Information Technology Telecommunications Network Services Contract

between

The Virginia Information Technologies Agency

on behalf of

The Commonwealth of Virginia

and

Verizon Business Network Services Inc., on behalf of MCI Communications Services, Inc. d/b/a Verizon Business Services (individually and collectively Verizon)

INFORMATION TECHNOLOGY TELECOMMUNICATIONS NETWORK SERVICES CONTRACT

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INFORMATION TECHNOLOGY TELECOMMUNICATION NETWORK SERIVCES CONTRACT

THIS INFORMATION TECHNOLOGY TELECOMMUNICATION SERVICES CONTRACT ("Contract") is entered into by and between the Virginia Information Technologies Agency (VITA) pursuant to §2.2-2012 of the Code of Virginia and on behalf of the Commonwealth of Virginia (hereinafter referred to as "VITA" or "Customer"), and Verizon Business Network Services Inc., on behalf of MCI Communications Services, Inc. d/b/a Verizon Business Services (individually and collectively "Verizon" or "Supplier"), a Delaware corporation headquartered at One Verizon Way, Basking Ridge, New Jersey 07920 to be effective as of OCT. 28, 2015 ("Effective Date").

1. PURPOSE AND SCOPE

This Contract sets forth the terms and conditions under which Supplier shall provide telecommunications network and related services as defined in § 2(L)) to VITA and any public body as defined by §2.2-4301 and referenced by §2.2-4304 of the Code of Virginia who is authorized by VITA as a Direct Service Plan (DSP) Participant.

2. DEFINITIONS

A. Acceptance

Acceptance shall take the form of successful performance of the Services at the designated location, or completed Acceptance testing to validate conformance with the Requirements of the Contract and the applicable order.

B. Agent

Any third party independent agent of any Authorized User.

C. Authorized Users

VITA and DSP Participants.

D. Confidential Information

Any confidential or proprietary information of a Party that is disclosed in any manner, including oral or written, graphic, machine readable or other tangible form, to any other Party in connection with the Services provided by Supplier under this Contract or as a result of discussions related to this Contract or any order issued hereunder, and which at the time of disclosure either (i) is marked as being "Confidential" or "Proprietary", (ii) is otherwise reasonably identifiable as the confidential or proprietary information of the disclosing Party, (iii) under the circumstances of disclosure should reasonably be considered as confidential or proprietary information of the disclosing Party, or (iv) any personally identifiable information, including information about VITA's employees, contractors, and customers, that is protected by statute or other applicable law.

E. Direct Service Plan (DSP)

The direct service plan provided by Supplier under this Contract as described in Exhibit B, "Service Requirements."

F. DSP Participant

Any public body, as defined by §2.2-4301 and referenced by §2.2-4304 of the Code of Virginia, who VITA prequalifies and grants written authority to participate in the DSP.

G. E-rate

The universal service "Schools and Libraries Program" administered by the Universal Service Administrative Company (USAC) under the oversight of the Federal Communications Commission (FCC), or successor program.

H. Eligible Entity

Any school or library meeting the USAC definition of an "Eligible Entity" under the universal Schools and Libraries Program.

I. Eligible Services

Products and services that are eligible for E-rate support.

J. Party

Supplier, VITA, or any Authorized User.

K. Requirements

The functional, performance, operational, compatibility, Acceptance testing criteria and other parameters and characteristics of the Service(s) as set forth in Exhibit A, "Service Fees" and Exhibit B, "Service Requirements" and the applicable order and such other parameters, characteristics, or performance standards that may be agreed upon in writing by the Parties.

L. Service

Any work performed or service provided by Supplier under this Contract for the benefit of the Commonwealth or other public body on whose behalf an Authorized User has placed an order with Supplier. For details about the work and services to be provided by Supplier under this Contract, see Exhibit A "Service Fees" and Exhibit B, "Service Requirements."

M. Subscriber

All public bodies, including VITA, as defined by §2.2-4301 and referenced by §2.2-4304 of the Code of Virginia who are end users of the Services of this Contract.

N. Supplier

Means the Supplier and any of its Affiliates (i.e., an entity that controls, is controlled by, or is under common control with Supplier).

O. Telecommunications Service Order (TSO)

An order for telecommunications services issued by VITA to a supplier of telecommunications services. For purposes of this Contract, a TSO shall refer to an order for Services, in substantially the form of Exhibit C to this Contract, issued by VITA to Supplier. Any TSO shall constitute an order.

3. TERM AND TERMINATION

A. Contract Term

This Contract is effective and legally binding as of the Effective Date and, unless terminated as provided for in this section, shall continue to be effective and legally binding for a period of five (5) years. VITA, in its sole discretion, may renew this Contract for up to five (5) additional one (1)

year periods after the expiration of the initial five (5) year period. VITA will issue a written notification to the Supplier stating the renewal period, not less than thirty (30) days prior to the expiration of any current term. All terms and conditions and rates and charges shall continue to apply during any renewal period selected.

Performance of an order issued during the term of this Contract may survive the expiration of the term of this Contract, in which case all terms and conditions required for the operation of such order shall remain in full force and effect until Services pursuant to such order have met the final Acceptance criteria of the applicable Authorized User.

B. Termination for Convenience

VITA may terminate this Contract, in whole or in part, or any order issued hereunder, in whole or in part, or an Authorized User may terminate an order, in whole or in part, upon not less than thirty (30) days prior written notice at any time for any reason.

C. Termination for Breach or Default

VITA shall have the right to terminate this Contract, in whole or in part for breach and/or default of Supplier. Supplier shall be deemed in breach and/or default in the event that Supplier fails to meet any material obligation set forth in this Contract.

If VITA deems the Supplier to be in breach and/or default, VITA shall provide Supplier with notice of breach and/or default and allow Supplier thirty (30) days to cure the breach and/or default. If Supplier fails to cure the breach as noted, VITA may immediately terminate this Contract or any order issued hereunder, in whole or in part. Any such termination shall be deemed a Termination for Breach or a Termination for Default. In addition, if Supplier is found by a court of competent jurisdiction to be in violation of or to have violated 31 USC 1352 or if Supplier becomes a party excluded from Federal Procurement and Nonprocurement Programs, VITA may immediately terminate this Contract, in whole or in part, for breach. VITA shall provide written notice to Supplier of such termination and Supplier shall provide written notice to VITA if Supplier is charged with violation of 31 USC 1352 or if federal debarment proceedings are instituted against Supplier.

D. Termination for Non-Appropriation of Funds

All payment obligations under this Contract are subject to the availability of legislative appropriations at the federal, state, or local level, for this purpose. In the event of non-appropriation of funds, irrespective of the source of funds, for the items under this Contract, VITA may terminate any order, in whole or in part, or an Authorized User may terminate its

order, in whole or in part, for those goods or services for which funds have not been appropriated. Written notice will be provided to the Supplier as soon as possible after legislative action is completed.

E. Effect of Termination

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Upon termination, neither the Commonwealth, nor VITA, nor any Authorized User shall have any future liability except for Services rendered by Supplier and accepted by the Authorized User prior to the termination date, and Transition Assistance provided at VITA's request (and under the associated pricing and terms) during the transition period.

In the event of a Termination for Breach or Termination for Default, all costs of de-installation and return or disconnection of Services shall be borne by Supplier.

In the event of a Termination for Breach or Termination for Default, or Termination for Failure to Meet Certain SLAs as provided in Appendix B, VITA/Authorized User may immediately procure services from another source. Once VITA/Authorized User has effected a purchase from an alternate source, the parties agree that VITA/Authorized Users may charge-back Supplier, in which case Supplier agrees to reimburse Authorized Users for any difference in the cost of Services between the original Contract price and cost to VITA/Authorized Users to cover from the alternate source, as measured over a 12 month period. Supplier also agrees to reimburse VITA/Authorized User for non- recurring installation charges for replacement services from an alternate source, with the charges not to exceed the list price in the Guide for a similar service. As to such alternate source, the foregoing is subject to (a) having been selected and procured pursuant to the Virginia Public Procurement Act and (b) a new monthly price as not exceeding a fair market price based on industry benchmark information.

In no event shall Authorized Users be held to pay Supplier any costs incurred by Supplier, including but not limited to ordering, marketing, manufacturing, or delivering the item(s) which are subject of notice of default by VITA. This remedy is in addition to and not in lieu of any other remedy VITA may have under this Contract or at law or in equity for Termination for Breach or Default of this Contract.

F. Transition Assistance

The Supplier must provide adequate information and reasonable assistance as necessary to enable VITA to conduct a smooth transition of services and functions being performed by the Supplier to an alternative Supplier upon expiration or termination of the Contract. Upon VITA's request, the Supplier will continue to provide Services for up to 24 months following the expiration or termination date of the Contract. All rates, service level agreements, and terms and conditions of the Contract will apply during that period. The Supplier agrees that no material decrease in the Supplier's level of performance and support will occur during the transition period.

G. Contract Kick-Off Meeting

Within 30 days of Contract award, Supplier may be required to attend a contract orientation meeting, along with the VITA contract manager/administrator, the VITA and/or other CoVa Agency project manager(s) or authorized representative(s), technical leads, VITA representatives for SWaM and any other significant stakeholders who have a part in the successful performance of this Contract. The purpose of this meeting will be to review all contractual obligations for both parties, all administrative and reporting requirements, and to discuss any other relationship, responsibility, communication and performance criteria set forth in the Contract. The Supplier may be required to have its assigned account manager as specified in Exhibit B, "Service Requirements," and a representative from its contracts department in attendance. The time and location of this meeting will be coordinated with Supplier and other meeting participants by the VITA contract manager.

H. Contract Closeout

Prior to the contract's expiration date, Supplier may be provided contract close out documentation and shall complete, sign and return to VITA Supply Chain Management within 30 days of receipt. This documentation may include, but not be limited to: Patent/Royalty Certificate, Tangible Property/Asset Certificate, Escrow Certificate, SWaM Reports Completion Certificate and Final Payment Certificate. Supplier is required to process these as requested to ensure completion of close-out administration and to maintain a positive performance reputation with the Commonwealth of Virginia. Any closeout documentation not received within 30 days of Supplier's receipt of our request will be documented in the contract file as Supplier non-compliance. Supplier's non-compliance may affect any pending payments due the Supplier, including final payment, until the documentation is returned.

4. SERVICES

A. Nature of Services and Engagement

This Contract is non-exclusive and the Commonwealth may, at its sole discretion, receive benefits from third party suppliers of services similar to, or in competition with, services provided by Supplier. Supplier is an independent contractor engaged to perform certain Services (see section 2(L)), including but not limited to providing telecommunications services and

installation and/or support activities as described in Exhibit B, "Service Requirements," Exhibit A, "Service Fees," Exhibit G, "Service Attachments, as applicable. The Commonwealth reserves the right to order any of Supplier's Services at any time during the term of this Contract or any extension thereto. Should VITA or an Authorized User request Services or Features not available under this Contract, Supplier shall promptly notify the VITA Ordering Officer and the parties shall discuss the option of amending the Contract to include the requested Services and Features prior to Supplier provisioning the Services and Features.

B. Availability of Supplier's Services

Supplier shall continue to offer all Services and service components identified in Exhibit A, "Service Fees" and Exhibit B, "Service Requirements," without exception, for the entire term of the Contract, including extension years and any period of Transition Assistance.

C. Substitution of Services

During the term of this Contract, the Supplier is authorized to substitute a Service identified in Exhibit A, "Service Fees," with a functionally equivalent service not already identified in Exhibit A, "Service Fees." In advance of such substitution, Verizon shall provide VITA and/or Authorize User with 120 days minimum notice of its substitution and its plan for migration of service. Supplier is not authorized to substitute for any Service identified in Exhibit A, "Service Fees," any other Service identified in Exhibit A, "Service Fees,"without the written permission of VITA.

D. Services that Include Software

Supplier grants a royalty-free, worldwide, non-exclusive and irrevocable (for the term of the Contract, including any period of termination assistance) license to the Subscriber to use any software necessary for use of the services provided by Supplier. Terms and conditions that concern or purport to govern any software and that are presented at any time in a "click-through" or "click-wrap" agreement or web site shall not be deemed to have been agreed to by Authorized Users and Subscribers and shall not bind Authorized Users and Subscribers.

Supplier warrants that any Service provided by Supplier under this Contract that includes software or equipment will not contain any device, code, or function intended to disrupt or disable the Service (sometimes referred to as "time bombs", "time locks", or "drop dead" devices) upon the occurrence of any event, including but not limited to, the elapsing of a period of time, exceeding the number of users, or non-payment.

Authorized Users and Subscribers shall be entitled to make copies of any software and documentation provided by Supplier for the permitted use of the Services and for archival and disaster recovery purposes. Authorized Users and Subscribers may copy any documentation and incorporate it into its processes, procedures and testing plans.

E. Service Delivery Intervals

The Supplier shall begin delivery of Services in accordance with Exhibit B, "Service Requirements" herein or on the date requested by the Authorized User and agreed to by the Supplier in an order. Supplier's failure to comply with such time frames shall be deemed a default, and VITA may, at its sole discretion and in addition to all other available remedies, exercise its rights pursuant to the Term and Termination section of this Contract. Supplier shall not be deemed in default if its failure to comply is the result of a failure of the Subscriber which is to receive Supplier's Services to provide any necessary access or support as identified in the applicable order.

The Authorized User may delay the Service delivery date by notifying the Supplier at least ten (10) days before the scheduled Service delivery date. In the event Verizon incurs third party costs as a result of an Authorized User's requested delay, Authorized User shall be responsible for payment of those third party costs directly attributed to the delay.

The Commonwealth requires that Supplier provide delivery equal to or better than that provided its commercial and retail customers.

F. Installation

Unless otherwise authorized in writing by the Authorized User, Supplier shall not, in performing installation Services, interfere with the current operational telephone system and/or telecommunications cabling system of the Subscriber in a manner that causes operational outages. Notwithstanding the foregoing, in the event that temporary modifications to the existing telephone and/or cabling systems become necessary to complete the installation of the new service, the Supplier shall notify the on-site point of contact for the Subscriber of such need and shall schedule a mutually agreeable time for such modifications to be completed.

G. Installation of Service Responsibility

Except for specific limitations expressly stated in this Contract, Supplier shall be responsible for completing and providing all components, terminals, wiring, labeling and all other items necessary for installation and commencement of each ordered Service, including, without limitation, installation of any necessary access lines and switching. Additional charges may be required if suitable facilities are not available to provide Service at any locations, In the event

installation of additional network facilities is required to provide Service, As per Section 7 Pricing E2 Special Construction of the RFP, Supplier will inform Customer of such applicable charges, and Supplier will install such facilities only upon prior mutual written agreement of the parties to such additional charges. If Customer does not agree to pay such additional charges, then the service order will be terminated subject to Section 3.(Term and Termination) B. above.

H. Missed Date Notification

Supplier will notify Authorized User in writing of a due date that may be missed, along with the reason, as soon as the Supplier realizes the potential failure of meeting an installation date.

I. Testing and Inspection

The Commonwealth reserves the right to conduct any test/inspection it may deem advisable to assure Services conform to the Requirements.

The Supplier shall provide the Services identified in each order in accordance with the Requirements set forth herein and on the applicable order and with all applicable standards of performance established by RFP 2013-08, the Virginia State Corporation Commission, and the Federal Communications Commission. The Supplier's Services shall meet and maintain the quality (grade of services) for each type of Service as specified herein.

J. Availability and Service Levels

Supplier Services shall be ready for use 24 hours per day 7 days per week. Supplier shall provide a technical or customer support center for the reporting by Authorized Users of technical service problems encountered by Subscribers while using the Services.

Exhibit B, "Service Requirements" provides Service Level Agreements and remedies applicable to this Contract and individual orders issued under the Contract. Credits and rebates for failing to meet Service Levels are remedies available to Authorized Users in addition to, and not in lieu of, any other remedies available pursuant to this Contract or at law or in equity for Termination for Breach, for cause, or failure to meet certain SLA's in this Contract.

K. Consistent or Recurring Service Level Failures

Without limitation as to the contractual implications of any single failure, Supplier's consistent or recurring failure to meet the agreed-upon service levels may be a material breach of the Contract, in whole or in part, as described in "Termination for Breach or Default".

5. ACCEPTANCE AND CURE

A. Acceptance and Cure of Implementation

In addition to Supplier's Implementation Plan Guarantees set forth in Exhibit B, "Service Requirements," after the Supplier initiates a specific Service to VITA, there will be a mutually agreed to predefined period that is set forth in the implementation project plan during which VITA reviews the Service quality to determine if it meets the Requirements and written criteria set forth herein, including, but not limited to, installation intervals, performance, availability, network throughput and delay, reliability, accuracy of management information reports and billing (an "Implementation Period"). If the specific Service (e.g., domestic voice, MPLS service) does not meet the Requirements, VITA will notify Supplier and Supplier will have 30 days in which to make the Service conform to the Requirements. If Supplier cannot cure the deficiencies within the 30-day period, VITA may terminate the Service without liability and, in addition to all remedies or credits obligated by Supplier in Supplier's Implementation Plan Guarantees, VITA may exercise "cover" in an amount equal to the difference between what VITA pays for substitute service from Supplier or another vendor and the charges VITA would have paid Supplier had the service been provided in accordance with the specifications, as measured over a twelve (12)-month period. In addition, VITA may exercise the remedies provided in "Termination for Breach or Default," in addition to and not in lieu of any other remedies available at law or in equity. Should a Termination for Breach or Default be exercised, the remedies and credits described above shall not be waived and will be in addition to those described in "Effect of Termination."

B. Acceptance and Cure of Individual Installations and Services

All installations and Services shall meet the Requirements and written criteria set forth herein and in the individual order.

Upon the installation of a Service, the Supplier shall ensure that it performs properly and promptly inform the Authorized User that it is available for use.

If such installation occurs during the Service's Implementation Period, Authorized User shall have 30 days to accept such Service. If, prior to Acceptance, Supplier becomes aware of or otherwise establishes that the installation and Services do not perform properly, or if Authorized User notifies Supplier of the same, Supplier will promptly correct the problem(s), with time being of the essence. Supplier shall have five (5) business days to cure all deficiencies and non-conformities such that the installation and Services meet the Requirements and written criteria set forth herein and in the applicable order, Once the cure has been satisfied, Authorized User shall have 30 days to accept such Service.

If such installation occurs after the Implementation period, Acceptance shall be automatic upon Supplier's notification to Authorized User that the installation is complete and Services are

available for use. If within seventy-two (72) hours of such Supplier notification, Supplier becomes aware of or otherwise establishes that the installation and Services do not perform properly, or if Authorized User notifies Supplier of the same, Supplier will promptly correct the problem(s), with time being of the essence. Supplier shall have five (5) business days to cure all deficiencies and non-conformities such that the installation and Services meet the Requirements and written criteria set forth herein and in the individual order. Once the cure has been satisfied, the service levels provided in Exhibit B, "Service Requirements" will be in effect. Additionally, Supplier will include a pro-rated credit for the cure duration against the related billing.

A Service will not be considered to fail to meet the Performance Requirements to the extent that any performance problem arises from any of the following: (i) Subscriber equipment and/or software not provided and managed by Supplier as part of the Services, (ii) Subscriber provided local access, (iii) power required to be supplied by Subscriber under the Agreement or the applicable Service Attachment, or (iv) any other factor that is the responsibility of Subscriber.

In the event that Supplier fails to cure the deficiencies or non-conformities to meet the Requirements and written criteria set forth herein and in the individual order within the 5-day cure period, Authorized User shall be entitled to the credits and remedies as provided in Exhibit B and Section 3E Termination of an individual order for failure to cure, however, shall not constitute a Termination for Breach or Default under the Contract.

6. NEW TECHNOLOGY

A. Access to New Technology

Supplier will bring to VITA's attention any new services that it believes will be of interest to VITA and will work to develop proposals for the provision of any such services as VITA requests. In addition, VITA and Supplier will review at least once a year the availability of these new services in the Commonwealth and where applicable will jointly build a plan to migrate from legacy services to new technology (i.e TDM access to native Ethernet access).

B. New Service Offerings Not Available from the Supplier

If new or replacement service offerings become available to VITA, and cannot be competitively provided by the Supplier, VITA may procure the services from a third party, and Supplier will reasonably assist VITA to migrate to such services, if VITA elects to use such new or replacement service offerings.

7. SUPPLIER PERSONNEL

A. Selection and Management of Supplier Personnel

Supplier shall take such steps as may be necessary to ensure that all Supplier personnel performing Services under this Contract are competent and knowledgeable of the contractual arrangements and the applicable Services herein. Supplier shall be solely responsible for the

conduct of its employees, agents, and subcontractors, including all acts and omissions of such employees, agents, and subcontractors, and shall ensure that such employees and subcontractors comply with the appropriate Authorized User's site security, information security and personnel conduct rules, as well as applicable federal, state and local laws, including export regulations. Authorized User reserves the right to require the immediate removal from such Authorized User's premises of any employee, subcontractor or agent of Supplier whom such Authorized User believes has failed to comply or whose conduct or behavior is unacceptable or unprofessional or results in a security or safety breach.

B. Supplier Personnel Supervision

Supplier acknowledges that the Commonwealth is not the employer of any Supplier personnel, including any of Supplier's agents, contractors, or subcontractors. As between Supplier and the Commonwealth, Supplier shall have sole responsibility for all employment-related functions, including, without limitation, to supervise, counsel, discipline, review, evaluate, set the pay rates of, and terminate the employment of such Supplier personnel.

C. Subcontractors

If an order issued pursuant to this Contract is supported in whole or in part with federal funds, Supplier shall not subcontract any Services pursuant to such order to any subcontractor that is a party excluded from Federal Procurement and Nonprocurement Programs. In no event shall Supplier subcontract any Services to any subcontractor which is debarred by the Commonwealth of Virginia or which owes back taxes to the Commonwealth and has not made arrangements with the Commonwealth for payment of such back taxes.

The Supplier will (i) be responsible for all work performed by subcontractors, (ii) be responsible for its (and their) compliance with the Contract, and (iii) guarantee the performance of any services provided by the Supplier's subcontractors (including, but not limited to, paying service credits associated with outages, liability for all subcontractors working in support of the Contract's requirements and those of any order placed thereunder, and adherence with all technical and operational specifications). The Supplier will be responsible for payment of its subcontractors and will indemnify the Commonwealth's Indemnified Parties against any claims resulting from Supplier's failure to pay, including discharging (at Supplier's expense) any liens obtained by the subcontractor.

8. GENERAL WARRANTY

THE OBLIGATIONS OF SUPPLIER UNDER THIS GENERAL WARRANTY SECTION ARE MATERIAL. SUPPLIER MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY CONCERNING MERCHANTABILITY OR FITNESS FOR ANY OTHER PARTICULAR PURPOSE.

All Services purchased under this Contract remain under warranty for the time period commencing after acceptance by Authorized User and continuing through expiration of the Contract or termination of the Services at the discretion of VITA, or termination by the Authorized User for an individual order.

UNLESS OTHERWISE SET FORTH IN A SUPPLIER EXHIBIT OR SERVICE DESCRIPTION ATTACHMENT, VERIZON SHALL PASS THROUGH ALL MANUFACTURERS'/PUBLISHERS' WARRANTIES FOR EQUIPMENT AND/OR SOFTWARE PROVIDED HEREUNDER TO CUSTOMER. THE CUSTOMER SHALL PRESENT ANY SUCH CLAIM DIRECTLY TO THE MANUFACTURER/PUBLISHER UNLESS THE EQUIPMENT IS A PART OF A FULLY MANAGED VERIZON SOLUTION AS OUTLINED IN EXHIBIT G.

With respect to the Services provided by Supplier, Supplier represents and warrants the following:

A. Ownership

Supplier has the right to provide the Services without violating or infringing any law, rule, regulation, copyright, patent, trade secret or other proprietary right of any third party. The remedy for any failure to so provide shall exclusively be as set forth in the Intellectual Property indemnity in Section 16A(2) of this Contract.

B. Supplier's Viability

Supplier warrants that it has the financial capacity to perform and continue to perform its obligations under this Contract; that Supplier has no constructive or actual knowledge of an actual or potential legal proceeding being brought against Supplier that could materially adversely affect performance of this Contract; and that entering into this Contract is not prohibited by any contract, or any order by any court of competent jurisdiction.

C. Supplier's Past Experience

Supplier warrants that the Services have been successfully performed on a similar scale for a non-related third-party without significant problems due to the Services or Supplier.

D. Performance

i). All Services shall be performed with care, skill and diligence, consistent with or above applicable professional standards currently recognized in its profession, and Supplier shall be responsible for the professional quality, technical accuracy, completeness and coordination of all plans, information, specifications, and Services furnished under this Contract;

(ii) Services are pursuant to a particular Request for Proposal ("RFP") and shall be fit for the particular purposes specified by VITA in the RFP and in this Contract, and Supplier is possessed of superior knowledge with respect to the Services and is aware that all Authorized Users are relying on Supplier's skill and judgment in providing the Services. The remedy for any failure to meet such performance standards with respect to individual installations and/or orders shall exclusively be as set forth in the SLA provisions in Sections 3E and 4 and Exhibit B of this Contract;

E. Malicious Code

Supplier hereby represents and warrants that Supplier shall use commercially reasonable efforts (in light of Supplier's standing as a telecommunications service provider and the Services provided pursuant to the Contract) to prevent the introduction and proliferation of any Malicious Code into Customer's systems or the Customer's network that are provided or managed by, or under the control of, Supplier *by any means attributable to, or under the control of, Supplier* during the performance of Services. In the event any Malicious Code in such Customer systems or the Customer network originates with Supplier, Supplier personnel, or in the Services software, Supplier shall work diligently on a continuous basis in cooperation with Customer: (i) to eliminate the Malicious Code if in Customer systems or the Customer network under Supplier's control; (ii) to assist Customer in reducing, to the extent feasible, its effects on the Services software (e.g., promptly apply security patches); (iii) to assist Customer in the removal of the Malicious Code outside of the Services software; and (iv) to assist in the restoration of data, all at no additional cost to Customer.

F. Remedial Action in the Event of a Virus Infection

If a software virus is contained in or affects any systems or software provided or maintained by or for the Supplier as part of the services, the Supplier will promptly notify VITA and shall take all reasonable steps to remedy the problem and to prevent a reoccurrence thereof.

9. TRAINING AND DOCUMENTATION

Any training or documentation necessary for the recipient of the Service to have full benefit of such Service shall be deemed included in the scope of the order at no cost, unless expressly excluded.

Supplier shall be responsible for providing hands-on training on the use of the Service(s) for all end users. Supplier shall coordinate scheduling for all training directly with the Subscriber. In conjunction with verbal explanations of the system features and configuration, Supplier shall supply documentation including operations manuals, instruction cards, and other materials as necessary for each Service.

10. RATES, ORDERS AND COMPENSATION

A. Non-Exclusivity

Supplier agrees that no pricing or service contained in this Contract is based upon "exclusivity" or any required percentage of the Commonwealth's or Authorized User's overall or service-specific spend or volume.

B. Fixed Pricing

Except for the process described in the "Annual Competitive Review Process" section of this Contract, all prices, terms, warranties and benefits granted by the Supplier in their proposal and this Contract are fixed and stabilized for the term of the Contract, including any extension years.

C. Direct Service Plan (DSP)

VITA may, at its sole discretion, qualify and grant to one or more public bodies the authority to participate in the DSP. VITA will notify Supplier in writing of the qualified public bodies ("DSP participants"), the Services they are authorized to order. DSP participants shall have the right to place orders to Supplier pursuant to this Contract and shall be billed directly by Supplier.

Should VITA partially or entirely revoke or otherwise suspend any public body's participation in the DSP, the suspension or termination of ordering privileges will be considered effective upon written notice to Supplier and the affected public body. Direct billing for Services may continue unless otherwise revoked. VITA will give Supplier sixty (60) days advance written notice of any complete suspension or termination of DSP participation. During this period, VITA and Supplier will take appropriate action to transfer ordering and billing functions back to VITA.

Should VITA at any time cancel the DSP, with respect to this Contract, in whole or in part, VITA will provide Supplier sixty (60) days advance written notice of such cancellation, and VITA and Supplier will take appropriate action to transfer ordering and/or billing functions back to VITA.

D. Telecommunications Service Orders

To order Services VITA will, and any other Authorized User (i.e., DSP participant) may, issue a written Telecommunications Service Order (TSO) to the Supplier for any Service(s) identified herein. A valid TSO should (i) reference the Contract number; (ii) be signed by an ordering officer authorized to contractually bind the Authorized User; and (iii) identify the Service(s) to be acquired, the price for each Service (in accordance with this Contract, including Exhibit A, "Service Fees"), the required Service delivery date for each Service, and, as applicable, the location(s) where each Service shall be performed. In no event shall a TSO include a request for any service not identified in this Contract. Supplier is responsible for ensuring a TSO is complete and valid before processing it. Should any TSO be incomplete or considered not valid by Supplier, Supplier agrees to promptly notify and work with the Authorized User to make the incomplete or invalid TSO complete and valid.

Upon receipt of a written, complete and valid TSO, the Supplier shall process such TSO and return a Service Order containing the following information in no more than two (2) business days or other timeframe as provided in Exhibit B, "Service Requirements:"

i). Verification that the TSO is technically correct;

ii). Date Services will commence;

iii). Verification of the charge and quantity for each distinctively identifiable billable item (Service) excluding taxes and surcharges to be provided; and

iv). Other applicable administrative information necessary to deliver the Services requested on the TSO including master contract number, circuit location/address (A-end and B-end as applicable) sub-account number(s), location code(s), and any other identifier(s) to be

assigned to any cost element(s) or facilities by which billing data can typically be sorted or which can be used to classify or report on Services and/or costs in Supplier's electronic portal.

The standard TSO template is provided as Exhibit C.

E. Direct Service Plan Orders

Supplier is required to accept any order placed by a DSP participant through the following means:

i). Purchase Order (PO): An official PO form issued by a DSP participant.

ii). Any other order/payment charge or credit card process, such as AMEX, MASTERCARD, or VISA under contract for use by a DSP participant.

iii). An order substantially in the form of a TSO.

This ordering authority is limited to issuing and canceling specific orders for the Services available under this Contract. Under no circumstances shall any DSP participant have the authority to modify this Contract. Any order placed pursuant to this Contract must reference the Contract number and identify the Service(s) to be performed, the price for each Service (in accordance with Exhibit A, "Service Fees"), and the required Service commencement date for each Service.

ALL CONTRACTUAL OBLIGATIONS UNDER THIS CONTRACT IN CONNECTION WITH AN ORDER PLACED BY ANY DSP PARTICIPANT ARE THE SOLE OBLIGATION OF SUCH DSP PARTICIPANT AND NOT THE RESPONSIBILITY OF VITA.

F. E-rate

Supplier agrees to make available all E-rate Eligible Services as listed and priced herein to any DSP Participant which is an Eligible Entity. Supplier agrees to provide the Services directly to the Eligible Entity, and to bill each Eligible Entity directly. Supplier agrees and understands that the responsibility for collection of all charges incurred, and the responsibility for resolving all Service problems as well as administration of this Contract for E-rate participation shall be the sole responsibility of Supplier.

Supplier warrants that it is qualified under applicable Federal Communications Commission and Virginia State Corporation Commission rules to apply for and receive Universal Service Fund allocations/disbursements for services provided pursuant to this Contract to Eligible Entities on behalf, and for the benefit, of those Eligible Entities. The Supplier also agrees to maintain those qualifications, and to assist Eligible Entities in applying for and receiving these allocations/disbursements.

G. Orders with Federal Funding

Supplier shall not accept any order issued pursuant to this Contract if such order is to be funded, in whole or in part by federal funds and if, at the time the order is placed, Supplier is not eligible to be the recipient of federal funds as may be noted on any of the Lists of Parties Excluded from Federal Procurement and Nonprocurement Programs.

H. Ordering Authority

The TSO and DSP Orders provisions above designate the process for the placement of new Service orders and installations with the Supplier. The process will be the only authorized way to place orders with the Supplier. The Supplier will implement provisioning processes to ensure that orders are not accepted outside of the process, and orders placed and billed outside of these procedures will not be the financial responsibility of the Commonwealth or any Authorized Users of the Commonwealth. VITA reserves the right to subsequently change its processes, including designating additional individuals or organizations that will be authorized to place orders.

I. VITA Approval and Contracting Authority

The Supplier recognizes that VITA, by statute, reviews and approves purchases of telecommunications Services for agencies and institutions of the Commonwealth. The Supplier agrees that the Supplier will not provide such Services unless VITA has given its advance, written approval, either individually or by category of Service or Subscriber.

J. Ordering Officer(s)

Authorized Users will designate in writing any individual authorized (Ordering Officer) to issue orders for the Services. Notwithstanding anything to the contrary, the Authorized User will make payment only pursuant to a valid order executed by an Ordering Officer. VITA's authorized Ordering Officers for this Contract are listed in Exhibit E, which may change from time to time.

K. Purchase Price and Price Protection

Exhibit A, "Service Fees," sets forth the fees and the applicable discounts. Authorized Users shall not be required to pay any additional costs above those costs provided for in Exhibit A, "Service Fees."

Except where expressly stated otherwise for a particular service, the rates and charges set forth in this Contract, including those contained in Exhibit A, do not include Federal Universal Service Fund charges, any other mandatory surcharge, applicable taxes, customer premises equipment or extended wiring to or at Customer premises.

At all times during the term of this Contract and any extensions thereto, Supplier's prices on Exhibit A, "Service Fees," shall at all times comply with §§ 56-234 et seq. of the Code of Virginia.

Supplier's failure to comply with the aforereferenced statute shall be grounds for termination of the Contract or any order issued hereunder for default and/or breach; and VITA may pursue any remedies available at law or in equity with regard to such failure to comply.

L. Most Favored Customer

Supplier agrees and warrants that for all Services priced pursuant to this Contract, the prices are, and will continue to be at or below Supplier's (or any agent thereof) lowest price offered to any Virginia county, city or local government, school district, special service district, any educational institution or any subdivision /agency thereof.

For any occurrence whereby the Supplier (or any agent thereof) is found to be charging any entity listed above, less than as is identified in this Contract, the Supplier shall immediately lower the prices in this Contract to a level equal to or below that charged such other entity.

M. Regulatory Fees and Other Surcharges

VITA and Authorized Users shall pay Federal Universal Service Fund ("FUSF"), all other mandatory surcharges, and taxes for which VITA and Authorized Users do not present Verizon with valid tax exemption documentation as applicable to the Services. No other regulatory surcharges shall be assessed under this Contract. The aforementioned charges shall accurately reflect the amounts that the Supplier is required to pay to government agencies or others, and only for the services on which such obligations are actually applicable.

No regulatory charges will be applied retroactively, whether as a result of a change in Supplier's policy or some other event.

N. Waiver of One-Time Charges for Transport Services

All non-recurring charges for transport services installed or modified under the Contract will be waived. This waiver is available throughout the term of the Contract and will apply to any and all non-recurring charges (NRCs), whether related to initial implementation, normal operations, or normal growth. The NRC waiver will not require any minimum in-service period for circuits or services.

O. Late Payment Charges

Supplier agrees to waive all late payment charges associated with invoices for Services provided under this Contract, except to the extent such late payment charges are required by law.

11. INVOICE PROCEDURES

A. Invoice Submission

Accurate bills for each calendar month, in both hard copy and electronic format(s), shall be delivered to each Authorized User at the billing address identified in the applicable Order.

Upon certification by VITA that a public body is eligible to receive direct billing, Supplier will provide separate billing directly to that public body.

No invoice may include any costs other than those identified in this Contract.

B. Disputed Charges

If, before payment of an invoice, Authorized User notifies the Supplier in writing of a disputed charge, Authorized User will have the right to withhold payment of the disputed amount until the dispute is settled or finally resolved.

a) All disputes between the parties directly relating to disputed charges on any invoice shall initially be referred in writing by either party to the Contractor and VITA stating the following details where applicable: i. Basis of Dispute ii. Circuit ID; iii. Service ID Account Number iv.Invoice date v.InvoiceNumber and vi.Amount of a disputed charge. If the Contractor and VITA are unable to resolve the dispute within sixty (60) day(s) after referral of the matter to them or upon the earlier joint request by both the Contractor and VITA, the parties shall submit the dispute to the Management Committee for immediate review. If both the Supplier's Program Delivery Executive and VITA's Billing Reconciliation Manager agree that adequate steps are being taken to resolve the dispute, even though the dispute has not been resolved within the first 60days, both parties can agree to continue working to resolve the issue without engagement of the Management Committee. However, at any point beyond the initial 60days, either the contractor or VITA can request that the Management Committee be engaged to assist in the resolution.

The Management Committee will consist of the following team members:

(a.) (VITA) Executive Director of Administration & Finance –, Controller, and Billing Reconciliation Manager

(b.) (Verizon) PMO Area Vice President, Program Delivery Executive, and Managing Client Partner.

(b) Within ten (10) days after any dispute between the parties is submitted to the Management Committee pursuant to Subparagraph (a), the Management Committee shall meet for the purpose of attempting to resolve such dispute.

At any meeting of the Management Committee at which more than one (1) dispute will be considered, VITA may establish the order in which such disputes shall be addressed.

If the Management Committee is unable to resolve a dispute within twenty (20) days after the date of the initial meeting of the Management Committee during which such dispute was considered, the Management Committee shall immediately notify VITA and Contractor pursuant to Subparagraph (c).

(c) In the event a dispute under this section 11 has not been resolved by the above process, both the Contractor and VITA must follow the Dispute Resolution process in section 21F.

(d) The claim shall state all grounds upon which the Contractor asserts a controversy exists.

(g) VITA and Contractor both acknowledge that the provision of Services is critical to the operations of VITA. Accordingly, in the event of a dispute between VITA and Contractor arising under or relating to this Contract, Contractor shall continue to provide the Services in accordance with the terms of this Contract during the pendency of the resolution of such dispute.

(h) Failure to resolve the dispute in this timeframe shall not constitute material breach of this Agreement. If a disputed charge is reversed, Supplier shall also reverse all associated taxes and regulatory charges.

C. Overpayment

If Authorized User notifies the Supplier in writing of a disputed charge, any credit(s) issued to Authorized User shall include all associated surcharges, regulatory charges and taxes.If Authorized User has overpaid the Supplier because of a billing error,, the time within which Authorized User may seek credits for overcharges (including associated surcharges, regulatory charges and taxes) will be 12 months..

D. Delayed Billing/Billing Guarantee

Except in the event of amounts initially disputed by Authorized User which are re-billed by the Supplier, Authorized User will not pay charges for services more than 6 months after the close of the billing period in which the charges were incurred. This requirement applies to all charges, including without limitation, Moves, Adds, Changes, Disconnections (MACD) charges, recurring charges, usage-based charges and non-recurring charges, as well as fees, surcharges, regulatory charges and taxes.

E. Purchase Payment Terms

Supplier is responsible for the accuracy of its billing information. Charges for Services accepted more than six (6) months prior to receipt of a valid invoice may not be paid, except in accordance with a milestone payment schedule.

All payment terms are net 30 days after receipt of proper invoice.

12. COOPERATION WITH AGENTS

Supplier agrees to cooperate with and take instructions from any Agent under contract with an Authorized User. The third party provider's responsibilities may include, for example, procuring Services from Supplier on behalf of Authorized User, liaising with Supplier with respect to service faults or failures, and reviewing, authorizing and paying Supplier invoices.

The Supplier must fully cooperate, at no additional charge, with the Agent in all areas that Authorized User requires. If an Agent is used for processing Supplier's invoices, Supplier must agree to send billing detail directly to the Authorized User and the Agent, at no additional cost to the Authorized User.

Supplier will not require any such Agent to execute a Non-Disclosure Agreement (NDA) as long as such Agent is under NDA with VITA or the Authorized User.

13. REPORTING

In addition to all reports identified in the Requirements, Supplier is required to submit to VITA the following monthly reports:

Small Business Subcontracting Report

These reports must be submitted using the instructions found at the following URL: http://www.vita.virginia.gov/scm/default.aspx?id=97

Failure to comply with all reporting requirements may result in default of the Contract.

Suppliers are encouraged to review the site periodically for updates on Supplier reporting.

14. ANNUAL COMPETITIVE REVIEW PROCESS

Upon VITA's written request, starting no earlier than 90 days before the end of each year of the Contract term except the final one, VITA and the Supplier will conduct a review of the overall competitiveness of the services provided under the Contract for pricing, terms and conditions, performance and service level metrics. The purpose of the review is to maintain VITA's relative position in the market, as defined in Section 10.L, "Most Favored Customer" for service arrangements involving substantially equivalent services.

Within 30 days of such request, both the Supplier and VITA will propose market-based reductions to rates and charges (which cannot be less than 0%) for the aggregate volume and mix of services provided to VITA. The proposed aggregate adjustment may be based on industry benchmark information or other relevant data. Both parties will negotiate in good faith an aggregate percentage change if facts warrant it. If the proposals from both parties are less than 5% apart, the Supplier and VITA will split the difference. If the parties are more than 5% apart, the proposed adjustment must be mutually agreed upon within 30 days or a neutral third party acceptable to both parties will be brought in to facilitate negotiations and pick either the Supplier's or VITA's proposed rate reduction.

WITHIN 15 DAYS OF THE ADJUSTMENT BEING AGREED UPON BY THE PARTIES OR CHOSEN BY THE NEUTRAL THIRD PARTY, AS APPLICABLE, THE SUPPLIER SHALL PREPARE THE NECESSARY REVISIONS TO THE CONTRACT, TO BE EFFECTIVE AS OF THE BEGINNING OF THE ANNUAL SERVICE PERIOD BEFORE WHICH THE ANNUAL COMPETITIVE REVIEW PROCESS WAS INITIATED.

15. CONFIDENTIALITY

A. Treatment and Protection

Each Party shall (i) hold in strict confidence all Confidential Information of any other Party, (ii) use the Confidential Information solely to perform or to exercise its rights under this Contract, and (iii) not transfer, display, convey or otherwise disclose or make available all or any part of such Confidential Information to any third-party. However, either party may disclose the Confidential Information as delivered by the other party to subcontractors, contractors, advisors or agents and to those Affiliates of such Party that are bound by non-disclosure contracts with such Party that are consistent with the non-disclosure obligations contained herein. Each Party, its employees, agents and subcontractors, shall take the same measures to protect against the disclosure or use of the Confidential Information as it takes to protect its own proprietary or confidential information (but in no event shall such measures be less than reasonable care). Each party shall advise its employees, agents and subcontractors in receipt of such other Party's Confidential Information of the of the confidentiality restrictions, present and continuing, set forth herein.

Supplier agrees that all information that relates to the quantity, technical configuration, type, destination, location and amount of use of a service under the contract obtained by Supplier as a result of providing service pursuant to this Contract will be considered confidential to VITA and the ordering Authorized User and not to Supplier. This includes all such information included in reports and other deliverables prepared by Supplier.

All Supplier documents now or later comprising the Contract may be released in their entirety under the Virginia Freedom of Information Act, and Supplier agrees that any confidentiality or similar stamps or legends that are attached to any future documents or information may be ignored to the extent they claim confidentiality beyond that permitted herein.

B. Exclusions

The term "Confidential Information" shall not include information that is:

i). in the public domain through no fault of the receiving Party or of any other person or entity that is similarly contractually or otherwise obligated;

ii). obtained independently from a third-party without an obligation of confidentiality to the disclosing Party and without breach of this Contract;

iii). developed independently by the receiving Party without reference to the Confidential Information of the other Party; or

iv). required to be disclosed by law, including the Virginia Freedom of Information Act (§§ 2.2-3700 *et seq.* of the Code of Virginia) or a court order.

C. Return or Destruction

Upon the termination or expiration of this Contract or upon the earlier request of the disclosing Authorized User, Supplier shall (i) at its own expense, (a) promptly return to the disclosing Authorized User all tangible Confidential Information (and all copies thereof, except to the extent any record is required by law to be retained) of the disclosing Authorized User, or (b) upon written request from the disclosing Authorized User, destroy such Confidential Information and provide the disclosing Authorized User with written certification of such destruction, and (ii) cease all further use of the Authorized User's Confidential Information, whether in tangible or intangible form.

VITA or the Authorized User shall retain and dispose of Supplier's Confidential Information in accordance with the Commonwealth of Virginia's records retention policies or, if Authorized User is not subject to such policies, in accordance with such Authorized User's own records retention policies.

All Supplier personnel, contractors, agents, and subcontractors performing Services pursuant to this Contract who (1) work at the applicable Network Operations Center and have configuration or administrative access to the Virginia State Police ("VSP") Juniper VPN devices, or (2) have access to architectural diagrams for the VSP VPN network, may be required to sign a non-disclosure agreement in the format of the one attached as Exhibit I to this Contract. If so required, VITA shall notify Supplier in writing with at least thirty (30) days advance notice of any such requirement,

If there is a breach or threatened breach of this confidentiality provision, the disclosing Party will be entitled to specific performance and injunctive or other equitable relief as a non-exclusive remedy. This clause does not prevent a Party from announcing the existence of the terms of this Agreement or the applicable Contract internally (e.g., to its employees and Affiliates). Supplier shall not be deemed to have received, obtained, discovered, processed,

stored, maintained, or been given access to Customer Confidential Information solely by virtue of the fact that (i) Customer receives, transmits, obtains or otherwise exchanges such information through its use of the Services (including without limitation any of Supplier's voice, data, and/or Internet services included in the Services) or (ii) Supplier's Services to Customer may involve the hosting, collocation, transport or other similar handling of such information. Customer is responsible for taking steps to protect the confidentiality and integrity of information, including without limitation Customer Confidential Information, that it receives, transmits, obtains or otherwise exchanges with third parties through its use of the Services, by using, for example, encryption or other security measures for its network transmissions.

D. Confidentiality Statement

Except as required by law or regulation, each party promises that during the Term and for three years after, it will use the other party's Confidential Information only for purposes of this Agreement, not disclose it to third parties except as provided below, and protect it from disclosure using the same degree of care it uses for its own Confidential Information (but no less than a reasonable degree of care). Such a party may disclose the other party's Confidential Information only to its employees, agents and subcontractors (including professional advisors and auditors), and to those of its Affiliates, who have a need to know for purposes of this Contract, and who are bound to protect it from unauthorized use and disclosure under the terms of a written agreement at least as protective as the related terms of this Contract.

16. INDEMNIFICATION AND LIABILITY

1. General

Supplier agrees to indemnify, defend and hold harmless the Commonwealth, Commonwealth Agencies and VITA, any Authorized Users or Subscribers, and their officers, directors, agents and employees (collectively, "Commonwealth's Indemnified Parties") from and against any and all losses, damages, claims, demands, proceedings, suits and actions (including any related liabilities, obligations, losses, damages, assessments, fines, penalties (whether criminal or civil), judgments, settlements, expenses (including attorneys' and accountants' fees and disbursements) and costs) (each, a "Claim" and collectively, "Claims") asserted against any of Commonwealth's Indemnified Parties by a third party, to the extent such Claims relate to, arise out of or result from: (i) any intentional or willful conduct or negligence of any employee, agent, or subcontractor of Supplier in connection with this Contract, (ii) any act or omission of any employee, agent, or subcontractor of Supplier, (iii) breach of any representation, warranty or covenant of Supplier contained herein, (iv) any defect in the Services, or (v) any actual or alleged infringement or misappropriation of any third party's intellectual property rights by any of the Services. Selection and approval of counsel and approval of any settlement shall be

accomplished in accordance with all applicable laws, rules and regulations. For state agencies the applicable laws include §§ 2.2-510 and 2.2-514 of the Code of Virginia. In all cases the selection and approval of counsel and approval of any settlement shall be acceptable to the Commonwealth.

2. Intellectual Property

Supplier is not the manufacturer of the Customer Premises Equipment ("CPE") or the owner of any third party software provided for use with the CPE, which CPE and software are provided hereunder pursuant to the standard terms and conditions of the respective third party manufacturer and/or owner(s) thereof. Except for such manufacturers' or owners' warranties and indemnities applicable to the CPE and/or software that Supplier is authorized to pass through for the benefit of Customer, which such indemnities Supplier hereby agrees to pass through to Customer, the CPE, including software used therewith, is provided to Customer on an AS IS basis, without any express or implied warranties of any type, and without any obligation to defend or indemnify for any infringement.

Supplier will defend and indemnify Customer against third party claims alleging that any Service as furnished by Supplier infringes such third party's rights, except to the extent that such a claim arises out of or relates to (i) Supplier's compliance with Customer's request that Supplier modify the Service to accommodate Customer's non-standard specifications where but for such compliance the Service would not have given rise to such claims of infringement; (ii) a combination of the Service by or on behalf of Customer with products, services, or other information or materials not provided by Supplier; (ii) a modification of the Service by or on behalf of Customer by anyone other than Supplier or its authorized agents; (iii) a use of the Service by or on behalf of Customer that is inconsistent with this Agreement; or (iv) information, data, or other content provided by or on behalf of Customer and not provided by Supplier.

Without limiting the foregoing indemnification, Customer's sole and exclusive remedy, Supplier may in its discretion and at its own expense obtain for Customer the right to continue using the Service or alternatively replace or modify the Service, so that it is functionally equivalent but non-infringing. If achievement of the foregoing is not commercially reasonable, Supplier may, in its sole discretion, terminate the affected Service, without liability of either party to the other for such termination, except for Customer's obligation to pay all charges for the affected Service incurred up to the time of such termination.

Supplier shall have no direct liability, nor any obligation to defend, indemnify or hold harmless Customer, for any claim or portion thereof that arises from (i) any negligent or willful act or omission by or attributable to Customer; (ii) any combination, use or operation of any Supplier

Services with equipment or services provided by Customer or any third party; (iii) any addition to or modification of the Supplier Service by Customer, any third party or Supplier at Customer's request; (iv) use of other than the then current unaltered release of any Supplier-provided software used in the Supplier Service provided Supplier has made such release available to Customer; (v) any equipment, system, product, process, method or service of Customer which otherwise infringed any U.S. patent or copyright asserted against Customer prior to the supply of the Supplier Service to Customer hereunder; (vi) functionality provided by Supplier at the direction of Customer, its agents, employees, or other contractors (including the provision of functionality in accordance with technical specifications provided by Customer) unless such functionality is provided by Supplier on a commercial basis, or such functionality was advertised or otherwise offered to Customer by Supplier; (vii) the content of communications transmitted by or on behalf of Customer in the use of the Supplier provided equipment or Services, including but not limited to libel, slander, and invasion of privacy or (ix) use or operation, by Customer, its agents, employees or other contractors, of Supplier Service other than as specified in this Agreement.

The foregoing states the entire obligation of Supplier to Customer and is Customer's sole and exclusive remedy with respect to any claim of infringement of any intellectual property right of any kind, including the manufacturers' or owners' indemnities applicable to the CPE and software that Supplier is authorized to pass through for the benefit of Customer, if any, and Supplier disclaims all other warranties and obligations with respect thereto.

3. Liability

Except for liability with respect to (i) any intentional or willful misconduct or gross negligence of any employee, agent, or subcontractor of Supplier, or (ii) claims for bodily injury, including death, and real and tangible property damage, ,, Supplier's liability shall be limited to direct damages only and limited to the lesser of fifty million dollars ($50,000,000.00) or two times the total amount paid to the Supplier under this Contract as of the date of the event or circumstance giving rise to contractors liability, but in no event less than twenty-five million dollars ($25,000,000.00) in year one of the contract. Supplier agrees that it is fully responsible, for all acts and omissions of its employees, agents, and subcontractors, including their gross negligence or willful misconduct consistent with the preceding sentence. The limitation shall apply on a per-incident basis, it being understood that multiple losses stemming from the same root cause constitute a single incident.

NEITHER PARTY SHALL BE LIABLE TO THE OTHER PARTY FOR INDIRECT, INCIDENTAL, CONSEQUENTIAL OR PUNITIVE DAMAGES UNDER THIS CONTRACT, INCLUDING (WITHOUT LIMITATION) LOSS OF PROFIT, INCOME OR SAVINGS, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.

17. SECURITY COMPLIANCE

Supplier uses the ISO 17799/27002, the Generally Accepted Information Security Principles (GAISP), and the National Institute of Standards and Technology (NIST) Special Publications, and with other industry recognized baseline references, to create its practices baseline security documents. Supplier's information security program includes policies and procedures addressing, but not limited to, firewalls, intrusion detection for critical systems, incident response processes, virus protection, change control, access control, and physical security. Supplier has provided VITA with non-sensitive information regarding Supplier's security policies and procedures. Supplier also is willing to review with VITA all of VITA's current security policies and procedures to determine which ones are relevant to this Contract and the Services being provided, and Supplier's ability to comply with them as currently written. However, as to any future policy, those policies will have to be reviewed by Supplier when they are supplied to Supplier, and Supplier will only then be able to inform VITA as to Supplier's ability to comply with them. Supplier shall also comply with all applicable federal, state and local laws and regulations.

Commonwealth shall grant to Contractor personnel such access to the Commonwealth location as may be necessary or appropriate for Contractor to perform its obligations under this Agreement, subject to all security issues. For any individual Subscriber's location, security procedures may include but not be limited to: background checks, records verification, photographing, and fingerprinting of Supplier's employees or agents.

18. IMPORT/EXPORT

In addition to compliance by Supplier with all export laws and regulations, VITA requires that any data deemed "restricted" or "sensitive" by either federal or state authorities, must only be collected, developed, analyzed, or otherwise used or obtained by persons or entities working within the boundaries of the United States.

19. INVENTIONS AND COPYRIGHTS

Under this Agreement, Supplier will provide reports and other documents to Customer in connection with the Services, which may contain the following: As described in a custom SOW executed by Customer and Supplier including but not limited to descriptions of Customer's network configuration and/or Customer's network design, analyses of Customer's network or any part thereof including the network configuration and/or network design, descriptions of the routing structure and designs for Customer's network, Customer network test results, descriptions of the work or process flows relating to Customer's network, descriptions of device configurations on Customer's network, Customer equipment inventory lists and the database of Customer's network elements, and other similar information pertaining to Customer's network (together the "Deliverables"). To the extent it is within the authority of Supplier (as used here, "Supplier" excludes its suppliers and contractors) to grant it, Customer will own the copyright in that portion of the Deliverable that is unique to Customer, first created by Supplier during the Term in the performance of this Contract, and delivered to Customer under this Contract ("Customer Information Copyright"). In the event ownership of a requested Deliverable would be beyond authority of Supplier, meaning subject to a third-party's consent, Supplier will notify Customer prior to delivery so that the Parties

may discuss. Other than any copyright assigned to Customer in the previous sentence, all intellectual property rights in the Deliverables, or based thereon, are and shall remain the sole and exclusive property of Supplier or its suppliers or contractors. Supplier hereby grants to customer a worldwide, non-exclusive, royalty free, non-transferable license to use, disclose, copy, display, and create derivative works of the Deliverables during the Term of this Agreement and for a period of three (3) years following the termination of this Agreement, or for such longer period as may be required for VITA and Authorized User's compliance with public records laws. Customer hereby grants Supplier, its affiliates and their contractors a worldwide, non-exclusive, royalty free, non-transferable license to use, disclose, copy, display, and create derivative works of the Customer Information Copyright during the Term of the Agreement in connection with the provision of services and products, including, without restriction, the Services and Deliverables, by Supplier to Customer under the Agreement. Nothing in this provision shall limit or otherwise modify either party's obligations under Section 15 "Confidentiality" of this Agreement.

20. ACCEPTABLE USE POLICIES

Use of Supplier's Internet Services and related equipment and facilities must comply with the then-current version of the Verizon Acceptable Use Policy ("Policy"), which is currently located at the following URL:
http://www.verizonenterprise.com/terms/aup/ also outlined in Exhibit H. Supplier reserves the right to suspend or terminate Internet Services effective upon notice for a violation of the Policy. Each party will promptly notify the other of any such violation.
Supplier agrees that at all times the scope of this Policy will be limited to addressing prohibited actions that could compromise or threaten the security of Supplier's IP Network, or that otherwise constitute illegal activity. Supplier further acknowledges that any changes purporting to add or modify terms, conditions, and remedies beyond those directly bearing on ensuring the security of Supplier's IP Network shall not be enforceable. In the case of any conflict between the terms of the Policy and this Contract, the terms of this Contract shall govern.

21. GENERAL PROVISIONS

A. Relationship Between VITA, Authorized Users and Subscribers; and Supplier

Supplier has no authority to contract for VITA or any Authorized User or Subscriber or in any way to bind, to commit VITA or any Authorized User or Subscriber to any agreement of any kind, or to assume any liabilities of any nature in the name of or on behalf of VITA or any Authorized User or Subscriber. Under no circumstances shall Supplier, or any of its employees, hold itself out as or be considered an agent or an employee of VITA or any Authorized User or Subscriber, and neither VITA nor any Authorized User or Subscriber shall have any duty to provide or maintain any insurance or other employee benefits on behalf of Supplier or its employees. Supplier represents and warrants that it is an independent contractor for purposes of federal,

state and local employment taxes and agrees that neither VITA nor any Authorized User or Subscriber is responsible to collect or withhold any federal, state or local employment taxes, including, but not limited to, income tax withholding and social security contributions, for Supplier. Any and all net income and employment taxes, interest or penalties, including, but not limited to, any federal, state or local net income or employment taxes, imposed, assessed or levied as a result of this Contract shall be paid or withheld by Supplier.

B. Incorporated Contractual Provisions

The then-current contractual provisions at the following URL are mandatory contractual provisions, required by law or by VITA, and are hereby incorporated by reference: http://www.vita.virginia.gov/uploadedFiles/SCM/StatutorilyMandatedTsandCs.pdf

The contractual claims provision §2.2-4363 of the Code of Virginia and the required eVA provisions at http://www.vita.virginia.gov/uploadedFiles/SCM/eVATsandCs.pdf are also incorporated by reference.

The then-current contractual provisions at the following URL are required contractual provisions, required by law or by VITA, that apply to all orders placed under this Contract that are] partially or wholly funded by the American Recovery and Reinvestment Act of 2009 (ARRA) and are hereby incorporated by reference: http://www.vita.virginia.gov/uploadedFiles/SCM/ARRA_Ts_Cs_Rev3.pdf

The then-current terms and conditions in documents posted to the aforereferenced URLs are subject to change pursuant to action by the legislature of the Commonwealth of Virginia, change in VITA policy, or the adoption of revised eVA business requirements. If a change is made to the terms and conditions, a new effective date will be noted in the document title. Supplier is advised to check the URLs periodically.

C. Compliance with the Federal Lobbying Act

Supplier's signed certification of compliance with 31 USC 1352 (entitled "Limitation on use of appropriated funds to influence certain Federal Contracting and financial transactions") or by the regulations issued from time to time thereunder (together, the "Lobbying Act") is incorporated as Exhibit D hereto.

D. Licenses and Permits

Supplier shall be responsible for obtaining all rights-of-way, licenses, and/or permits required by applicable authorities in order to perform installation Services at the location(s) specified in any order issued pursuant to this Contract.

E. Governing Law

This Contract shall be governed by and construed in accordance with the laws of the Commonwealth of Virginia without regard to that body of law controlling choice of law. Any and all litigation shall be brought in the circuit courts of the Commonwealth of Virginia. The English language version of this Contract prevails when interpreting this Contract. The United

Nations Convention on Contracts for the International Sale of Goods and all other laws and international treaties or conventions relating to the sale of goods are expressly disclaimed. UCITA shall apply to this Contract only to the extent required by §59.1-501.15 of the Code of Virginia.

F. Dispute Resolution

In accordance with §2.2-4363 of the Code of Virginia, Contractual claims, whether for money or other relief, shall be submitted in writing to the public body from whom the relief is sought no later than sixty (60) days after final payment; however, written notice of the Supplier's intention to file such claim must be given to such public body at the time of the occurrence or beginning of the work upon which the claim is based. Pendency of claims shall not delay payment of amounts agreed due in the final payment. The relevant public body shall render a final decision in writing within thirty (30) days after its receipt of the Supplier's written claim.

The Supplier may not invoke any available administrative procedure under §2.2-4365 of the Code of Virginia nor institute legal action prior to receipt of the decision of the relevant public body on the claim, unless that public body fails to render its decision within thirty (30) days. The decision of the relevant public body shall be final and conclusive unless the Supplier, within six (6) months of the date of the final decision on the claim, invokes appropriate action under §2.2-4364, Code of Virginia or the administrative procedure authorized by §2.2-4365, Code of Virginia.

Upon request from the public body from whom the relief is sought, Supplier agrees to submit any and all contractual disputes arising from this Contract to such public body's alternative dispute resolution (ADR) procedures, if any. Supplier may invoke such public body's ADR procedures at any time and concurrently with any other statutory remedies prescribed by the Code of Virginia.

In the event of any breach by a public body, Supplier's remedies shall be limited to claims for damages as provided herein and Prompt Payment Act interest and, if available and warranted, equitable relief, all such claims to be processed pursuant to this Section. In no event shall Supplier's remedies include the right to terminate any Services hereunder.

G. Taxes

The Commonwealth of Virginia is exempt from Federal excise and all State and Local taxes. Authorized Users and Subscribers may be exempt from some or all Federal, State and Local taxes. Such taxes shall not be included in Contract prices for VITA and for those Authorized Users and Subscribers who present Verizon with valid tax exemption documentation, includingForm ST-12. Verizon will exempt Authorized Users or Subscribers in accordance with the law, effective on the date Verizon receives the exemption documentation. Deliveries against this Contract shall be free of Federal excise and transportation taxes. The

Commonwealth's excise tax exemption registration number is 54-73-0076K. The Commonwealth is also exempt from paying E-911 charges.

H. Advertising and Use of Proprietary Marks

Supplier shall not use the name of VITA or any Authorized User or Subscriber or refer to VITA or any Authorized User or Subscriber , directly or indirectly, in any press release or formal advertisement without receiving prior written consent of VITA or such Authorized User or Subscriber. In no event may Supplier use a proprietary mark of VITA or an Authorized User or Subscriber without receiving the prior written consent of VITA or the Authorized User or Subscriber.

I. Notices

Any notice required or permitted to be given under this Contract shall be in writing and shall be deemed to have been sufficiently given if delivered in person, or if deposited in the U.S. mails, postage prepaid, for mailing by registered, certified mail, or overnight courier service addressed to:

i). VITA and Supplier, if Supplier is incorporated in the Commonwealth of Virginia, at the addresses shown on the signature page.

ii). Supplier, if Supplier is incorporated outside the Commonwealth of Virginia, to the Registered Agent registered with the Virginia State Corporation Commission.

Pursuant to Title13.1 of the Code of Virginia, VITA or Supplier may change its address for notice purposes by giving the other notice of such change in accordance with this Section.

Administrative contract renewals, modifications or non-claim related notices are excluded from the above requirement. Such written and/or executed contract administration actions may be processed by the assigned VITA and Supplier points of contact for this Contract and may be given in person, via U.S. mail, courier service or electronically

J. No Waiver

Any failure to enforce any terms of this Contract shall not constitute a waiver.

K. Assignment

This Contract shall be binding upon and shall inure to the benefit of the permitted successors and assigns of VITA and Supplier. Supplier may not assign, delegate or otherwise convey this Contract, or any of its rights and obligations hereunder, to any entity without the prior written consent of VITA, and any such attempted assignment without consent shall be void. VITA may assign this Contract to any entity, so long as the assignee agrees in writing to be bound by all the terms and conditions of this Contract.

If any law limits the right of VITA or Supplier to prohibit assignment or nonconsensual assignments, the effective date of the assignment shall be thirty (30) days after the Supplier gives VITA prompt written notice of the assignment, signed by authorized representatives of

both the Supplier and the assignee. Any payments made prior to receipt of such notification shall not be covered by this assignment.

L. Captions

The captions are for convenience and in no way define, limit or enlarge the scope of this Contract or any of its Sections.

M. Severability

Invalidity of any term of this Contract, in whole or in part, shall not affect the validity of any other term. VITA and Supplier further agree that in the event such provision is an essential part of this Contract, they shall immediately begin negotiations for a suitable replacement provision.

N. Survival

The provisions of this Contract regarding License, Warranty, Confidentiality, Liability and Indemnification, and the General Provisions shall survive the expiration or termination of this Contract.

O. Force Majeure

No Party shall be responsible for failure to meet its obligations under this Contract if the failure arises from causes beyond the control and without the fault or negligence of the non-performing Party. If any performance date under this Contract is postponed or extended pursuant to this section for longer than thirty (30) calendar days, VITA, by written notice given during the postponement or extension, may terminate Supplier's right to render further performance after the effective date of termination without liability for that termination, and in addition an Authorized User may terminate any order affected by such postponement or delay.

P. Remedies

The remedies set forth in this Contract are intended to be cumulative; however, except in the context of a material breach of this agreement, the measure of damage for isolated occurrences of Supplier's failure to meet any particular Service Level Agreement is as set forth in SLA Exhibit B. Supplier, VITA and all Authorized Users and Subscribers reserve any and all other remedies that may be available at law or in equity consistent with the terms of this Contract.

Q. Right to Audit

VITA reserves the right to audit those Supplier records that relate to the Services rendered or the amounts due Supplier for such Services under this Contract. VITA's right to audit shall be limited as follows:

i). Five (5) years from Service performance date;

ii). Performed at Supplier's premises, during normal business hours at mutually agreed upon times; and

iii). Excludes access to Supplier cost information, except as required to satisfy 3rd party charges due to end user delay or early termination of a service.

The Supplier shall not have the right to audit, or require to have audited, VITA or any Authorized User.

R. Unauthorized Sales

Supplier agrees that it is not engaging, and shall not engage, during the term of the Contract (including any renewal period or period of Transition Assistance), in activities that conflict with the interests of VITA (for example, by attempting to sell services to individual public bodies, locations or business units outside the Contract or not in compliance with the processes set forth in the Contract). Should a potential conflict arise, the Supplier shall promptly notify VITA, rectify such conflict, fully compensate VITA for any volume credits or rebates to which it would have been entitled should the conflict not have occurred, reimburse VITA for all revenue not collected from the public body by VITA as a result of such conflict, and take steps to prevent its recurrence. In the example given above, the Supplier's correction would take the form of bringing all services under the Contract and refunding any charges paid by the public body in excess of those contained in the Contract; as well as providing VITA with credits in the amount of any service charges VITA would otherwise have collected from the public body, and any credits and rebates that would otherwise have been given to VITA by Supplier had the unauthorized sale(s) not occurred.

S. Contract Administration

Supplier agrees that at all times during the term of this Contract an account executive, at Supplier's senior management level, shall be assigned and available to VITA. Supplier reserves the right to change such account executive upon reasonable advance written notice to VITA.

T. Order of Precedence

In the event of a conflict, the following order of precedence shall apply: this Contract document, Exhibit B, Exhibit A, iv) E-rate Addendum if applicable (v) Exhibit G, then (v) any specific order. In the event of a conflict or inconsistency between the negotiated terms of this Contract and any provision incorporated by reference into the Contract (e.g., a section of an Acceptable Use Policy), the negotiated terms of this Contract shall take precedence. For purposes of this section, a "conflict" exists with respect to a subject that has been comprehensively addressed in the Contract when supplementary terms contained in a provision incorporated by reference would alter the rights and obligations of the parties set forth in the Contract.

U. Entire Contract

The following Exhibits, including all subparts thereof, are attached to this Contract and are made a part of this Contract for all purposes:

Exhibit A	Service Fees
Exhibit B	Service Requirements
Exhibit C	TSO Template
Exhibit D	Certification Regarding Lobbying
Exhibit E	Individuals Authorized to Order Services (VITA Ordering Officers)
Exhibit F	E-Rate Addendum
Exhibit G	Supplier Service Attachments
Exhibit H	Acceptable Use Policy
Exhibit I	Non-disclosure Agreement

This Contract and its Exhibits constitute the entire agreement between VITA and Supplier and supersede any and all previous representations, understandings, discussions or agreements between VITA and Supplier as to the subject matter hereof. The provisions of the Virginia Department of General Services, Division of Purchases and Supply Vendor's Manual shall not apply to this Contract or any order issued hereunder. This Contract may only be amended by an instrument in writing signed by VITA and Supplier.

To the extent that any order issued hereunder includes any terms and conditions inconsistent with the terms and conditions of this Contract, such terms and conditions shall be of no force or effect.

VITA and Supplier each acknowledge that it has had the opportunity to review this Contract and to obtain appropriate legal review if it so chose.

Executed as of the last date set forth below by the undersigned authorized representatives of VITA and Supplier.

Verizon Business Network Services Inc.

on behalf of MCI Communications Services, Inc.

d/b/a Verizon Business Services

By: Anthony Recine

Name: Anthony Recine

Title: SVP

Date: 10/27/2015

Address for Notice:

Verizon Business Network Services Inc.

on behalf of MCI Communications Services, Inc.

d/b/a Verizon Business Services

703 East Grace Street, 7th Floor

Richmond, Virginia 23219

Attention: Eric Adkins, Sr. Client Partner

VITA

By: Nelson P. Moe

(Signature)

Name: Nelson P. Moe

Title: Chief Information Officer

Date: 10/28/15

Address for Notice:

CESC – VITA Supply Chain Management

11751 Meadowville Ln.

Chester, VA 23836

Attention: Contract Administrator

EXHIBIT A

SERVICE FEES

See attached Excel workbook.

ADDENDUM 1 - PRICING

Internet Port

PRICE PROTECTED	MRC
T-1 - 1.544 MB	$157.00
N*T-1 - 3.088 MB	$251.00
N*T-1 - 4.632 MB	$285.00
N*T-1 - 6.176 MB	$328.00
T-3 - 44.736 MB	$1,046.00
OC-3 - 155.52 MB	$2,290.00
OC-12 - 622.08 MB	$5,688.00
OC-48 - 2488.32 MB	$17,796.00
TIERED	
T-3 - 3 MB	$24300
T-3 - 6 MB	$286.00
T-3 - 9 MB	$320.00
FE - 10MB	$325.00
T-3 - 12 MB	$391.00
T-3 - 15 MB	$457.00
FE - 20MB	$568.00
T-3 - 21 MB	$597.00
T-3 - 30 MB	$792.00
FE - 30MB	$792.00
FE - 40MB	$960.00
T-3 - 45 MB	$1,046.00
FE - 50MB	$1,100.00
GigE - 100 MB	$1,625.00
GigE - 200 MB	$2,844.00
GigE - 300 MB	$3,657.00
GigE - 400 MB	$4,064.00
GigE - 500 MB	$4,572.00
GigE - 600 MB	$5,490.00
GigE - 700 MB	$6,046.00
GigE - 1000 MB	$7,114.00
DIVERSE	
T-1 - 3.088 MB	$251.00
T-3 - 89.4 MB	$1,679.00
OC-3 - 311.04 MB	$3,793.00
OC-12 - 1244.16 MB	$8,845.00
OC-48 - 4976.64 MB	$35,392.00

SHADOW	
T-1 - 1.544 MB	$157.00
N*T-1 - 3.088 MB	$251.00
N*T-1 - 4.632 MB	$285.00
N*T-1 - 6.176 MB	$328.00
T-3 - 44.736 MB	$1,046.00
OC-3 - 155.52 MB	$2,290.00
OC-12 - 622.08 MB	$5,688.00
OC-48 - 2488.32 MB	$17,796.00

NETWORK ACCESS SERVICE

Dedicated Access – flat rate

Network Services Local Access Services. In lieu of all other rates, discounts and promotions, Customer will pay the following local loop MRCs for Network Services Local Access Services, which are fixed for the Term, based on the access circuit type (i.e., Analog, DS0, T1/DS1, and DS3) and facility type if applicable.

Access Circuit Type (and facility type if applicable)	Local Loop MRC
DS0	$ 108
DS1	$ 204
DS3	$ 2052
Rates valid in the Commonwealth of Virginia	

DS0 Rate also applicable in CLLI ATLNGACS
DS1 Rate also applicable in CLLI WASHDCDN

OC3 Network Service

OC3 Network Services Local Access Services. In lieu of all other rates, discounts and promotions, Customer will pay the following Local Access Channel MRC, which is fixed for the Term, for each circuit of OCn SONET-based Network Access Local Access Service, based upon the circuit type (i.e., OC3, OC12 or OC48), facility type (i.e., Type 1, Type 3), service commitment period, and CLLI code. Customer commits to pay the circuit MRC for the applicable service commitment period, even if the circuit is terminated sooner (unless terminated by the Customer for Cause).

OCn SONET Service Type	Facility	CLLI Code	Local Access Channel Monthly Recurring Charge
OC3	Type 3	MNRLVAML	$ 5760
OC3	Type 3	RCMDVAIT	$ 5760
OC3	Type 3	RCMDVASR	$ 5760
OC3	Type 3	RCMDVAGR	$ 5760
OC3	Type 3	RCMDVAPE	$ 5760
OC3	Type 3	LSBGVALB	$ 5760
OC3	Type 3	INHLVAXA	$ 5760
OC3	Type 3	CHESVACR	$ 5760

Pricing for OC3 service outside of the CLLI's listed above will be done on an ICB basis. NRC's waived for locations listed above.

Ethernet Access Service – fixed rate

Ethernet Access Service. In lieu of all other rates, discounts and promotions, Customer will pay the following local loop MRC for Ethernet Access Service, which is fixed for the Term, based upon the facility type (i.e., Type 1, Type 2 or Type 3, Type 4 and Standard), interface, bandwidth, and CLLI Code. For all other circuits, Customer will pay the rates listed in the Guide based on the circuit term listed below.

Rates below are valid for Type 2 CLLI's locations only. Type 2 CLLI's listed below.

Facility Type	Interface	Bandwidth	MRC
Type 2	100 MB	2 Mb	$350.00
Type 2	100 MB	3 Mb	$352.00
Type 2	100 MB	4 Mb	$354.00
Type 2	100 MB	5 Mb	$357.00
Type 2	100 MB	6 Mb	$360.00
Type 2	100 MB	7 Mb	$363.00
Type 2	100 MB	8 Mb	$365.00
Type 2	100 MB	9 Mb	$367.00
Type 2	100 MB	10 Mb	$370.00
Type 2	100 MB	20 Mb	$421.00
Type 2	100 MB	30 Mb	$497.00
Type 2	100 MB	40 Mb	$574.00
Type 2	100 MB	50 Mb	$655.00
Type 2	1000 MB	60 Mb	$822.99
Type 2	1000 MB	70 Mb	$892.50
Type 2	1000 MB	80 Mb	$956.25
Type 2	1000 MB	90 Mb	$1,020.00
Type 2	1000 MB	100 Mb	$1,062.50

Type 2	1000 MB	200 Mb	$1,402.50
Type 2	1000 MB	300 Mb	$1,700.00
Type 2	1000 MB	400 Mb	$1,955.00
Type 2	1000 MB	500 Mb	$2,210.00
Type 2	1000 MB	600 Mb	$2,465.00
Type 2	1000 MB	700 Mb	$2,720.00
Type 2	1000 MB	800 Mb	$2,953.75
Type 2	1000 MB	900 Mb	$3,187.50
Type 2	1000 MB	1000 Mb	$3,400.00

NRC's waived for EA.

Type 2 CLLI	
ALWDVAXA	MNKNVAMN
ALXNVAAD	MNSSVAXA
ALXNVAAX	MNTRVAXA
ALXNVABA	MRSHVAMA
ALXNVABR	MTHWVAXA
ALXNVACN	NKVLVAXA
ALXNVAFR	NRFLVABL
ALXNVAMV	NRFLVABS
AMHRVAXA	NRFLVAGS
APMTVAXA	NRFLVAOD
ARCLVAXA	NRFLVAOV
ARTNVAAR	NRFLVASP
ARTNVACK	NRFLVAWC
ARTNVACY	NWNWVAHU
ARTNVAFC	NWNWVAHV
ASBNVAAS	NWNWVAJF
ASLDVAAS	NWNWVAND
BGISVABI	NWNWVAYK
BKBGVABB	OCQNVAXA
BLBGVAAE	OLCHVAXA
BLBGVABB	PCVLVAPV
BLMTVABM	PNTGVADF
BTHIVABT	PRANVAXA
CCVLVACH	PRANVAXB
CHCYVACC	PRFRVAPF
CHESVACR	PTBGVACD
CHKTVAXA	PTBGVAPB
CHNCVAXA	PTMOVAHF
CHNCVAXB	PTMOVAHS
CHSKVACD	PUNGVAXA
CHSKVADC	QNTCVAXA

CHSKVAGU	QNTNVAQN
CLHGVACO	RCMDVACG
CLMTVAXA	RCMDVAGK
CLPPVACU	RCMDVAGR
CLPPVAGR	RCMDVAGY
CNCRVACN	RCMDVAHL
CNVIVACT	RCMDVAHR
CRBGVACB	RCMDVAHS
CRTDVAXA	RCMDVAIT
CRVIVACV	RCMDVALS
DAWNVAXA	RCMDVAPE
DBLNVADU	RCMDVAPS
DLCYVAXA	RCMDVARA
DLLSVAXA	RCMDVASN
DNDRVAXA	RCMDVASR
DNWDVADW	RCMDVATC
DRVRVADR	RDFRVARA
DSPAVAXA	RKVLVARK
DSWLVAXA	RMTNVARE
DTVLVAXA	RONKVABK
FLCHVAMF	RONKVABS
FRBGVAFB	RONKVACS
FRBGVALH	RONKVACV
FRFXVABF	RONKVAGC
FRFXVACL	RONKVALK
FRFXVAFF	RPHNVAXA
FRFXVART	RSTNVAFM
GCLDVAGO	SALDVAXA
GLCSVAXA	SALMVAFL
GNWDVAGW	SALMVAMC
GRBRVAXA	SALMVASA
GRBRVAXB	SFFLVASK
GRFLVAGF	SHVLVASW
GVTNVAGR	SLLYVADD
HAYSVAXA	SMFDVAXA
HCKRVAXA	SNMTVASM
HLBOVAHB	SNTNVASS
HMPNVAAB	SPFDVASP
HMPNVADC	SPTSVASP
HMPNVAQN	SRRYVAXA
HMPNVAWD	SRVLVASP
HNVRVAXA	STCKVAXA
HPWLVAHW	STDRVASD
HRNDVADU	STFRVAXA
HRNDVAHE	STTNVAST

HRNDVAST	STTNVAVE
HRWDVAHW	SWVLVASV
HYMRVAXA	THPLVATP
INHLVAXA	TOANVATO
IVORVAXA	TRNGVAXA
IVTNVAXA	UPVLVAUP
KGGRVAXA	VARNVAVR
KGQNVAXA	VINNVAVN
LRTNVAGU	VRBHVACC
LRTNVAXA	VRBHVACT
LSBGVALB	VRBHVAGN
LVVLVALV	VRBHVAIL
LYBGVACH	VRBHVAIR
LYBGVACV	VRBHVAPT
LYBGVAMH	VRBHVARC
LYBGVANL	VRBHVASR
LYBGVAOF	VRBHVAVB
LYBGVATM	WHOKVAWO
LYBGVAYB	WLBGVAWM
MCHVVAMV	WNDSVAXA
MCLNVALV	WRTNVAWR
MDBGVAMI	WSPNVAWP
MDLTVAMD	WTFRVAWT

Private IP Service – Domestic PIP

US Private IP – specific Port/CAR speed (Option 2) In lieu of all other rates, discounts and promotions, Customer will pay the following MRCs per port/CAR speed, which are fixed for the Term of this Agreement, for US Private IP Service.

PIP PORTS

	Speed	MRC
DS1	64 Kbps	$36.75
DS1	256 Kbps	$78.33
DS1	512 Kbps	$123.69
Ethernet	1 Mbps	$162.12
DS1	1.024 Mbps	$162.12
DS1	1.536 Mbps	$174.93
Ethernet	2 Mbps	$225.75
Ethernet	3 Mbps	$336.00

2xDS1	3.072 Mbps	$337.05
Ethernet	4 Mbps	$372.75
3xDS1	4.608 Mbps	$394.80
Ethernet	5 Mbps	$409.50
Ethernet	6 Mbps	$430.00
4xDS1	6.144 Mbps	$431.55
Ethernet	7 Mbps	$462.00
Ethernet	8 Mbps	$486.15
DS3	8 Mbps	$486.15
Ethernet	10 Mbps	$525.00
DS3	10 Mbps	$525.00
Ethernet	15 Mbps	$666.96
DS3	15 Mbps	$666.96
Ethernet	20 Mbps	$820.89
DS3	20 Mbps	$820.89
Ethernet	30 Mbps	$882.00
DS3	30 Mbps	$882.00
Ethernet	40 Mbps	$979.44
DS3	40 Mbps	$979.44
DS3	44.736 Mbps	$987.63
Ethernet	50 Mbps	$1,056.93
OC-3	50 Mbps	$1,056.93
Ethernet	80 Mbps	$1,522.08
OC-3	80 Mbps	$1,522.08
Ethernet	100 Mbps	$1,761.90
OC-3	100 Mbps	$1,761.90
Ethernet	150 Mbps	$2,677.50
OC-3	155/155.52Mbps	$2,677.50
Ethernet	200 Mbps	$3,220.98
OC-12	200 Mbps	$3,220.98
Ethernet	300 Mbps	$4,861.71
OC-12	300 Mbps	$4,861.71
Ethernet	400 Mbps	$6,200.46
OC-12	400 Mbps	$6,200.46
Ethernet	500 Mbps	$7,046.13
OC-12	500 Mbps	$7,046.13
Ethernet	600 Mbps	$8,433.81
OC-12	600 Mbps	$8,433.81
OC-12	622.08 Mbps	$8,641.08
Ethernet	800 Mbps	$10,061.94
Ethernet	1000 Mbps	$11,097.87

PIP PORT GOLD CAR RATES

Speed	MRC
0 Kbps	
28 Kbps	$6.51
32 Kbps	$6.51
50 kbps	$6.51
56 Kbps	$6.51
128 Kbps	$6.51
230 kbps	$6.51
256 Kbps	$6.51
460 kbps	$6.51
500 Kbps	$6.51
512 Kbps	$6.51
544 Kbps	$6.51
768 Kbps	$6.51
900 kbps	$6.51
912 Kbps	$6.51
1.382 Mbps	$6.51
1.536 Mbps	$6.51
1.728 Mbps	$6.51
2.000 Mbps	$55.23
2.048 Mbps	$55.23
2.700 Mbps	$55.23
2.765 Mbps	$55.23
3.000 Mbps	$55.23
3.008 Mbps	$55.23
3.072 Mbps	$55.23
3.686 Mbps	$92.19
4.000 Mbps	$92.19
4.147 Mbps	$92.19
5.000 Mbps	$147.42
5.400 Mbps	$147.42
5.530 Mbps	$147.42
6.144 Mbps	$147.42
7.200 Mbps	$147.42
7.500 Mbps	$147.42
9.000 Mbps	$147.42
10.000 Mbps	$230.58
13.500 Mbps	$414.96
15.000 Mbps	$414.96
17.184 Mbps	$414.96
18.000 Mbps	$414.96
20.000 Mbps	$414.96
22.368 Mbps	$414.96
24.384 Mbps	$599.34

25.000 Mbps	$599.34
27.088 Mbps	$599.34
30.931 Mbps	$599.34
36.000 Mbps	$691.53
40.000 Mbps	$691.53
40.262 Mbps	$691.53
45.000 Mbps	$691.53
50.000 Mbps	$1106.28
62.500 Mbps	$1,211.64
72.000 Mbps	$1,211.64
75.000 Mbps	$1,211.64
77.760 Mbps	$1,211.64
90.000 Mbps	$1,211.64
100.000 Mbps	$2,028.18
135.000 Mbps	$2,028.18
139.968 Mbps	$2,028.18
150.000 Mbps	$2,028.18
180.000 Mbps	$2,028.18
200.000 Mbps	$3,134.46
250.000 Mbps	$3,134.46
270.000 Mbps	$3,134.46
300.000 Mbps	$4,425.12
311.040 Mbps	$4,425.12
360.000 Mbps	$4,425.12
400.000 Mbps	$5,531.04
450.000 Mbps	$5,531.04
500.000 Mbps	$7,006.44
540.000 Mbps	$7,006.44
559.872 Mbps	$7,006.44
720.000 Mbps	$9,034.62
750.000 Mbps	$9,034.62
900.000 Mbps	$10,970.61

Geographic Gateway / Router Diversity			
United States			
	64	128	256
Nonrecurring Charges	$13.00	$25.00	$25.00

Dynamic Bandwidth	NRC	MRC	
Dport	$0	$0	
DCAR	$0	$0	
Scheduler	$0	$0	
WAN Analysis with Shared or Dedicated Ports – Unmanaged Private IP Only			
Reporting Level	NRC	MRC	
Provider Edge Reporting	$0.00	Included	
Standard Select	$0.00	Waived	
ETM Reporting	$0.00	Included	
ETM Select	$0.00	$25.00	
Multicasting			
Tier Name	Bandwidth Range	MRC	
Multicast Tier 0	0Kbps-15Kbps	$0.00	
Multicast Tier 1	16Kbps-511Kbps	$0.00	
Multicast Tier 2	512Kbps-1.499Mbps	$0.00	
Multicast Tier 3	1.5Mbps-2.99Mbps	$0.00	
Multicast Tier 4	3Mbps-5.99Mbps	$0.00	
Multicast Tier 5	6Mbps-14.99Mbps	$0.00	
Multicast Tier 6	15Mbps-44.99Mbps	$0.00	
Multicast Tier 7	45Mbps-99.99Mbps	$0.00	
Multicast Tier 8	100Mbps-499.99Mbps	$17,250.00	
Multicast Tier 9	500Mbps-999.99Mbps	$34,500.00	
Multicast Tier 10	1Gbps-4.99Gbps	ICB	
Multicast Tier 11	5Gbps-9.99Gbps	ICB	
Private IP Service Port Only Cross Connect MRC	Monthly Recurring Charge (per port) / Port Type / Port Speed		
	Ethernet	Ethernet	Ethernet
Location	200 Mbps	250 Mbps	300 Mbps
U.S. Mainland and Hawaii	$500.00	$500.00	$500.00

Private IP Service Port Only Cross Connect NRC	Non Recurring Charge (per port) / Port Type / Port Speed		
	Ethernet	Ethernet	Ethernet
Location	200 Mbps	250 Mbps	300 Mbps
U.S. Mainland and Hawaii	$500.00	$500.00	$500.00

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Detailed Description of Proposed Solution(s)

Supplier's response by item in the tables set forth in Section 5, clearly identifying and detailing the proposed services and solutions, and any processes, methodologies, and resources required by the services and solutions defined in Section 5.

Verizon Response

Please see the following.

5. Functional and Technical Requirements

The following are instructions for completing the response table/box for each subsection:

1. If an RFP section specifies one or more requirements, then state "Yes" in the "Comply (Yes/No)" box only if the Supplier fully complies without exception to all of the requirements of the section. In cases where descriptive answers are required, use the "Explanation/Description" box to the right of the "Comply (Yes/No)" box to provide details.

2. If the Supplier takes exception to one or more requirements in the section, then state "No" in the "Comply (Yes/No)" box and delineate which specific requirements you do not meet, at least in the way described by VITA, in the "Explanation/Description" box. You may also state that the Supplier is compliant with all of the other requirements even in such a case of a "No" answer triggered by non-compliance with one requirement in a particular question.

3. In such a case of a "No" answer, describe an offering that most closely matches the requirement and explain how that functionality may be accomplished.

4. Do not simply state "To Be Negotiated." VITA will treat such a statement as "Does Not Comply" with no opportunity for you to explain partial compliance or an alternate solution prior to evaluation of the proposal.

Verizon Response

Read and understood.

A. Access Circuits

In general, the Supplier is expected to provide access circuits to reach the Supplier's closest Point of Presence for data and voice connectivity, or to the Point of Presence that supports the network service in question provided by that Supplier.

In some cases VITA may supply its own Customer-provided access. However, Supplier-provided access is generally delineated in the services and locations presented in Appendix A.

This Section of the RFP provides VITA's requirements for those Supplier-provided access circuits.

Separate circuits may be needed for different services at the same site (e.g., MPLS services, inbound and outbound voice services). Both traditional TDM and Ethernet circuits are required.

Verizon Response

Read and understood.

1. Proactive Access Circuit Monitoring

VITA desires proactive access circuit monitoring, whether or not VITA purchases a managed solution. Do you provide capability to monitor access circuits and initiate circuit maintenance and repair proactively?

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	The Verizon Enterprise Solutions Proactive Notification Team monitors registered customer access circuits for loss of circuit continuity. Verizon will automatically perform an intrusive test on any registered circuit in order to isolate and attempt to resolve the issue causing the loss of service. The test will indicate whether the problem is within the Verizon network or within the customer's premise. Verizon will automatically notify the customer via e-mail of the test results. If the problem is determined to be within the Verizon network, Verizon will automatically open a Priority 1 trouble ticket for further isolation and correction, and will include in the email to the customer the trouble ticket number, Circuit ID number, the time the issue was detected, and instructions for obtaining trouble ticket status. Proactive Notification is offered at no additional charge. **Description** ▪ Down-hard condition occurs - ticket is generated ▪ Intrusive testing conducted to determine origin of cause. Outside Verizon Network: – E-mail notification sent suggesting a validation of the premise equipment. – Ticket is held for 24 hours and closed. ▪ Inside Verizon Network. E-mail notification sent informing customer process to restore service has begun and including the following information: – Ticket number – Circuit ID – Time the issue was detected – Instructions for obtaining trouble ticket status – Progress status may be obtained via the Verizon web portal or by calling the operations center. ▪ Intermittent or bouncing condition occurs - ticket is generated: – E-mail notification sent, maintenance window requested – No work pursued until maintenance window granted – Ticket held for 24 hours and closed if customer does not respond Alarm Definition: An alarm is generated for any service disruption that remains in effect for a period of at least 45 seconds "Down Hard" Condition: An event that creates an alarm that remains in effect for a period of 10 consecutive minutes Intermittent or Bouncing Conditions: A pattern of alarm conditions that occur, but do not remain in effect for a period of at least 10 consecutive minutes, for example: ▪ An alarm condition occurring three times within 60 minutes, OR ▪ An alarm condition occurring 10 times with 24 hours Proactive Notification is available with the following Verizon Enterprise Solutions

Comply (Yes/No)	Explanation/Description
	Services ▪ Private IP (U.S. and International) ▪ Private Line – (in certain locations) U.S. DS-1 circuits and International DS-1 circuits originating/terminating in the U.S. which are provisioned through a Wide Band DXC ▪ Dedicated Access to Long Distance Voice Network (in certain locations) T1 and above Service Level Objective The Proactive Notification service level objective is for 90 percent of the qualified incidents. The PN Center will notify the customer of the problem within 60 minutes of the first alarm. Customers benefit by understanding the target timeframe for notification and are able to plan their networks and support resources accordingly.

2. *Underlying Access Channel Infrastructure*

Do you take advantage of the opportunity to employ underlying access facilities from the best available option at each location, including:

- ***The Incumbent Local Exchange Carrier (ILEC) at that location***
- ***Any Competitive Local Exchange Carriers (CLECs) at that location***
- ***"Consumer"-oriented broadband providers that reach that location, e.g., cable broadband, DSL, fiber-to-the-premises***

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	

3. *Ethernet Access Types and Availability*

Describe the forms of Ethernet access available within the State of Virginia and clearly describe the differences in capability between each.

Please include relevant information on maximum circuit bandwidths, type of interface (single-mode fiber, copper coax, etc.), service and implementation constraints, and factors affecting transition between speeds. Provide a map or listing indicating geographic areas where Ethernet access capabilities would be available.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Ethernet Access supports the following physical interfaces: **10/100 Electrical Hand-off (10BaseT or 100BaseT)** This port type is generally referred to as "standard" or Fast-Ethernet (FastE). The port is capable of setting its speed to 10 or 100 Mbps depending on the port speed of the connected equipment. The port is delivered via an RJ-45 connector over twisted pair copper cable. The selection of port speed is automatic and will adapt to the customer's equipment. The port speed of Ethernet is different than the provisioned circuit bandwidth. 10/100BASE-T ports can be converted to 100BASE-FX via a media converter if required. ▪ 10M ▪ 10Base-T – RJ-45 ▪ 100M ▪ 100Base-TX – RJ-45 **100FX Optical Fiber Hand-off (100BaseFX)** This port type is generally referred to as optical Fast-Ethernet (Optical FastE) or Fast Ethernet over fiber. The port is typically 1310 nm Single-Mode Fiber and it is optical by definition. The port is only capable of setting its port speed to 100 Mbps. The 100BASE-FX port of Ethernet is different than the provisioned circuit bandwidth. The 100BASE-FX port can be provisioned with any amount of bandwidth up to the maximum speed of the port. In this case, 100BASE-FX would support a maximum of 100 Mbps. ▪ 100M ▪ 100Base-FX – SC, FC, or LC connectors, MM, or SM fiber. **Optical Gigabit Ethernet (GigE)** This port type is generally referred to as GigE. The port is either 850nm Multi-Mode Fiber (1000BASE-SX) or 1310nm Single-Mode Fiber (1000BASE-LX), and it is optical by definition. Regardless of the port type, it is only capable of setting its port speed to 1000Mbps. Gigabit Ethernet is full-duplex only as dictated by the IEEE 802.1 standards body. The port speed of Ethernet is different than the provisioned circuit bandwidth. A 1000BASE-SX/LX or GigE port can be provisioned with any amount of bandwidth up to the maximum speed of the port. In this case, the port would support a maximum of 1000Mbps or 1Gbps; this rate is often referred to as full-

Comply (Yes/No)	Explanation/Description
	rate GigE. ▪ 1G ▪ 1000Base-T – RJ-45 ▪ 1000Base-SX – SC, FC or LC connectors, MM fiber ▪ 1000Base-LX – SC, FC or LC connectors, SM fiber ▪ 10G ▪ 10Gbase-LR – SC, FC or LC connectors, SM fiber ▪ 10Gbase-ER – SC, FC or LC connectors, SM fiber ▪ 10Gbase-LW – SC, FC or LC connectors, SM fiber ▪ 10Gbase-EW – SC, FC or LC connectors, SM fiber Verizon will provide all the fiber cabling, patching, and cross connects needed to provide the Ethernet Access service. Cables, patching and cross connects for the equipment owned and operated by the customer are not part of the service. The customer will be provided with an Ethernet handoff to connect to their equipment. It is the responsibility of the customer to provide appropriate in-building demarcation extension facilities and/or conduit to deliver the Ethernet Access service to the correct location. Additional charges may apply if relocation of the Ethernet Access service demarcation is required after installation has occurred. In alignment with the RFP request Verizon has provided flat-rate Ethernet access pricing for the Type 2 Ethernet backbone. This backbone is available across the Commonwealth of Virginia in specific central offices listed in Appendix 3 Type 2 Backbone Availability by Central Office. Verizon does have the capability of providing Ethernet access throughout the Commonwealth via our Type 3 Ethernet backbone. That backbone utilizes local facilities from regional providers when Verizon does not have direct access. As a result the pricing varies throughout the Commonwealth depending on location and provider. We are unable to flat-rate price Type 3 Ethernet. We can provide this pricing on an ICB basis.

4. Supplier-Owned Access Infrastructure

Identify any specific VITA locations included in Appendix A, which either are already, or can be, physically connected to a Supplier-owned access facility within the next 12 months (fiber, SONET or SDH-based, etc.).

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	All locations in Appendix A are currently served by Verizon access facilities.

5. Demarc Extensions

The Supplier will provide demarc extensions from the local access minimum point of penetration to the access router/device. Existing VITA locations use extension wiring that may have been placed by the local access provider or may have been contracted to another communication wiring vendor.

We expect the Supplier to extend the demarcs which are not regulated by tariff and will become the agency's responsibility after the warranty expires. Explain how demarc extensions are priced.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Demarc extensions are fixed price and include 1 service call, 2 hours on-site labor, up to 150 feet Cat 3, Cat 5, or Cat 5E cable, connectors, tie-wraps/straps, jack, face plate, cable test. Two prices are provided in Appendix A; one for normal business hours and one for after-hours installations.

B. Alternative WAN Transport

Connectivity for many of VITA's WAN locations is currently provided by legacy packet data network elements (Frame Relay and ATM ports and PVCs, including PVCs connecting to the Internet for ISP access). In this RFP, many of these locations are presented as end-points in a potential MPLS solution, while other locations are presented as requiring Internet access, particularly in the case of a managed IP-VPN solution for the Virginia State Police.

Supplier is asked to provide a proposal for the MPLS network locations presented in Appendix A of this RFP. However, VITA is also interested in understanding other leading-edge WAN services that Supplier can provide. Therefore, in addition to the MPLS service requirements described in the next section, Supplier is encouraged to propose alternative solutions that provide value and are cost-effective for agencies, localities, and schools in the Commonwealth of Virginia.

Examples of these solutions include (but are not limited to) CPE- or network-based IP VPNs, wide area virtual private LAN-type services, and private wide-area Ethernet services aggregating smaller agency locations into larger hubs.

If Supplier chooses this additional option in submitting a proposal in response to this RFP, provide technical details and descriptions of Supplier's proposed alternative WAN solution, including:

- ***Proposed design/traffic flow diagram***
- ***Solution components/elements***
- ***Available bandwidths***
- ***Limitations and constraints***
- ***Pricing model (for example, by site, port, circuit, etc.)***

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	

1. *Rigorous Service Levels Required For All Services Proposed*

Although VITA will consider a range of WAN services, it requires a consistent level of provisioning and network performance guarantees. Appendix B contains service level requirements for services that are considered to be the minimum expectation, especially MPLS.

Supplier may or may not find that the WAN services it propose fall exactly within the service level metrics specified in Appendix B. If they do not, Supplier should submit a similar set of provisioning and network performance guarantees that meet an analogous level of performance as that set out for MPLS.

VITA's flexibility is in the range of WAN solutions that it will consider, not in the service levels that it expects Supplier to maintain.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Verizon has submitted a similar set of provisioning and network performance guarantees.

2. *Statewide Availability*

If such a service is proposed, confirm that the Supplier's alternative WAN transport solution is available statewide. If there are any locations in the Appendix A "Alternative WAN Transport" worksheet to which Supplier has not proposed to provide its alternative WAN transport solution, list such locations/exceptions.

Comply (Yes/No)	Explanation/Description
Yes	

C. *MPLS Network Services*

1. *Core MPLS Network Description*

a. *Standards-Compliant MPLS*

Confirm that the Supplier's MPLS service described in its response is RFC 4364bis-compliant MPLS.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	The Verizon Private IP service is based on the IETF RFC 4364bis. The Verizon Private IP service also supports all of the RFC's typically associated with a native IP service. Verizon is a leader in the development and deployment of MPLS technology that is the basis for our Private IP Service. The Company began using MPLS technology in our global IP backbone in 1998. Our Private IP product was launched in May 2000. The service is available in over 130 countries and, as of January 2010 has more than 8,300 customer VPNs with 238,000+ connections worldwide. Six of our employees have authored or co-authored MPLS Request for

Comply (Yes/No)	Explanation/Description
	Comments (RFCs), adopted by the Internet Engineering Task Force (IETF). Verizon has also deployed MPLS as a traffic-engineering tool since 1998 in our industry-leading networks: ▪ The Company's Internet European backbone (1998) ▪ The first production of OC-192 (1999) ▪ vBNS ATM network (1999) These facts demonstrate the Company's solid experience and dominant position with MPLS technology. Verizon maintains its vision and commitment to MPLS as it continues to deploy the world's premier next generation network. Verizon's commitment and active participation in establishing and contributing to the establishment of standards is especially apparent in the area of Multi-Protocol Label Switching (MPLS) technology. Verizon is committed to MPLS and demonstrates significant expertise with this next generation technology. For example: ▪ Verizon has been a Principal Member of the MPLS Forum. ▪ Verizon was one of the early pioneers in MPLS and is now a leader in MPLS field deployment. ▪ Verizon's convergence strategy supports industry adoption of MPLS: – MPLS global implementations are RFC 4364-compliant. – This strategy includes ongoing integration with other Verizon offerings. – Verizon's product portfolio is designed to converge network, platforms, and protocols. – MPLS helps us meet this strategy and ensure Verizon uses industry-standard protocols. Cisco and Juniper are the two router/switch manufacturers that are utilized by Verizon for PE and P-Core devices within the Private IP network. Verizon is a Cisco Partner - Gold Certified and a Juniper J-Partner with an Enterprise Solution Provider Elite status. Verizon has been working with both Cisco and Juniper for over eight years as a vendor/partner in providing equipment for the Private IP MPLS network.

b. MPLS Network Architecture

Describe the Supplier's MPLS network physical and logical architecture including the following information:

- ***The core (P-router) and edge (PE-router) network equipment manufacturer and model (e.g., Cisco GSR, ESR, or Route Processor Modules (RPMs) within a multiservice switch).***
- ***Whether its architecture allows MPLS traffic to be transported over the same P-router (core router) that also supports Public Internet traffic. State whether your architecture allows MPLS traffic to be transported over the same edge router that also supports Public Internet traffic.***
- ***Whether inter-AS MPLS/VPN is supported (for unicast and/or multicast), and if so what arrangements Supplier has with other providers?***

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	The Private IP architecture utilizes Cisco ESR 10008s, GSR 12816s, and Juniper M320s serving as Provider Edge (PE) routers, with GSR 12816s and Juniper T-1600s serving as P-Core (P) routers. The Juniper T-1600 has the ability to support core speeds up to 100GBPS. As of 4Q09 the Juniper M320 is being deployed as the standard PE device globally. The M320 supports port speeds ranging from 64K to 2.5 GBPS and supports virtually all the same routing protocols as the Cisco ESR/GSR devices. Verizon has standardized on the Juniper M320 at the edge (PE router) and the Cisco 12816 GSR at the core (P router) to provide carrier class IP routing and MPLS label switching functionality for the Private IP network. As previously noted the Juniper T-1600 will be deployed on as-needed basis. The T-1600 provides Verizon the flexibility to increase the MPLS core speed up to 100GPS in the future. The M320 gives Verizon many advantages as the standard deployed edge service router for Private IP. The M320 is carrier-class router to support 99.999 percent availability. It was expressly designed to support large scale utilization of multiple features such as IP QoS and Multicast without adversely impacting customer traffic. The GSR 12816 is a member of Cisco's very widely adopted GSR family. The GSR was initially introduced as a 2.5 Gbps core router but has since been evolved into a very effective edge service router with the addition of industry leading edge service features and line cards. The GSR's dual function core and edge routing capabilities were major factors in Verizon's selection of GSR as both a backbone (P-router) and a high speed access PE router. Other key factors driving Verizon's adoption of GSR include: ▪ Distributed architecture: Dedicated line card forwarding and memory. ▪ Separate control and forwarding planes enable feature, routing, and forwarding scalability. ▪ Modular non-blocking switch fabric scalable from 2.5G/10G to 40G. ▪ Specialized ASICs enable line rate 10G forwarding. ▪ Hardware-based QoS, security, and MPLS. ▪ Migration path to carrier class availability: 99.999 percent.

Comply (Yes/No)	Explanation/Description
	Verizon's Private IP backbone topology has been engineered to maximize resiliency and minimize failover times. The P-core is a closed private MPLS backbone (i.e., no Internet connectivity that is dedicated solely to MPLS Label Switching and does not support any direct customer access connections). Using a dedicated P-core enhances network scalability by reducing Open Shortest Path First (OSPF) adjacencies and providing OC-768 trunking and high density aggregation of PE trunks. Customers can utilize multiple VPNs across third-party carriers by provisioning separate MPLS VPN Inter-provider Connection(s) (MVIC)s. Each MVIC would be mapped into a separate VRF between the two networks.

c. IP Addressing

Are there any IP addressing restrictions for the PE-CE numbering (unnumbered, SP Address space, Customer Address space, RFC1918)?

Are there any IP address blocks used by the provider that may conflict with our addressing, which is a combination of VITA's public registered IP addresses 166.67.0.0/16 & 165.176.0.0/16 and all private RFC 1918 addresses, that we should be aware of (for management purposes for instance)?

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	By default, Verizon will assign a /30 for the WAN connection IPv4 addressing on the Private IP network. Verizon will assign a /30 for the point to point IP addressing between the CE and PE by default. This /30 will be out of Verizon registered IP address space that is not advertised on the Internet. The individual /30 networks will be assigned during the initial implementation process. MPLS does not technically require a registered IP address, but Verizon has taken the architectural approach that every port on the Private IP network has a unique IP address assigned. This enables Verizon to offer centralized network based services such as enhanced reporting options, VoIP and Video gateway services, application acceleration (future) and other enhancements that can leverage the Private IP network. Customers are able to utilize their own registered IP addressing since on the WAN links since these addresses are unique. Verizon is able to use non-registered RFC 1918 addresses on the WAN links for customers who require using their own RFC 1918 address space as an ICB provided that this address space is reflective of the size of the Verizon MPLS implementation and no other customer is utilizing this address space. The real benefit of unique IP addresses beyond the additional features that can be leveraged by customers is the ability to provide a sound, scalable and supportable MPLS solution with respect to provisioning, order entry, troubleshooting and circuit database management. With unique IP addresses, Verizon has the capability to track and troubleshoot a

Comply (Yes/No)	Explanation/Description
	Customer Private IP MPLS circuit by the unique IP Address parameter alone. If Verizon allowed Customers to choose their own address space, then there would be consistent reuse of the same RFC 1918 Private IP space over time. This would leave the only the circuit ID and Customer Name as the unique parameters that should be utilized for tracking, trouble ticketing and troubleshooting with respect to locating circuits within the internal databases. Circuit IDs have to be manually entered into customer routers or outside inventory spreadsheets. The other advantage of requiring Private IP Customers to use registered unique IP space for the CE-PE /30 WAN subnet is that as Customer networks change, i.e. mergers and acquisitions, divestitures over time, this approach allows Verizon to combine and separate Customer MPLS VPNs much more transparently compared to MPLS VPNs that were each allowed to utilize the same IP space for WAN IP subnets.

d. ***IPv6 Compliance***

Indicate if the Supplier's MPLS service (i.e., at the PE router for the applicable VITA locations) is compliant and can support the IPv6 addressing standard. If the Supplier is not currently IPv6 compliant, explain when it will be compliant.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	

e. ***MPLS Nodes***

Complete the following table (Present Commonwealth of Virginia (CoVA) MPLS POP Information) identifying where the Supplier provides the locations of its MPLS POPs.

Supplier should not include 3rd party provider MPLS POPs. In the table, provide the following information concerning Supplier's MPLS Points of Presence (POPs).

For the purposes of specifying the location of POPs, VITA defines a single MPLS POP as a separate facility or building which has a unique street address:

- ***Indicate which MPLS POPs, if any, have non-redundant PE-routers installed and where they are located by city, state (if applicable), country;***
- ***Types or categories of MPLS POPs including the maximum port bandwidth capacities for each MPLS POP type, quantities of ports available and the core fiber bandwidth (e.g., OC-xxx) with which the POP is interconnected;***

- ***Any difference in services offered at different POPs;***
- ***A list (do not provide maps) indicating where each MPLS POP is located by city. If there are two MPLS POPs in the same city, make a note as such.***

Verizon Response

Present Commonwealth of Virginia (CoVA) MPLS POP Information

(Supplier to complete table below adding rows as required)

MPLS POP City, State	Type of POP (e.g., Tier 1)	Any non-redundant PE-Routers installed? (Y/N)	Maximum POP Bandwidth Available at POP	Is POP dual-homed to other POPs?
Verizon has a global network of PIP nodes. The relevant nodes based on past installations are presented here for simplicities sake. A full list of nodes is available				
Ashburn, VA	Tier 1	N	Bandwidth increased as needed	Yes
Atlanta, GA	Tier 1	N	Bandwidth increased as needed	Yes
Beltsville, MD	Tier 1	N	Bandwidth increased as needed	Yes
Cary, NC	Tier 1	N	Bandwidth increased as needed	Yes
Charleston, WV	Tier 1	N	Bandwidth increased as needed	Yes
Charlotte, NC	Tier 1	N	Bandwidth increased as needed	Yes
Charlottesville, VA	Tier 1	N	Bandwidth increased as needed	Yes
Clarksburg WV	Tier 1	N	Bandwidth increased as needed	Yes
Culpepper, VA	Tier 1	N	Bandwidth increased as needed	Yes
Greensboro NC	Tier 1	N	Bandwidth increased as needed	Yes
Lynchburg, VA	Tier 1	N	Bandwidth increased as needed	Yes
Memphis, TN	Tier 1	N	Bandwidth increased as	Yes

MPLS POP City, State	Type of POP (e.g., Tier 1)	Any non-redundant PE-Routers installed? (Y/N)	Maximum POP Bandwidth Available at POP	Is POP dual-homed to other POPs?
			needed	
Nashville TN	Tier 1	N	Bandwidth increased as needed	Yes
Norfolk, VA	Tier 1	N	Bandwidth increased as needed	Yes
Relay, MD	Tier 1	N	Bandwidth increased as needed	Yes
Richmond, VA	Tier 1	N	Bandwidth increased as needed	Yes
Roanoke, VA	Tier 1	N	Bandwidth increased as needed	Yes
Washington, DC	Tier 1	N	Bandwidth increased as needed	Yes

f. ***Third Party Infrastructure***

Identify those segments or POPs in Supplier's edge and core network infrastructure within the CoVA footprint where a third party telecom provider (e.g., wholesale telecom provider, Autonomous System (AS) Border interconnects, resold services or NNI arrangements) is used instead of the Supplier's own infrastructure.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Verizon does not use any third party infrastructure in our MPLS network US footprint including Hawaii, Alaska, and Puerto Rico.

g. ***MPLS Port Diversity***

Describe in detail how Supplier plans to minimize aggregation of VITA locations into a single Frame Relay or MPLS access node. VITA requires the Supplier to minimize the risk of multiple site outages due to a single chassis or PE router failure. Indicate in your response to Appendix A any additional pricing for these diversity requirements.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Verizon will work with VITA during the network design phase to ensure a level of port diversity that minimizes risk. It will be important to review the balance of risk between port diversity against that of increasing access circuit distance. We have undergone similar network design reviews within the NG\CoVA

Comply (Yes/No)	Explanation/Description
	partnership and will make recommendations on a network by network basis. Within reason we are able to accommodate port changes and modification to support diversity. Charges for gateway/router diversity are found in Appendix A.

h. Route Diversity

Indicate which segments in the Supplier's edge and core networks do not have alternative paths to route around failed fiber segments or MPLS POP facilities due to significant events such as Hurricane Isabel in September 2003 and the Fairfax County central office outages due to the "Derecho" storm of June 29, 2012. Provide your definition of route diversity and how Supplier maintains diversity over time.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Verizon's Private IP network implements numerous design rules and best engineering practices to protect against network anomalies that may affect the overall network and ensure network survivability, including the following: Redundancy is the most important tool for ensuring network survivability. Verizon has explicitly engineered the Private IP network infrastructure to eliminate any single point of failure beyond the customer's access connection. All Provider Edge (PE) and P-Core routers are equipped with redundant processor cards and DC power supplies, and dual P-Core routers are deployed at backbone node sites. Route Reflector (RR) redundancy is achieved by deploying dual RRs at each site. All network elements have backup battery power and standby electrical generators. All trunking connections are dual homed to diverse routers. The PE and P-Core routers are directly trunked together via high-speed connections. Every PE router is diversely trunked into two diverse P-core routers to insure a node will never be isolated. Dual routers are deployed at each P-core site and diversely trunked using high-speed trunks. Every P-core router has at least 2 physically diverse paths to other P-core sites to insure a node will never be isolated. Verizon designs the Private IP Backbone to be able to reroute around trunk failures based on the number of trunks that exist out of any given location and the utilization associated with them. For example, when a trunk fails there must be enough capacity on the remaining link(s) to support all the bandwidth previously supported by the failed trunk. Example: Do not load a trunk more than 40% of its capacity if it is one of two trunks. (The two trunks could have load ratios of 60/20, 50/30, or 40/40 or share traffic in any ratio so that the aggregate of the total traffic does not exceed the node's ability to restore all traffic in the event of a single trunk failure.) The capacity is measured at peak demand.

i. MPLS Network Diversity and Fast Reroute

Describe the Supplier's ability to provide and maintain diversity of VITA's MPLS traffic across access switches and core routers in the network. Also describe the Supplier's capability to

detect failed PE-router or core (P-router) facilities and to route around these failed devices within 50-msec. This is particularly important for support of VoIP.

Has the Supplier implemented the "Fast Reroute" protocol to provide sub-50 msec re-route to an alternate Label Switched Path? If the Supplier has not implemented the Fast Reroute protocol, describe the mechanism it employs to ensure a sub-50 msec re-route.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Verizon does currently utilize a version of Fast Reroute functionality within the Private IP core within the Layer 1 Wavelength Optical Mesh network that is deployed globally across Verizon's optical infrastructure. Verizon has a dedicated team, the Private IP Traffic Engineering organization, whose responsibility is to maintain the Private IP backbone to deliver the necessary capacity, diversity, and growth required to meet and exceed the service levels guaranteed globally by the Private IP MPLS product. BFD (Bidirectional Forwarding Detection) is supported on the Verizon's Private IP Juniper and Cisco GSR along with select ESR Provider Edge Routers.

2. MPLS VPN Topology

a. Logical Separation of VRFs

Explain how the Supplier's MPLS solution would enable certain locations within VITA's MPLS network to be segregated into separate, logical MPLS VPNs. Sites within the same VPN require any-to-any connectivity. Confirm that a packet from a location in one VPN is unable to terminate to any of the other logically separate VPNs.

Describe Supplier's ability to support this capability including any CE-router configuration requirements.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Verizon's Private IP multi-protocol label switching (MPLS)-based Virtual Private Network (VPN) provides routing separation and privacy as traffic travels through the backbone between customer sites. Each customer VPN on the Private IP backbone has its own Virtual Routing and Forwarding (VRF) table in our Provider Edge (PE) devices, so any customer or site that belongs to a VPN is provided access only to the set of routes contained within that table. All the PE devices in the Private IP network contain a number of per-VPN routing tables and a global routing table that is used to reach other routers in the provider network. Effectively, a number of virtual routers are created in a single physical router that addresses the data between the Customer Edge (CE) to the Verizon Provider Edge (PE). There are no CE special considerations.

b. Class of Service Treatment with Multiple VPNs

Describe how Class of Service is implemented at sites with multiple VPNs. For example, CoS based upon the VPN bandwidth or the port bandwidth; different CoS applies for each VPN or virtual COS across VPNs; etc.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Quality of Service (QoS) queues are defined on an individual VLAN basis for Ethernet connections. The QoS policy is defined using Low-Latency Queuing (LLQ), Class-Based Weighted Fair Queuing (CBWFQ) and Weighted Random Early Detection (WRED). These policies are used to define traffic types and priorities per VRF/VLAN. Gold CAR will need to be applied to each sub-interface/VLAN to utilize QoS across the individual VRFs. Ethernet interfaces will have their own 6 class of service policy applied to the individual VLANs and each VLAN is rate shaped at Layer 2 to the subscribed EVC speed, and there is no oversubscription of the aggregate Ethernet Access speed. On traditional TDM (T1, DS3, and OCx) connections Verizon is able to utilize a per-VRF QoS policy or an aggregate Port-Based QoS model. Customers can choose which QoS methodology to utilize on the TDM circuit. Per PVC QoS model is the default configuration if the customer doesn't specify the QoS type upon order entry. Gold CAR will need to be applied to each sub-interface/VLAN to utilize QoS across the individual VRFs. For TDM connections with the VRF queuing model each sub-interface will have its own 6 class of service policy. Per PVC/VRF rate limiting will be configured on each sub-interface. Bandwidth on full-rate TDM ports can be oversubscribed while fractional TDM connections do not support PVC oversubscription. Port-Based QoS for TDM connections will utilize a common QoS policy that looks at traffic across the entire port. One Gold CAR will be applied across the port. The EF traffic across each VRF will be applied to the Gold CAR value for the entire Port. The QoS policies are also applied across multiple VRFs to act as a single QoS policy.

c. Backup Default Routes

Is Supplier able to support a backup default gateway should the primary default head-end/gateway path become unavailable? Describe how this is accomplished given the Supplier's proposed MPLS platform (e.g., assign a BGP Weight using the BGP extended community to deterministically route to VITA's primary versus secondary default gateways).

State whether there are any site exceptions to the Supplier's compliance based on the specific VITA location and port bandwidths shown in Appendix A.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Customers are able to utilize default routing over the Private IP network as a method to utilize external Internet links. Customers would be able to develop a routing policy to route traffic from the Private IP network into the customer's data centers. This will ensure customer security requirements are met or to force traffic to customer firewalls within the customer's data centers. Customers can utilize standard BGP attributes, VRF segmentation, or Site-of-Origin (SOO) routing to determine default route preferences by region. Below are some common designs to regionalize default routing: Natural sharing for minimal latency – When Verizon's PE routers receive two or more routes to the same destination, they follow the least-cost (lowest latency) path through the PIP network. The OSPF costs are based upon fiber mileage. This is the default routing policy if nothing is manipulated in the Customer Edge or Provider Edge routers. Customers are able to divide different regions into multiple VRFs and can customize the injection of the default routes into the various VRFs. This requires that sites are members of multiple VRFs, or that sites will need to route back to the regional data centers site to gain access to other non-region sites within the company. Verizon can implement a Site-of-Origin (SOO) configuration on the Provider Edge routers. This is a configuration where sites can be selected to choose a particular default route. This can be implemented where each remote site can have a different primary, secondary, and tertiary route per region. If the default route is available, the local Provider Edge router will modify the BGP local preference attribute to choose a particular default route. Multiple SOO groups can be created to provide multiple routing scenarios based upon the customer's requirements. Verizon can work with VITA to determine which default routing approach meets the security and routing requirements.

d. Intranet and Extranet VPN

How would Supplier architect an intranet VPN (only VITA sites) versus extranet VPN (for Business partners)? What are the options for interconnecting the 2 types of VPN?

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	The Extranet feature of Private IP enables customers to create secure extranet connections for business to business (B2B) e-commerce trading partners, vendors, and customers. Using Layer 3 technology, the customer can create multiple secure connections to trading partners, vendors, and customers without implementing and managing IP Security (IPSec) tunnels. Note, however, that the ultimate responsibility for securing these extranet connections lies with the customer as Verizon does not secure the customer's hosts nor restrict the routes advertised from such sites. An Extranet is an arrangement where more than one Verizon customer agrees to connect to one or more Verizon customers to make content available to a limited, defined group. Each Extranet customer will have a Private IP PVC to achieve the cross-company connection. The Extranet feature allows two or more VPNs to share resources and gain access to each other. Each VPN may be operated by a different company or the same company. VPNs can be made to overlap completely, or some sites can be excluded from the shared community. It is not possible to exclude specific subnets or hosts at a shared extranet site. The entire site joins the Extranet as a unit as far as the Verizon Extranet feature is concerned. Customers must make sure that the portions of a site that are not to be reached via the Extranet are shielded by a firewall or similar device. For the Verizon Extranet feature, the tool used in the Cisco IOS to construct the Extranets will be the route target (RT), selectively applied to VRFs, or Virtual Routing and Forwarding tables. Special RTs are required in each PE VRF that is to participate in an Extranet. This will allow the provisioner to select specific sub interfaces (PVCs) from CEs, place the PVCs into particular VRFs, then apply the RTs as needed to the VRFs to provide the Extranet connectivity. The Extranet granularity for the purpose of this feature is at the sub interface level. That is, specific sub interfaces can be included in Extranets or not, but an entire sub interface MUST join as a complete unit to any VPN or Extranet in the Verizon implementation.

3. *MPLS Protocols*

Describe which CE-to-PE routing protocols are supported by the Supplier's MPLS service. The minimum support level is BGPv4 routing protocol between the CE and PE and provide full routing tables to each location.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Private IP supports multiple routing protocols between Provider Edge (PE) and Customer Edge (CE) routers including static routing, eBGP, RIPv2, Open Shortest Path First (OSPF), and Bidirectional Forwarding Detection (BFD). Most service providers only provide customers with two choices for their routing protocols. Private IP provides customers with greater flexibility by providing five. **Border Gateway Protocol (BGP)** BGP is a protocol for exchanging routing information between gateway hosts (each with its own router) in a network of autonomous systems. BGP is often the protocol used between gateway hosts on the Internet. The routing table contains a list of known routers, the addresses they can reach, and a cost metric associated with the path to each router to ensure that the best available route is chosen. Hosts using BGP communicate using the Transmission Control Protocol (TCP) and send updated router table information only when one host has detected a change. Only the affected part of the routing table is sent. BGP-4, the latest version, lets administrators configure cost metrics based on policy statements. (BGP-4 is sometimes called BGP4.) BGP communicates with autonomous (local) networks using Internal BGP (IBGP) since it doesn't work well with IGP. The routers inside the autonomous network thus maintain two routing tables: one for the interior gateway protocol and one for IBGP. **Routing Information Protocol (RIP)** RIP is a widely-used protocol for managing router information within a self-contained network such as a corporate local area network (LAN) or an interconnected group of LANs. Using RIP, a gateway host (with a router) sends its entire routing table (which lists all the other hosts it knows about) to its closest neighbor host every 30 seconds. The neighbor host, in turn, will pass the information on to its next neighbor and so on until all hosts within the network have the same knowledge of routing paths – a state known as network convergence. RIP uses a hop count to determine network distance. Each host with a router in the network uses the routing table information to determine the next host to route a packet to for a specified destination. RIP is considered an effective solution for small homogeneous networks. For larger, more complicated networks, RIP's transmission of the entire routing table every 30 seconds may put a heavy amount of extra traffic in the network. **Open Shortest Path First (OSPF)** OSPF is a router protocol used within larger autonomous system networks in preference to RIP, which is more commonly installed in many of today's corporate networks. Like RIP, OSPF is designated by the Internet Engineering

Comply (Yes/No)	Explanation/Description
	Task Force (IETF) as one of several Interior Gateway Protocols (IGPs). Using OSPF, a host that obtains a change to a routing table or detects a change in the network immediately multicasts the information to all other hosts in the network so that all will have the same routing table information. Unlike the RIP in which the entire routing table is sent, the host using OSPF sends only the part that has changed. With RIP, the routing table is sent to a neighbor host every 30 seconds. OSPF multicasts the updated information only when a change has taken place. Rather than simply counting the number of hops, OSPF bases its path descriptions on "link states" that take into account additional network information. OSPF also lets the user assign cost metrics to a given host router so that some paths are given preference. OSPF supports a variable network subnet mask so that a network can be subdivided. RIP is supported within OSPF for router-to-end station communication. Since many networks using RIP are already in use, router manufacturers tend to include RIP support within a router designed primarily for OSPF **Bidirectional Forwarding Detection (BFD)** Bidirectional Forwarding Detection is a network protocol used to detect faults between two forwarding engines. BFD establishes a session between two endpoints over a particular link. Private IP customers have requested support for BFD to improve the failure detection times between Customer Edge (CE) - Provider Edge (PE). BFD can be used in a number of ways in a network, but from a customer standpoint, it only affects the PE to CE link. BFD runs independently of any other protocol on the CE-PE link. While routing protocols typically have time out mechanisms to signal that a link or route is no longer available, these typically are very resource intensive on the router and not granular enough for a customer so that the outage is detected quickly. When BFD runs on the PE to CE link, it can detect failures much quicker and signal this information to the routing protocol so that the link can be taken out of service.

4. MPLS Multicasting

Does the Supplier support multicast routing within its MPLS network? What mode is used (e.g., Protocol Independent Multicast (PIM) Sparse Mode, Source-Specific Mode, Dense Mode, etc.).

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Private IP Multicasting VPN is a bandwidth conserving technology that reduces traffic by simultaneously delivering a steady stream of information to multiple locations. Applications that take advantage of multicasting VPN include video conferencing, corporate communications, distance learning, and distribution of software, stock quotes, and news.

Comply (Yes/No)	Explanation/Description
	With this feature, Private IP customers can create a multicasting group that consists of the locations within their network. These locations will receive packets of information sent from the host site. At the host site, the customer creates the data stream, which is sent to the network. The network receives the information and simultaneously sends a copy to each member of the multicasting group. Private IP Multicasting VPN supports Protocol Independent Multicast (PIM) Spare Mode (Version 2), or PIM-SM (v2) and PIM Source Specific Multicast (SSM). Unlike dense-mode protocols that send multicast traffic to all routers in the network, PIM-SM uses a "pull" model to deliver multicast traffic and restrict traffic to only those routers designated as receivers. In other words, traffic is sent only to network segments with active receivers that explicitly request the data. Private IP Multicasting VPN does allow the customer to use Multicast Source Discovery Protocol (MSDP) to pass data transparently across the Private IP network. PIM-SM (v2) constructs distribution trees for forwarding multicast traffic. PIM-SM initially constructs a Shared Tree of networking devices based around the RP router within the Private IP backbone. When a new source device becomes active, traffic flows from it to the RP and down the Shared Tree, allowing routers with directly connected receivers to learn about the new sources. Shared Trees reduce the total overall amount of multicast forwarding state information that must be maintained by the routers in the network. The customer must provide a Designated Router (DR) at all sites to receive and process any Internet Group Management Protocol (IGMP) messages. Source Specific Multicast (SSM) is a datagram delivery model that best supports one-to-many applications, also known as broadcast applications. SSM is a core networking technology for the Cisco implementation of IP multicast solutions targeted for audio and video broadcast application environments. This feature module discusses the following Cisco IOS components that support the implementation of SSM: ▪ Protocol Independent Multicast source specific mode (PIM-SSM) ▪ Internet Group Management Protocol Version 3 lite (IGMP v3lite) ▪ URL Rendezvous Directory (URD) PIM-SSM is the routing protocol that supports the implementation of SSM and is derived from PIM sparse mode (PIM-SM). In Cisco IOS Release 12.1(5)T, the Cisco implementation of SSM will be deployed with IGMPv3 support. IGMP v3lite and URD are two Cisco-developed transition solutions that enable the immediate development and deployment of SSM services, without the need to wait for the availability of full IGMPv3 support in host operating systems and SSM receiver applications. IGMP v3lite is a solution for application developers that allow immediate development of SSM receiver applications switching to IGMPv3 as soon as it becomes available. URD is a solution for content providers and content aggregators that enable them to deploy receiver applications which are not yet SSM enabled (through

Comply (Yes/No)	Explanation/Description
	support for IGMPv3). Private IP does not process IGMP. IGMP dynamically registers individual hosts in a multicast group on a particular LAN. Hosts identify group memberships by sending IGMP messages to their local multicast router. Under IGMP, routers listen to IGMP messages and periodically send out queries to discover which groups are active or inactive on a particular subnet.

5. *MPLS Access Technology*

Discuss the access technologies that MPLS services are currently generally available on (non-ICB). Describe the service offering in terms of availability and service features as well as technologies employed, i.e., MLPPP, NxT1, etc.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Access to Private IP service can be provided using any of the following methods: ▪ Direct access via a traditional TDM local loop cross-connected directly to the PE router ▪ Ethernet access via the CEA (Converged Ethernet Access) network Satellite Gateway ▪ Private IP Wireless Access (Using Verizon Wireless Mobile Private Network) ▪ MVIC (MPLS VPN Interprovider Connection) with a vendor's MPLS VPN network **Direct Access** Direct access typically uses an access line from a Local Exchange Carrier (LEC) directly from a customer's site into the nearest Verizon POP with on-net backhaul as required to the closest Private IP node. The exception is when the customer resides in a building served by a Verizon on-net fiber connection, e.g. "lit" building. Ethernet access may be supported from a lit building or via a LEC provided TDM access circuit. Direct access is supported for the following Layer 2 encapsulations but may not be supported for all speeds: ▪ Frame Relay ▪ Point-to-Point Protocol (PPP) ▪ High-level Data Link Control (HDLC) ▪ MLPPP (Multilink PPP) ▪ MLFR (Multilink Frame Relay) ▪ Ethernet **Multilink PPP** Multilink Point-to-Point Protocol (MLPPP) provides a higher bandwidth solution for customers that require access bandwidths higher than T1/E1 but less than T3/E3.

Comply (Yes/No)	Explanation/Description
	MLPPP is an IETF standard defined in RFC 1990 that enables multiple T1/E1 circuits to be bundled into a single logical bundle on both the Private IP PE and the CPE router. The maximum number of T1s in an MLPPP bundle is eight, and the maximum number of E1s is five. Sub-T1/E1 access for MLPPP is not supported. MLPPP eliminates the need for additional hardware, e.g. Inverse MUX (IMUX), for bonding since multiple T1/E1 circuits can be terminated directly into the customer's router, where they are bonded into a single logical port. A customer's existing router may not always support MLPPP and may need to be upgraded to accommodate MLPPP. In addition, some low-end routers can support only a maximum of four T1s. A customer's router may also require additional components (specifically WIC cards) to be installed. A Cisco Router IOS 12.0(3) T or higher is required to support MLPPP. **Multilink Frame Relay** Multilink Frame Relay (MLFR) is another NxT1/E1 access method that fulfills the same customer bandwidth requirements as MLPPP. The lone disadvantage presented by MLPPP is it does not support multiple permanent virtual connections (PVCs) with VRF Lite at the customer edge. MLFR resolves this, enabling a customer to use VRF Lite to add up to 20 PVC's on the logical port. MLFR can only be supported on the Cisco GSR and Juniper Networks M320 Provider Edge devices. Outside the 48 contiguous United States this option has limited availability. Your Verizon Client Partner can work with you to evaluate which countries MLFR can be used as an option. **Ethernet Access** The method of providing local Ethernet access to the Private IP Provider Edge varies by geographic region as described in the subsequent paragraphs. Customers may subscribe to the full Fast Ethernet (FE) port at line rate or any of a range of tiered 802.1q VLAN speeds. The full Private IP feature set is supported including both Standard and Enhanced Traffic Management (ETM) Class of Service. **Fast Ethernet Access** In the US, local Fast Ethernet (FE) access is provided via the CEA (Converged Ethernet Access) network. At the customer's site, the Private IP customer edge router (CE) is connected via 10/100 FE to a Building Ethernet Access Service (BEAS) device at the customer site in a Verizon lit building. Alternatively, the BEAS may be connected via a Telco DS3/OCx local loop back to the Verizon terminal. The FE connection transits the Ethernet access network to a Telco Systems layer-two switch which terminates into the Cisco GSR or Juniper Networks M320 Provider Edge device Ethernet card. **Gigabit Ethernet Access** Gigabit Ethernet is predominately available on the Cisco GSR 12816 or Juniper Networks M320 PE router. The full Private IP feature set is supported including both Standard and ETM Class of Service. Local Gigabit Ethernet access is provided via the CPA (Converged Packet

Comply (Yes/No)	Explanation/Description
	Access) network. At the customer's site, the Private IP customer router (CE) is connected via GigE to a Telco Systems 4000 at the customer site in a Verizon lit building. The GigE connection transits the Ethernet access network to a Tellabs 8860 which terminates via an OADM into the GSR 4-port Gigabit Ethernet card. **Satellite Gateway** The Private IP - Satellite Gateway solution is an effective broadband connectivity solution that provides access to customer remote locations in all 50 states. The Verizon Private IP Satellite Access solution is able to reach areas where DSL may not be available, or where T1 circuits are cost prohibitive. Additionally, customers may utilize the Verizon Private IP Satellite Access solution as a physically redundant connection, serving as a backup to their terrestrial circuit. Satellite access to Private IP utilizes connectivity provided by Verizon's Satellite Solutions Group (SSG) and includes various options. ▪ Primary Access is marketed as an alternative primary access for customer locations, where the preferred type of terrestrial circuit may not be available or where terrestrial services are cost-prohibitive. ▪ Back-Up service is a non-terrestrial, reliable solution for redundancy and targeted towards enterprise customers with medium-to-large offices. When combined with terrestrial access to the Private IP network, back-up service supports customer's business continuity initiatives. ▪ "Fly Away" service is a disaster recovery solution with reliable access and is targeted towards companies, such as insurance companies and banks. ▪ Customized service solution is targeted towards large enterprise customers with hundreds of sites that have unique requirements not met by one of our standard offerings. Remote satellite terminals are aggregated on a per-customer basis, using an individual Virtual LAN (VLAN) per customer. Each VLAN is mapped to a Private IP PVC. Since multiple sites share a VLAN and PVC to the Private IP network, the Private IP Committed Access Rate (CAR) value must be sized according to the needs of the customer and the total instantaneous load that the satellite network can handle. As customers add, change, or disconnect remote satellite terminals, the CAR may need to be reengineered to handle the new traffic load. All satellite service locations must have a clear view of the Southern sky, roof rights, and no obstructions. International service is available to U.S.-based companies only and will be handled on an individual case basis. Customer and/or Verizon licenses may be required. **Private IP Wireless Access** Private IP Wireless Access uses two Verizon product offerings: Verizon Wireless Private Network and Verizon Private IP to provide a broadband wireless access method for mobile users or remote sites. This service provides an effective broadband connectivity solution to customer remote locations in all 50 United States. The interface between these two networks is called the Private IP Wireless Gateway (PWG). This gateway is a shared port designed to support multiple

Comply (Yes/No)	Explanation/Description
	customers. There are four gateways in place connecting the two networks. ▪ The primary gateways are located in Las Vegas, Nevada; Plymouth Meeting, Pennsylvania; Charlotte, North Carolina; Columbus, Ohio; and Lone Star, Texas. These gateways carry the customers "live" traffic from Verizon Wireless. Customers can order ports on one or both of these gateways. A single port is ordered on the PWG and should be sized so that it is large enough to support the Verizon Wireless remote sites. New primary gateways in Aurora, Colorado will be installed in 2013. ▪ The secondary gateways are located in Tempe, Arizona; Wilmington, Delaware; Nashville, Tennessee; Westland, Michigan; and Copperfield, Texas. Additional gateways will be installed in South Jordan, Utah in 2013. These gateways do not carry "live" traffic. Instead these are back-up gateways that will only carry traffic in the event of a failure of the primary gateway. Customers cannot load share traffic between the primary and secondary gateways. ▪ Verizon will automatically configure customers on both a Primary and Secondary PWG for a single monthly recurring charge. The Private IP PWG port speeds range from 768K up to 1GBPS (Sub-Rate OC48). Port speeds up to 500MBPS are considered standard with no pre-approval required. The PWG will be another site on the customers Private IP network and there will be a monthly recurring charge based on the port speed. Verizon Wireless has designed a private networking solution, created to enhance the experience of today's mobile workforce using both 3G EVDO and 4G LTE. The Verizon Wireless Private Network segregates the host devices that are a part of the private network and assigns them to enterprise-specific home agents. The remote devices can only connect to the home agents, no traffic is routed to the public Internet, and split tunneling to the Internet is not supported. This solution can be used in many applications, such as: ▪ Single IP, Single User Mobile and Telemetry Applications: Devices such as smart phones, lap top computers and unmanned telemetry devices (e.g., vehicle tracking) ▪ Multi IP LAN applications requiring unmanaged primary or backup connectivity – Office setting - multiple PCs, some server applications – Retail setting – Point-of sale terminals, PCs, back office servers, telemetry, etc. – Bank setting - ATM machines, branch applications, etc. Access speed can vary based on a number of factors, including wireless signal strength (similar decibel signal (db) levels can translate to various throughput levels), number of users per cellular tower, or environmental factors such as shielded router locations. Customers will receive a separate invoice from Verizon Wireless for the Private Network solution. ▪

6. *Logical Access (Layer 2)*

Describe any Frame Relay, ATM, or other Layer 2 access used between Supplier's Access POPs serving the state of Virginia and the MPLS PE-router. Ensure that any Layer 2 access solution described below supports at least four (4) Classes of Service.

Verizon Response

Logical Access (Layer 2)

Frame Relay Encapsulation (Y/N?)	PPP (Y/N)?	MLPPP (Y/N)?	Ethernet (Y/N)?	DSL Access direct (Y/N)?	Wireless Access (Cell, WiMax) (Y/N)?	FRF 16 (Y/N)?
Yes – Supported natively by PIP	Yes – Supported natively by PIP	Yes – Supported natively by PIP	Yes – Supported natively by PIP	No – Supported indirectly via Secure Gateway	Yes – Supported natively via VZW Private Network or indirectly via Secure Gateway	Yes – Supported natively by PIP

If the Supplier uses a PVC or PVC-like Layer 2 Frame Relay or ATM protocol to provide the Layer 2 protocol for the MPLS connection, describe whether packets will be eligible or tagged as discard eligible. In addition, if they can or will be tagged as discard eligible, is there any bursting control used for these PVCs or PVC-like connections?

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Frame Relay may be used as a Layer 2 encapsulation upon customer request. In this context Frame Relay (FR) does not refer to the actual legacy Verizon Layer 2 network. Rather, these are both encapsulation methods that Verizon supports on our Private IP Service. The use of FR is required for customers wishing to run Virtual Routing Forwarding-Lite (VRF-Lite) on their CPE router because these are the only encapsulations that support the multiple PVCs required with VRF-Lite.

7. *MPLS Product Structure*

a. *Port and Class of Service Bandwidths*

Provide the following information:

- ***A comprehensive list of available port speeds and individual Class of Service speeds***
- ***Does the Supplier offer a "burstable" MPLS port, i.e., could VITA specify a maximum port speed, but have different charges depending on the actual usage that would vary from month to month?***
- ***Are ports priced separately from Classes of Service?***
- ***Are separate Classes of Service priced separately?***
- ***Does the Supplier offer a range of different port types that each provides a different class of service mix?***
- ***Itemize and detail your capabilities and the availability of all Port and COS speeds for the MPLS proposed solution as priced in Appendix A.***

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	A comprehensive list of available PIP port speeds is provided in Appendix A. Verizon does not offer a burstable port. We do offer a Dynamic Port and Dynamic Gold CAR (EF COS) that allows for modification to port speeds via a web portal. Verizon does not charge for any class of service other than EF. That pricing is provided under the Gold CAR pricing in Appendix A. The full bandwidth of the port is available to any class of service within the QOS policy guidelines. With Gold CAR applied to the port there is a full range of class of service mixes at no additional charge.

b. ***Changing Port and Class of Service Bandwidths***

VITA expects that Supplier provide an automated method to increase, decrease, or modify Port and Class of Service speeds (assuming the local access bandwidth supports the change) via the Supplier's web-based portal. Describe the Supplier's capability to re-provision Port and/or Class of Service bandwidth at a specific location (e.g., within hours or a few days). Identify any differences in capabilities for port speeds of T1 and below, NxT1, and 45Mb and above.

Describe Supplier's provisioning practices for upgrading port bandwidth for port speeds of T1 and below, NxT1, and 45M and greater. Specifically, if a port speed is to be changed, state under what circumstances, if any, Supplier installs all new facilities for the new speed, followed by disconnect of the old port and access, as opposed to installing any necessary incremental new facilities and performing a software upgrade for the existing port.

In addition, confirm that no cost will be incurred resulting from port and access overlap due to delayed de-installations where new facilities have been required.

Also describe how and when the billing of re-provisioned bandwidth is synchronized with the actual service change. For example, if VITA changes the Port bandwidth in the middle of the month, will the Supplier's invoice reflect a pro-rata charge for this mid-month change?

If new facilities are installed for port upgrades followed by disconnect of the old port, confirm that billing for the old port and access will not overlap billing of the new port and access.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Dynamic Committed Access Rate (DCAR) allows customers to change the Gold CAR value associated with the customer's Private IP PVC on the fly. This setting can be increased or decreased via a web-based interface on the Verizon Customer Center (VEC) portal. In addition using PMO to request this type of change will be a 5 business day SLA. This feature is implemented by changing the input service policy applied to the customer's router interface. When a customer DCAR change request is submitted via the VEC, the Verizon provisioning systems will automatically provision the appropriate input policy for the ordered CAR value. The Dynamic Bandwidth Port Maintenance (DPORT) is a VEC function that allows PIP customers to request bandwidth modifications, higher or lower, based on their business needs for a given site.

Comply (Yes/No)	Explanation/Description
	If the current access port is not sufficient to support the bandwidth upgrade requested, the user will be notified automatically. If a change is still desired it will need to be requested from Sales via the new circuit order process. Charges for the Dynamic CAR and Dynamic Port will be pro-rated based on the number of days remaining within the month the change is made. Dynamic Port is available for TDM access connections and select Ethernet access platforms. Dynamic Port is not available for NxT1 connections.

8. *Classes of Service (CoS)*

VITA expects that data traffic will be separated into four or more Classes of Service. VITA is generally seeking to segregate its traffic into non-business and store-and-forward applications such as e-mail, mission-critical business applications, internal video/audio-conferencing, and Voice over IP (VoIP).

VITA is willing to consider various Class of Service schemes under MPLS, provided it is understood that the each application should be assigned into the appropriate Class of Service. For example, for MPLS services implemented with four Classes of Service, VITA may choose the lowest two classes if those classes meet the business and service level requirements.

Confirm that Supplier provides a minimum of four Classes of Service.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	The Verizon Private IP QoS service is implemented with six distinct classes with a separate queue for each class. The Voice/Real Time Data class is implemented using LLQ. The sixth class is a Best Effort class which offers minimal bandwidth guarantee and is implemented as CBWFQ. Classes two, three, four, and five are implemented using CBWFQ with a minimum bandwidth guarantee for each class. IP Packets are colored or marked for one of the six IP Classes of Service by marking the Type of Service (TOS) byte in the IP header. The two different methods that are available for marking the TOS byte are DiffServ Code Points (DSCP) or IP Precedence. Additionally for customers using DiffServ marking, Verizon will allow further designations in the Video/Priority Data, Mission Critical Data, Business Data and General Data. Customers will be able to mark high priority and low priority within these classes for a total of 10 designations. Customers using IP Precedence will be able to take advantage of the six main Classes of Service, but will not be able to access the further designations in the data classes.

a. *Classes of Service Description*

Detail in the table below each of the Classes of Service that can be offered to VITA, including the differences between them and what traffic types are best supported for each Class of Service. Include the Supplier's name for each Class of Service and the Differentiated Services Code Point (DSCP) that VITA is required to use in their CE-router to which it corresponds.

Describe also how customer traffic is shaped or policed at the ingress PE-router as well as the egress PE-router for each different Class of Service offered by the Supplier.

Verizon Response

IETF Designation	Supplier Name for the Class of Service	Supplier IETF Designation	DSCP (specify in decimal)
EF	Voice/Real Time Data (EF)	EF/IP Precedent 5	46, 40
AF4x	Video/Priority Data (AF4)	AF41/42/43, Prec 4	34,36,38,32
AF3x	Mission Critical Data (AF3)	AF31/32/33, Prec 3, Prec 6 and Prec 7	26,28,30,24,48,56
AF2x	Business Data (AF2)	AF21/22/23, Prec 2	18,20,22,16
AF1x	General Data (AF1)	AF11/12/14, Prec 1	10,12,14,8
BE	Default Data (BE)	All other DHSCP traffic	0 and all other values

Comply (Yes/No)	Explanation/Description
Yes	The Verizon Private IP QoS service is implemented with six distinct classes with a separate queue for each class. The Voice/Real Time Data class is implemented using LLQ. The sixth class is a Best Effort class which offers minimal bandwidth guarantee and is implemented as CBWFQ. Classes two, three, four, and five are implemented using CBWFQ with a minimum bandwidth guarantee for each class. IP Packets are colored or marked for one of the six IP Classes of Service by marking the Type of Service (TOS) byte in the IP header. The two different methods that are available for marking the TOS byte are DiffServ Code Points (DSCP) or IP Precedence. Additionally for customers using DiffServ marking, Verizon will allow further designations in the Video/Priority Data, Mission Critical Data, Business Data and General Data. Customers will be able to mark high priority and low priority within these classes for a total of 10 designations. Customers using IP Precedence will be able to take advantage of the six main Classes of Service, but will not be able to access the further designations in the data classes. **Ingress / Egress QoS Overview** The only CoS that is policed at the ingress of the Private IP network is the ETM Real-Time Class of Service. For ingress, CE to PE traffic flow, the Verizon PE router polices Real-Time traffic against the Customer defined Real-Time CAR subscribed to on the port. For example, if a Private IP Customer has a T1 and subscribes to a 256k Real-Time CAR (EF/CS5), the PE will police all EF/CS5 traffic at ingress, and discard any EF/CS5 traffic exceeding 256k. AFxx and BE traffic is not policed at the ingress of the Private IP network. All AFxx and BE traffic arriving at the ingress of the Private IP network is admitted to the network up to port speed. For Private IP egress QoS, PE to CE traffic flows, the Verizon PE utilizes priority

Comply (Yes/No)	Explanation/Description
	percent for the EF class and the CBWFQ configurations for the AFxx and Default classes.

Traffic Type	Ingress Policy	Egress Policy
Real Time / Voice EF Prec5	Real-Time/Gold CAR Incoming Traffic policed to Subscribed EF CAR; excess traffic discarded, set EXP=5	Priority Queuing (LLQ) 50% or 90% of Port Egress Bandwidth allocated to Priority Queue
Video AF41, 42/43 Prec 4(CS4)	Incoming Traffic admitted up to port speed; no policing. set EXP=4	CBWFQ Minimum Egress % of Remaining Bandwidth not being used by EF class based on Customer chosen egress profile
Mission Critical Data AF31, 32/33 Prec 3 (CS3)	Incoming Traffic admitted up to port speed; no policing. set EXP=3	CBWFQ Minimum Egress % of Remaining Bandwidth not being used by EF class based on Customer chosen egress profile
Business Data AF21, 22/23 Prec 2 (CS3)	Incoming Traffic admitted up to port speed; no policing. set EXP=2	CBWFQ Minimum Egress % of Remaining Bandwidth not being used by EF class based on Customer chosen egress profile
General Data AF11/12/13, Prec 1 (CS2)	Incoming Traffic admitted up to port speed; no policing. set EXP=0	CBWFQ Minimum Egress % of Remaining Bandwidth not being used by EF class based on Customer chosen egress profile
Default CS0 (Default) All other DSCP/Prec/CSC values not matched by the other 5 CoS	Incoming Traffic admitted up to port speed; no policing. set EXP=0	CBWFQ Minimum Egress % of Remaining Bandwidth not being used by EF class based on Customer chosen egress profile

b. ***Use of Port Bandwidth***

Can each Class of Service use bandwidth allocated to another Class of Service in the event that the bandwidth is unused for a period of time? How is traffic specifically re-prioritized based on whether it is conforming (at or below provisioned Class of Service bandwidth) or non-conforming (bursting above provisioned Class of Service bandwidth)? Provide Supplier's traffic bursting policies.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Verizon does not allow bursting of Real-time/Voice (EF) traffic in order to provide a controlled jitter environment for this traffic and be able to offer the highest service level agreements. Video/Priority Data (AF4) traffic is not regulated at the ingress of the Private IP network and will be able to burst to full port speed if bandwidth is available on the Customer port, and based on the bursting capability defined in the Customer outbound egress QoS policy configured on the CE router. Mission Critical Data (AF3) traffic is not regulated at the ingress of the Private IP network and will be able to burst to full port speed if bandwidth is available on the Customer port, and based on the bursting capability defined in the Customer outbound egress QoS policy configured on the CE router. Business Data (AF2) traffic is not regulated at the ingress of the Private IP network and will be able to burst to full port speed if bandwidth is available on the Customer port, and based on the bursting capability defined in the Customer outbound egress QoS policy configured on the CE router. General Data (AF1) traffic is not regulated at the ingress of the Private IP network and will be able to burst to full port speed if bandwidth is available, and based on the bursting capability defined in the Customer outbound egress QoS policy configured on the CE router. Default Data (BE) traffic is not regulated at the ingress of the Private IP network and will be able to burst to full port speed if bandwidth is available, and based on the bursting capability defined in the Customer outbound egress QoS policy configured on the CE router. Please reference ingress/egress policies below

Traffic Type	Ingress Policy	Egress Policy
Real Time / Voice EF Prec5	Real-Time/Gold CAR Incoming Traffic policed to Subscribed EF CAR; excess traffic discarded, set EXP=5	Priority Queuing (LLQ) 50% or 90% of Port Egress Bandwidth allocated to Priority Queue
Video AF41, 42/43 Prec 4(CS4)	Incoming Traffic admitted up to port speed; no policing. set EXP=4	CBWFQ Minimum Egress % of Remaining Bandwidth not being used by EF class based on Customer chosen egress profile
Mission Critical Data AF31, 32/33 Prec 3 (CS3)	Incoming Traffic admitted up to port speed; no policing. set EXP=3	CBWFQ Minimum Egress % of Remaining Bandwidth not being used by EF class based on Customer chosen egress profile

Comply (Yes/No)	Explanation/Description		
	Business Data AF21, 22/23 Prec 2 (CS3)	Incoming Traffic admitted up to port speed; no policing. set EXP=2	CBWFQ Minimum Egress % of Remaining Bandwidth not being used by EF class based on Customer chosen egress profile
	General Data AF11/12/13, Prec 1 (CS2)	Incoming Traffic admitted up to port speed; no policing. set EXP=0	CBWFQ Minimum Egress % of Remaining Bandwidth not being used by EF class based on Customer chosen egress profile
	Default CS0 (Default) All other DSCP/Prec/CSC values not matched by the other 5 CoS	Incoming Traffic admitted up to port speed; no policing. set EXP=0	CBWFQ Minimum Egress % of Remaining Bandwidth not being used by EF class based on Customer chosen egress profile

9. *MPLS Network Security*

Describe how Supplier maintains both physical and logical separation of enterprise customers' MPLS traffic and Public Internet traffic if the Supplier's MPLS core (P-routers) is shared by both MPLS and Public Internet traffic.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Verizon's PIP core is not shared with Public Internet traffic. **Built-In Security Features and Methodology** In order to consider Private IP to be as secure as Layer 2 based VPNs, the security characteristics described below must be met: ▪ It is necessary to have addressing and routing separation. ▪ The internal structure of the backbone network must be hidden from the outside. ▪ The network must have resistance to attacks **Routing Separation** All the Layer 3 functionality in the Private IP network is located in the core of the network, and there is no interconnectivity to public IP networks from this core. Layer 3 MPLS provides route separation by having each PE router maintain a separate routing table for each connected VPN. This routing table, called a Virtual Routing and Forwarding instance (VRF), contains the routes from one VPN that were learned statically or through a dynamic routing protocol. These VRFs are separate from each other as well as from the global routing table. Private IP has the same addressing and routing separation capabilities as comparable Layer 2 VPNs such as Frame Relay or ATM. **Hiding the MPLS Core Network**

Comply (Yes/No)	Explanation/Description
	MPLS doesn't reveal unnecessary information, even to customer VPNs. Since the interface to the VPNs is BGP, there is no need to reveal any information about the core. The only information that is required in the case of a routing protocol between PE and CE is the address of the PE router. If this is not desired, static routing can be configured between the PE and CE. With this measure the MPLS core can be kept hidden and addressed using a public or even private address. Using the traceroute utility, the Private IP cloud does not show up as a hop in the output. **Resistance to Attacks** With Private IP, it is extremely difficult to gain access into other VPNs, unless this has been specifically configured (extranet configuration); thus, it also difficult to attack other VPNs from within a VPN. This makes Private IP as secure as its Frame Relay and ATM counterparts. **MPLS Label Spoofing** All interfaces into the Private IP core network only require IP packets, without labels. For security reasons, a PE router should never accept a packet with a label from a CE router. In Cisco routers, the implementation is such that labeled packets that arrive on any interface where label switching is not enabled will be dropped. Thus, it is not possible to insert fake labels, since no labels will be accepted on these interfaces. It would also be very difficult to insert a 'spoofed' label into an MPLS network and thus gain access to another VPN or the MPLS core. In this capability, Private IP provides the same level of security as a Frame Relay or ATM-based VPN. Private IP provides the same level of privacy associated with Layer 2 Frame Relay and ATM-based networks. Customers do not have to add a connection-oriented overlay to the Verizon Private IP Service network to encrypt tunnels, which would be required if the customer was using Internet Protocol Security (IPSec). All access to this network is limited through the Verizon internal private data networks; and, access is consistently monitored so that only authorized personnel can access the internal Layer 3 network. A very limited number of trained technicians have access to the network provisioning system for initiating changes to configurations on the customer's behalf. Below is an overview of some of the mechanisms Verizon uses to secure the Verizon MPLS network: ▪ Data Center employees are unable to access network equipment via console access. Other groups are responsible for equipment configuration. ▪ Two-factor authentication is necessary to access network devices. ▪ Each login must be traced back to an individual (no group logins). The BGP peering sessions can be configured to use MD5 authentication. BGP-MD5 can be supported, but this requires additional engineering approval. The MD5 authentication will be configured for each BGP session into the Private IP network. The MD5 authentication will be between each CE and PE pair. The key used between the CE and PE for MD5 will be preconfigured and the same

Comply (Yes/No)	Explanation/Description
	for all locations. Verizon can support MD5 authentication between the PE and CE for dynamic routing protocols with special engineering approval; however, it does not offer a relatively high level of security since the keys are not dynamic, thereby requiring significant administrative effort on the part of both Verizon and MST. The key used between the CE and PE for MD5 will be preconfigured and the same for all locations. It should be noted this authentication is only between the CE and PE and not between all the CEs across the MPLS core. In order to run BGP-MD5 between the CE devices, MST would be required to have all CEs in one ASN and run a full mesh of IBGP peers between all CEs. The Private IP Provider Edge router does not participate in data encryption. Customers are able to transport IP Sec and other methods of encryption over the Private IP network between the Customer Edge devices. The Customer Edge router can be configured with “QoS pre-classify” to preserve the ToS field in the new IP Sec header in tunnel mode. This will ensure that tunneled and encrypted traffic can utilize QoS across the network. The Customer Edge router can be managed by Verizon or the customer depending on the customer’s preference. Protecting the confidentiality of information means ensuring that it is not intercepted and read by anyone other than its intended recipients. Encryption of data transmitted over a network whose appropriate security level cannot be assured must be employed any time confidentiality is a requirement. The encryption algorithm used must be one that is currently approved by the Verizon security group and listed in the guidelines. Confidentiality of data must not be compromised if the data is restored from backup media. If highly confidential data must be stored on non-volatile storage media, it should be encrypted. Highly confidential data that is stored on non-volatile storage media that has low physical security must be encrypted to lower the risk of a compromise of confidentiality due to physical theft. Implementation of any symmetrical key encryption is required to use one or more of the technologies used below: ▪ Triple DES ▪ IDEA (128 bit key length) ▪ CAST (128 bit key length) ▪ AES (128 bit key length) ▪ DES (56 bit key length). Accepted only for the Kerberos service. ▪ Digital Signing Standard - DSS (1024 bit key length) ▪ Diffie-Hellman (1024 bit key length) ▪ RSA (1024 bit key length) ▪ Elliptic Curve (124 bit key length) The Verizon Network Security Incident Response Team (NSIRT) responds to major information system security incidents that are unexplained, affecting multiple systems and/or multiple platforms, occurring in multiple locations, occurring repeatedly or for which a First Response Organization is unable to resolve the incident. The Network Security Operations Center is responsible for the activation of the

Comply (Yes/No)	Explanation/Description
	team and the facilitation of the incident until resolution. Verizon also utilizes extensive instrumentation and monitoring capabilities to closely monitor network resource consumption. The PIP Network Daily Health along with various traffic utilization reports are used by the Data Traffic Engineering and Global Data Network Operations groups to monitor and track all network resources on a daily basis and take immediate corrective action as soon as any negative trend is identified.

a. Common Backbone Security

Describe how Supplier maintains both physical and logical separation of enterprise customers' MPLS traffic and Public Internet traffic if the Supplier's MPLS core (P-routers) is shared by both MPLS and Public Internet traffic.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	The Private IP network itself does not distinguish between internal and Internet traffic. It does not directly connect to the Internet by default. All the Layer 3 functionality in the Private IP network is located in the core of the network, and there is no interconnectivity to public IP networks from this core. Layer 3 MPLS provides route separation by having each PE router maintain a separate routing table for each connected VPN. This routing table, called a Virtual Routing and Forwarding instance (VRF), contains the routes from one VPN that were learned statically or through a dynamic routing protocol. These VRFs are separate from each other as well as from the global routing table. Private IP has the same addressing and routing separation capabilities as comparable Layer 2 VPNs such as Frame Relay or ATM.

10. Internet VPN MPLS Access

Provide technical details and descriptions of Supplier's capability to provide access to the MPLS network via the following fixed line and wireless broadband services providing access to the public Internet:

- ***xDSL (including ADSL, IDSL, SDSL and other forms of xDSL);***
- ***Cable Internet service (if available as an equivalent service to DSL);***
- ***Broadband wireless services (such as LTE, EV-DO, HSDPA).***

Certain agencies may require an Internet-based broadband solution to provide low cost, secure, persistent connectivity with sufficient response and throughput capabilities to support a number of business applications or to provide a VPN back-up connection to a primary MPLS port.

List your available speeds and geographic coverage for any or all of the following broadband technologies: xDSL, Cable Internet, and Broadband Wireless,

Verizon Response

Comply (Yes/No)	Explanation/Description
No	

a. *Static IP Addresses*

VITA has the need for utilizing static IP addressing. Describe the Supplier's ability to provision service using static IP addresses.

Verizon Response

Comply (Yes/No)	Explanation/Description
NO	

b. *IPSec Tunnels*

The Supplier's solution should permit VITA to establish and maintain IPSec VPN tunnels between its remote location and the Supplier's regional MPLS gateway.

Describe how the IPSec tunnel termination on the MPLS gateway operates when the remote location provides its own broadband connection (own Internet Service provider) instead of the Supplier providing the remote location broadband connection.

Specifically, what are the routing protocol requirements (i.e., static IP) and pricing implications when the remote provides its own broadband connection?

Verizon Response

Comply (Yes/No)	Explanation/Description
No	

11. *MPLS Connection to the Internet*

In order to support agencies with unique requirements, VITA's current legacy packet network employs separate PVC elements that provide connectivity to the Internet using the same frame relay port used with traditional PVC connections.

As VITA transitions to a newer, IP-based WAN service, it is very interested in understanding the Supplier's capability to replicate this connectivity.

Does the Supplier provide such functionality? If so, provide technical details and descriptions of Supplier's capability to provide Internet connections from its MPLS network, including:

- ***Proposed design/traffic flow diagram***
- ***Solution components/elements***
- ***Available bandwidths***
- ***Limitations and constraints***
- ***Pricing model***

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Secure Gateway - Firewall provides employees secure access to the Internet from your locations connected to a Verizon network service via a network-based firewall. Secure Gateway - Firewall is available with Private IP (our Layer 3 MPLS VPN service) around the world. This service extends the power of our network services to safely provide Internet access without the requirement of multiple links and premises based firewalls. Secure Gateway - Firewall bundles a Secure Gateway Universal Port (providing Private IP and Internet access) with Managed Security Services (MSS) Cloud Premium firewall service to help protect against a range of network security threats. The network-based firewall inspects and tracks all inbound and outbound data streams, allowing passage of only those packets that match a known and authorized state. Stateful firewalls improve on the security and performance of more traditional packet filters because they capture and hold attributes of each data stream for the entire length of the connection. Using MSS Cloud Premium, the Secure Gateway - Firewall service is able to identify and help protect against Denial of Service (DoS) attacks that can overwhelm a server or network with illegitimate requests that may prevent users from accessing corporate resources. This service can also defend against IP spoofing, an attack that sends a system rogue packets that appear to originate from an authenticated source. These packets may induce a local host to execute commands that can compromise the security of an entire network or cause damage to valuable data resources. Secure Gateway - Firewall is designed to support outbound web surfing and multiple in-bound firewall policy/protocol settings on MSS Cloud Premium administered by the Verizon Security Operations Center.. Customers will be allocated seven public IP addresses per Secure Gateway Universal Port ordered with the Secure Gateway - Firewall (standard) feature in addition to one address for standard outbound access. Customers are limited to seven in-bound public IP addresses; these addresses are assigned by SG service delivery from an IP pool specific to Secure Gateway services. The following are applicable to Secure Gateway - Firewall (standard) service: ▪ Service is designed to support outbound web surfing and up to seven in-bound firewall policy/protocol settings including inbound return packets. ▪ Optionally, Service can support SMTP and other mail services. ▪ Customers will be allocated seven public IP address per Secure Gateway Universal Port ordered with the Secure Gateway - Firewall (standard) feature in addition to one for standard outbound access. Customers are limited to seven in-bound public IP addresses.

Comply (Yes/No)	Explanation/Description
	▪ For customers ordering multiple Secure Gateway Universal Ports with the Secure Gateway - Firewall (standard) feature, SMTP e-mail can only be supported on one Secure Gateway Universal Port Firewall instance (i.e., a single SMTP server can only reside on one Secure Gateway - Firewall instance). ▪ For example, a multinational corporation may require regional network-based firewall support (one to support U.S. locations, one to support EMEA locations, and one to support Asia-Pacific locations); however, SMTP access is supportable on only one of the three Secure Gateway Universal Ports connecting to the customer's Verizon network service. ▪ No logging available. ▪ Secure Gateway - Firewall (standard) does not offer any customer-facing reporting or logging. ▪ Service includes a firewall which monitors transmission packets and ensures that inbound traffic from the Internet is only allowed into the customer's Verizon network service in response to a valid customer user request. ▪ Service has a maximum concurrent web session limit of 9,999 sessions. ▪ Reporting is not available for this service ▪ Intrusion Detection (IDS) and/or Intrusion Protection (IPS) are not available as part of this service ▪ Service is configured as the customer's default route to the Internet. Requests to use an alternative ISP as the default route to the Internet are considered on a case-by-case basis and must be approved prior to placing an order. ▪ Service has not been fully tested or certified for use with other related security services and products such as e-mail and content filtering. ▪ Service Level Agreements (SLAs) for Secure Gateway Services are applicable to the Secure Gateway Universal Port. ▪ SLAs include Service Availability, Time to Restore (TTR) and Service Installation. ▪ Verizon assigned IP Dedicated IP addressing cannot be ported over to the Secure Gateway - Firewall service; new IP addressing must be assigned. Likewise, IP addressing assigned via Secure Gateway - Firewall cannot be ported over and used for other purposes besides Secure Gateway – Firewall. ▪ Customers purchasing Secure Gateway - Firewall (custom or standard) may host their own Domain Name Service (DNS) to handle resolution between host names and Internet addresses. DNS is a free service for our Internet customers. For customers who have firewall requirements beyond the capabilities of Secure Gateway - Firewall (standard), it is recommended that customers use MSS Cloud services as described below. MSS Cloud services are also available to be used with the Secure Gateway (SG) Universal Port. This allows SG customers to combine premium MSS cloud-based services (firewall, IDPS, etc.) with the SG Universal Port, and is the preferred option to use with SG Universal Port. These services are quoted, priced, contracted, ordered, and provisioned

Comply (Yes/No)	Explanation/Description
	separately from the SG Universal Port, but do require some configuration on the SG Universal Port to function properly. MSS Cloud Firewall and IDPS services are complementary services to SG Universal Port. When using MSS Cloud, note that public IP addressing is provided by that service and not with SG Universal Port. In addition, services such as DNS must be provided by the customer and are not available with the SG Universal Port or MSS Cloud service.

12. *MPLS Service Level Agreements*

Describe Supplier's SLAs for its MPLS offer by completing the relevant parts of Appendix B. VITA expects that higher Classes of Service will provide higher and more comprehensive SLAs (e.g. covering items such as jitter). SLAs with end-to-end coverage (NTU to NTU) are highly preferred.

Service credits are expected in the event that SLAs are not met. Detail the service credits that would be provided in the event that individual service levels are not met by completing the relevant parts of Appendix B. Describe explicitly any limitations, caps, or exclusions applicable to service credits.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Verizon has provided complete SLA and credit information in Appendix B 3a and 3b.

a. *Service Level Exceptions*

Detail any exceptions to the Supplier's service levels for Data Delivery Ratio, Round Trip Delay, or Jitter metrics (even at locations where the total contracted Class of Service bandwidth is a low percentage of the port speed (e.g., total Class of Service bandwidth is 64K and port speed is T1).

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Verizon has provided complete SLA Exceptions information in Appendix B 1d.

b. *Service Level Compliance with Third Party MPLS Partners*

Confirm that Supplier has no third party MPLS partner exclusions associated with its response to Appendix B. For example, Supplier confirms that its responses for Round Trip Delay, Data Delivery Ratio and Jitter support all VITA sites shown in Appendix A.

Disclose any SLA exclusions by site where third party MPLS partners are used by the Supplier.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Verizon does not use any third party infrastructure in our MPLS network US footprint including Hawaii, Alaska, and Puerto Rico.

13. MPLS Reporting

a. Network Inventory

Describe the ability of Supplier to provide and maintain, via a web Internet portal, a database of standard local access circuit and service documentation in electronic, importable format including the following:

- ***Site ID (VITA site identifier)***
- ***Address***
- ***Central Office***
- ***Circuit ID***
- ***VRFs implementation by Site ID***
- ***Port Speed***
- ***CoS bandwidth information***
- ***Access type***

Verizon Response

<table>
<tr><th>Comply (Yes/No)</th><th>Explanation/Description</th></tr>
<tr><td>Yes</td><td>PIP customers can view the status of their MPLS VPN via the Verizon Enterprise Center portal and all of the attributes on their network based on the settings at the MPLS Provider Edge (PE) device.
Following are the items the customer can view:
<table>
<tr><th>VPN Level Information</th><th>Class of Service Information</th></tr>
<tr><td rowspan="2">VPN Name
VPN Default
Multicasting VPN (True/False)
Multicasting Rendezvous Point Address
VPN Topology (fully meshed/hub and spoke)
Max Routes
Concord Enabled
Maximum paths
Enhanced Interior Border Gateway Protocol (EIBGP) Load Sharing
Routing Protocol
Border Gateway Protocol (BGP) CE AS Num
BGP Message-Digest algorithm 5 (MD5</td><td>Class of Service (CoS) type (Private IP Standard or Private IP Enhanced Traffic Management)
Gold CAR
Silver CAR
Multicasting CAR</td></tr>
<tr><td>VRF Parameters
VRF Name
Router name
Hub/Spoke
Max Routes
eHealth Enable flag</td></tr>
</table></td></tr>
</table>

Comply (Yes/No)	Explanation/Description
	<table><tr><td>password) BGP Timers keepalive BGP Timers hold time BGP Send community</td><td>Max Paths Multicasting Rendezvous Point (RP) Address</td></tr><tr><th>Site Information</th><th>BGP Routing Information</th></tr><tr><td rowspan="2">Site Name Circuit ID Permanent Virtual Circuit (PVC) ID Location PE Interface Router name Router type Speed Interface name PE IP Address/Prefix Length Fragmentation Multicasting site type (hub or remote) Encapsulation (diff from CE indirect) Access Type (e.g. T1, E1, T3, etc.)</td><td>Allow Autonomous System (AS) AS override CE AS Number Timers keepalive Timers hold time</td></tr><tr><td><table><tr><th>Routing Information Protocol (RIP) Routing Information</th></tr><tr><td>Redistribute OSPF (Open Shortest Path First) OSPF Private IP Static Routes Destination Address Destination subnet mask Forwarding address</td></tr></table></td></tr><tr><th>Customer Edge (CE) Interface Information</th><th>Site of Origin information</th></tr><tr><td>Connection Type (Direct/Indirect) CE IP Address/Prefix Length Encapsulation Data Link Connection Identifier (DLCI), Virtual Path Identifier (VPI), or Virtual Local Area Network (VLAN) ID Router model (for managed only) Router DNS domain ID (this is the ESP identifier for the managed device)</td><td>Site of origin site type Remote site order number</td></tr></table> **Download Network Summary Information** The Looking Glass tools allow customers to download the site details into an Excel format. The customer can use this information to store for future use.

b. ***Strict Segregation of Agency Data***

Supplier is expected to ensure that each agency has access only to its own inventory and performance reporting data on its Web Internet portal. Describe how Supplier provides credentials and other processes to ensure such strict segregation, while still enabling VITA to view inventory and performance metrics across the entire network.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	All Verizon reporting systems offer strict partitioning of user data.

Comply (Yes/No)	Explanation/Description
	The Verizon Enterprise Center segments that users access are based on account billing. Assignment to a master account number for VITA permits global access. Assignment to an user sub-account number would restrict access to only that network. The Verizon eHealth Wan Analysis platform allows a user account to be assigned to various permission levels. The user account must also be specifically assigned to networks by name. This allows access from view-only on a single network all the way to administrator privileges on all networks.

c. Performance Reporting

VITA's performance reporting requirements are stated below. The metrics contained in the table below are to be measured and reported to VITA on a calendar month basis via web portal access as noted below. Reporting is to be at the agency level, with adequate security implemented limiting a specific agency's view to its own data only.

Metric to be Measured and Reported (Monthly)	*Reported via Real-Time Customer Web Portal Access*	*Reported to VITA via Monthly Historical Report (via Web Portal or Electronic Document)*
MPLS Port Utilization by Site ID (95th percentile)	*Required*	*Required*
MPLS Port Utilization by Site ID (99th percentile)	*Required*	*Required*
MPLS COS Utilization by Site ID - both Ingress and Egress directions	*Required*	*Required*

Include the following additional requirements when pricing and stating Supplier's compliance to this section:

- ***Collection of port utilization statistics by polling Router interfaces every 5 minutes.***
- ***Storing the collected statistics in a database making the information available near real-time.***
- ***Retention by the Supplier of historical statistics for 12 consecutive months.***
- ***Notify VITA at the end of each month which MPLS ports have utilization exceeding 70% of port capacity as measured at the 95th percentile.***
- ***Notify VITA at the end of each month which router interfaces are not collecting data.***

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Verizon has included several tiers of WAN Analysis Reporting as part of PIP offering presented. WAN Analysis Reporting is a comprehensive network and service monitoring and reporting tool enabling customers to view and analyze data collected on their Verizon transport and managed services. WAN Analysis is offered as Software-as-a-Service, with the data and software

Comply (Yes/No)	Explanation/Description
	securely hosted within the Verizon network. Data is collected directly from existing customer premises equipment. Customers will access their WAN Analysis Reporting via a Web portal, which is accessed via the "Network Tools" tab of the Verizon Enterprise Center. WAN Analysis Reporting is part of the Application Aware Networking network monitoring and reporting toolset. WAN Analysis Reporting offers customers a one-stop solution for proactive performance management, capacity analysis, and reporting on their network infrastructure. WAN Analysis Reporting provides customers with a single view on their infrastructure by consolidating reporting for selected Verizon transport (e.g., Private IP, Private IP Satellite) and Verizon managed network services (e.g., Managed WAN, Managed LAN). WAN Analysis Reporting uses the Simple Network Management Protocol (SNMP) to periodically query the management information base (MIB) of customer premises equipment (CPE). The data collected is related to device configuration and device component performance. The process of periodically querying the MIB of a device is referred to as polling. Polling reduces the load (such as bandwidth utilization) on customer networks but the tradeoff is that performance information is slightly delayed due to the interval between individual polls. The following reporting tiers included as part of the PIP service offered in Appendix A. **Provider Edge (PE) Statistics.** ▪ Provider Edge Statistics is designed to provide any Private IP Layer 3 transport customer with the fundamental reporting statistics for their Private IP Multiprotocol Label Switching (MPLS) network. ▪ Statistics include WAN Interface and per queue Quality of Service (QoS)/Classes of Service (CoS) utilization collected from the customer interface on the Verizon Provider Edge router and response metrics collected on routes between Verizon Provider Edge routers, such as Core Network Transit Delay (NTD) and Jitter. ▪ The device polling interval is 15 minutes for Customer Interface statistics; a Daily Average is provided for response metrics. PE Statistics are imported and updated every 2 to 4 hours. **Standard Select Reporting** ▪ Standard Select is designed to provide the fundamental reporting statistics for the health of their Verizon managed customer premises equipment (CPE). This tier is equally useful for gathering basic statistics for customer-managed (aka Unmanaged) CPE connected to the Private IP or other Verizon transport networks. ▪ Statistics include customer premises equipment CPU, memory and interface utilization, interface errors and scheduled and on-demand reports designed to help customers with capacity analysis and reporting on their network infrastructure. ▪ The device polling interval for the Standard Select tier is five (5) minutes. **ETM Reporting**

Comply (Yes/No)	Explanation/Description
	▪ ETM includes all features of Standard Select, with additional performance reporting options for monitoring Quality of Service and latency sensitive network traffic. This tier is particularly useful for customers using the Quality of Service (QoS) traffic prioritization capabilities of networks based on Multiprotocol Label Switching (MPLS), such as Verizon Private IP. ▪ Statistics include Quality of Service (QoS) metrics for monitoring network traffic by individual Class of Service (CoS) queue. For devices with Cisco IP SLA (or equivalent) collect response metrics (like NTD, Jitter) per CoS queue between customer end points such as routers or switches. ▪ The device polling interval for the ETM tier is five (5) minutes. One optional tier is available as listed in Appendix A and includes: **ETM Select Reporting with netflow** ▪ ETM Select reporting with netflow includes all features of ETM, with additional features to help customers with proactive performance management on customer networks. This tier allows the customer to project a visual representation of their network with performance exceptions and performance related faults. It also allows customer users to be notified by email when certain exceptions occur on the network. ▪ Statistics include performance related alarms, such as time over threshold for high utilization. ▪ The polling interval for the ETM Select tier is five (5) minutes. Customers have the option to select individual device elements and temporarily change the polling interval to every thirty (30) seconds. Netflow data is limited to Top N talkers. Top N talker netflow data is kept at 1 minute intervals for specific elements and averaged into 15-minute samples after 30 days data.

d. ***Performance Reporting Delivery***

All performance reporting will be provided to VITA within 21 calendar days from the prior calendar month.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Automated reports can be established to provide data in real-time or at scheduled intervals.

e. ***Capacity Management (Optimization) Information***

Describe Supplier's capability to provide to VITA, on an annual basis, an MPLS Service Optimization Report. The delivery timeline is:

- ***Initial report – approximately twelve (12) months after the effective date of the contract***
- ***Subsequent reports – annually***

Confirm that this report will show high-level usage statistics, performance trends and recommendations for reduction in cost and improvements in performance. VITA expects the Optimization Report to have charts, graphs and tables to support the recommendations.

Supplier may choose to waive or bundle this cost in its Appendix A pricing.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	

f. Other MPLS Reporting

Describe any additional reporting provided as part of the standard offering or as additional value add services.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Both our VEC Looking Glass and several tiers of our Wan Analysis offerings are included as part of our standard offering. An optional tier of Wan Analysis is available and pricing is provided in Appendix A.

14. Enhanced and Future MPLS Services

a. Enhanced Technology Services

Describe the enhanced MPLS Services currently offered by Supplier, including, but not limited to:

- ***Network-based firewalls and proxy servers***
- ***Intrusion Detection Systems (IDS)***
- ***Internet Data Centers or Virtual Data Centers***
- ***Network Based Internet Access***

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	**MSS Cloud** Managed Security Service Cloud Firewall and IDS/IPS are available with Verizon Private and Public IP products where a dedicated IP connection is used. These services are deployed on a scalable, highly available, multitenant shared platform hosted in dedicated security centers in Verizon's IP network and maintained by security operations teams located around the world. The Firewall and IDS/IPS services are activated on a per circuit or universal port basis and will only scan and protect traffic on Verizon circuits which have the service activated. Firewall and IDS/IPS are available for the following eligible services:

Comply (Yes/No)	Explanation/Description
	▪ Private IP with Secure Gateway Universal Port. ▪ Internet Dedicated Access/ Internet Dedicated Ethernet ▪ Data Center Co-location (with use of a dedicated1 IP circuit) ▪ IP Application Hosting (with use of a dedicated IP circuit) The service includes all port types: Double/Diverse/Shadow/Nx and only for IPv4. Native IPv6 is excluded. Please verify with your Verizon Client Partner if the Gateway Router of your IDE/IDA circuits can support MSS Cloud services. ▪ Firewall. Provides security monitoring and processes firewall logs in real time to identify potential security threats. Service will help secure the access to the Internet, and becomes the barrier to the customer's network. It allows customers to integrate their own firewall rule set, as long as it is supported by Verizon's firewall platform. ▪ IDS/IPS (to be purchased in combination with MSS Cloud Firewall). MSS Cloud IDS/IPS monitors security alerts generated from virtual IDS/IPS sensors located in front of an Internet facing firewall. Signatures of the IDS/IPS sensors are maintained by Verizon. The service utilizes baseline IPS policy and will alert and/or take action on packets based on operating systems, protocols, categories, applications, known attacks, and severity. MSS Cloud includes the provisioning and maintenance of virtual devices based on leading carrier class technology. You do not have to invest in hardware or software on your premises and there is no configuration of the customer edge IP router required. The implementation team will coordinate the installation with you. Routing is performed within the Verizon network and not by the customer. Premium service for MSS Cloud includes Monitoring and Management of the entire cloud infrastructure. MSS Cloud is deployed and maintained on a multi-tenant shared platform with highly scalable multi-blade and high availability architecture with Active-Active type failover, located in eight dedicated security centers around the world. The Security Centers are designed to maintain greater than 10 Gbps throughput per Security Center, and each security center has been engineered to support over 4 million concurrent connections. Each Security Center has local failover capabilities and is equipped with redundant Firewall and IDS-IPS platforms. The MSS Cloud platform fails over from primary to secondary and fails-open after that. The Security Centers use proven secure facilities and procedures to deploy cloud based services which enhance the reliability and reduce the risks of outsourcing security services to cloud based solutions. The MSS Cloud infrastructure resides on Verizon's backbone with routing and switching capabilities through the Security Centers. They are not commercial data centers and they cannot house customer specific equipment. IP addresses assigned by Verizon to IDA/IDE customers are reused for MSS Cloud. IP addresses originally assigned by Secure Gateway are reserved only for use with Secure Gateway. Therefore, if you are a Secure Gateway customer obtaining MSS Cloud Firewall, you will have to relinquish the Secure Gateway addresses for IPs that are not from the Secure Gateway

Comply (Yes/No)	Explanation/Description
	reserved IP pool. By default, MSS Cloud will assign a /29 from the non-Secure Gateway address pool. If you require more address space, it can be obtained with proper justification. As a Secure Gateway customer, if you already have more than a /29, you can obtain a like for like exchange of address space. The start of service is a coordinated effort between you and Verizon's implementation team. Traffic to and from the Internet has to be redirected into the designated security center. This redirection is performed with a combination of Virtual Routing & Forwarding (VRF) and Virtual LAN (VLAN) architecture. VRFs are employed to securely transport your traffic to and from the Security Center while VLANs are used to segregate traffic from other customers within the Security Center. Location of Security Centers: ▪ Frankfurt ▪ Amsterdam ▪ London ▪ Washington, DC ▪ Houston, TX ▪ Los Angeles, CA ▪ Sydney ▪ Hong Kong Gateways are hosted in Verizon Security Centers. Traffic will be scrubbed as close to the source as possible. All gateways are located directly on the network. Private IP (PIP) Network customers using Secure Gateway Universal Port may experience an additional latency impact of up to 10-15 ms. Internet/Ethernet Dedicated Access Customers may experience an impact based on the distance from their location to the Security Center. The highest latency would be expected in 'trombone' traffic which sends traffic to a distant Security Center for local server connections. **VRF-Lite (aka Multi-VRF CE)** VRF-Lite (Virtual Routing Forwarding-Lite) is not an actual Private IP application, but rather a Cisco proprietary feature available to customer networks using Cisco routers. Private IP fully supports interoperability with VRF-Lite via multiple logical interfaces, e.g. PVCs or VLANs. VRF-Lite enables the customer to build end-to-end departmental networks by extending the routing separation provided by Verizon Private IP to the customer's local intranet. The BGP/MPLS VPN technology implemented in Private IP provides per customer routing separation by building a separate VRF table in the Private IP Provider Edge (PE) devices for each customer VPN. The use of VRFs maintains access control, meaning that any customer or site that belongs to a VPN is provided access only to the set of routes contained within that table. With VRF-Lite, also known as Multi-VRF CE, the concept of VRFs is extended to the CE router which now has the ability to maintain separate VRF tables in

Comply (Yes/No)	Explanation/Description
	order to extend the privacy and security of an MPLS VPN network down to the various LANs in a branch office. Customers who implement VRF-Lite on their CE router can create multiple VPN connections into Verizon Private IP via a single Private IP Port. Each department on the customer's LAN can have a virtual connection (PVC or VLAN) to Private IP. This enables customers to segment their network, dedicating bandwidth for each organization based on their unique needs. **Verizon Video Conferencing via Private IP** Private IP customers can access the Verizon Video Conferencing service via the Private IP network by leveraging the Private IP Extranet capability described above. By using Private IP, customers can utilize Verizon's world-class Video Conferencing service and leverage the CoS capabilities of Private IP to prioritize video flows. The Video Conferencing platform is configured into a VPN that can be extranetted with any Private IP customer's VPN, thus providing secure access to the shared resources of the conferencing platform. Private IP customers wishing to access the Video Conferencing platform must use registered public IPv4 addresses for their video-enabled endpoints. As an alternative to NAT, customers using private RFC 1918 addresses may create a new IP video subnet as a secondary interface on the CE router and advertise that public IP subnet to the Private IP PE. Customers can then continue to use their existing private addresses for interfaces that do not require access to Video Conferencing. **Private IP with Verizon VoIP Availability** Verizon Voice over IP (VoIP) with Private IP is available in the continental United States, the United Kingdom, France, Germany, Belgium, Luxembourg, the Netherlands, Italy, Spain, Sweden, Switzerland, Ireland, Hong Kong (IP Outbound only), India (IP Outbound only), Australia and Singapore. **Access Type and Speed** Verizon VoIP will support both direct and indirect Private IP access via Frame Relay, using Frame Relay. Private IP with eDSL or ATM is not available with Verizon VoIP. Verizon VoIP will only be available with Private IP Dedicated Service. Note: With Private IP Dedicated Service, the customer's port will have only one permanent virtual circuit (PVC), which goes to the Private IP network. Verizon VoIP with shared ports is not supported. Verizon VoIP with Private IP supports port speeds of: ▪ 384 Kbps ▪ 512 Kbps ▪ 768 Kbps ▪ T1 ▪ MLPPP/NxT1 ▪ T3

b. Network Feature Roadmap

Provide your plans for addressing growth over the next 1 to 2 years. Use diagrams showing future footprint. What is your roadmap for the following technologies?

- ***MPLS-TE***
- ***IPv6***
- ***VPLS***
- ***AToM***
- ***Carrier Serving Carrier (CSC)***
- ***BFD***
- ***Cellular & WiFi Services***

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Verizon has expanded and continues to expand the footprint and density of the Multiprotocol Label Switching (MPLS) network to meet the demands of our customers. Verizon continues to increase the node density and our global network footprint. With respect to Virginia, the PIP network is very robust and regionally dense. We have PIP nodes in 6 cities in Virginia and additional nodes in multiple cities in Maryland, West Virginia, Tennessee, North Carolina, and Washington DC. ▪ MPLS-TE - Currently, the MPLS Label Switch Paths (LSPs) are calculated using metrics from OSPF to find the shortest paths within the Verizon Private IP core from PE to PE. The LSPs across all PE pairs are dynamically determined based on current network use and network conditions. OSPF is used as the network performance feedback mechanism to build the Layer 2 paths across the MPLS network. Private IP PEs verify full label-switched connectivity with one another continuously. The label-stacking path is verified prior to LSPs being created. OSPF is used as the network performance feedback mechanism instead of RSVP. At this time DNE engineers do not see the performance gains versus the added load on our routers to implement MPLS–TE. As the network becomes more complex however, we may implement it in the future. ▪ IPv6 - Supported on PIP Today. ▪ VPLS – Verizon offers VPLS as a separate service from PIP today. VPLS provides any-to-any Ethernet virtual connections utilizing Ethernet Access (EA) terminating technology at the customer's designated premises. EA technology provides customers the ability to leverage a single EA port to support multiple network services. Virtual Local Area Network (VLAN) tags are employed to distinguish one flow from another. ▪ AToM –Support for AToM is not on the roadmap. ▪ Carrier Serving Carrier (CSC) –Support for CSC is not on the roadmap. ▪ BFD - Supported on PIP. ▪ Cellular & WiFi Services – Supported on PIP today via VZW Private Network or Secure Gateway

c. Network Service Roadmap

Describe the major upgrades or enhancements planned for your network within the next 2-3 years. What is the projected timetable for these projects and what benefit will these upgrades offer VITA?

How will these upgrades improve service to VITA? What impact (negative or positive) will the changes affect your services to VITA? How will these upgrades minimize service disruption?

Recognizing that investments in network infrastructure tend to be continuous rather than periodic, and that system expansions and network upgrades are key to reliable service; describe your reinvestment strategy for the previous year as well as your plans for the next three years in terms of capital investment.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Verizon continues to expand the footprint and density of its Private IP service to meet the demands of our customers. We have invested tens of millions of dollars in our Private IP technology infrastructure over the last year, and projected 2013 capital spending is similar to that invested in 2012. Capital budgets for the next two years are not yet finalized; however, we anticipate continued investment in our flagship private networking service. To provide end-to-end MPLS services in countries with large geographic footprints and multiple commercial hubs, Verizon has devised a two-pronged strategy. ▪ Extend the Private IP network by installing provider edge devices in the capital cities and other key business centers to provide customers with MPLS Access via Verizon co-located international nodes to the Private IP network. ▪ Extend the scope and density of the Private IP offering in-country by partnering with local providers that will provide access via an MPLS VPN Interprovider Connection (MVIC), which will interconnect the Private IP network with the in-country provider's domestic MPLS networks. The MVIC enables Verizon to connect our Private IP with a partner MPLS network to give customers a seamless MPLS-based solution and Class of Service (CoS) features for all their locations. By utilizing the MVIC, customers will receive one invoice, will receive support from one account team, and have one number to dial for incident reporting and resolution. Verizon will interconnect our Private IP network with an MPLS network partner only in countries where it makes economic sense, specifically in nations with large geographies where the benefits of partnering clearly outweigh the cost of building a new national network infrastructure. Verizon will partner only with MPLS providers whose networks are in compliance with RFC 4364, the MPLS standard. (RFC 4364 is the official standard for BGP/MPLS IP Virtual Private Networks and replaced RFC 2547 as of February 2006.) These partnership agreements are carefully crafted to ensure that the customers receive a seamless, high-quality service from Verizon and our

Comply (Yes/No)	Explanation/Description
	partners. In all cases, partner networks provide MPLS-based network transport from outlying locations to the nearest Private IP in-country node. From an overall network architecture prospective Verizon is constantly making investments in infrastructure. Today Verizon has standardized on the Juniper M320 at the edge (PE router) and the Cisco 12816 GSR at the core (P router) to provide carrier class IP routing and MPLS label switching functionality for the Private IP network. In the future the Juniper T-1600 will be deployed on as-needed basis. The T-1600 provides Verizon the flexibility to increase the MPLS core speed up to 100GPS in the future. 10G PIP customer ports have launched in selected markets this year with more to be announced. With respect to features there are several planned for 2013-2014 launch: ▪ Private IP Ethernet port level queuing to allow for more flexible bandwidth utilization with multiple VRFs. ▪ PIP Video Priority for video-centric applications such as conferencing ▪ Secure Cloud Interconnect to allow native PIP interconnects with 3rd party cloud providers Verizon regularly implements processes and/or technological advances which improve the overall quality of our products and services. Occasionally, this improvement process necessitates that software and/or hardware is modified, upgraded, or replaced. In such an event, network change notifications will be channeled through the Account Team. These outages will be brought to the attention of the Account Teams, on a best effort basis, a minimum of 5 days in advance of the activity. In addition, the Worldwide Customer Service Center tracks these outages ensuring that scheduled timeframes are adhered to and that service is restored promptly upon completion of the activity. Situations where the Change Management Maintenance Guidelines do not apply are defined below: ▪ Emergency Maintenance: an emergency situation where network degradation or errors exceeding Immediate Action Limits (IAL) are occurring or are imminent. The situation is tracked via a trouble ticket and/or flash. ▪ Problem Management: in situations where it is deemed necessary to perform a maintenance activity outside the normal maintenance guidelines to address a problem that, at the moment, is not impacting service or traffic but is determined to be too risky to wait until the next available maintenance window, permission may be granted. The problem is tracked via a trouble ticket. Examples include the following: ▪ Card failure impacting customers that has occurred two times in a 24 hour period. ▪ Taking an unstable backbone network trunk down for testing. ▪ Any issue where customers are complaining of service disruption. For managed customers, most domestic and many international locations will receive 24x7 maintenance support as standard. Locations that may be outside of the standard support area (major developed metropolitan areas of the world) will qualify for standard support. Locations that are outside of developed areas, or in countries with no

Comply (Yes/No)	Explanation/Description
	maintenance contractor, or in politically sensitive areas of the world, may receive alternative maintenance support, which might include 8x5, Next Available Flight, Next Business Day. The maintenance contract will identify the coverage and response time objectives at each location. In addition, the Private IP and Managed Services SLAs have objectives for Mean Time to Repair, which also apply to covered locations as appropriate.

15. Statewide Availability

Confirm that the Supplier's MPLS network as proposed is available statewide. If there are any locations in the Appendix A "MPLS Transport" worksheet to which Supplier has not proposed to provide its MPLS network service, list such locations/exceptions.

Comply (Yes/No)	Explanation/Description
Yes	

D. Internet Services

1. Internet Service Capabilities and Supplier Classification

Detail Supplier's IP network capabilities with respect to:

- ***Supplier's global Internet network design, peering arrangements and if you own the network or have agreements with local ISPs.***
- ***Whether the network is a Tier-1 ISP network and, if not, then which portions are not Tier-1 networks.***
- ***Any agreements with local ISPs in detail and how they are managed.***
- ***The number and type of public and private peering arrangements, listing partners, quantities, locations and overall percentage of private vs. public peering.***

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	The Verizon Internet network is a Tier-1 ISP network. Verizon does not use local ISPs. All of the peering points in the United States are private. Please refer to the Peering Connectivity White Paper information regarding network design and peering provided in the Appendix 2 of this proposal. Verizon interconnects with hundreds of networks on both a regional and national basis is more than 28 countries. Coupling our extensive peering relationships with one of the largest customer bases in the industry, Verizon provides unparalleled reach, offering direct connectivity to more than 65 countries around the globe. As UUNET, Verizon created the modern Internet as the first commercial Internet Service Provider (ISP) and remains a global leader in Internet communications solutions for businesses, online service providers, content providers, and telecommunications firms around the world.

Comply (Yes/No)	Explanation/Description
	We offer high–quality Internet services that enable our customers to harness the full power of Internet technology from a full range of dial and high–speed dedicated access options to the latest in cutting edge network based VPN and Voice over IP (VoIP) products. We offer a complete line of high–quality, high–performance Internet, Intranet and Extranet solutions enabling customers to increase productivity and profitability through Internet technology. You can choose from in–house deployment to end–to–end, fully managed, Internet services and all are backed by unsurpassed technical resources, personnel and experience. Our Internet services are offered through the local operating companies worldwide in 40 countries. We also maintain extensive interconnections to Internet Service Providers in 50 other countries throughout Europe, the Middle East, the Asia/Pacific region, and Latin/South America. Our Global Transit Service is the first wholesale Internet access product to offer high–performance, high–reliability international and intercontinental connectivity. Field integration teams develop unique solutions by working with customers to evaluate applications and business requirements. With a superb combination of technical and quality support, we are a leading supplier of Internet solutions for business customers worldwide. The Network Operations Center and technical support staff offer customers individualized support for their business Internet solutions and provide network monitoring 24 hours a day, 365 days a year with Global Network Operations Centers (NOCs) located in Hilliard/Columbus, OH, USA; Reading, UK; and, Hong Kong. Both the Customer edge device (CPE) and the Verizon network edge gateway (GW) are monitored every 30 seconds via ICMP and syslog data for any indication of service outage. **The Verizon Global Internet Backbone** For the latest fiber backbone maps and a closer look at each major path, please refer to the following URL (this is not an Internet map, but rather a representation of Verizon international fiber): http://www.verizonenterprise.com/us/about/network/maps/map.xml. There are about 365 active core switching/access facilities, or hubs, deployed throughout the Verizon Global Internet backbone utilizing nearly 1,100 trunks and an aggregate bandwidth of over 10Tbps (Terabits per second). **Verizon North America Internet Network Architecture** There are about 175 active core switching/access facilities, or hubs, deployed throughout the Verizon North America Internet backbone, set up in a hierarchical network with three separate levels: ▪ The Transit Network. Traffic between a source and a destination in different regions travels over the regional network to a transit hub in the originating region, where it leaves the regional network and enters the transit network and is delivered to the transit hub in the neighboring region. ▪ The Regional Network. Traffic between a source and a destination in the same region travels through the regional network between the two locations. ▪ The Access Network. The edge where customer traffic enters and exits the network.

Comply (Yes/No)	Explanation/Description
	Verizon North America Transit Internet Network The top level of the network is the transit backbone, which provides connectivity between hubs in different regions. Transit hubs are interconnected via redundant and diverse OC768c, OC192c, 10GigE, and OC48c circuits and utilize Multiprotocol Label Switching (MPLS). MPLS was introduced primarily for its superior scalability to 10Gbps and greater speeds, single chassis management simplicity (vs. two chassis router and switch solution with ATM) and improved traffic engineering capabilities (dynamic LSPs, constraint–based LSPs, etc.). Verizon uses Juniper T1600, T640, and MX960 routers in the transit network. Transit routers are interconnected via MPLS LSPs (Label Switched Paths). Each transit router is connected to every other transit router via two parallel, fully–meshed planes of LSPs. There are always two transit routers within a transit hub running in parallel, for redundancy and traffic management. **Verizon North America Regional Internet Network** Below the transit level are regional networks; there are currently nine U.S. regional networks (including parts of Mexico) plus two Canadian regions in addition to the transit backbone. Within each region, all hubs are connected by a diverse and redundant combination of OC768c, 10GigE, OC192c, OC48c and OC12c circuits. Each regional network employs Cisco CRS–8/S, 12410 and 12008 routers and Juniper T1600, T640, MX960 or M320 routers. As in the Transit network, Verizon uses MPLS, for maximum efficiency in distributing traffic in the regional networks. Each hub in the regional network is physically connected to at least two other hubs in the same region. Regional networks connect to the transit network in each region's transit hubs, through exchange routers. Like the transit network, regional networks have two exchange routers running in parallel, for redundancy and traffic management. Typically, the large hubs in major metropolitan cities (e.g., Atlanta, Chicago, Dallas, Los Angeles, New York, San Francisco/San Jose, and Washington DC) are connected via 10Gbps trunks at the "regional" layer in a ring fashion. Additionally, there are two or (in several regions) three transit hubs in each region that are connected at the transit–level with multiple 10Gbps trunks on the transit planes. This provides robust service to customers in the region in the event of a major outage at a transit hub or in the metro ring itself. **Verizon North America Access Internet Network** The access network consists of "edge" devices where customer connections enter the backbone. Verizon employs Juniper T640, MX960, and M320, Cisco CRS–8/S, 12410 & 12008 routers, Marconi ASX1000 ForeRunner ATM switches, and Lucent/Ascend CBX500 WAN switches in these hubs. Each of these edge devices is connected to both of the redundant planes (i.e., XL1 and XL2) within the hub. Within each hub, routers are connected to each other via multiple parallel OC–12, OC–48, GigE or 10GigE. Customer access is available via dial, DSL, T1, T3, OC–3, OC–12, OC–48, Ethernet (including GigE and 10GigE), and satellite. To facilitate T1 through OC–48 dedicated customer access Verizon has provisioned many on–net (Verizon

Comply (Yes/No)	Explanation/Description
	fiber) local SONET rings to connect customer CO's to our high speed access hubs in major metro areas. This can reduce customer telco costs, shorten install times, and increase link survivability. **Design Benefits** The multi–protocol, multi–platform backbone design greatly enhances Verizon's ability to observe, manage, and control traffic flows within the network. Multiple redundant and diverse paths exist throughout the network. This reduces single points of failure and provides optimal routing and traffic flow. The simplicity of the design allows for scalability and extensibility, allowing the Verizon Internet network to grow and change as demand requires. For additional stability, all Verizon Internet nodes are physically secure and are protected by uninterruptible power supplies, using batteries and diesel generators. Finally, the logical full–mesh topology allows the creation of "single–hop" virtual circuits or LSPs, helping reduce overall latency, improve traffic delivery time, and increase network efficiency.

2. *Points of Presence*

Provide a list of Internet POPs in Virginia. Note any VITA locations where there is no POP within 20 miles.

Describe how these POPs are managed and how a high level of availability for connections to these POPs is measured and maintained.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Through the use of our access Internet network the distance limitation is removed. Verizon utilizes an LD POP connected to our backhaul network to provide direct access to one of our IP Hubs. As a result, we can provide Internet access on our backbone architecture throughout Virginia without mileage limitation. We have a large number of IP Hubs around the globe. Below is a partial list of hubs in the Virginia region. Upon request, we can provide the global listing. ▪ Ashburn, VA ▪ Atlanta, GA ▪ Baltimore, MD ▪ Culpeper, VA ▪ Greensboro, NC ▪ Philadelphia, PA ▪ Pittsburgh, PA ▪ Raleigh, NC ▪ Richmond, VA ▪ Vienna, VA ▪ Washington DC

Comply (Yes/No)	Explanation/Description
	All of the Verizon backbone facilities are highly redundant, including features such as redundant power supplies, CPU's, and routing engines wherever possible; diversely–routed backbone circuits between the hubs; spare hardware kept in the hub; and multiple high–speed connections to other providers (Peers). The Verizon management of this network is triply redundant: in–band, using a separate private management network, and via remote access. The backbone equipment is deployed exclusively in telco–grade facilities. All network nodes have backup power systems to provide electricity in the event of a local power failure. Telco–grade facilities also provide high levels of physical security, which serves to further protect the Verizon network. As the first company in the industry to offer service level agreements (SLAs) for Internet traffic among key global business centers, Verizon set new standards for Internet service around the world. Through the years, Verizon has raised the bar on Internet service by increasing its performance threshold. These service level agreements reinforce our commitment to deliver high–performance IP–based services and provide additional confidence for businesses evolving their communications to an increasingly IP environment. Verizon's network capacity planning group is tasked with defining capacity requirements as well as the logical and physical design to support the company's transmission, switching, and equipment needs. The available network switch and transport backbone capacities are constantly monitored. Any systems running at excessive utilization are flagged then thoroughly reviewed to ensure real time traffic growth warrants the expansion. Orders are then placed to ensure expansions are initiated in ample time to facilitate customer growth. Additionally, trend analysis is done on past network growth in order to provide sufficient lead–time for implementation organizations. The planning process is done on a rolling 18–month basis. Statistics on packet loss are available as part of the SLA. Please see http://www.verizonenterprise.com/about/network/latency/. The third and fourth tables provide information on packet delivery stats for the various paths covered under the SLA.

3. Backbone Topology

Describe the available capacity over the Supplier's IP network backbone. Also describe the Supplier's growth/investment plans for increasing this capacity over the next 12 months.

Identify those segments in the Supplier's distribution and core networks where a third party telecom provider (e.g., wholesale telecom provider) is used instead of the Supplier's own infrastructure. In addition, indicate which segments in the Supplier's distribution and core networks do not have alternative paths to route around failed infrastructure.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Verizon owns and operates a global fiber–optic network that spans six

Comply (Yes/No)	Explanation/Description
	continents and has more than 485,000 route miles delivering services to customers in more than 150 countries and 2,700 cities throughout the world. We participate in more than 65 submarine communications cable systems to help route IP traffic on our global network. We are the only founding U.S. provider involved in a new submarine cable system recently activated to open high-speed direct Internet routes between the US and mainland China. The new undersea cable, called the Trans-Pacific Express (TPE), uses the latest optical technology to provide greater capacity and higher speeds to meet the dramatic increase in demand for IP, data and voice communications in the Asia–Pacific region. We have also announced another major submarine cable build called the Europe India Gateway (EIG) cable. Completed in 2010, the EIG provides multinational customers with high–speed routes that connect the United Kingdom and India and that support next–generation IP applications. As a leader in global mesh networks, we are the first to offer seven–way trans–oceanic mesh diversity across the Pacific and Atlantic oceans. Meshing provides alternate paths for rerouting traffic in the event of a cable cut or other disruption. When a service interruption occurs and meshing is needed, the equipment housed in network buildings on land allows the rerouting of voice and data traffic within 50 to 100 milliseconds. Verizon is a tier 1 provider with a global reach. With its use of regional AS for management and MPLS traffic optimization, which extends to a across the globe, Verizon's global network continues to serve the Internet with the greatest number of Autonomous System (AS) network connections of any IP network, playing a critical role in the movement of Internet traffic. We are noted by many researchers as the most connected network in the world. This means that our clients do not need to reach peering points, public or private, to quickly communicate with clients or business partners. Our reach provides you with optimized, lower latency connectivity to your clients. In addition, Verizon's Internet backbone architecture is designed to be extremely fault–tolerant. All nodes are interconnected via multiple, redundant, high–speed links. Verizon's backbone links terminate into both Juniper (M160 and M40) Label Switch Routers (10 Gbps) and ATM switches from Marconi (formerly FORE Systems) at speeds up to OC–48 (2.5 Gbps). These backbone routing and switch platforms offer numerous high–availability features, such as redundant power supplies and CPUs. Our network design specifies that ATM switches and backbone routers are to be cross-connected to each other in each hub. This allows for switch and router backup and redundant connections to transit and metro networks, in case a failure occurs. Our use of MPLS traffic engineering infrastructure allows the same redundancy while eliminating redundant ATM equipment, allowing us to run backbone circuits using Packet over SONET (POS) at speeds of up to OC-192 and provide higher levels of availability guarantee's to our clients. We continue to invest in our facilities-based strategy to deliver the performance and reach to meet customer needs, from small business to enterprise to government to wholesale market segments of ISPs and leading content providers.

4. *Fixed and Burstable Dedicated Internet Service*

Provide a list of the fixed bandwidth and burstable port speeds available, up to and including 1Gbps. What are the available methodologies for computing and billing burstable usage?

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Port speeds and bandwidth options available are provided in Appendix A. The Burstable Internet service provide the maximum billing flexibility for Internet customers whose bandwidth needs vary from day-to-day or month-to-month. The customer has the ability to burst to the full line speed of the provisioned service at all times but their monthly invoice will be determined by calculating the 95th percentile on the usage samples collected during the month. **95th Percentile Methodology for Determining Sustained Utilization** Verizon determines the customer's sustained usage by collecting samples every five minutes from the Verizon IP router that terminates the customer's connection. Both the inbound and outbound traffic are sampled every five minutes and stored in a database in separate arrays. At the end of the month the inbound and outbound samples are each sorted from lowest to highest and the P95 median is calculated by eliminating the top five percent of the samples (432 samples or 1.5 days of data). The next highest sample (433rd) represents the P95 utilization. Once the P95 is determined for both the inbound and outbound traffic, the higher of the two is chosen and used to determine the customer's billing tier. For example, every five minutes a sample is taken from the customer's interface. ▪ Inbound – 10:00 a.m. = 1000 bytes ▪ Inbound – 10:05 a.m. = 1500 bytes The difference between the two samples is determined (500 bytes) and is then multiplied by 8 to determine the number of bits. ▪ 500 x 8 = 4000 bits 4,000 bits is the total usage over the entire five-minute sampling window and it is this sum that is averaged out. The 4000 bits is divided by 300 (seconds in a five-minute sample). ▪ 4000 (bits)/300 (sec) = 13.3 bits/sec 13.3 bits/sec is the value that is stored for the inbound five-minute sample. The same process is followed for the outbound traffic. The five-minute samples are stored in two separate data arrays for inbound and outbound. For a 30-day month, there should be 8,640 samples (5 minute samples = 12 samples/hour = 288 samples/day = 8,640 samples/month). At the end of the month, the samples are sorted from lowest to highest and the top five percent are removed (432 samples = 36 hours/1.5 days of data). The higher of the inbound and outbound arrays is used to determine the Burstable-billing tier.

5. *Internet Security*

Describe how and to what extent Supplier will support VITA in Trap and Trace assistance when VITA is experiencing a network attack or fraud that is affecting Internet service performance including, but not limited to, the following attacks:

- ***Denial Of Service and Directed DOS***
- ***IP spoofing***
- ***Illegal and VITA-policy-defined unacceptable use of VITA's ISP connection.***

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Verizon's IP network offers customers high–quality performance as well as multiple levels of data security. To protect its network, Verizon uses a combination of traditional defense in depth approaches, along with perimeter security approaches. Verizon implements many layers of security, including physical, perimeter, host–based, personnel, and procedural security. The security of Verizon's IP network is critical to both Verizon and its customers, and Verizon's Information Security Group is devoted to maintaining that security. Verizon's security staff includes engineers with extensive backgrounds in computer security policy and implementation. These organizations maintain the proper levels of protection on the Verizon IP network, ensuring that all new projects and products comply with Verizon's rigid security standards and procedures. This group's knowledge of the necessary technologies, and its relationships with the FBI, CERT, Secret Service, and other agencies, allow them to achieve this goal. Within the Service and Support Manual for our customers there are phone numbers for the Worldwide Service Center (WSC). When you place the call, just select the Internet option, and tell them you believe that you are experiencing a DDoS attack on a Verizon provided Internet link. The WSC will then engage our Internet Abuse Investigations (IAI) team. They will drive the process of determining the sources of the attack and the best methods of mitigation. The charter of this team includes traditional treats such as Spam, Denial of Service (DoS) Attacks, Hacking / Cracking, Child Pornography, and Viruses. As well they also handle newer threats such as Phishing, Malware and P2P abuse. Because they handle thousands of cases per month, they are extremely experienced and well trained to assist you. **Recommendations** The following are in the order of preference. Items 1 and 2 apply regardless of specific detection and mitigation options selected by the enterprise. ▪ Any time a company detects or suspects that a DDoS attack has been launched against the organization's address space on a Verizon provided Internet connection, the enterprise IT staff should contact the Verizon SOC and their local security engineer. The SOC or engineer will assist in engaging the Verizon Internet Abuse Investigations Department.

Comply (Yes/No)	Explanation/Description
	This organization is chartered with investigating and responding to a wide range of Internet fraud and abuse issues including the following: Spam (UCE) Complaints, USENET News Complaints, Denial of Service (DoS) Attacks, Phishing, Theft of Service, Criminal and Civil Subpoenas, Bomb, Death, Suicide Threats, Copyright, Credit Fraud, Threats, Harassment Issues, Child Pornography / Child Endangerment, Hacking / Cracking, Break–ins (Attempted Break–ins); Court Testimony and Enforcement of the Verizon Acceptable Usage Policy. This team interoperates with Verizon internal network operations as well as other ISPs and law enforcement. ▪ **Implement internal IPS systems to protect key servers from attack.** The IPS platform should be in–line and placed as close as practical to the servers to be protected. Although such devices would provide some host and service level DDoS protection, the primary function is to protect against the myriad of other attack types that are not DDoS related and are within the acceptable protocol filters passed by the firewall. Tipping Point, Checkpoint, Juniper and McAfee all provide suitable platforms. Although technological advances cause the technology lead to change hands from year to year, as of this writing Verizon research indicates Tipping Point to have the strongest product offering in the IPS market space. **Detection Recommendations** ▪ **Primary Recommendation.** Implement detection at the network level to provide the most robust detection capability and survivability. This solution will also provide advanced reporting on link utilization by protocol and address for trend analysis, recognition of pre–attack patterns and capacity planning. ▪ **Secondary Recommendation.** As a second alternative to option (a) above, the organization could install one or more IPS systems in–line with the Internet links. This solution would provide a limited degree of immediate DDoS protection as well as providing notification that some form of attack is under way. Netflow collection and analysis cannot be recommended without investigation regarding the enterprise's edge router configuration and utilization. **Mitigation Recommendations** ▪ **Primary Recommendation.** Implement mitigation at the network level to provide the most robust mitigation capability and survivability. ▪ **Secondary Recommendation.** As a second alternative to option (a) above, the enterprise could install one or more IPS systems in–line with the Internet links.

6. *Internet Usage Reporting*

VITA is interested in understanding Supplier's Internet usage reporting capabilities. Supplier should respond to the following requirements in order to present the capabilities of its internet service in this area. VITA does not expect to incur any additional charges for the Internet usage reporting that Supplier would provide.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	IP Global Utilization Statistics (IGUS) is a reporting application that reports on various usage statistics for select Verizon Internet Dedicated Access products. This application enables the sales teams and customers to interactively view the statistics and see the usage trends. Information gained from IGUS can be used to identify high bandwidth sites in need of bandwidth upgrades. Features include: ▪ Searching for sites by common attributes such as Line Type and Site Type ▪ Drill–down options to present detailed data on specific data points ▪ Colorful data identification for easy interpretation of data ▪ Site statistics for easy comparison in relation to location ▪ Customizable data reports and trending analysis ▪ Indicators that identify over–utilized sites ▪ Ability to download data in a .csv format for additional analysis ▪ Warehouse of Internet Dedicated circuit outage tickets See the Internet Global Utilization Statistics (IGUS) User Guide included in Appendix 1 of this proposal for more information.

7. *Internet Usage Reports Provided*

VITA would like the Supplier to provide the following Internet usage reports:

- ***Summary and detailed automated web based (exportable) Internet usage reports that meet requirements (i.e., USERID, port, protocol, source IP address, destination site and IP address, number of visits, date and time).***
- ***An efficient, cost-effective, flexible, centralized, enterprise level data collection and reporting tool with historical search capabilities for tracking Internet usage and access traffic patterns.***
- ***Real-time Internet usage reporting.***

Provide sample detailed and summary reports with pictures or snapshots.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	See the attached Internet Global Utilization Statistics (IGUS) User Guide for more information and sample reports in Appendix 1.

8. Statewide Availability

Confirm that the Supplier's Internet services as proposed are available statewide. If there are any locations in the Appendix A "Dedicated Internet" or "NetworkVirginia" worksheets to which Supplier has not proposed to provide its Internet services, list such locations/exceptions.

Comply (Yes/No)	Explanation/Description
Yes	

E. Private Lines

VITA currently employs point-to-point private line services for certain applications. Refer to Appendix A for the private line inventory.

1. Supplier Private Line Services

Provide the following information in connection with its private line offer (both interexchange and local/metropolitan):

- ***Digital and analog capabilities;***
- ***A comprehensive list of bandwidths available, including OCx and wide-area Ethernet speeds;***
- ***Redundancy and diversity options;***
- ***Current capacity and available bandwidth over the Supplier's private line backbone, as well as plans to increase this capacity over the next 12 months;***
- ***Pricing methodologies (VITA desires flat-rate by speed versus mileage-sensitive).***

Any variation in the Supplier's capabilities by geography should be clearly stated.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Our solutions include: ▪ **U.S. Private Line (USPL) Service.** Provides point-to-point connectivity for Fractional DS-1, DS-1, and DS-3 speeds. DS-3 Service is offered either as linear or restorable (physically diverse). These services are provided with digital handoffs. Verizon currently offers USPL DS0 service. However, DS0 service is scheduled to become grandfathered (no moves, adds, or changes) during the 4th quarter of 2013 with a product decommissioning after 2015. Verizon continuously reviews and assesses our network and services to ensure we offer our customers the latest technology and solutions. These reviews have identified that DS0 level circuits will become increasingly difficult to support – primarily due to aging equipment – in a world class manner going forward. VITA has one DS0 private line circuit between Richmond and Atlanta (Appendix A, Private Line, Reference 1). Verizon will work with VITA to transition this circuit to an alternate service before decommissioning or final expiration of the current COVANET agreement.

Comply (Yes/No)	Explanation/Description
	▪ **U.S. Private Line SONET Service.** Provides high quality point-to-point interLATA communications service with an optical handoff over SONET self-healing ring technology. Available speeds range from OC-3 to OC-192, and the service is available with concatenation (full bandwidth) or channelized handoffs to the customer. Circuits are available as restorable or non-restorable. ▪ **U.S. Wavelength Service:** Provides ultra-high-speed, dedicated bandwidth customer solutions designed and priced on a custom basis at speeds of 2.5, 10 and 40 Gbps with plans for 100 Gbps speeds in the near future. Diversity options are available on a custom basis. ▪ **Ethernet Private Line Service:** Utilizes Ethernet over SONET technology to provide dedicated point-to-point Ethernet connectivity between two locations. EPL circuits are available in the US at the following speeds: 10 Mbps, 50 Mbps, 100 Mbps, 150 Mbps, 300 Mbps, 450 Mbps, 600 Mbps, and 1 Gbps. Ethernet Private Line provides UNI card and UNI device diversity at the customer location, but does not currently provide geographic diversity. Under normal growth patterns, the Verizon backbone will have available capacity to meet routine customer demands. As a general rule of thumb, transport capacity is monitored and augmented based upon trended growth, utilization models, and customer forecasts. Portions of the network in Virginia are currently being expanded which may delay the ability to provide high bandwidth services in the immediate future. Ultra Long Haul (ULH) network projects currently in progress will provide expanded bandwidth and increased diversity in Virginia and other areas. We are also developing a new POP in the Culpeper area to provide increased capability in that region. US Private Line and Wavelength Services are available at locations in the contiguous 48 states with suitable local access facilities for the requested speed. Ethernet Private Line Service is available at locations with suitable local access facilities within the Verizon ILEC local access footprint and locations directly served by the MCI Legacy Company-owned network. Please see the Private Line worksheet (Section 2) in Appendix A for the details of Verizon's pricing methodology.

2. Back-Up Service Options

Provide specifics regarding restoration options (protection capability for both Private Line IOC and access) in the event of a circuit outage.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	US Private Line SONET Service is always provisioned using SONET at Layer 1 (Physical Layer) in the access and IOC portions of the circuit. However, unless otherwise specified, the "working" and "protect" legs of the circuit are not guaranteed to be physically diverse. This protects against a single card failure, but does not protect against a Layer 1 problem such as a fiber cut. Physical diversity can be added to these circuits on a custom basis. US Private Line Service at the DS3 level can be designed with equipment and/or geographic diversity (access and/or IOC). US Wavelength Service can also be designed with these same levels of protection depending on the facilities serving a specific location. Ethernet Private Line Service maps Ethernet data into various SONET payloads. However, as noted above, this does not guarantee physical diversity. Physical diversity with Ethernet Private Line Service is not available at this time.

3. Statewide Availability

Confirm that the Supplier's Private Line services as proposed are available statewide. If there are any locations in the Appendix A "Private Line" worksheet to which Supplier has not proposed to provide its Private Line services, list such locations/exceptions.

Comply (Yes/No)	Explanation/Description
Yes	Service is available at the locations and speeds noted in the Appendix A "Private Line" worksheet. General availability is available as noted in the response to Question 1 above.

F. Long Distance Voice Services

VITA currently supports approximately 131 million minutes of toll-free and outbound dedicated and switched long distance services each year to support communications for its variety of operations.

Larger sites use dedicated T1 facilities, often multiple circuits for a single location, to access the virtual voice and toll-free networks. These sites frequently use the same facilities for both outbound and toll-free services. VITA requires the ability to have multiple T1 facilities in combinations of several trunk groups.

Many of the dedicated access lines are employed for shared dedicated access to Centrex. They are also likely to be employed for SIP Trunking if VITA moves in that direction.

1. *Inbound Toll-Free Service*

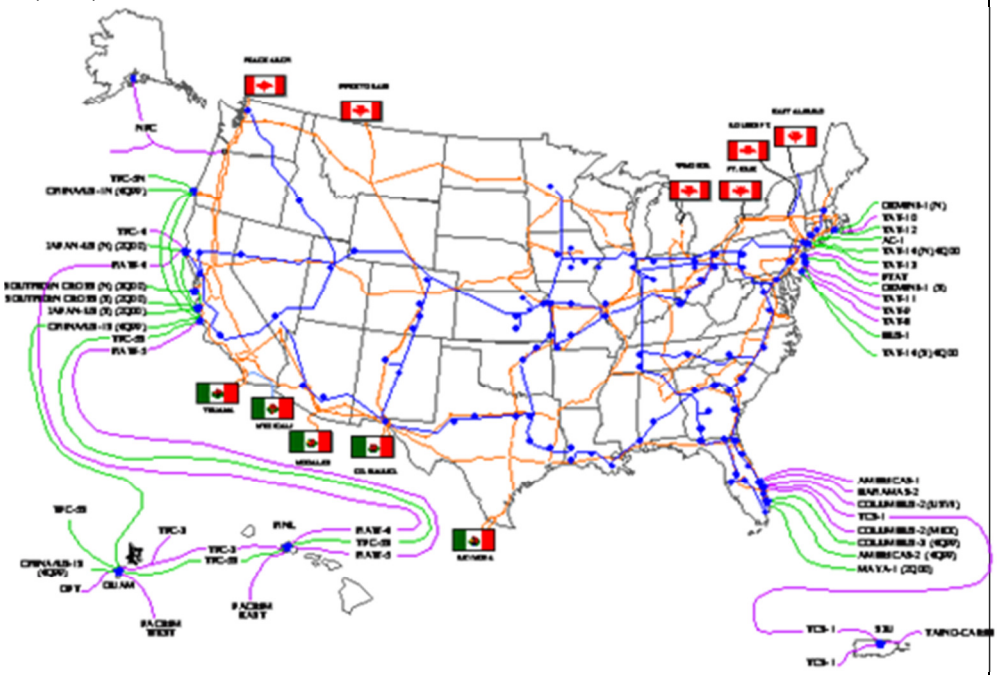
VITA currently generates approximately 50 million minutes of inbound toll-free services each year. The demand set for these services is detailed in Appendix A.

The Supplier should briefly describe its toll-free transport service capabilities, including:

- ***Terminating access methods***
- ***Overflow to other toll-free trunk subgroups***
- ***Call-by-call selection / ISDN Primary Rate Interface***
- ***Automatic number identification (ANI)***
- ***Dialed number identification service (DNIS)***
- ***Routing on terminating busy signal or no answer to another toll-free dedicated or switched access location***

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	**Inbound Toll Free Service Network Architecture** The entire Verizon network is digital and the entire network backbone is composed of fiber-optic cables and supporting network elements. In fact, over 99% of the traffic on Verizon's network travels over fiber-optic equipment. This is supplemented and backed up by digital radio equipment, giving a mixture of transmission media that the National Research Council has recommended for improving network reliability. Verizon has a three-level switching hierarchy consisting of Class 1, Class 3, and Class 5 switches. Class 3 switches serve a region or metropolitan area, receive calls from and deliver calls to local Bell operating companies (BOCs), support "Feature Group D" service, and route calls to other Class 3 or Class 1 switches. Class 1 switches (also known as tandem switches) determine the concentration of call traffic over the network and route calls to other Class 1 or Class 3 switches. Class 5 switches are local class switches. The network communications layer of Verizon's network performs signaling through the Common Channel Signaling Network. This signaling network uses Signaling System 7 protocols and is known as CCS7. Verizon has five mated pairs of signal transfer points (STPs) located around the country. They handle two CCS7 functions within the Verizon network. One function is to inquire about and carry routing instructions. The second function is to provide "look-ahead" routing to setup call paths. Each network switch is connected to at least two signal transfer points, and the signal transfer points are interconnected by multiple links. During the busiest hour, each STP runs at only 40 percent of capacity. One STP is easily capable of handling the functions of its mate in the unlikely event of a STP failure. This redundancy ensures that STPs will always be available to perform routing functions. The STPs are interconnected in a mesh architecture so that any single failure of the backbone facilities will not isolate any network component. Every switch contains redundant CCS7 hardware that is diversely connected to at least two

Comply (Yes/No)	Explanation/Description
	STPs in order that any one switch cannot be isolated. Each STP has fully redundant processors throughout the platform and the capacity to upgrade software in Split Mode while still online in the network. The STPs are connected by redundant data C (connecting) links. The STPs are connected to the other STPs with B (bridging) links. The Service Switching Points (SSPs) are connected to the STPs by A (access) links. Verizon STPs are connected to the Local Exchange Carrier (LEC) STPs by D (data) links.  *U.S. Network Architecture* **Terminating Access Methods** Our Toll Free service is designed for single- or multi-location users of incoming toll free calls and can be provided with either switched or dedicated access including Switched Termination/POTS line, Dedicated Termination/T1 or PRI, and Local termination. Our toll free service is available for intrastate and interstate calling. We offer the following termination features: ▪ Direct Termination Overflow/Network Call Redirect ▪ Dialed Number ID Service (DNIS) ▪ Enhanced Dialed Number ID Service (EDNIS) ▪ Real Time ANI ▪ Disconnect Message Referral **Automatic Number Identification (ANI)** This feature allows an inbound service customer to receive the working number of the calling party as part of the call setup. The working telephone number is commonly referred to as Automatic Number Identification or ANI. ANI is a subscription option available on both in-band (Multi-Frequency [MF] and

Comply (Yes/No)	Explanation/Description
	Dual Tone Multi-Frequency [DTMF]) and out-of-band (ISDN PRI). **Dialed Number Identification Service (DNIS)** This feature permits a location with multiple inbound service telephone numbers terminating in the same location to identify the specific toll free number which was dialed by the calling party. DNIS is available to Dedicated terminations only. **Network Call Redirect** Network Call Redirect (NCR) is an advanced toll free feature that redirects calls to other pre-defined alternate locations during outages, busy conditions, or when agents are not present to handle calls. Alternate destinations can be network announcements or other customer locations. A network manager has an unlimited number of choices of why, where and how to overflow calls based on trunk group, type of service (both inbound and outbound) or individual toll free number. NCR is allowed on both switched and dedicated terminations. NCR allows the customer to overflow calls if no one is available to answer the call. The customer has the ability to determine how long a caller will listen to a ring before the call is overflowed to an alternate location. The customer can set the ring no answer timer from anywhere from 1 second to 4 minutes. NCR allows us to offer a superior grade of service, since Network Call Redirect allows calls to overflow around network failures such as a fiber cut or a tandem switch failure. NCR works with Real-Time Restoration (RTR) and other rerouting capabilities. **ISDN Primary Rate Interface (PRI)/Call-by-Call Selection** PRI uses the ISDN architecture and has a bandwidth of 1.536 Mbps for communication to the customer's premises. There are 2 kinds of channels in ISDN-PRI. ▪ B Channels - full 64 kbps, free of call set-up signaling, for use in voice and switched data transmission ▪ D Channel - control signaling functions Based on the customer's equipment and business needs, the customer may select an appropriate PRI arrangement from the following options: ▪ 23 B Channels + 1 D Channel ▪ 23 B Channels + 1 Back-up D Channel ▪ 24 B Channels The Call-by-Call Service Configuration allows the B channels within a PRI to be shared between services subscribed to on the PRI – for example outbound service and inbound toll free.

a. ***Toll-Free Routing Capabilities***

List and briefly describe all routing features available with the Supplier's toll-free service offering, including but not limited to:

- ***Routing by percentage allocation between locations***
- ***Routing by time-of-day or day-of-week***
- ***Routing by area code, exchange, or individual 10-digit number (ANI)***

- ***The ability to block calls based on area code, exchange or individual 10-digit number (ANI)***
- ***The ability to share a single termination point across multiple toll-free numbers, and to make changes to the termination that will automatically apply to every toll-free number associated with it***
- ***Pre-defined, selectable routing plans that can be defined to operate on multiple toll-free numbers as a group***
- ***The ability to define a set of terminations, which will be attempted in sequence if the preceding termination is busy, until the call can be successfully terminated (routing to next available termination)***
- ***The ability to build, modify or delete each of the above routing specifications in real time***

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	**Advanced Features** Verizon Advanced Features for inbound can significantly increase the business functionality of Verizon Toll Free Service. Advanced Features are designed to tailor Verizon Toll Free Service to meet your requirements. Advanced features fall into three general classifications: ▪ Origination Features ▪ Routing Features ▪ Termination Features **Origination Features** Origination features allow customers to direct incoming traffic to the appropriate location based on characteristics of the call's origin. VITA will decrease the amount of time callers wait to reach the appropriate callers, while also cutting call duration and time wasted by manual direction of traffic. **Extended Call Coverage** Verizon's basic Toll Free service includes the 48 continental United States, Hawaii, Alaska, Puerto Rico, Guam, Saipan, and U.S. Virgin Islands. Extended call coverage provides availability from additional area(s) at no extra charge. Canada is the only area considered an Extended Call Coverage option. Extended Call Coverage utilizes your same Toll Free number and existing termination(s), while expanding your customer's market coverage to include Canada (any subset of 17 Canadian Area Codes). **Point of Call Routing – State Routing/NPA/NXX Routing** With Point of Call Routing, VITA can control which network location will receive calls based upon originating NPA or state (including areas served by extended call coverage). VITA establishes Originating Routing Groups (ORGs) and designates a specific answering location for each ORG's calls. This feature is generally useful when multiple locations are used to simultaneously terminate calls directed to a single Toll Free number. The answering location need not be in the originating calling area. Point of Call Routing can be used in combination with Direct Number Identification Service

Comply (Yes/No)	Explanation/Description
	(DNIS) to identify originating calling locations on a single Toll Free number. **Area Code Routing/NPA Routing** Area Code routing is the classical origination feature that allows you to route inbound Toll Free calls based on the three-digit North American area code from which a call is placed. Using Area Code routing, you can, for example, tailor routing plans to selectively block inbound Toll Free calls from area codes that do not fall within your service area. **Exchange Routing** Exchange Routing takes Point of Call Routing an extra step by allowing VITA to route calls not only by the area code and state, but also by the exchange of the originating call. The call originating from NPA-NXX-XXXX is routed based on the full six digits comprising the NPA-NXX. This feature allows VITA to provide even more customization to call disposition by differentiating calls originating from within the same area code. **State Routing (STA)** State routing allows you to route inbound Toll Free calls based on the state from which a call is placed. You can, for example, using STA routing to tailor routing plans to route Toll Free calls from outside Virginia to a specific call center. **Geographic or Country of Origin Routing** Geographic or Country of Origin Routing provides the ability to define routing options based on the call's country of origin. Geographic regions used for routing are customer-defined and allow the customer to route based on originating country codes. Routing occurs by country or a group of multiple countries. This feature allows the User to define a Geographic Region by selecting the Country Codes to be included in the region. **Prefix Routing (PFX)** Prefix Routing allows you to route inbound Toll Free calls based on country code and city code prefix digits. Using PFX routing, you can, for example, tailor routing plans to route Toll Free calls from specific locations within a country to their nearest service centers. **Calling Line Identifier (CLI)** CLI allows you to route inbound Toll Free calls based on an originating telephone number. You can, for example, use CLI to tailor routing plans to accommodate special customer arrangements with specific clients. **Calling Line Identifier Range (CLR)** CLR allows you to route inbound Toll Free calls based upon an originating telephone number falling within a specific range of telephone numbers. You can, for example, use CLR to tailor routing plans to accommodate special customer arrangements with large organizations that have consecutively sequenced telephone numbers. **LATA Routing (Local Access and Transport Area)**

Comply (Yes/No)	Explanation/Description
	LATA routing allows you to route inbound Toll Free calls based on the Local Access and Transport Area (LATA) from which a call is placed. You can, for example, use LATA routing to tailor routing plans to reroute inbound Toll Free calls originating from and terminating in areas serviced by your LEC. **Origination Line Type (OLT)** OLT routing allows you to route inbound Toll Free calls based on the type of phone line from which a call is placed. You can, for example, use OLT routing to tailor routing plans to selectively block calls placed from pay phones or prisons. **Cross Corporate ID Routing** Cross Corporate ID Routing allows you to route inbound calls to any answering location and thus use your facilities more efficiently. The location need not share the same Corporate ID as the 800 number. (A Corporate ID is an identifier that links Toll Free numbers and service locations (terminations) together in Verizon's internal systems.) Cross Corporate ID routing allows VITA to use service bureaus as "second locations" to answer overflow, off-peak, or promotional calls without setting up separate facilities. **Tailored Call Coverage** This feature allows a customer to block incoming calls from specific origination areas. It is available in Canada on a NPA/NXX basis only. It is not available for overseas originations. The following criteria define the capabilities and limitations. The blocked areas are defined by one of the following: ▪ Area Code or NPA ▪ NPA/NXX For example, a company in New York may only be interested in receiving calls from specific cities in Canada. Calls from any other area would be blocked. Anyone calling from a blocked area would hear the message: "This 800 number cannot be reached from your calling area." Unlike banding features, Verizon Tailored Call Coverage allows customers to designate the areas from which they wish to receive calls, down to the NPA/NXX level, thereby paying for only those calls that they want to. Tailored Call Coverage can be used regardless of the number of the customer's locations. This service can be used in conjunction with the following routing options, which are explained in the following section, "Routing Features." ▪ Time Interval Routing ▪ Day of Week Routing ▪ Holiday Routing ▪ Percent Allocation Routing ▪ Alternate Routing **Routing Features** Verizon Toll Free Service Routing Features allows customers to direct incoming traffic in ways that most effectively utilize their answering resources. VITA may select from any of the various options listed below to find one that meets your

Comply (Yes/No)	Explanation/Description
	needs and schedules. **Time Interval Routing\Time of Day (TOD)** Time Interval Routing routes a Toll Free number's incoming call traffic to different locations according to the time of day the call is made. This capability helps you utilize your staff most effectively and thereby save money. You simply establish a schedule that provides a route for completing all calls during all time periods of the day. Time period intervals begin and end in five-minute increments. A maximum of 48 time slots per day are allowed. **Day of Week Routing (DOW)** This feature will route calls to different locations depending on which day of the week the call is made. Like Time of Day Routing, Day of Week Routing is designed to help you reduce overhead and to better control internal operations. You simply establish a schedule that provides a route for completing all calls for each day of the week. A different routing arrangement may be chosen for each day. **Holiday or Day of Month/Year Routing (DOM/DOY)** Holiday Routing directs calls to different locations on specified holidays or for specified ranges of days. You simply subscribe to Day of Month/Year Routing and route holiday calls the same way calls are routed for Day of Week Routing. **Percent Allocation Routing (PCT)** Helps prevent call overload at any one location by distributing calls on a percentage basis chosen by VITA. This feature allows you to route calls for a single toll free number to two or more answering locations based upon the percentage distribution you designate. **Dialed number identification service (DNIS)** This feature permits a location with multiple inbound service telephone numbers terminating in the same location to identify the specific toll free number which was dialed by the calling party. DNIS is available to Dedicated terminations only. **Network Call Redirect (NCR)** NCR, described in the previous question, provides the ability to specify routing options for busies, overflows and ring no answers. **Network Manager** Network Manager is a Web-based application that gives you a view of your toll-free network routing data as well as the capability to make quick changes to routing plans. You can examine current routing plans and customize their features on a near real-time basis. Thus, you can manage your toll-free network configurations by routing inbound traffic, enabling a quick response to disasters and changing business needs. Network Manager also enables VITA to proactively build alternate plans and activate them in emergencies. Customers who subscribe to Network Manager will not incur feature related change or cancellation charges.

b. Toll-Free Announcement Capabilities

List and briefly describe all announcement features available with the Supplier's toll-free service offering, including but not limited to:

- ***Menu-based announcements and routing with caller prompted for touchtone digits***
- ***Menu-based announcements and routing with caller prompted for spoken digits***
- ***En-route announcements***
- ***The ability to share the same network announcement across different toll-free numbers and have a single announcement storage charge***
- ***Terminating network announcements (courtesy announcement), for both redirecting callers, as well as for an out-of-service toll-free number***
- ***The ability of a caller to return to the beginning of a menu prompt sequence at any time during a call***
- ***The ability for VITA to select the same voice for all VITA announcements***
- ***The ability for VITA to supply pre-recorded announcements to be loaded into Supplier's network, including supported formats and media***
- ***The ability for VITA to securely dial into Supplier's network and record announcements for real-time loading into the network***

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	**Toll-Free Enhanced Call Routing – Announcement Capabilities** Enhanced Call Routing (ECR) is a network-based voice response system that provides a flexible and customized solution to put callers in touch with the right agent the first time they call. ECR is scalable, adapting to applications from simple menu routing to complex systems that require the more advanced features. An endless variety of feature combinations is available to make sophisticated, unique business solutions. ECR relies on a host of information to determine the best routing pattern for the customer's call. It looks at any combination of the caller's menu choices, originating ANI, time-of-day, database information, and caller-entered digits to determine the appropriate call destination. ECR permits convenient call transferring between departments and company locations, allowing communication with the customer's database for advanced applications that provide customer-specific information. ECR's features can be used in numerous combinations and in conjunction with a variety of advanced toll-free features to provide a customized routing solution. Each application is designed to meet the customer's specifications and business needs. There is no end to the variety. **Announced Connect** Sometimes referred to as "whisper," Announced Connect provides a customized message to the called party before the caller is connected. This alerts the called party with certain information about the caller (i.e., account number or any other information entered through Caller Entered digits).

Comply (Yes/No)	Explanation/Description
	Announced Connect can also alert the called party to the nature of the call, and can allow pre-access of customer/caller records or other information. This eliminates the need for the caller to restate the reason for the call. The caller is on hold, usually listening to music, while the Announced Connect message is played to the called party. Standard Announced Connect messages (tone and incoming ECR call) are supported without the Announced Connect feature (no customer charge). **Automated Speech Recognition (ASR)** ASR allows the caller to speak the option/menu choices they want, instead of using DTMF. Directed Dialog applications can support Yes/No prompts for a positive or negative response, recognize/process a string of up to 20 digits, and a voice menu that supports a list of 20-25 menu items. An install charge and monthly recurring charge are required. Natural Language Speech Recognition allows callers to speak in a more natural way to the application, with the application recognizing and processing full phrases. Custom development is required for Natural Language applications, and requires engineering charges for application development, set up, testing, and application tuning. An install charge and monthly recurring charge are required. ASR applications require a 90 - 120 day development/testing cycle. **Busy/No Answer Rerouting (BNAR)** If a call reaches a busy signal or is not answered within a specified number of rings, BNAR automatically reroutes the call to a pre-specified alternate location or to a recording. This is done behind the scenes so the caller is unaware that the line, for example, is busy. This feature is built into the ECR application and is charged only when used. Any alternate termination may be used, and can be changed in real-time by pointing the hidden toll-free number to a different termination. Busy/No Answer Rerouting can be used a maximum of six times per termination. Exceptions may be offered on a limited basis. **Caller GiveBack/TakeBack** Caller GiveBack/TakeBack allows a caller to return to the ECR menu to make additional call routing selections, or to access "hidden" menus not available during the initial selection process. Either the answering agent (GiveBack) or the caller (TakeBack) enters predefined digits (*plus one or two digits) and the caller is returned to the menu. By using Caller TakeBack, callers can maneuver themselves through various routing options without the need to hang up and redial. **Customized Call Records (CCRs)** CCRs are ASCII text records in a comma-delimited format that contain information about each call that ECR answers. CCRs let customers create custom reports on ECR call statistics. Some of the information available in CCRs includes the following: ▪ Date and time of the call ▪ Call duration

Comply (Yes/No)	Explanation/Description
	▪ Outdial attempts (including outdial sequence number, length of time outdialed party spoke to the caller, and the reason the outdial terminated, i.e., the caller hung up, transferred or received a busy signal). CCRs are available in the following increments: ▪ Next day via e-mail (daily) ▪ Weekly via e-mail within two days of weeks end ▪ Monthly via e-mail within two days of month's end **Dealer Connect (an application of Database Routing)** Dealer Connect is a special Standard Database application that routes each caller to his or her nearest store or dealer. A special database is created based on either ANI, which is automatically passed through with the call, or zip code, which the caller will have to enter. Maps are available from local phone companies that show the nearest destinations by car. There is no extra charge for Dealer Connect. The regular installation and recurring charges apply and the database lookup is charged as any other database lookup. **Enhanced Reporting (customized)** Enhanced Reporting is a robust tool that allows faster access to ECR data. Customers can choose either FTP delivery or a Web interface to view their ECR Report Data. The Web option includes a Brio interface that allows on-demand web interface, report scheduling, Graphical Report Builder, and analytical tools. **HostConnect** HostConnect is a feature of Hosted IVR - Enhanced Call Routing that provides communication between our in-network IVR platforms and out-of-network customer resources. HostConnect enables Verizon hosted IVRs to retrieve and update data located on a customer's host system (web service, website, database, mainframe, or API) via multiple protocols (ODBC, TN3270, XML, SOAP, HTML, and MQ). Information retrieved from the customer's system can be announced to the caller, and/or be used in subsequent routing of the call. Customers using HostConnect are able to use any of the other available features on ECR, including ASR (Automatic Speech Recognition). HostConnect enables Verizon customers to bring people and information together by integrating voice applications with dynamic data, improving efficiencies and providing better access to information. Due to the increasing need for contact centers to optimize their resources and enhance customer service, organizations are searching for alternate ways to provide routine information to callers in a quick, inexpensive manner. By enabling callers to retrieve information from customer databases via self-service applications, HostConnect provides the following benefits: ▪ Automates labor-intensive/repetitive processes such as claim status, order tracking, and stock quotes ▪ Improves productivity by offloading routine tasks, allowing agents to focus on complex customer issues that require human intervention

Comply (Yes/No)	Explanation/Description
	▪ Provides 24x7 access to information, even if contact center is not staffed around the clock ▪ Reduces caller time in queue particularly during busy hours resulting in both lower costs, fewer abandoned calls, and improved customer satisfaction Connectivity from the Verizon IDN (i.e. HostConnect) to a customer host system can be facilitated via PIP/MPLS, IP Sec Tunnel, or the Internet. **ICR Integration and Intelligent Queuing** ICR Integration is available to customers with pre-certified Intelligent Call Routers (ICR). With ICR Integration, one or more enterprise ICRs can be interfaced with the Next Generation Service Node (NGSN) to permit the ICR to control NGSN call treatment, thus extending enterprise specific call treatment into the Verizon intelligent call network. This feature provides many of the existing features of ECR and their associated benefits, plus the enhanced features and benefits of the enterprise ICR. ICR Integration is a prerequisite for Intelligent Queuing (in-network parking). ICR Integration call treatment capabilities may include: ▪ Third-Party Call Control/Call interrupt ▪ Out-of-Band signaling ▪ Dynamic Messaging (Constructed Messages) ▪ Dynamic Data Exchange (DDE) ▪ Personalized Call Treatments ▪ Carrier-grade Computer Telephony Integration (CTI) ▪ Intelligent Queuing (in-network call parking) ▪ Blind Network Call Transfer (BNCT) with Optional Release-Link-Trunk (RLT) ▪ Attended Network Call Transfer (ANCT) with Optional RLT ▪ Conference Network Call Transfer (CNCT) capabilities **Menu Routing** When a toll-free number is dialed, the caller hears a welcome announcement and is provided with a menu to route the call. Menu Routing enables callers to choose the path to reach a specific person, department, location, or message announcement. With ECR, you can specify which menu options callers will hear, empowering callers to make routing decisions without the help of a live operator. Menus or messages can be recorded using ECR Voice talent (male or female) with a variety of tones (i.e., business, casual, etc.), or the customer can record his or her own message. ▪ The recording is included in the application installation charge. ▪ There is no monthly storage charge for messages. ▪ Menus are only charged on calls when used. ▪ Only one menu is charged per call, even if more than one menu is used. The caller is prompted to use touchtone keypad input (also known as Dual Tone Multi-Frequency or DTMF) to determine the next action steps, such as

Comply (Yes/No)	Explanation/Description
	"For Sales, Press 1; For Technical Support, Press 2; For all other requests, Press 3." By choosing one of the options, the caller is sent to the appropriate department, call center, or location anywhere in the United States (all 50 states) or Canada (via a toll-free number), or other places in the world (via an International Direct Distance Dialing or IDDD number). In addition, Menu Routing can give callers the option to respond to a series of questions (Survey) before the call is terminated. **Message Announcement** With ECR Message Announcement, the caller hears a pre-recorded promotional or informational messages prior to, during, or after the call is routed to the caller-selected destination. Message Announcement gives customers the ability to provide timely information to their callers. This feature may meet the caller's needs without further routing or providing additional information during call processing. Messages can save the customer money by eliminating the need for a live agent on some calls. VITA can choose the same voice for all announcements if desired. VITA can also supply prerecorded announcements via wav files, ulaw and ADPCM. These files can be uploaded through Network Manager.

If You Choose	Then	Notes
ADPCM	Save file with: type = Dialogic (*.vox) file attributes = ADPCM, 4 bit rate = 8000 Hz, 32 kbps, mono.	Goldwave http://www.goldwave.com recommended.
WAV	Settings: PCM 8.000 kHz 16 bit mono	Sound Recorder recommended.
.ulaw	Save file with type: Raw (*.snd), attributes: ulaw, mono.	Goldwave http://www.goldwave.com recommended. Since Goldwave sets extension to .snd, you need to rename your file with .raw or .64 extension before you upload your audio data.

Network Database Routing

Network Database Routing is similar to Standard Database Routing, but can handle more complex databases. Network Database Routing provides you with the ability to make real-time updates to your own database records.

Using a touchtone phone, you can add, delete, or change application database records such as personal identification numbers, account numbers or zip codes for near real-time changes.

An example of a customer that would benefit from Network Database is one in which account representatives are at different sites every day. Each

Comply (Yes/No)	Explanation/Description
	representative can update the database with his or her current location so callers can always reach them. **Remote Audio Update** Remote Audio Update allows customers to make real-time (within 15 minutes) updates to their audio message that callers hear. Using their assigned ID number and password, customers can dial into their application message and modify or review it. Only 10 messages may be updated at one time through SRAMA [Scheduled Remote Audio Modification Application] on the NGSN Platform. If a customer wishes to update more than 10 messages, they will need to redial the SRAMA access number and proceed with their additional updates. This process allows them to have more control over their application and provides their callers with accurate information in a timely manner. **Standard Database Routing** This feature enables calls to be routed automatically to the appropriate destination. Data fields contain information for use by the call processing application. Examples of data fields are DNIS outdial telephone number, message number, and password. If caller input (via DTMF) is required, messages may be played to the caller as a prompt. An acknowledgement (Thank You) message can be played after digits are entered. The digits entered can be repeated to the caller for verification before attempting to retrieve database information. These messages are included in the database feature charge and are not charged a separate message announcement feature charge. Database Routing should be used if an application utilizes six or more DNIS/Entry points. A Database charge will apply. **Standard Reports** ECR offers seven types of Standard Reports that give summary information on call disposition. They are available daily, weekly, and monthly. The reports include the number of calls the platform answers, the number of calls extended, the duration of each, which hidden toll-free number was dialed, how many extended calls were answered, how many busy signals, and how many calls were not answered, etc. **Survey (DTMF)** ECR Survey allows callers to respond to a series of questions via touchtone (DTMF) input. You can design your own customized survey to gather information on service levels or customer satisfaction. A maximum of 20 questions can be asked, although studies show that the percentage of caller responses drops significantly after five to seven questions. ECR Survey collects DTMF digits only (such as, 1 for yes, 2 for no, and scales from 1 to 5). Since surveys are usually used to get validation on level of service provided by agents, the surveys are a quick and easy way to collect feedback from callers. VITA can choose to send all or a random percentage of callers to the survey. Responses are tallied and summarized in a report to the VITA. Reports containing the results of the survey responses for the specified period of time

Comply (Yes/No)	Explanation/Description
	are available next day, weekly, or monthly via e-mail. **TakeBack and Transfer (TnT)** This popular feature allows the called party to transfer a call to another location. If a company has one location that provides first-level technical support, an agent can transfer their caller to another agent group for second-level support. This cost-effective way of transferring calls releases the circuit immediately after transfer, while requiring no CPE. It gives the caller control over moving between locations, departments, or countries without the need to hang up and redial. ▪ TnT is an ECR feature that is ordered with the application. ▪ TnT can be invoked either by a person or by a VRU. ▪ Transfers are done with speed dialed numbers in a TnT database. The agent or VRU enters "*" and predetermined digits. The database is part of TnT with no additional charge. ▪ DTMF can be transferred along with the call. ▪ When a call is transferring using the TnT feature, no platform time accrues even though the call is actually going through the ECR platform again. The cost of the transfer platform use is included in the TnT feature charge. **TnT Options** ▪ **Attended TnT.** The transferring agent connects with the second agent, announces the call that is being transferred, and then hangs up, which connects the caller with the second agent. ▪ **Unattended TnT.** The first agent hangs up as soon as he enters the transferring digits. When the second agent answers, he is speaking to the caller. ▪ **3-Way TnT.** This is a form of conferencing in which all three people can remain on the phone at the same time, and talk to each other.TnT works with any outdial, Verizon toll-free number, Direct Distance Dialing DDD (NPA/NXX) number, or non-Verizon toll-free number. For non-Verizon toll-free numbers, we continue to bill the owner of the published toll-free number, and the other vendor bills its customer for the transport part of the call, in effect double billing for that part of the call. ▪ **Termination Billing and TnT.** Termination billing is an option for calls that use Verizon toll-free numbers or ECR route plans, to extend the call from the platform. With non-Verizon numbers or DDD numbers the billing must go to the owner of the published toll-free number. ECR offers daily, weekly, or monthly reports at no charge that show how many calls transferred, and also how many calls went to each outdial as the result of a transfer. **Interaction Monitoring** Interaction Monitoring is an ECR feature that can be used by VITA to silently monitor caller interactions with your Network Interactive Voice Response (IVR) call plans, or with the Network IVR and their agents. IVR-Only and IVR-and-Agent Interaction Monitoring are provisioned on the

Comply (Yes/No)	Explanation/Description
	Verizon NGSN network IVR platform and are programmed to connect a planned number of monitoring calls that are controlled by VITA in near-real-time using PC-based Network Management. In addition, the Monitoring Supervisors can also control how many calls they actually monitor by how many they answer and control the monitoring duration by how long they listen before hanging up. When Interaction Monitoring is used for IVR-Only, NGSN sets up a planned number of monitoring calls to a designated supervisory location, which are timed to start monitoring when the caller receives the first prompt by their network IVR application. They end when the call is answered by a customer's call center, unless it is terminated by the Monitoring Supervisor. When Interaction Monitoring is used to monitor IVR-and- Agent interactions the set-up is the same but, instead of disconnecting the Supervisor Monitoring call when the customer caller is connected to a call center, the connection continues as a third channel in a standard ECR Three-Way TakeBack and Transfer conference while the caller interacts with one or more call center agents. In the IVR-and-Agent configuration, Silent Monitoring can continue through multiple unattended agent transfers until the caller or the Monitoring Supervisor hangs up, or until an agent enacts an attended transfer. ▪ Interaction Monitoring is NGSN-initiated. The number of silent monitoring calls is programmed via Toll-Free Routing Plans. Monitoring calls are launched immediately upon the arrival of call at the Interaction Monitoring Entry Point of an NGSN application. ▪ NGSN launches silent monitoring calls that must be answered by the Monitoring Supervisor during the time in which NGSN plays a "Welcome/Monitoring" message for the caller to allow for monitoring to begin from the time the first call plan prompt is played. ▪ Interaction Monitoring calls that are not answered before the conclusion of the "Greeting and Monitoring" Message are defaulted into the customer's normal call plan program without jeopardizing the caller experience and proceed without supervision. ▪ Interaction Monitoring can be configured to monitor IVR-Only or IVR-and-Agent Interactions. NGSN can "play" caller selections, rather than the DTMF, for the Monitoring Supervisor in an IVR-Only Configuration. ▪ NGSN can be programmed to accept DTMF commands from the Monitoring Supervisor in an IVR-and-Agent Application. ▪ NGSN's Monitoring Supervisor calls are treated as "listen-only" for reporting and monitoring purposes and, when answered, accrue a TNT charge and Platform Time charges until NGSN detects answer supervision from a call extension, even if the monitoring supervisor hangs up during an IVR-Only Monitoring ECR Interaction Monitoring is built as an ECR application with Three-Way TNT. The call flow is written to define a two-leg call/Three-Way Conference as the monitoring function. In the IVR-Only configuration, Interaction Monitoring bills a TakeBack and Transfer feature charge when the monitoring call is answered and platform until NGSN receives answer supervision from a call extension.

Comply (Yes/No)	Explanation/Description
	In the IVR-and-Agent Configuration, Interaction Monitoring bills another TakeBack and Transfer feature charge and changes the billing rate of the continuing Monitoring Call from Platform Time Rate to the customer's Standard Toll-Free Rate. **Integrated Call Tree** Integrated Call Tree (ICT) is the full integration of Advanced Toll Free and Enhanced Call Routing (ECR) features into a single plan. ICT allows you to build and maintain your plans online via the Verizon Enterprise Center. This online tool is accessed through Network Manager. ICT allows VITA to design, build, and maintain custom routing solutions using a combination of caller's menu choices, originating automatic number identification (ANI), time of day, database lookups, caller-entered digits, and other ICT features. ICT cannot be provisioned with international originations (ITFS/UIFN). **SAFE Encryption Technology** SAFE Encryption Technology – An encryption technology which provides added security to the transmission of customer private data. This is specifically valuable to enterprises who include sensitive personal information (SPI) in their ECR applications and have data passing from our network to their premises for database look ups and CTI (e.g., Host Connect, Announce Connect, Hosted ICR and ICR-I users).

c. ***Call Redirection During Service Disruption or Missed Installation***

In the event that a VITA toll-free service location experiences a toll-free outage or busy condition, a non-network-related problem such as extreme weather that interferes with normal operation, or a disruption because a service installation date is not met, what capabilities does the Supplier offer VITA to re-terminate the traffic? Indicate what procedures and timeframes are required to accomplish this change.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	**Alternate Routing** Alternate routing allows VITA to pre-define alternate routing arrangements that can be activated upon command in the event of an emergency such as power outages, natural disasters, or other service disruptions. VITA can pre-define up to 99 alternate routing plans. You must have at least two different locations for this routing feature to be applicable. The monthly charge applies to each alternate plan Verizon stores for VITA. The change charge will apply to any of the following: to change the number or make-up of alternate plans, to cancel the feature, or to cancel the inbound service number with which the feature has been associated. Alternate routing is not available in super routing plans. Alternate Routing pre-defined plans can be invoked within minutes via the Network Manager or by calling the Verizon service center. Changes to existing plans can also be modified in near real time with Network Manager.

Comply (Yes/No)	Explanation/Description
	Network Call Redirect (NCR) Using NCR, VITA can control potential congestion of calls. You simply send overflow calls to a pre-determined alternate routing group (dedicated access termination, business line termination, or switched WATS termination) via a VITA-defined routing table when the intended call termination is busy. NCR will allow Verizon to offer a superior grade of service, since NCR allows calls to overflow around network failures such as a fiber cut or a tandem switch failure. NCR works in conjunction with Real-Time Restoration (RTR) and other rerouting capabilities. In cases where a call will not reroute around a failure using RTR, NCR can be invoked and the call can overflow to a secondary or subsequent termination not affected by the network failure. NCR also covers situations where the local service provider or re-seller has under provisioned access trunks. In the case of a missed service installation NCR will be used to route calls to a location selected by VITA.

d. Call Transfer Capability

Briefly describe capabilities to redirect a toll free call, after it has been answered by VITA's Contact Center, in the following ways:

1. Send the caller to a target party (without remaining on the call).

2. Put the call on hold, and conduct a transfer to another target party, with the ability to hear call progress tones (e.g., ringing), then being disconnected from the call once the call is re-terminated at the target party.

3. Conference with the original caller, and the target party, prior to call transfer.

Confirm that each of the above transfer types can be accomplished for the following types of target numbers:

- ***Another VITA toll-free number.***
- ***Another customer's toll-free number on Supplier's network.***
- ***Any dialable long distance number, potentially outside of Supplier's network.***

Detail whether the caller can be returned to the original menu if the call transfers in items 1 and 2 above are unsuccessful.

VITA prefers that the caller being transferred does not hear any audible tones associated with the transfer. State whether Supplier's call transfer solution provides this capability.

VITA prefers to have the ability for a transferred call to pass information to the new termination point that was available during the original call, including ANI and any menu routing digit information. The Supplier should provide a detailed description of information that can be transferred along with a call.

VITA is interested in a speed dial option with the call transfer capability. The Supplier should describe how its speed dial option is used.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	**TakeBack and Transfer (TnT)** This popular feature allows the called party to transfer a call to another location. If a company has one location that provides first-level technical support, an agent can transfer their caller to another agent group for second-level support. This cost-effective way of transferring calls releases the circuit immediately after transfer, while requiring no CPE. It gives the caller control over moving between locations, departments, or countries without the need to hang up and redial. ▪ TnT is an ECR feature that is ordered with the application. ▪ TnT can be invoked either by a person or by a VRU. ▪ Transfers are done with speed dialed numbers in a TnT database. The agent or VRU enters "*" and predetermined digits. The database is part of TnT with no additional charge. ▪ DTMF can be transferred along with the call. ▪ When a call is transferring using the TnT feature, no platform time accrues even though the call is actually going through the ECR platform again. The cost of the transfer platform use is included in the TnT feature charge. **TnT Options** ▪ Attended TnT: The transferring agent connects with the second agent, announces the call that is being transferred, and then hangs up, which connects the caller with the second agent. ▪ Unattended TnT: The first agent hangs up as soon as he enters the transferring digits. When the second agent answers, he is speaking to the caller. ▪ 3-Way TnT: This is a form of conferencing in which all three people can remain on the phone at the same time, and talk to each other. . TnT works with any outdial, Verizon toll-free number, Direct Distance Dialing DDD (NPA/NXX) number, or non-Verizon toll-free number. In the case of non-Verizon toll-free numbers, we continue to bill the owner of the published toll-free number, and the other vendor bills its customer for the transport part of the call, in effect double billing for that part of the call. ▪ Termination Billing and TnT: Termination billing is an option for calls that use Verizon toll-free numbers or ECR route plans, to extend the call from the platform. With non-Verizon numbers or DDD numbers the billing must go to the owner of the published toll-free number. ECR offers daily, weekly, or monthly reports at no charge that show how many calls transferred, and also how many calls went to each outdial as the result of a transfer. With TakeBack and Transfer, the caller will hear audible tones during call

Comply (Yes/No)	Explanation/Description
	transfer. These tones can be eliminated with Intelligent Contact Routing Integration described in the response to the next question.

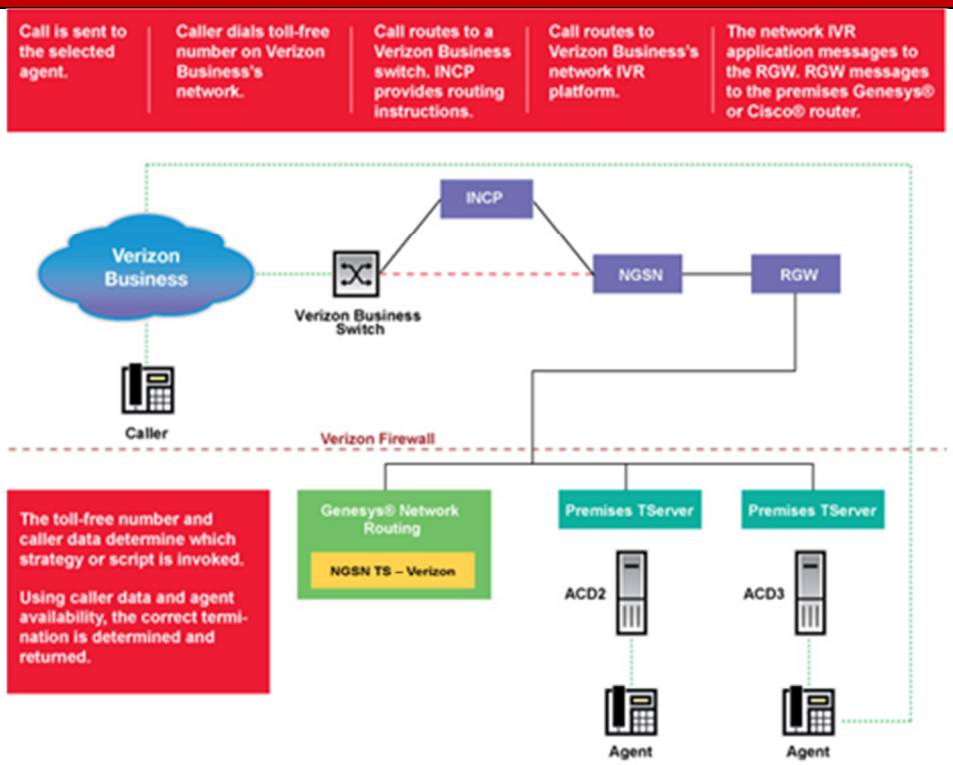
e. ***Intelligent Call Processing***

VITA does not currently use Intelligent Call Processing, meaning the ability to route calls to different centers based on real-time interaction between the toll-free network and VITA's call management equipment. An example of this type of service works with the Cisco Intelligent Call Manager (formerly Geotel) system.

However, VITA may decide to use this capability in the future. Briefly describe Supplier's capability to provide this service and which call management systems are supported.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	**Intelligent Contact Routing - Integration (ICR-I)** Intelligent Contact Routing Integration, or ICRI, allows VITA to put your Genesys or Cisco intelligent routing in the best place – in the network and integrated with ECR. By integrating an enterprise ICR, like Genesys or Cisco, with ECR, additional benefits can be realized. These features and benefits include the following: ▪ Third-Party Call Control/Call interrupt ▪ Out-Of-Band signaling ▪ Dynamic Messaging ▪ Dynamic Data Exchange (DDE) ▪ Personalized Call Treatments ▪ Carrier-grade Computer Telephony Integration (CTI) ▪ Intelligent, Network Call Queuing ▪ Blind Network Call Transfer with Optional Release-Link-Trunk (RLT) ▪ Conference Call Transfer capabilities will be offered soon. An integral component of the Verizon ECR network architecture enhancement includes a Router Gateway (RGW), enabling Verizon's Hosted Intelligent Voice Response (IVR) ECR to connect with and communicate directly with Genesys and Cisco ICR solutions. The RGW translates call flow messages into ICR-specific languages for the appropriate router. In addition to supporting customer premises-based Genesys and Cisco ICR solutions, ICRI is "built into" Verizon's Hosted Intelligent Contact Routing. The general ICR-Integration architecture, shown in Figure 1, represents an integrated, end-to-end view of the Verizon Hosted IVR-ICR interface through Router Gateway (RGW), to in-network Hosted ICRs and customer premises ICRs. RGW uses colocated NAMs for Cisco ICR interfaces to leverage NAM round-robin load balancing. When Hosted IVR is interfaced with Genesys, the RGW communicates directly with a Genesys T-Server ICR.

Comply (Yes/No)	Explanation/Description
	 *ICR-Integration Architecture (Genesys ICR shown)* **Direct Interface** A generalized Hosted IVR Application Programming Interface (API) and new Router Gateway network element permit an enterprise ICR to be interfaced directly with Verizon's ECR on Hosted IVR, using customer-specific ECR applications, designed to inter-operate with customer-specific ICR scripts and call plan strategies. ECRs ICR-Integration feature permits a seamless interface with leading third-party enterprise vendor ICRs to complement existing network-based ECR features with customer controlled intelligent call routing. Advantages are numerous. This exceptionally rich feature augments existing Toll Free ECR features by integrating a customer's enterprise ICR with Verizon's Hosted IVR ECR platform and Intelligent Network Call Processing (INCP) capabilities. **ICR-Integration Capabilities** ECR applications are built to support customer-specific call plans, using standard System Independent Building Blocks (SIBB) to interface directly with an enterprise ICR. Each application must implement necessary logic and messaging to accommodate enterprise specific ICR scripts/strategies and customer call plan requirements.

Comply (Yes/No)	Explanation/Description
	The main ICR-Integration application is responsible for establishing a dialogue with an enterprise ICR via the RGW and then for sending and receiving messages to and from the ICR. It can provide existing ECR features (i.e., Menu, Message, Survey, Host Connect, etc.) integrated with the advanced ICR-Integration capabilities. ICR-I Network T-Server Enhancement for DNIS Pooling: The upgraded ICR-I interface for Genesys intelligent routers supports more flexible call flows and improves the interoperability of ICRI with premises based IVRs. The new feature permits call flows that engage ICRI only when needed for queuing, thus avoid unnecessary transaction charges, while still allowing Genesys to be fully aware of the interaction for call control and reporting purposes. **Intelligent Queuing** With Intelligent Queuing, VITA can park calls on Verizon's Hosted IVR when using ICR-Integration. The enterprise-ICR determines that an appropriate agent/agent group is not available to take the call. Hosted IVR will execute a customer-specific Intelligent Queuing application while waiting for a message from the ICR instructing the Hosted IVR to play custom music or message or to transfer the call to a newly available agent. When VITA orders Intelligent Queuing, one or more Hosted IVR ECR application(s) are built to provide customized in-network call queuing capabilities. Intelligent Queuing application(s) are called by the main ICR-Integration application and return the main ICR-Integration application after the call is un-queued. Each ICR-Integration and Intelligent Queuing application must implement necessary logic and messaging to accommodate enterprise specific ICR scripts/strategies and customer requirements. After a call is queued on the Hosted IVR platform, the Intelligent Queuing application waits for routing instructions from the ICR. The Intelligent Queuing application can be designed to provide personal call treatment, such as estimated wait time and/or play customer-specific announcements or music while the caller is waiting. This application inherently uses Call Interrupt, out-of-band signaling, and can be built to include standard ECR features. **Third-Party Call Control – A Customer Specified Call Treatment** Customers utilizing ICR-Integration can place call processing intelligence on a customer premises enterprise ICR platform or on Verizon's in-network ICR (for Hosted ICR Genesys customers) to provide dynamic control and custom call treatment, in addition to customer-specific static routing plans placed on Verizon′s Intelligent Network Call Processing (INCP). Our Hosted IVR will coordinate messaging between INCP and enterprise ICRs to receive and process routing instructions from the controlling platform. Calls can be directed to a specific contact center resource. Static routing plans are also supported for emergency routing and default routing. Unsolicited ICR messages can interrupt call treatment during call extension, call queuing, and call transfers. This offers maximum flexibility for an enterprise to assess centers of excellence, agent availability, work load, and call volume statistics, in addition to individual

Comply (Yes/No)	Explanation/Description
	caller data based upon ANI, dialed number, time-of-day, regional information, past call history, and caller identity. This permits ICR call control/treatment before dynamically specifying call extension information. **Out-of-Band Signaling** Available only with ICR-Integration, out-of-band signaling allows ECR to interact with an enterprise ICR via data control messages which are unheard by callers or agents. Unlike ECR Take-back and Transfer (TNT), out-of-band signaling provides silent call transfers; dynamic direct data exchange (DDE), and call control messaging without use of DTMF tones. Currently, when TNT or Give-Back/Take-Back is invoked, DTMF tones are used to indicate actions needed to be taken by ECR. These DTMF tones are heard by the caller, and viewed as undesirable by Verizon and by many customers. With out-of-band signaling, call signaling is not heard by callers or by customer agents. **Dynamic Messaging and Data Exchange Support Personalized Call Treatment** ICR-Integration offers added functional flexibility with direct Dynamic Data Exchange (DDE) of Caller Entered Digits and exchange of Call Variables between ECR and an enterprise ICR. DDE, dynamic messaging (sometimes referred to as Constructed Messages) is available with ICR-Integration, permitting the enterprise-ICR to harvest enterprise databases for caller-specific information and notify ECR to provide personalized call treatment, when needed. Dynamic messaging can be used to provide simple feedback to callers, such as expected agent wait-time with Intelligent Queuing, or caller specific information such as account balance, credit limits, account transaction history, etc. DDE capabilities support transactions between a caller and enterprise server with the enterprise ICR controlling the call. Because this capability is similar to ECR Host-Connect, ICR-Integration customers may not need to order Host Connect with ICR-Integration for limited sized database query requirements. The ICR-Integration use of a persistent call ID allows for handling of n-call treatments, maintaining call identification. A unique and persistent Call ID on each and every ICR message permits the ICR to specify multiple call treatments for the same call and maintain a complete call status over the life of call. The Call ID is created by the Hosted IVR from the Node ID, IP ID, Port ID, and a call counter on each Hosted IVR port, resulting in a unique call ID which will not be reused in less than about 2-weeks. This permits call traceability and detailed Hosted IVR reporting on calls requiring multiple call treatment transactions. DDE also supports 3rd Party Call Control using CTI (screen pops) and other advanced capabilities needing a means to directly correlate the carrier call treatment with the enterprise call treatment - I.E. Host Connect and ICR-Integration can share data using common call ID - can reduce dependence upon using ANI and CED to identify the call.

Comply (Yes/No)	Explanation/Description
	Carrier-Grade Computer Telephone Integration (CTI) Customers using enterprise Computer Telephony Integration (CTI) can take advantage of Verizon's carrier-grade network with ICR-Integration to coordinate delivery of voice with caller-specific data for agent desk-top screen-pops. By using ICR-Integration, significant cost benefit can be achieved by reducing enterprise requirements for dedicated data-network connections between offices and remote locations. Now enterprise IT managers can ensure CTI data is provided to remote agent desktops to service contact center customer calls. Superior customer resource management can be realized by integrating virtual contact centers and remote agents using DDE and CTI using Verizon's carrier-grade ECR and ICR-Integration features. **Multiple Call Transfer Types Supported** ICR-Integration provides blind network call transfer, similar to ECR unattended transfer, and attended network call transfer, both with optional Release Link Trunk (RLT). ICR Integration transfers use out-of-band signaling. When ICR-Integration interfaces with Cisco's ICR, optional RLT can be switched on or off for each call by the enterprise ICR. With the Genesys ICR, RLT is static and specified at ICR-Integration application build-time. Blind network call transfer and attended network call transfer are priced the same as in-band TNT, but provide advantages of out-of-band signaling and RLT. Conference Call Transfer capabilities and controls like coach and listen are also offered with ICR-Integration out-of-band signaling with the Genesys 7.1.1+ version and the CISCO 7.0 ICR version.

f. Toll Fraud Detection

As part of the toll-free service, Supplier should provide an advanced plan or service to provide proactive fraud control and monitoring of VITA's toll-free usage, and share in any losses caused by toll fraud. The Supplier should specify:

- ***What types of fraud control management and reporting are available to VITA***
- ***How VITA will be notified of the potential fraud***
- ***The maximum liability that VITA would incur for toll fraud***
- ***Any required precautions that VITA must implement to be eligible for coverage***
- ***Any exclusions to coverage***

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Verizon Financial Risk Management Operations provides fraud control monitoring to our customers on a 24x7x365 basis. Our operations are provided at mirrored sites in Denver, CO and St. Louis, MO.

Comply (Yes/No)	Explanation/Description
	Our fraud monitoring capabilities utilize state of the art parametric thresholding with artificial intelligence algorithms to provide high level data reduction allowing our analysts to focus on the traffic patterns most likely to be fraudulent. Our analysts work closely with our account team and customer contacts to provide a managed service approach for our customer base. We will notify our account teams and customers of suspect traffic patterns and work closely with them on resolving any issue that arises. We monitor a complete range of products provided to our customers including inbound toll free, outbound international, remote access data, traditional Dial 1, 10XXX, and portable calling card products. Our group also handles the review and application of fraud credits where necessary for our customers. At all times we reserve the right to protect our customers and our network by instituting immediate restrictions to prevent traffic that is known from our research to be fraudulent. We are also diligent in our efforts to preserve our customers' ability to conduct business by carefully reviewing traffic to insure that it falls within legitimate business usage. Our fraud protection services are provided as a value added service to our customers and come with no additional cost to them. Our portable products are reviewed for credit on a theft of service basis, while our CPE/PBX protection is provided under our Remote Toll Fraud Program, which limits customer liability to $10K when the program's conditions have been met. At this time our program does not have additional insurance or buy-down components. **Verizon Fraud Policy Overview** Included here is Verizon's Toll Fraud policy. Toll charges that are not entitled to credit under either the "theft of service" provisions of Section .01 or the Remote Toll Fraud Program of Section .02 are the responsibility of the Customer. **Fraud** ▪ .01 Theft of Service: Except with respect to usage involving the use, misuse or abuse of Customer Premises Equipment (CPE) interconnected with service, or as otherwise provided in this section or in any contract between the Company and the Customer, the Company will issue full credit for invoiced charges for Customer calls determined to the reasonable satisfaction of Company to have resulted from a "theft of service." A "theft of service" is the unauthorized use of the Customer's service following its theft by a third person over whom neither the Customer nor an Authorized User possesses an ability to control. Under no circumstance will credit be issued for service use resulting from the acts or omissions of the Customer or any Authorized User, or from the acts of any of the Customer's or Authorized User's employees, former employees, agents, vendors or independent contractors. To qualify for a credit, the Customer must: (1) notify the Company in writing within ninety (90) days of the Customer's receipt of the first invoice containing alleged unauthorized service use; and (2) co-operate fully with the Company in connection with any investigation, prosecution or litigation arising from such theft of service. The Customer's written notification must identify with specificity the service use for which the Customer is seeking credit. ▪ .02 Remote Toll Fraud Program: The Remote Toll Fraud Program provides

Comply (Yes/No)	Explanation/Description
	the procedure required for Customer fraud credit requests and limits a qualifying Customer's liability for verified Remote Toll Fraud usage charges. For purposes of this Program, Remote Toll Fraud is defined as: (i) the placement of unauthorized outbound calls to international locations by using the Customer's outbound international service; or (ii) unauthorized use of eligible toll-free service originating from a domestic location(s) and compromising certain CPE associated with the service(s) located in the United States. The following terms and conditions apply to the Remote Toll Fraud Program: ▪ .021 To be eligible to receive benefits under this Program, the Customer must: ▪ .0211 provide the Company with requested information concerning any password(s) used to access CPE involved in any suspected Remote Toll Fraud; ▪ .0212 co-operate with the Company in all efforts to identify, prevent or eliminate suspected or confirmed Remote Toll Fraud. For purposes of notification, the Customer must furnish the designated Company Representative with: (i) the names of Customer personnel involved in the Program, including individuals capable of being contacted 24 hours per day, seven days per week; and (ii) Customer pager, cellular or off-hour telephone numbers. This information must be furnished initially by the Customer and updated, as necessary, in order for the Customer to become, and remain, eligible to receive benefits under the Program; ▪ .0213 provide follow up information regarding the nature of any potentially fraudulent usage within forty-eight (48) hours of a Company notification to the Customer. Provide Company with access to its CPE within twenty-four (24) hours of a Company request, and the Customer must allow the Company Representative to investigate the current and/or former CPE configuration. Under no circumstance will the CPE configuration be, or be deemed to be, the responsibility of the Company; ▪ .0214 immediately notify the Company whenever Remote Toll Fraud is suspected or detected, irrespective of whether other common carrier(s) are involved; ▪ .0215 notify the Company in writing within sixty (60) days of receipt of the first Company invoice containing any suspected Remote Toll Fraud usage charges. If the Customer fails to notify the Company, all usage charges for which written notice has not been provided will not qualify as Remote Toll Fraud usage charges. The Customer's notice must establish with specificity (e.g., by way of call detail records) to the reasonable satisfaction of the Company that the suspected usage charges are covered under the Program; and ▪ .0216 notify the Company in writing within sixty (60) days of the end of the Remote Toll Fraud incident of the means by which the fraud occurred, if

Comply (Yes/No)	Explanation/Description
	known, and the changes made to the Customer's CPE to prevent future Remote Toll Fraud. ▪ .022 Program Benefits and Other Program Conditions: ▪ .0221 CPE eligible for participation in the Program is limited to a single Private Branch Exchange (PBX) or a single electronic key system located on Customer Premises within the United States. ▪ .0222 Under no circumstance will the Program cover, nor will Remote Toll Fraud be defined to include, calls placed by wireless devices, dial-around (10-10-XXX) calls, Operator Service calls, toll-free or 900 pay-per-call traffic, or calls made through any non-Company conferencing service or Centrex system. ▪ .0223 For each incident of Remote Toll Fraud, an eligible Customer will be liable to the Company for the first $10,000 of Remote Toll Fraud usage charges for calls occurring prior to notification. For purposes of this section notification is defined as (i) notice to the Customer from an authorized representative of the Company's Fraud Prevention organization or Account Team representative; or (ii) notice from the Customer to the Company's Fraud Prevention organization or Account Team representative of suspected remote access fraud. An eligible Customer's pre-notification liability will not exceed $10,000 per Remote Toll Fraud incident, but the Customer will be liable to the Company for all Remote Toll Fraud usage charges for calls occurring after notification is given by the Company to the Customer or by the Customer to the Company. ▪ .0224 The $10,000 limitation of Customer liability will not apply to CPE for which a credit previously was given, or to any other CPE connected to CPE for which a credit previously was given, until a "30 day fraud-free period" has elapsed. This period will be measured beginning with the date of the last fraudulent call of the last incident affecting the same CPE. ▪ .0225 CPE not owned or leased by the Customer and not subject to the Customer's direct control, whether on Customer Premises or elsewhere, is not eligible under the Program. ▪ .0226 The Program will not cover any Remote Toll Fraud usage charges resulting from the negligent or intentional acts of the Customer, its employees, former employees, agents, vendors or independent contractors. ▪ .0227 Credited Remote Toll Fraud usage charge amounts will be excluded from the ascertainment of volume/term discount levels and satisfaction of any applicable volume/revenue requirements. ▪ .0228 With respect to any credit amount awarded to Customer under this Program, the Company is subrogated to any and all rights of the Customer with respect to any associated claims against third parties (including, without limitation, any person who made the unauthorized calls resulting in the credit amount given). ▪ .023 Failure of the Customer to comply with any of its obligations under the Remote Toll Fraud Program will disqualify the Customer from current and future participation in the Program at all Customer locations.

g. Toll-Free Routing and Reporting Tool

VITA would like to have an interactive tool that can provide toll-free call detail information in near real time. This information should include:

- ***Call date, time and duration***
- ***Caller ANI***
- ***Toll-free number dialed***
- ***Whether the call completed or did not complete in the network or at VITA's location***
- ***Trunk group on which the call terminated***
- ***Whether network routing menu announcements were used and the selections that were made***

A caller to a VITA toll-free number should perceive a single call, even though it may be transferred using the call transfer capability. VITA would like the ability to use the reporting tool to track customer calls through all transfers and terminations that are associated with a call. This capability ensures that the caller experience meets VITA's customer service standards. VITA would like Supplier to provide this information on a daily basis for calls handled the previous day. VITA would also like the Supplier to provide the following capabilities:

- ***Trend analysis***
- ***The ability to change toll-free call routing parameters in real-time***
- ***An inventory of all toll-free numbers (routing plan(s) structure, terminating information, cross-reference to circuit information), regardless of whether or not the number had usage***
- ***A view into trunk group performance***
- ***The ability to create schedules to automatically run reports***
- ***Ad hoc reporting capability***
- ***Access to at least 100 days of traffic***
- ***The ability to download all information so that VITA can retain it as long as necessary***

Describe in detail how Supplier can support these requirements and any other capabilities its tool offers that would be of interest to VITA. Also describe the form of access provided to customers for the tool(s) (e.g. Web-based, secure VPN, etc.). It is critical that the Toll-Free Routing and Reporting Tool provide Master Access to VITA for all traffic statistics, but preclude each agency from being able see one another's traffic statistics. Confirm that Supplier will work directly with VITA to establish login credentials for VITA to provide this functionality while additional login credentials for certain individual agencies will strictly segregate traffic.

Confirm that subscribing to the tool will not preclude VITA from contacting Supplier service centers by telephone to implement real-time routing changes.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	**Verizon Enterprise Center (VEC)** The VEC is a suite of web based communications management tools that enable VITA to monitor, analyze, and redirect voice, data, and internet traffic. The new command and control tools for enterprise-wide and personal communications include: Traffic Monitoring, reporting, service configuration, universal messaging and order entry and provisioning, product and service

Comply (Yes/No)	Explanation/Description
	training and customer care. ▪ Event Monitor: Event Monitor is an alarm and reporting tool. ▪ Usage Tracking and Analysis: Usage Tracking and Analysis provides monthly customized call traffic data allowing VITA to view its call traffic information, monitor usage, analyze traffic, summarize calls, and create customized call reports. ▪ Network Manager (NM): Network Manager is a Web-based VEC application that gives VITA a view of their toll-free network routing data as well as the capability to make quick changes to routing plans. You can examine current routing plans and customize your features on a near real-time basis. Thus, you can manage your toll-free network configurations by routing inbound traffic, enabling a quick response to disasters and changing business needs. Network Manager also enables VITA to proactively build alternate plans and activate them in emergencies. Customers who subscribe to Network Manager will not incur feature related change or cancellation charges. ▪ Outbound Network Manager (ONM): ONM allows you to examine your configuration data and customize features on a near real-time basis. ONM provides VITA the ability to view information about the current features selected for your network; schedule and implement changes to your database network (including, for example, canceling a lost or stolen calling card or addressing sudden changes in employee status); and add and maintain users. ▪ Traffic Monitor: Traffic Monitor provides summary and call detail information on inbound numbers within one to thirty minutes (near real-time) after a call has completed. Traffic Monitor is designed as an early warning system to help pinpoint critical information in order to make quick decisions to support VITA's Long Distance Voice Services inbound service. ▪ Traffic Reporting: Traffic Reporting offers a comprehensive suite of inbound summary and inbound and outbound call detail reports. VITA's designated User Administrator has control of what information can be seen by which user. The Company Structure function allows you to set up folders as you like and group your accounts within folders. Once this structure is set up, you can assign users to folders which will give them access to accounts within a folder, but will not allow them to view other folders.

h. Historical Toll-Free Routing and Reporting

VITA would like to receive monthly reports that can provide usage and toll-free platform information. The reports should include:

- ***An inventory of all toll-free numbers (routing plan(s) structure, terminating information, cross-reference to circuit information), regardless of whether or not the number had usage***
- ***Volumes of usage per 800 number monthly***
- ***Call level detail, including call date, time and duration and routing information***
- ***Volumes of features used, and number of active stored announcements***

- ***Ad hoc reporting capability***
- ***Access to the monthly data for at least 12 months***

Describe the media (CD or Portal), or reporting platform that is available for monthly reporting.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	**Verizon Enterprise Center (VEC)** Historical Toll Free Routing and Reporting can be accessed through the VEC described in the response to the previous question.

2. *Outbound Long Distance Service*

VITA currently generates approximately 81 million minutes of outbound dedicated and switched voice traffic each year in support of communications for its strategic business operations. Approximately 35% of outbound usage originates and/or terminates over dedicated access. The demand set for this service is detailed in Appendix A.

a. Long Distance Virtual Voice Network

The Supplier should briefly describe its virtual voice network features, including:

- ***Overflow to switched access on terminating busy signal***
- ***Switched digital data capability***
- ***Capability to redirect and transfer network calling***

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Our Outbound Voice services enable you to place calls to locations around the world over one of the most extensive global networks. We provide an intelligent networking architecture that links your domestic and international sites with voice, fax, and low-speed data traffic, helping you improve your employees' responsiveness. **Enhance Productivity with Simple, Yet Powerful Features** ▪ Streamlined invoicing and online reporting options ▪ Expense management features that can track and allocate employee, client, or department code ▪ Add employees, create satellite offices, or expand markets simply, because Verizon's open network architecture can accommodate your growth Outbound Voice services let you focus on your business, knowing that all your calls are being carried by a premier global telecommunications company dedicated to delivering service and value. **Overflow to Switched Access on Terminating Busy Signal** **Capability to Redirect and Transfer Network Calling** As mentioned in the Toll Free responses, Network Call Redirect (NCR) is a call overflow product intended to allow customers to complete calls that would

Comply (Yes/No)	Explanation/Description
	normally go unanswered because of busies, ring-no answers or other customer-specific reasons. **Outbound Service** This service provides multiple hop overflow (5) capability that allows for call redirection based on: ▪ Overflowing on Busy ▪ Ring No Answer (RNA) ▪ Network Congestion ▪ ISDN Cause Values and ▪ Different access methods (Service Type Logical Termination, and Dialed Number) NCR can be ordered for switched access (a.k.a. LEC or ANI) facilities and Verizon dedicated access facilities **Switched Digital Data Capability** Switched Digital Services (SDS) is a staple of contemporary virtual network offerings, providing customers with circuit-switched data speeds of up to 1.536 Mbps (T1). SDS is integrated into virtual network product pricing and discount plans, and makes use of virtual network features and dialing plans. Underneath the SDS umbrella are two options: ▪ Verizon Outbound Switched Digital Service ▪ Verizon Inbound (Toll Free) Digital Service Each provides the flexibility to have the originating or terminating party pay for the digital application. These services were subsequently incorporated into a suite of virtual network services that are provided on an integrated basis. Such integrated service offerings include integrated billing and network pricing in consideration of total voice and data service commitments for the entire enterprise. SDS can be provided as follows: ▪ Switched 56/64 ▪ Verizon On-Net Data ISDN H0 ▪ Verizon On-Net Data ISDN H11 ▪ Verizon On-Net Data ISDN Multi-Rate Bearer Service (MRBS) ▪ Global ISDN

b. Outbound Features

List and briefly describe all major features not listed above that are available with the outbound virtual voice network service offering.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	**Improve Intra–Company Communication** Outbound Long Distance offers a comprehensive group of features that make intra–company communications easier and more efficient. Features that can increase productivity and reduce costs: ▪ **Private dialing plans** ensure simple dialing for users, whether they are in the office or traveling. This helps reduce the time required to dial all the numbers. You may set up a 10–digit, 7–digit, or variable–length dialing plan. The 10–digit plan mimics the North American Numbering plan. ▪ **Customized messages and intercepts** allow the customer to create tailored messages that are delivered to a caller based on either the intercept condition or the number dialed. Users are informed of number changes via intercept messages. Intercepts can encourage redialing when errors occur, and calls are intercepted with messages that customers record with "Help Desk" information or with other company announcements. ▪ **Virtual ringdown** provides a low–cost alternative to traditional point–to–point ringdown circuits. The service provides a quick and easy connection between two sites without dialing. This feature is especially useful for customer service organizations, companies with close vendor or interdepartmental ties, security, and other applications requiring quick, easy, and direct connections. Examples are the airport telephones that call car rental companies/hotels, otherwise known as "bat phones." ▪ **Increase management and control.** Outbound Long Distance helps customers manage their expenses and internal cost allocations by customizing their billing options to suit their needs. Features that can help increase control and reduce calling cost: ▪ **Accounting codes** can be used by the customer to simplify cost management. Accounting Code length can be selected on a location–specific basis, used with ID Codes for added flexibility, assigned to multiple individuals at multiple locations associated with the same project and department. ▪ **Verified Accounting/ID** give the customer the power to define calling areas at the level of the individual user: Verified Accounting/ID Codes are digits entered after the phone number has been dialed. They offer the same management reporting benefits as Accounting Codes but are verified in Verizon's intelligent network database to determine whether the caller has authorization to place the call. Calls are presented on a "Call Detail Report" sorted by code. ▪ **Universal/customized range privileges** help customers manage fraud and calling expenses. Universal/Customized range privileges provide generic

Comply (Yes/No)	Explanation/Description
	limits on calls. Options include blocking all calls, allowing U.S. or on–net calls or permitting unlimited calls. ▪ **10– or 15–digit restriction** can help reduce calls and manage incoming calls. 10– or 15–digit unauthorized phone numbers can be blocked. Unauthorized numbers can include personal call numbers and telemarketing calls to individuals who have requested to be deleted from the database. ▪ **Calling station identification (CSI)** allows customers with PBXs to easily identify the originating extension of each outbound call, thereby improving cost allocation and control. CSI is a user–transparent alternative to accounting codes. Currently, many PBX customers use ID Codes to provide this break–out. CSI can be an effective replacement for this practice, since the employee would no longer be required to key in a code with each call. ▪ **Enhance network call routing.** Outbound Long Distance helps increase operational efficiency so that employees are connected in the U.S. or internationally. Features that can help manage calls: ▪ **Point of Origin Routing (POR)** enables a customer to designate an alternative Dedicated Access Line (DAL) overriding the DAL specified in the dialing plan. The Directory Access Protocol (DAP) overrides the DAL specified in the dialing plan based on the originating switch and intended terminating switch. It is necessary to have dedicated access for this feature to work. Examples: A customer may have an established private network to interconnect with Verizon Services. This allows the customer to receive the benefits of the features and to receive a lower cost by routing traffic where it is most cost–effective. In turn, this helps to manage load balancing (percentage of traffic placed on the DAL) for the DAL terminations. A customer may have two Human Resources (HR) departments established to respond to employee questions. As the company grows, a third HR center is opened. To provide the third HR center an opportunity to become established, the POR functionality allows calls only from specified originations. The specified originations can be modified or removed as the HR center is stabilized. ▪ **Virtual Foreign Exchange (F/X)** helps the customer maintain a local identity by allowing them to eliminate a physical office and still maintain a local presence. This is often used until a new Yellow Pages edition is published and other marketing tools can be updated to show a new, out–of–town number. It allows callers to dial a local seven–digit telephone number and be routed to another location for handling. ▪ **Simplify Billing Management.** Verizon offers streamlined invoicing and online reports, so customers can tailor the invoices to their needs and review billing reports. Features that can provide flexible billing options: ▪ **Location Level Billing** provides each bill payer location its own location invoicing package and is responsible for the payment associated with that account. Numerous management reports by product and location can be generated, and alphanumeric translation is provided.

Comply (Yes/No)	Explanation/Description
	▪ **Verizon Customer Center** is a single entry point into a wide range of web–based applications supporting voice, data, local, and global services, which empowers the customer to manage the details of their Verizon services. Reduce calling expenses with multiple accesses to Outbound Long Distance – Outbound Long Distance offers multiple ways to obtain access to long distance, while reducing calling expenses and increasing productivity. Features that provide multiple access to long distance: ▪ **Toll Free Remote Access** is a simple and secure way to access customers' Private Dialing Plan. This toll free remote access feature helps keep customers and their employees in touch while traveling. It uses ID/accounting codes for call verification and charge back. It is a fraud–resistant replacement for Direct Inward System Access (DISA), an on–network access for users who have no need to make off–network calls. ▪ **Intra–LATA Toll.** We can help users to bypass their local exchange carrier and have Verizon carry their local toll traffic without any special equipment or high charges. ▪ **Global Outbound Service** can carry national and international traffic at competitive rates and roll these services into one corporate contract. Global Outbound Service supports billing in 13 languages and in 18 currencies. ▪ **Shared DALs** enables a customer to open DALs to receive calls from other customer networks. A customer can specify any number of DALs within its Corporate ID to be shared by another customer to terminate calls. This feature is similar to Toll Free Corp. ID routing. The originating company will pay whatever rate has been set up for its dedicated termination and will still receive its own bill. Customers can benefit from this application through reduced access and egress costs by receiving dedicated access termination discounts.

c. ***PIC Freeze***

Commit to placing preferred inter-exchange carrier (PIC) freezes on all of VITA's switched access lines to prevent inappropriate changes in long distance carrier services on these lines. VITA, not the Supplier, will be identified as the party that can rescind the freeze or modify the carrier choice.

Verizon Response

Comply (Yes/No)	Explanation/Description
No	Verizon can place a PIC freeze on switched access lines where Verizon is the local service provider. If the local service provider is another carrier, Verizon does not have the authority to place a PIC freeze on switched access lines on behalf of the customer. However, given a current letter of authorization from VITA, Verizon's PMO team could place those orders on VITA's behalf. Verizon LD is the only long distance option available for sites elected by VITA to be provisioned on Verizon's IP Trunking service.

d. Toll Fraud Detection

As part of the basic outbound service, Supplier should provide, at no additional cost, international call blocking services where requested by VITA, premium number call blocking, and "dial-around" long distance service blocking for all numbers.

The Supplier should have an advanced plan or service to provide proactive fraud control and monitoring of VITA's long distance usage. The Supplier should specify:

- ***What types of fraud control management and reporting are available to VITA***
- ***How VITA will be notified of the potential fraud***
- ***The maximum liability that VITA would incur for toll fraud***
- ***Any required precautions VITA must implement to be eligible for coverage***
- ***Any exclusions to coverage***

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Please see the response to question 1f earlier in this section.

3. *Voice Access*

Detail the telephony interfaces that the Supplier supports (e.g., SIP, T-1, ISDN, CAS, etc.). VITA is specifically interested in the Supplier's ability to support IP Trunking.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	**SIP Access** The Verizon Global IP network serves as the underlying technology for our IP Trunking services. Verizon offers a broad array of access methods, from conventional Public IP (Internet Dedicated Access) to our MPLS-based Private IP (PIP) network. Private IP (PIP) at the following speeds: ▪ 384 Kbps ▪ 512 Kbps ▪ 768 Kbps ▪ T1 ▪ NxT1 using MLPPP ▪ T3 ▪ OC3, OC12, OC48 is supported on customer provided CPE (under our Uncertified Access Policy) ▪ Ethernet to PIP ▪ 1M up to Gig E Internet Dedicated Access (IDA) at the following speeds: ▪ 768 Kbps ▪ NxT1 (using MLPPP up to 4 T1s) ▪ T1 ▪ T3 ▪ OC3, OC12, OC48 is supported on customer provided CPE (under our Uncertified Access Policy) **Traditional TDM Access** Traditional TDM Access is available via both switched and dedicated connections. Verizon offers dedicated connections via ISDN PRI as well as traditional T1/T3 circuits. A PRI connection offers the following options: ▪ Call-by-Call Service Configuration – allows the B channels of a PRI to be shared between multiple services carried on the PRI ▪ Non-Facility Associated Signaling – one PRI D channel can control up to 20 T1 Digital Access channels ▪ D-Channel Backup – provides a redundant hot stand-by of the PRIs primary D channel ▪ Automatic Number Identification (ANI) – allows VITA to receive the origination caller's working telephone number provided this information is provided by the caller's Local Exchange Carrier (used with toll free service) ▪ Dialed Number Identification Service (DNIS) - provides the called party with the number dialed by the Customer or a translated version of the dialed number (used with toll free service)

4. Statewide Availability

Confirm that the Supplier's Long Distance Voice services as proposed are available statewide. If there are any locations in the Appendix A "Access-Voice" worksheet to which Supplier has not proposed to provide its Voice Access services, or any locations in Virginia where Supplier's Long Distance Voice services are not available, list such locations/exceptions.

Comply (Yes/No)	Explanation/Description
Yes	

G. Internet-Based VPN Managed Services Takeover

One of VITA's most important current applications is a managed network required for state agencies, localities, schools, and Federal Agencies to access the Criminal Justice Information System. This network is referred to as the Virginia State Police Managed IP-VPN, or the "VSP Managed IP-VPN." The network enables law enforcement and public safety agencies throughout the Commonwealth to continually supply, update, and access the Criminal Justice Information System in accordance with their daily law enforcement activities.

In the current environment, the state agencies, localities, schools, and Federal Agencies on the network own the customer premises VPN switches, but VITA's incumbent provider manages all of this CPE. This current environment includes management of Juniper VPN firewalls and Nortel Contivity VPN switches.

The Virginia State Police is in the process of transitioning the Nortel Contivity switches to the Juniper SRX Series Services Gateways acting as VPN switches. However, at the time of expiration of the current contract in 2013, this transition process will still be ongoing, and is expected to extend into 2014.

These VPN switches are located at VITA, the Virginia Department of Transportation, the Virginia State Police, and other Executive Branch agencies. A large number of law enforcement and public safety agencies, plus numerous other entities with reason to require access to law enforcement and criminal justice information, act as remote sites on the network.

Many of the remote sites access the network via an Internet connection established over the current provider's frame relay service. In these cases, transport is based on Internet access over a separate Internet PVC emanating from a frame relay port, and requires a 56K or T1 access connection.

Many other remote sites access the network not over the current provider's frame relay service, but rather over a cable, DSL or other broadband connection. They obtain this connection under one of a set of Broadband Contracts that public bodies within the Commonwealth hold with broadband services providers. Typically these result in Ethernet-based WAN connections from the remote site into the VPN network.

Even where a given site does not utilize the current provider's transport service, the existing provider does provide on-site maintenance on the Juniper and Nortel VPN equipment in use at the remote users' sites. Following the transition off the Nortel equipment described above, the incumbent provider will be providing maintenance throughout the Juniper-based network.

At the same time, many of the sites that are explicitly Division or Area headquarters of the Virginia State Police, as well as sites with closely related State Police functions such as Narcotics Task Forces, are being transitioned to a separate management structure under Northrop Grumman, and will no longer receive either transport or maintenance services from the current provider.

With all this in mind, the Supplier will perform a transparent, managed takeover of the current VPN network. The Supplier will:

- ***Manage equipment for all sites on the IP-VPN once they have converted to the Juniper IP-VPN equipment, other than those supported by Northrop Grumman, and***
- ***Provide the associated dedicated transport for those sites where the transport is currently provided by the incumbent provider.***

In the Appendix A workbook, under the VSP Managed IP-VPN tab, all of the sites requiring management (and maintenance) are listed with the level of Required Maintenance Coverage, typically covering either business day or 24x7.

Also listed are the interface types required for the Juniper equipment at the site – typically TDM at either 56K or T1, or Ethernet – depending principally on whether the site in question is using the current transport provider's frame relay Internet gateway or is utilizing one of the Broadband Contracts. This site listing includes all sites on the VSP IP-VPN except those being transitioned to Northrop Grumman.

Additionally, under the Dedicated Internet tab, transport requirements – access and port sizes – for the VSP IP-VPN are listed for those sites that do employ the current managed equipment provider's transport service.

The transport connectivity supporting this application is specified as Dedicated Internet Ports, in recognition of the fact that suppliers do not generally, or any longer, assign PVCs over frame relay for this purpose, and additionally in recognition of the fact that frame relay and ATM in the current environment for other applications is being presented in Appendix A generally as another service – MPLS.

As noted on the Dedicated Internet tab of Appendix A, (which includes requirements for both the VSP IP-VPN and all of VITA's other Internet connectivity needs), the Supplier may ultimately have the opportunity to provide transport to those VSP IP-VPN sites that utilize one of the Broadband Contracts for Ethernet connectivity into the VPN, although those transport requirements are not currently included under Dedicated Internet.

In general, the managed equipment services requirements for this application are equivalent to those detailed in the following Section H, Managed Services and Other Support Services. However, as a starting point, VITA needs to specifically understand the Supplier's approach to achieving the takeover of the VSP Managed IP-VPN as transparently as possible.

1. Direct Managed Takeover

Can the Supplier perform a transparent, managed takeover of the current IP-VPN network based on the equipment described above and employing Dedicated Internet connections?

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	We are not performing managed takeover because Verizon is the incumbent. Verizon proposed to continue to manage the Virginia State Police IP-VPN in the Private NOC environment detailed in Attachment A. under the Value-add TPM/SPM tab. The TPM and SPM responsibilities detailed in Attachment A include Day to Day Trouble Resolution, Solution Management, and Engineering support for the Virginia State Police VPN and for On Demand/As Requested (9-5) Agency level support scoped within this RFP.

a. Experience with Juniper Equipment

Does the Supplier have experience managing the Juniper equipment in question, including the SRX Service Services Gateways that are becoming increasingly critical to the application?

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Verizon currently has certified Juniper routers, switches, and firewalls for managed services. Specifically, the SRX Services Gateways are certified for management.

2. Non-Disclosure Agreement for All Personnel

All Supplier personnel that have configuration access to the Juniper VPN devices will be required to sign a Non-Disclosure Agreement with the Virginia State Police.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	

3. Criminal Background Check

All Supplier personnel that have configuration access to the Juniper VPN devices will be required to submit to a fingerprint-based national criminal background check. This is a one-time requirement.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	

4. Timing of the Direct Managed Takeover

VITA has the right to decide whether the implementation of the Managed Takeover will be concurrent with the implementation of all other services presented in the demand set of this RFP, or will begin only upon the conversion of all of the Nortel Contivity sites to Juniper by the incumbent provider.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	

a. Nortel Spares Pool

The Virginia State Police will maintain a Nortel spares pool with equipment recovered from other sites that were converted to Juniper equipment. If VITA decides to begin the implementation of the Managed Takeover before all of the sites have converted to Juniper equipment, it will provide access to the Nortel equipment for those sites that have not converted to Juniper.

However, as delineated in the following section, the Supplier is expected to meet specified service levels for all of the Juniper sites by storing Juniper spares at the Supplier's own sites, or at the sites of subcontractors or other partners.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	

5. Statewide Availability

Confirm that the Supplier's Managed IP-VPN services as proposed for the VSP Managed IP-VPN takeover are available statewide. If there are any locations in the Appendix A "VSP Managed IP-VPN" worksheet to which Supplier has not proposed to provide its Managed IP-VPN services, list such locations/exceptions.

Comply (Yes/No)	Explanation/Description
Yes	All locations are available for the proposed services.

H. Managed Services and Other Support Services

The majority of agency WAN end-points in the existing Commonwealth of Virginia network are self-managed. However, the Internet-based Managed IP VPN for the Virginia State Police and other public bodies described in Section 5.G preceding is a critical application, and as described require a completely transparent takeover or a very similar solution.

In addition, while VITA currently utilizes only small quantities of managed router services in its network overall, individual end user agencies may have increasing future needs for managed router and other managed equipment solutions.

To meet these potential needs, VITA requires Supplier to provide information regarding maintenance services, management services and other services associated with managed equipment solutions as described in this Section.

1. Break/Fix Maintenance Services

This section sets out the break/fix maintenance services that VITA requires for managed VPN equipment. Maintenance is defined as break/fix of a repair, replacement or resolution (e.g., through re-boot of a device) of a failed part, device or equipment software and the subsequent testing to confirm operation of the repaired/replaced device. Maintenance includes all necessary spare parts and all remote and on-site repair activities.

a. Overview of Supplier's Maintenance Service

Provide an overview of your maintenance services including what aspects of its service are provided by sub-contractors, and what sub-contractors Supplier would use. Explain any differences in your maintenance services as applicable to different equipment types and manufacturers.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Verizon is responsible for monitoring and maintaining all required services in the RFP. However, if the Commonwealth of Virginia elects to subscribe to "value add" services (such as State Police VPN and routers, Translation Services, and Data Center Services), Verizon will provide VITA with documentation on repair processes for those specific services. Verizon's Network Operation Center (NOC) acts as the first point of contact for the customer and field support for reporting trouble with installed services. The center verifies account information in a system called Enterprise Trouble Management System (ETMS). The Commonwealth can contact the repair center by dialing a dialing a toll free number. In addition, the Verizon Enterprise Center (VEC), a web application, offers the Commonwealth an easy-to-use electronic ticketing system. Service Inquiry is available to U.S. customers subscribing to global voice, data, and local services. It is designed to provide the Commonwealth with the ability to create and update trouble tickets within Electronic Trouble Management System (ETMS) system database at no charge. Service Inquiry enhances visibility and control over the trouble ticket process. The Commonwealth can open and view trouble tickets from their own desktops (without calling a customer service center to track progress) and see comments related to open trouble tickets. One can also review a comprehensive list of stored trouble tickets for six months. Commonwealth users can easily view, print, and sort tickets from the ETMS system database. This web-based option is ideal for customers that normally rely on calls to customer service centers to open and check the status of trouble tickets. When the NOC receives a service inquiry call, the representative will open an ETMS ticket utilizing your telephone number, circuit ID, or company name as the basis. During the process, the NOC will validate information or ask questions from the standard checklist to obtain information concerning the inquiry. Types of questions include: ▪ Customer name, ten-digit telephone number, and/or Circuit Identification (Ckt ID)? ▪ Do you have an internal customer ticket number? ▪ What time did the trouble occur? ▪ Are there any specifics that could assist our technicians? ▪ If circuit/span problem is reported, is circuit/span released for testing? ▪ Do you have a call example? (If Automatic Number Identification (ANI)-related) (Includes originating number, terminating number, time of call) ▪ Do you hear recordings when attempting your call? (To isolate network issues)

Comply (Yes/No)	Explanation/Description
	▪ Corp ID? ▪ Customer's access hours, if necessary. ▪ Description of trouble? ▪ Customer contact information (i.e., name and contact number)? ▪ Each company's ticket number (#)? Once the information is obtained, a case is generated in ETMS. The specifics of the issue are entered in the notes section of the case. The case is then assigned a priority and a trouble description code. Guaranteed repair intervals are not available, but MTTR (Mean Time to Repair) goals are held. Each case is assigned a priority and a trouble description code. Based upon the case priority as well as the local service delivery method, ETMS determines a standard commitment time.

b. ***Spare Locations***

Supplier is expected to meet specified service levels without reliance on storing spares at individual network locations. Confirm that Supplier can meet service levels for provisioning, repair, and network performance by storing spares at its own sites, the sites of subcontractors or other partners, or other channel arrangements.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	

c. ***Field Technicians***

Describe how Supplier will ascertain/determine the need to provide dedicated field technicians versus off-site technicians in order to meet VITA's service level requirements. Describe where Supplier intends (e.g., by site type) to deploy dedicated field technicians.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Verizon will meet the agreed upon Service Levels using Non-Dedicated Field Technicians. We ascertain/determine the need for dedicated vs. off-site technicians based on our experience with the Commonwealth.

2. *Management Services to be Provided or Supported*

This section sets out the management services and other support services that VITA requires Supplier to either perform or support for managed services generally and explicitly for the IP-VPN "Managed Takeover" or equivalent solution for the Virginia State Police network as described in Section 5.G.

The Supplier is asked to provide pricing for management services in its response to Appendix A that corresponds to the requirements in this Section and to Supplier's response to these requirements. The required network management processes and functions include:

- ***Incident Management;***
- ***Problem Management;***
- ***Preventative Maintenance;***
- ***Configuration Management;***
- ***Change Management;***
- ***Documentation Management;***

The remainder of this Section provides additional details and requirements for each of these functions. Supplier should note that these management services will also apply to all network services and cabling that are connected to equipment under management.

a. *Incident Management*

Incident Management is defined as the set of processes, people, and tools that provides monitoring, fault detection and classification and fault resolution for all in-scope equipment, software, and network services.

It is done real-time to ensure that user services are available. Incident Management is a continuous process whereby incidents (also referred to as faults) are logged, tracked, expedited, and resolved.

b. *Incident Notification and Escalation*

Detail the Supplier's process to notify VITA of outage/disruption events, including:

- ***Required status updates for faults, including updates relating to fault diagnosis and resolution;***
- ***Coordination of fault resolution efforts among all necessary parties (e.g., onsite Supplier technicians, third party vendors, service providers, etc.);***
- ***Coordination of dispatch, escalation, access, and tech support for Supplier's field technicians or third party technicians;***
- ***Direct escalation when required to the equipment vendor's technical assistance resources/experts for fault resolution (see Fault Diagnosis below).***

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Verizon's Managed Services uses a true multilayered approach to network monitoring via an in house developed platform known as IMPACT. IMPACT incorporates each aspect of Verizon's data network architecture to include Customer Networks, Verizon's virtual data networks, DXCs, and the Optical transport layer. Each of these layers feeds alarms to the architecture to provide cross platform

Comply (Yes/No)	Explanation/Description
	alarm correlation. The point of entry into IMPACT for an alarm generated by a managed customer's element is a highly customized version of the industry leading SMARTS in Charge Management Platform. Once the alarm clears the SMARTS platform (discussed in detail later in this document) the event is handed off to the 2nd portion of the IMPACT architecture which acts as an umbrella for various other network management platforms. The key functions of the impact platform include: ▪ Proactive Monitoring of each element of the customer's WAN ▪ Fault Correlation. Multiple alarms can be associated to a single failure. These alarms are correlated within the customer's network and then cross correlated to other elements within Verizon network. The ability to correlate multiple alarms to a single root cause is critical to remedy the fault condition quickly and efficiently. This correlation allows our engineers to focus on problem resolution, not identification. ▪ We have set the platform up to execute an ICMP ping to each managed element once every three minutes. Based upon a failed ping, the ping is attempted again and if it fails again, an alarm is generated. This alarm generation automatically creates a trouble ticket in the Verizon ticket system, ETMS (Enhanced Ticket Management System). Once the trouble has been detected, the following actions take place: ▪ The MSO (Managed Services Operations) receives an alarm, either from a failed ICMP Poll or an unsolicited SNMP Trap, on the SMARTS platform. ▪ If a ticket is detected proactively, MSO's automation architecture known as IMPACT will automatically open an Electronic Trouble Management System (ETMS) Service Inquiry ticket under the responsibility of customer service. Using Customer Service as the ticket owner provides the VITA with a single point of contact and an overlay organization for status and escalations. Newly entered tickets are pushed to the top of the tickets to be reviewed. The ticket will then automatically be referred out to the MSO for follow up testing and trouble repair. ▪ The IMPACT tool will automatically page or email notification to the appropriate customer address within 15 minutes. If a voice call is required, the MSO will place a call to the appropriate customer contact. Before any testing of a service that is not down hard, the customer will be contacted and asked for a release of the service for testing and isolation (On down hard issues testing begins immediately.). The MSO will also ask if there are any known problems (power, maintenance) to exist at the site currently in alarm. If the service is not release for testing by the customer, the customer may wish to schedule a release for testing at a later time. ▪ The MSO will assign the trouble to the appropriate party for correction based upon the information collected in step 4. A. Network Problem - The MSO will determine if the problem is related to the Managed Network. If the problem is found to be within the lines of demarcation the MSO will initiate the trouble isolation/resolution process. B. If the problem appears to be a local LAN issue outside the lines of demarcation, the MSO will refer the trouble to VITA. The MSO will not

Comply (Yes/No)	Explanation/Description
	abandon VITA if the trouble is referred to VITA and will assist in any reasonable fashion. C. Site Contact (or backup) - The MSO may ask that the local Site Contact (or backup) serve as their "eyes and hands" in correcting a problem. The MSO will not expect the local Site Contact (or backup) to be able to work an issue of this type alone, just be able to follow specific step-by-step instructions provided by the MSO over the phone (like hitting a power button or looking for a cable hanging off). The intent is to reduce service restorable time frames rather than wait for a dispatch. D. The MSO will assign troubles to the appropriate third party service providers as necessary (including on site third party maintenance providers). The MSO will manage the third party service providers based upon the committed service objectives. The MSO will use the dispatch authorization procedures for outside of contract calls as required and authorized by the Site Contact (or backup). Verizon will coordinate with third party providers related to equipment faults and failures. E. If the problem on Verizon's circuit is determined to be a physical-level circuit issue, the MSO will (via IMPACT testing capabilities) test the circuit to the associated CSU/DSU from the Verizon DXC. If it is not a Verizon circuit, prior trouble isolation will direct the MSO to report the fault to the appropriate carrier for resolution. The trouble will be assigned to the appropriate repair entity whether that is a Verizon Terminal, an RBOC, or a PTT. F. The MSO will act as agent for VITA in this situation and manage the third party carrier based upon committed service objectives. During the process of resolution, VITA is updated approximately every fifty-five minutes with the status of the ticket and fault resolution process. VITA may name up to three contacts they would like Verizon to notify with updated status. The MSO will track and manage the trouble regardless of what group the trouble was assigned to. When a corrective action occurs, the MSO will determine if the trouble has been cleared. ▪ A. If the trouble has not been cleared, the MSO will re-evaluate the trouble based upon the information collected and reassign the trouble beginning at "MSO Assignment." ▪ B. If the trouble HAS cleared, the MSO will verify with VITA that the service is restored/acceptable and close the service inquiry through ETMS noting the name of the person at the customer location. The MSO will notify the appropriate parties that the trouble has been cleared based upon the detailed notification procedures.

c. Proactive Monitoring, Fault Diagnosis, and Fault Dispatch

Describe Supplier's capabilities to perform fault diagnosis and notification to VITA including automated event correlation to resolve the fault to meet or exceed the service level requirements in Appendix B.

Supplier should demonstrate willingness to collaborate with VITA's designated support personnel and/or the equipment manufacturer (if and when required) to troubleshoot and resolve a fault. However, the Supplier is the responsible and empowered entity to meet or exceed the service level requirements shown in Appendix B.

In addition, can the Supplier provide 24x7 proactive monitoring for IP-VPN equipment that would potentially be under management? Proactive monitoring is needed to enable event detection and fault prevention over fault correction (i.e., to identify degradation in performance and correct it before an actual outage occurs). Describe Supplier's capabilities in this area.

Once the Fault has been diagnosed, describe the process by which Supplier determines whether to resolve the fault remotely or dispatch a field technician in order to meet or exceed the service level requirements shown in Appendix B. Supplier responsibilities include:

- ***If required, dispatch an on-site field technician to resolve the fault;***
- ***Repair and/or replacement of hardware and/or reloading of software and its configuration covered under contract;***
- ***Provide fault status updates;***
- ***Service all faults immediately (deferrals by permission of VITA authorized personnel only).***

  Note: Proactive monitoring is NOT required for the VSP Managed IP-VPN.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Detail as Above: Once the trouble has been detected, the following six actions take place: The MSO (Managed Services Operations) receives an alarm, either from a failed ICMP Poll or an unsolicited SNMP Trap, on the SMARTS platform. If a ticket is detected proactively, MSO's automation architecture known as IMPACT will automatically open an Electronic Trouble Management System (ETMS) Service Inquiry ticket under the responsibility of customer service. Using Customer Service as the ticket owner provides the VITA with a single point of contact and an overlay organization for status and escalations. Newly entered tickets are pushed to the top of the tickets to be reviewed. The ticket will then automatically be referred out to the MSO for follow up testing and trouble repair. The IMPACT tool will automatically page or email notification to the appropriate customer address within 15 minutes. If a voice call is required, the MSO will place a call to the appropriate customer contact. Before any testing of a service that is not down hard, the customer will be contacted and asked for a release of the service for testing and isolation (On down hard issues testing begins immediately.). The MSO will also ask if there are any known problems (power, maintenance) to exist at the site currently in alarm. If the service is not release for testing by the customer, the customer may wish to schedule a release for testing at a later time.

Comply (Yes/No)	Explanation/Description
	The MSO will assign the trouble to the appropriate party for correction based upon the information collected in step 4. A. Network Problem - The MSO will determine if the problem is related to the Managed Network. If the problem is found to be within the lines of demarcation the MSO will initiate the trouble isolation/resolution process. B. If the problem appears to be a local LAN issue outside the lines of demarcation, the MSO will refer the trouble to VITA. The MSO will not abandon VITA if the trouble is referred to VITA and will assist in any reasonable fashion. C. Site Contact (or backup) - The MSO may ask that the local Site Contact (or backup) serve as their "eyes and hands" in correcting a problem. The MSO will not expect the local Site Contact (or backup) to be able to work an issue of this type alone, just be able to follow specific step-by-step instructions provided by the MSO over the phone (like hitting a power button or looking for a cable hanging off). The intent is to reduce service restorable time frames rather than wait for a dispatch. D. The MSO will assign troubles to the appropriate third party service providers as necessary (including on site third party maintenance providers). The MSO will manage the third party service providers based upon the committed service objectives. The MSO will use the dispatch authorization procedures for outside of contract calls as required and authorized by the Site Contact (or backup). Verizon will coordinate with third party providers related to equipment faults and failures. E. If the problem on Verizon's circuit is determined to be a physical-level circuit issue, the MSO will (via IMPACT testing capabilities) test the circuit to the associated CSU/DSU from the Verizon DXC. If it is not a Verizon circuit, prior trouble isolation will direct the MSO to report the fault to the appropriate carrier for resolution. The trouble will be assigned to the appropriate repair entity whether that is a Verizon Terminal, an RBOC, or a PTT. F. The MSO will act as agent for VITA in this situation and manage the third party carrier based upon committed service objectives. During the process of resolution, VITA is updated approximately every fifty-five minutes with the status of the ticket and fault resolution process. VITA may name up to three contacts they would like Verizon to notify with updated status. The MSO will track and manage the trouble regardless of what group the trouble was assigned to. When a corrective action occurs, the MSO will determine if the trouble has been cleared. A. If the trouble is not cleared the MSO will re-evaluate the trouble based upon the information collected and reassign the trouble beginning at "MSO Assignment." B. If the trouble HAS cleared, the MSO will verify with VITA that the service is restored / acceptable and close the service inquiry through ETMS noting the name of the person at the customer location. The MSO will notify the appropriate parties that the trouble has been cleared based upon the detailed notification procedures.

d. Incident Resolution

Once the Supplier has determined whether remote or on-site dispatch is required, and once the Supplier has determined the cause of the outage or service degradation, it will immediately begin the resolution of the fault. In the process of troubleshooting, a Supplier cannot create a service outage without explicit approval from an authorized VITA representative.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	When a service-affecting event is detected, whether reported by VITA or identified through MSO proactive monitoring, a trouble ticket is opened. This trouble ticket contains a complete description of the service issue and is used to transfer information between the Verizon Service Center and other Verizon organizations responsible for testing and repair. Such information includes: ▪ Problem description ▪ Initial diagnostic results ▪ Points of Contact ▪ Circuit number or DNS name Once compiled, MSO Is assigned the ticket for further diagnostics and repair. Incident resolution management responsibilities include: ▪ Ticket notification to VITA and Verizon Account Team ▪ Direction of timely-resolution progression ▪ Performance of escalations as needed ▪ Resolution progress, offering a regular status report to VITA ▪ Ticket closure with VITA upon resolution Verizon coordinates the dispatch and resolution of the trouble regardless of whether the source of the trouble is network related to Verizon, another vendor, or a third party carrier. MSO has responsibility for proactive customer notification of outages and verification with the customer of restoration. Verizon trouble tickets will be assigned priority levels based on established criteria. Those problems likely to cause the greatest disruption receive Priority 1 status and are handled accordingly. Customers receive statuses on an hourly basis for all Priority 1 troubles until closure of the ticket.

e. Incident Closure

Once the Incident has been successfully resolved (e.g., the failed device or software fault has been successfully repaired or replaced), VITA expects that Supplier will do acceptance testing prior to closing the ticket and notify VITA accordingly. When Supplier replaces redundant hardware, testing of failover or resiliency is required prior to ticket closure.

Confirm Supplier's ability to provide the following upon resolution of the Incident:

- ***The description of the Incident and details of the action taken to resolve the fault are accurate, related to the fault, and readable;***
- ***Classification is complete and accurate according to root cause;***
- ***Resolution/Action is agreed to by VITA and documented electronically;***

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	The process is described in above responses (questions c and d). Additionally, VITA is updated every 55 minutes with the status of the ticket and fault resolution process. When the problem is corrected, the ticket is updated with the resolution information. We will close the ticket following confirmation of incident resolution and with VITA approval.

3. Problem Management

VITA requires a sound Problem Management process that minimizes the adverse impact of Incidents and Problems on the agency and prevents the undue recurrence of Incidents. Where Incident Management's aim is rapid restoration of service, Problem Management's aim is diagnosis of the underlying cause and prevention/reduction of future Incidents.

Detail the Supplier's definition of what constitutes a "Problem" for areas of network services. Detail the Supplier's ability and experience in providing such a process. Such experience should include working and coordinating with the equipment manufacturer to assist in:

- ***Tracking and reporting problems***
- ***Resolving problems***
- ***Recognizing trends***
- ***Making recommendations to VITA***

Describe Supplier's system or tool that provides a suitable repository for the historical Incident information – typically based on an integrated Service Management tool which can capture the information at logging or first-analysis stage of the Incident handling process.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Problem management is an important feature of Verizon Managed Services. A recurring service issue is defined as "chronic" when three or more tickets are opened on the same service element (such as a circuit or router) within a rolling, 30-day period. Once identified, a chronic ticket is opened to address the issue in a manner designed to determine its root cause.

Comply (Yes/No)	Explanation/Description
	Service management includes multiple activities for diagnosing and correcting problems associated with VITA service. Service management information and activity logging is accomplished using our Enhanced Ticket Management System (ETMS). ETMS is tightly integrated with other critical systems through our IMPACT platform allowing for integrated diagnostics, communication, collaboration, control, correction, and cataloging of events along with their resolutions. This activity may involve extensive testing, review by a second level support group, and other actions deemed appropriate to ensure resolution. Once resolved, a report of actions taken and ongoing improvement processes will be communicated to VITA. The ticket is updated and the resolution confirmed and approved by VITA.

4. Preventative Maintenance

Describe how Supplier performs all manufacturers' recommended preventative maintenance including implementing recommended software updates and patches according to each equipment manufacturer's recommendation for good operational practice.

For purposes of responding to this RFP, VITA defines a software update or patch as a bug fix (for security issues), a change in OS release version (within the same feature set) or when the OEM of the software provides the update, upgrade or patch software at no cost to VITA (including via any maintenance agreements that VITA has) or at no cost to Supplier.

VITA requires that the software be maintained in its most up-to-date release that is considered stable, secure, and compatible with already deployed equipment and only with VITA's approval and in accordance with VITA's existing Change Management Process requirements.

Also describe how Supplier performs testing following the installation of an update, patch, or an upgrade to confirm the equipment is functioning in accordance with the manufacturer's specifications. Confirm that testing will be done in accordance with mutually agreed upon test plans.

Confirm that Supplier has not included the costs of software upgrades in its Appendix A maintenance pricing. An "upgrade" is defined as an increase of features or capabilities to the existing equipment software and is not an update or patch of the existing equipment software.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	From time to time, manufacturers will issue software patches and IOS bug fixes specific to a device being managed by Verizon. Verizon. When maintaining a device's IOS within supported parameters (two full releases), MSO may not move to the latest IOS. MSO instead moves a device to the latest IOS that supports the customer's environment and that our testing and experience have shown to be "bug free." Security patches will be discussed with VITA prior to deployment and implemented as mutually agreed. VITA may be given a number of security patch options, based upon perceived security risks and downtime sensitivity Configurations and current IOS revision information is stored in the CMDB (Verizon ESP). Verizon will back up VITA's router configurations on a weekly

Comply (Yes/No)	Explanation/Description
	basis. This allows quick recovery when a hardware replacement is made and provides accurate record keeping when performing configuration changes on the VITA network. Backups are accomplished through the use of a custom Verizon application whereby a TFTP session is established to the device and CPE configurations are stored on dual secure servers within the network access point (NAP) architecture. Historical configurations are retained for 52 weeks for managed WAN devices. IOS updates, patches, and configuration management are included in the monthly fee for management. "Upgrades" are not included in the pricing in Appendix A.

5. *Configuration Management*

Configuration Management is defined as the development and maintenance of VITA's logical and physical inventory and detailed configurations of all in-scope equipment and network infrastructure. VITA will review and approve all device configurations.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Configuration Management broadly defines those functions and activities performed by Verizon to keep VITA's solution (network and CPE) in line with their changing business needs. Activities included are: ▪ Inventory of installed network devices ▪ Backup of router configuration (saved after every change; saved for fifty-two (52) weeks) ▪ Deployment of software and / or firmware releases, as required in order to address a problem in the network ▪ Managing non-design-impacting change requests (SCM) ▪ Managing and coordinating design-impacting change requests (OCM) ▪ Proactive recommendations for change management when a security advisory has been given that affects any managed hardware Verizon's Network Operating Center (NOC) takes a comprehensive approach to Configuration Management. The objective is to minimize, if not eliminate, any negative and/or unforeseen service impacts while carrying out changes to Typical activities included are: ▪ Inventory of installed network devices ▪ Backup of router configuration (saved after every change; saved for fifty-two (52) weeks) ▪ Deployment of software and / or firmware releases, as required in order to address a problem in the network ▪ Managing non-design-impacting change requests (SCM) ▪ Managing and coordinating design-impacting change requests (OCM) ▪ Proactive recommendations for change management when a security

Comply (Yes/No)	Explanation/Description
	advisory has been given that affects any managed hardware Verizon's NOC takes a comprehensive approach to Configuration Management. The objective is to minimize, if not eliminate, any negative and/or unforeseen service impacts while carrying out changes to VITA's managed network. This is achieved by processing change requests via well-defined and controlled procedures.

a. Configuration Management Database

Confirm Supplier's ability to develop and maintain a Configuration Management Database (CMDB) that includes defining and maintaining configuration items including equipment hardware and software configuration details by site address.

A configuration item (CI), in the context of this RFP, is equipment (e.g., a Cisco 7206VXR router), a card within a device (e.g., supervisor card), the software on the equipment (e.g., IOS), a network POP, or a local access circuit.

Describe the available additional CIs that Supplier's CMDB is able to include. VITA requires "View Only" access capability to the Supplier's CMDB.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Verizon uses a centralized CMDB within our Enterprise Services Portal (ESP). ESP houses the database of record for all VITA CIs. Some additional CIs include: ▪ Cable ▪ Interface Card ▪ Network Module ▪ Power Supply ▪ Software License ▪ Defined Interfaces Read only access is available via the Verizon Enterprise Center (VEC). Using the VEC, VITA may view or print detailed reports on a device, site, or network specific basis.

6. Moves, Adds, Changes, and Disconnections (MACDs)

The selected Supplier is expected to have a rigorous process for implementing VITA's orders for Moves, Adds, Changes, and Disconnections (MACDs). Provide a description of the resources available to the Supplier throughout the Commonwealth of Virginia for both physical ("truck rolls") and remote MACDs.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	As part of Managed WAN Services, Verizon takes responsibility for all router software and hardware changes, and covers the following three change

Comply (Yes/No)	Explanation/Description
	management services by default: ▪ Router IOS software upgrades (described question 4) ▪ Password management ▪ Configuration management (described question 5) Other customer requested changes are carried out via the change process; standard change management (SCM). These changes are considered non-design impacting. All SCM changes are included in the monthly managed services fee.

a. Change Management Processes

Change Management is the process of assessing, controlling, and managing changes to VITA's Supplier-managed equipment, or any aspect of the services related to the managed equipment. The primary goal of this process is to ensure that changes are properly planned for, communicated, and approved. Describe Supplier's proposed Change Management Process, and provide documentation of Supplier's change management procedures and auditing practices.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	As part of Managed WAN Services, Verizon takes responsibility for all router software and hardware changes, and covers the following three change management services by default: ▪ Router IOS software upgrades (described question 4) ▪ Password management ▪ Configuration management (described question 5) Other customer requested changes are carried out via the change process; standard change management (SCM). These changes are considered non-design impacting. All SCM changes are included in the monthly managed services fee.

b. MACD Service Level Requirements

Equipment and MACD Type (Notes 1&2)	*Coverage (Note 3)*	*VITA Requirement*	*Service Credit (Note 4)*
Data Remote Emergency	*24x7*	*4 hours*	*100% of MACD NRC*
Data Remote Simple	*8x5*	*1 business day*	*100% of MACD NRC*
Data Remote Complex	*8x5*	*2 business days*	*100% of MACD NRC*
Data On-site Simple	*8x5*	*3 business days*	*100% of MACD NRC*
Data On-Site Complex	*8x5*	*5 business Days*	*100% of MACD NRC*
Data Device De-installation	*8x5*	*15 business days*	*100% of MACD NRC*
Telephony Remote Emergency	*24x7*	*4 hours*	*100% of MACD NRC*

Notes:

1. "Remote" is defined as a MACD performed remotely by the Supplier – for example, from the Supplier's Network Operations Center – and requires no truck roll to the site. "On-site" is defined as a MACD which requires the Supplier to visit a site with a truck roll even if no hardware is replaced or added.

2. There are three MACD types: A Simple MACD is one that requires limited effort from the Supplier's personnel to accomplish with a few steps. A Complex MACD is one that requires more effort than a Simple MACD with multiple steps to complete the MACD. An Emergency MACD is defined as an emergency change required to prevent an outage from occurring.

3. Coverage time of 8x5 is defined as 8 a.m. to 5 p.m. Eastern Time, excluding VITA holidays. For MACD requests requested by 4:30 p.m., the start day will be considered to start on that day for the Supplier. For example, if VITA requests a Data Remote Simple request on a Tuesday at 4:20 p.m., the Supplier will complete it no later than Wednesday, close of business, 5 p.m.

4. Service credits are calculated based on the Non-Recurring Charge (NRC) or unit charge for the applicable MACD service request.

Supplier will provide a service credit equal to the NRC for the applicable MACD should it miss the interval for a specific service request. If the Supplier is required to redo or re-work a MACD service request, due to a Supplier error in performing the initial MACD, then the MACD interval "clock" will stop once the re-worked MACD has been completed correctly by the Supplier.

Verizon Response

<table>
<tr><th>Comply (Yes/No)</th><th>Explanation/Description</th></tr>
<tr><td>No</td><td>We provide three standard SLAs for Remote MACDs:
▪ Emergency 24X7: 4 hours (Priority 1 ticket)
▪ Express 24X7: 24 hours
▪ Standard 24X7: 72 hours
The SLA credit is 20% of MACD NRC
Verizon provides one standard SLA for Onsite MACDs.
Standard: 15 business Day
The SLA credit is 20% of MACD NRC
Data De-installation is considered Best Effort.
Telephony Remote Emergency is not available
Standard Change Management
<table>
<tr><th>Activity</th><th>Cost</th></tr>
<tr><td>Modify analog or ISDN DBU</td><td>Included in MRC</td></tr>
<tr><td>Circuit Upgrade/Downgrade</td><td>Included in MRC</td></tr>
<tr><td>Dialer Interface Modify</td><td>Included in MRC</td></tr>
<tr><td>Discontinue Managed Services</td><td>Included in MRC</td></tr>
<tr><td>Emergency IOS Upgrade</td><td>Included in MRC</td></tr>
<tr><td>Filters/Access Lists</td><td>Included in MRC</td></tr>
<tr><td>IOS Vulnerability Upgrade</td><td>Included in MRC</td></tr>
<tr><td>Single Site IP Address/Subnet Mask Changes</td><td>Included in MRC</td></tr>
</table></td></tr>
</table>

Comply (Yes/No)	Explanation/Description	
	Privilege Exec Commands Add/Modify	Included in MRC
	Request Copy of Router Configuration	Included in MRC
	SNMP community strings Add/Modify/Delete	Included in MRC
	Static Route Add/Modify/Delete	Included in MRC
	PVC for Unmanaged Remote Device Add/Modify/Delete	Included in MRC
	TACACS Add	Included in MRC
	Password Change	Included in MRC
	Bandwidth Increase/Decrease Logical	Included in MRC
	Host Name Change	Included in MRC
	IP Address/Subnet Mask Changes Add/Modify/Delete	Included in MRC
	Modify Buffer Allocation	Included in MRC
	Modify Dial Back-up/Dialer (interface)	Included in MRC

7. *Documentation Management*

Describe Supplier's procedures to maintain, efficiently organize and update all documentation related to the managed services.

Documents included in the documentation management provided by the Supplier could include the following: operations and procedures manual, reports, site documentation information, communication memorandums, password files and contract documents with up-to-date amendments.

Confirm if Supplier would allow VITA to access the above-listed documents, including downloading documents via a web portal, in their original format during the contract term and any extension years.

Also indicate if there are any pricing implications related to the use of VITA-provided document repositories rather than Supplier-provided document repositories, and ensure that any such implications are clearly explained and reflected in Appendix A, Pricing.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	We maintain and organize much of a customer's documentation in the VEC portal for access by authorized customer personnel. Included are site documentation, designs, service-specific information, and contact details. Additionally, VITA can access a customer training portal that houses the latest product information and training materials that can be printed or used online. The Account Team takes the responsibility for managing contract documentation and administrative documentation related to agreements with VITA. If VITA uses its own repositories for document management, supporting documentation (as defined) can be made available in digital form for download at no additional cost.

8. *Equipment Installation and Testing*

This section sets out the installation and testing services that VITA may require Supplier to perform from time to time (as specifically described in the requirements within this Section) in relation to any equipment under management by the Supplier.

a. *Equipment Installation Process*

Most commonly in the current environment, where managed services are employed, the customer premises equipment is initially provided by the vendor to state agencies, localities and schools, although those state agencies, localities and schools ultimately own the equipment. Going forward, and especially for prospective managed networks other than the Virginia State Police Managed IP-VPN, VITA anticipates that it may buy its own equipment directly from the manufacturer.

Taking into account either scenario, Supplier's Network Operations Center is responsible for configuring the equipment to a standard specification and, typically, sending the device to a local subcontractor for installation at the user agency.

With these options in mind, provide a description of Supplier's own staging, configuration and installation process for new IP VPN data equipment installations. Also describe how this process changes for expedite orders. Ensure that the description adequately describes complete system or device installations, as well as individual cards as part of a MACD (Moves, Adds, Changes, De-Installation) process.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Verizon configures the equipment, stages, ships, and arranges for installation. Verizon also tests the equipment. The timing for these processes can be shortened for expedited orders.

b. *Equipment Staging and Configuration*

As part of the equipment procurement process, describe Supplier's procedures for staging the equipment prior to installation. VITA defines equipment staging as those Supplier activities performed prior to the actual installation and test of the device at the VITA site. Confirm that the following equipment staging tasks will be performed:

- ***Pre-assemble equipment including any modules;***
- ***Implement the Supplier engineered and VITA-approved configuration on the specific device including loading all necessary VITA approved OS and software;***
- ***Burn-in and test of equipment in accordance with manufacturer's and Supplier's recommended best practices. Describe Supplier's ability to be responsible for validating the functionality and device-specific configuration during burn-in and test.***

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Verizon stages, configures, tests, and burns in equipment at our staging facilities to ensure all CPE shipped is ready for installation and activation. Our staging centers follow the procedures outlined below as required: ▪ CPE Services is a multiple department organization responsible for providing value added circuit and equipment provisioning, equipment

Comply (Yes/No)	Explanation/Description
	integration and testing, for communication systems installed in the Verizon network and customer's premises. ▪ CPE Services works cross-functionally with Verizon Account teams, Marketing and Operations in an effort to meet customer specific location needs and project installation schedules. ▪ All CPE Services output deliverables are held to strict time intervals and quality standards, enabling Verizon to deliver network capacity, services and products faster and more effectively. ▪ CPE staging locations: USA/CANLA – Grapevine, Texas

c. Manufacturer Certification

Supplier acknowledges that all personnel that perform the installation and test of new equipment are certified by the manufacturer to perform installation and test for the applicable equipment. Confirm that Supplier's Appendix A pricing takes this into account for all installations without exception.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	

d. Installation Windows

Confirm that Supplier will be available 24x7 to support VITA's installation during the term of the Contract. The Supplier will install and test equipment in a manner that is least disruptive to VITA's business operations, including performing installations during non-business hours in accordance with VITA installation and maintenance policies.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	

e. Supplier Installation Requirements

After staging and configuration, describe how Supplier will install new equipment or upgrades to existing equipment in accordance to the Supplier developed design and configuration documentation and the implementation project plan. Confirm that Supplier will perform the following equipment installation and testing tasks:

- ***Call the site contact to confirm the scheduled installation date and time window.***
- ***Unpack, inspect, accept, inventory, and check against equipment purchase list and site design information.***
- ***Install and implement the final equipment configuration and OS software at the agreed location, according to the solution design.***
- ***Power up equipment and check proper operation.***

- ***Verify all data equipment software is loaded and configured properly to support user configuration standards (e.g., quality of service, VLANs, hunting/forwarding paths, station and call routing programming, etc.).***
- ***If not done during staging, perform any mutually required patching for current, known security and functionality issues specific to the equipment refresh.***
- ***Provide any required extension of local access circuits to the office space where the equipment will be installed.***
- ***Verify the proper functionality of the configuration of the equipment.***
- ***Connect equipment to existing premises and carrier network infrastructure as applicable.***

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	

f. Testing and Acceptance

VITA expects the Supplier to be responsible for testing the new equipment prior to its cutover into VITA's production environment. Confirm that Supplier will perform any end-to-end testing to ensure the new equipment is interoperable with connected equipment or transport services.

Testing should cover the installation procedures, back-out procedures and the functional integrity of the resultant system. There should be a sign-off for each stage of testing. Final acceptance and sign-off for the new equipment to go into the live environment should come from the Agency.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	

9. Managed Services Tools

Provide a description of Supplier's currently deployed service management tools and systems that will be used to support the management services described in all the previous sub-sections of this Section 5.H. VITA realizes that not all ITIL processes are best served by employing an automated tool, with some processes requiring human interaction or a manual implementation.

Confirm that no additional charges apply for any of the tools described in Supplier's response to this requirement.

In addition, describe:

- ***How Supplier's service management tools support the ITIL framework and guidelines;***
- ***How Supplier will communicate to VITA its new processes and procedures when a new tool is introduced or an existing tool is significantly upgraded;***

- ***How Supplier's service management tools are maintained (patches, lifecycles, testing, audits, personnel training);***
- ***The security capabilities of Supplier's service management tools specifically addressing how (i) the systems are segmented; (ii) communications are protected with encryption; (iii) personnel access to service management tools is restricted; (iv) NOC personnel is screened; (v) auditable and investigable records of actions are generated and maintained; (vi) access from customers is secured; and (vii) periodic audits are performed.***

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Verizon utilizes a system developed specifically for network management called the Integrated Management Platform for Advanced Communications Technologies (IMPACT). IMPACT is an integrated management platform for Verizon's global network. IMPACT interfaces with various Element Management and Network Management Systems to provide a unified view of network problems to the user community. Additionally, IMPACT makes available many features allowing the users to be more productive in their daily tasks, such as workflow, ticketing, topology information, task automation, command interaction capabilities, as well as, interfaces to several internal systems for maintenance activities, outage notifications, and contact information. For example, the IMPACT system integrates with the ESP CMDB to provide configuration changes and details on a specific site/device basis. **IMPACT Functions** The impact system provides the following functions: ▪ Network Fault and Performance Data Collection ▪ Fault Correlation, Filtering and Reduction ▪ Alarm Presentation ▪ Performance Monitoring ▪ Command/Control ▪ Trouble Ticket Integration ▪ Field Technician Information Integration ▪ On-line Help Facilities ▪ Flexible/Survivable System Configuration ▪ Current & Historical Data Reporting ▪ Color graphic Operator Stations Verizon follows the industry-standard FCAPS model. FCAPS consists of Fault Management, Configuration Management, Accounting Management, Performance Management, and Security Management. The IMPACT management tool has been developed following this guideline. **Customer Data Management** Customers will not have access to Verizon's network management data. Where customer access is provided, a customer can only see their specific data. Customer reporting data is accessible via the Internet. The NOC restricts this access by allowing only designated customer source IP

Comply (Yes/No)	Explanation/Description
	addresses through our internal firewall. The Web servers that contain the customer data have access protection based on the source IP address. The Web servers are not publicly advertised and the IP address is only given out to support personnel. Customers access this data via a Proxy firewall via the address that is given to the customer when their service is enabled. **Device Passwords** Verizon uses the operating system of the server to protect access to the directories and files. A user's access to the files/directories is restricted based upon the access granted him by the system administrator at login. Further, the Verizon password protects the files so that even engineers with proper access to the files and directories require passwords. **Configuration Management Security** This process is only valid when Verizon has complete read/write access to the managed device (Full service level). Any other access that is less than read/write may cause Verizon not to be able make SLA or keep to the letter of this document. ▪ Passwords: Verizon changes router passwords regularly and will change passwords based on a customer's request. This password change will be completed throughout the customer's routers. In the NOC, if key support personnel who have access to a customer's router leave the company, all the routers/devices which make up the customer's network will have their passwords changed immediately. All passwords will follow the minimum standard of 6 to 13 upper and lower case alphanumeric characters. ▪ Router Configurations: We currently retrieve all router configurations on a weekly basis. We keep a 52-week historical archive of customer's unique configurations. Any changes that are made midweek are saved as well and kept on our internal TFTP server. **Access Lists** Verizon currently has implemented access lists that are based on specific IP addresses. The access lists state a permit capability on a particular IP address. This permit statement has an implied deny to all IP addresses that do not match the IP address in the access list. These access lists effectively block out any TCP and UDP connections that are not initiated from a permitted IP address. The routes (paths), which point to the permitted IP address, point back to the NOC. These routes are static and therefore are not changed via dynamic routing changes. This creates an additional layer of protection because Verizon would manually have to change the entries if we wanted to change the routes. An additional access list has been applied to all customers' connections to the NOC. This access list will only allow established TCP connections. This will prevent customers from attempting to Telnet from their routers, through our router, to another customer's router. **Virtual Terminal Connections (VTYs)** In addition to protecting data flows, Verizon has protected the virtual terminal connections on our routers using the access lists described above. Included in the protection is the fact that only "incoming" connections are allowed to

Comply (Yes/No)	Explanation/Description
	connect. When an incoming connection is requested, a password must be provided as well as be from one of the trusted Verizon hosts. This virtual terminal protection is set up on multiple ports. **SNMP Strings** In the SNMP environment, Verizon has setup a unique community string (password). Verizon personnel and the trusted hosts only know this password. In addition, all SNMP traps are explicitly sent to several Verizon trusted hosts. These hosts are part of the access lists described above and must know the correct community string. **TACACS Authentication** Verizon has multiple TACACS servers currently utilized as part of our NOC. Only authorized Verizon employees have accounts on this system. All customers' passwords are unique per customer. Our password aging follows the company standards. We have different password aging standards based on the system and its use. Currently we use TACACS where possible as our authentication protocol. For each managed domain we deploy a separate TACACS server. The servers are configured in the same manner for ease of administration. The following policies are applied to all servers. First all accounts are deleted after 90 days if they go unused. Secondly, TACACS accounts have a 60-day limit on their passwords. At the end of this limit, a new password needs to be selected. All passwords will follow the minimum standard of 6 to 13 upper and lower case alphanumeric characters. A user is allowed to miss type their password no more than 10 times. After 10 failures, no matter when in the 60 day cycle, the account is disabled. The user then has to contact Verizon to get their password reset. **Out of Band Access** All modems are password protected with a 6 to 13 alphanumeric character password. This method is the minimum protection required for out of band management. In some instances more elaborate solutions have been implemented. In all cases the console/aux port that the modem connects to is password protected. The authentication mechanism can either be TACACS based or local on the router. In either case the 6 to 13 character password limit applies. Verizon uses a dial out only modem pool for gaining access to the modems on the managed routers. The modems and console ports are allowed three login attempts prior to taking down the connection. **Logging, Reviews, and Forensics** It is the requirement that all TACACS authentications be logged and stored for a 3-month period. This logging requirement is also applied to all managed firewalls logs and syslog servers. The data is made available to the customer upon request. We will do log reviews and data posting for customer upon request for a specific time frame and limited scope. Any other requests that would require long log reviews are done on a time and materials contract.

10. Managed Router and Other Managed Services

The Supplier should detail its capability to provide Managed Equipment services to VITA locations. These include not only Managed Router services but also managed security offerings (e.g., managed firewalls) and managed LAN switching equipment. Pricing for these managed services may be addressed utilizing the Managed Services tab contained in Appendix A. Cover the following areas in your proposal response:

- ***Break-fix maintenance.***
- ***Device management including fault identification/isolation/resolution and device configuration.***
- ***MACD process.***
- ***Equipment Rental or Lease.***

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	See Response to #9 above.

11. Statewide Availability

Confirm that the Supplier's Managed Services and Other Support Services as proposed are available statewide. If there are any locations in Virginia where Supplier's Managed Services and Other Support Services are not available, list such locations/exceptions.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	All locations are available for the proposed services

I. Voice over IP

Over time, VITA anticipates that a significant portion of VITA's voice traffic, now essentially all carried over the traditional Public Switched Telephone Network (PSTN), will migrate to Voice over IP.

Not all of this current spend is explicitly presented in Appendix A of this RFP for Telecommunications Network Services, which essentially includes only interexchange carrier traffic. However, once VITA "gets its feet wet" in VoIP, it is likely to seek out opportunities in substituting VoIP for PSTN infrastructures throughout its telecommunications plant.

Among VITA's current spend are the following notable statistics.

- ***Approximately 130 million minutes a year of long distance voice toll traffic (including intrastate InterLATA, intrastate toll, interstate, and international calling).***
- ***More than $8 million a year in Analog Centrex Local Service Lines.***
- ***Several hundred Primary Rate Interface (23B+D) Local Service network connections.***
- ***Nearly 17,000 monthly instances of ANI-based routing charges.***
- ***A substantial amount of traditional Centrex and a small amount of hosted IP Centrex services within the legacy Bell Atlantic (as opposed to legacy GTE) portions of the Commonwealth now served by Verizon.***

The main types of VoIP services that VITA is seeking would be Hosted IP Telephony and SIP Trunking. It is anticipated that Hosted IPT would provide VoIP benefits at what are currently Centrex locations, and that SIP Trunking would provide VoIP benefits at locations that currently employ a PBX.

VITA would like the Supplier to offer both Hosted IP Telephony and SIP Trunking services for consideration over the life of the Contract resulting from this RFP.

J. Hosted IP Telephony

VITA anticipates that the legacy voice equipment environment will likely change. Particularly in the case of Centrex, VITA anticipates that a replacement solution would likely be the functional equivalent of Centrex for the VoIP environment – Hosted IP Telephony. In addition, while the current legacy (PBX/Centrex) voice equipment environment continues to serve COVA well, because of limited resources, COVA is always seeking more effective and economical solutions such as this form of hosted, cloud-based telephony.

COVA is interested in the supplier's fully-managed hosted IP Telephony utility (shared platform/cloud model) service including any required remote site equipment such as voice gateways and IP handsets and softphones. The hosted service will be maintained by the supplier and include redundant server equipment, full management and maintenance of the shared hardware and software and MACD support. The service will also support future agency needs for Unified Communications and Collaboration (UC&C).

Suppliers should note that, while potential IPT solutions may eventually replace the functionality of the current legacy voice equipment environment (which includes PBX, Electronic Key Telephone Systems (EKTS) and/or Centrex services), COVA does not have site-specific requirements at this time.

In terms of possible opportunities, the legacy sites represent a total of more than 33,500 active Centrex lines. There are also approximately 13,500 voice mailboxes, 7,900 of which are associated with traditional ILEC TDM local services, and are also provided through the expiring IXC contract. COVA is interested in the Supplier's ability to deliver a robust voice mail solution with features such as unified messaging (voice mail to email integration) and automated attendant service.

1. Offer Description and Components

The typical scope of services that could comprise individual COVA Hosted IPT service opportunities include:

- ***Centralized shared IPT server platform:***
  - ***Assignment of the required IPT equipment and software (or when required, installation of additional equipment/software) needed to implement a Hosted IPT service solution (including for voicemail services).***
  - ***On-going maintenance and management of the equipment and software.***
- ***Interface with existing IP handsets (or installation of new IP handsets) at COVA agency locations in order to implement the solution.***
  - ***Ongoing management of the handsets.***
  - ***On an exception basis Supplier may also be required to install, maintain and manage media gateways at certain COVA locations.***
- ***If desired by VITA, on-going maintenance and management of telephony CPE and related software that remains in place at the remote locations following the conversion to the Hosted IPT Solution.***
- ***End to End call processing and routing.***

Describe the Supplier's shared utility/cloud-based Hosted IPT service in terms of architecture, technology, hardware/software at the central platform site (and at individual remote sites if required), conformance to standards, and ability to meet standard SLAs.

Describe the specific component "building blocks" deployed in support of the service, specifying the underlying OEM (Avaya, Cisco, etc.). Explain how these components would provide the required functionality and meet the Supplier's offered performance levels and service level requirements.

Verizon Response

Comply (Yes/No)	Explanation/Description
No	

2. *Design/Deployment Description*

Provide a description of a typical Hosted IPT service deployment/design, including underlying data requirements and normal assumptions, including:

- ***Data center environment/capabilities at the host site (Tier 1, Tier 2 standards, etc.).***
- ***How redundancy is achieved.***
- ***Solution scalability for increases or decreases in supported endpoints (both specific core components the entire system). How many disparate sites (PBXs, locations, branches) can be supported by the core routing elements?***
- ***Solution for call set-up and routing for on-net calls between Customer's on-net locations, including route table management, determination of originating and terminating call data that traverse the WAN vs. hand-off to the PSTN.***
- ***Interoperability with both private and public network dial plans.***
- ***Solution dependencies on the underlying wide area network.***
- ***The ability to integrate and operate with existing COVA hardware and systems.***
- ***Approach to security.***
- ***E911 considerations – how the solutions meets all industry and legal E911 requirements globally.***

Verizon Response

Comply (Yes/No)	Explanation/Description
No	Verizon will not be providing this service

3. *Local Calling Capability Throughout the Commonwealth*

Do you have a hybrid solution to ensure that local calling is available throughout entire Commonwealth even where the hosted IP telephony does not natively provide this capability in certain geographies? This would likely encompass alternatives to establishing rate centers for the purpose of rating local calls. If the Supplier does not have such a solution, describe how much of the Commonwealth can be covered through hosted IP telephony.

Verizon Response

Comply (Yes/No)	Explanation/Description
No	Verizon will not be providing this service

4. *Features and Capabilities*

Describe the various calling features and capabilities contained in the Supplier's Hosted IPT service. Ideally the features should be available in a reasonable mix of a standard basic package, additional packages, and a la carte features.

Feature	*Description*
Authentication of IP Phone registration	
Call Tracing	
Call Waiting	
Follow Me / Anywhere (permits users to link fixed and mobile phones to his/her account and setup ringing rules)	
Flexible queuing and routing mechanisms	
Personal Web Portal (allows users to activate and customize services)	
Local Extension Dialing	
Last Number Redial	
Music On Hold – by location	
2/3-Way Calling	
Shared Call Appearance	
Simultaneous Ring	
Speed Dialing	
Auto Attendant	
Call Park	
Call Pickup	
ACD/Hunt Groups	
Multiple Call Arrangement	
Auto Echo Cancellation	
Automated Call-by-Call Bandwidth Selection	
Automated Endpoint Installation Configuration	
Call Forwarding (Off Premise, Ring/No Answer, Self-Directed)	

Feature	***Description***
Call Hold/Release	
Call Transfer	
Calling Line ID Line and Name	
Conference (Unicast, Multicast)	
Direct Inward Dialing	
Direct Outward Dialing (DOD)	
Event Logging and Reports	
Distinctive Ringing (Internal vs. External Call)	
Call detail recording and reporting	
General reporting capabilities including tools, applications and user interface	
Voice Mail Services	
Message Waiting Indication (MWI)	

Verizon Response

Verizon will not be providing this service.

5. Service Management

COVA requires the Supplier's Hosted IPT service to be a fully managed service offering. Describe the comprehensive service management support included in the offer, addressing the following broad requirements:

- ***Maintenance of the shared central infrastructure and remote devices including media gateways and (if required) handsets,***
- ***Preventative maintenance activities,***
- ***Platform monitoring,***
- ***Trouble reporting,***
- ***Fault isolation and resolution,***
- ***Management of hardware and software, including the latest OEM software versioning/upgrades based upon the underlying infrastructure (Cisco UCM, etc.),***
- ***Performance management,***
- ***MACD activities, including what changes can be made by COVA users/local site administrators using web tools.***

With respect to software management, what capabilities and 'upgrades' are included in the Supplier's hosted service and when would COVA expect to be able to use the capabilities of next release?

Verizon Response

Comply (Yes/No)	Explanation/Description
No	Verizon will not be providing this service

6. *Implementation and Operational Management*

Describe the Supplier's capabilities to install and support the Hosted IPT service in alignment with the following criteria:

- ***The overall approach to implementing a shared service model for Hosted IPT service including typical project phases and activities.***
- ***Project management support***
- ***Installation***
- ***Testing and acceptance***

Verizon Response

Comply (Yes/No)	Explanation/Description
No	Verizon will not be providing this service

7. *Technology Roadmap*

Describe how the Hosted IPT service will provide COVA with a future proofed path to deploying additional IP Telephony and Unified Communications solutions and installations. Include references to architecture, scalability and call routing (including call control and bandwidth management).

Verizon Response

Comply (Yes/No)	Explanation/Description
No	Verizon will not be providing this service

8. *IPT Pricing*

Based upon the above requirements, the Supplier should provide pricing for its standard hosted IPT solution (using an appropriate worksheet format of its choice) as an addendum to the pricing workbook. In doing so, break out any potential UC capabilities/feature package pricing separately from the standard hosted IP dial tone/voice mail capabilities. To reiterate, be aware that COVA does not have agency-specific IPT requirement opportunities at this time.

Verizon Response

Comply (Yes/No)	Explanation/Description
No	Verizon will not be providing this service

9. Service Levels

Provide a copy of the Supplier's standard Service Level Agreement covering availability, network performance, change intervals, and other items that are generally associated with the Supplier's Hosted IPT service.

Verizon Response

Comply (Yes/No)	Explanation/Description
No	Verizon will not be providing this service

K. SIP Trunking Voice Services

1. Supplier's SIP Trunking Voice Service Offering

Where agencies, localities, schools and other public bodies employ their own PBXs, individual locations throughout the Commonwealth are increasingly likely to have IP PBXs at their sites.

Because of the predominance of SIP Trunking in new offers from local carriers (whether those offers are explicitly identified as running over SIP Trunking or not) which typically connect up to a wide range of smaller IP PBXs via the SIPconnect 1.0 or 1.1 standards, personnel at these locations are likely to be encountering the concept of "Voice over IP" in a rigorous fashion for business locations.

VITA believes that it stands to achieve benefits by migrating a combination of local voice and interexchange voice facilities to SIP Trunking in the near to intermediate term. VITA also believes that incorporating SIP Trunking services into the mix of telecommunications services that are provided to the Commonwealth of Virginia will enhance its ability to attract a wider range of telecommunications Suppliers to contracting opportunities with the Commonwealth.

Provide a summary of the Supplier's SIP Trunking service offering. Also provide Supplier's proposed pricing using the SIP Trunk Service tab in Appendix A.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	With IP Trunking, customers can leverage Verizon's IP backbone to access the Public Switched Telephone Network and voice services, allowing more efficient use of their wide area network resources. Designed for customer locations equipped with an IP PBX, IP Trunking service is delivered via a standards-based SIP trunk directly to the customer's IP PBX. This streamlined approach eliminates the need for expensive TDM enterprise gateways or TDM cards, and the associated maintenance costs. IP Trunking offers single and multi-site configurations and is certified for use with some Alcatel, Avaya, Cisco, Nortel, and Siemens CPE platforms

2. *Underlying Transport Options*

Describe the underlying network services over which Supplier can offer SIP Trunks (e.g., MPLS circuits, dedicated Internet circuits, DSL circuits) and any restrictions applicable to the different options, e.g.:

- ***Real-time MPLS class of service requirements;***
- ***Relationship between maximum number of concurrent calls and underlying transport bandwidth.***

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	When deployed over an MPLS circuit, Verizon's IP Trunking and the MPLS circuit will be provisioned with Gold CAR on each circuit. Gold CAR is bandwidth allocated on an MPLS circuit marked for expedite forwarding in the MPLS network. A Verizon Engineer or Solution Architect will calculate the required amount of Gold CAR based upon the codec used (g.711 or g.729) and the number of concurrent calls required. In general, 80Kbps is allocated per g.711 call, 38 Kbps is allocated per g.729 call, and 60 Kbps is allocated per T.38 fax. QOS overhead and transport overhead are also factored into the sizing of a circuit for IP Trunking. IP Trunking Access is available with the following access types and speeds: ▪ Internet Dedicated Access 768 to T3 speeds, including NxT1 using MLFR up to 4 T1s. ▪ Ethernet using IDE Types 1, 2, 3. It is only available using IPv4 . ▪ Private IP 384 to T3 speeds, including NxT1 using MLPPP. ▪ Ethernet to PIP via Types 1, 2, and 3 The access method and transport speed selected will determine the call capacity for the Verizon VoIP products.

3. *SIPconnect Standard Compliance*

State whether Supplier supports the SIPconnect standard for its service, and whether the compliance is to SIPconnect version 1.0 or version 1.1.

Verizon Response

Comply (Yes/No)	Explanation/Description
No	SIP Program Detail SIPconnect is a recommendation and not yet a standard. Therefore, it is not supported in our VOIP network. Verizon is a member of the committee designing the recommendation and hopefully future standards for SIPconnect.

4. *Manufacturer Support*

State which IP-PBX and Session Border Controller (SBC) manufacturers have been specifically tested and verified as supporting the Supplier's SIP Trunking service. Include SBC functionality primarily provided via dedicated hardware and that provided via a separate software load, such as the Cisco Unified Border Element (CUBE).

Do not include simply coincidental compliance with the same version of SIPconnect as indicating "support." List only IP-PBX and SBC manufacturers that have been individually tested over the Supplier's network for call quality and feature transparency.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	The following IP PBXs are certified to interoperate with our IP Trunking services: ▪ Avaya Communication Manager with SIP Enablement Services (SES) 3.1 and 4.0 ▪ Cisco Unified Communications Manager Express 3.4/4.0 (4.0 tested with Private IP only) ▪ Cisco Unified Communications Manager versions 4.1.3 , 4.2, 5.1, and 6.0 ▪ Alcatel Omni Enterprise Edition 7.1 ▪ Alcatel Omni Office Edition 5.1 and 6.0 ▪ Seimens Hipath 4000 Rel 3.0 ▪ Nortel CS1000 Rel 5.0 ▪ Nortel BCM 50 3.0 See the attached CPE Matrix below. IP_Trunking_-_Certified_IP_PBX (2).xlsx

5. *Call Compression*

List all of the call compression codecs that the Supplier can support, which should include at a minimum G.711 and G.729 (e.g., G.729a, G.729b and G.729ab).

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	The codecs currently configured in the VoIP architecture support G.711 and G.729a standards and T.38 Faxing

6. Statewide Availability

Confirm that the Supplier's SIP Trunking Voice Services as proposed are available statewide. If there are any locations in Virginia where Supplier's SIP Trunking Voice Services are not available, list such locations/exceptions.

Comply (Yes/No)	Explanation/Description
Yes	SIP Trunking as proposed is available statewide

L. Implementation

As indicated in Section 1 of this RFP, the Commonwealth of Virginia, localities, schools and other public bodies contract for telecommunications services with numerous telecommunications providers. Additionally, both the current Contract that VITA holds with its incumbent telecommunications provider and any Contract(s) resulting from this RFP are not mandatory sources for localities and other non-state public bodies, meaning that many public bodies have the option to purchase their own services under their own contracts.

Because individual localities, K-12 schools, and other non-State Government public bodies have the ability to decide whether or not to purchase services under the Contract, rigorous implementation of the telecommunications services provided under the Contract is particularly critical.

Professional implementation of critical telecommunications services will lessen the anxiety of migrating to new services and/or new suppliers.

In particular, it is in both the Commonwealth of Virginia's and the Supplier's interest to forestall a tendency among users to avoid migration to new and more advanced services (including situations where telecommunications providers may be in the process of retiring older, legacy services) due to concerns over implementation.

Supplier understands that assurance of smooth and timely implementation is a needed, given the prospective competition with other contracting vehicles that are available to all public bodies within the Commonwealth of Virginia.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	We currently support the Commonwealth by directly billing eligible schools and libraries at rates approved by VITA. We will continue to ensure the success of the Federal Universal Fund discount program.

1. *Supplier Bears All Costs of Implementation*

Supplier should understand that all costs of transition from existing services to a new Supplier, or from one service on the COVANET Contract to analogous services on the Contract resulting from this RFP, will be the responsibility of the Supplier, including project management, communications with end user Agencies and any subcontractors, and technical support.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Verizon will bear all costs of transition from existing services on the COVANET Contract to analogous services. Verizon will work within a mutually agreed upon implementation plan/timeline to avoid overlapping services and billing. There will not be installation charges for non ICB priced circuits. However, if special construction charges, capital expenditures, or extended inside wiring charges are required, an estimate will be presented to VITA for review and acceptance before work begins. VITA has the option to cancel the order without incurring the charges.

2. *Description and Methodology*

Clearly describe the Supplier's overall approach and plans to implement VITA's services. VITA believes a phased implementation plan with appropriate overlap of activities for different services will enable migration at a manageable risk level.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Verizon will propose a phased implementation plan to implement COVA's required services. It should be noted that the current private ATM/Frame Relay network must coexist with the new MPLS PIP network for the entire implementation period to ensure continuity of service delivery. The private network will be incrementally decommissioned during the implementation period as appropriate without jeopardy to existing COVA business needs and requirements. Once the overall Service Design Packages are complete and agreed to by both COVA and Verizon, a detailed phased implementation plan will be defined and documented by Verizon, and submitted to COVA for approval. At a high level, the implementation plan would include the following phases in order with specific detail and overlap to be defined once the solution service design is complete. **Phase I: Core MPLS PIP Network Tie-Point Services** This phase will implement the new core MPLS PIP tie-point circuits and services and must be complete or substantial service delivered prior to beginning the edge network migration phase. This phase may also include the turn-up of new SIP voice services concurrently and as applicable based on the final solution. Based on the final solution, this phase may also include private line back door links or other similar connectivity for core network diversity purposes.

Comply (Yes/No)	Explanation/Description
	Phase II: Edge Network Migration to MLPS PIP Network This phase will implement the new edge network connectivity to the MPLS PIP core network and should be coordinated by region. This phase may also include the turn-up of new SIP voice services concurrently and as applicable based on the final solution. The decommissioning of the private ATM/Frame Relay network will also begin during this phase as appropriate to COVA business needs and requirements. **Phase III: SIP Voice Services Overlay or Adjustments** Depending on SIP service and the overall final solution, this phase may be done concurrently with phases I and II. **Phase IV:** This phase will be the final network configurations and decommissioning of the private COVA ATM/Frame Relay network including circuits and equipment removal as appropriate.

a. Draft Implementation Plan

Submit a draft Implementation Plan as part of the Supplier's proposal to demonstrate your understanding of the issues raised by a migration of VITA's services.

In the Implementation Plan, clearly identify tasks that the Supplier expects VITA to undertake and VITA's obligations and the timeline that Supplier believes is appropriate for the implementation (measured from the effective date of the Contract).

The Implementation Plan should detail major milestones, dependencies, critical path and the activities required to implement the services identified in this RFP. Indicate the skill levels required to accomplish each milestone and which Key Personnel are associated with each skill level.

As appropriate, the Implementation Plan should separately detail the migration of different services (e.g., data network transport services, voice transport services, managed data network services, managed telephony services, managed video services, etc.).

State the estimated time to implement all of VITA's locations from Contract signature (measured from the effective date of the Contract) were all of the Supplier's proposed services to be awarded.

At a minimum, include the following items in the draft plan:

- ***Identification of the Supplier's project management team and resources;***
- ***Identification of information or resources that VITA will be required to provide the Supplier for completion of the implementation;***
- ***Verification of the current status of equipment and services prior to commencing implementation (baseline current state both physically and operationally);***
- ***Lead times and task dependencies for equipment and services to be implemented by location and region;***
- ***Description of the Supplier's implementation processes and implementation criteria for acceptance;***
- ***NOC support during implementation;***

- ***Description of procedures for joint development with VITA of transition time frames and priorities, tools for publishing and tracking transition performance against agreed plans, and processes for informing and managing VITA site personnel of transition activities;***
- ***Description of the Supplier's automated tools that will be available during the implementation and what processes and procedures will be implemented by the Supplier to ensure that VITA's IT service management platforms are kept up to date during the implementation.***
- ***Description of the Supplier's processes and tools used during the implementation to support ongoing MACD activities and maintain configuration control and up-to-date device configuration information in databases;***
- ***Description of the Supplier's processes and policies for coordinating with third parties;***
- ***Restrictions and flexibility regarding support for transition performance outside of normal business hours;***
- ***Processes for implementing requested or required changes.***

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Verizon prepared a migration plan to migrate from the legacy COVANET ATM/Frame Relay network to Private IP. This plan incorporates processes that were successfully used for the Commonwealth of Virginia's Executive Agencies during the last 6 years.

3. Implementation Planning Phase

a. Implementation Project Kickoff

Within 7 calendar days of the effective date of the Contract, will your implementation project team meet with VITA's implementation team in order to establish an understanding of project deliverables, timelines, and individual team member roles and responsibilities?

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	

b. Implementation Plan

Within 14 calendar days after the effective date of the Contract, provide a detailed draft Implementation Plan that sets out the implementation timing, milestones, activities/tasks, dependencies, process and individual implementation steps required to implement the services on a site-by-site, circuit-by-circuit, and service component-by-service component basis.

In the Implementation Plan, factor in dependencies such as lead times for circuit installation and local business requirements, and include the following:

- ***The dates by which VITA must provide Supplier with complete orders;***
- ***Supplier's proposed readiness date for completing the implementation process for each service component;***
- ***Supplier's access and back-up circuit order submission dates;***

- ***Circuit due dates;***
- ***Supplier's site survey completion date;***
- ***Customer premises equipment (CPE) delivery dates;***
- ***Planned service installation date;***
- ***Service acceptance testing date;***
- ***Interdependencies between different implementation project workstreams;***
- ***Ramp-down of incumbent services/providers.***

The detailed Implementation Plan is a validation of the solution that is to be implemented for each specific location. It should cover elements including, but not limited to, equipment, data network circuits, monitoring access circuits to be implemented, NOC support tools and processes to be implemented, Supplier versus VITA personnel responsibilities and the like.

VITA will review the detailed draft Implementation Plan and provide input and required updates to Supplier.

Once VITA has validated the final detailed Implementation Plan, implementation of service will commence.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	

c. Changes to the Implementation Plan

Once the final detailed Implementation Plan has been agreed in writing, it may only be changed by written agreement of Supplier and VITA. It is noted that the detailed implementation plan is expected to be a working document and will continue to be updated and refined throughout the implementation project.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	

d. Service Cutover Scheduling

Fixed implementation dates for individual sites should be provided 10 business days prior to the actual date of implementation. The fixed implementation dates should be scheduled in accordance with the agreed detailed implementation plan. The Supplier should not deliver services to sites prior to the fixed implementation date as given to VITA.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	

e. Maintenance of Implementation Plan

A project management tool should be employed to take responsibility for all development, updates and maintenance of the Implementation Plan. VITA's preference is for the Supplier to use Microsoft Project software as its project management tool.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	

4. Ordering Phase

Once the implementation planning phase is complete, VITA will initiate the ordering for individual service components in accordance with the Implementation Plan.

Once VITA places reasonably complete and accurate orders with Supplier, Supplier will initiate the physical ordering (e.g., leased lines, Supplier-owned/leased CPE, purchased equipment, management services) and the logical orders (e.g., virtual circuits, Supplier's Network Operations Center ("NOC") actions) for the service components.

Supplier will pre-populate all orders based on the information it has already received from VITA or that it has already determined.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	In addition to the above requested steps Verizon will also provide a design check step for Private IP circuits. For Private IP circuits with speeds of DS3 and above as well as Ethernet, the Verizon Solution Architect will review the overall proposed city level circuit path with the customer.

5. Installation Phase

a. Out-of-Hours Implementation Activities

Although VITA understands that some implementation activities that are non-service-affecting would be carried out during business hours, VITA anticipates that a significant amount of implementation work, particularly service cutovers and any other service-affecting work, will need to be performed outside of a location's local business hours, including weekends.

VITA does not expect to incur additional charges for such out-of-hours work, nor expects the Supplier to apply any constraints upon such out-of-hours work.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Verizon proposes the installation of new access loops at all locations so Agencies are not impacted by migration activities until a cutover is scheduled. Agencies may also request installations re-using existing loops. Doing so will all the Project Team to test the new facilities, schedule cutovers with minimal disruption to the site, and allow for a quick back-out process if the process takes longer than the allotted window.

Comply (Yes/No)	Explanation/Description
	The Service Delivery team is staffed M-F 6am-11pm CST. After hours and weekend activity can be provided with advance scheduling.

b. VITA's Installation Responsibilities

State what responsibilities VITA would have during the installation phase at individual sites. For example: Would Supplier have engineers on-site for service cutover, or would VITA be expected to perform certain cutover and other installation responsibilities itself?

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Because CPE is procured and managed by the Commonwealth, the Commonwealth is expected to provide resources at agency locations for service installation and cutover. The circuits will be tested by our technicians well in advance of cutovers dates. We will provide remote engineering and technical support for these locations.

c. Supplier Acceptance Testing

Describe the acceptance testing that Supplier will perform for different types of service components (e.g., data network services, voice services, managed network services).

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Verizon will provide acceptance testing for each service component and will provide VITA with an acceptance check-off document per location. With the exception of NUMS, all services are tested by a Verizon Technician or Engineer to ensure they meet or exceed Service Level Agreements before user acceptance testing commences. If technical standards are not met, the Project Team will advise VITA of the proposed remedy and timeline. Verizon will escalate if the due date is in jeopardy.

d. Service Handover

Once Supplier has completed its acceptance testing, Supplier will provide VITA the documented acceptance test results and notify VITA in writing that the circuit/service is activated.

Confirm that VITA will not be required to pay for any service components that, although accepted, it cannot practically use because of some other Supplier dependency (for example, VITA's Data Center circuits have not yet been installed and accepted by VITA).

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Verizon agrees to coordinate installation of circuits in order to allow most services to be available when cutover. The project plan will be designed with connectivity to COVA's data centers in the initial phase of the project. VITA is not expected to pay for activated service if Verizon has not provided a useable connection to an agency headquarter site or primary data center.

6. Implementation Project Management

VITA needs to have the Supplier provide an Implementation Team for the initial contract conversion of major services from the current provider, such as Internet and MPLS (or other proposed data networking solution), including the Managed Takeover of the critical law enforcement application involving the Virginia State Police and other agencies.

Describe the Supplier's planned implementation team below. This implementation team is in addition to the Supplier's Account Team. Based on prior experiences for an implementation of this magnitude and complexity, the Supplier should specify the quantity of resources. (Add rows for any Supplier roles in addition to the ones mentioned below.)

Verizon Response

Supplier Proposed Implementation Team

Title	Quantity	Role
Enterprise Project Manager		
Project Implementation Managers	1	The Verizon PM has bottom line accountability for the successful execution of the project.
Implementation Engineers	3	2 Data Engineers and 1 Voice
NOC Support Engineers		
Inventory and Asset Management Specialist		
Change Management Specialist		
Financial Management / Billing Specialist	1	Set up billing structure, resolve billing issues, review invoices, track and report on open billing items and service credits.
Contract Specialist	1	The Service Program Manager will oversee the implementation of the contract. The SPM monitors and reports on contractual commitments.
Field Technicians	100+	Field Technicians install network interface units at pre-determined locations and test access facilities through the network prior to site cutover

The parties agree that each member of the Implementation Team will be reasonably acceptable to VITA.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	

a. Project Implementation Managers

The Supplier will provide dedicated project implementation managers at no additional cost. These resources would work under the supervision of the overall Enterprise Project Manager.

The Enterprise Project Manager will be the primary contact for the selected Supplier, and will have responsibility for service implementation for all the Supplier's services during the implementation period. VITA will be allowed to interview and approve project management team members and would expect that the assigned resources be designated to support the project through completion of the implementation period.

Changes to the project team should be subject to consultation with VITA.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	

b. Project Management Methodologies

For all services, identify the project management methodologies that will be used in migrating existing services onto its service in a cost-effective and timely manner, minimizing business disruption and risk to VITA.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Verizon's Project Management Plan illustrates the milestones, interdependencies, and risks. Verizon's risk mitigation plan includes strategies to avoid failure to meet the agreed upon service delivery schedule.

c. Progress Reports

Be prepared to submit progress and status reports every week during the implementation period showing the following:

- ***Status of planned activities for the period***
- ***Status of activities actually underway for the period***
- ***Issues and resolutions***
- ***Review of schedule and milestones***

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	

d. Project Review Meetings

During the implementation period, be prepared to conduct Project Review Meetings on a regular basis at a mutually agreed time interval that will be at least once per week and held at a VITA-designated location. At a minimum, the Supplier's Enterprise Project Manager, one or more implementation engineers, and the appropriate project implementation managers will attend the review meetings with VITA-appointed representatives. The Project Review Meetings will:

- ***Summarize the progress of the project;***
- ***Review the detailed project plan;***
- ***Discuss and review required changes to the project plan;***
- ***Identify and review current or new problems, and establish action plans for their resolution to meet committed timelines;***
- ***Coordinate the activities between Supplier and VITA.***

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	

7. Implementation Plan Guarantees

For those services that VITA will be implementing as part of the initial contract conversion, provide a guarantee that Supplier will implement VITA's services in a smooth and timely manner.

The guarantee should entitle VITA to a range of remedies, from increasing monetary credits up to and including partial or total termination of the Contract, if the Supplier fails to complete its implementation activities in accordance with the implementation plan, or fails to meet service levels during the implementation period.

Detail the remedies Supplier will make available in the table below (with respect to the scope of services Supplier is offering) by describing each migration milestone it has proposed and assigning a time for completion based on the number of business days after contract execution. Add or delete rows in the table if necessary.

Note that VITA will not hold Supplier accountable for VITA's own failure to meet its responsibilities in respect of the implementation.

Implementation Milestone Guarantees

Milestone	*Milestone Description – Network Services (Voice, MPLS, Other Data, etc.)*	*Business Days After Contract Signing Date*	*Monetary Credit If Milestone Is Missed*
I.			
II.			
III.			
IV.			
V.			
VI.			
VII.			
VIII.			
IX.			
X.	*Final VITA site migrated per agreed-upon date*		

Verizon Response

Comply (Yes/No)	Explanation/Description
No	Verizon has a long standing relationship with COVA and an excellent service delivery record around transition projects working with the Commonwealth since 1993. We have successfully deployed new technology for the private network. In addition, our most recent implementation of Private IP was completed for the Supreme Court. We are currently migrating 600 sites on the State Police VPN to new routers. We anticipate that if we are awarded the MPLS transport and Voice business as well as those existing services we provide today, that Verizon can jointly create a Transition Plan that could include milestone guarantees to meet certain milestones. Attempting to create a Transition Plan and Milestones without the joint input of the Commonwealth is not in the best interest of either company. Milestone credits will not be given.

8. *Proof of Concept*

If required by VITA for a specific service or group of services, be prepared to conduct a Proof of Concept for a limited group of pilot locations selected by VITA. The Proof of Concept may include some or all services that Supplier is proposing to provide to VITA.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Verizon has transitioned the Supreme Court from the private ATM/Frame Relay network to Private IP. Verizon will be pleased to conduct an additional pilot if additional proof is desired.

9. *Post-Implementation Project Review*

The selected Supplier will conduct a formal post-implementation review between 3 and 6 months after the service implementation is under way. VITA is responsible for initiating the first post-implementation review.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	

10. *Billing Implementation*

Propose how the Supplier will participate in and provide resources for a comprehensive design of billing account structure. Be prepared to make billing system experts available at the Commonwealth Enterprise Solutions Center (CESC) in Chester, Virginia, so that VITA's financial staff can efficiently utilize the billing system capabilities to meet VITA's payment and reporting requirements.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	The Financial Service Manager will present the billing hierarchy options as well as to demonstrate the reporting tool. Because the Commonwealth is an existing customer, most of the Billing Identifiers are in use today. The only anticipated billing change is to create Private IP invoices for Higher Education, e-Rate Schools, and Municipalities. Since VITA is already a Private IP Customer, your current Bill Identifier can be utilized unless a change is desired.

M. Service and Support Management

1. Account Team

Provide a list of assigned personnel, and a statement of its Account Team's qualifications to perform the proposed work and each team member's relevant experience and tenure with the Supplier, including a summary of the Account Team members' prior involvement in similar previous accounts, including customer names, dates, and types of services supported.

Confirm that VITA will be able to provide input to the Supplier's creation of the Account Team staff, both organizationally and with individual personnel.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Verizon will ensure that an adequate number of qualified personnel, familiar with VITA's operations and use of telecommunications services, are available to support VITA's use of the Services in accordance with the terms of the Contract ("Account Team"). VITA's Account Team will consist of, at minimum: (i) an Client Partner, who shall be VITA's primary point of contact; manage the Verizon-VITA relationship; identify and present solutions for VITA; provide product information, pricing of and access to Verizon resources; and manage VITA satisfaction issues; (ii) Implementation Project Management Resources, who during the implementation phase will provide project planning and oversight of project scheduling, coordination of resources, and issues as they arise during implementation and performance of projects under statements of work; (iii) a Program Service Manager, who shall be a single point of contact for post-implementation account level support. This includes billing support, periodic service reviews, first invoice reviews, online self-service training and shall assist the Client Partner with VITA satisfaction issues. (iv) a Technical Consultant, who shall provide technical support; technical product information; and network design and consulting; and (v) a Technical Program Manager who shall serve as a single point of contact for post-implementation account level support from a Network performance perspective. Ensures network diagrams/designs are accurate. Provides standard network performance reports (vi) Sales Management, consisting of a Managing Client Partner, Area Vice President and Sales Vice President, who shall work in good faith according to the parties' agreed informal resolution procedures to resolve VITA issues that cannot be resolved by the aforementioned Account Team members. Upon execution of the new COVANET contract Verizon's PMO will coordinate a collaborative meeting between key stakeholders within Verizon and VITA to review each section of the executed contract. A matrix outlining each section of the contract may be constructed and reviewed to ensure the contract is well understood, including negotiated intentions, that may not necessarily be specifically highlighted within the contract itself. Minutes from the meeting will be then loaded into Verizon's Contract Viewer repository for future reference. In addition, any important communications/documentations that is deemed vital for retaining for the life of the contract will also be loaded and stored in Verizon's

Comply (Yes/No)	Explanation/Description
	Contract Viewer repository.

a. Account Team Organization

Provide an organizational chart that includes the names of the Account Team members, their titles and reporting relationships. As part of the organizational chart description, describe the staff's responsibilities and locations, especially if outside the Richmond, Virginia metropolitan area. The organizational chart should also detail upper-level management support.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Please refer to the Account Team Organizational Chart provided below and in the Appendices of this proposal. For roles and responsibilities, please reference M.1 above. Members are located in Richmond, VA.

Account Team		Customer Service Support	
George J Fischer SVP, Global Sales VERIZON ENTERPRISE (908) 559-1825 george.fischer@one.verizon.com	Michael Maiorana SVP-Sales Public Sector VERIZON ENTERPRISE (703) 886-7603 michael.maiorana@one.verizon.com	Shelly Ashwill-Powers Vice President Service VERIZON ENTERPRISE (303) 305-6232 shelly.ashwill@one.verizon.com	Charlie Burns Director Complex Service Delivery VERIZON ENTERPRISE (703) 886-2669 charlie.burns@one.verizon.com
Margaret C Hallbach VP-Sales Public Sector VERIZON ENTERPRISE (703) 886-3321 margaret.hallbach@one.verizon.com	Jerri Nibert Managing Client Partner VERIZON ENTERPRISE (304) 356-3355 jerri.j.nibert@one.verizon.com	Ben Howard Program Service Manager Complex Delivery VERIZON ENTERPRISE (804) 527-6739 benjamin.howard@one.verizon.com	John O'Donnell Project Manager VERIZON ENTERPRISE (804) 527-6301 john.odonnell@one.verizon.com
Eric R Adkins Client Partner VERIZON ENTERPRISE (804) 527-6363 eric.r.adkins@one.verizon.com	Edward Dentel Sr Engineer-Ntwk Consulting VERIZON ENTERPRISE (804) 527-6709 edward.dentel@one.verizon.com	Michelle D Epley Billing Service Manager VERIZON ENTERPRISE (410) 598-7378 michelle.epley@one.verizon.com	Susan Cooper Lead Service Program Manager VERIZON ENTERPRISE (804) 527-6783 (Work) susan.stubbs@one.verizon.com
Mark Williams Sr. Engineer-Ntwk Consulting VERIZON ENTERPRISE (804)-837-9652 mark.b.williams@one.verizon.com	James Jurkowski Solutions Architect VERIZON ENTERPRISE (410)-229-5322 james.m.jurkowski@one.verizon.com	Charlie King Technical Program Manager VERIZON ENTERPRISE (804) 527-6326 charles.m.king@one.verizon.com	

b. Account Team Deployment

The Supplier will provide Account Team and local operational support to VITA in Richmond, Virginia. Account Team members outside of Richmond should be located within a reasonable distance from Richmond.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Verizon will manage the account from the State of Virginia and deploy in region resources to support the contract. The Commonwealth of Virginia is a Global Sensitive Accounts Management (GSAM) customer and Verizon will ensure sensitivity levels are set for all Commonwealth Accounts and all support will remain in CONUS.

c. Key Personnel

The following positions will be considered as the Supplier's personnel vital to the Account Team and will be provided as part of the Account Team for the duration of the Contract and any extensions thereto ("Key Personnel").

- ***Senior Account Executive***
- ***Product Managers and Specialists (including technical resources)***
- ***Billing System or other "back-office" System Specialists***
- ***Designated Billing Specialist***

Indicate the percentage of the Account Team's time, including each of the Key Personnel, that will be devoted to VITA support work, and whether the Account Team will be designated or dedicated to VITA during the term of the Contract.

The Supplier may not replace or transfer any Key Personnel as long as they are satisfactory to VITA, except at the impetus of the individual employee/sub-contractor. In such an event, the Supplier should be prepared to provide written notification to VITA and a minimum 60-day overlap period for the departing Key Personnel to train and orient their replacements with respect to this Contract, VITA's related processes and interfaces, and all associated services, projects and ongoing operations in which it is engaged.

When Key Personnel are changed for any reason, the new staff assignment will be subject to VITA's approval, and at VITA's request, the Supplier will make a change in key personnel based on unsatisfactory performance.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	▪ Client Partner-100% Commonwealth of Virginia Accounts ▪ Life Cycle Project Manager– 100% Commonwealth of Virginia Accounts ▪ Designated Financial Service Manager - 100% Commonwealth of Virginia Accounts If it becomes necessary for Verizon to change the membership of the Account Team, Verizon at its discretion will assign replacement personnel of comparable background, experience and qualifications of the departing personnel Verizon will provide notice to VITA of such changes but cannot give VITA the unilateral authority to dictate specific individuals' inclusion on or exclusion from the Account Team.

d. ***Account Team Accessibility***

Key Personnel will be reachable within a 2-hour period during normal business hours. In addition, the Senior Account Executive will be reachable at all times or will have a designated backup available.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Contact information will be provided to VITA for all key Personnel.

e. ***Status Meetings***

The Account Team will be prepared to conduct monthly stewardship meetings with VITA to provide a broad review of all services, projects, and ongoing operations.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Verizon will work with VITA to determine a timeframe in which meetings will be held.

f. ***Contract Reporting***

Supplier will work collaboratively with VITA within the first 60 days after contract execution to develop reporting to be used to support contract administration, management, and customer satisfaction initiatives.

These reports may include detailed data related to customers, contract spend, services types and quantities purchased, as well as current market data to support Commonwealth efforts to control costs and ensure that the Contract and services remain relevant and aligned with the telecommunications market environment.

Supplier will agree to allocate the appropriate internal resources to provide detailed reporting within an agreed-upon timeframe for the Contract term and any extensions, and to provide a primary point of contact for VITA to coordinate reporting and support of other administrative programs needed to support the Contract. The frequency of the reporting will be mutually agreed upon.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Verizon Service Program Manager and Financial Service Manager will meet with VITA within the first 60 days after contract execution to design a report template to meet VITA's reporting requirements.

2. *Customer Support Network Operations Center (NOC)*

a. *NOC Support*

Supplier will provide a detailed explanation of its technical and management customer support organization for its network operations center ("NOC") and how the NOC will support VITA for each of the services set forth in this RFP (please list by service).

Provide any information concerning Supplier's support organizations if these organizations provide additional or unique capabilities needed to support complex or unique services. Identify each unique NOC with which VITA will be required to interact. VITA's preference is to have a centralized NOC.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Our NOCs perform 24x7 proactive monitoring and fault management support. They are ISO 9001:2000 certified, as well as a benchmark for service and process management. An audit by a third-party entity must be completed to receive certification. All contracted services can be reported to the same toll free number. Calls are routed to the correct organization based upon account or circuit number. The Verizon Enterprise Center is a convenient online tool also used by the Commonwealth of Virginia for the same purpose to engage the Cary NOC.

b. *NOC Capabilities*

As part of Supplier's description of the primary NOC's capabilities, please provide the following information:

- ***The geographic location of the proposed NOC/NOCs.***
- ***The approximate number of NOC technical staff that are on-duty during normal business hours and those that are on-duty during evenings and weekends. Specify whether any of the NOC staff are dedicated to a particular account or, if shared, the percentage shared across accounts.***
- ***Describe whether the NOC will be supporting Level 2 through Level 3 trouble tickets, or whether the trouble ticket will be routed to other Supplier NOC locations if escalation is required. If trouble tickets are routed to other NOCs, describe where these other NOCs are located and the escalation procedures.***

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Cary NC is the primary center for your inbound repair calls but we have 5 NOCs. If a disaster generates excessive calls, the workload is easily distributed among these centers. Our NOCs are staffed 24x7 and make carefully tracked adjustments based on historical ticket volumes. If VITA wants a dedicated NOC, pricing is found in the Value Add section of the proposal. Tiers 1, 2, and 3 are normally located in the same facility. Work can be seamlessly shifted between centers when warranted. The approximate number of NOC technical staff: 600 Domestic US.

c. Staffing and Hours of Operation

Please specify the number of NOC staff that will be specifically assigned to VITA. A primary and secondary point-of-contact will be designated who will be most familiar with VITA's Services. State if the NOC staff assigned to VITA are "designated" or "dedicated" to the account.

The NOC will be available for trouble resolution and testing, customer service and technical support, 24 hours per day, 7 days per week, 365 days per year.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	The Commonwealth of VA will be assigned to a NOC of shared resources. Should VITA wish a dedicated NOC, there is pricing in the Value Add section of the proposal. Verizon's NOCs are staffed 24 hours per day, 7 days per week, and 365 days per year.

3. Network Transport Provisioning Requirements

The following requirements apply to both voice and data transport services.

a. Provisioning Performance Reports

Supplier will provide monthly and year-to-date reporting of installation activity, showing number of installations, average time to install, percent completed on time, Service Level compliance, and a breakdown of the reasons for the failure to complete any installation on time.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Project Management will provide monthly reports on installation activity with tracking by category of missed dates.

b. Provisioning Management

Supplier will establish a central inquiry center for the provisioning status of order activity, and provide VITA with the status of pending order activity upon request.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	The Project Manager is prepared to supply status of all orders and related activities so that VITA's Ordering Officers can view the detail upon request.

c. Consistency of Service Levels and Response Times

VITA understands that changes in the provisioning process or levels of resources may take place during the life of the contract owing to procedural changes, technology refreshes, and organization changes (including mergers and acquisitions) at the Supplier.

Nevertheless, Supplier agrees to maintain agreed-upon service levels and response times regardless of changes in the provisioning process or resources, changes in Supplier ownership, and the like.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Verizon endeavors shorten order intervals while improving or deploying new technology. We understand that VITA expects us to fulfill our commitment for the entire term of the agreement.

d. Order Management

Provide a high level description of the Supplier's order process, expedite process, and jeopardy process for each service.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	A number of the services outlined in this RFP response can be ordered directly in the on-line Verizon Enterprise Center (VEC). The VEC provides comprehensive functionality for online management of Verizon telecommunication services where Customers are enabled to manage their Verizon services, streamline business processes, and control critical business functions. Supported by a host of powerful, electronic self-service capabilities, the portal is available 24 hours a day, seven days a week. The portal provides access to network management, service ordering, invoice review and pay, network event monitoring, service requests (trouble ticketing), reporting, and customer service contacts. Verizon continues to develop enhancements to the VEC and additional products and services will become available for ordering in the portal however currently some of the more complex products will need to be submitted directly to your Verizon Account Team at this time. An example of a product that would be ordered through your Account Team would be VPLS orders. Whether an order is submitted in the portal or to the account team there is basic information that is required from the customer. Taking the example of a Private IP circuit order, required information will include; ▪ Billing account number or the request for a new billing account ▪ Primary contact information ▪ Site address ▪ Location contact information ▪ Demarc information – the location in the building where your wiring ends and the access provider's wiring begins

Comply (Yes/No)	Explanation/Description
	▪ Indicate whether you would like Verizon to extend the demark to another location in the building ▪ Access type – TDM or Ethernet ▪ VPN name ▪ Access speed ▪ Port speed ▪ If a gold CAR is being ordered then that will need to be indicated along with the desired speed ▪ Requested due date Indicate whether equipment is being ordered All products can be ordered as an expedited installation however there is an associated expedite fee and Verizon is unable to guarantee a requested expedited due date because of possible situations such as the requirement for a facilities build. For services ordered through the VEC you can search and view on the status of your orders on-line. You are also able to create an escalation if an order is in jeopardy and have that flow to the team that needs to work on it. There is an 'export to file' option that allows users to download the table. For orders that must be placed through your Verizon Account Team a similar file with details of your orders will be created and maintained by the assigned Order Manager. In addition to the above requested steps Verizon will also provide a design check step for Private IP circuits. For Private IP circuits with speeds of DS3 and above as well as Ethernet, the Verizon Solution Architect will review the overall proposed city level circuit path with the customer.

e. ***On-Line Provisioning***

While VITA is not equipped to use online provisioning today, and may not be in the foreseeable future, if the Supplier has an electronic order process, describe the system, its access and capabilities with respect to tracking orders in progress, and any advantages that VITA would have in using Supplier's electronic order process.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	The Verizon Enterprise Center, our award-winning customer self-service portal, is designed to do just that. Delivering powerful, comprehensive self-service capabilities that support your Verizon account, the Verizon Enterprise Center offers information and resources that can help make the products you use work even harder and more efficiently, save you time, and help control costs. Request service changes and view order status for Verizon data and voice products including IP VPN, Private IP (our Layer 3 MPLS VPN), Private Line, inbound and outbound long distance, Internet access, and more.

f. Expedites

Describe the Supplier's rules and procedures for those orders in which VITA requests and may need expedited provisioning. Specify how many expedites are included in the Supplier's offer at no additional charge.

Verizon Response

Comply (Yes/No)	Explanation/Description
No	VITA will be charged accordingly for any expedited order. The expedite pricing is in Attachment A. There will be no built in waivers or free expedites offered to COVA. Verizon will accept expedite requests when clearly indicated on the OGTS for less than standard intervals. Expedite fees are not waived unless Verizon is at fault for a delayed installation.

g. Cancellation of Orders

Describe the Supplier's cancellation policy, by service, in terms of the latest date that VITA may cancel a service installation request and not be assessed a penalty.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Verizon should receive a cancelation notice from the Commonwealth at least 10 business days prior to service delivery for orders with dedicated access or services requiring application development (i.e., Enhanced Call Routing). For regular voice orders such as outbound long distance, NUMs or Toll Free, please notify Verizon at least 1 business day prior to installation.

4. Training

Supplier will provide training to VITA on the Supplier's products and services at no additional cost. Describe the training that the Supplier will provide to users (as applicable), telecom and IT management personnel, and VITA's team.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Online training is free to our customers, and online courses can be taken as often as needed. If customization of online material is required for large customers, a one-time charge is required. We offer onsite training for a fee. Customers attending Colorado Springs sessions are responsible for related travel expenses. User and reference guides are available on the Customer Training and Development (CTD) website (https://customertraining.verizon.com/).

N. The Direct Service Plan (DSP)

The Direct Service Plan (DSP) allows authorized entities within the Commonwealth to use the current Contract with VITA's telecommunications provider in a flexible and distributed fashion without compromising VITA's role and responsibility for ensuring effective and efficient use of Commonwealth telecommunications resources. VITA qualifies and grants specific public bodies (e.g., agencies, institutions and other political subdivisions) permission to participate in the DSP. In granting an entity permission to participate in the DSP, VITA grants full or partial access to some or all network service types (e.g., voice but not data services or vice-versa).

1. Provisions of the Direct Service Plan

Supplier will support the following processes of the DSP program. The Supplier will receive and fulfill service requests directly from each VITA-approved public body enrolled in the DSP program ("DSP Participant"). The Supplier will work directly with each DSP Participant for ordering, provisioning, and billing, and to resolve all service-related issues according to the terms and conditions of the Contract. Supplier acknowledges that each DSP Participant is solely responsible for meeting its financial obligations for services it orders through the DSP.

At the option of the DSP participant, Supplier will provide billing information in a variety of electronic formats. Supplier will also provide VITA with the DSP Participants' billing information in VITA's desired electronic format.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Verizon is familiar with the Direct Service Program and will continue to support them as specified in the contract.

O. Billing Requirements

1. Billing Structure

In the current environment, certain services may be billed to certain agencies directly by the incumbent service provider (the Direct Service Plan) at VITA's sole discretion while many services are billed through VITA itself providing an invoice to agency locations (VITA Billed).

In addition, VITA utilizes a combination of location-specific, region-specific and statewide billing, and VITA desires an invoice structure that supports this hierarchy as VITA's needs dictate and in VITA's defined billing format.

Each invoice may need to contain a combination of accounts, services and locations. Invoices should include total charges by office location and service type. These charges should also appear within the Contract-wide summary reports received monthly at VITA's headquarters.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	The DSP arrangement is similar to participation agreements. The DSP customers will receive the same standard invoicing as VITA. The Billing Service Manager will work with VITA's Billing Department to affect any mutually agreed upon changes or additions that VITA needs to accommodate VITA's defined billing format. Depending on the scope of changes, additional charges may apply.

2. *Centralized Billing*

Supplier will supply VITA (at its headquarters or other designated location) a consolidated monthly report and a summary statement for all charges billed for services obtained pursuant to this Contract.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Verizon has read, understands, and will comply. Verizon currently provides consolidated invoices to VITA for all services and will continue to do so throughout the term of this contract.

a. *Bill Media*

Supplier will provide VITA's bill electronically via Secure FTP. The data format or electronic media cannot be changed without notification to VITA 120 days in advance. In addition, Supplier will provide a Summary Invoice via paper hard copy.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	VITA will be receiving standard invoicing for the services in this RFP. These invoices are available in paper and electronic formats. Additionally, the invoices will be available in the online portal (VEC). Verizon is currently sending call detail records in a Secure method via FTP. Layout records will be sent at least 120 days in advance of changes.

b. *Additional Bill Media*

Detail the bill media options that Supplier will make available to VITA (e.g., paper invoicing, electronic invoicing via CD-ROM or via a billing portal). Be prepared to provide multiple bills (CD-ROM or web-based portal and hard copy) and delivery to multiple addresses and individuals as requested by VITA. This refers to all scenarios including the Direct Service Plan.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	You can designate the address for invoices.. Customer invoices can also be viewed through the VEC. There is no charge for VEC/Electronic invoices. Except for grandfathered CD ROMs, all invoices are available via paper and electronic media. Verizon prefers to eliminate paper whenever possible in an effort to conserve natural resources.

c. Network Invoice Portal

Supplier will provide a web-based view of billing information for review and management purposes. Describe Supplier's on-line billing reporting capabilities.

The on-line version of any billing information should be consistent with the information in any paper-based or electronic media or online-based invoices. It is also critical that agencies be precluded from seeing one another's billing.

Confirm that Supplier will work directly with VITA to establish login credentials for agencies that will strictly segregate billing information.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	The Verizon Enterprise Center (VEC) is a one-stop portal for accessing critical information and resources on-demand. Recent integration efforts allow customers to access both Verizon and Verizon Wireless details, providing a single location for key data, voice, and wireless information. Customers are enabled to manage their Verizon services, streamline business processes, and control critical business functions. Supported by a host of powerful, comprehensive electronic self-service capabilities, the portal is available 24 hours a day, seven days a week. The VEC provides customers the ability to track and customize their Verizon products to make them work for their business. Customers can also reduce costs and simplify business management by leveraging these self-service tools. Access to important business functions is streamlined into task-oriented groupings: Orders, Invoices, Repairs, Network Tools, and Resources. The portal provides access to network management, service ordering, invoice review and pay, network event monitoring, service requests (trouble ticketing), reporting, and customer service contacts.

3. Invoice Timing

Accurate bills for each calendar month will be produced no later than 10 days after the end of the month for which the service has been provided. VITA's preferred bill date is the 28th of each month. All recurring charges will bill in advance.

Verizon Response

Comply (Yes/No)	Explanation/Description
No	Verizon seeks to clarify that while we strive to provide our customers with accurate invoicing we are not able to guarantee that each bill will be 100% accurate. It is possible that the invoices may contain a billing error. Customers may dispute any charge they feel is incorrect and Verizon will work quickly to resolve all billing issues. Verizon also seeks to clarify that the standard invoicing that the customer will receive will bill the non-usage based or non-metered charges in advance. However, the bill date of this standard invoice is the 10th of the month.

4. *Billing Detail*

Supplier will send the following information to VITA as part of all invoices as applicable:

- ***Federal Identification Number (FIN)***
- ***Full call detail (date, time, duration, originating and terminating number, rate schedule, geography, call type, and disposition);***
- ***Itemized toll-free advanced feature charges (to allow calculation of individual feature use);***
- ***Circuit identifier, date of installation, master contract number, circuit location/address (A-end and B-end as applicable);***
- ***Individual Telecommunications Service Order (TSO) number for each item billed***
- ***Service Type/Description***
- ***Charge for each Service, including recurring charges at the element level (including, as applicable, miles, rating, discounts, geographic information, port charges, bandwidth or subscription charge, Class of Service, Access Channel);***
- ***Service Level credits;***
- ***Discounts, including type, description, percentage and applicable amount;***
- ***Adjustments and credits (description, date(s), amount);***
- ***All surcharges, regulatory charges and taxes itemized by the type of charge or tax, and the basis for the amount of the charge or tax.***

No invoice may include any costs other than those identified in this Contract.

Verizon Response

Comply (Yes/No)	Explanation/Description
No	Verizon's standard invoicing will reflect the pricing that is outlined in the Appendix A. These invoices include many of the requested items listed in this section but some of them will not be included in the standard invoice. The FIN, master contract number, and TSO are not included. The call detail will not include the rate schedule and disposition. The surcharges and taxes will be listed individually on the invoice but the calculation of those items will not be itemized on the invoices.

5. *De-Installation Orders*

De-installation notices for a device or service element will be considered to be received by the Supplier, and the interval for disconnect begun, when an order is submitted to the Account Team. Service will not be de-installed or otherwise disabled prior to the requested de-installation date.

If an order is for de-installation in less than 12 business days, the Supplier should not charge for more than 12 business days past the date of notification. For de-install orders placed with greater than 12 business days' notice, charges will be discontinued as of the requested de-install date. In cases where services are billed one month in advance, Supplier will credit a pro-rated portion of any advance payments upon de-installation of such services.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	VITA will receive a credit for a prorated amount for services that bill in advance. Verizon's Billing System automatically calculates pro-rated credits for services billed in advance. The Financial Service Manager will verify the amounts and issue additional adjustments if necessary.

6. *Billing Dispute Resolution*

All billing disputes will be resolved within 60 days and, to the extent practicable, will be cleared at the end of the fiscal year (each June 30).

Verizon Response

Comply (Yes/No)	Explanation/Description
No	Except in the event of amounts initially disputed by Authorized User which are re-billed by the Supplier, Authorized User will not pay charges for services more than 6 months after the close of the billing period in which the charges were incurred. This requirement applies to all charges, including without limitation, Moves, Adds, Changes, Disconnections (MACD) charges, recurring charges, usage-based charges and non-recurring charges, as well as fees, surcharges, regulatory charges and taxes.

a. *Billing Dispute Aging Report*

Supplier will provide a custom monthly report giving the number of disputed charges submitted and resolved with dates, amounts, invoice numbers, and status.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Verizon reads, understands, and will comply. Verizon's Financial Service Manager will provide a monthly report containing pending and resolved disputed amounts and their respective invoice numbers.

7. Credits

a. Credit Timing

Credits owed to VITA (e.g., for refund of overcharges or Service Level failures) will be applied in the billing months agreed to by VITA and the Supplier. If VITA and the Supplier have not agreed to a particular billing month, then the credit should be applied no later than the second billing cycle after VITA becomes eligible for the credit.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	If Authorized User notifies the Supplier in writing of a disputed charge, any credit(s) issued to Authorized User shall include all associated surcharges, regulatory charges and taxes. If Authorized User has overpaid the Supplier because of a billing error, the time within which Authorized User may seek credits for overcharges (including associated surcharges, regulatory charges and taxes) will be 12 months

b. Credit Application

Any credits owed to VITA will be applied to the particular billing account(s) selected by VITA. The Supplier should state if there are any limitations on the number of accounts to which credits can be applied.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Customer may designate, in writing, where credits are to be applied in full, or we may elect to apply the credit to the oldest Customer balances. You can divide credit among no more than 10 account numbers, which will be applied against your Total Service Charges incurred for interstate and international services. If Customer interstate and international Total Service Charges for such monthly billing period are less than the credit, the excess amount of such credit is applied to Customer's interstate and international Total Service Charges in the next consecutive monthly billing period(s) until the full credit amount has been applied. Verizon can support providing refund checks in instances where large unapplied cash and credit balances exist. However, for smaller UC&C balances Verizon prefers to either have the customer short pay the account or request to move the credits to an alternate account. Note: Refunds will not be provided if there are open invoices on an account.

c. Credit Notes

All credit notes provided by Supplier should include the following information:

- ***The original invoice to which the credit corresponds;***
- ***The reason for the credit;***
- ***The credit amount.***

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Verizon has read, understands, and will comply. The Financial Service Manager will provide credit notes including the invoice number, credit reason, and credit amount.

d. SLA Service Credits

Supplier will identify and calculate all credits due for outages, performance failures, or failure to meet a service level. Ensure that all credits due VITA are provided automatically without requiring VITA to submit a claim or request, and clearly identified on the credit note to which they are posted (including specifically identifying on the credit note the outage or failure to which the service credit applies).

Service credits will be issued no later than the second billing period following VITA's eligibility for them.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Credit memos are processed by Verizon's Account Team. Service credits take up to two billing cycles to show on the invoice.

8. Disputed Amounts

If VITA disputes an invoiced charge, Supplier will resolve such disputed charge (whether by credit or explanation of the charge to VITA's satisfaction) in VITA's required format within two billing cycles (60 days) following VITA's written notification. VITA will not pay any disputed amounts that remain unresolved after 120 days.

If a disputed charge is reversed, Supplier will reverse all associated surcharges, regulatory charges, and taxes.

Verizon Response

Comply (Yes/No)	Explanation/Description
No	Verizon takes exception to portions of this language. In the event a corrective credit is issued, the credit will include the associated portions of surcharges, regulatory charges, and taxes. As mentioned earlier in this RFP response, Verizon will make commercially reasonable efforts to resolve all billing disputes within 2 billing cycles. Failure to resolve the dispute in this timeframe shall not constitute material breach of the customer's agreement. While Verizon will work with our customer to correct any billing disputes, we are not able to relinquish our right to bill and collect on disputes that may turn out to be invalid.

9. *Delayed Billing / Billing Guarantee*

Except in the event of amounts initially disputed by VITA which are re-billed by the Supplier, VITA will not pay charges for services more than 90 days after the close of the billing period in which the charges were incurred.

This requirement applies to all charges, including without limitation, MACD charges, recurring charges, usage-based charges, and non-recurring charges, as well as fees, surcharges, regulatory charges and taxes.

Verizon Response

Comply (Yes/No)	Explanation/Description
No	Except in the event of amounts initially disputed by Authorized User which are re-billed by the Supplier, Authorized User will not pay charges for services more than 6 months after the close of the billing period in which the charges were incurred. This requirement applies to all charges, including without limitation, Moves, Adds, Changes, Disconnections (MACD) charges, recurring charges, usage-based charges and non-recurring charges, as well as fees, surcharges, regulatory charges and taxes.

10. *Administrative Billing Changes*

If VITA requests an administrative billing change (e.g., to move a service to a new billing account) at least 10 calendar days prior to the invoice date, Supplier will complete the change for inclusion on the next invoice.

At VITA's option, billing change information may be emailed to the designated billing specialist instead of requiring VITA to enter the information in a Supplier standard format, e.g., a web portal.

At VITA's option, extensive billing changes may be grouped together and treated as a project. The designated billing specialist will manage the project and ensure that all changes are made as requested.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Verizon respectfully advises the Commonwealth of Virginia that billing changes must be completed in the billing system before the end of the billing cycle which can be 10-15 days before the invoice date for some services. (i.e., Data circuit invoice date is the 10th but the billing cycle ends on the 31st)

11. Designated Billing Specialist

Supplier will appoint a designated billing specialist, at no additional cost, who is highly familiar with VITA's services and invoice structure. This individual will be VITA's advocate in the timely investigation and resolution of billing errors, and should have the ability to make billing changes and corrections on-line in real time to the Supplier's invoicing systems.

Verizon Response

Comply (Yes/No)	Explanation/Description
No	VITA is receiving standard invoicing. VITA has a designated Verizon billing specialist. The billing specialist will not be able to make any real time changes to the rates that have been automated in the billing systems.

12. Rate Verification

To ensure that VITA achieves the full benefit of the pricing in the Contract, Supplier will carry out rate verification for all services prior to issuance of the third invoice after the effective date of Contract. Be prepared to report the verification results to VITA as a review of the implementation of the Contract.

Rate verification should be performed periodically throughout the Contract term.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	This function will be performed by the Service Program Manager and Billing Manager.

P. Value Adds

If Supplier is offering any additional telecommunications services or directly-related services that it believes will offer some additional value to the Commonwealth (e.g., "legacy" type services such as dial-up Internet access; virtual contact center functionality), they are described in detail here and pricing is provided in the "Value Adds" section of Appendix A.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Verizon is pleased to offer additional Telecommunications and Next- Gen services that it believes will potentially benefit the Commonwealth of VA. The services are described here and pricing is provided in Appendix A. ▪ **Conferencing, Audio.** Audio Conferencing enables multiple participants to converse simultaneously via a telephone regardless of their location. Audio Conferencing enables businesses of all sizes to meet with high efficiency. Verizon Conferencing provides access numbers and passcodes either via a reservation center or via online tools. ▪ **Conferencing, Video.** Video conferencing is live, interactive image and voice communication between two or more locations. It provides

Comply (Yes/No)	Explanation/Description
	businesses with all the advantages of face-to-face interaction and can save money on travel expenses. Verizon Video Conferencing allows companies to conduct remote meetings with locations virtually anywhere in the world via state-of-the-art conferencing centers in the U.S. and Hong Kong. The service supports both traditional H.320 (ISDN) and H.323 (IP) transport protocols (either through Public Internet access or via the Verizon Private IP MPLS-based network). Conference attendees who do not have video access can connect to the conference via an audio-only connection. ▪ **Conferencing, Net.** With global Net Conferencing, presentations can be shared with meeting participants while they listen on an accompanying conference call. By using the power of the Internet, a visual component can be brought to your meeting participants – without anyone having to travel. Verizon Conferencing provides a choice of Net Conferencing platforms, service levels, and pricing models. We give VITA the flexibility to use some of the best web conferencing tools in the industry, Cisco WebEx and Microsoft Office Live Meeting, while taking advantage of years of conferencing expertise. Whether Live Meeting or WebEx, our interface for Reserved or Instant Net Conference provides a consistent web conference experience for leaders and participants. ▪ **IP Contact Center.** The Verizon IP Contact Center (IPCC) portfolio of internetworking services tightly couples signaling and functionality from the Advanced Toll Free and IP networks to deliver the intelligent routing and call treatment required by today's contact centers. IPCC services are network based and consist of VoIP Inbound and IP Interactive Voice Response (IVR). ▪ **VoIP Inbound** extends Verizon's traditional Toll Free network to enable Voice over IP terminations via standard types of access such as Internet Dedicated Access and Private IP (our Layer 3 MPLS VPN). VoIP Inbound calls can be received via traditional North American toll free (8xx) numbers. VoIP Inbound calls may also be received from any country where Verizon offers International Toll Free (ITFS) service or Universal International Free phone Numbers (UIFN) service. ▪ **VoIP Inbound Toll Free** provides network-based TDM to IP conversion, Codec Negotiation and Intelligent Routing functionality for domestic and international (ITFS and UFIN) Toll Free calls using Session Initiation Protocol (SIP) signaling per IETF RFC 3261. VoIP Inbound Toll Free calls terminate to IP CPE using Internet Dedicated Access or Private IP, and can also terminate to TDM Contact Center locations using Dedicated or Switched access. ▪ **IP IVR** is a network-based IVR service that provides automated attendant treatment and routing for inbound calls using a combination of callers' menu choices, originating automatic number identification (ANI), time of day, database look-ups, caller-entered digits, and/or destination labels provided by customer systems. IP IVR enables callers to reach the right resource the first time or to be

Comply (Yes/No)	Explanation/Description
	transferred without having to make a new call. IP IVR is scalable, adapting to applications from simple menu routing to complex systems that require more advanced features. IP IVR provides customizable treatment, routing, and transfers for VoIP Inbound Toll Free and Local Origination calls that allow seamless internetworking between customer IP and TDM contact centers with the Verizon SS7 (PSTN) and IP networks. ▪ **National Unified Messaging Service (NUMS).** NUMS is a network-based unified messaging service designed to meet the needs of any sized company. This service can be sold along with Centrex service, PBX solutions based on PRI or IP services, voice services provided by other service providers and is available throughout the U.S. National Unified Messaging Service enables customers to move away from using multiple regional voicemail platforms or CPE-based solutions. Enterprises can collaborate more effectively and drive efficiency and productivity improvements with National Unified Messaging Service. ▪ **Unified Communication and Collaboration as a Service.** Unified Communication and Collaboration as a Service (UCCaaS) is Verizon's hosted and managed service based on Cisco's Hosted Collaboration Solution. UCCaaS provides the flexibility of a premises-based solution with the simplicity of a hosted solution. Verizon's UCCaaS service offering delivers business-grade communications services from the Cloud. With Verizon's UCCaaS, customers can integrate cloud delivery to drive down capital expenses and benefit from user based packages billed on a per user basis. Customers enjoy the benefits of a shared infrastructure with their own dedicated applications. ▪ **Managed Wireless LAN (WLAN).** Managed WLAN is a turnkey solution that can help meet the demands of our customers and their employees: security, high-level network performance, and end-to-end reliability. All are available in a single, scalable, turnkey solution, without tedious learning curves, burned-out staffers, technology risks, and management migraines. Managed WLAN offers: – Pre-assessment and design – Wireless LAN readiness and site analysis – Engineering, design creation, and maintenance – Implementation And Management – Hardware procurement and maintenance – Deployment and design validation – On-going wireless network management – Performance reporting – Security – Security review – Implementation – Authentication Managed WLAN features lightweight, low-cost, plug-and-play access

Comply (Yes/No)	Explanation/Description
	points. These access points act as extensions of your wireless controllers, assuring ease of deployment and minimal disruption to existing LAN infrastructure. Lightweight access points retain no configuration data—so their theft or loss can never compromise your network. ▪ **Private IP Satellite.** Verizon Private IP Satellite is an advanced network service that uses a spaceflight transceiver (transmitter/receiver) Satellite device orbiting in a space constellation around the earth to connect to Verizon Private IP, a network-based IP VPN (Virtual Private Network) solution that utilizes IP-over-MPLS (Multi-Protocol Label Switching) technology. The spaceflight transceiver Satellite acts as a radio relay station, linking remote customer sites to teleport Satellite earth station hubs, which connect via terrestrial links into the Verizon Private IP worldwide network. To enable the Private IP Satellite Service, the customer's remote sites need a dish antenna, usually referred as a Very Small Aperture Terminal (VSAT) antenna, to transmit and receive signals to/from the spaceflight transceiver Satellite. ▪ **Technical Program Manager (TPM) and Service Program Manager (SPM).** The TPM and SPM exist today in the current COVANET contract and provide customized service desk support. If COVA would like to replicate or enhance the support it receives today, these services are available. Pricing is provided in Appendix A. TPM is a consultative role, specializing in technical network-based needs. TPM is accountable for developing and executing on a technical service strategy that will ensure an outstanding customer service experience. Clients subscribing to TPM may elect to purchase designated, dedicated and/or on site resource support. SPM provides premium consultative and governance services to the client via a Statement of Work. This SOW can include a combination of disciplines and associated deliverables as determined by the client and Verizon and defined in the executed SOW. The functions and deliverables define the context around which the SPM performs overall governance of the client/Verizon business relationship; it is therefore the role of the delivery team assigned to trend overall issues and create/execute recommendations which improve the overall relationship between the client and Verizon. ▪ **Verizon's Juniper CPE.** Verizon is able to offer Juniper CPE to the Commonwealth of VA and its customers for special discounted rates as defined in Appendix A pricing. This special pricing is available from Verizon for the following Juniper lines: – SRX series – M series – EX series – QFX series – SA series – MAG series – IDP series

Comply (Yes/No)	Explanation/Description
	– CX series ▪

Q. Service Level Agreements (SLAs)

Appendix B "Service Level Agreements (SLAs)" sets forth the Service Level Agreements applicable to the Services set forth herein.

Section 6 Implementation Plan

Document Purpose

The purpose of this draft Project Plan is to provide a comprehensive plan that outlines required processes and time frames for implementing Private IP Service for Commonwealth of Virginia's network. This project plan is a living document.

Commonwealth of Virginia personnel should review this document to ensure the implementation plan meets their requirements. A scheduled periodic review of this plan by the project team should occur as needed.

Project Scope

This project plan is meant to act as a generalization depicting Verizon's process and procedures covering the implementation of the Commonwealth of Virginia PIP network. For general purposes the perspective of this project plan will be one of a Data Network migration.

Typically, listed here in the Project Scope, Verizon will provide Commonwealth of Virginia with an overview of the products and services to be provided, once a final decision by the Commonwealth of Virginia has been made as to which products and services Commonwealth of Virginia has decided to purchase from Verizon. These include the following:

- Private IP
- SIP Trunking

Implementation of the Verizon data network will be performed through the successful achievement of milestones. These milestones are presented in this document.

Scope of Work

The Commonwealth of Virginia's MS PIP project will begin pending agreement of Commonwealth of Virginia contract amendment signature. Verizon assumes that Commonwealth of Virginia will agree to sign the contract amendment pending review and satisfactory agreement by Verizon and the Commonwealth of Virginia whereby full implementation can commence upon contract amendment signature.

Verizon and Commonwealth of Virginia will jointly participate in the Design Phase in which an acceptable post-contract signature network design will be developed and agreed upon. Upon completion of the Design Phase, the implementation will begin with ordering of circuits for the data portion of the network and CPE equipment.

Upon final acceptance of the network by Commonwealth of Virginia, in compliance with the Statement of Requirements (SOR) / Customer Design Document (CDD), the project will be deemed complete.

Transitioning – Data Center

When transitioning data centers, it is imperative to eliminate or limit down time to a minimum. At these locations, to transition from the existing network to the new Verizon Private IP (MPLS) network, a parallel data path must first be established.

This parallel data path would be available once the "last mile" loop connecting the customer premises to the Verizon Private IP network is completed by the LEC, connected to the interface network module, activated, and tested by Verizon. Both network topologies would then co-exist until all sites were cutover to the new network.

The following depictions are inclusive of the Verizon suggested transition method:

Data Center Transition

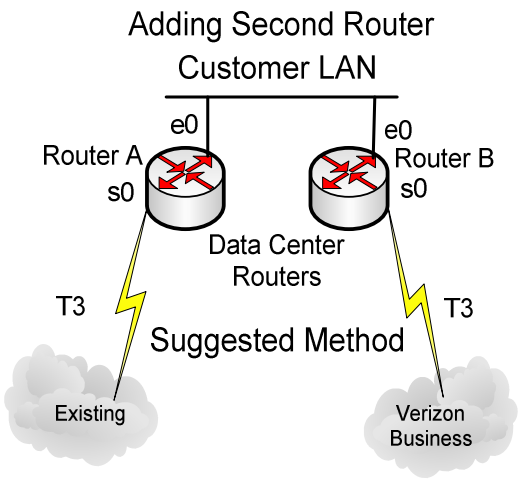
- Verizon suggested method
- New Verizon provided router

Advantage

- No impact to existing network service
- Ability to test new T3 service before accepting Production traffic
- Zero Down time incurred during WAN and LAN activation

Disadvantage

- None



Data Center Transition

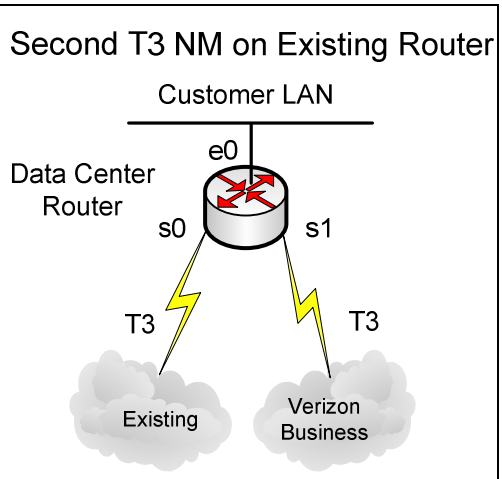
- Router Owned by Commonwealth of Virginia
- Re-use Existing Router
- Use Existing Spare Slot
- Add additional Network Module T3 Card

Advantage

- Use of existing router and NM Slot
- No impact to existing network
- Ability to test new T3 service before accepting Production traffic

Disadvantage

- Increased risk of possible impact to existing network due to added activity to existing router



Transition - Remote Sites

To transition from the existing network to the new Verizon Private IP (MPLS) network, a parallel Verizon data path will be required at each of the remote sites.

Once this parallel path is delivered, tested and activated to the site's WIC card within the router—per any of the three scenarios depicted below—the site would then be considered completed and passing traffic.

Scenario 1

Remote Site Transition

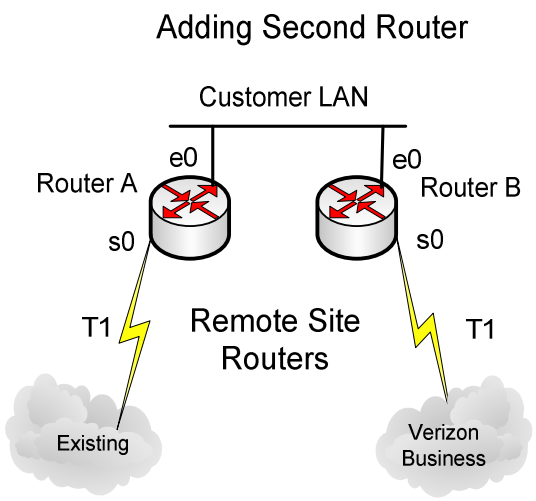
- Verizon suggested method
- Verizon provided router

Advantage

- No impact to existing network service
- Ability to test new T1 service before accepting Production traffic
- Zero Down time incurred during WAN and LAN activation

Disadvantage

- None



Scenario 2

Remote Site Transition

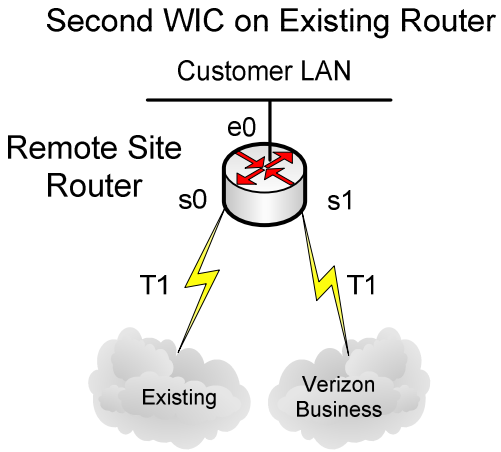
- Router Owned by Commonwealth of Virginia
- Re-use existing Router
- Use Existing Spare Slots
- Add additional Spare Wan Interface Module

Advantage

- Re-use of existing route and WIC Slot
- No Impact to existing network
- Ability to test new service before accepting Production traffic

Disadvantage

- Increased risk of possible impact to existing network due to added activity to existing router



Scenario 3

Remote Site Transition

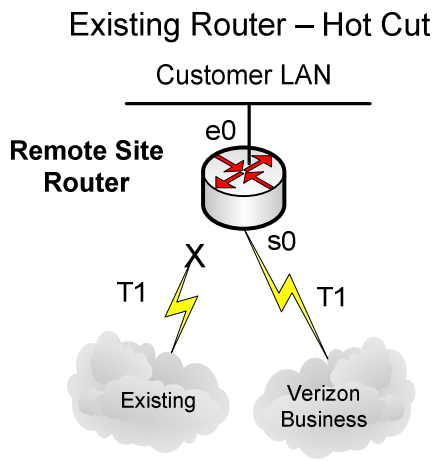
- Hot – Cut:
- Re-use of existing Router
- Disconnect "existing" circuit
- Connect Verizon network
- Fall-Back
- Reconnect existing cable

Advantage

- Re-use of all existing equipment

Disadvantage

- Up to 1 hour of downtime may be required



Deliverables (MS Implementation)

- Network Design Documents
  SOR – Statement of Requirements
  CDD – Customer Design Document
- Implementation Project Plan
- Project Implementation Tracking Spreadsheet

Constraints and Assumptions

Below are the constraints and assumptions important to the successful and timely delivery of the Verizon -provided circuits:

1. Commonwealth of Virginia will notify local site contacts (LCON) of pending orders and of the fact that Verizon and the Local Exchange Carrier / Public Telephone & Telegraph Company (PTT) personnel may contact them to verify site information.

2. Whenever possible, Commonwealth of Virginia will verify site-specific information and configuration prior to submitting an order to Verizon to ensure orders comply with site requirements. If not, orders will be processed based on best information available and will be completed as ordered at the onset of the project. Detailed demarc information will be provided to Verizon by the Commonwealth of Virginia.

3. If, for any reason, it is determined that a change in the overall service request (port speed, CAR, etc.) is required for any given site, the appropriate orders will be issued after the initial order has been completed.

Whenever possible, service changes will be implemented using a change order, however, there may be some situations which require that a new install order be processed to accommodate the new request. Verizon will advise Commonwealth of Virginia of the type of order that will be processed on a case-by-case basis.

4. Site local contact (LCON) will direct LEC to the location where the circuit demarcation is to be placed and advice that demarc must be extended to that point. Verizon requests a fallback LCON or COVA PM be on site and that a “Place Demarc Here” note be placed where COVA would like the demark to be.

5. A completed “clean” order must contain:

(a) Existing billing ID or information required to setup new billing ID

(b) Commonwealth of Virginia requested due date

(c) Requested activation date

(d) Accurate site address and site phone number

(e) Local site contact name (LCON) and LCON phone number

(f) Alternate contact and phone number

(g) Site Access Hours

(h) Specific demarc information

(i) Port speed and CAR

(j) Number of PIP circuits per location

(k) PIP Class of Service

(l) Port Connection (Direct or Indirect)

(m) Routing Protocol (Static, RIP V2, EGRP, OSPF)

(n) Diversity requirements

(o) Access Type (DSO, Factional, T1/E1)

(p) T1/E1 Channel Assignments

(q) Link Management Type (LMI, Annex A or Annex D)

(r) Framing (D4 or ESF)

(s) Line coding (AMI or B8ZS)

(t) Jack Type (RJ11, RJ21, RJ45, RJ48, etc.)

(u) DLCI Assignments

(v) Equipment and CSU type

(w) Pricing Information

(x) Fiber specification

(y) SMF/MMF

(z) Diameter

(aa) Jack Type

6. Commonwealth of Virginia will ensure adequate conduit is available to extend demarc from Minimum Point of Entry (MPOE) to the ultimate extended demarc location. Customer should ensure sufficient power is available.

7. Commonwealth of Virginia will transmit all orders via email attached word document with individual line items for each service desired. The email address in which Commonwealth of Virginia will send orders to Verizon will be assigned and communicated to VITA once the contract is signed.

8. Standard Interval timeframes are based on availability of facilities including local exchange carrier, site, and Verizon network facilities.

9. Changes (for example address, circuit engineering or local contact) in order information may restart the implementation interval.

10. Verizon will notify Commonwealth of Virginia as far in advance as possible of any system maintenance, which may impact the project schedule.

11. Commonwealth of Virginia will notify Verizon as far in advance as possible of any times during which activations may not be scheduled such that it may impact the project schedule.

12. Verizon will provide an updated list of circuits that are ready for activation via the Verizon tracking spreadsheet.

13. Commonwealth of Virginia will not schedule any circuit for activation until Verizon indicates the circuit is ready as noted on the Verizon tracking spreadsheet (assumption: activation e-mail has been submitted/approved).

14. Circuits not ready for activation may be forecasted with activation dates, but may not be scheduled for actual activation until they are listed by Verizon as ready for activation.

15. Commonwealth of Virginia will approve a priority list of sites to be scheduled for activation 5 business days in advance of requested activation date.

16. If VITA requires a change to the established activation schedule they must communicate those changes at least 72 hours in advance of the scheduled activation date and must receive acknowledgment from Verizon.

17. Verizon will communicate any circuits to Commonwealth of Virginia, which were ready for activation but are no longer ready for activation via the status calls and email jeopardy notification. Commonwealth of Virginia will confirm that they have received notification.

18. Verizon will communicate the reason for all missed activations to Commonwealth of Virginia as well as when the issue will be resolved.

19. PIP cannot be tested until the time of activation. During activation, Verizon will be responsible for verifying that PIP circuits have been tested and are in working order.

Implementation Plan

This section of the Project Plan details the processes for the implementation of requested Verizon Private IP services (PIP).

MS PIP Implementation Process

1. Verizon Project Manager (PM) receives order request from Commonwealth of Virginia's POC.

2. Verizon Network Consultant (NC) will be engaged and advise VITA of locations if facilities are not available. The NC will follow the design and provide technical information as needed (i.e., Visio). This would be an initial facilities check for some services. As the Smartform is used, Verizon will perform final facilities check in steps 7 - 8.

3. Order is confirmed to VITA.

4. The Project Manager submits the order to engage the Service Delivery team.

5. Internal conference calls and customer conference calls begin.

6. Order Manager (OM) orders circuits, and CPE if required.

7. Initial orders are processed.

8. Orders are monitored and worked through the various systems.

9. Sites are confirmed ready for installation.

10. VITA notifies sites to expect circuit delivery.

11. Circuits are delivered.

12. Local loop is installed then tested by LEC from the central office to the Network Interface Unit (NIU) on site.

13. Hardware arrives at the site if new equipment is required.

14. VITA will coordinate installation of the CPE.

15. VITA will confirm CPE is installed and ready.

16. Verizon Engineering confirms basic circuit configuration, activation, and network testing.

17. Upon successful activation, the agency is encouraged to perform application testing.

31. Project Manager submits site/circuit for Site Acceptance to VITA

32. Project Manager completes site acceptance process and billing begins

Order Entry

The Account Team will submit the circuit, CPE, and orders via Order Pro.

Typical information provided on the order request

- Site Address, City, State, Zip
- Targeted Install Date
- Dispatch Requested Date
- Equipment Type
- Contact Name
- Contact Phone Number
- Contact Fax Number
- Circuit Access Speed
- Circuit ID
- COMS Order Number
- Billing ID
- Verizon Due Date
- Router Type
- Router IOS Version
- Other Cable, Interface Cards, etc.

Pre-installation Requirements

In preparation for installation activities outlined below, the Commonwealth of Virginia will be expected to provide some assistance and make preparations before any of the installation activities can be completed.

If any of Commonwealth of Virginia's pre-installation requirements cannot be met in time for the scheduled router installation and activation, the installation will be rescheduled as soon as possible after the Commonwealth of Virginia provides notification that the site is ready.

Demarc Identification

The Private IP (MPLS) should be installed less than six feet from the table or rack on which the router will be installed.

Commonwealth of Virginia is responsible for identifying the proper location of the Private IP (MPLS) for the LEC technician. If the jack is installed in the wrong location, the line will have to be reordered and the router activation will be rescheduled at least 2 business days after the jack has been installed in the correct location.

Power Outlet Requirement

Commonwealth of Virginia must ensure that there are enough electrical outlets near the table or rack to connect the equipment. A power strip with five outlets is sufficient for most standard configurations. A UPS is also recommended.

Table or Rack Requirement

Commonwealth of Virginia must have a rack or table on which to place the equipment. Under no circumstances can the equipment be placed on makeshift surfaces such as cardboard boxes or filing cabinets, and should never be placed in a closet or a drawer.

Commonwealth of Virginia Project Communications

Commonwealth of Virginia's site contact must ensure that everyone in the office who might greet visitors is aware of the project so the installers are never turned away without being able to complete their work.

In any case where a visitor's purpose is unknown, all Commonwealth of Virginia's personnel should have a contact within each location that can explain the situation and authorize the visit.

Router Installations/Activations

Once the following conditions have been met, the Project Manager will coordinate resources for site activation:

- The CPE has been delivered and installed at the Commonwealth of Virginia.

  If any of the above conditions are not met, the router activation cannot take place.

  Verizon will perform the following steps during a router installation:

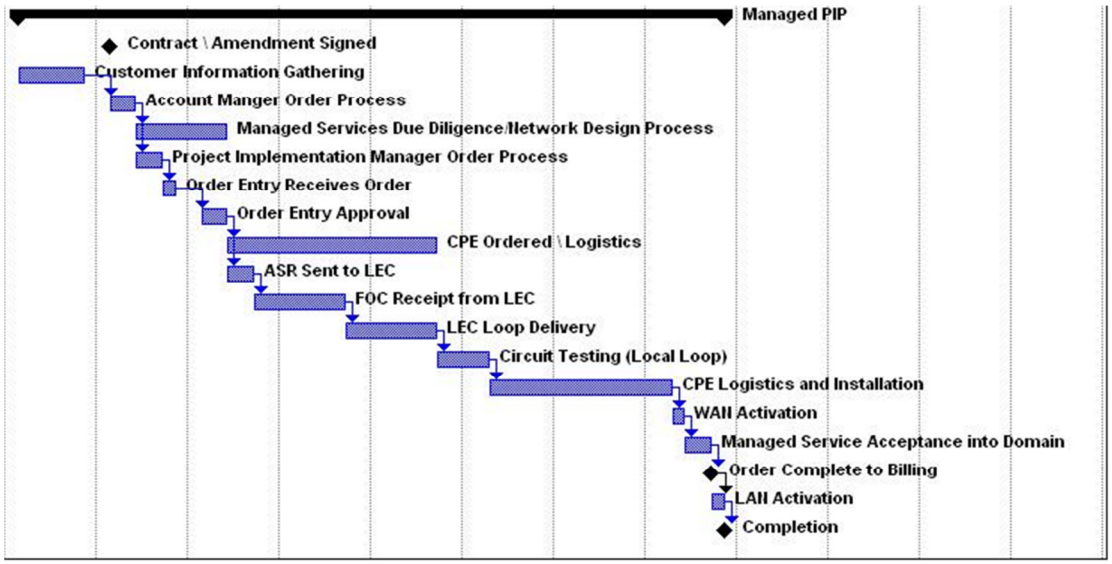
- Power up the router and verify that they are functioning properly
- Test pre-configured network addresses, routing tables, and interface parameters
- Ensures that gateway Link Management Indicator (LMI) is good and the port is activated.
- IE performs router connectivity ping test to at least one active EVC/PVC – including the network management EVC/PVC.
- If the ping test is successful, the agency should perform an application test

  If the ping test is unsuccessful, the Verizon Engineer – Tier I will initiate troubleshooting to resolve any issues. If there are any serious circuit issues, they will be resolved by the Account Team.

Private IP - Milestones and Interdependencies

The following depicts standard interdependencies for the installation of Private IP Service, from contract signature to circuit activation.

The following Sample Project Plan may vary from service to service:



Schedule of Delivery

Verizon will perform a maximum of 5 activations per day on a 4 day work week (Monday -Thursday), leaving each Friday as a day to resolve any issues that may have occurred during the present activation work week.

As Verizon continues this implementation strategy, it may be recognized that the amount of circuit activations per day may be increased and/or that normal circuit activations can be conducted on a given Friday.

Once approval for this is received from all concerned parties (Commonwealth of Virginia and Verizon) the overall installation period of this network may be reduced from the original plan.

Risk Management Plan

Below are the known risks that may affect the execution and schedule of the project and which may have a direct impact to missing any agreed upon installation SLA interval/s.

- **Risk: Inaccurate Addresses/Phone Numbers.** LEC will reject orders that are submitted with inaccurate or mismatched addresses and/or site phone numbers.

  An address is considered a mismatch if it does not match the physical address recorded in the 911 database as used by the LEC (US only) or PTT's inability to validate the address information. This will delay the order process for as long as it takes to obtain the correct information plus the time to reprocess the order.

Commonwealth of Virginia will be responsible to contact each location to verify order information. Additionally, Commonwealth of Virginia will confirm to Verizon that the sites have been notified and made aware of the project. Order interval will restart from the beginning when correct information is provided to Verizon.

Mitigation Strategy. Commonwealth of Virginia will submit orders with address information as contained in their most current database.

Verification should include confirmation of address as recorded in the 911 database (US) or provide a validated address to the PTT. The OM will contact Commonwealth of Virginia's POC to advise of any address discrepancies.

- **Risk: Inaccurate LCON Contacts.** LEC will reject orders if the site contact and/or contact phone number is no longer valid. This will delay the order process for as long as it takes to get the correct information plus the time to reprocess the order. Order interval will restart from the beginning when the correct information is provided to Verizon.

  Mitigation Strategy. Commonwealth of Virginia will submit orders with contact information as contained in their most current database. Commonwealth of Virginia will notify all locations to advise LCON and verify LCON phone numbers before submitting orders to Verizon whenever possible.

- **Risk: Demarc May Not Be Extended to Correct Location.** Extended Demarc information must, whenever possible, be correct when the new order is sent from Commonwealth of Virginia's POC to the OM.

  If LEC fails to extend the demarc and a demarc extension is required, depending on which LEC is working the order, they may tack on up to 10 business days to re-dispatch.

  LEC may also refuse to dispatch and the Commonwealth of Virginia will need to contract a vendor to complete this work or extend it itself.

  If Commonwealth of Virginia is unable to provide specific demarc termination information, the circuit will be delivered to the Minimum Point of Entry (MPOE) and Commonwealth of Virginia will be responsible for contracting with an outside vendor to extend the demarc or completing the extension themselves. (See Attachment I below, for further information regarding LEC demarcation extensions.)

  Mitigation Strategy. The OM will notify the Commonwealth of Virginia's POC of LEC tentative dispatch date. Verizon Operations Circuit Delivery Project Manager will closely coordinate to ensure that the LCON is on site the day the loop is delivered so that the circuit is demarcated in the correct location.

- **Risk: The Local Contacts (LCON) Are Not On Site and Do Not Know About Pending Order and LEC Gets Turned Away.** If the Local Contact will be out of the office, an alternate contact must be designated. LEC field technicians are not obligated to call in advance the day they are scheduled to dispatch. Time to re-dispatch LEC could take 5-10 business days.

Mitigation Strategy. Commonwealth of Virginia should call each LCON prior to loop delivery and advise them of the loop delivery date. The Verizon Operations Circuit Delivery Project Manager, will also contact the LCON when authorized by the Commonwealth of Virginia.

The loop delivery date can be found in the circuit order tracking spreadsheet distributed from the Verizon Project Team. The Verizon Operations Circuit Delivery Project Manager will also contact the LCONs prior to the scheduled LEC loop delivery date to assist in preventing LEC from being turned away.

The pager number of the OM or Project Manager for Operations and LEC Issues will be provided on the access service requests sent to the LECs. The LEC technician or LCON may page the OMs or project managers to request assistance in preventing the LEC technician from abandoning the local loop installation.

- **Risk: There May Be a LEC Facility Issue Preventing Timely Delivery of Circuits from LEC.** There is always the risk that the LEC loop delivery commitment date comes back with an exceptionally long lead-time (in excess of 20 business days) due to facilities issues (e.g., failed cable, lack of cable pairs, lack of central office capacity, etc.).

  All capacity issues will be reported to Verizon and forwarded to the Commonwealth of Virginia and options will be discussed to determine if a work around can be implemented. Since capacity cannot be reserved, it will not be secured until a firm order is placed.

  Mitigation Strategy. To minimize any LEC capacity issues, Verizon requests that Commonwealth of Virginia place orders for each location as far in advance as possible.

  After the orders have been submitted, if LEC capacity causes an order to be put on hold, Verizon will report the situation to Commonwealth of Virginia's POC and will work cooperatively to resolve the situation.

- **Risk: There May Be a Lack of Verizon Capacity to Engineer and Implement Any Given Circuit.**

  Mitigation Strategy. To minimize any Verizon capacity issues, Verizon requests that Commonwealth of Virginia place orders for each location as far in advance as possible.

  The Verizon Network Consultant (NC) will work with Verizon's capacity planning to verify existing capacity and arrange for capacity expansion if necessary.

  In addition, if location information can be provided by the Commonwealth of Virginia, in advance of the actual order submission, the Verizon SE will complete an inquiry to identify any potential situations where facilities will not be available.

  They will provide an overview of major facility capacity issues to be taken into consideration until specific site information is provided to Verizon.

- **Risk: PIP Service Cannot Be Tested Until the Time of Commonwealth of Virginia's Conversion.**

  Mitigation Strategy. It is understood that the PIP service cannot be tested until the scheduled conversion. If trouble is found, the OM will open a trouble ticket with the appropriate LEC. The trouble resolution process will be managed by the OM.

- **Risk: PIP Service cannot be activated at scheduled activation time.**

  Mitigation Strategy. To activate PIP services, specific PIP circuit parameter information shall be needed by Verizon. If this information is missing or inaccurate, the PIP circuit activation will be delayed until the information is received and /or is made correct.

Project Communication Plan

- **Project Review Schedule.** Verizon and the Commonwealth of Virginia conferences to be executed
- **Progress Reporting.** Status reporting media (i.e., spreadsheets, databases)
- **Project Implementation Inventory Documentation.** Circuit/service documentation provided to Commonwealth of Virginia at project end.
- **Information Flow.** During this project there will be several documents passed between Verizon and Commonwealth of Virginia updating the team on weekly progress. The overall Project Manager will be copied on all communications and will be the central point of contact for the communications to the project team.

  The standard documentation is listed below:

  - **Project Plan.** The purpose of this document is to provide a comprehensive plan that outlines required processes and timeframes for implementing Private IP services for the Commonwealth of Virginia.

    The sequence and time frames are proposed by Verizon based upon investigations between the Verizon Account Team, Project Managers, and the Commonwealth of Virginia project team. The Project Manager owns the Project Plan and will update and communicate any and all updates to the team.

  - **Commonwealth of Virginia's Order Tracking Spreadsheet.** This document will contain all necessary information for Verizon to order requested services.

    It will show the location name, port and CAR speed, DLCI assignments, addresses, LEC due dates, LEC completion dates, Verizon due dates, Verizon completion dates, if a circuit is ready for activation and comments.

    The Verizon Project Implementation Manager will own this spreadsheet. All updates will be communicated by the OM to the interested parties on the project.

- **Open Action Items (OAIs) and Meeting Minutes.** The Project Manager is responsible for tracking all project open action items and meeting minutes. This information will be sent to the entire project team in Email format to include the following:

  Open Action Item #:
  Task:
  Owner:
  Critical Resolution Date:
  Status: OPEN, CLOSED, LATE
  Comments:

- **Trouble Handling Document.** The Verizon Service Support Manual contains all information pertinent to trouble handling procedures. The Account Team will provide the Commonwealth of Virginia with the proper Service Center numbers to dial for reporting trouble tickets.

- **Project Review Schedule.** Conference calls are conducted with the Commonwealth of Virginia and internal Verizon to review status of orders, outstanding issues, and concerns. The project team will determine the frequency of the calls.

  Combined Team Call with Verizon and the Commonwealth of Virginia (Recurring)

  Date:
  Time:
  Toll-Free:
  Passcode:

- **Progress Reporting.** Progression of the order will be reported via Commonwealth of Virginia's Master Tracking Spreadsheet. If a circuit is at risk of missing the scheduled completion date, a jeopardy flag will be placed in the spreadsheet for that particular site/order.

  An order will be flagged as a jeopardy whenever any of the order tracking milestones (order sent for order entry into Verizon system, ASR sent to LEC, FOC received, LEC loop delivered, etc.) dates are missed.

- **Jeopardy Situations.** Jeopardies will be categorized as Order Jeopardies.

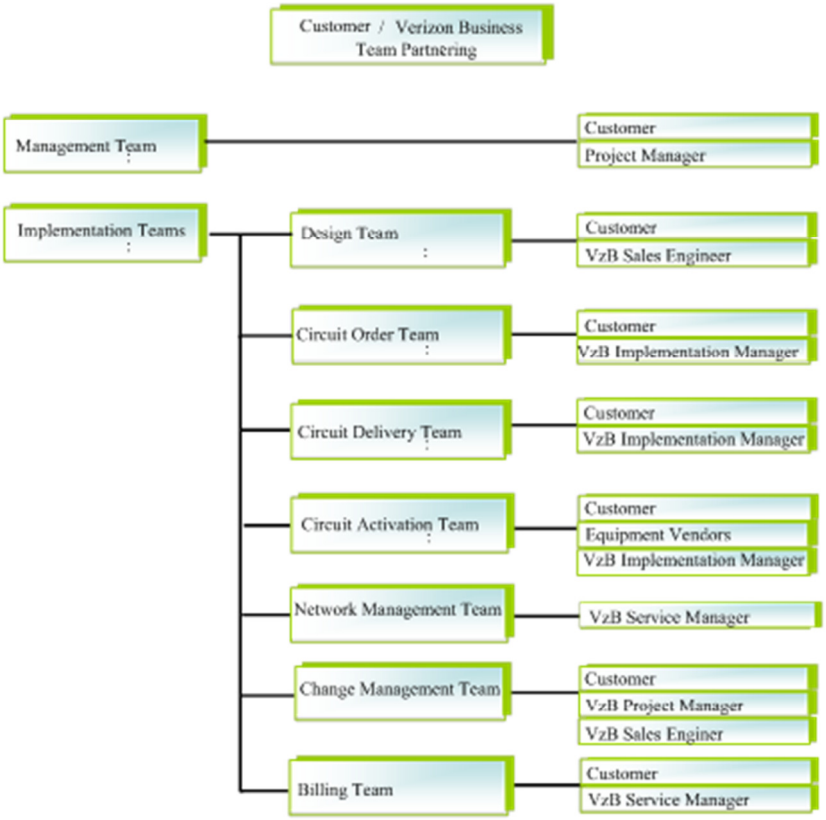
- **Order Jeopardies.** Order Jeopardies will be reported via the status spreadsheet updated by the Implementation Managers. A jeopardy status will be assigned to an order which is affected by anything which may jeopardize the timely delivery of the service including site not ready, demarc installed in wrong location, circuit reconfiguration, etc.

- **System Maintenance Notifications.** Periodically, system maintenance windows, both internal to Verizon or by Commonwealth of Virginia, may impact scheduling or conducting activations. Commonwealth of Virginia will be notified of all such maintenance windows as soon as the Implementation Team is notified. Notification will be via e-mail message to the entire project team.

- **Project Implementation Inventory Documentation.** At Project Completion, Verizon will generate a spreadsheet consisting of an inventory of all circuits delivered during the implementation of this project.
- **Roles and Responsibilities.** This section of the Project Plan details the roles and responsibilities of Commonwealth of Virginia and Verizon project teams.

  (Project Implementation Manager = Order Manager)

  Verizon Sales Engineer title is now Network Consultant



Commonwealth of Virginia / Verizon Implementation Team

The successful, overall delivery of this entire project will require the participation of combined teams consisting of Commonwealth of Virginia and Verizon personnel. Descriptions (below) will give the team an understanding of how all members will work together.

Management Teams

Management teams represent the functional management for Commonwealth of Virginia and Verizon. Each management team is responsible for providing the required resources to complete the project. If a deficiency is recognized in that functional department, the PMO will work with the management team and resolve the issues.

Implementation Teams

In order to successfully implement data services in an efficient manner, a matrix managed implementation team environment has been established. These implementation teams will include team members from the functional organizations from the Commonwealth of Virginia and Verizon.

These teams include:

- **Design Team.** The Design Team is comprised of the Commonwealth of Virginia and Verizon technical staff responsible for all elements of the network design.

  These responsibilities include collecting design requirements, creating the design, receiving required approvals within the Commonwealth of Virginia on the final design, providing pricing for the Commonwealth of Virginia purchase orders, providing design scalability with technical, and design support.

- **Circuit Order Team.** The Circuit Order Team consists of Commonwealth of Virginia designees and the Verizon Project Implementation Manager (OM) The Circuit Order Team will be led by the OM. Commonwealth of Virginia's designees will forward complete orders to the OM.

  The OM will verify the order information and, if there are any questions regarding the order, the OM will contact the appropriate Commonwealth of Virginia team member to resolve. If there are no initial issues regarding the order, the OM will submit the order to be entered into Verizon's systems for provisioning.

  If address or LCON issues occur with an order, Verizon will be notified and will forward that information to the Commonwealth of Virginia's POC. Once the issue is resolved, the OM will have the order entered into Verizon order systems.

- **Circuit Delivery Team.** The Circuit Delivery Team is comprised of Verizon Order Managers and Commonwealth of Virginia's designees.

  The Circuit Delivery Team is responsible for ensuring that circuits are delivered on time once they have been entered into Verizon's systems. The team will be led by the Verizon Order Manager (OM).

  The OM will track the order until the circuit is ready to schedule for activation. The OM will again verify that circuits are ready for activation. The status of each order will be provided via the tracking spreadsheet provided by the OM.

  If any issue arises regarding circuit delivery; the OM will work with the Commonwealth of Virginia to ensure they are aware of the issue so the issue may be resolved promptly.

- **Circuit Activation Team.** The Circuit Activation Team is comprised of the Verizon Order Manager (OM) and the Commonwealth of Virginia and their respective equipment vendors.

  The Circuit Activation Team is responsible for activating circuits. The OM will lead the team. The OM will notify the Commonwealth of Virginia's POC that a circuit is ready to schedule for activation via the e-mail.

Commonwealth of Virginia's POC will notify when circuits are ready to schedule for activation. Commonwealth of Virginia's POC will provide the OM with the requested activation schedule at least 10 business days prior to the requested activation date by responding to the email confirmation.

The OM will coordinate final testing on the circuit 48 hours prior to activation to ensure the circuit is ready. If the circuit fails testing, the Verizon activator will notify the OM.

The OM will notify the Commonwealth of Virginia's POC. Whenever Verizon detects an issue, the OM will work with the appropriate Verizon departments as required, to resolve all issues preventing circuit activation.

Any supplemental orders will be worked by the OM. Once all issues are resolved, the activator will advise the Commonwealth of Virginia's POC who will then notify all necessary the Commonwealth of Virginia personnel.

- **Contract Compliance Team.** The Contract Compliance Team is comprised of the Client Partner, Project Manager, Program Service Manager, and the Commonwealth of Virginia's POC. The Contract Compliance Team will be responsible for ensuring all project activity is compliant with the contract.
- **Change Management Team.** The Change Management Team is comprised of the Verizon Project Management Project Manager, Commonwealth of Virginia's POC and all Verizon functional project team leads.

  The Change Management Team will be responsible for reviewing all project change requests from Commonwealth of Virginia and determining how they will impact the project.

  Based on the impact of each requested change, the Change Management Team will work in conjunction with the Commonwealth of Virginia to determine if the change is still desired.
- **Billing Team.** The Billing Team will consist of a billing specialist from Commonwealth of Virginia and a Verizon Financial Service Manager (FSM).

  Once a circuit has been completed the Verizon FSM will consult with the Circuit Activation Team to determine when billing began and what credits are warranted.

  The FSM proactively interacts with the Contract Billing Solutions Organization (CBSO) to provide new Bill ID's and circuit ID's so that SCA contractual rates and discounts are hardcode in a timely manner.

Verizon Roles and Responsibilities

Specific roles and responsibilities for team members appear below.

(Project Implementation Manager = Order Manager)

Verizon Project Manager (PM) for Implementation

The Verizon PM has bottom line accountability for the successful execution of the project. The PM is responsible for:

- Performing overall project management services for the delivery and activation of Verizon Private IP services.
- Acting as ultimate point of escalation for the project team.
- Developing and providing senior management status reports.
- Securing and matrix managing all resources necessary for project execution.
- Developing joint communication requirements between Verizon, Commonwealth of Virginia, and their vendors.
- Developing the Project Plan jointly with Verizon Account and support groups, Commonwealth of Virginia, and their associated vendors.
- Leading development of processes and procedures required for network implementation.
- Overseeing the completion of all steps in the defined process.
- Chairing the Change Management Team.
- Establishing reporting procedures with Commonwealth of Virginia and Verizon.
- Coordinating team efforts throughout implementation, ensuring on-time delivery of the project.
- Publishing open action items and status reports and conducting post mortems.
- Hosting conference calls.
- Ensuring overall project delivery is compliant with the contract.

Client Partner

The Client Partner is responsible for directing Account Team resources to provide the optimum level of service to the Commonwealth of Virginia. Their responsibilities include:

- Maintaining overall relationship between Commonwealth of Virginia and Verizon.
- Facilitates communication between Commonwealth of Virginia and Verizon.
- Participating in evaluation of network topology, diversity, and connectivity issues.
- Providing Commonwealth of Virginia with pricing information.
- Maintaining overall responsibility for sales, support, and operations.
- Negotiates and disseminates contractual information.
- Providing pricing and proposals.

Verizon Network Consultant (NC)

The Verizon Network Consultant (NC) is responsible for:

- Providing design input and recommendations to Commonwealth of Virginia based on their analysis of the Commonwealth of Virginia's network design.
- Conducting technical presentations and briefings.
- Acting as liaison to Verizon engineering and product management organizations.
- Providing information related to telecommunication products, services, and issues.
- Ongoing consultation related to implementation of new services.
- Ongoing support for existing services.

Verizon Order Manager (OM)

The Order Managers (OMs) are responsible for:

- Receiving orders from the Commonwealth of Virginia, via the PM
- Verifying orders are accurate and complete.
- Notifying the Commonwealth of Virginia if orders are not accurate or complete.
- Submitting orders for order entry.
- Assisting Commonwealth of Virginia in the resolution of any local contact issues, as needed.
- Updating the status spreadsheet and providing status reports to Commonwealth of Virginia.
- Acting as the point of contact for Commonwealth of Virginia and Verizon internal organizations in order to ensure a smooth implementation.
- Assists Commonwealth of Virginia in the resolution of any extended demarc issues, as needed.
- Verifying circuits are ready for activation prior to the scheduled activation time.
- Oversees activations with Verizon Commonwealth of Virginia and their associated vendors.
- Providing initial trouble isolation and resolution during cutovers.
- Providing activation status reports within 24 hours of scheduled activations.
- Hosting conference calls and meetings as required.
- Acting as point of contact for any failure, after implementation issues develop, should they occur 24 hours after Commonwealth of Virginia has accepted the circuit.

Circuit Delivery Coordinator

The following will be coordinated by the Order Manager

- Notifies the LCON of impending LEC delivery.
- Determines if there are security issues that need to be considered.
- Ensures LEC delivers access loops on time and escalates if late.
- Ensures Verizon operations complete an order as soon as possible upon LEC delivery.
- Will accept calls from LCONs or LECs to coordinate Commonwealth of Virginia, and LEC personnel so that LEC can successfully install the circuit at the correct demarcation during the first dispatch.

Verizon Financial Services Manager (FSM)

The Verizon Financial Service Manager Billing Specialist is responsible for:

- Assisting Commonwealth of Virginia in setting up billing structure.
- Resolving any billing issues.
- Providing tracking and status reports for all open issues related to billing.
- Developing Account Team Service Plans quarterly.
- Providing initial inventory.
- Delivering SCA Standard Reporting Packages.
- First Invoice Reviews with Commonwealth of Virginia.
- Scheduling Commonwealth of Virginia training on certain Verizon tools.
- Monitoring contract commitments.

Commonwealth of Virginia's Responsibilities

Following are the responsibilities of Commonwealth of Virginia in order to execute this project plan and meet the estimated time frame:

- Define project requirements including complete project size and timeline.
- Commonwealth of Virginia may provide site survey information prior to order submission.
- Provide complete and accurate order information.
- Ensure that all local contacts/alternate contacts are aware of the project and are aware of pending LEC delivery date.
- Ensure that demarc locations are specifically located and tagged.
- Ensure that the local contacts/alternate contacts are aware of demarc locations and do not accept local loops demarcated at any other location.

- Ensure any changes in local contacts/alternate contacts are communicated to Verizon.
- Ensure that sufficient internal wiring and conduit is available at each site.
- Provide access to site facilities for both LECs and vendors.
- Attend service activation calls, as needed.
- Advise Verizon of acceptance of services installed at each site.
- Commonwealth of Virginia will confirm circuit functionality after LAN activation and confirm circuit acceptance.

Escalations

Path

During Project implementation, Commonwealth of Virginia may feel it necessary to request their own escalations when the implementation is not progressing in accordance with recommended guidelines previously stated (reference paragraph 3.0).

When this occurs, Commonwealth of Virginia may use the following escalation procedures to gain issue resolution and satisfaction:

- **ESC Level 1: Verizon Order Manager (OM)**. The OM is responsible for placing all service orders, tracking all order milestones utilizing Verizon's workflow systems and ensuring that all services are activated in a timely manner meeting all agreed upon install intervals.

  The OM has dotted line responsibility to the Project Manager and is responsible for providing all updates regarding the services pending installation. The OM will escalate in the Verizon Service Delivery teams any issues that would cause a delay in the proposed implementation of services for Commonwealth of Virginia.

  If, for any reason Commonwealth of Virginia is not satisfied with an update of any ordered service, Commonwealth of Virginia may request that the issue be escalated directly to the Project Manager.

- **ESC Level 2: Project Manager.** If, for any reason Commonwealth of Virginia is not satisfied with an update of any ordered service, Commonwealth of Virginia may request that the issue be escalated directly to the Senior Manager of Implementations.

- **ESC Level 3: Senior Manager of Implementations.** If, for any reason Commonwealth of Virginia is not satisfied with an update of any ordered service, Commonwealth of Virginia may request that the issue be escalated directly to the Director of Implementation Services.

- **ESC Level 4: Director of Implementation Services.** If, for any reason Commonwealth of Virginia is not satisfied with an update of any ordered service, Commonwealth of Virginia may request that the issue be escalated directly to the Vice President of Service Support.
- **ESC Level 5: Vice President of Service Support.** Name, Contact telephone, fax, pager, and cellular numbers for the personnel will be supplied upon request, after contract signature.

Escalation Method

Escalations may be communicated to the responsive Verizon personnel listed in the escalation paths provided by means of email, direct telephone call, or fax.

Project Contact List

Verizon Internal Project Team

Name	Title	Phone	Pager	Cellular Phone	Email Address

Commonwealth of Virginia Project Team

Name	Title	Phone	Pager	Cellular Phone	Email Address

Sample Schedules of Delivery

Sample Schedule of Delivery A

Location	# of Orders	Bandwidth	Interval (Business Days)	Order Entry Date	Activation Date

This Schedule of Delivery is provided as a sample to be used for setting interval expectations. The Intervals shown are based on averages.

The stated order-to-activation timelines and associated lead time intervals above are calculated from the time the order has been approved by the Verizon Order Entry organization through to the date the order is activated. The provided install interval starts once the order has received Order Entry Approval.

Sample Schedule of Delivery B

Location	# of Orders	Bandwidth	Interval (Business Days)	Order Entry Date	Activation Date

Schedule of Delivery is provided as a sample to be used for setting interval expectations. The Intervals shown are based on averages.

The stated order-to-activation timelines and associated lead time intervals above are calculated from the time the order has been approved by the Verizon Order Entry organization through to the date the order is activated. The provided install interval starts once the order has received Order Entry Approval.

Demarcation Extension Information

- MPOE Definition. Minimum Point of Entry (MPOE) is the new demarcation point resulting from the Telecom Act of 1996. It is the physical location where the LEC's /PTT's regulated network facilities end, and the point, at which Commonwealth of Virginia's or building owner's responsibilities for cable, wire, and equipment begins.

- Background and General Information. As part of the Telecommunications Act of 1996, and part of deregulation of the telecommunications industry, all LEC's were ordered to change the place where Commonwealth of Virginia connects to the local telephone network for all regulated loop based products.

  The new demarcation point is at the Minimum Point of Entry (MPOE). The regulated network facility ends for most services at the MPOE. The MPOE is at the point where the LEC's entrance facility enters a building or property.

  Embedded equipment, such as Amplifiers, Repeaters, and/or Analog NCTE remains the property of the LEC and part of the regulated product.

  The LEC is responsible for identifying the MPOE for existing buildings. New single buildings are allowed only one MPOE. Property owners of continuous property can purchase secondary MPOE's through Special Construction arrangements.

- Inside Wiring and Jacks. As a result of deregulation, the LEC's regulated responsibility ends at the MPOE. Jacks and inside wire were ordered to be deregulated and as a result Users are responsible for installing or maintaining jacks and inside wire beyond the MPOE.

  Inside wire is all wire and jacks on Commonwealth of Virginia's side of the Network Termination Point. Inside wire includes any required cross-connects from the Network Termination Point to Commonwealth of Virginia's unit. Inside wire does not include customer premises equipment such as telephone sets, cords, or other equipment.

  The LEC or other designated outside plant vendor will install or rearrange inside wire to meet Commonwealth of Virginia's needs. There will be a wiring charge for each cable installed, or rearranged, plus a materials charge for each jack installed.

  These installation and rearrangement charges will vary dependent on the LEC, or vendor performing the work. The jack price will depend on the type of jack installed. The materials cost associated with installing these jacks will vary dependent on the LEC, or vendor performing the work.

Inside Wire Options

- Install and repair their own Inside Wire and jacks
- Negotiate with a vendor to install and repair Inside Wire and jacks
- Negotiate with LEC for Inside Wire and jack installation and repair

Verizon Wiring Criterion

General Guidelines: Verizon will be responsible for inside wiring meeting the following criterion: When providing services in a complex environment, Verizon will always attempt to use available inside wire that may be spare.

If the Verizon Technician needs to run an inside wire, a CAT 5 wire will be used to complete the endpoint installation. We will not pull wire in conduit, and we will only pull wire between floors if an existing cable path can be used and the pull does not exceed twelve (12) feet vertically.

- **One Story – One Demarcation Point.** Our Technicians will attempt to locate a spare pair from the ILEC demarcation to the user's desired location. If a spare pair is available, the Technician will use that spare pair and proceed with the installation. If pairs are not available, the Technician will:
  - Identify if there is a direct path and safe environment from the MPOE to the desired location.
  - Assess that the distance of the wire run is in compliance with our footage distance standards (12 foot vertically, 150 foot maximum).
- **One Story – Multi-Terminal Points.** In cases where there are satellite terminals (telephone closets) beyond the incumbent local exchange carrier (ILEC) demarcation point, we will attempt to find a spare pair that directly tones back and is wired to the ILEC demarcation point.

  If there are no connected facilities by placing a tone generator at the user location, the Verizon Technician will attempt to locate the tone through satellite terminals.

  If successful, Verizon will cross-connect continuously through the terminals until reaching the ILEC demarcation. In cases that Verizon cannot reach the ILEC demarcation, the Technician will extend an inside wire up to 150 feet.

  The 150-feet of inside wire may be run from end to end, from the ILEC demarcation to the satellite terminal, between satellite terminals, or between the satellite terminal and the user's location.

- **Multi-story – One Demarcation Point.** In the case where there is only the ILEC demarcation point existing and no satellite terminals, Verizon will follow the procedures as stated above in items 1 and 2 for One Story Services.

  When Verizon is supplying a service above the first story, we will use any existing, free of charge, spare riser cable pairs of wire between floors. If the existing riser cable cannot be used and the demarcation point is on a floor other than the floor where the user suite is located, we will pull wire between floors if an existing cable path can be used. The wire pull cannot exceed 12 feet vertically.

- **Multi-story – Multi-Terminal Points.** Verizon will proceed by following the processes documented in scenarios A, B, and/or C above.

Appendix 1 IGUS User Guide

Please see the following.

IGUS User Guide.pdf

Appendix 2 Peering Connectivity White Paper

Please see the following.

Peering_Connectivity
_White_Paper.pdf

Appendix 3 Type 2 Backbone Availability by Central Office

Type 2 Central Offices

Region	CLLI	Central Office
CENTRAL	DAWNVAXA	DAWN
CENTRAL	DSWLVAXA	DOSWELL
CENTRAL	DTVLVAXA	DELTAVILLE
CENTRAL	GLCSVAXA	GLOUCESTER
CENTRAL	HAYSVAXA	HAYES
CENTRAL	HNVRVAXA	HANOVER
CENTRAL	IVTNVAXA	IRVINGTON
CENTRAL	KGGRVAXA	KING GEORGE
CENTRAL	KGQNVAXA	KING & QUEEN
CENTRAL	MNTRVAXA	MONTROSS
CENTRAL	MTHWVAXA	MATHEWS
CENTRAL	OLCHVAXA	OLD CHURCH
CENTRAL	SALDVAXA	SALUDA
EASTERN	CHKTVAXA	CHUCKATUCK
EASTERN	CHSKVACD	CHURCHLAND
EASTERN	CHSKVADC	DEEP CREEK
EASTERN	CHSKVAGU	GUERRIERE
EASTERN	CLMTVAXA	CLAREMONT
EASTERN	CRTDVAXA	CRITTENDON
EASTERN	DNDRVAXA	DENDRON
EASTERN	DRVRVADR	DRIVER
EASTERN	DSPAVAXA	DISPUTANTA
EASTERN	GRBRVAXA	GREAT BRIDGE
EASTERN	GRBRVAXB	BATTLEFIELD
EASTERN	HCKRVAXA	HICKORY
EASTERN	HMPNVAAB	ABERDEEN
EASTERN	HMPNVADC	DRUMMONDS CORNER

Region	CLLI	Central Office
EASTERN	HMPNVAQN	QUEEN STREET
EASTERN	HMPNVAWD	WOODLAND RD
EASTERN	IVORVAXA	IVOR
EASTERN	NRFLVABL	BRICKELL
EASTERN	NRFLVABS	BUTE STREET
EASTERN	NRFLVAGS	GRANBY STREET
EASTERN	NRFLVAOD	OLD DOMINION
EASTERN	NRFLVAOV	OCEANVIEW
EASTERN	NRFLVASP	SEWELLS POINT
EASTERN	NRFLVAWC	WEST LITTLE CREEK
EASTERN	NWNWVAHU	HUNTINGTON
EASTERN	NWNWVAHV	HARPERSVILLE
EASTERN	NWNWVAJF	JEFFERSON
EASTERN	NWNWVAND	NETTLES
EASTERN	NWNWVAYK	YORKTOWN
EASTERN	PRANVAXA	PRINCESS ANNE
EASTERN	PRANVAXB	SHIPPS CORNER
EASTERN	PTMOVAHF	HODGES FERRY
EASTERN	PTMOVAHS	HIGH STREET
EASTERN	PUNGVAXA	PUNGO
EASTERN	SFFLVASK	SUFFOLK
EASTERN	SMFDVAXA	SMITHFIELD
EASTERN	SRRYVAXA	SURRY
EASTERN	STCKVAXA	STONEY CREEK
EASTERN	TOANVATO	TOANO
EASTERN	VRBHVACC	CHINESE CORNER
EASTERN	VRBHVACT	CENTERVILLE TURNPIKE
EASTERN	VRBHVAGN	GREAT NECK
EASTERN	VRBHVAIL	INDIAN LAKES
EASTERN	VRBHVAIR	INDIAN RIVER
EASTERN	VRBHVAPT	PLAZA TRAIL
EASTERN	VRBHVARC	ROBBINS CORNER
EASTERN	VRBHVASR	SALEM ROAD

Region	CLLI	Central Office
EASTERN	VRBHVAVB	VIRGINIA BEACH
EASTERN	WLBGVAWM	WILLIAMSBURG
EASTERN	WNDSVAXA	WINDSOR
NORVA	ALXNVAAD	ANNANDALE
NORVA	ALXNVAAX	ALEXANDRIA
NORVA	ALXNVABA	BARCROFT
NORVA	ALXNVABR	BURGUNDY
NORVA	ALXNVACN	CAMERON
NORVA	ALXNVAFR	FRANCONIA
NORVA	ALXNVAMV	MOUNT VERNON
NORVA	ARTNVAAR	ARLINGTON
NORVA	ARTNVACK	COLUMBIA PIKE
NORVA	ARTNVACY	CRYSTAL CITY
NORVA	ARTNVAFC	FALLS CHURCH
NORVA	CNVIVACT	CENTREVILLE
NORVA	FLCHVAMF	MERRIFIELD
NORVA	FRFXVABF	BRADDOCK ROAD
NORVA	FRFXVACL	FAIRFAX
NORVA	FRFXVAFF	FAIRFAX
NORVA	FRFXVART	RIDGE TOP
NORVA	GRFLVAGF	GREAT FALLS
NORVA	GVTNVAGR	GROVETON
NORVA	HRNDVADU	DULLES CORNER
NORVA	HRNDVAHE	HERNDON
NORVA	HRNDVAST	STERLING PARK
NORVA	LRTNVAGU	GUNSTON
NORVA	MCLNVALV	LEWINSVILLE
NORVA	PNTGVADF	PENTAGON
NORVA	RSTNVAFM	FOX MILL
NORVA	SLLYVADD	SULLY/CHANTILLY
NORVA	SPFDVASP	SPRINGFIELD
NORVA	VINNVAVN	VIENNA
PIEDMONT	ARCLVAXA	ARCOLA

Region	CLLI	Central Office
PIEDMONT	ASBNVAAS	ASHBURN
PIEDMONT	BKBGVABB	BROKENBURG
PIEDMONT	BLMTVABM	BLUEMONT
PIEDMONT	CHNCVAXA	CHANCELLOR I
PIEDMONT	CHNCVAXB	CHANCELLOR II
PIEDMONT	CLPPVACU	CULPEPER
PIEDMONT	CLPPVAGR	GRAYSON
PIEDMONT	DLCYVAXA	DALE CITY
PIEDMONT	DLLSVAXA	DULLES
PIEDMONT	FRBGVAFB	FREDERICKSBURG
PIEDMONT	FRBGVALH	LEE HILL
PIEDMONT	HLBOVAHB	HILLSBORO
PIEDMONT	HRWDVAHW	HARTWOOD
PIEDMONT	HYMRVAXA	HAYMARKET
PIEDMONT	INHLVAXA	INDEPENDENCE HILL
PIEDMONT	LRTNVAXA	LORTON
PIEDMONT	LSBGVALB	LEESBURG
PIEDMONT	LVVLVALV	LOVETTSVILLE
PIEDMONT	MDBGVAMI	MIDDLEBURG
PIEDMONT	MNSSVAXA	MANASSAS
PIEDMONT	MRSHVAMA	MARSHALL
PIEDMONT	NKVLVAXA	NOKESVILLE
PIEDMONT	OCQNVAXA	OCCOQUAN
PIEDMONT	PCVLVAPV	PURCELLVILLE
PIEDMONT	QNTCVAXA	QUANTICO
PIEDMONT	RMTNVARE	REMINGTON
PIEDMONT	SPTSVASP	SPOTSYLVANIA
PIEDMONT	SRVLVASP	SPERRYVILLE
PIEDMONT	STFRVAXA	STAFFORD
PIEDMONT	THPLVATP	THE PLAINS
PIEDMONT	TRNGVAXA	TRIANGLE
PIEDMONT	UPVLVAUP	UPPERVILLE
PIEDMONT	WRTNVAWR	WARRENTON

Region	CLLI	Central Office
PIEDMONT	WTFRVAWT	WATERFORD
RICHMOND	ASLDVAAS	ASHLAND
RICHMOND	BTHIVABT	BETHIA
RICHMOND	CHCYVACC	CHARLES CITY
RICHMOND	CHESVACR	CHESTER
RICHMOND	CLHGVACO	COLONIAL HEIGHTS
RICHMOND	DNWDVADW	DINWIDDIE
RICHMOND	GCLDVAGO	GOOCHLAND
RICHMOND	HPWLVAHW	HOPEWELL
RICHMOND	MCHVVAMV	MECHANICSVILLE
RICHMOND	MDLTVAMD	MIDLOTHIAN
RICHMOND	MNKNVAMN	MANAKIN
RICHMOND	PRFRVAPF	PROVIDENCE FORGE
RICHMOND	PTBGVACD	CHESDIN
RICHMOND	PTBGVAPB	UNION ST/PETERSBURG
RICHMOND	QNTNVAQN	QUINTON
RICHMOND	RCMDVACG	COGBILL RD
RICHMOND	RCMDVAGK	GASKINS RD
RICHMOND	RCMDVAGR	GRACE ST
RICHMOND	RCMDVAGY	GAYTON RD
RICHMOND	RCMDVAHL	HULL ST
RICHMOND	RCMDVAHR	HERMITAGE RD
RICHMOND	RCMDVAHS	HUNGARY SPRING
RICHMOND	RCMDVAIT	TURNER RD
RICHMOND	RCMDVALS	LOGAN ST
RICHMOND	RCMDVAPE	PEMBERTON RD
RICHMOND	RCMDVAPS	PATTERSON AVE
RICHMOND	RCMDVARA	RANDALL AVE
RICHMOND	RCMDVASN	SECOND AVE
RICHMOND	RCMDVASR	STUART AVE
RICHMOND	RCMDVATC	THE CROSSINGS
RICHMOND	RKVLVARK	ROCKVILLE
RICHMOND	SNTNVASS	SANDSTON

Region	CLLI	Central Office
RICHMOND	VARNVAVR	VARINA
RICHMOND	WHOKVAWO	WHITE OAK
RICHMOND	WSPNVAWP	WEST POINT
ROANOKE	BGISVABI	BIG ISLAND
ROANOKE	BLBGVAAE	BLACKSBURG
ROANOKE	BLBGVABB	BLACKSBURG
ROANOKE	CCVLVACH	CHURCHVILLE
ROANOKE	CNCRVACN	CONCORD
ROANOKE	CRBGVACB	CHRISTIANSBURG
ROANOKE	CRVIVACV	CRAIGSVILLE
ROANOKE	DBLNVADU	DUBLIN
ROANOKE	GNWDVAGW	GREENWOOD
ROANOKE	LYBGVACH	CHURCH ST
ROANOKE	LYBGVACV	CLEARVIEW
ROANOKE	LYBGVAMH	MADISON HEIGHTS
ROANOKE	LYBGVANL	NEW LONDON
ROANOKE	LYBGVAOF	OLD FOREST RD
ROANOKE	LYBGVATM	TIMBERLAKE
ROANOKE	LYBGVAYB	YELLOW BRANCH
ROANOKE	RDFRVARA	RADFORD
ROANOKE	RONKVABK	BARKLEY AVE
ROANOKE	RONKVABS	BONSACK
ROANOKE	RONKVACS	CAVE SPRING
ROANOKE	RONKVACV	COVE RD
ROANOKE	RONKVAGC	GARDEN CITY
ROANOKE	RONKVALK	LUCK AVE
ROANOKE	SALMVAFL	FORT LEWIS
ROANOKE	SALMVAMC	MASONS COVE
ROANOKE	SALMVASA	SALEM
ROANOKE	SHVLVASW	SHAWSVILLE
ROANOKE	SNMTVASM	STONE MOUNTAIN
ROANOKE	STDRVASD	STUARTS DRAFT
ROANOKE	STTNVAST	FILLMORE

Region	CLLI	Central Office
ROANOKE	STTNVAVE	VERONA
ROANOKE	SWVLVASV	STEWARTSVILLE
WESTERN	ALWDVAXA	ALLWOOD
WESTERN	AMHRVAXA	AMHERST
WESTERN	APMTVAXA	APPOMATTOX
WESTERN	RPHNVAXA	RAPHINE

Appendix B - Service Level Agreements (SLAs)

Appendix B covers Service Level Agreements for Data Network and Voice Network provisioning and network performance, Dedicated Internet Service, Managed VPN Device Service, billing, and Customer Service/Network Operations Center (NOC); and for other Services as set forth in Attachment 1. For all tables except billing, complete each line of the table by specifying a number in conformance with, or in distinction from, the given VITA requirement.

1. General Provisions

Each of the following General Provisions apply to all of the SLA Tables beginning with MPLS Network Transport Service Levels.

a. Credits for Failures to Meet Service Levels

Supplier will provide VITA with credits specified in all agreed-upon Service Level Agreements according to the actual performance of the services provided by the Supplier.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Supplier will provide VITA with credits specified in all agreed-upon Service Level Agreements according to the actual performance of the services provided by the Supplier

b. Measurement of Outage Time and Service Request Intervals

Note that an outage or incident "clock" will start based on the date and timestamp of the alarm or event captured in the trouble ticket. For service requests, such as MACD requests, the clock starts when the Supplier receives the service request from VITA.

Incident tickets can be closed once Supplier determines that the outage or incident is resolved and the service performs in accordance with the applicable service levels. Service Request tickets can be closed once Supplier completes the service request as requested and specified by VITA.

The period of time during which VITA conducts acceptance testing of repaired or restored service or equipment, once deemed Ready For Use (RFU) by Supplier, will not count as outage time.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Clarification: Clock starts when ticket is received by Verizon, or when ticket is opened directly with Verizon.

c. Source Data

Supplier will make available to VITA the actual source data used to calculate service level compliance.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Verizon will make available to VITA the actual source data used to calculate service level compliance.

d. Exceptions

List all exceptions that the Supplier would make to its service level commitments, i.e., circumstances or events that would relieve Supplier from its obligation to meet a particular service level commitment.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	▪ Missed SLAs due to acts or omissions on the part of Customer, its contractors or vendors, or any other entity over which Customer exercises control or has the right to exercise control ▪ Scheduled maintenance ▪ Customer power issues. ▪ Customer Time. The time identified on the trouble ticket (if any) due to, attributable to, or caused by, through no fault of Verizon, the following: (a) unavailability of customer tech to resolve an outage or address an issue that causes Verizon to miss an SLA, (b) clarification or correction needed from customer for MACDs. (c) incorrect or incomplete contact information provided by customer which prevents Verizon from completing the trouble diagnosis and service restoration; (d) Verizon being denied access to network components at the customer location when access is required to complete trouble shooting, repair, diagnosis, or acceptance testing; (e) Customer being unavailable when Verizon calls to close a trouble ticket or verify service restoration, ▪ Customer's failure or refusal to release the service for testing.

e. Service Level Compliance and Credit Report

Supplier will provide a monthly Service Level Compliance and Credit Report for those service levels proposed by the Supplier. The report should detail the actual performance for each service level metric versus the service level metric guaranteed by the Supplier.

The Report should reflect any credits due VITA based on actual performance versus the metric, the amount of the credit, date when the credit will post and the number of the account to which the credit will be applied.

Verizon Response

Comply (Yes/No)	Explanation/Description
Yes	Verizon is able to meet this requirement

2. Options for Presentation of Alternative WAN Solutions SLAs

As described in Section 5.B of this RFP, Supplier is asked to provide a proposal for the MPLS network locations presented in Appendix A of this RFP, but VITA is also interested in understanding other leading-edge WAN services that Supplier can provide.

VITA believes that in most cases, WAN solutions other than MPLS should provide equivalent or better network performance and provisioning ability. Supplier should determine whether any alternative WAN solution that it proposes has equivalent metrics to the "MPLS and Other WAN Solutions Network Transport Service Levels" presented below in Section 3 of Appendix B.

If it does, Supplier should complete the charts in Section 3. If the service is substantially different such that the nature of the measurements changes, it should submit separate tables for its proposed alternative WAN solution.

3. MPLS and Other WAN Solutions Network Transport Service Levels

a. MPLS and Other WAN Solutions Provisioning Service Level Requirements

State the Supplier's committed service levels compared to VITA's objectives.

Verizon Response

Service Level Description	VITA Requirement (in business days)	Supplier Proposed Commitment (in business days) (Supplier to specify a number; not "Yes" or "No")
New or existing location (Local Access and Port) and MACD Order: Interval to approve or reject Order from Customer (if approved, then the install/MACD interval clock begins)	2	Verizon does not provide an SLA for intervals to approve or reject an Order from the customer. However the install interval clock does include receipt time of the order.
Interval to install a Dedicated US T1 Access Circuit	20	20 Business Days
Interval to install a Dedicated US T3 Access Circuit	40	40 Business Days

Service Level Description	VITA Requirement (in business days)	Supplier Proposed Commitment (in business days) (Supplier to specify a number; not "Yes" or "No")
Provide a notification of the actual installation date prior to the planned installation date to ensure site is ready for Supplier	10	Verizon does not provide an SLA for notification of the actual installation date. However, VES does provide advanced notification which varies from service to service.
Change an existing Port's speed (assumes no change to local access speed)	5	Non- Dynamic Port 10 Business Days (5 days with Dynamic Port)
Add, Change or Delete a COS speed or profile on an existing Port	5	10 Business Days
Add, Change, Delete Communities of Interest for Inter-Enterprise/Multiple VPNs (includes VRF Table changes)	7	10 Business Days
Service Credit for Missing any of the above Provisioning or MACD interval Service Level Commitments	100% of Supplier's Installation or MACD Charge (credit applies even if charge is waived)	50% of Port MRC

Explanation/Description
DS3 and above as well as Ethernet circuits often times require facility builds. For that reason, the install SLA on DS3 and Ethernet circuits is based on the Firm Order Commitment (FOC) date and not a predefined interval.

b. ***MPLS and Other WAN Solutions Network Performance Service Level Requirements***

State the Supplier's committed service levels compared to VITA's objectives. All metrics are calculated over a calendar month. In addition, all metrics provided should be measured and reported to VITA on an end-to-end basis inclusive of Supplier-provided and invoiced service components such as local access circuits, NTUs or CSU/DSUs, if provided by the Supplier as part of the service, unless otherwise indicated in the "Service Level Description" column below.

If Supplier is proposing an alternative WAN solution to MPLS, provide analogous service level metrics, and feel free to add additional lines to this table to define such metrics as appropriate to the alternative WAN solution. As an additional option, Supplier may consider providing its own comprehensive service level table as a replacement for the below.

Verizon Response

Service Level Description	VITA Requirement	Supplier Proposed Commitment (Supplier to specify a number; not "Yes" or "No")
Site Availability Single Connection (for a single dedicated local loop and MPLS Port) (measurement includes the uptime of the local access and is a monthly calculation and calculated per site)	99.9%	99.90%
Site Availability Dual Connections (for a site with dedicated local access and MPLS Port as its primary connection and a backup connection such as Internet VPN or local loop with MPLS Port) (measurement includes the uptime of primary or backup combined and is a monthly calculation and calculated per site)	99.99%	99.95%
Time to Restore Service (see Note 1)	4 hours (24x7 coverage)	4 hours (24/7)
Data Delivery Ratio (measured PE router-to-PE router using AF COS)	99.95%	99.99%
Round-trip Network Delay between sites within the network; (see Note 2)	US: ≤ 90ms	≤ 90 ms
Jitter (for real-time Class of Service only; measured PE router-to-PE router for any location)		EF< 5ms AF4x< 15 ms
Service Credit for Missing any of the above Performance Service Level Commitments	20% of the applicable Monthly Recurring Charges including the MRCs for local access for the RTD and Site Availability metric	Availability and TTR : 20% of the Port MRC. RTD, DDR, and Jitter : 20 % of the Port MRC. The MRC will be defined as the average of the MRCs for each of the two impacted Customer Connections.

Service Credit for Missing any of the above Performance Service Level Commitments 20% of the applicable Monthly Recurring Charges including the MRCs for local access for the RTD and Site Availability metric

Note 1: Time to Restore Service is defined as a maximum threshold per incident in any calendar month. The service level metric applies to failure of an individual service component, even if back-up service components are maintaining access to the network. This includes all locations.

Note 2: Round-trip Network Delay is measured CE router-to-CE router excluding the CE router but including the local access circuit; assume a 64-byte ping packet used to measure in 10-15 min. intervals during normal operations).

4. Voice Network Transport Service Levels

a. Voice Provisioning Service Level Requirements

Verizon Response

Service Level Description	VITA Requirement (in business days)	Supplier Proposed Commitment (in business days) (Supplier to specify a number; not "Yes" or "No")
New Location or Existing (Local Access) Order: Interval to approve or reject Order from Customer (if approved, then the install interval clock begins)	2	Verizon does not provide an SLA for intervals to approve or reject an Order from the customer. However the install interval clock does include receipt time of the order.
Interval to install a Dedicated US T1 Voice Access Circuit	20	20 business days
Interval to install a Dedicated US T3 Voice Access Circuit	40	40 business days
Interval to install a US ISDN PRI Circuit	20	25 business days
Interval to install a US ISDN BRI Circuit	15	15 business days
Interval to install or Modify a Trunk Group (Existing T1/E1 Access)	6	10 business days Service Level Objective
Interval to install a New Toll-Free Number on Existing Trunk Group	6	10 business days Service Level Objective
Interval to install a Toll-Free Routing Feature	5	10 business days Service Level Objective
Interval to install a Toll-Free Announcement	10	10 business days Service Level Objective
Interval to Re-record or Modify a Toll-Free Announcement Feature	10	10 business days Service Level Objective
Interval to install an Outbound Feature	10	10 business days Service Level Objective
Interval to install a Switched Access Location	5	10 business days Service Level Objective
Service Credit for Missing any of the above Provisioning Service	100% of Supplier's Installation,	For each business day past the date on which Verizon committed to complete installation, the service credit is $100 per

Service Level Description	VITA Requirement (in business days)	Supplier Proposed Commitment (in business days) (Supplier to specify a number; not "Yes" or "No")
Level Commitments	activation, or change Charge (credit applies even if charge is waived).	domestic access circuit. Service Level Objectives are not subject to any credit

b. Voice Network Performance Service Level Requirements

Verizon Response

Service Level Description	VITA Requirement	Supplier Proposed Commitment (Supplier to specify a number; not "Yes" or "No")
Voice Circuit Availability - for a single dedicated local loop) (measurement includes the uptime of the local access and is a monthly calculation and calculated per site)	99.9%	99.9%
Time to Restore Service (see Note 1 above)	4 hours (24x7 coverage)	4 hours (24x7)
Service Credit for Missing any of the above Performance Service Level Commitments (Service Credits will be calculated by the Supplier and will apply for all the above metrics after the reporting month. In other words, there will be no "cure period" after missing the service level requirement the prior calendar month)	50% of the applicable voice Monthly Recurring Charges and Supplier-provided device MRCs (if separately charged for NTUs and CSU/DSUs)	Availability : $125 Monthly Service Credit TTR : $150 Monthly Service Credit

5. Dedicated Internet Port Service Level Requirements

State the Supplier's committed service levels compared to VITA's objectives. All metrics are calculated over a calendar month. In addition, all metrics provided should be measured and reported to VITA on an end-to-end basis inclusive of Supplier-provided and invoiced service components such as local access circuits, NTU's or CSU/DSUs, if provided by the Supplier as part of the service, unless otherwise indicated in the "Service Level Description" column below.

As an additional option, Supplier may consider providing its own comprehensive service level table as a replacement for the below.

Verizon Response

Service Level Description	VITA Requirement	Supplier Proposed Commitment (Supplier to specify a number; not "Yes" or "No")
Site Availability Single Connection	99.0%	99%

Service Level Description	VITA Requirement	Supplier Proposed Commitment (Supplier to specify a number; not "Yes" or "No")
(for a single dedicated local loop and Internet Port) (measurement includes the uptime of the local access and is a monthly calculation and calculated per site)		
Time to Restore Service (see Note 1)	4 hours (24x7 coverage)	4 hours (24x7 coverage)
Data Deliver Ratio (measured see Note 3)	99.00%	99.5%
Round-trip Network Delay (see Note 2)	≤ 90ms	≤ 90ms
Notification time to VITA for Severity 1 Incidents (Severity 1 is defined as a site outage) (time interval measured when Supplier first detects outage)	15 minutes	Where Managed Services is ordered : 15 minutes
Service Credit for Missing any of the above Performance Service Level Commitments	20% of the applicable Monthly Recurring Charges including the MRCs for local access for the RTD and Site Availability metric	20% of the applicable Monthly Recurring Charges including the MRCs for local access

Note 1: Time to Restore Service is defined as a maximum threshold per incident in any calendar month. The service level metric applies to failure of an individual service component, even if back-up service components are maintaining access to the network. This includes all locations.

Note 2: Round-trip Network Delay is measured CE router-to-PE router (far end) excluding the CE router but including the local access circuit; assume a 64-byte ping packet used to measure in 10-15 min. intervals during normal operations).

Note 3: Data Delivery Ratio is the ratio of test packets received by the egress router to test packets sent from the CE router to the PE ingress router to the PE egress router.

6. Managed VPN Device Service Level Requirements

State the Supplier's committed service levels compared to VITA's objectives. All metrics are calculated over a calendar month. In addition, all metrics provided should be measured and reported to VITA on an end-to-end basis inclusive of Supplier-provided and invoiced service components such as VPN edge device/appliances, NTU's or CSU/DSUs, if provided by the Supplier as part of the service, unless otherwise indicated in the "Service Level Description" column below.

As an additional option, Supplier may consider providing its own comprehensive service level table as a replacement for the below.

Verizon Response

Service Level Description	VITA Requirement	Supplier Proposed Commitment (Supplier to specify a number; not "Yes" or "No")
Time to Restore Service: 24x7 coverage (see Note 2)	4 hours	4 hours
Time to Restore Service: 8x5 coverage (see Note 2)	Next Business Day (outages occurring before 5:00pm local time must be repaired the same business day)	Next Business Day
Notification time to VITA for Severity 1 Incidents (Severity 1 is defined as a site outage) (time interval measured when Supplier first detects outage)	15 minutes	15 minutes with Proactive Monitoring.
Service Credit for Missing any of the above Performance Service Level Commitments	20% of all applicable Monthly Recurring Charges for the site including circuit and CPE MRCs	20% SLA credit applies only to the monthly recurring maintenance fees

Note 1: The demarcation point for the table above is end-to-end and includes the maintenance and management of the VITA VPN edge device.

Note 2: Site Time to Restore is defined as a maximum threshold per incident in any calendar month.

7. *Billing Service Levels*

VITA's preferred service level commitments for billing are listed below. All metrics are measured and calculated over a calendar month period.

In order to allow the Supplier to have an initial ramp-up period, the billing service credits will go into effect beginning with the fourth monthly invoice. However, the measurement and tracking of the service levels should begin in the first month. State the Supplier's compliance with these metrics in the Comply (Yes/No) box below the table and note any exceptions.

Service Level Description	*Metric*	*Service Credit*
Number of days after the 28th day of the calendar month that invoice is received by VITA	***Average of 21 calendar days or less for all invoice submittals***	***$500 per day late***
Percent of billing change orders implemented on next invoice as long as VITA requests change at least 10 calendar days prior to the invoice date	***99.0%***	***$1,000 credit***

Service Level Description	*Metric*	*Service Credit*
Percent of billing inquiries responded to within 5 business days	***99.0%***	***$1,000 credit***
Percent of new services/equipment billed to correct VITA account on invoices	***99.0%***	***$1,000 credit***
Percent of new services billed at correct price on invoices	***99.0%***	***Credit of 5% of the amount net overbilled***

Verizon Response

Comply (Yes/No)	Explanation/Description
No	Verizon does not provide SLAs on billing commitments.

8. *Other Service Levels*

The following Service Level requirements are provided for Customer Service/Network Operations Center (NOC) responsiveness. All metrics are measured and calculated over a calendar month period. State the Supplier's compliance with these metrics in the Comply (Yes/No) box below the table and note any exceptions.

Service Level Description	*Coverage*	*VITA Requirement*	*Service Credit*
Response time for a) acknowledgement of service interruption/restoration requests after notification from an Authorized User and b) providing a status report. ***The status report must include a description of the failure and an estimated time to restore services***	***24 x 7 x365***	***Response within 1 hour for 95% of the requests***	***0.5% of the total Monthly Recurring Charge (MRC) for all VITA sites monitored by the NOC***
Time-to-Restore after notification of an interruption/restoration request by an Authorized User for services not specified in Sections 1-5 above (remote or on-site)	***24 x 7 x365***	***4 hours***	***20% of the applicable Monthly Recurring Charges including the MRCs for local access***

Verizon Response

Service Level Description	VITA Requirement	Supplier Proposed Commitment (Supplier to specify a number; not "Yes" or "No")
Response time for a) acknowledgement of service interruption/restoration requests after notification from an Authorized User	24 x 7 x365 Coverage Response within 1 hour for 95% of the requests	24 x 7 x365 Coverage An Incident ticket is provided immediately as acknowledgment once an Authorized

Service Level Description	VITA Requirement	Supplier Proposed Commitment (Supplier to specify a number; not "Yes" or "No")
and b) providing a status report. The status report must include a description of the failure and an estimated time to restore services	0.5% of the total Monthly Recurring Charge (MRC) for all VITA sites monitored by the NOC	user opens a ticket with Verizon via the VEC or by calling Verizon directly. Verizon Incident Management team has an Service Level Objective to provide updates for each ticket every hour with an appropriate update for that ticket.
Time-to-Restore after notification of an interruption/restoration request by an Authorized User for services not specified in Sections 1-5 above (remote or on-site)	24 x 7 x365 Coverage 4 hours 20% of the applicable Monthly Recurring Charges including the MRCs for local access	See Appendix B – Service Level Agreements (SLAs) for Specific Product Level SLA
Explanation/Description		
• Once a customer/end user opens a ticket with Verizon, either via the VEC or by calling into Verizon directly, an Incident ticket is opened and immediately provided. • The Verizon Incident Management team has an SLO to provide updates for each ticket every hour with an appropriate update for that ticket. ○ The initial update typically communicates the results from the automated testing that is performed on the circuit. • The initial status update may not identify what the root cause for the failure due to various reasons; complex of design, number of carriers and/or ILECs involved, etc. • In addition, an estimated time to restore service may not be able to be provided within the first hour of the outage. Triage across multiple carriers and ILECs may take longer than 1 hour to isolate the failure. In the event of fiber cuts, isolation of the cut, estimated time to replace the damaged fiber, and final determination of the ETR could take longer than the SLA for restoration for that particular service.		

9. *Additional Service Level Agreements (SLAs)*

Attachment 1 to this Appendix B Service Level Agreements (SLAs)), entitled "Additional Service Level Agreements (SLAs)," sets forth the SLAs for additional Services.

Attachment 1 Additional Service Level Agreements (SLAs)

The following Service Level Agreements are additional Service Level Agreements applicable to Services not specifically identified in Appendix B above. To the extent the Service Level Agreements in this Attachment 1 are in conflict with the foregoing portions of Exhibit B, including Appendix B (collectively "Exhibit B", Exhibit B shall control. Without limiting the generality of the foregoing, and notwithstanding any other provision in this Attachment 1, the exclusions applicable to all Service Level Agreements, along with any requirements for obtaining any resulting credits, shall be limited to the exclusions, requirements, and processes specified in Exhibit B.

Managed LAN

Service Level Agreement

1. **Overview.**

Managed LAN offers certain service level agreements as shown below. Capitalized terms that are not defined in Appendix B: Terms and Definitions are defined pursuant to Customer's Agreement with Company for Managed LAN Service.

The Managed LAN SLAs are as follows:

LAN Switch Availability
Time to Repair ("TTR")
Managed LAN Installation
Proactive Outage Notification

2. **Managed LAN Details.**

2.1 **Coverage Categories.** The Managed LAN SLAs vary by geographic location and maintenance plan and, provider as specified below.

Geographic Location and Maintenance. The location of a Site, whether maintenance is provided by Company Data Maintenance – Network, Company Data Maintenance or an approved third party ("3rd Party Maintenance"), and the maintenance plan determines the applicable service levels. Certain SLAs are only available when LAN Switches have maintenance plans with coverage 24 hours a day, 7 days a week, 365 days a year with 4 hour response time, except where noted. The locations covered under the Managed LAN SLA are the US. The current approved 3rd Party Maintenance providers are IBM, Siemens, Cisco, HP, NCR, and Unisys. Other maintenance providers may be approved on a case by case basis.

1. U.S. – The U.S. Mainland and Hawaii (with Company WAN In Band Access)

3. **Managed LAN SLA.**

3.1 Service Level Agreement by Location, Category, Level of Managed LAN service, and Maintenance Provider

Table 3.1 **Managed LAN Premium Service Level Agreements**

Parameter	U.S.	3rd Party Provided In Band Access
LAN Switch Availability Workgroup LAN Switch	99.5%	N/A
LAN Switch Availability Core LAN Switch	99.95%	N/A
TTR – Company Data Maintenance – Network	3.5 Hours/6 hours for sites with no OOB access	6 Hours
TTR – Next Business Day Maintenance	By end of business the following business day	By end of business the following business day
TTR – 3rd Party Maintenance	6 Hours	6 Hours
Managed LAN Installation	40 Business Days (Hawaii excluded)	Not Available
Proactive Outage Notification	15 Minutes	15 Minutes

4. **Service Level Agreements and Objectives Defined.**

4.1 **Availability:** A LAN Switch is available if i) no alarm events have occurred on the Network Operations Center's ("NOC") Network Management System, or ii) no Trouble Ticket has been opened by Customer. If multiple LAN Switches are unavailable because of a Core LAN Switch issue, Company will only consider the Core LAN Switch Outage in its calculation of the Availability SLA and LAN Switches attached logically or physically to that Core LAN Switch will not be considered unavailable. LAN Switch availability is based on the total number of minutes in a calendar month during which the LAN Switch is unavailable to exchange data divided by the total number of minutes in that month. LAN Switches are considered available if the LAN Switch is available to pass data whether data is passing through the LAN Switch or not. Availability is based on the total number of minutes per calendar month and conformance with Company's Site design (e.g. redundancy for Core LAN Switches).

▪

Each Trouble Ticket will be evaluated by Company for appropriate corrective action and Customer will be informed of the status of each closed ticket even where the LAN Switch is within normal operating parameters.

▪

4.2.1 **Calculation.** Availability is the percentage of time that the LAN Switch is available within a given calendar month. Availability only applies to Outages.

Monthly Managed Site Availability (%) =

$$1 - \left(\frac{\text{Total minutes of Outage per month}}{\text{Number of days in calendar month} \times 24 \text{ hrs} \times 60 \text{ min}} \right) \times 100$$

4.2.2 **Credit Structure and Amounts.** For any month in which Company fails to meet the applicable availability standards for a LAN Switch, Customer will be eligible for an SLA credit equal to the a percentage of the Managed LAN monthly recurring charges for the affected Site, as indicated in the following tables.

Workgroup LAN Switch Availability matrix Applies to LAN Switch level performance. This SLA is not available with 3rd Party Provided In Band access.

Managed Availability %		U.S.	Global Tier A	Global Tier B
From	To			
100%	99.50%	0%	0%	0%
99.49%	99.40%	15%	10%	10%
99.39%	99.30%	30%	20%	20%
99.29%	99.00%	35%	30%	30%
98.99%	96.61%	40%	35%	35%
96.60	95.01%	50%	40%	40%
95.0% or less		100%	100%	100%

Core LAN Switch Availability matrix Applies to LAN Switch level performance. This SLA is not available with 3rd Party Provided In Band access.

Managed Availability %		U.S.	Global Tier A	Global Tier B
From	To			
100%	99.95%	0%	0%	0%
99.94%	99.50%	15%	10%	10%
99.49%	99.40%	25%	20%	20%
99.39%	99.00%	35%	30%	30%
98.99%	98.00%	45%	40%	35%
97.99%	96.70%	50%	50%	40%
Less than 96.7%		100.0%	100.0%	100.0%

4.2 **Time to Repair ("TTR").** TTR is the time to resolve an Outage Trouble Ticket for a LAN Switch under management.

4.2.1 **Calculation.** The Customer's TTR is based on the Outage time per LAN Switch for each Outage event. The TTR time starts when a Trouble Ticket is opened by Company or the Customer after an Outage and concludes with the restoration of LAN Switch and the LAN interface.

LAN Switch Time To Repair (Hrs.) =

Length of Trouble Ticket resolution per LAN Switch per Outage

4.2.2 **Credit Structure and Amounts.** Customers will be credited 20% of the Managed LAN monthly recurring charges for the affected LAN Switch.

- 4.3 **Managed LAN Installation SLA.** The Managed LAN Installation SLA is defined as the period of time to install the Managed LAN at a Site.
-

4.3.1 **Calculation.** The Managed LAN Installation SLA time period starts the date the Customer approves the CDD provided by Company and ends the date the Managed LAN is up and billable at that Site.

4.3.2 **Credit Structure and Amounts.** Customer is eligible to receive a fifty percent (50%) credit of the non-recurring Managed LAN installation fee for a LAN Switch if Company fails to install the LAN Switch within 45 business days.

- 4.4 **Proactive Outage Notification SLA.** The proactive outage notification SLA provides credits if Company fails to notify Customer of a LAN Switch Outage as provided below. Proactive Outage Notification will be provided to the Customers' designated point of contact by e-mail or pager. Company has fifteen (15) minutes to notify Customer's primary point of contact from the start point of the Notification Period, as defined below.

4.4.1 **Calculation.** The "Notification Period" begins with opening of a Trouble Ticket for an Outage and ends when the Trouble Ticket is closed. Company is in compliance with the proactive outage notification SLA if the Customer opened the Trouble Ticket or contacts Company within the Notification Period. Company will provide the ticket number and an initial status.

-

4.4.2 **Credit Structure and Amounts.** Customer is eligible to receive a credit equal to ten percent (10%) of the monthly recurring charge for each LAN Switch which was impacted during an Outage that was not properly notified.

-

- 4.5 **Change Management Service Level Objective.** The Change Management service level objective is to complete certain change management requests, listed below, within 24 hours of the change being scheduled with Customer, or within four (4) hours if designated by Customer as an emergency. Emergency changes must be requested by Customer's submission of a Priority 1 Trouble Ticket.

-

4.5.1 **Definition.**

-

Express Change Request Types:

These are a subset of current change request types that would be eligible for the standard change management objective:

Device Port Activation
Device Port Shutdown
Device Port Duplex Change
Device Port Speed Change
Device Password Change
Terminal Access Controller Access Control System (TACACS) configuration
IP Address/Subnet Mask – Modify
Hostname change
LAN DHCP IP Helper Modify

Both Emergency and Express change requests have no scheduling, coordination or follow-up with Customer by Company before or after the request. Impact assessment and evaluation of the change is not required. However, Company will not provide fault isolation of bad or unsupported configurations.

4.5.2 **Credit Structure and Amounts.** The Change Management service level objective and has no associated credit.

5. **Credit Application Process.** This provision applies to all SLAs.

5.1 **Managed LAN SLA Application Structure.** Credits are not cumulative month to month. If the SLA issue exceeds 30 days, the same schedule applies for each consecutive month. The maximum credit within any one month for the aggregate SLA credits within that month is 50% of the total MRC for the Managed LAN for all LAN Switches. A minimum of two LAN Switches must be managed by Company in a single network for this credit to apply. Company's data and calculations will be used to determine if an SLA has been missed and a credit is due. Company will issue a credit within 90 days if it determines that a credit is due.

5.2 **Process for Customers to Apply for SLA Credits.** Customer completes two steps in order to have an Outage qualify for a Service Level Agreement credit. First, except for the Installation SLA, a Trouble Ticket needs to be opened in response to Managed LAN issues at the time of the Managed LAN issue. Second, a written request for credit must be made to the account team contact.

5.2.1 **Opening a Trouble Ticket.** For the Availability, TTR, and Proactive Outage Notification SLAs, an Outage Trouble Ticket must be opened, either by Company or Customer. A Trouble Ticket records the Outage event.

5.2.2 **Submitting a Service Level Agreement Credit Request.**

5.2.2.1 Installation SLA Customer must request a credit in writing (e-mail or fax) to the Company Account Team within fifteen (15) days after the date that the LAN Switch installation is completed with the following information:

- The Site identifier
- The date the LAN Switch should have been installed
- The date the LAN Switch was installed
- The date that Customer approved the CDD

5.2.2.2 Availability, Time To Repair, and Proactive Outage Notification SLA Customer must request a credit in writing (e-mail or fax) to the Company Account Team within fifteen (15) days of the Outage with the following information:

- The date the LAN Switch Outage occurred
- The time the LAN Switch Outage began and ended
- The Outage location or LAN Switch.
- Trouble Ticket number for each Site and event.

5.2.3 Service Level Agreement Credit Time Limitation. If Company has failed to meet the same SLA for three (3) consecutive months, Customer may elect to:

- Continue the Managed LAN with a limit of six (6) months of credits for any individual SLA within a 12-month period.
- Discontinue Managed LAN without liability except for charges incurred prior to discontinuation of the Managed LAN. Customer must submit a written disconnect notice to their Company Account Team within 30 days following the end of either the third or subsequent consecutive month of Company's failure to meet the SLA.

If 3rd Party Maintenance provider causes the payout of SLA credits for three (3) consecutive months, Company has the following options:

- require a change of 3rd Party Maintenance provider, as applicable; or
- terminate its performance obligations under this Managed LAN SLA for the related SLA.

▪ Appendix A: General Exclusions

The following exclusions apply to all Service Level Agreements contained in this document:

- Missed SLAs due to acts or omissions on the part of Customer, its contractors or vendors, or any other entity over which Customer exercises control or has the right to exercise control
- Scheduled maintenance
- Customer power issues.
- No credit will be due to the extent that an SLA has not been met due to OOB access or access via secondary access connection not being available (where such OOB access or access via secondary access connection could have been used to resolve the outage) including SLA not being met due to time required for Verizon to dispatch for further maintenance or repair as needed in such cases
- Customer Time. The time identified on the trouble ticket (if any) due to, attributable to, or caused by, through no fault of Verizon, the following:
  (a) unavailability of customer tech to resolve an outage or address an issue that causes Verizon to miss an SLA,
  (b) clarification or correction needed from customer for MACDs.
  (c) incorrect or incomplete contact information provided by customer which prevents Verizon from completing the trouble diagnosis and service restoration;
  (d) Verizon being denied access to network components at the customer location when access is required to complete trouble shooting, repair, diagnosis, or acceptance testing;
  (e) Customer being unavailable when Verizon calls to close a trouble ticket or verify service restoration,

- Customer's failure or refusal to release the service for testing.

▪ Appendix B: Terms and Definitions

▪

▪ Terms and Definitions	▪ Definition
▪ 3rd Party In Band Access	▪ IP Sec in band access transport provided by a 3rd party Internet access provider.
▪ 3rd Party Maintenance	▪ Maintenance services from third parties approved by Company from time to time. The current approved 3rd Party Maintenance providers are IBM, Siemens, Cisco, HP, NCR, and Unisys.
▪ Core LAN Switch	▪ A high availability LAN Switch used primarily to switch LAN traffic between other LAN Switches (i.e. including but not limited to servers, hubs, other switches, routers) but not directly to end user workstations.
▪ Customer Premise Equipment ("CPE")	▪ Managed LAN equipment located at the Site.
▪ Customer Service Center	▪ Service centers where Customers call in to report Managed LAN issues.

▪ Terms and Definitions	▪ Definition
▪ Customer Time	Time attributable to or caused by one or more of the following: • Incorrect or incomplete information provided by Customer; • Company or the Company approved maintenance provider being denied access to CPE or network components at the Customer location when access is required; • The analog telephone connection for OOB access is either unavailable or not maintaining a minimum 9600 bits per second connection such that Company can not troubleshoot the LAN Switches and Company has not been notified by Customer that such minimum OOB access has been restored; • Failure or limited bandwidth of Customer's WAN connecting LAN sites where only one WAN In Band Access site is provided; • Failure or refusal to release the LAN Switch for testing; or • Customer unavailability where needed to close a Trouble Ticket.
▪ In Band Access	In band access may be provided either i) through a Company Managed WAN site connected to Customer's LAN network, or ii) through Customer-provided Internet access (from Company or a 3rd party) using IP Sec encryption technology with Company Internet Dedicated – Managed service connected to Customer's LAN network (collectively, "WAN In Band Access"). In band access is required for each of Customer's LAN locations or Company can manage more than one Customer LAN using one WAN In Band Access site.
▪ LAN Switch	▪ Any LAN networking Customer premises equipment managed by Company.
▪ MRC	▪ Monthly Recurring Charge.
▪ Outage(s)	▪ An Outage is defined as an unscheduled period in which the LAN Switch is interrupted and unavailable for use by Customer for sixty (60) or more unavailable Seconds ("UAS") within a 15-minute period measured by Company. UAS is the American National Standards Institute standard (ANSI)T1.231.
▪ Port	▪ A physical interface for data cables to a LAN Switch.
▪ Service Level Agreement ("SLA")	▪ A series of performance commitments made by Company to the Customer.
▪ Service Restoration Priorities	▪ Process by which Managed LAN disruptions are ranked by the Customer Service Center.
▪ Site	▪ A site is Customer's Managed LAN location which includes a LAN Switch
▪ Trouble Ticket	▪ A ticket opened within Company's NOC from an internal Company report or a report by a Customer to Company of either perceived Outage or Managed LAN degradation.
▪ WAN In Band Access	See In Band Access definition for defined term.
▪ Workgroup LAN Switch	A single ended LAN Switch used primarily to connect end user workstations to the local LAN infrastructure.

Managed Wireless LAN ("WLAN")
Service Level Agreement

1. Overview

The Managed WLAN Service offers certain service level agreements as shown below. Capitalized terms that are not defined in Appendix B: Terms and Definitions are pursuant to Customer's service agreement.

The Managed WLAN SLAs are as follows:

Time to Repair ("TTR")
Managed Service Installation
Proactive Outage Notification

2. Managed Service Details

2.1 **Coverage Categories**. The Managed WLAN SLAs are available only in the contiguous 48 states, the District of Columbia and Hawaii (the "U.S.").

3. Verizon Managed WLAN Service SLA

3.1 Service Level Agreements

TABLE 3.1 MANAGED WLAN SERVICE LEVEL AGREEMENTS

Parameter	
TTR – Verizon Data Maintenance - Network or 3rd Party	Next Business Day
Managed WLAN Installation	45 Business Days (Hawaii excluded)
Proactive Outage Notification	15 Minutes

4. Service Level Agreements and Objectives Defined

4.1 **Time to Repair ("TTR")**. TTR is the time to resolve an Outage Trouble Ticket for a Device under management.

4.1.1 **Calculation**
The Customer's TTR is based on the Outage time per Device for each Outage event. The TTR time starts when a Trouble Ticket is opened by Verizon or the Customer after an Outage and concludes with the restoration of Device and the WLAN interface.

Device Time To Repair (Hrs.) =
Length of Trouble Ticket resolution per Device per Outage incident

4.1.2 **Credit Structure and Amounts**
Customers will be credited for Managed WLAN monthly recurring charges for the affected Device as shown below.

TIME TO REPAIR (APPLIES TO EACH DEVICE AT A SITE)

Time to Repair	
Outage Repair Time (Per incident)	Credit (U.S.)
Next Business Day	20% of MRC

- 4.2 **Managed WLAN Installation SLA**. The Managed WLAN Installation SLA is defined as the period of time to install the Managed WLAN at a Site.

4.2.1 **Calculation**
The Managed WLAN Installation SLA time period starts the date Verizon accepts a Customer's order and ends the date the Managed WLAN is up and billable at that Site.

4.2.2 **Credit Structure and Amounts**
Customer is eligible to receive a fifty percent (50%) credit of the non-recurring Managed WLAN installation fee for a Device if Verizon fails to install the Device within 45 business days.

- 4.3 **Proactive Outage Notification SLA**. The proactive outage notification SLA provides credits if Verizon fails to notify Customer of a Device Outage as provided below. Proactive Outage Notification will be provided to the Customers' designated point of contact by e-mail or pager. Verizon has fifteen (15) minutes to notify Customer's primary point of contact from the start point of the Notification Period, as defined below.

4.3.1 **Calculation**
The "Notification Period" begins with opening of a Trouble Ticket for an Outage and ends when the Trouble Ticket is closed. Verizon is in compliance with the proactive outage notification SLA if the Customer opened the Trouble Ticket or contacts Verizon within the Notification Period. Verizon will provide the ticket number and an initial status.

4.3.2 **Credit Structure and Amounts**
- Customer is eligible to receive a credit equal to ten percent (10%) of the monthly recurring charge for each Device which was impacted during an Outage that was not properly notified.

- 4.4 **Change Management Service Level Objective**. The Change Management service level objective is to complete certain change management requests, listed below, within 24 hours of the change being scheduled with Customer.

4.4.1 **Definition**

Express Change Request Types:

These are a subset of current change request types that would be eligible for the standard change management objective:

Change requests have no scheduling, coordination or follow-up with Customer by Verizon before or after the request. Impact assessment and evaluation of the change is not required. However, Verizon will not provide fault isolation of bad or unsupported configurations.

4.4.2 **Credit Structure and Amounts**. The Change Management service level objective and has no associated credit.

5. **Credit Application Process**. This provision applies to all SLAs.

- 5.1 **Managed WLAN Services SLA Application Structure**
  Credits are not cumulative month to month. If the SLA issue exceeds 30 days, the same schedule applies for each consecutive month. The maximum credit within any one month for the aggregate SLA credits within that month is 50% of the total MRC for the Managed WLAN for all Devices. A minimum of two Devices must be managed by Verizon in a single network for this credit to apply. Verizon's data and calculations will be used to determine if an SLA has been missed and a credit is due. Verizon will issue a credit within 90 days if it determines that a credit is due.

- 5.2 **Process for Customers to Apply for SLA Credits**. Customer completes two steps in order to have an Outage qualify for a Service Level Agreement credit. First, except for the Installation SLA, a Trouble Ticket needs to be opened in response to Managed WLAN issues at the time of the Managed WLAN issue. Second, a written request for credit must be made to the account team contact.

5.2.1 **Opening a Trouble Ticket**
For the TTR and Proactive Outage Notification SLAs, an Outage Trouble Ticket must be opened, either by Verizon or Customer. A Trouble Ticket records the Outage event.

5.2.2 **Submitting a Service Level Agreement Credit Request**

5.2.2.1 **Installation SLA**. Customer must request a credit in writing (e-mail or fax) to the Verizon Account Team within fifteen (15) days after the date that the Device installation is completed with the following information:
- The Site identifier
- The date the Device should have been installed
- The date the Device was installed
- The date that Customer approved the CDD

5.2.2.2 **Time To Repair and Proactive Outage Notification SLA**. Customer must request a credit in writing (e-mail or fax) to the Verizon Account Team within fifteen (15) days of the Outage with the following information:
- The date the Device Outage occurred
- The time the Device Outage began and ended
- The Outage location or Device .
- Trouble Ticket number for each Site and event.

5.2.3 **Service Level Agreement Credit Time Limitation**

If Verizon has failed to meet the same SLA for three (3) consecutive months, Customer may elect to:

- continue the Managed WLAN with a limit of six (6) months of credits for any individual SLA within a 12-month period.
- No credit will be due to the extent that an SLA has not been met due to OOB access or access via secondary access connection not being available (where such OOB access or access via secondary access connection could have been used to resolve the outage) including SLA not being met due to time required for Verizon to dispatch for further maintenance or repair as needed in such cases
-
- discontinue Managed WLAN without liability except for charges incurred prior to discontinuation of the Managed WLAN. Customer must submit a written disconnect notice to their Verizon Account Team within 30 days following the end of either the third or subsequent consecutive month of Verizon's failure to meet the SLA.

If 3rd Party Maintenance provider causes the payout of SLA credits for three (3) consecutive months, Verizon has the following options:

- require a change of 3rd Party Maintenance provider, as applicable; or
- terminate its performance obligations under this Managed WLAN SLA for the related SLA.

▪ Appendix A: General Exclusions

The following exclusions apply to all Service Level Agreements contained in this document:

- Missed SLAs due to acts or omissions on the part of Customer, its contractors or vendors, or any other entity over which Customer exercises control or has the right to exercise control
- Scheduled maintenance
- Customer power issues.
- No credit will be due to the extent that an SLA has not been met due to OOB access or access via secondary access connection not being available (where such OOB access or access via secondary access connection could have been used to resolve the outage) including SLA not being met due to time required for Verizon to dispatch for further maintenance or repair as needed in such cases
- Customer Time. The time identified on the trouble ticket (if any) due to, attributable to, or caused by, through no fault of Verizon, the following:

  (a) unavailability of customer tech to resolve an outage or address an issue that causes Verizon to miss an SLA,

  (b) clarification or correction needed from customer for MACDs.

  (c) incorrect or incomplete contact information provided by customer which prevents Verizon from completing the trouble diagnosis and service restoration;

  (d) Verizon being denied access to network components at the customer location when access is required to complete trouble shooting, repair, diagnosis, or acceptance testing;

  (e) Customer being unavailable when Verizon calls to close a trouble ticket or verify service restoration,

- Customer's failure or refusal to release the service for testing.

▪

▪ Appendix B: Terms and Definitions

▪

▪ Terms and Definitions	▪ Definition
▪ 3rd Party Maintenance	▪ Maintenance services from third parties approved by Verizon from time to time. The current approved 3rd Party Maintenance provider is Aruba Networks.
▪ Customer Premise Equipment ("CPE")	▪ Managed WLAN equipment located at the Site.
▪ Customer Time	Time attributable to or caused by one or more of the following: • Incorrect or incomplete information provided by Customer; • Verizon or the Verizon approved maintenance provider being denied access to CPE or network components at the Customer location when access is required; • Failure or refusal to release the Device for testing; or • Customer unavailability where needed to close a Trouble Ticket.
▪ Device	▪ Any WLAN CPE managed by Verizon.
▪ Verizon Service Center	▪ Service centers where Customers call in to report Managed WLAN issues.
▪ MRC	▪ Monthly Recurring Charge.

▪ Terms and Definitions	▪ Definition
▪	• Total loss of service • Managed WLAN degradation such that Customer is unable to use Managed WLAN and Customer is prepared to release the circuit to Verizon for immediate testing.
▪ Service Level Agreement (“SLA”)	▪ A series of performance commitments made by Verizon to the Customer.
▪ Site	▪ A site is Customer’s Managed WLAN location which includes a Device
▪ Trouble Ticket	▪ A ticket opened within Verizon’s NOC from an internal Verizon report or a report by a Customer to Verizon of either perceived Outage or Managed WLAN degradation.

Private IP Satellite Access Service Level Agreement

1. Private IP Satellite Access Service Level Agreement Summary

This Service Level Agreement "(SLA") sets key performance metrics for the Private IP Satellite Access Service. This SLA applies only to Private IP Satellite Access Service provided exclusively in the continental United States (“CONUS”) and only for Customers with the standard Antenna/BUC configurations with the Throughput level indicated in Table 1 below.

Customers may receive credits for failure by Verizon to satisfy the SLA as set forth below.

These metrics include Network Transit Delay, Network Packet Delivery, and Network Availability and range from 99.7% to 99.9% across the CONUS. Service level experienced by any particular customer will vary based on geographic location, antenna size and power, applications deployed on the network and other factors, as shown in Figures 1, 2, and 3. No delay, unavailability or other performance problem resulting from the exclusions set forth in Exclusions in Section 3 of this SLA will be counted in the determination of whether the threshold standard for any particular SLA has been met.

The term SLA is used to refer collectively to all of the SLAs related to the Verizon Private IP Satellite Access Service set forth in this document. Each individual standard and its related remedy are referred to by the name of the standard itself.

1.1 Network Transit Delay

Network Transit Delay is the monthly average delay for round-trip transmission between Verizon-designated origination and the destination demarcation points within the Verizon Satellite Network, as measured by Verizon. The Network Transit Delay standard is set forth in Table 1 below (following Section 1.2).

1.2 Network Packet Delivery

Network Packet Delivery is the percentage of packets delivered (i.e., not dropped) between Verizon-designated Verizon Private IP Satellite demarcation points, as measured by Verizon The Network Packet Delivery standard is set forth in Table 1 below.

Table 1. Network Transit Delay and Network Packet Delivery Based on Required Antenna/BUC Capacity and Throughput

Region	Antenna/BUC Size	Maximum Throughput	Network Transit Delay (round trip) Milliseconds (Less or equal to)	Network Packet Delivery (Greater or equal to)
CONUS	1.2m/3w 1.8m/3w (Florida)	< 512 kbps	800	99%
CONUS	1.2m/4w 1.8m/3w (Florida)	< 1024 kbps	800	99%
CONUS	1.8m/4w 2.4m/4w (below the southeastern-most demarc line in the tables below	< 2048 kbps	800	99%

1.3 Network Availability

Network Availability is the total number of hours in a month during which a Customer's Private IP Satellite Access Service, measured between the two demarcation points shown in Appendix A is able to exchange signals between the Satellite Customer site demarcation point (on the right side of the diagram and the Satellite Hub demarcation point, on the left side of the diagram) divided by the total number of hours in a month. For purposes of calculating Network Availability under this Network Availability SLA, the Private IP Satellite Access Service is considered unavailable only from the time that a Trouble Ticket is opened by the Ticket Management group to the time the Ticket is closed, based on the time stamp noted on the Trouble Ticket. Figures 1, 2 and 3 display the applicable Network Availability standards, depending on specified factors, such as geography, transmission speed, Customer's antenna size and block up-converter ("BUC").

Figure 1: CONUS Network Availability SLA based on 512 kbps transmission rate and below.

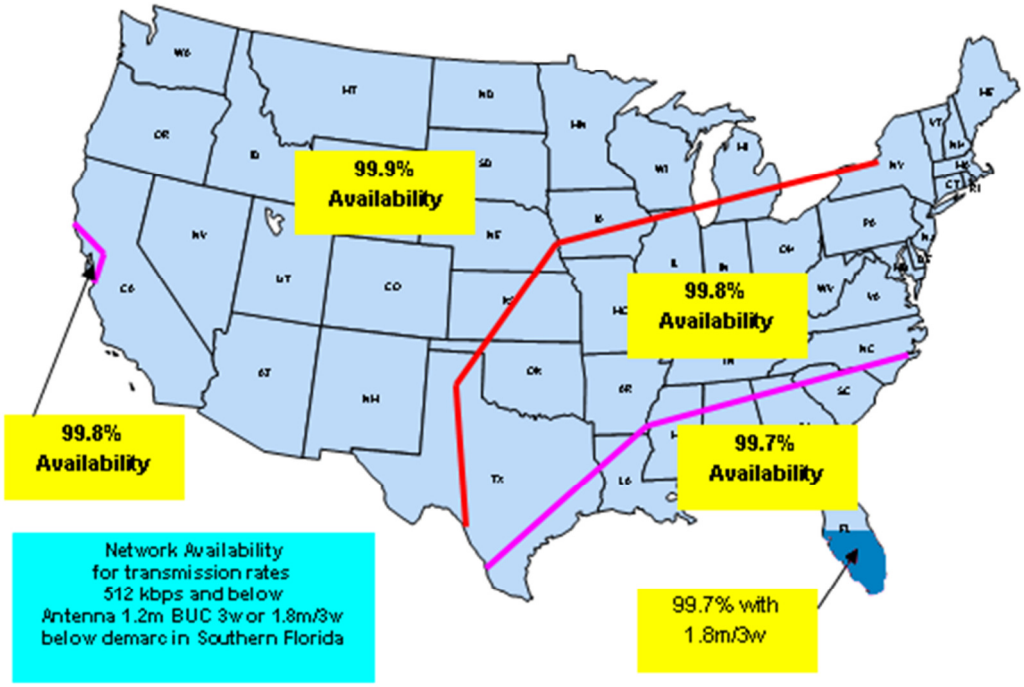


Figure 2: CONUS Network Availability SLA based on 1024 kbps transmission rate and below.

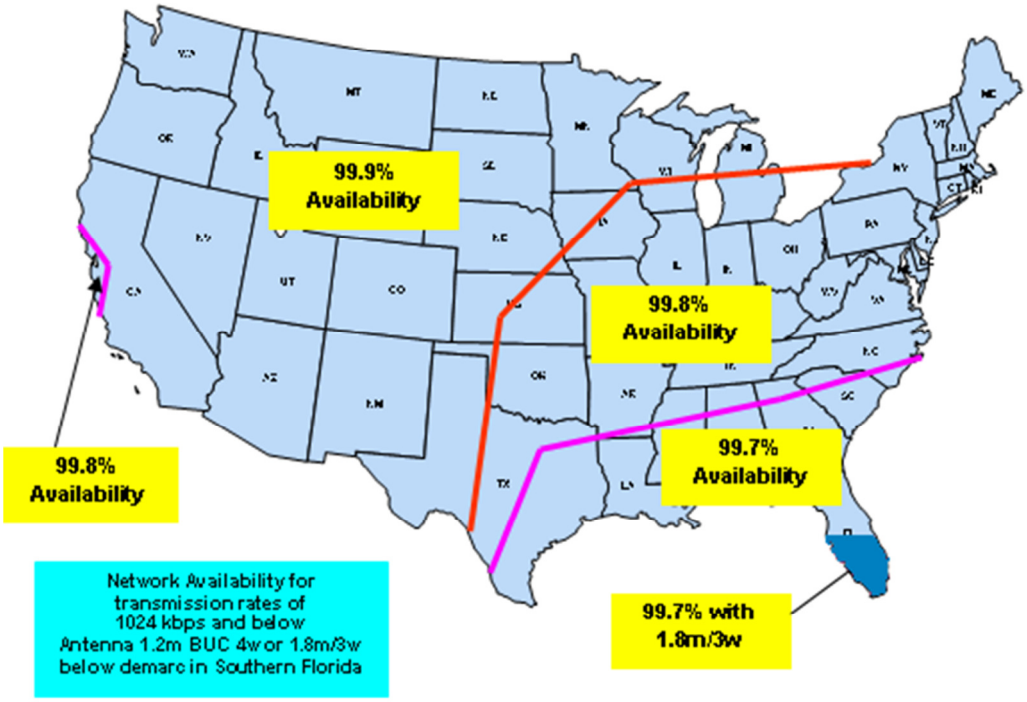
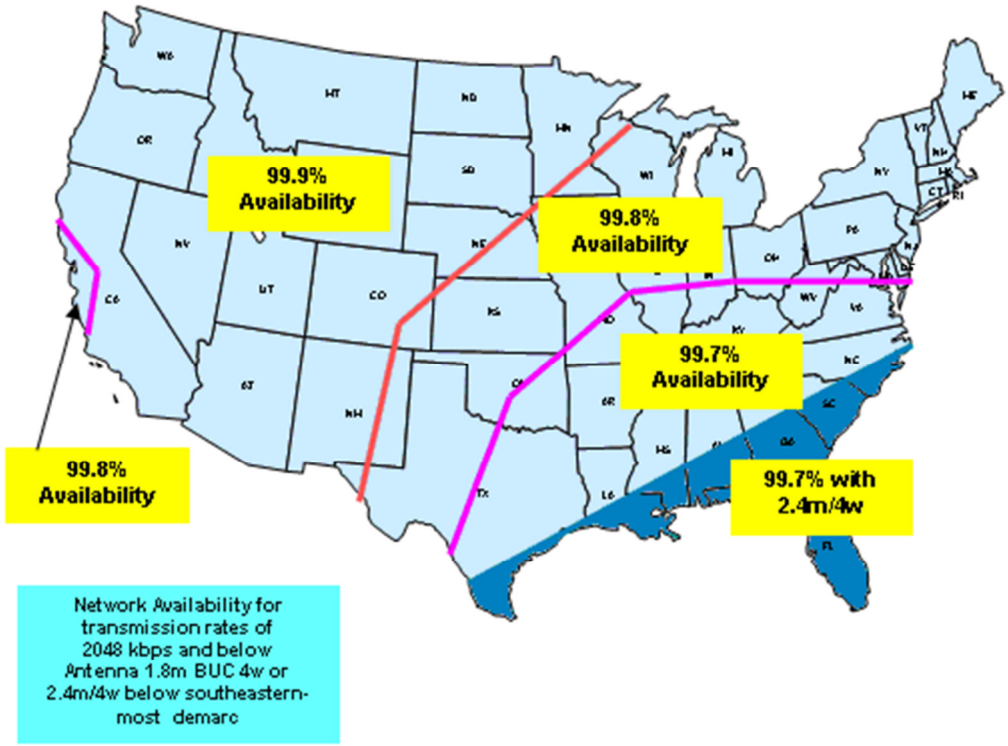


Figure 3: CONUS Network Availability SLA based on 2048 kbps transmission rate and below.



1.4 De-Ice

Customer sites located above the demarcation line are at risk for accumulating snowfall or ice on their equipment which may affect their Private IP Satellite Access Service. Customers should consider installing devices to remove or prevent the build up of snow or ice on equipment that is used to provide Private IP Satellite Access Service.

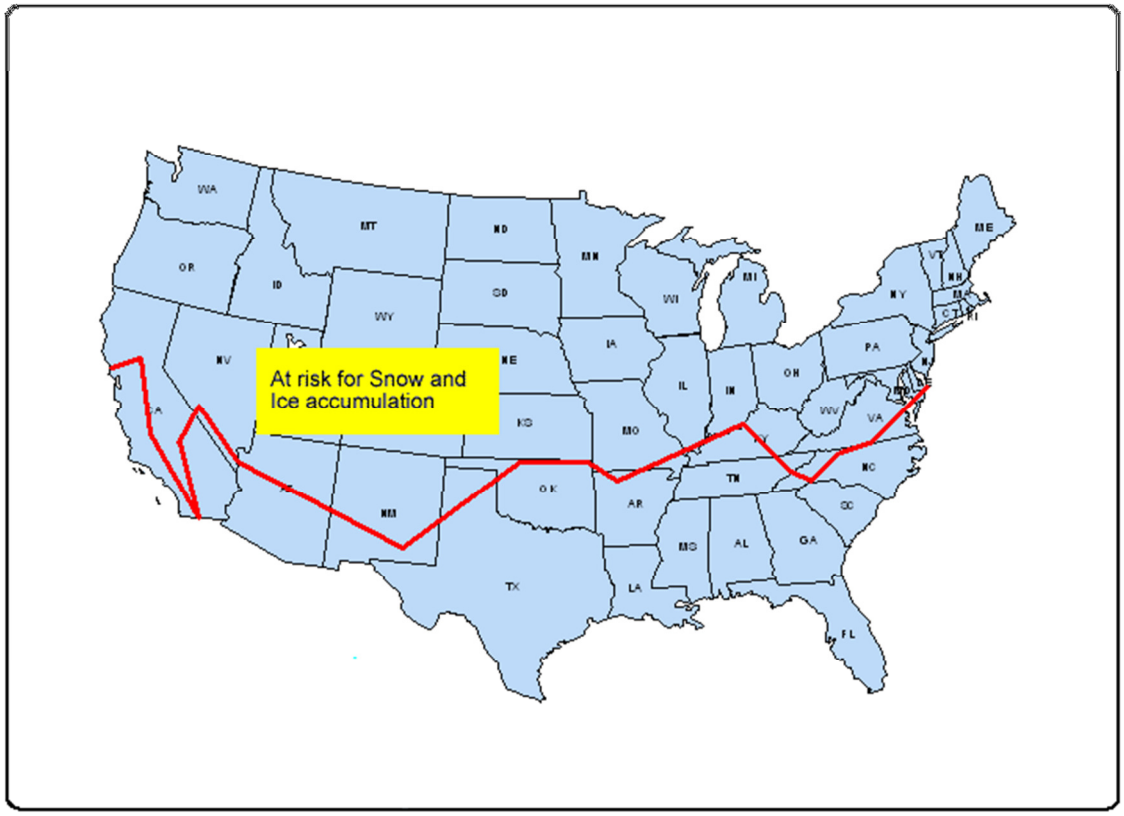


Figure 4: De-Ice Locations for Network Availability

2. Credit Structure

2.1 General

For any billing month in which Verizon fails to meet any SLA in this document, the applicable credit set out in Section 2.2 or Section 2.3 below will be applied to the monthly recurring charges (MRC) set forth in the Agreement for the Customer's Private IP Satellite Access Service, not to exceed the total of those charges for one month.

Credits may not be applied to offset any other charges, including without limitation local access or backhaul charges.

This SLA sets forth Customer's sole remedy with respect to any failure by Verizon to meet the specified standard. The determination as to whether a particular SLA has been met or has not been met is reserved to Verizon in its sole judgment.

Verizon reserves the right to enhance or restrict these SLAs in whole or in part. In the event of a material adverse change in this SLA, Customer may elect to terminate the Verizon Private IP

Satellite Access Service within 30 days of the change without penalty, unless Verizon cures the material adverse change within the notice period.

2.2 Network Packet Delivery and Transit Delay SLA Remedy

Verizon posts Network Packet Delivery and Network Transit Delay SLA results by the 10th business day of each month at http://www.verizonbusiness.com/about/network/vsat/. To receive credit under Network Transit Delay SLA or Network Packet Delivery SLA, Customer must request such credit within 30 days from the date that the actual service rates are posted by Verizon by submitting a credit request form online at http://www.verizonbusiness.com/terms/us/products/. For each month in which Verizon fails to meet the Network Packet Delivery SLA or Network Transit Delay SLA, Customer is eligible for a credit equal to 1/30th of the MRC for Customer's Private IP Satellite Access Service.

2.3 Network Availability SLA Remedy

To receive credit under the Network Availability SLA, Customer must submit a Network Availability Credit request form online at http://www.verizonbusiness.com/terms/us/products/ within 30 days from the date that the Network Availability actual results are posted by Verizon. If the Network Availability SLA has not been met, then for each hour or fraction thereof in any calendar month that Network Availability fell below the SLA standard, Customer's account shall be credited at Customer's request for the pro-rated charges for one day of the MRC for Verizon Private IP Satellite Access Service, not to exceed the total of those charges for one month.

3. Exclusions

No delay, unavailability or other performance problem resulting from any of the following will be counted in the determination of whether the threshold standard for any particular SLA has been met:

3.1 Any act or omission on the part of the Customer, its contractors or vendors, or any other entity over which the Customer exercises control or has the right to exercise control.

3.2 Verizon's or the Customer's scheduled maintenance.

3.3 Events or occurrences that result in "No Trouble Found" Trouble Tickets such as power outages due to customer turning off or unplugging the Private IP Satellite equipment.

3.4 Labor strikes.

3.5 Natural disasters.

3.6 Force majeure events beyond the reasonable control of Verizon including, but not limited to, acts of God, government regulation and national emergency.

3.7 Atmospheric, electromagnetic, solar, seismic, weather, and similar conditions that prevent the Private IP Service from functioning in accordance with the SLA.

3.8 An interruption occurring because Customer elects not to report or release the Private IP Satellite Access Service to Verizon for testing and repair and continues to use it on an impaired basis.

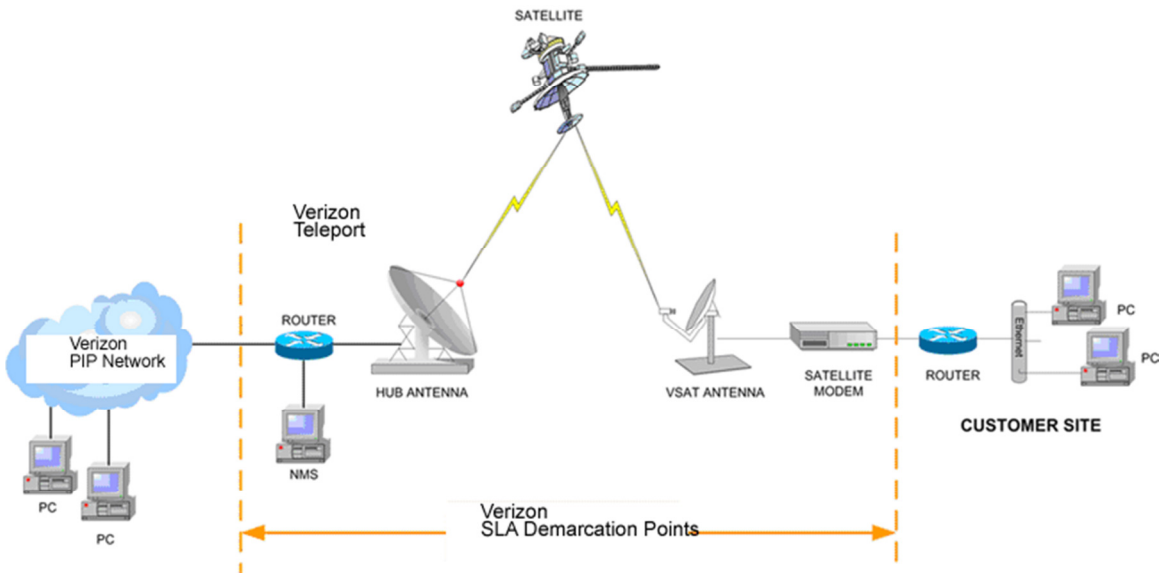
3.9 Interruptions during any period where Verizon or its agents are not permitted access to the Private IP Satellite Access equipment (indoor and/or outdoor units) at the Customer's site.

3.10 Trouble that has been isolated to Customer owned and maintained (COAM) equipment or wiring.

3.11 Delays resulting from Verizon's need for additional information that Verizon has requested from Customer.

3.12 Customer configuration changes that were not communicated to Verizon or Customer changes that cause a service disruption and which must be rectified by the issuance of a Verizon change order.

Appendix A


SATELLITE
Verizon
Teleport
Verizon
PIP Network
ROUTER
HUB ANTENNA
NMS
PC
PC
VSAT ANTENNA
SATELLITE
MODEM
ROUTER
Ethernet
PC
PC
CUSTOMER SITE
Verizon
SLA Demarcation Points

Verizon Voice over IP (VoIP) Service Level Agreement (SLA)

Overview

Verizon provided IP Service guarantees service by offering a performance Service Level Agreement (SLA). Performance metrics in the SLA include: Mean Opinion Score (MOS), Jitter, Network Availability, and Time To Repair (TTR). Customers must submit their request for an SLA credit payout as SLA credits are not automatic. No SLA credits will be given if an SLA standard is not met due to reasons of force majeure (as defined in the Contract or applicable Service Agreement).

Verizon offers the SLA to those Verizon VoIP customers who use Verizon's Internet Dedicated Service or Private IP Service for transport.

SLA Components

Jitter

Also known as delay variation, jitter is defined as the variation or difference in the end-to-end delay between received packets of an IP or packet stream. In voice over IP, jitter is the variation in the time between packets arriving, caused by network congestion, timing drift, or route changes.

Jitter is usually caused by imperfections in hardware or software optimization or varying traffic conditions and loading. Excessive delay variation in packet streams usually results in additional packet loss, which impacts voice quality.

Jitter metrics are calculated based on the G.729a codec with 20 millisecond frame size. The VoIP Jitter SLA provides that Verizon's contiguous U.S. Internet Network (as defined in the Guide) monthly jitter performance will not exceed 1.0 millisecond. Performance is measured by periodically collecting data across the contiguous U.S. Internet Network from which a monthly average is derived.

Mean Opinion Score (MOS)

A "good" voice call is one in which the participants can communicate without difficulty and in which there are no annoying or distracting effects. One of the mostly widely known metrics for measuring voice quality is MOS, or Mean Opinion Score. Mean Opinion Score is a measure (score) of the audio fidelity, or clarity, of a telephone call. It is a statistical measure that predicts how the average user would perceive the clarity of each call.

MOS metrics are calculated based on the G.729a codec with 20 millisecond frame size. The MOS SLA threshold for VoIP using the E-model (ITU-T G.107) is 4.0.

Network Availability SLA

The VoIP Network Availability SLA provides that Verizon's contiguous U.S. Internet Network (for the purposes of this Network Availability SLA, the "Network") will be available at least ninety-nine point nine per cent (99.9%) if the time as measured on a monthly basis by trouble ticket time. The Network is considered not available for the number of minutes that a trouble ticket shows the Network was not available to Customer. The unavailable time starts when Customer opens a trouble ticket with Verizon Customer Support at 877-777-7176 and releases the Service for immediate testing. The unavailable time stops when the applicable Network or access circuit trouble has been resolved and the Service is again available to Customer.

The VoIP Network Availability SLA does not include unavailability resulting from:

Force majeure (as noted above);Verizon Internet Network maintenance, Customer-ordered third-party circuits; inappropriate Service configuration change(s) made by or through Customer at the Verizon Enterprise Center web-site; Customer Premises Equipment including, but, not limited to, Customer-provided PBX, black phones, SIP phones, firewalls, Router/modem and/or Analog/Ethernet Adapter; acts or omissions of Customer, or any use or user of the service that is authorized by or enabled through Customer but outside the scope of Customer's Service; "Customer Time," which is the time identified on the trouble ticket (if any) attributable to, or caused by, through no fault of Verizon, the following: (a) incorrect or incomplete contact information provided by Customer which prevents Verizon from completing the trouble diagnosis and service restoration; (b) Verizon being denied access to network components at the Customer location when access is required to complete trouble shooting, repair, diagnosis, or acceptance testing; (c) Customer's failure or refusal to release the circuit for testing; (d) Customer being unavailable when Verizon calls to close a trouble ticket or verify service restoration, (e) any other act or omission on the part of Customer; or (f) down-time caused by the Local Exchange Carrier (LEC) local loop for periods where the LEC's maintenance support is not available.

Customer must open a trouble ticket with Verizon Customer Support while it is experiencing a service problem. The calculation of unavailable time is based on trouble ticket times. Should Customer have multiple locations detrimentally affected by an outage, one ticket can be submitted; however, the individual locations affected should be identified in the original ticket.

Time to Repair (TTR)

The VoIP Time to Repair (TTR) provides that Priority One (PTY 1) tickets will be resolved in four hours or less.PTY 1 tickets are categorized as a "hard outage" whereby there is complete loss of VoIP service or severe degradation that results in Customer's inability to receive any inbound calls and/or complete any outbound calls from a given location using Verizon VoIP and Customer is prepared to release its Service for immediate testing. "Time to Repair" is defined as time taken to restore end-to-end Service during a Hard Outage based on trouble ticket time. Unavailable time starts when Customer opens a trouble ticket with Verizon Customer Support at 877-777-7176 and releases the Service for immediate testing. Unavailable time stops when the Service is again available to Customer.

Priority One (PTY 1) outages resulting from any of the following are not subject to the TTR SLA:

- Force majeure (as noted above);Verizon Internet Network maintenance;
- Verizon Internet Network maintenance;
- Customer-ordered third-party circuits;
- Inappropriate Service configuration change(s) made by or through Customer at the Verizon Enterprise Center web site;
- Customer Premises Equipment including, but not limited to, Customer-provided PBX, black phones, SIP phones, firewalls, Router/modem and/or Analog/Ethernet Adapter;
- Acts or omissions of Customer or its users, or any use or user of the Service that is authorized by or enabled through Customer but outside the scope of Customer's service;

In addition, the TTR SLA does not cover "Customer Time," which is the time identified on the trouble ticket (if any) attributable to, or caused by, through no fault of Verizon, the following: (a) incorrect or incomplete contact information provided by Customer which prevents Verizon from completing the trouble diagnosis and service restoration; (b) Verizon being denied access to network components at the Customer location when access is required to complete trouble shooting, repair, diagnosis, or acceptance testing; (c) Customer's failure or refusal to release the circuit for testing; (d) Customer being unavailable when Verizon calls to close a trouble ticket or verify service restoration, (e) any other act or omission on

the part of Customer; or (f) down time caused by the Local Exchange Carrier (LEC) local loop for periods where the LEC's maintenance support is not available.

Benefits

Every VoIP customer that signs up for a minimum one-year term agreement is eligible for the benefits of the VoIP SLA at no additional cost.

Credit Submission Process

Customer SLA credit requests must be proactively submitted within 30 days after the month in which the SLA standard was not met. Requests can be submitted to Verizon Voice over IP SLA.

SLA credit payout rules apply as follows:

- Jitter, MOS, and TTR
  - Credit equal to 1 day share of Verizon VoIP and Data monthly recurring charge (MRC).
  - A la Carte service, the MRC used to calculate the credit is either the applicable site fee of simultaneous calling charge plus the applicable MRC for the related Internet Dedicated Service or Private IP Service under the related Verizon Service Agreement.
  - Bundled service, the MRC used to calculate the credit is the applicable base charge plus the simultaneous calling charge.
- Network Availability:
  - Credit equal to 1 day share of Verizon VoIP Service monthly recurring charge ("MRS) multiplied by each whole hour that the affected unit of service was unavailable.
  - For VoIP Service provided on an A La Carte basis, the MRC used to calculate the credit is either the applicable site fee or simultaneous calling charge plus the applicable MRC for the related Internet Dedicated Service or Private IP Service under the related Verizon Service Agreement.
  - For VoIP Service provided on a Bundled basis, the MRC used to calculate the credit is the applicable base charge plus the simultaneous calling charge. No credits will be given with respect to units of the Service not affected by the unmet SLA.

Technical Reference

Explaining the MOS SLA metric

To derive MOS on VoIP, the standards based E-model (ITU-T G.107) published by the ITU (International Telecommunications Union) is used.

The E-model is a complex computational model or mathematical algorithm that assesses the impacts of transmission impairment factors on call quality. Essentially, the E-model determines how the combination of network impairment factors impact user perception of voice quality and then quantifies it with an R-Factor score. R-Factor is a numerical value that rates the expected call quality perception of the average user.

R-Factor rating can lie in the range from 0 to 100, where R = 0 represents an extremely bad quality and R = 100 represents a very high quality. Public switched telephone network (PSTN) calls generally have R-Factor scores between 70 and 100. Using these two standards, the maximum R-Factor that can be measured on a G.729a codec (with 20 millisecond frame size) is 83.

The R-Factor value is then used to estimate a Mean Opinion Score (MOS). The E-model (ITU-T G.107) contains the formula to derive MOS from R-Factor. The best possible MOS any carrier can provide using the G.729a codec with 20 millisecond frame size is 4.1. The MOS SLA threshold for VoIP is 4.0.

Below is a matrix pulled directly from the ITU E-model document which maps R-value to MOS and shows the corresponding user satisfaction level.

R-Factor	MOS	User Satisfaction
90	4.34	Very satisfied
80	4.03	Satisfied
70	3.60	Some users dissatisfied
60	3.10	Many users dissatisfied
50	2.58	Nearly all users dissatisfied

Service Level Agreement (SLA) Verizon IP Contact Center Service

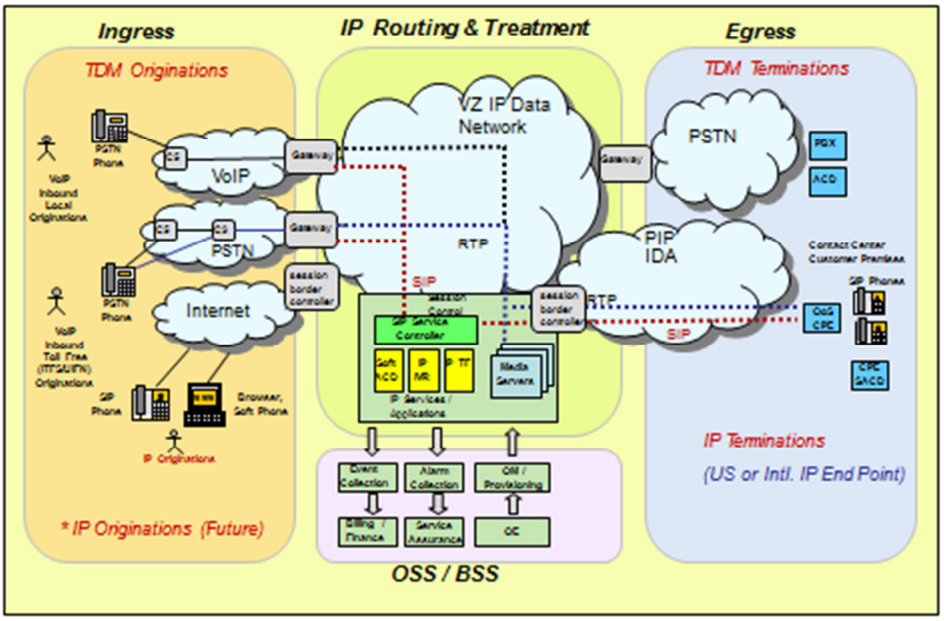
Overview

Verizon offers this performance Service Level Agreement (SLA) to customers subscribing to Verizon's IP Contact Center Service. The SLA provides performance metrics for Verizon's IP Contact Center network, i.e., the backbone infrastructure of IP Contact Center services (for the purposes of this SLA, the "IPCC Network"), and covers Network Availability, Time To Repair (TTR), Network Jitter, and Network MOS.

Demarcation

The IPCC Network Routing Architecture (shown below) identifies the IPCC Network components covered by this SLA. The demarcation points of this SLA are defined as the Verizon VoIP Network Gateways (Inbound) and the Verizon Gateways (Outbound) for TDM-terminated calls, and the Verizon VoIP Network Gateways (Inbound) and Session Border Controllers (Outbound) for TDM-to-IP-terminated calls. Associated originating and terminating Network infrastructure, such as Network switching and access facilities, are not covered by this SLA.

IPCC Multi-Service Architecture – High Level View



IPCC Network SLA Pre-conditions

This SLA is subject to:

(i) Customer's IPCC CPE compliance with Verizon's IPCC Network Interoperability Specifications, as provided in writing by Verizon to Customer from time to time.

(ii) To the extent Customer's IPCC Services include IP-IVR, Customer's written certification that it has tested its IP-IVR applications and they are suitable for production traffic.

IPCC Network Availability SLA

The Network Availability SLA provides that the IPCC services (the "Service") is available to process calls at least 99.9% of the time as measured on a monthly basis by Priority 1 Trouble Ticket outage time.

The Service is considered not available for the number of minutes that a Trouble Ticket shows the Service was not available to Customer. The unavailable time starts when (i) the Customer opens a Priority 1 Trouble Ticket with Verizon Customer Support [(800) 900-0241 or other telephone number provided to Customer] and (ii) provides Verizon with permission to test the affected Telephone Number(s). Upon Verizon's reasonable request, Customer will cooperate with and assist Verizon in the controlled testing of affected service elements. The unavailable time stops when the trouble ticket has been resolved and the Service is again available to Customer.

Customer must open a Trouble Ticket with Verizon Customer Support while it is experiencing a Service problem. The associated Trouble Ticket(s) will record the calculation of unavailable time attributable to Verizon. One ticket can be submitted for simultaneous issues with different VoIP Inbound services, however, the individual Verizon Inbound Local Origination numbers, IP Toll Free and/or Route Plans affected must be identified in the ticket.

Where monthly Availability falls below the SLA's 99.9% guarantee; Customer will be entitled to a credit associated with a Network Monthly Availability percentage, defined as Network Monthly Availability = Total Monthly Minutes (all telephone numbers; based on a 30-day month), minus Total Outage Minutes for affected telephone number(s) (in a month), divided by Total Monthly Minutes. Credits are calculated against Customer's total per-minute Toll Free Transport Charges in the affected month.

A Trouble Ticket is required to document a Network Availability outage for credit submission. To receive an SLA credit for IPCC Network Availability; Customer must submit its request via the standard "Invoice Inquiry" process, using the Verizon Enterprise Center (VEC) Portal, within 30 business days after the month in which the Service Level is not met. The request must contain: (1) the Trouble Ticket number; (2) the date and time the Trouble Ticket was initiated; (3) the VoIP Inbound number that experienced the service outage and/or Route Plans affected; and (4) the total outage time.

Time to Repair ("TTR") SLA

The TTR SLA provides that valid Priority 1 tickets will be resolved in four hours or less. "Time to Repair" is defined as time taken to restore Service during an Outage based on Trouble Ticket time. Unavailable time starts when Customer opens a Trouble Ticket with Verizon Customer Support [(800) 900-0241] and releases the Service for immediate testing. Unavailable time stops when the Service is again made available to Customer.

Restore times are based on amount of Outage time attributable to Verizon as recorded in the associated Trouble Ticket(s). Where TTR falls below the IPCC Network SLAs guarantee of 4 hours, Credits will be calculated based on based on the repair time for a given Outage as recorded in the Priority 1 Trouble Ticket, as a percentage of Customer's total per-minute VoIP Inbound Usage Charges in the affected month.

Jitter SLA

Jitter is the variation or difference in the end-to-end delay between received packets of an IP or packet stream. Jitter is usually caused by imperfections in hardware or software optimization or varying traffic conditions and loading. Excessive delay variation in packet streams usually results in additional packet loss which detrimentally affects voice quality.

The Jitter SLA provides that Verizon's contiguous U.S. Private IP ("PIP") or Internet network monthly jitter performance will not exceed 1.0 millisecond on average. Performance is measured by periodically collecting data across the contiguous U.S. IPCC Network demarcation points, defined in Section 2, above (Demarcation), from which a monthly average is derived.

To receive credit for a Jitter SLA claim, Customer must submit its request within 30 business days after the month in which the SLA was not met, via the standard "Invoice Inquiry" process using the Verizon Enterprise Center (VEC) Portal. Customer must provide all required information (e.g., account number). Verizon's Customer Support department will use the backbone statistics on its web site to verify that the Jitter SLA was not met.

If Verizon Customer Support confirms Customer's claim (i.e., that the Jitter SLA was not met), then Customer shall receive a credit to its account equal to one day's share of the MRC for VoIP Inbound Subscription.

MOS SLA

Mean Opinion Score ("MOS") is a measure (score) of the audio fidelity, or clarity, of a voice call. It is a statistical measurement that predicts how the average user would perceive the clarity of each call.

The MOS SLA provides that the MOS measured across Verizon's U.S. IPCC Network demarcation points, as defined above in Section 2 (Demarcation), will not drop below 4.0 where MOS is calculated using the standards-based E-model (ITU-T G.107). Performance is measured by periodically collecting data across Verizon's contiguous U.S. PIP or Internet network, from which a monthly average is derived.

To receive credit for a MOS SLA claim, Customer must submit its request within 30 business days after the month in which the SLA was not met, via the standard "Invoice Inquiry" process using the Verizon Enterprise Center (VEC) Portal. Customer must provide all required information (e.g., account number). The Verizon Customer Support department will use the backbone statistics on its web site to verify that the MOS SLA was not met.

If Verizon Customer Support confirms Customer's claim (i.e., that the MOS SLA was not met), then Customer shall receive a credit to its account equal to one day's share of the MRC for VoIP Inbound Subscription.

IPCC Network SLA General Conditions

The appropriate non-compliance credit amount will be credited to Customer's account within 90 calendar days following Verizon's confirmation of Service Level non-compliance.

Service credits made by Verizon to Customer under this Service Level Agreement are the sole and exclusive remedy available to Customer with respect to any failure to meet a defined Service Level.

The total of all credits within any one month is limited to a maximum of 100% of Customer's IPCC Service usage charges per VoIP Inbound telephone number affected by any non-compliance with the Service Levels.

IPCC Network SLA Exclusions

No credit will be due to Customer to the extent the SLA is not met because of:

- Any act or omission on the part of the Customer, its contractors or vendors, or any other entity over which the Customer exercises control or has the right to exercise control.
- A Force Majeure event, as defined in the Agreement.
- Scheduled maintenance by Customer or entities under Customer's direction or control.

- Scheduled maintenance by Verizon within Verizon's maintenance windows.
- Problems unrelated to the IPCC Network including but not limited to IP-IVR Application Program changes, local access origination, and termination segments such as:
- IPCC Network components other than the Network Gateways and Session Border Controllers, IP Network Cloud, IPCC Service Controller, Verizon SCP/NCP and IP IVR Call Treatment.
- Inappropriate IP-IVR Application or Configuration/Routing change(s) made by Customer through the Verizon Network Manager.
- Customer Equipment including, but not limited to Terminating Numbers and/or Inbound and Outbound calls that are not compliant with the IPCC Network Interoperability Specifications

IPCC Network SLA Definitions

Terms used in this SLA are defined as follows:

Terms	Definition
Outage	Total loss of service or service degradation such that Customer is unable to use the full functionality of the IP Contact Center Service and Customer releases the Service for intrusive testing and resolution.
Trouble Ticket	The official record used to document a perceived problem with the Service or an Outage incident.
Priority 1 Trouble Ticket	Hard outage whereby there is a complete loss of the IP Contact Center Service or severe degradation that results in Customer's inability to receive or complete inbound calls via VoIP Inbound. • 50% or more of the location is out-of-service; • 50% or more of the ports/channels are out-of-service; • Critical Verizon network or system failure with no workaround capability.

Technical Reference

Explaining the MOS SLA metric

To derive MOS on VoIP, the standards based E-model (ITU-T G.107) published by the ITU (International Telecommunications Union) is used.

The E-model is a complex computational model or mathematical algorithm that assesses the impacts of transmission impairment factors on call quality. Essentially, the E-model determines how the combination of network impairment factors impact user perception of voice quality and then quantifies it with an R-Factor score. R-Factor is a numerical value that rates the expected call quality perception of the average user.

R-Factor rating can lie in the range from 0 to 100, where R = 0 represents an extremely bad quality and R = 100 represents a very high quality. Public switched telephone network (PSTN) calls generally have R-Factor scores between 70 and 100. Using these two standards, the maximum R-Factor that can be measured on a G.729a codec (with 20 millisecond frame size) is 83.

The R-Factor value is then used to estimate a Mean Opinion Score (MOS). The E-model (ITU-T G.107) contains the formula to derive MOS from R-Factor. The best possible MOS any carrier can provide using the G.729a codec with 20 millisecond frame size is 4.1. The MOS SLA threshold for VoIP is 4.0.

Below is a matrix pulled directly from the ITU E-model document which maps R-value to MOS and shows the corresponding user satisfaction level.

R-Factor	MOS	User Satisfaction
90	4.34	Very satisfied
80	4.03	Satisfied
70	3.60	Some users dissatisfied
60	3.10	Many users dissatisfied
50	2.58	Nearly all users dissatisfied

Audio Conferencing Service Objectives

Service Objectives

- Service objectives are subject to change from time to time and are based upon the measurement of the current performance of Verizon Audio Conferencing service for all customers. Should Verizon Audio Conferencing service fail to meet the objectives defined below, the customer's sole and exclusive remedy is to notify Verizon Conferencing of such failure(s). Our sole and exclusive obligation is to use good faith efforts to comply with the failed objectives, following notification thereof, and/or to otherwise work with the customer to resolve the concerns.

- Please Note: these are objectives only and should not be interpreted as guarantees of a particular level of service.

Service Availability

- Verizon Audio Conferencing is available 7 days a week, 24 hours a day, 365 days a year.

Reservation Average Speed of Answer (ASA)

- Verizon Conferencing will answer a customer's reservation request in 30 seconds or less at least eighty percent (80%) of the time.

Time to Establish Conference Following ASAP Request – Meet Me

- ASAP audio conference calls with 100 or fewer participants will be initiated within no more than 20 minutes from time of request, at least 98.5% of the time. Audio conferences with more than 100 participants may require additional time and special handling.

Dial Out Call Setup Time

- Contact with participants on a Dial Out audio conference with 100 or fewer participants will be initiated within 20 minutes of the scheduled conference call start time, at least 98.5% of the time.

Meet Me – Attended Call Setup Time

- Conference coordinators will be prepared to respond to incoming authorized audio conference participants 10 minutes prior to the requested start time, of a previously reserved audio conference with 100 or fewer participants, at least 98.5% of the time (inclusive of conferences utilizing the Participant List feature with a maximum of two required pieces of information, i.e., participant name and company name). Audio conferences with more than 100 participants may require additional special handling.

Mean Time to Repair

- In the event of a bridge failure, the conference will be re-established within a maximum of 20 minutes following the notification by the customer of the reported difficulty.

Network Availability

- Audio bridge ports will be ninety-nine percent (99%) error-free, twenty-four hours a day, seven days a week, as measured over each quarterly period. An error shall occur when an audio bridge port requested by the customer is unavailable (i.e., scheduled for use, but for technical reasons, unavailable for use), and there is no alternative bridge port, resulting in the customer's inability to hold the call.

Network Quality

- The Verizon Audio Conferencing platform access network and bridge ports are routinely maintained, tested and monitored. Verizon Business's backbone network is managed and maintained to industry quality standards. Network issues are promptly addressed.

Quality Performance

- Instant Meeting audio conference quality performance will be at or above a 99.9% quality rating, calculated as follows:

- **Quality Performance Percentage =**

  Total number Instant Meeting Service conference calls less the number of Instant Meeting Service conference calls experiencing a service issue for which the root cause was within Verizon's control, divided by the total number of Instant Meeting Service conference calls.

Reserved attended (Premier and Standard Service levels) audio conference quality performance will be at or above a 98% quality rating, calculated as follows:

- **Quality Performance Percentage =**

  Total number attended service conference calls less the number of attended service conference calls experiencing a service issue for which the root cause was within Verizon's control, divided by the total number of attended service conference calls

Response to Request for Coordinator Assistance

- Technical assistance will be provided during live conferences for *0 requests within a maximum of ninety seconds from request for such assistance. Assistance is immediate at the Premium Service level because a Conference Coordinator monitors throughout the duration of the conference.

Trouble Handling

- Verizon Conferencing Call Centers are dedicated to answering any problems or concerns VITA may have. We take customer service seriously. For continual outstanding service, we have implemented a reliable service recovery process that provides VITA with timely follow-up and resolution of any reported problems.

Service Recovery Process

- In the event a conference call does not meet expectations, VITA can initiate a Service Recovery Report and a Verizon Conferencing Customer Relations Representative will investigate the problem. A Customer Relations Specialist will contact the customer as soon as possible following the impacted conference, which is typically within the same business day. Call placement or reservations personnel also initiate Service Recovery Reports if they discover an issue that may impact a conference call.

- The Service Recovery Process is as follows:

- Service Recovery Report is submitted to Customer Relations.
- The situation is researched and defined to understand the cause of the difficulty.
- The goal of Verizon Conferencing is to complete a callback within one business day following the completion of your conference call. However, in the event of catastrophic outages, this timeframe may be extended.
- The situation is resolved and follow-up means are identified.

Escalation Process

- Customer Relations is in charge of managing all trouble resolutions and escalations. They will document the call logistics, the difficulty experienced, the reason, the outcome, and the resolution. If a severe issue, Customer Relations will escalate it internally to the appropriate management level. A sample flow of the escalation process is as follows:

- VITA notifies Verizon Conferencing Customer Relations of severe issue.
- Formal escalation is drafted by Customer Relations and sent to Verizon Conferencing management.
- The Sales team is notified.
- A resolution is proposed based on VITA's feedback, as well as Verizon Conferencing management's insight and response to the formal escalation.
- Customer Relations and/or management contacts VITA with the proposed plan of action as well as the steps necessary to implement the plan.
- Problems and resolutions are discussed in weekly meetings held by Verizon Conferencing management.

Consolidated Conferencing Tracking System (CcTS)

- Verizon Conferencing uses a system called Consolidated Conferencing Tracking System (CcTS). This system measures the quality of our processes and procedures. Following is a high level description of the system and its capabilities:

- CcTS is a state-of-the-art conferencing tracking system running on a Clarify-based platform.
- CcTS was developed with our customers in mind.
- A CcTS case is opened for each affected conference.

- Affected conferences are meetings that had problems such as delayed starts or disconnected sites. Conference Specialists open cases that describe events as they took place. Technical Support opens cases to document any reported technical issues when contacted for testing or equipment dispatch. The cause of failure and an action plan are documented in CcTS.

- The data that CcTS provides gives us an invaluable tool for trending and analysis on the types of calls handled and the problems associated with them.
- CcTS is designed to enable us to continue to provide our customers with the highest level of quality control and exceptional customer service.
- CcTS is also used to track internal issues.

- Each affected conference call is tracked by the following categories:

- 1. Network – Described as Verizon Conferencing or public call routing process.

- 2. Verizon Equipment/System – Described as Verizon Conferencing bridge, other equipment or system utilized for conferencing services.

- 3. Customer Education – Pertains to the level of customer knowledge and level of training.

- 4. Customer Equipment – Pertains to the customer's on-premise video conferencing unit or other equipment

- 5. Operations – Described as human and procedural issues.

- CcTS cases are closed after follow-up is conducted with the conference contact and/or facility coordinator and a mutual agreement has been reached, thereby resolving the issue. Complete resolution may require further testing and/or dispatch to replace malfunctioning equipment/software by your equipment maintenance vendor.

Net Conferencing Service Objectives

Service Objectives

- Service objectives are subject to change from time to time and are based upon the measurement of our current performance across Verizon's entire customer base. Should our Net Conferencing service fail to meet the objectives as defined below, the customer's sole and exclusive remedy is to notify Verizon Conferencing of such failure(s). Our sole and exclusive obligation is to use good faith efforts to comply with the failed objectives, following notification thereof, and/or to otherwise work with the customer to resolve the concerns. Please note: these are objectives only and should not be interpreted as guarantees of a particular level of service.

Service Availability

- Verizon Net Conferencing events can be held 7 days a week, 24 hours a day, and 365 days a year. All servers are monitored from multiple strategic locations and provide immediate notification to technical support professionals in the event of a potential problem.

Reservation Average Speed of Answer (ASA)

- It is our objective to answer a customer's reservation request in 30 seconds or less at least eighty percent (80%) of the time.

Net Conference Setup

- It is our objective to establish each Reserved Net Conference at the scheduled start time. The customer is responsible for establishing the reservation within a minimum of 20 minutes prior to the start time. For previously reserved calls, the conference leader may access the net portion 30 minutes prior to the start of the call. Instant Net Conference requires a subscription. There is no cost for the subscription, only for the net conference usage. Once the user establishes a subscription, an Instant Net Conference may be accessed.

Network Availability

- It is our objective to maintain capacity ninety-nine percent (99%) error free, 24 hours a day, 7 days a week, as measured over each quarterly period. An occurrence of error shall be defined as when capacity requested by the customer is unavailable (i.e., scheduled for use, but for technical reasons, unavailable for use), and there is no alternative capacity, resulting in the customer's inability to hold the call.

Network Quality

- Verizon Business provides monitoring and management of Verizon network facilities and systems. Verizon Conferencing's Internet-based conferencing services deploy a fault tolerant network utilizing multiple geographically diverse signal acquisition centers. If a disaster should occur, streaming content will automatically route only to functioning and accessible servers. Because there are multiple signal acquisition centers, redundant calls may be placed for added protection during an event. Alternatively, a server or site outage can be recovered by dialing back in to a functioning and accessible data center.

Quality Performance

- It is our objective to have quality performance at or above a ninety-eight percent (98%) quality rating, which is calculated as follows:

- Quality with minimum 100 calls per month

- Performance Percentage = (Total Number of Calls Completed in Month – Calls with Verizon Conferencing-Controllable Difficulties in Month) / Total Number of Calls Completed in Month

Verizon Unified Communications and Collaboration as a Service Service Level Agreement ("SLA")

1. **Overview.** This SLA provides performance metrics and provisions for Unified Communications and Collaboration as a Service ("UCCaaS"). UCCaaS is designed for Cisco Unified Communications Manager, Unified Presence Server and Unity Connections messaging utilizing Cisco's defined best practice recommendations for redundancy and availability. This SLA is in addition to service level agreements for other services that may be offered as part of a UCCaaS solution that include, but are not limited to, Verizon Private IP, Verizon Managed WAN or Managed LAN, and Verizon VoIP SIP Trunking. Please refer to the service level documentation for such services for SLA terms and conditions offered. This SLA is provided to Customers implementing both Verizon-approved UCCaaS architectures and Verizon Private IP ("MPLS") transport service ("PIP") within the United States. Capitalized terms that are not defined in Appendix B: Terms and Definitions of this SLA are defined in the Customer's UCCaaS Service Attachment.

2. **Verizon UCCaaS Service Level Agreement Metrics.**

TABLE 2.1 UCCAAS SLA METRICS

Parameter		U.S.
Application Availability	UCCaaS Applications (with Geographic Redundancy)	100%
	UCCaaS Applications (without Geographic Redundancy)	99.50%
Call Quality	Good	MOS ≥ 4.00
	Acceptable	MOS ≥ 3.70 and ≤ 3.99
	Poor	MOS < 3.70
Time To Repair	Restoration of Customer's instance of a UCCaaS Outage	90 Minutes
Pro-Active Notification	Notification Time	15 Minutes

TABLE 2.2 UCCAAS SERVICE LEVEL OBJECTIVE FOR ADMINISTRATIVE CHANGE MANAGEMENT

Parameter		U.S.
Change Management – MACD	Moves, Adds and Change Requests via a Verizon help desk request	72 Hours
Change Management – MACD Password Resets	Verizon help desk request	4 Hours

3. **UCCaaS SLAs Defined**

3.1 **UCCaaS Application Availability.** Application Availability is the amount of time the Platform is operating properly within the Customer instance across the Verizon data center(s) within a given month. A UCCaaS application is deemed "Available" if i) no Outage alarm events have occurred in the Verizon's Network Operations Center ("NOC") which resulted in a Trouble Ticket being opened, or ii) no Trouble Ticket related to Outages has been opened by Customer or by Verizon on behalf of Customer. Verizon provides standard UCCaaS reports including application availability on a monthly basis through the Verizon Enterprise Center portal; however such availability reports are for reference only and will not be used to measure UCCaaS service levels.

3.1.1 **UCCaaS Geographic Redundancy.** "Geographic Redundancy" means Customer's

UCCaaS design provides geographically diverse Local Access into PIP.

3.1.2 **Calculation.** Availability is the percentage of time that UCCaaS is available (i.e. not experiencing an Outage) within a given billing month as based upon recorded Outage time in associated Trouble Ticket(s).

Application Availability (%) = (Available Minutes per Billing Month per)X100
Number of days in billing month x 24 hrs. x 60 min

3.1.3 **Credit Structure and Amounts.** For each month that Application Availability percentage for UCCaaS falls within a tier associated with a credit amount in the table below, Customer will be eligible for the related credit percentage of such application's MRC.

Application Availability %		
From	To	Credit (% of MRC)
100%	99.95%	10%
99.949%	99.00%	15%
98.99%	98.00%	20%
97.99%	97.00%	30%
96.99%	95.00%	50%
Less than 95.00 %		100%

Table 3.1 **APPLICATION AVAILABILITY MATRIX WITH GEOGRAPHIC REDUNDANCY AND UCCAAS ROUTER WITH SURVIVABLE REMOTE SITE TELEPHONY.**

Application Availability %		
From	To	Credit (% of MRC)
100%	99.50%	0%
99.49%	99.00%	10%
98.99%	97.00%	15%.
96.99%	95.00%	25%
94.99%	93.00%	35%
92.99%	90.00%	50%
Less than 90.00%		100%

Table 3.2 **APPLICATION AVAILABILITY MATRIX WITHOUT GEOGRAPHIC REDUNDANCY OR UCCAAS ROUTER WITHOUT SURVIVABLE REMOTE SITE TELEPHONY.**

3.1.4 **Exclusions** In addition to the general exclusions found in Appendix A, the following exclusions apply to the Application Availability SLA:

3.1.4.1 Interruptions or outages not reported by Customer, or for which no Trouble Ticket was opened, are excluded from the Application Availability SLA.
3.1.4.2 The Application Availability SLA does not apply to services installed for less than one full calendar month.

3.2 **Call Quality.** The UCCaaS Call Quality SLA metric uses the industry standard Mean Opinion Score ("MOS") speech assessment model that measures the impact of impairments in an IP based network. The Call Quality MOS report can be accessed through the Verizon Enterprise Center portal and will be available on the first day of the month and provides statistics for the previous month.

3.2.1 **Calculation.** The MOS model runs an algorithm on completed call segments using information such as Codec type used, reference conditions, and sample rates which are provided by devices like IP phones and gateways as part of the call detail records and call detail management tools within the UCCaaS platform on each call segment. The output from the algorithm provides an assessment of the listening quality experienced by the end user in the form of a value between 1 and 5, where 1 is poor

voice quality and 5 is excellent voice quality.

3.2.2 **Credit Structure and Amounts.** For each month in which the Call Quality MOS falls within a tier associated with a credit amount in the table below, Customer will be eligible for the related credit percentage of the MRC for the affected month. Customer is only eligible for one credit per month.

Table 3.3 **CALL QUALITY MATRIX MOS**

MOS Score		Quality	Credit
From:	To:	Measurement	Credit (% of MRC)
5.00	4.00	Good	0%
3.99	3.70	Acceptable	0%
3.69	1.00	Poor	10%

3.2.3 **Exclusions.** In addition to the general exclusions found in Appendix A, the following exclusions apply to the Call Quality SLA:

3.2.3.1 The Call Quality SLA does not apply to services installed for less than one full calendar month.
3.2.3.2 Calls from Sites operating in the Survivable Remote Site Telephony mode are not included in the Call Quality SLA calculation.
3.2.3.3 Sites not under Verizon Managed WAN service at the full management level are not eligible for the Call Quality SLA.
3.2.3.4 No SLA will be deemed missed due to Customer not fully complying with Verizon recommendations for LAN settings with regard to Quality of Service configurations.
3.2.3.5 The Call Quality SLA does not apply to UCCaaS with primary or secondary Private IP access using 4G LTE wireless service and/or Internet connectivity.
3.2.3.6 The Call Quality SLA does not apply to UCCaaS using non-Cisco or "Third Party" SIP IP Phones.

3.3 **Time to Repair ("TTR").** TTR is the time to close a Trouble Ticket for an Outage of the UCCaaS Service. The TTR SLA applies to the Cisco Unified Communication Manager, Cisco Unity Connection, and Cisco Unified Presence applications.

3.3.1 **Calculation.** The TTR time starts when a Trouble Ticket is opened by Verizon or the Customer for an Outage event and concludes when the Trouble Ticket is closed following the resolution of the Outage event.

3.3.2 **Credit Structure and Amounts.** For each month in which the TTR SLA for an Outage incident for an application falls within a tier associated with a credit amount in the table below, Customer will be eligible for the related credit percentage of the UCCaaS MRC for the users of the affected application. For example, if the Communications Manager application incurred an outage, the credit would be based on number of configured users affected on that application for the affected month times the Communication Manager MRC times the credit percentage related to the Outage Repair Time.

Table 3.4 **TIME TO REPAIR (APPLIES TO EACH APPLICATION)**

Time to Repair		
Outage Repair Time *(Per incident)*		Credit (% of MRC)
0:90:00	3:59:59	5%
4:00:00	5:59:59	10%
6 Hours Plus		15%

3.3.3 **Exclusions.** In addition to the general exclusions found in Appendix A, a TTR time period for an incident does not include time for Trouble Tickets associated with non-Verizon networks or non-UCCaaS Verizon services (e.g., PSTN or SIP Trunking services).

3.4 **UCCaaS Proactive Outage Notification SLA.** Proactive Outage Notification will be provided to Customers' designated point of contact through email within 15 minutes from the start point of the Notification Period, as defined below. Verizon will provide a ticket number and initial status.

3.4.1 **Calculation.** The "Notification Period" begins with the opening of a Trouble Ticket for an Outage and ends when Verizon has sent an email to Customer's designated point of contact.

3.4.2 **Credit Structure and Amounts.** Customer is eligible to receive a credit equal to ten percent (10%) of the MRC for each UCCaaS application which had an Outage and Customer was not properly notified.

3.4.3 **Exclusions.** In addition to the general exclusions found in Appendix A, the following exclusions apply to the Proactive Outage Notification SLA:

3.4.3.1 Outages not reported by Customer, or for which no Trouble Ticket was opened, are not included within the Proactive Outage Notification SLA.

3.4.3.2 Time delays resulting from the Customer point of contact unavailability due to incorrect contact information or other cause are not included in the Notification Period.

3.5 **Change Management Service Level Objective.** The Change Management Service Level Objective ("SLO") applies to Administrative Change Management MACD activities. Verizon and the Customer may agree to revisions of the change request types from time to time.

Parameter		**SLO (U.S.)**
Change Management - MACD	Moves, Adds and Change Requests via a Verizon help desk request	72 Hours
Change Management – MACD Password Resets	Password Resets via a Verizon help desk request	4 Hours

3.5.1 **Change Management Definition.** Change management MACD requests are defined within the Service Attachment.

3.5.2 **Credit Structure and Amounts.** The Change Management Service Level Objective has no associated credit.

4.0 **Credit Application Process.**

4.1 **UCCaaS SLA Application Structure.** Credits are not cumulative month to month. If the SLA issue exceeds 30 days, the SLA metric will restart for each consecutive month. The total credit percentage that will be applied against the total MRC for the UCCaaS Service for all failures to meet the SLAs within a month will not exceed 100% of total MRC for the UCCaaS Service for the affected month. Verizon's data and calculations will be used to determine if an SLA has been missed and whether a credit is due. Verizon will issue a credit within 90 days of Customer's request if it determines that a credit is due.

4.2 **SLA Credit Application Process.** Except for Call Quality SLAs, Customer completes two steps in order to have an Outage qualify for an SLA credit. First a Trouble Ticket needs to be opened in response to UCCaaS issues at the time of the issue. Second, a written request for credit must be made by Customer to the Customer's account team contact.

4.2.1 **Opening a Trouble Ticket.** For the Availability, TTR, and Proactive Outage Notification SLAs, an Outage Trouble Ticket must be opened, either by Verizon or Customer. A Trouble Ticket records the Outage.

4.2.2 **Submitting a Service Level Agreement Credit Request**

4.2.2.1 **Call Quality.** Customer may only request one MOS score credit per month. Customer must make a request in writing (e-mail or fax) to the Verizon Account Team for a credit within 15 days of the end of the month for which an SLA credit is due with the MOS Call Quality reports. MOS reports are available at the end of a month via the Verizon Enterprise Center ("VEC") customer portal.

4.2.2.2 **Availability, Time To Repair, and Proactive Outage Notification SLA.** Customer must make a request in writing (e-mail or fax) to the Verizon Account Team for a credit within 15 days of the end of the month for which an SLA credit is due with the following information:
 The date the Outage occurred
 The Sites affected by the Outage.
 Trouble Ticket number for each Site and Outage.

4.3 **Service Level Agreement Credit Time Limitation.** If Verizon has failed to meet the same SLA for 3 consecutive months, Customer may elect to:
 Continue the UCCaaS Service with a limit of 6 months of credits for any individual SLA within a twelve month period.
 Discontinue UCCaaS without liability except for charges incurred prior to discontinuation. Customer must submit a written disconnect notice to their Verizon Account Team within 30 days following the end of either the third or subsequent consecutive month of Verizon's failure to meet the SLA.

Appendix A: General Exclusions
The following exclusions apply to all UCCaaS SLAs:

 No SLA will be deemed missed due to any act or omission on the part of the Customer, its contractors or vendors, or any other entity over which the Customer exercises control or has the right to exercise control, including without limitation, disconnection of power to the CPE.
 No SLA will be deemed missed due to Force Majeure, as defined in the Agreement.
 SLA time will be suspended for scheduled maintenance by Customer or entities under Customer's direction or control.
 SLAs are only available for UCCaaS designs approved by Verizon.
 SLA time will be suspended for scheduled maintenance by Verizon within Verizon's maintenance windows.
 No SLA will be deemed missed due to lapses of UCCaaS before the UCCaaS is up and billable.
 SLA time will be suspended for the amount of time delays due to Customer Time.
 No SLA will be deemed missed due Trouble Tickets associated with any act or omission of any third party.
 No SLA will be deemed missed due to changes to the recommended network or server configuration, trunking or dial plans without Verizon's prior agreement.
 No SLA will be deemed missed due to network or network access outage.
 No SLA will be deemed missed due to performance impacting issues related to or resulting from (but not limited to) rogue network devices, viruses, worms, miss-configured unmanaged network devices attached to the LAN being managed or other impacting events/devices beyond the scope and control of Verizon.

Appendix B: Terms and Definitions

Terms and Definitions	Definition
Billing Month	The period of time used for the monthly invoice. This is usually a minimum of 30 days but starts after the first of any month.
Codec	Program used to convert voice signals from analog data to digital data for transmission by the UCCaaS Service and then convert the data back to analog data to be received.
Customer Premise Equipment ("CPE")	Managed Service equipment located at the Site.
Customer Time	Time attributable to or caused by one or more of the following: Incorrect or incomplete information provided by Customer; Verizon or the Verizon approved maintenance provider being denied access to CPE or network components at the Site when access is required; Failure or refusal to release the Device for testing; or Customer unavailability where needed to close a Trouble Ticket.
MOS	Mean Opinion Score. A measurement of the voice quality of a call ranging from a score of 1 to 5.
MRC	Monthly Recurring Charge.
Outage(s)	One of the following applications; Cisco Unified Communication Manager, Cisco Unity Connection, or Cisco Unified Presence applications is not operational within the UCCaaS Data Centers such that the Customer does not have the ability to utilize such UCCaaS application capabilities.
Platform	The Customer's solution design for Cisco Unified Communications Manager, Unified Presence Server and Unity Connections messaging utilizing Cisco's defined best practice recommendations for redundancy and availability.
UCCaaS	UCCaaS is made up of the CUCM Cluster instances and other applications (e.g. Unity Connection and Unified Presence) located at the UCCaaS Data Center.
Site	A Site is a Customer's UCCaaS location.
Trouble Ticket	A ticket opened within Verizon's NOC from an internal Verizon report or a report by a Customer to Verizon of either perceived Outage or UCCaaS Service degradation.

Service Level Agreement (SLA) for Secure Gateway Services

Overview

The Service Level Agreement (SLA) for Secure Gateway Services includes the following Operational SLAs:

- Service Availability
- Time To Repair (TTR)
- Proactive Notification
- Service Installation

With the exception of Service Installation, Trouble Tickets will be used to track Service Availability and Time To Repair metrics.

Note: Network performance SLAs (Jitter, Packet Delivery/Throughput, and Round Trip Delay) are not covered under this SLA.

Summary Matrix of SLA Metrics and Remedies

Secure Gateway Services	Metric	Remedy (all % of Universal Port an HWC MRC)
Service Availability		
Secure Gateway Universal Port	100%	20%
Time To Repair (full outage)		
Secure Gateway Universal Port	4 hrs or Less	20%
Service Installation (Per Port or circuit)		
Secure Gateway Universal Port	20 business days	20%

The Secure Gateway Services SLA covers the following service components:
· Secure Gateway Universal Port (including the Retail and Remote Office, Mobile User and Firewall features
of the Secure Gateway Universal Port)

· Secure Gateway - Retail and Remote Office Hardware Clients (HWCs)

Notes:

- Network performance SLAs (Jitter, Packet Delivery/Throughput, and Round Trip Delay) are not part of this SLA.

COVA PUNITIVE SLA CREDIT STRUCTURE ALONG WITH TERMINATION RIGHTS

(Applies to Negotiated SLA's: PIP, Manged Services, TDM Voice, Internet Dedicated)

An additional, punitive remedy will apply where SLA nonperformance significantly exceeds the stated commitment. COVA will have the option to select a further financial SLA remedy, OR exercise termination rights. The financial remedy will be cumulative with the existing SLA credits and cumulative with each other, not to exceed 100% of the MRC for the impacted service.

Installations:
Upon the 10th calendar day past the due date, COVA can choose ONE of the following remedies:
Option 1: An additional 10% credit for 10-20 calendar days past due, and a further credit of 15% for 20 - 30 calendar days past due.
Option 2: VITA may Termination for Cause, and VITA may immediately procure services from another source upon written notice to Verizon of at least ten (10) days. Once VITA has effected a purchase from an alternate source, Authorized Users/VITA may charge-back Verizon, in which case Verizon agrees to reimburse Authorized Users for any difference in cost between the original monthly recurring Contract price (measured by taking the average price over the 12-month period preceding date of termination, if less than 12 months have passed from the Effective Date) and the new monthly price incurred by such Authorized Users to cover from the alternate source as measured over and limited to a 12 month period, immediately following the date of termination of the Contract or the relevant Order (as applicable). Verizon will reimburse Authorized Users for non recurring installation charges for replacement services from an alternate source, with the charges not to exceed the list price in the Guide for a similar service.

TTR:
Upon the 10th calendar day of a continuous, single outage COVA can choose ONE of the following remedies:
Option 1: An additional 15% credit for outages lasting between 12 and 18 hours and a further credit of 25% for outages lasting longer than 18 hours.
Option 2: VITA may Termination for Cause, and VITA may immediately procure services from another source upon written notice to Verizon of at least ten (10) days. Once VITA has effected a purchase from an alternate source, Authorized Users/VITA may charge-back Verizon, in which case Verizon agrees to reimburse Authorized Users for any difference in cost between the original monthly recurring Contract price (measured by taking the average price over the 12-month period preceding date of termination, if less than 12 months have passed from the Effective Date) and the new monthly price incurred by such Authorized Users to cover from the alternate source as measured over and limited to a 12 month period, immediately following the date of termination of the Contract or the relevant Order (as applicable). Verizon will reimburse Authorized Users for non recurring installation charges for replacement services from an alternate source, with the charges not to exceed the list price in the Guide for a similar service.

Exclusions:

Missed SLAs due to acts or omissions on the part of Customer, its contractors or vendors, or any other entity over which Customer exercises control or has the right to exercise control
Scheduled maintenance
Customer power issues.

Customer Time. The time identified on the trouble ticket (if any) due to, attributable to, or caused by, through no fault of Verizon, the following:
(a) unavailability of customer tech to resolve an outage or address an issue that causes Verizon to miss an SLA,
(c) incorrect or incomplete contact information provided by customer which prevents Verizon from completing the trouble diagnosis and service restoration;
(d) Verizon being denied access to network components at the customer location when access is required to complete trouble shooting, repair, diagnosis, or acceptance testing;
(e) Customer being unavailable when Verizon calls to close a trouble ticket or verify service restoration,
(f) any other act or omission on the part of Customer. (g) Customer's failure or refusal to release the service for testing.

EXHIBIT C – TELECOMMUNICATIONS SERVICE ORDER (TSO) TEMPLATE

PRINTED FROM VTA-SOS ON 20070423 AT 15:34:43.6 BY MISMAM 704805-999-VTA

VIRGINIA INFORMATION TECHNOLOGIES AGENCY
110 SOUTH 7TH STREET, RICHMOND, VA. 23219

TELECOMMUNICATIONS SERVICE ORDER
[illegible] SERVICE ORDER - NO FACILITY DETAIL SHEETS ATTACHED ***

VTA ORDER NO : 704805-999-VTA PROJECT: MAM-0423
ACCOUNT NO. : VTA999 REQUESTED DUE DATE: 20070302
VTA CONTACT : MARGARET S. MORAN
TELEPHONE : 804/371-8534
COPY TO :

VTA APPROVAL : _____ DATE: _____

ACTIVITY CODE: 0136000 AGENCY LOG NO:
AGENCY : VA INFORMATION TECHNOLOGIES AGY
COORDINATOR : PAUL HOPPES, ALVIN SEAY
ADDRESS : 110 SOUTH 7TH ST.
CITY : RICHMOND
STATE : VA
TELEPHONE : 804/371-8560 ZIP: 23219

VENDOR : VIRGINIA INFORMATION TECHNOLOGIES AGENCY
ADDRESS : 110 SOUTH 7TH STREET
CITY : RICHMOND
STATE : VA ZIP: 23219
REMARKS TO VENDOR:

SERVICE REP: _____

TELEPHONE : _____ DUE DATE: _____

S.O. NOS : _____ _____ _____ _____

REMARKS FROM VENDOR:

_____

_____

_____

_____

SERVICE ORDER GENERAL DESCRIPTION: DESCRIPTION PAGE 1 OF 2

XYZ COMPANY

CONTACT: JANE DOE
SERVICE ADDRESS: 110 SO. 7TH ST.
RICHMOND, VA 23219

EXHIBIT D – CERTIFICATION REGARDING LOBBYING

The undersigned certifies, to the best of his or her knowledge and belief, that:

i). No Federal appropriated funds have been paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee or an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal Contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal Contract, grant, loan, or cooperative agreement.

ii). If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal Contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

iii). The undersigned shall require that the language of this certification be included in the award documents for all sub awards at all tiers (including subcontracts, sub grants, and Contracts under grants, loans and cooperative agreements) and that all sub recipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

Signature: Anthony Recine

Printed Name: Anthony Recine
Vice President

Organization: Verizon Business Network Services Inc. on behalf of MCI Communications Services Inc. d/b/a Verizon Business Services

Date: June 4, 2013

Signature: Klara Reilly

Printed Name: for Susan Zeleniak
by Klara Reilly, Dir.

Organization: Terremark Federal Group LLC

Date: June 4, 2013

EXHIBIT E – INDIVIDUALS AUTHORIZED TO ORDER SERVICES

VITA's authorized Ordering Officers for this Contract are as follows:

Linda Brown

Margaret A. Moran

Pamela Wood-Henry

Exhibit F E-Rate

E-Rate Funding Related Terms and Conditions

Service Attachment

1. **General.**

1.1 The terms and conditions of this service attachment apply with respect to any Services (which term includes equipment) for which Customer seeks E-Rate funding ("E-Rate Services") under the federal Universal Service Fund from the Schools and Libraries Division of the Universal Service Administrative Company or USAC ("E-Rate Program").

1.2 **Delayed Implementation**. Verizon will delay the start of any work or activities related to installation or provision of the E-rate Services upon Customer request, until such time as Customer notifies Verizon in writing of USAC's approval of E-rate funding, or Customer notifies Verizon to proceed to provide such E-rate Services (regardless of whether E-rate funding is or has been approved), in which case Customer shall be responsible for payment as set out in Section III.C below. However, if within twelve (12) months after this Agreement is signed by either party, Customer has neither notified Verizon that it has received such USAC approval of E-rate funding for E-rate Services nor notified Verizon to proceed to provide such E-rate Services, then Verizon reserves the right to terminate this Agreement with respect to such E-rate Services upon written notice to Customer.

1.3 **Term and Survival**. Notwithstanding any other provisions to the contrary set forth in the Verizon Business Service Agreement (the "Agreement") to which this is attached, the Initial Term and Effective Date for E-Rate Services will be as follows: Providing Customer has signed and delivered this Agreement to Verizon no later than May 1, 2013, the "Initial Term" for the E-Rate Services will be scheduled to begin on July 1, 2013, or as soon thereafter as such services are installed if not previously installed, and the pricing in this Agreement will be effective for such E-Rate Services on that date ("Effective Date"). If Verizon has not received the signed Agreement from Customer by May 1, 2013, the Initial Term for the E-Rate Services will be scheduled to commence on the 1st day of the 2nd billing cycle following Verizon's receipt of the signed Agreement from Customer, or as soon as such services are installed if not previously installed, but in no event earlier than July 1, 2013. The Initial Term shall end upon completion of the number of months specified as the Initial Term in the Agreement following the commencement of the Initial Term. At the end of the Initial Term, the Agreement for these Services may be subject to extension or continuation to the extent so provided in the provisions of the Agreement applicable to these Services. In the event the Services are provided to, and used by, Customer after the signature of this Agreement but prior to July 1, 2013, then Customer shall pay the rates set forth in this Agreement unless a prior written agreement is in effect and applicable to such pre-July 1 time period.

1.4 Customer and Verizon each represent and warrant that it has complied and will comply with all laws, rules and regulations applicable to the E-Rate Program.

2. E-Rate Funding Method. Please designate the intended funding method by checking the appropriate box below:

☐ Billed Entity Applicant Reimbursement Form ("BEAR") – FCC Form 472

☐ Service Provider Invoice Form_("SPIF') – FCC Form 474

3. Customer Responsibilities.

3.1 Customer is solely responsible for applying for and securing any E-Rate funding, and for ensuring the accuracy and integrity of all data and information submitted in connection with such application. Verizon has no liability arising from any assistance it provides Customer in connection with such application and Customer shall hold Verizon harmless with respect to any such assistance or information provided to Customer.

3.2 Verizon makes no representation or warranty whatsoever with respect to the eligibility of any particular Services for E-Rate funding, as such determination rests solely with the Schools and Libraries Division of USAC in its capacity as administrator of the E-Rate Program. Any reference in the Agreement to E-Rate eligibility or ineligibility is not determinative, but is for ease of reference only.

3.3 If for any reason Customer fails to qualify for or secure E-Rate funding or otherwise becomes ineligible for such funding in whole or in part, or if such funding is withdrawn or canceled in whole or in part, or if payment of any Verizon charges is denied by USAC in whole or in part, Customer is nevertheless obligated to pay one-hundred percent (100%) of the charges associated with the Services provided under this Agreement that are not paid to Verizon from E-Rate funding, including if applicable reimbursing to Verizon any funds which Verizon is obliged to return to USAC on account of Customer in connection with the Agreement.

3.4 Upon request, Customer will provide Verizon with copies of any E-rate-related materials (including all attachments) reasonably requested by Verizon, including without limitation: (i) Form 471 and Item 21 Attachments, (ii) Form 500, (iii) Service Substitution Request, and (iv) approved SLD FCC 486 Service Certification Form.

4. Payment.

4.1 **Standard Invoicing**. Except as provided below, Verizon will invoice Customer in full for all Services, including those for which Customer's E-rate funding request has been approved. Customer will pay all invoices as provided in the Agreement. With respect to Services for which E-Rate funding has been approved, Customer will file FCC Form 472 (Billed Entity Applicant Reimbursement Form or BEAR) and certify that it has paid for those Services in full. (Note that Verizon must receive an approved SLD Funding Commitment Decision Letter and approved SLD FCC Form 486 Service Certification Form before Verizon will sign Customer's FCC Form 472 (BEAR).) Within twenty (20) business days after receipt of payment from USAC, Verizon will remit the approved discounted portion to Customer.

4.2 **Alternative Invoicing**.

4.2.1 For some services (which Verizon will identify for Customer on request), Customer may request that Verizon invoice Customer only for the so-called non-discounted charges (i.e., the charges that are not to be paid or reimbursed via E-Rate funding).

4.2.2 Any such request will apply to all E-Rate Services that are eligible for such invoicing until Customer notifies Verizon that it does not want to continue that invoicing treatment with respect to a subsequent funding year. Once made, this invoicing election may not be changed for the current year.

4.2.3 To qualify for such invoicing, Customer must send notice to Verizon under this Agreement, together with an approved SLD Funding Commitment Decision Letter and approved SLD FCC Form 486 Service Certification Form.

4.2.4 Customer understands that Verizon will file FCC Form 474 (Service Provider Invoice Form or SPIF) to obtain payment from USAC of the so-called discounted charges, and upon request, Customer will provide any appropriate documentation or information to Verizon or USAC in support of Verizon's request(s) for payment.

4.3 If, following the end of the funding year, Verizon determines that it has received payment for a Service from both USAC and Customer, Verizon will correct any such duplication, either through credits or refunds to Customer or USAC, as it determines to be appropriate.

NETWORK ACCESS SERVICES

Verizon will provide Network Access Services as follows:

1.1 **Network Services Local Access Services.** Analog Local Access, DSO (Hubless) Access, T-1 (DS1) Digital Access, DS3 Local Access (collectively known as "Time Division Multiplexor ("TDM")-based access services") are provided pursuant to the Contract.

1.2. **Ethernet Services.** Ethernet Access and Ethernet Private Line ("EPL") Access (collectively known as "Ethernet Access Services") are provided pursuant to the Contract relating to Ethernet Services. Ethernet Access Services are provided on a private carriage basis.

Audio Conferencing
Service Attachment

1. Service Description

1.1 **Audio Conferencing.** Audio Conferencing ("Audio Conferencing") provides a multipoint long distance telecommunications service between a single calling station and two or more called stations. Audio Conferencing requires a teleconferencing bridge port for each called station. A Verizon Conference Center provides the necessary bridge ports. This service is not available for collect calling.

1.2 **Definitions**

1.2.1 **Leader.** A "Leader" is defined as the Customer contact requesting conference services.

1.2.2 **Participant.** A "Participant" is defined as any Customer-authorized party joining the conference.

1.3 **Access Methods**

1.3.1 **Toll Meet Me Access.** This access method allows the Customer to reserve a direct distance dial number for a pre-arranged date and time. Each call to the bridge is initiated separately by each Participant. Each Participant will be responsible for his/her transport charges incurred in connection with the conference call.

1.3.2 **Dial-Out Access.** This access method requires a Verizon Conference Coordinator or the Leader to establish the conference call. For Instant Meeting service, the Leader performs the dial-out to Participants via the online call management tool called "Web Moderator." Otherwise, Customer must arrange for the Participants to be called by the Verizon Conference Coordinator at the pre-arranged date and time. Dial-Out Access charges include an allocation for transport charges only unless otherwise noted.

1.3.3 **Toll Free Access.** This access method allows Participants to access a call via a number that is toll free in the United States and parts of Canada.

1.3.4 **Global Access**

1.3.4.1 **Global Access Local Toll Access.** Global Access Local Toll Access ("Local Access") allows Participants to access a call via a non-U.S. local exchange number.

1.3.4.2 **Global Access Local Freephone Access.** Global Access Local Freephone Access ("IFN") allows Participants not located in the United States to access a call via a Local Toll Free number (the "IFN number"). An in-country IFN number and corresponding passcode allows direct dial access to the conference call.

1.4 **Service Types**

1.4.1 **Premier.** Provides for a Verizon Conference Coordinator to greet and announce each Participant into the conference call if requested by the Leader, take roll call, and monitor the conference call to the conference call's conclusion.

1.4.2 **Standard.** Provides for a Verizon Conference Coordinator to greet and announce each Participant into the conference call if requested by the Leader. The Verizon Conference Coordinator will leave from the conference call after the conference call begins, but will monitor the conference call. Participants can recall the Verizon Conferencing Coordinator at any time during the conference call by entering a pre-assigned code (e.g., #1) via touch-tone key pad.

1.4.3. **Unattended/Instant Meeting.** Provides for a Verizon Conference Coordinator for technical assistance only. Participants enter the conference call by entering a pre-assigned passcode via touch-tone keypad.

2. Pricing – See Appendix A Pricing

3. On Line Password for Access to Service and CPNI. At the time Audio Conferencing is established, Verizon will provide Customer's designated billing point of contact (the "Billing POC") with an authorization code ("Password"), which Customer and the Billing POC may use to access Audio Conferencing and obtain information about Audio Conferencing on-line that may include "CPNI" (as defined in the Agreement). In order for the Billing POC to receive the Password, Customer will name the Billing POC as a CPNI Authorizer following the process set forth in the Agreement. [Customer agrees that the Billing POC is also authorized to use the Password to establish Audio Conferencing for Customer personnel and to disclose the Password for Audio Conferencing and CPNI access to other personnel of Customer, and that such personnel are authorized by Customer to access Audio Conferencing and CPNI. Customer will be solely responsible for use and disclosure of the Password by Customer personnel.

3.1 **Access to CPNI.** Customer's use of Audio Conferncing Service may enable access to Customer Proprietary Network Information ("CPNI"). As a condition of such access, Customer agrees:

- To execute a "Designation Of Customer Audio Conferencing Administrator(s) With CPNI Authorizer" form provided by Verizon (see Appendix I), designating in writing one or more Customer "Administrators" authorized to access CPNI and to identify end-users authorized to access CPNI either directly or via an online application such as the Integrated Communications Package (ICP), if applicable; and

- To cooperate with Verizon's reasonable authentication and security procedures for access to CPNI, including, without limitation, password resets and re-authentication of authorized end-users.

CPNI includes information about the quantity, technical configuration, type, destination, location, and amount of use of telecommunications or interconnected voice over Internet Protocol services purchased from Verizon or its affiliates that is made available to Verizon or its affiliates solely by virtue of your relationship with Verizon or its affiliates and related local exchange or toll billing information.

Note: This form must be filled out whenever a new Audio Conferencing Service Administrator is named or removed, or whenever an existing VOIP Service Administrator needs a new password (for example, because it has been lost or forgotten).

Appendix I

Appendix I

Agreement to Protect CPNI

Customer	**[INSERT CUSTOMER FULL LEGAL NAME]**
Signature	
Name	
Title	
Date	

THIS AGREEMENT TO PROTECT CPNI ("CPNI Protection Agreement" or "Agreement") is made on this [INSERT DAY] day of [INSERT MONTH], 200[INSERT YEAR NUMBER] ("Effective Date"), by and among Verizon Business Network Services Inc., on behalf of MCI Communications Services, Inc., d/b/a Verizon Business Services and its affiliates (collectively or individually "Verizon") and [INSERT CUSTOMER'S FULL LEGAL NAME] and its affiliates ("Customer"), through their authorized representatives' signatures above and Verizon's acceptance of them. Verizon acceptance occurs upon Verizon's verification that an unaltered Customer-signed document is received by a Verizon implementation center.

WHEREAS, the parties have entered into one or more agreements (each a "Service Agreement") relating to the provision by Verizon to Customer of telecommunications services, interconnected Voice over IP services, and any other services that may hereafter become subject to the Federal Communications Commission rules governing Customer Proprietary Network Information ("CPNI"); and

WHEREAS, the parties desire to amend the Service Agreements by this Agreement to establish terms under which CPNI may be provided by Verizon to Authorized Customer Representatives (as defined below);

NOW, THEREFORE, in consideration of the mutual promises set forth below, and intending to be legally bound hereby, the parties agree to add the following to the Service Agreements.

1. **Protection of Customer CPNI**

1.1 Verizon will protect the confidentiality of Customer CPNI in accordance with applicable laws, rules, and regulations. Verizon may access, use, and disclose Customer CPNI as permitted or required by applicable laws, rules, and regulations or this Agreement.

1.2 Verizon may provide Customer CPNI (including, without restriction, call detail) to representatives authorized by Customer ("Authorized Customer Representatives" as defined below).

1.3 Verizon may provide Customer CPNI to Authorized Customer Representatives via any means authorized by Verizon that is not prohibited by applicable laws, rules, or regulations, including, without restriction: to the Customer's email address(es) of record (if any) or other email addresses furnished by Authorized Customer Representatives, to the Customer's telephone number(s) of record or other telephone numbers provided by Authorized Customer Representatives, to the Customer's postal (U.S. Mail) address(es) of record or to other postal addresses furnished by Authorized Customer Representatives, or via Verizon's online customer portal or other online communication mechanism.

1.4 Authorized Customer Representatives include Customer employees, Customer agents, or Customer contractors, other than Verizon, who have existing relationships on behalf of Customer with Verizon customer service, with regard to Customer's account, or other Verizon representatives and all other persons authorized in written notice(s) (including email) from Customer to Verizon. Authorized Customer Representatives shall remain such until Customer notifies Verizon in writing that they are no longer Authorized Customer Representatives as described below. Customer agrees, and will cause Authorized Customer Representatives, to abide by reasonable authentication and password procedures developed by Verizon in connection with disclosure of Customer CPNI to Authorized Customer Representatives.

1.5 Customer's notices of authorization or deauthorization must be sent to Verizon's service or account manager, and must contain the following information:

- the name, title, postal address, email address, and telephone number of the person authorized or deauthorized;
- that the person is being authorized, or is no longer authorized, (as applicable) to access CPNI; and
- the full corporate name of the Customer whose CPNI (and whose affiliates' CPNI) the person can access or can no longer access as applicable.

1.6 During the Service Agreements, Customer will at all times have designated, below, in an attachment containing the same data elements listed below, or in a separate writing sent to the service manager or account manager, representatives ("CPNI Authorizers") with the power to authorize Customer representatives to access CPNI under this Agreement, and who are themselves authorized to access CPNI of Customer and its affiliates. Additions or removals of CPNI Authorizers will be effective within a reasonable period after Verizon has received a signed writing of the change, including the affected person(s)' name, title, postal address, email address, and telephone number.

Name	Title	Tel. No.	Email	Postal Address

2. If Customer is served by at least one dedicated Verizon representative under the Service Agreements (that can be reached by Customer by means other than calling through a call center), Verizon may suppress certain Significant Account Change (SAC) notices to Customer.

3. The defined terms set forth in the preamble and recital clauses of this Agreement are deemed contractual.

4. Except as modified by this Agreement, the Service Agreements remain unchanged and in full force and effect.

Appendix 2

Authorization or Deauthorization of User Access to Customer Proprietary Network Information (CPNI)

BY:

Customer	**[Insert Customer's Full Legal Name]**
Name	[Customer Signatory Must Be a "CPNI Authorizer"]
Title	
Date	
Signature (if faxed or mailed)	

By sending this email or signing above (as applicable), I hereby either (1) authorize the User(s) named below (or on the attached spreadsheet containing the same data elements set out below) to have access to CPNI* or (2) deauthorize the named User(s) from having access to CPNI, for the Customer named below and Affiliates. This authorization shall be valid until revoked by me or another Customer CPNI Authorizer in writing. Revocation of authorization shall be sent to Verizon at the email, fax or postal address (as applicable) provided by my Verizon Service Manager or Account Manager. I am authorized to grant such CPNI access and acknowledge that to be effective, this document must be either emailed from the address that the Customer named below has identified as mine, or if sent by fax or postal mail, it must be signed by me.

Customer Name	[Insert Custome'sr Full Legal Name]
NASP ID and GUDUNS ID (where available)	[Insert Customer NASP ID and GUDUNS ID]

Name of User	Company and Title	Tel. No.	Email	Postal Address	Add	Remove
					☐	☐

*

[

Local Service—CLEC
Service Attachment

1. **Description.** The Local Service—CLEC local exchange services provided pursuant to this Service Attachment ("Local Service") may be provided by a Verizon affiliate. Verizon shall at all times remain liable for such Local Services in accordance with the Agreement.

2. **Local Service**

2.1 **National Unified Messaging Service (NUMS)**

2.1.1 **MRC.** For NUMS services provided under this Service Attachment, Customer will pay an MRC as identified in Exhibit A.

2.1.2 **Non-Recurring Charges.** The Install Charge for NUMS services is set forth in Exhibit A. The Change Charge for NUMS services is also listed in Exhibit A.

2.1.3 **Form Mailbox.** Form Mailbox enables Customer to design and set up a vocal form application with up to 20 questions and capture the responses of callers. Form Mailbox sends the responses via email to Customer as a .WAV file attachment. Form Mailbox does not save the responses after it transmits them.

INTERNET DEDICATED SERVICE
SERVICE ATTACHMENT

1. **Rates and Charges.**

1.1 **Monthly Recurring Charges and Non-Recurring Charges.**

1.1.1 Customer will pay the monthly recurring charges ("MRC"), which are fixed for the Term of this Agreement and the non-recurring charges ("NRC") for Internet Dedicated Services in the contiguous U.S. (includes Internet Dedicated NxT1 Service, Internet Dedicated T1 Service, Internet Dedicated T3 Service, Internet Dedicated OC3 Service, Internet Dedicated OC12 Service, Internet Dedicated OC48 Service, Internet Dedicated GigE Port Only Service, Internet Dedicated Ethernet Service and Internet Dedicated Fast Ethernet Port Only Service), in Alaska (includes Internet Dedicated NxT1 Service, Internet Dedicated T1 Service, Internet Dedicated T3 Service, Internet Dedicated OC3 Service, Internet Dedicated OC12 Service and Internet OC48 Service), ("Internet Dedicated Service") and attendant options listed, as applicable,

2. **Additional Service Provisions.**

2.1 **Access.** Access to a router at an Verizon Network hub near Customer's site may be interrupted for (i) scheduled maintenance (usually scheduled during off-hours at an Verizon hub, such as Tuesdays and Thursdays between 3:00 AM and 6:00 AM local time), (ii) emergency maintenance, or (iii) as otherwise set forth in the Agreement.

2.2 **Verizon Internet Dedicated GigE Port Only Services.** Verizon's Internet Dedicated GigE Port Only Service and 10GigE Port Only Service are intra-building connectivity products, and thus the Customer's demarcation point must reside within the same building as a GigE-qualified Verizon-owned network hub. To ensure proper installation, Verizon will order all telco lines within the telco facility where the Verizon hub is located.

2.3 **Customer Obligations – Service Not To Be Resold.** While Customer can resell Internet connectivity, Customer cannot resell the Internet Dedicated Service in its entirety to another person or entity without the express prior written consent of Verizon. If Customer resells Internet connectivity to end users, Customer is responsible for: (i) providing the first point of contact for end user support inquiries; (ii) providing software fulfillment to end users; (iii) running its own primary and secondary domain name service DNS for end users; (iv) registering end users' domain names; (v) using BGP routing to the Verizon Network, if requested by Verizon; (vi) collecting route additions and changes, and providing them to Verizon; and (vii) registering with the appropriate agency all IP addresses provided by Verizon to Customer that are allocated to end users.

Long Distance Voice Services[1]
Service Attachment

1. **Interstate Outbound Voice Service.** Customer will pay the rates per minute shown in Exhibit A for Interstate Outbound Voice Service, which are fixed for the Term:

   1.1 **Interstate Directory Assistance.** Customer will pay for Interstate Directory Assistance services at the fixed rate as shown in Exhibit A, in lieu of the standard Directory Assistance rate.

2. **Interstate Inbound Voice Service.** Customer will pay the rates per minute as set forth in Exhibit A for Interstate Inbound Voice Service, which are fixed for the Term.

3. **International Outbound Voice Service.** Customer will pay the rates per minute set forth in Exhibit A, which are fixed for the Term, for International Outbound Voice Service that originates in the U.S. Mainland, Hawaii, American Samoa and the U.S. Virgin Islands, and terminates in the listed international locations (based on origination type).

4. **International Directory Assistance.** For International Directory Assistance calls, Customer will pay a fixed rate as set forth in Exhibit A.

5. **International Inbound (Toll Free) Voice Service.** For International Inbound (Toll Free) Voice Service that originates from the applicable international locations and terminates via switched, dedicated, or Local terminations in the U.S. Mainland, Hawaii, American Samoa and the U.S. Virgin Islands, Customer will pay the usage charges, MRCs and NRCs set forth in Exhibit A.

6. **Specific State Pricing.** Customer will pay the per minute rates set forth Exhibit A, which are fixed for the Term, for Intrastate Outbound (based on origination type), Intrastate Inbound (toll free) usage (based on termination type), for Virginia only.

[1] The use of the term "Local" throughout this Service Attachment refers to calls originating or terminating, as applicable, via a Local Network Connection.

Managed LAN Services

1. **Rates and Charges.**

1.1 **Monthly Recurring Charges.** Based upon Customer's order, Verizon will provide, Managed Local Area Network ("LAN") Services ("MLAN Service"), for the following monthly recurring charges ("MRC") per LAN Switch specified in Exhbit A of the Contract.

1.1.2 **Standard LAN Switches.** The "Standard" Managed LAN switches are listed in Exhibit A and apply to the Managed Services price tables in Exhibit A.

2. **Service Provisions.**

2.1 **Description of Service.**

2.1.1 **Managed LAN Service.** Verizon MLAN Service is a LAN device management solution. MLAN Service incorporates the management oversight and responsibility for Customer's designated LAN Switches into Verizon's Full Management network management services. Certain LAN Switches have network modules or network management functionality as stated in the SOR, as defined below, and management of such functionality is not included in MLAN Service.

2.1.1.1 **Full Management** is a comprehensive managed LAN device service that provides monitoring and notification, design services and fault determination for the network and physical aspects of the LAN Switches including management of any software licenses associated with LAN Switches.

Full Management also provides physical and logical fault management, configuration management, and security management. Customer will provide Verizon with "Privileged" access mode to all LAN Switches. Customer will provide Verizon with the SNMP "Write Access Community String" for all monitored LAN Switches.

2.1.2 **Initial MLAN Service Non-Recurring Options.**

2.1.2.1 **Managed Implementation Service.** Managed Implementation brings a new Customer Managed LAN network online after the Customer's requirements have been gathered and the design activities have been completed. Verizon provides support for the planning, system engineering and overall project management of a new network. Verizon will provide Managed Implementation Service in accordance with a statement of requirements ("SOR") as agreed upon by the parties.

2.1.3 **In-Band and Out of Band Access.** Verizon must have in-band and optionally out of band access to each managed LAN Switch to manage Customer's LAN.

2.1.3.1 **In-Band Access.** In-band access may be provided through a Verizon Managed WAN site connected to Customer's LAN. In-band access is required at each Customer's LAN location, or alternatively, Verizon can manage more than one Customer LAN using one WAN In-Band Access site provided that: a) all LANs are connected via Customer's WAN; b) Customer allows Verizon management traffic to flow through its WAN as required by Verizon (e.g. allowing certain protocols), and c) there is a WAN transport

bandwidth of at least 1.544 Mbps if Verizon is managing more than 1000 LAN Switches, or 256 kbps for 1000 or less LAN Switches.

2.1.3.1.1 **Managed WAN In-Band Access.** For Verizon Managed LAN in-band access service, Customer must contract with Verizon for Managed WAN service and a minimum of two PIP circuits into the Customer's LAN network. The MLAN Service and MWAN Service must both be at Full Management level for that site. Other Managed WAN Access configurations may be available on a custom basis with Verizon approval.

2.1.3.2 **Out of Band Access.** Out of band ("OOB") access is recommended for all Managed LAN Full Management. Customer will provide at their cost either a dedicated, analog telephone connection or indirect cable access (such as a terminal server) for use by each OOB modem for troubleshooting each circuit/device that is part Managed LAN Full Management. The analog telephone connection must maintain a minimum 9600 bits per second connection rate for site level service level agreements ("SLAs") to apply. If the customer elects not to deploy OOB Management, the TTR SLA and corresponding SLA credits are affected. The reduced set of SLA's as outlined in Exhibit B will apply. Managed LAN OOB access is in addition to any Managed WAN OOB access.

2.2 **Customer Responsibilities.** Customer will do the following:

2.2.1 **Information and Access Requests.** Customer will provide information to Verizon, its subcontractors or its designated point of contact ("Verizon or its Designees") that is reasonably requested by for Verizon to perform its obligations. In addition, Customer will provide Verizon or its Designees with access to Customer facilities, installation sites, and equipment as reasonably requested by for Verizon to perform its obligations hereunder.

2.2.2 **Licenses.** Customer will obtain any necessary permits, licenses, variances, and/or other authorizations required by state and local jurisdictions for installation and operation of the CPE on Customer's premises or where the jurisdiction requires Customer to obtain the permit, license, variance and/or authorization.

2.2.3 **Building Space.** Customer will provide adequate building space, circuitry, facility wiring, temperature, humidity, and power to comply with the standards established by the manufacturer of the CPE for proper installation and operation of the Managed Service.

2.2.4 **Supported Devices.** Only Verizon certified devices will be supported and must be an approved Verizon design as outlined in Customer's SOR.

2.3 **Reports**. All copies of any reports, recommendations, documentation, VEC printouts, or other materials in any media form provided to Customer by Verizon hereunder will be treated as Verizon Confidential Information, except as required by law or Customer's records-related policy. Customer Confidential Information if embedded in the above shall continue to be treated as Customer Confidential Information.

2.4 **IP Addresses.** Verizon reserves the right to assign IP addressing to Customer's LAN Switches. If supported, secondary IP addressing will be used, maintaining Customer's existing IP address

space. In the case where there are devices which do not support secondary addressing, Verizon will assign new IP addressing based on availability in both Verizon's and Customer's address space. If Customer will not permit the use of Verizon-assigned address space, Customer agrees to pay reasonable costs for a dedicated management domain or an IP proxy/NAT/IPv4-IPv6 solution. Additionally, Verizon reserves the right to use border gateway protocol ("BGP") routing for the management permanent virtual circuits ("PVCs") used to access and monitor Customer's Network.

2.5 **Service Level Agreement.** See the SLA agreement in Exhibit B.

Managed WAN Service Attachment

1. **Rates and Charges.**

1.1 **Monthly Recurring Charges.** Based upon Customer's order, Verizon will provide Verizon Managed WAN ("Managed WAN Services") for the following monthly recurring charges ("MRC") and non recurring charges ("NRC") per Managed Devices, as specified in Exhibit A of the Contract.

1.1.2 **Standard CPE.** The standard "Managed Devices" are defined in Exhibit A and apply to the Managed Services price tables in Exhibit A.

1.1.3 **CPE.** If procured from Verizon, United States domestic CPE is ordered and governed by a separate agreement with Verizon.

2. **Service Provisions.**

2.1 **General Service Description.** Under this Service Attachment, Verizon may perform such services as design Customer's data network, activate, monitor and manage specified Customer Premise Equipment ("CPE") comprising Customer's data network where Customer has executed an agreement for such transport services and Third Party Transport Service (collectively the "Managed WAN Services" or "Managed Services"), and will be performed by Verizon or through its agents and subcontractors on a commercially reasonable basis.

2.2 **Description of Services.** Customer may choose Managed WAN Full, each as summarized below:

2.2.1 **Managed WAN Full Management** is a comprehensive managed WAN service that provides proactive monitoring, WAN Analysis Provider Edge Statistics ("PE Statistics"), WAN Analysis Standard Select Reporting, basic physical device fault notification, and managed services portal access to Customer. Verizon is responsible to clear both logical and physical issues with Customer's reasonable cooperation. Verizon may clear the fault condition remotely or by dispatching a technician to Customer's site at Verizon's option.

Full Managed WAN also provides dial backup design/test, implementation, testing and fault isolation and the network design consultation, physical and logical Managed Device fault isolation, detection and monitoring and certain change management activities. Verizon is responsible for management of any software licenses associated with Managed Devices. Customer is responsible for the management of all equipment connected to Managed Devices that are out of the scope of the Managed WAN Service. Customer is also responsible for providing Verizon with read access to the Managed Device configuration.

Verizon will provide an analog dial backup design, if applicable. Customer is responsible to arrange for the provisioning of analog lines as necessary. Change management activities that are included in the monthly recurring charges for Full Management are found in Exhibit B.

2.3 **Initial Managed WAN Service**

2.3.1 **Managed Implementation Service.** Managed Implementation brings a new Customer Managed WAN network online after the Customer's requirements have been gathered and the design activities have been completed. Verizon provides support for the planning, system engineering and overall project management of a new network. Verizon will provide

Managed Implementation Service in accordance with a separate statement of requirements ("SOR") agreed upon by the parties.

2.4 **Optional Services.**

2.4.1 **Managed WAN Support for Private IP Dynamic Bandwidth Feature.** Fully Managed Customers get fully automated or semi-automated dynamic bandwidth support for PE and CE routers depending on Customer's Managed Devices and configuration. Dynamic bandwidth support is provided at no additional cost, and may only be available for certain Managed Devices as determined by Verizon or may require custom support from Verizon.

2.4.2 **Expedite, Rescheduling, and After Hours Charges.** Certain Administrative NRCs (e.g., expedite charges) are specified in Exhibit A.

2.5 **Customer Responsibilities.** Customer will do the following:

2.5.1 **Information and Access Requests.** Upon request, Customer will provide information to Verizon, its subcontractors or its designated point of contact ("Verizon or its Designees") that is reasonably necessary or useful for Verizon to perform its obligations. In addition, upon request, Customer will provide Verizon or its Designees with access to Customer facilities, installation sites, and equipment as reasonably necessary or useful for Verizon to perform its obligations hereunder.

2.5.2 **Licenses.** Customer will obtain any necessary permits, licenses, variances, and/or other authorizations required by state and local jurisdictions for installation and operation of the CPE on Customer's premises or where the jurisdiction requires Customer to obtain the permit, license, variance and/or authorization.

2.5.3 **Building Space.** Customer will provide adequate building space, circuitry, facility wiring, temperature, humidity, and power to comply with the standards established by the manufacturer of the CPE for proper installation and operation of the Managed Service.

2.5.4 **IP Addresses.** Verizon reserves the right to use secondary IP addressing if Customer is using unregistered IP address space. If Customer will not allow secondary IP addressing, Customer agrees to pay reasonable costs for a dedicated management domain or an IP proxy hardware solution. Additionally, Verizon reserves the right to use border gateway protocol ("BGP") routing for the management of permanent virtual circuits ("PVCs") used to access and monitor Customer's Network.

2.5.5 **Out of Band Access.** Out of band ("OOB") access is recommended for all Managed WAN Full Management. Customer will provide at their cost either a dedicated, analog telephone connection or indirect cable access (such as a terminal server) for use by each OOB modem for troubleshooting each circuit/device that is part Managed WAN Full Management. The analog telephone connection must maintain a minimum 9600 bits per second connection rate for site level service level agreements ("SLAs") to apply. If the customer elects not to deploy OOB Management, the TTR SLA and corresponding SLA credits are affected. The reduced set of SLA's as outlined in Exhibit B will apply.

2.5.6 **Supported Devices.** Only Verizon certified devices will be supported and must be an approved Verizon design as outlined in Customer's Statement of Requirements.

2.6 **Reports.** All copies of any reports, recommendations, documentation, Customer Portal printouts, or other materials in any media form provided to Customer by Verizon hereunder will be treated as Verizon Confidential Information, except as required by law or Customer's records-related policies.

2.7 **Service Level Agreement.** During the Term, Customer will receive the benefits of the Managed WAN Service Level Agreement that is found in the Contract.

MANAGED WIRELESS LAN SERVICE ATTACHMENT

1. **General Service Description.** Under this Service Attachment, Verizon may perform such services including, without limitation, design Customer's wireless local area network ("WLAN"), activate, monitor and manage specified Customer Premise Equipment ("CPE") comprising Customer's WLAN (the "Managed WLAN Services" or "Managed Services"). The Managed Services will be performed by Verizon or through its agents and subcontractors.

2. **Description of Services.** The following is a summary of the services provided as part of Managed WLAN Services:

2.1 **Initial Managed WLAN Service Non-Recurring Services:**

2.1.1 **Managed Implementation Service.** Managed Implementation brings a new Customer Managed WLAN network online. Managed Implementation begins after the Customer's requirements have been gathered and the design activities have been completed. Verizon provides support for the planning, system engineering and overall project management of a new network including without limitation:

- The collection of system, application and end-user requirements;
- The creation of the overall project plan including system design and equipment configuration;
- The implementation of the overall project plan; and
- Network site installation and acceptance.

Verizon will provide Managed Implementation Service in accordance with a statement of requirements ("SOR") agreed upon by the parties. Customer may request a wireless site assessment via a Verizon Site Preparation Services Schedule to the Voice and Data Equipment and Related Services Attachment or provide a completed wireless assessment from a third party agreed to by Verizon. If Customer opts not to have such wireless assessment, Verizon will deploy and monitor the WLAN based upon Customer's requirements but Verizon will not be responsible for the overall WLAN performance or reliability and no service level agreements will be available for such WLAN.

2.2 **Managed WLAN Recurring Services:**

2.2.1 **Managed WLAN** is a comprehensive managed WLAN service providing the following:

2.2.1.1 **Design:** Verizon will complete the logical and physical design in close cooperation with and agreement of the Customer. This logical design includes, but is not limited to, proposed network topology to support immediate needs and planned growth, logical IP and addressing schemes, and protocol flows. Network design for WLAN devices will be made part of Customer's overall network design through an SOR. Customer and Verizon will both approve and execute the SOR.

2.2.1.2 **Network Management:** The Verizon network operations center ("NOC") provides physical and logical fault management, configuration management, security management, and monitoring services for WLAN devices. The NOC provides coverage 24 hours per day, seven days per week.

2.2.1.3 **Change Management Services:** The following change management services are included in Customer's monthly recurring charge. Verizon may add, delete or change these change management activities upon mutual agreement and execution of a modification:

Wireless LAN Security – Modify
Wireless LAN Authentication – Modify
Wireless Access Point – Modify
Protocol/Feature (e.g. 802.11) Modify
Operating System ("OS") Emergency Upgrade
Dynamic Host Configuration Protocol ("DHCP") Configuration - Modify
IP Address/Subnet Mask Changes
Device (e.g. switch, controller) Virtual LAN Changes – Modify
Device Spanning Tree Configuration – Modify
Filters/Access Lists – Modify
Management Access List – Modify

3. **Customer Responsibilities.** Customer will do the following:

3.1 **WLAN Service Functions.**

Customer is responsible to perform certain user-oriented day-to-day WLAN Service functions including, but not necessarily limited to:

- configuration and update of individual end-user accounts;
- administration of the authentication appliance;
- end-user WLAN policies.

Customer is primarily responsible to perform system administrator WLAN Service functions, including but not necessarily limited to:

- definition of specific security policies;
- end-user access policies or restrictions;
- administration of end-user authentication and policy definition;
- support of end-user workstations, wireless clients and Tier One help desk support.

3.2 **Information and Access Requests.** Customer will provide Verizon with "Privileged" access mode to all WLAN devices. Customer will provide Verizon with the SNMP "Write Access Community String" for all monitored WLAN devices.

3.3 **Licenses.** Customer will obtain any necessary permits, licenses, variances, and/or other authorizations required by state and local jurisdictions for installation and operation of the CPE on Customer's premises or where the jurisdiction requires Customer to obtain the permit, license, variance and/or authorization.

3.4 **Building Space.** Customer will provide adequate building space, circuitry, facility wiring, temperature, humidity, and power to comply with the standards established by the manufacturer of the CPE for proper installation and operation of the Managed Service.

3.5 **IP Addresses.** Verizon reserves the right to use secondary IP addressing if Customer is using unregistered IP address space. If Customer will not allow secondary IP addressing, Customer agrees to pay reasonable costs for a dedicated management domain or an IP proxy hardware solution. Additionally, Verizon reserves the right to use border gateway protocol ("BGP") routing for the management of permanent virtual circuits ("PVCs") used to access and monitor Customer's Network. Customer must provide an IP address for each WLAN device as specified and approved by Verizon.

3.6 **Out of Band Access.** Out of band ("OOB") access is recommended for all Managed WLAN Full Management. Customer will provide at their cost either a dedicated, analog telephone connection or indirect cable access (such as a terminal server) for use by each OOB modem for troubleshooting each circuit/device that is part Managed WLAN Full Management. The analog telephone connection must maintain a minimum 9600 bits per second connection rate for site level service level agreements ("SLAs") to apply. If the customer elects not to deploy OOB Management, the TTR SLA and corresponding SLA credits are affected. The reduced set of SLA's as outlined in Exhibit B will apply. Managed WLAN OOB access is in addition to any wide area network ("WAN") or local area network ("LAN") OOB access. Managed WLAN service requires Customer to have one Verizon Managed WAN circuit.

3.7 **Supported Devices.** Only Verizon certified devices will be supported according to the approved Verizon design as outlined in Customer's SOR. Customer owned CPE must be under 24 hours a day x 7 days a week x 365 days a year maintenance coverage with a 4 hour response time.

4. **Reports.** All copies of any reports, recommendations, documentation, Customer Portal printouts, or other materials in any media form provided to Customer by Verizon hereunder will be treated as Verizon Confidential Information except as required by law or Customer's records-related policy.

5. **Service Level Agreement.** During the Term, Customer will receive the benefits of the Service Level Agreement that is attached to this Contract.

6. **Security Services Disclaimer.** Verizon does not guarantee that any Verizon security services will eliminate the risk or prevent damage to Customer's network from intrusions, viruses, trojan horses, worms, time bombs, cancelbots or other similar harmful or destructive programming routines. Verizon makes no warranties, guarantees, or representations, express, or implied, that all security threats and vulnerabilities will be prevented or detected or that the performance of the Verizon security services will render Customer's systems invulnerable to security breaches.

7. **Rates and Charges.** Refer to Exhibit A for Rates and Charges.

Net Conferencing
Service Attachment

1. **Service Description**

1.1 **Net Conferencing.** Net Conferencing provides a multipoint Web-based service that enables Customer to conduct a conference call allowing text, documents, data or images (collectively, "data") to be transmitted via the Internet either with a reserved session or without a reserved session ("on demand"). Net Conferencing may be used to provide data on a one-way, one-to-many, view-only basis or on a multipoint, many-to-many, collaborative basis. To initiate a session, a Net Conferencing leader and participants must have browser access to the Internet. The Net Conferencing leader and participants may also access an accompanying Audio Conferencing call. Verizon allots each participant an individual server connection (or "seat") on the Net Conferencing server. Verizon provides Net Conferencing powered by different third party platforms (each a "Platform", collectively, "Platforms").

1.2 **Definitions**

1.1.1 **Leader.** A "Leader" is defined as the Customer contact requesting a conference.

1.1.2 **Participant**. A "Participant" is defined as any Customer-authorized party joining the conference.

1.3 **Options.** Net Conferencing is available in one of four options:

- **Instant Net Conference** allows Leaders to create net conferences on demand for up to 250 participants. Each Instant Net Conference provides a personal meeting ID and Leader-identified password.

- **Advanced Net Conference** provides Leaders a portal for scheduling and managing Net Conferences. This service integrates with Verizon's Instant Meeting Audio Conferencing services and other popular third party applications. Advanced Net Conference can support up to 500 participants.

- **Customized Net Conference** provides Customer with a dedicated website that allows Customer to schedule and access Net Conferencing via either the Microsoft or Cisco WebEx platform. The number of Participants depends on the Customized Net Conference product selected. Customized Net includes the same features as Advanced Net.

- **Reserved Net Conference** enables Customer to schedule a Net Conferencing session for a specified date, time and up to 1,250 Participants, conducted with a concurrent attended audio conferencing conference call. A cancellation charge applies if a scheduled Net Conference session is cancelled within 30 minutes of the scheduled session time.

Applicable Audio Conferencing charges are in addition to any Net Conferencing charges.

1.4 **Billing Options.**

1.4.1 **Per-Minute Option.** For the Per-Minute Billing Option, usage is calculated on a per-minute per-participant basis.

1.5 **Net Conferencing Platform Options.** Customer may select Net conferencing on either of the following platforms:

- **Cisco WebEx**, which offers the following sub-platforms:

- Meeting Center Pro
- Training Center
- Event Center
- Support Center
- Enterprise Edition

- Microsoft Office Live Meeting Professional

1.6 **Net Conferencing Features**

1.6.1 **Reserved Net Replay Set-up and Storage.** Participants are directed to an Internet website provided by Verizon for a Customer-defined period in increments of 30 days not to exceed a total of 360 days following the Net Conferencing session. Notwithstanding the above, Verizon reserves the right to limit the storage period to no more than 30 days in order to enable a Net Conferencing infrastructure change.

1.6.2 **Replay Storage for Advanced and Customized Net Conference with Microsoft Office Live Meeting (a non-chargeable feature).** Storage for self-serve replay and maintenance of presentations within Microsoft Office Live Meeting Professional is available. Presenters can start the recording of the net conference and select either to store the recording or not. Such recording may be stored on the Microsoft Live Meeting site designated by Verizon, to which site participants will be directed by the Conferencing leader to view the Net Replay. Net Replays described in this Section may be stored for a maximum of 365 days. Notwithstanding the above, Verizon reserves the right to limit the storage period to no more than 30 days in order to enable a Net Conferencing infrastructure change.

1.6.3 **Customized Net Conference Document Storage (Cisco WebEx).** Customers on the Cisco WebEx platform (except for Support Center) may store documents on the Customer's Customized Net Conference site. The first one gigabyte per Internet site per 30-day period is at no charge.

1.6.4 **Reserved Net Conference File Download.** Permits Customer to download a Net Replay recording via File Transfer Protocol (FTP).

1.6.5 **Reserved Net Operator Hosting.** Permits Customer to request at time of reservation of a Reserved Net Conference session a Verizon Net Conferencing Specialist to present Customer-defined data during a Net Conferencing session on behalf of Customer.

1.6.6 **Site Set-up/Branding.** Customer may customize the branding of its Net Conferencing websites.

2. **<u>Service Provisions</u>**

2.1 **Cancellation Charges.** A per-Reserved Net Conference connection charge will apply for each pre-scheduled Reserved Net Conference either cancelled by Customer within 30 minutes of the scheduled conference session time or during which there are fewer than two participating connections. These charges are identified in Appendix A.

2.2 **Overbooking Charge.** An overbooking charge will apply to each unused, Reserved Net Conference connection after the first 50 unused connections per completed Reserved Net Conference. These charges are identified in Appendix A.

2.3 **Nature of Service.** Net Conferencing does not provide service, maintenance or repair to or for any real or personal property.

2.4 **On Line Password for Access to Service and CPNI.** At the time Net Conferencing is established, Verizon will provide Customer's designated billing point of contact (the "Billing POC") with an authorization code ("Password"), which Customer and the Billing POC may use to access Net Conferencing and obtain information about Net Conferencing on-line that may include "CPNI" (as defined in the Agreement). In order for the Billing POC to receive the Password, Customer will name the Billing POC as a CPNI Authorizer following the process set forth in the Agreement. [Customer agrees that the Billing POC is also authorized to use the Password to establish Net Conferencing for Customer personnel and to disclose the Password for Net Conferencing and CPNI access to other personnel of Customer, and that such personnel are authorized by Customer to access Net Conferencing and CPNI. Customer will be solely responsible for use and disclosure of the Password by Customer personnel.

2.5 **Access to CPNI.** Customer's use of Net Conferencing Service may enable access to Customer Proprietary Network Information ("CPNI"). As a condition of such access, Customer agrees:

- To execute a "Designation Of Customer Net Conferencing Administrator(s) With CPNI Authorizer" form provided by Verizon (see Appendix I), designating in writing one or more Customer "Administrators" authorized to access CPNI and to identify end-users authorized to access CPNI either directly or via an online application such as the Integrated Communications Package (ICP), if applicable; and

- To cooperate with Verizon's reasonable authentication and security procedures for access to CPNI, including, without limitation, password resets and re-authentication of authorized end-users.

Note: This form must be filled out whenever a new Net Conferencing Service Administrator is named or removed, or whenever an existing Net Conferencing Service Administrator needs a new password (for example, because it has been lost or forgotten).

Appendix I

Agreement to Protect CPNI

Customer	**[INSERT CUSTOMER FULL LEGAL NAME]**
Signature	
Name	
Title	
Date	

THIS AGREEMENT TO PROTECT CPNI ("CPNI Protection Agreement" or "Agreement") is made on this [INSERT DAY] day of [INSERT MONTH], 200[INSERT YEAR NUMBER] ("Effective Date"), by and among Verizon Business Network Services Inc., on behalf of MCI Communications Services, Inc., d/b/a Verizon Business Services and

its affiliates (collectively or individually "Verizon") and [INSERT CUSTOMER'S FULL LEGAL NAME] and its affiliates ("Customer"), through their authorized representatives' signatures above and Verizon's acceptance of them. Verizon acceptance occurs upon Verizon's verification that an unaltered Customer-signed document is received by a Verizon implementation center.

WHEREAS, the parties have entered into one or more agreements (each a "Service Agreement") relating to the provision by Verizon to Customer of telecommunications services, interconnected Voice over IP services, and any other services that may hereafter become subject to the Federal Communications Commission rules governing Customer Proprietary Network Information ("CPNI"); and

WHEREAS, the parties desire to amend the Service Agreements by this Agreement to establish terms under which CPNI may be provided by Verizon to Authorized Customer Representatives (as defined below);

NOW, THEREFORE, in consideration of the mutual promises set forth below, and intending to be legally bound hereby, the parties agree to add the following to the Service Agreements.

1. **Protection of Customer CPNI**

1.1 Verizon will protect the confidentiality of Customer CPNI in accordance with applicable laws, rules, and regulations. Verizon may access, use, and disclose Customer CPNI as permitted or required by applicable laws, rules, and regulations and this Agreement.

1.2 Verizon may provide Customer CPNI (including, without restriction, call detail) to representatives authorized by Customer ("Authorized Customer Representatives" as defined below).

1.3 Verizon may provide Customer CPNI to Authorized Customer Representatives via any means authorized by Verizon that is not prohibited by applicable laws, rules, or regulations, including, without restriction: to the Customer's email address(es) of record (if any) or other email addresses furnished by Authorized Customer Representatives, to the Customer's telephone number(s) of record or other telephone numbers provided by Authorized Customer Representatives, to the Customer's postal (U.S. Mail) address(es) of record or to other postal addresses furnished by Authorized Customer Representatives, or via Verizon's online customer portal or other online communication mechanism.

1.4 Authorized Customer Representatives include Customer employees, Customer agents, or Customer contractors, other than Verizon, who have existing relationships on behalf of Customer with Verizon customer service, with regard to Customer's account, or other Verizon representatives and all other persons authorized in written notice(s) (including email) from Customer to Verizon. Authorized Customer Representatives shall remain such until Customer notifies Verizon in writing that they are no longer Authorized Customer Representatives as described below. Customer agrees, and will cause Authorized Customer Representatives, to abide by reasonable authentication and password procedures developed by Verizon in connection with disclosure of Customer CPNI to Authorized Customer Representatives.

1.5 Customer's notices of authorization or deauthorization must be sent to Verizon's service or account manager, and must contain the following information:

- the name, title, postal address, email address, and telephone number of the person authorized or deauthorized;
- that the person is being authorized, or is no longer authorized, (as applicable) to access CPNI; and
- the full corporate name of the Customer whose CPNI (and whose affiliates' CPNI) the person can access or can no longer access as applicable.

1.6 During the Service Agreements, Customer will at all times have designated, below, in an attachment containing the same data elements listed below, or in a separate writing sent to the service manager or account manager, representatives ("CPNI Authorizers") with the power to authorize Customer representatives to access CPNI under this Agreement, and who are themselves authorized to access CPNI of Customer and its affiliates. Additions or removals of CPNI Authorizers will be effective within a reasonable period after Verizon has received a signed writing of the change, including the affected person(s)' name, title, postal address, email address, and telephone number.

Name	Title	Tel. No.	Email	Postal Address

2. If Customer is served by at least one dedicated Verizon representative under the Service Agreements (that can be reached by Customer by means other than calling through a call center), Verizon may suppress certain Significant Account Change (SAC) notices to Customer.

3. The defined terms set forth in the preamble and recital clauses of this Agreement are deemed contractual.

4. Except as modified by this Agreement, the Service Agreements remain unchanged and in full force and effect.

Appendix 2

Authorization or Deauthorization of User Access to Customer Proprietary Network Information (CPNI)

BY:

Customer	**[Insert Customer's Full Legal Name]**
Name	[Customer Signatory Must Be a "CPNI Authorizer"]
Title	
Date	
Signature (if faxed or mailed)	

By sending this email or signing above (as applicable), I hereby either (1) authorize the User(s) named below (or on the attached spreadsheet containing the same data elements set out below) to have access to CPNI* or (2) deauthorize the named User(s) from having access to CPNI, for the Customer named below and Affiliates. This authorization shall be valid until revoked by me or another Customer CPNI Authorizer in writing. Revocation of authorization shall be sent to Verizon at the email, fax or postal address (as applicable) provided by my Verizon Service Manager or Account Manager. I am authorized to grant such CPNI access and acknowledge that to be effective, this document must be either emailed from the address that the Customer named below has identified as mine, or if sent by fax or postal mail, it must be signed by me.

Customer Name	[Insert Custome'sr Full Legal Name]
NASP ID and GUDUNS ID (where available)	[Insert Customer NASP ID and GUDUNS ID]

Name of User	Company and Title	Tel. No.	Email	Postal Address	Add	Remove
					☐	☐

3.1 **Usage Charges.** Calculation of usage begins when a Leader initiates or Participant joins a net conference and ends when the last participant in the conference call disconnects. Calls are subject to a one-minute initial period and are billed in one-minute increments. All charges will be rounded up to the nearest one-minute billing increment. If a computed charge includes a fraction of a UK pence, European Euro, Hong Kong cent, Singapore cent, Japanese yen or Australia cent the fraction is rounded up to the nearest whole pence, cent or yen, as applicable.

Private IP Satellite Access Service
("PIP Satellite Service")
Service Attachment

1. **Service Description**

1.1 **Scope of Service**

1.1.1 PIP Satellite Service customer sites in the U.S. will be connected via broadband satellite with access to Verizon's Private IP network, a managed network-based VPN Service. Terms and conditions set forth below apply to PIP Satellite Service only. Private IP service (i.e., the network-based service) is available via a separate Verizon service attachment.

1.1.2 Customer is responsible for the operation and configuration of its own Local Area Network ("LAN"). Customer is solely responsible for all hardware, software, equipment, systems, cabling and facilities ("Customer Equipment") supplied by Customer and used in conjunction with the PIP Satellite Service. All Customer Equipment must be compatible with the PIP Satellite Service. The PIP Satellite Service requires Customer to purchase certain equipment ("CPE") and software from Verizon as shown in "Rates and Charges", below. Customer will provide Verizon with such access to Customer Equipment and CPE and such assistance as Verizon reasonably requires in order to provide the PIP Satellite Service.

1.1.3 **Disaster Recovery (Backup).** Disaster Recovery (Backup) provides an alternate diverse access path for Customer's occasional use if its primary terrestrial communications path fails. Disaster Recovery (Backup) is available if Customer purchases a minimum of 10 sites with a common subscription data rate for backup purposes. The available bandwidth pool is comprised of 10% of the selected subscription rate. Disaster Recovery (Backup) thus provides sufficient bandwidth to back-up 10% percent of the aggregate bandwidth of Customer's PIP Satellite Locations. The following example illustrates:

For Disaster Recovery (Backup) purposes, Customer purchases 100 PIP Satellite Locations, each with a 1024 x 1024 kbps data rate. Each of the 100 VSAT locations contributes to the overall shared bandwidth pool at 102.4 Kbps (10% of its data rate) resulting in an aggregate bandwidth pool of 10,240 kbps – large enough to support 10 Disaster Recovery (Backup) 1024 kbps sites (10% of Customer's 100 PIP Satellite Disaster Recovery (Backup) Locations) at any single point in time.

1.2 **Service Features**

- 7x24x365 Customer support Help Desk.
- Use of up to 5 static IP address per satellite CPE site. IP addresses may be changed by Verizon at any time.

1.3 **CPE.** Standard Satellite CPE consists of an outdoor dish antenna, outdoor radio frequency transmit and receive units, an indoor satellite terminal, an I-Direct 3100 modem and up to 100 feet of dual coaxial cable inter-facility links between the outdoor and indoor equipment. Risk of loss for the Verizon-provided CPE will pass to Customer upon receipt of the CPE by Customer. Customer is responsible for CPE shipping and handling charges billed through Verizon. Verizon will pass through to Customer any manufacturer's warranty it receives that is intended for Customer as an end user.

1.4 **Installation.** Installation is deemed complete after Verizon network operations and Customer confirm end-to-end connectivity of the PIP Satellite Service. Installations requiring more than what is included in Standard Installation are provided under Non-Standard Installation, below. Non-Standard installations may also extend the installation interval.

1.4.1 **Standard Installation.** Standard Installation consists of the following:

- Meeting with Customer's site contact in person, during normal business days, Verizon holidays excluded, between 8:00 AM and 5:00 PM, local time relative to the site ("Site Local Time").
- Gaining access to the site from Customer, and other areas of the building required to run cable or access the outdoor antenna area.
- Assessing the site for optimum mount design, and mutual agreement between the site contact and the installer.
- Mounting outdoor unit using standard, provided mounts, typically on the roof of the Customer's building. Preferred installation is a non-penetrating roof mount.
- Aiming and aligning antenna for optimum satellite signal quality.
- Two coaxial cable runs of up to 100 feet from the outdoor unit to the indoor unit location. Any cable runs in excess of 100 feet will be billed to Customer.
- Routing of cable runs to existing point of entry ("POE") in Customer's building. Extended wiring within Customer's building is Customer's responsibility.
- Proper grounding of the outdoor unit. Up to 35 feet of ground wire will be provided to meet or exceed National Electrical Code Article 250 and Article 810 for grounding in the United States or such grounding necessary to comply with Federal, State, or Local codes. Any ground wire in excess of 35 feet will be billed to Customer.
- Confirming proper connection between the indoor unit demarcation point (Ethernet port) and the Verizon Network.
- Electronically activating the satellite CPE with Verizon's gateway for delivery of Private IP Service connectivity.
- Clean up as necessary.

1.4.2 **Non-standard Installation**. Non-standard installation is priced at an hourly labor rate basis. Non-standard Installations costs will vary based on distance of any cable extension, conduit construction within the building, power and space constraints, and other factors. Examples of Non-standard installations include, but are not limited to the following:

- Ground-level installation requiring trenching, hole drilling, etc.
- Penetrating roof mounts.
- Pole mounts.
- Ground mounts.
- Roof buildups to support non-penetrating mounts, on roof structures with corrugated roofing material.
- Use of cranes or other specialized equipment.
- Structural surveys required to verify building or roof structure's capability of supporting prescribed outdoor equipment.

1.5 **Maintenance.** Customer may choose from among the following maintenance programs for service that is not covered by the manufacturer's warranty referenced above.

1.5.1 **Standard On-Site Maintenance (<u>Available in U.S. Mainland Only</u>).**

1.5.1.1 **Standard On-Site Maintenance.** Standard On-Site Maintenance includes on-site arrival as per Customer-selected maintenance response time and consists of:

- Troubleshooting and fault isolation of the CPE.
- Reorientation and re-pointing of the antenna subsystem in the event of misalignment during installation.
- Reactivating the PIP Satellite Service.
- Obtaining necessary sign-offs from Verizon's network operations and Customer help desk.

1.5.1.2 **Response Times.** Response time is Next Business Day – 8AM–5PM. Technician arrives on-site on the next business day from the time of Customer's confirmed problem and call registration; except Verizon holidays, between 8:00 AM and 5:00 PM, Site Local Time.

- **Next Business Day – 8AM–5PM.** Technician arrives on-site on the next business day from the time of Customer's confirmed problem and call registration; except Verizon holidays, between 8:00 AM and 5:00 PM, Site Local Time.

1.5.2 **Non-standard On-Site Maintenance.** Maintenance service is available for services or locations that are outside the scope of Standard On-Site Maintenance (see above). Examples of Non-Standard On-Site Maintenance include but are not limited to the following:

- Maintenance, repair, or replacement of CPE damaged or lost through events, such as, but not limited to, catastrophe, accident, lightning, theft, misuse, fault, or negligence of the Customer, or causes external to the CPE, including, but not limited to, failure of, or faulty, electrical power or air conditioning, operator error, failure or malfunction of data communication equipment not provided to Customer by Verizon;
- Maintenance, repair, or replacement of CPE damaged or lost from any cause other than intended and ordinary use or force majeure events as set forth above. Verizon does not guarantee that maintenance or repair of any CPE will restore the CPE to a satisfactory condition;
- Reorientation or re-pointing of the antenna subsystem in the event of misalignment caused by Customer;
- Service required due to changes, modifications, or alterations in or to the CPE by anyone other than Verizon, Verizon subcontractors and other Verizon agents, other than Verizon-approved upgrades and configuration changes; or
- De-installation, relocation, or removal of the CPE or any accessories, attachments, or other equipment.
- Hourly rates are set forth for "Non-Standard On Site Satellite CPE Maintenance Service" in Appendix A**.**

2. **Rates and Charges.** Customer will pay the applicable monthly recurring charges ("MRCs"), non-recurring charges ("NRCs") and other charges for PIP Satellite Service. Private IP Service (i.e., the network service) is available through Customer's subscription to the Private IP Service Attachment. Current PIP Satellite Service MRCs are set forth in Appendix A, and are based on the bandwidth and type of service (Data Applications or Voice Applications) selected. Billing for the service will commence when PIP Satellite Service is made available for Customer's use. Charges for Customer Premises Equipment ("CPE") shall be invoiced upon shipment. MRCs are invoiced monthly in advance.

The PIP Satellite Service MRC for Standard Service includes Remote Network Management—Service Tier 1, as shown in Appendix A.

Shipping and Handling charges are NOT included in any pricing represented for CPE, Parts etc. These charges will vary based on locations, equipment chosen etc. A quotation for these charges, in addition to applicable taxes that are passed through to the customer, will be provided after the order has been received.

3. **Service Provisions**

3.1 **Failed Dispatch for Installation.** Verizon will bill a Failed Dispatch fee, as provided in "Rates and Charges" above, when a technician is dispatched and cannot complete an installation because Customer is (i) not present for the appointment; (ii) requests rescheduling; or (iii) cancels upon the technician's arrival. Verizon will also bill a Failed Dispatch fee under circumstances where Customer has not ordered and paid for an optional site survey prior to installation, the technician is dispatched but cannot complete the installation due to technical difficulties with the CPE or inadequate view of the southern sky. In such cases a site survey will be performed and billed to Customer, if Verizon reasonably determines the site survey is necessary to provision the PIP Satellite Service.

3.2 **Safety Issues.** During the initial site survey Verizon will notate any condition at or surrounding the site poses a potential safety issue for the technicians. If at installation Verizon reasonably determines that the issues have not been addressed, then Verizon may without liability cancel the call until the safety hazard is resolved to the satisfaction of Verizon.

3.3 **CPE Restrictions**

3.3.1 Customer is responsible for obtaining all permits, permissions or other rights required to install the external dish antenna and coaxial cable at Customer's site. Such permits, permissions or rights may include, but are not limited to, roof rights, zoning variances, waiver of restrictive covenants or deed restrictions. CPE must be mounted on a fixed platform. Mounting of CPE on a moving platform is prohibited.

3.3.2 Customer will not copy the software resident on the CPE nor shall Customer sublicense, assign or transfer, whether through a network, service bureau, loan, or other means, any CPE, software or their documentation, or any derivative work or copies thereof, in whole or in part.

3.3.3 Customer will not use any software provided with the PIP Satellite Service other than with CPE at the CPE site. Use of the software by Customer for purposes other than in connection with the PIP Satellite Service shall be considered a material breach of the Agreement and shall be subject to prompt application of the termination provisions. Customer shall not alter, modify or adapt the CPE or any part of the CPE, including but not limited to translating, de-compiling, disassembling, reverse engineering or creating derivative works or products.

3.3.4 Customer will not use, or attempt to use, the CPE or the PIP Satellite Service for any Unauthorized Use. "Unauthorized Use" as used herein includes: (i) obtaining access to or use the PIP Satellite Service with intent to avoid payment, in whole or in part, of charges due, (ii) access to, use of, alternation of, or destruction of the data files, programs, procedures, or information associated with the software, (iii) use of any CPE or the PIP Satellite Service which causes or contributes to any malfunction or outage, or (iv) use of any CPE or the PIP Satellite Service for any purpose or in any manner which, directly or indirectly, violates the law or aids in any unlawful act or undertaking.

3.4 **Use of Facilities and Equipment.** Verizon may interrupt the PIP Satellite Service for scheduled or emergency maintenance or as otherwise set forth in the Agreement. Notwithstanding anything herein to the contrary, Verizon's obligation under this PIP Satellite Service Service Attachment is to furnish the PIP Satellite Service consisting of facilities and equipment that are exclusively of Verizon's choosing. Verizon may (without limitation) substitute facilities or equipment used to furnish the PIP Satellite Service, substitute comparable service, or discontinue the PIP Satellite Service, at any time. If for any reason this PIP Satellite Service should become unavailable, Verizon will make every commercially reasonable effort to migrate Customer to a comparable service. PIP Satellite Service may be discontinued without liability in response to a request from any governmental authority.

3.5 **Licenses and Authorizations**. In the event that Verizon's licenses and authorizations for the provision of services that are the subject matter of this PIP Satellite Service Service Attachment are denied or terminated by the relevant governmental authorities, or in the event that the performance of the services is materially affected by any applicable laws and regulations, Verizon may suspend or cancel the provision of services without incurring any penalties or liability.

3.6 **Service Level Agreement.** The Service Level Agreement ("SLA") for PIP Satellite Service are provided in Exhibit B of the Agreement.

Private IP Service
Service Attachment
VBSIII Plan B

1. **Rates and Charges.**

   1.1 **U.S. Private IP.** Customer will pay Verizon's monthly recurring charges ("MRC") and non-recurring charges ("NRC") as specified in Exhibit A.

2. **Additional Terms and Conditions.**

   2.1 **Service Level Agreement.** The Service Level Agreement ("SLA") for this Service is located in Exhibit B.

   2.2 **Dynamic Bandwidth.** Customer's access circuits must be un-channelized. Dynamic changes to CAR values may be made not more than once per day. Dynamic changes to CAR values are set to occur based on the Greenwich Meridian Time Zone and not Customer's local time zone.

Secure Gateway Services
Service Attachment

Mobile User
Firewall

1. **Description of Services.** Secure Gateway Services is a suite of two services –Mobile User, and (standard) Firewall. Mobile User connect Customer sites and users to its Verizon Private IP service ("Verizon Network Service") via an IP Security ("IPSec") VPN from the Internet to a network-based Secure Gateway Universal Port on the Verizon network, enabling Customer's traffic to travel more securely between the Internet and the Verizon Network Service. The Secure Gateway Universal Port is a logical/virtual port that enables Customer to use each of the three Secure Gateway Services with a single port. Customer must order Universal Port as a prerequisite to ordering any other Secure Gateway services.

1.1 **Mobile User.** Secure Gateway–Mobile User enables Customer's mobile or remote users to access the Customer's Verizon Network Service via an IPSec VPN over an Internet service connection. Secure Gateway–Mobile User is a single-user service utilizing a software client that resides on a PC or other device that will build an encrypted tunnel to Customer's Secure Gateway–Universal Port. The Internet service connection may be Verizon-provided or customer-provided (i.e., obtained from an "Alternative Service Provider").

1.2 **Firewall.** Secure Gateway–Firewall provides perimeter security to Verizon Network Service customers desiring Internet service from the Verizon Network Service via a network-based Firewall. Secure Gateway–Firewall provides firewall configuration, administration, support, and the use of a firewall system consisting of firewall equipment and related software that is owned and supported by Verizon on the Verizon IP network. Customer may select the standard Secure Gateway–Firewall configuration for each Universal Port, allowing Customer to select one of Verizon's pre-packaged firewall templates. Customer acknowledges that Secure Gateway-Firewall options may not be available at some Universal Port locations.

2. **Rates & Charges.** Customer will pay monthly recurring charges ("MRC"), and non-recurring charges ("NRC") for Universal Port. Customer will pay additional MRCs and NRCs for any equipment and equipment management required or for optional services or features that may be applicable to the particular Secure Gateway Service(s) that include Mobile User and Firewall subscribed to under this Service Attachment. "Administrative" NRCs (e.g. cancellation charges or expedite charges) will apply as set forth in Appendix A.

2.1 **Universal Port.** Customer will pay the MRC and NRC set forth in Appendix A and based on the Secure Gateway – Universal Port speed. A fail over port is included at no additional charge, but may not be used for load sharing. Secure Gateway Universal Port speeds above 44.184 Mbps may be ordered and installed on an Individual Case Basis ("ICB") only.

2.2 **Secure Gateway Services**

2.2.1 **Mobile User.** There are no charges for Mobile User additional to the Universal Port charges set forth above under this Service Attachment.

2.2.2 **Firewall.** There are no charges for standard Firewall additional to the Universal Port charges set forth above.

2.3 **Other Services Required for Mobile User**

2.3.1 **Mobile User**. Broadband Internet service, such as Verizon's Internet DSL and Internet Cable Services, cellular (wireless) access, or Internet Dedicated (T1) Service, is required for

Secure Gateway-Mobile User. As described above in Section 1.2, purchase of Verizon's Mobile Workforce Manager also is required for Secure Gateway-Mobile User. Customer may also use third party Internet access at their discretion.

2.4 **Network Service Required.** Verizon Network Services such as Private IP Service are provided pursuant to a separate service attachment.

3. **Service Provisions**

3.1 **Customer Responsibilities.** Customer agrees to:

(a) be solely responsible for its authorized users compliance with the terms set forth in the Agreement and in this Service Attachment;
(b) designate and maintain an authorized system administrator responsible for administering Authorized User accounts;
(c) designate and maintain an authorized Firewall Administrator responsible for defining, tracking and communicating to Verizon the initial Secure Gateway- Firewall system rules as well as any future modifications to those rules;
(d) be solely responsible for the set-up, administration, and maintenance via secure connection of all Authorized User accounts, including without limitation dial-up Internet authorizations and Authorized User identifications and passwords; and
(e) obtain all licenses, permits and approvals that may be required by any governmental authorities for the use of equipment, software, technical data provided hereunder in conjunction with Secure Gateway Services.

3.2 **Customer Responsibility for Maintaining Security Program.** Verizon does not guarantee that use of Secure Gateway Services will prevent unauthorized access to Customer's systems. Customer is responsible for maintaining an overall security program, including but not limited to: (i) exercising due diligence in protecting Customer systems and information that might be used to access, exploit, or otherwise affect Secure Gateway Services (ii) modifying, updating, deleting and otherwise administering such access information and passwords with respect to Customer's Authorized User accounts, and (iii) promptly notifying Verizon in writing of any security compromise with respect to such information or Authorized User accounts. .

3.3 **Billing.** Billing for Secure Gateway – Universal Port will commence upon testing and turn up of the Secure Gateway connection by Verizon. Customer may order the Universal Port in advance of the particular Secure Gateway Service, such as for advance planning purposes. However, billing for the Universal Port will commence as described above, regardless of whether any of the particular Secure Gateway Services –, Mobile User, or Firewall -- have been ordered.

3.4 **VPN Design.** The design of the VPN shall be provided by Verizon based on information provided by Customer to Verizon. Customer must provide all accurate, complete and up-to-date information reasonably requested by Verizon to provision the VPN. Any changes to the initial design of the VPN must be mutually agreed in writing through submission of a change order prior to implementation of such change to ensure the new design is within Verizon's design parameters.

3.5 **Additional Service Provisions Applicable to Firewall**

3.5.1 **Firewall Configuration Submission**. Verizon will configure the standard Secure Gateway–Firewall in accordance with Customer's initial order selection of one of Verizon's pre-packaged firewall templates.

3.5.2 **Administration**. After installation of the standard Firewall configuration, and upon Customer request, Verizon will administer the standard Firewall within the guidelines

set forth in the Firewall service templates, which templates will be provided to Customer during implementation of the Firewall.

3.5.3 **Configuration Backups**. Verizon will maintain backups of Customer's Firewall System configuration and regularly store such backups at a remote location.

3.5.4 **IP Addressing.** IP addresses must be publicly routable and are provided by Verizon. Customers who require IP addresses above the Verizon-specified quantities must justify the additional addresses. Alternative Service Providers also must provide publicly routable IP addresses.

3.5.5 **Technical Support**. Verizon will provide second-level helpdesk support to Customer as a part of Secure Gateway–Firewall administration. With respect to the standard Secure Gateway–Firewall, the service includes a limited set of Internet service rules that must be identified and defined by mutual agreement between Customer and Verizon. These rules will be applied to the standard Firewall at the time of service provisioning. Verizon will reasonably consider Customer's requests for desired updates or modifications to the standard Firewall rules.

3.5.6 **Access to Firewall.** Verizon reserves the right to access and revise any Secure Gateway Firewall system configuration where required to satisfy the obligations of the Agreement or any order**.**

3.6 **Additional Service Provisions Applicable to Mobile User**

3.6.1 **Internet Service**. Customer may choose to use Verizon's Internet access services which are provided pursuant to separate service attachments. Customer may also use third party Internet access at their discretion.

3.6.2 **Authentication.** Secure Gateway–Mobile User requires authentication to verify if Authorized Users are authorized to access the customer's network. Authentication methods include Verizon – hosted or Customer-hosted authentication. Customer-hosted authentication options include UserID/PSWD (via RADIUS) or SecurID Token (via RADIUS).

3.6.3 **Encryption**. Customer must choose one of Verizon's two encryption capabilities: 3DES or AES.

3.6.4 **Access Software Required.** Upon activation, Verizon will provide Customer with the appropriate URL to use to download the VPN software client. As part of the downloading process, Customer must respond to questions in order to comply with U.S. export control restrictions.

4. **Service Level Agreement.** The Service Level Agreement ("SLA") for Secure Gateway Services is located in Exhibit B.

Site Preparation Services Schedule
to the Voice and Data Equipment and Related Services Attachment ("VDE")

1. **Scope of Services.** Verizon will provide, from time to time upon Customer's order: i) Site Audit, ii) CPE site survey (either remote or on site) ("Site Survey"); iii) wireless assessments ("Wireless Assessment"), iv) inside wiring ("Inside Wiring") and extended demarcation wiring ("Extended Demarc") services(Inside Wiring and Extended Demarc services are referred to collectively herein as "Wiring Services"), v) installation for Customer provided CPE ("Customer CPE Installation"), vi) CPE moves, adds, or changes ("MAC"), or vii) de-installation of CPE ("De-installation") collectively referred to herein as "Site Services". Site Services will be provided at the location shown on the applicable quote(s).

   Site Services may be quoted as fixed price or on a time and materials ("T&M") basis. For T&M quotes, Verizon will provide an estimate of the cost of the Site Services ordered. T&M charges will include a minimum 3 hour charge; 1 hour for travel and 2 hours for Site Services ("Minimum Charge"). Verizon will bill in 15 minute increments for the actual hours worked or travelled over the Minimum Charge and for the actual materials used to deliver the Site Service. The actual length of time to complete a T&M services is dependent on a number of factors including, but not limited to, the size of the Customer's site, the number of devices at the Customer's site, the physical layout of the equipment, and the physical condition of the Customer's site.

   1.1 **Site Audit.** A Site Audit gathers and reports detailed information about Customer's site, including, an inventory of devices deployed and other pertinent information, device detail (vendor, device type, serial numbers, quantities, physical location within the building), demarc locations, circuits, and power availability. Site Audits are performed on a T&M basis for the Customer designated locations as shown in the applicable quote.

   1.1.1 Site Audits do not include:
   - Any logical data collection for any networking device or terminal access to any networking device.
   - Cabling or circuit tracing.
   - Physically moving any equipment from its current location (e.g. unplug or un-rack any equipment) in order to gather the necessary data.

   1.2 **Site Survey.** Customer may order Site Survey as a physical on-site survey or a remote Site Survey done via a phone call. A Site Survey consists of a survey of the proposed location for installing CPE and report on that location's suitability for that purpose with respect to environmental conditions (e.g., temperature, humidity, availability equipment cabinets/racks/closets), the availability of an appropriate power source, and the need for any additional inside wiring. Site Surveys may be performed on a T&M basis for the Customer designated locations as shown in the applicable quote.

   1.2.1 Unless performed on a T&M basis, Site Surveys are subject to the following limitations:
   - The time to complete the on-site Site Survey and generate a report must not exceed two hours.
   - All on-site work must be indoor work.
   - All on-site work must be completed in one site visit.
   - Remote Site Surveys must be completed in a forty-five minute phone consultation.

   1.2.2 Site Surveys do not include:
   - Any logical data collection for any networking device or terminal access to any networking device
   - Cabling or circuit tracing.
   - Physically moving any equipment from its current location (e.g. unplug or un-rack any equipment) in order to gather the necessary data.
   - CAD/Visio drawings in the Site Survey report.

   1.3 **Wireless Assessment.** Wireless Assessments are performed on a fixed price quote or on a T&M basis for the Customer designated locations as shown in the applicable quote.

   1.4 **Wiring Services.** Inside Wiring services consist of the installation of wiring to connect two items of Customer equipment. Extended Demarc services consist of the installation of wiring that extends wiring from the circuit LEC demarcation point (the point at which the LEC's regulated network ends and Customer's inside wire responsibility begins) to a point adjacent to Customer's network or equipment, as directed by Customer. Except as explicitly noted otherwise, the provisions for Wiring Services apply to both Inside Wiring and Extended Demarcs. Following completion of Wiring Services, Customer owns and is responsible for the care and maintenance of the installed wire and any connectors. Wiring Services are performed on a fixed price quote or

T&M basis for the Customer designated locations as shown in the applicable quote. Wiring Services are subject to the following limitations and requirements:

1.1.1 All work must be standard, non-custom indoor work, requiring no special equipment (e.g. hollow walls, drop ceilings or raised floors).

1.1.2 All work must be completed in one site visit.

1.1.3 New wire will be indoor-outdoor four-pair wire, at CAT 3, CAT 5, or CAT 5E, as specified by Customer at time of order. Verizon will use appropriate wire for the application if Customer does not specify the category of performance at the time of order.

1.1.4 Total length of new wire will not exceed 150 linear feet.

1.1.5 Wire will not be installed more than 12 feet in height from the ground or floor.

1.1.6 Verizon is not responsible for moving furniture, modifying fixtures, or other site changes.

1.1.7 Work may involve surface installation or installation through available ducts or other reasonably accessible conduits.

1.1.8 Work does not include running of conduit.

1.1.9 Work may involve drilling through walls, floors and ceiling. Work involving any of the following is considered nonstandard: drilling of masonry more than one inch thick, or any hole that penetrates the building slab, raised floor slabs, block walls, or any surface that requires a hammer or special drill.

1.5 **Customer CPE Installation.** For Customer CPE Installation services, a Verizon technician installs Customer provided equipment on Customer-provided racks, backboards, or other facilities. Verizon will verify equipment power-up, operation of network interfaces. No demarc extension is provided with Customer CPE Installation. Remote activation of the equipment and transport connectivity will be provided with Verizon transport services only or in certain locations where Verizon has specifically pre-approved remote activation. Local area network configuration or activation is not included with Customer CPE Installation. Customer CPE Installation is performed on a T&M basis for the Customer designated locations as shown in the applicable quote.

1.6 **MAC (Move, Add, Change).** Verizon will verify equipment power-up, operation of network interfaces. No demarc extension is provided with MAC. Remote activation of the equipment and transport connectivity will be provided with Verizon transport services only or in certain locations where Verizon has specifically pre-approved remote activation. Local area network configuration or activation is not included with MAC. MACs are performed on a T&M basis for the Customer designated locations as shown in the applicable quote.

1.6.1 **Move.** For moves, Verizon will de-install the Customer designated equipment from the current designated Customer location and then install the same equipment in the new designated Customer location within the same building as shown in the applicable quote. Customer must provide packaging to protect the equipment to be moved.

1.6.2 **Add.** Adds are available via Installation service described in the Voice and Data Equipment and Related Services Attachment ("VDE").

1.6.3 **Change.** For changes, Verizon will deliver the System components and/or software required to implement the requested change to the Customer designated location as shown in the applicable quote.

1.7 **De-installation.** For De-Installation, Verizon will de-install equipment at Customer's designated locations as shown in the applicable quote. Verizon will power down and pack equipment in Customer provided packaging. At Customer's request and expense Verizon will move the equipment to a new location within the same building but will not unpack or re-install the equipment. Premises cables will be left in place and not removed or changed. Equipment or packaging disposal is not included as part of De-installation. De-installation is performed on a T&M basis.

1.8 **Design and Engineering.** Design and Engineering services consists of activities including consulting and implementation services for both Verizon managed networks and Customer networks not managed by Verizon. Specific consulting and implementation services are delivered remotely and may include, but are not limited to, network analysis to determine feasibility for new technology deployment, network planning for growth or consolidation, and engineering assistance with the implementation of a new network. Design and Engineering services are only available in the United States and are performed on a T&M basis for the Customer designated locations as shown in the applicable quote. Design and Engineering is subject to the following limitations and requirements:

1.8.1 Design and Engineering services is an hourly, remote labor service and does not include on-site dispatches, transport, access, CPE, or physical network upgrades. Updates to the Customer's network or CPE may be provided at an additional cost.

1.8.2 Verizon will provide a report detailing the work completed, if requested, at the Design and Engineering hourly rate.

2.0 **Site Service Provisions.** Site Services are subject to the service provisions of CPE Deployment Services Provisions and Customer Responsibilities as found in Part II, Section 3.6 and 3.7 of the VDE in addition to terms and conditions relevant to services generally in the VDE and the terms below. For such provisions and responsibilities, the term "CPE Deployment Services" will be taken to mean "Site Services" and the System may include Customer provided CPE as applicable.

2.1 **Service Limitations.** Site Services are subject to the following (without limitation):

2.1.1 Verizon may suspend and/or cancel service at any time if Verizon reasonably determines that site conditions pose a safety risk. Verizon is not responsible for any costs related to the presence of any hazards, whether in plain view or uncovered while the services are being performed.

2.1.2 Site Services do not include providing configurations for CPE.

2.2 **Customer Responsibilities.** Customer is responsible for the following (without limitation):

2.2.1 Obtaining all necessary permits, licenses and other permissions (e.g., low-voltage, other special licenses, rights related to CPE including access, etc.).

2.2.2 Complying with, and notifying Verizon of, all union and other labor-related requirements and special building specific conditions between landlord and tenant.

2.2.3 Notifying Verizon of applicable building, fire and other code requirements, as well as any relevant site conditions.

2.3 **Performance.** Verizon controls the means, methods, places and time of its performance of the Site Services (including the use of subcontractors and consultants); references to "Verizon" in this schedule include all Verizon agents and contractors. While working on a Customer site, Verizon will abide by Customer's stated security rules for the site.

2.4 **Warranties.** In addition to the warranties found in the Agreement, the following apply:

2.4.1 **Verizon Wiring Services Warranty.** If any wire or connectors provided by Verizon as part of Wiring Services fail solely due to a defect in Verizon's workmanship or materials within one year after installation, Verizon will repair or replace (at its discretion) the failed wire or connector. This warranty does not cover wire that has been subject to repair by third parties or damage caused Customer misuse or abuse or by a Force Majeure event.

If Verizon dispatches a technician in response to a Customer warranty claim and determines that the wire or connector failed for a reason other than a defect in Verizon's workmanship or materials, or if Verizon finds no trouble, Customer will pay a No Fault Found charge ("NFF Charge"). The NFF Charge if the technician is dispatched and makes the determination that an NFF Charge applies between 7 a.m. and 7 p.m. (at the dispatch location) during regular Verizon work days is listed in Exhibit A. The NFF Charge if the dispatch or determination is made before 7 a.m. or after 7 p.m. is also listed in Exhibit A.

2.4.2 **Customer Warranty.** Customer warrants that it owns all right, title, and interest in and to, or has the license for and the right to grant Verizon access to, any programs, systems, data, materials or other information furnished by Customer to Verizon for the purpose of enabling Verizon to perform the Site Services. Customer further warrants that it has the proper authority to provide access to sites and locations within sites required for the provision of Site Services.

3. **Fixed Price Rates and Charges.** Customer will pay the charges listed in Exhibit A for fixed price Site Services.

Routing Code: 1/2/5CPE/PS

UNIFIED COMMUNICATIONS AND COLLABORATION AS A SERVICE ("UCCaaS")
SERVICE ATTACHMENT

PART I: RATES AND CHARGES. Based upon Customer's order, Customer will pay one or more package and a la Carte rates, as applicable, based on the average number of individuals configured in the UCCaaS database ("End Users") during a billing month. The average is calculated based on aggregate daily measurement of total configured End Users for a billing month divided by the number of days in the billing month. Customer is responsible for non-recurring costs associated with handsets and any CPE. Conferencing may be purchased pursuant to a Conferencing Schedule attached hereto. Upon acceptance by Customer, UCCaaS will be in production.

The pricing in the contract applies to all of Customer's users.

Sites with fewer than 5 end users are considered self-installed sites by Customer, unless noted under a separate Statement of Work ("SOW"). Verizon will not perform activities in 1.2.1.2 under on-site Field Services for self-installed sites.

Should Customer's implementation and integration requirements exceed those documented in the detailed service description, Part II, 1.2, an incremental SOW may be required to be executed between the Parties in order to document and bill for the added expenses incurred with implementation.

1. **Package Pricing.** See Exhibit A.

2. **A la Carte Pricing. See Exhibit A.**

3. **Additional Charges.**

   3.1 **Administrative Change Management** Customer may order one or more of the Verizon-performed administrative change move, add, change, delete ("MACD") activities shown below. When available and upon Verizon's approval, Customer may perform certain MACDs for no additional cost.

Administrative Change Management Activities
Add, Remove, Update, Change an IP Phone or soft phone
Add, Remove, Change a User, Directory Listing, Call Capabilities
Add, Remove, Change Extension Mobility Set Up/Login Features
Add, Remove, Change Voicemail Box
Voicemail Password Reset
Add, Remove, Change a Presence User

   3.1.1 **MACD Support Block.** Customer will be charged the flat MRC shown in Exhibit A for each month during the term ("MACD Support Block"), whether or not a MACD activity is ordered. Each MACD activity requested by Customer and performed by Verizon in excess of the monthly MACD activities shown in Exhibit A will be charged the overage rate shown in Exhibit A.

   3.1.2 **MACD per End User.** Customer will be charged as identified in Exhibit A per End User, based on the Customer's monthly average total number of End Users configured for UCCaaS:

PART II: SERVICE DESCRIPTION AND REQUIREMENTS. Unified Communications and Collaboration as a Service ("UCCaaS") may include, to the extent specified in a SOW, the design of the UCCaaS solution (including applications for IP-based PBX, voicemail, presence/instant messaging, and mobility service), activation of specified Verizon hosted, router, handset, PC-based hosted collaboration solutions ("HCS") applications, and ongoing management of Customer's UCCaaS applications in the United States only. Verizon will provide technical, consultative, design and installation services specified in this Service Attachment. References to "Verizon" in this Service Attachment include all Verizon affiliates, agents and contractors.

Upon Customer's order, Verizon will provide certain technical, consultative, design or installation services and deliver any reports or other deliverables (collectively, "Deliverables") specified herein or in SOW(s), if required.

The SOWs will become a part of this Service Attachment upon execution by Customer. Such services and Deliverables under a particular SOW are referred to as a "Project" which may be delivered in phases depending on the complexity of each Project. This Service Attachment, as supplemented by SOWs entered into from time to time, and the master agreement ("Master Agreement") (collectively, the "Agreement") sets forth the terms and conditions for each Project. Customer will also receive a statement of requirements ("SOR") that outlines other information related to the Project that is not included in the Agreement.

1. **Detailed UCCaaS Description.** UCCaaS is based upon underlying Cisco Unified Communications applications that are dedicated to Customer and hosted in a Verizon data center on a shared infrastructure. To complete the UCCaaS solution, Customer must separately purchase Verizon Private IP Service and either Verizon VoIP IP Trunking Service or local service trunking. Additional capabilities such as net conferencing or audio conferencing may be added to UCCaaS by adding the relevant schedule to this Service Attachment.

1.1 **Assessment and Managed Take-Over Service.** Verizon, with Customer's assistance, will evaluate Customer's existing network to determine the feasibility of adding UCCaaS. This evaluation will be performed pursuant to a SOW with the details and costs defined therein. Verizon may remotely collect Customer's requirements, system information, application and End User requirements. All network data must be provided by Customer, including, but not limited to, Customer interviews, Customer-provided network diagrams, and site-specific information.

At the close of the initial process, Verizon, in cooperation with the Customer, will i) inventory Customer's network; ii) identify any physical/logical activities required to provide UCCaaS, and iii) identify any associated costs in bringing the network up to Verizon's standard required for UCCaaS. Customer is responsible to implement any upgrades identified by Verizon as part of this initial process at Customer's cost. At Customer's request and cost, Verizon will perform such upgrades.

1.2 **UCCaaS Configuration, Implementation, and Activation.** Following the initial assessment process, Verizon will i) determine application-specific design requirements, ii) install data center hardware and software components, and iii) configure application, system, and End User level information. This configuration will be performed pursuant to the Statement of Requirements document ("SOR"). The SOR will also outline the implementation steps. Upon acceptance of each installed site, Customer's UCCaaS site is considered activated.

1.2.1 **Implementation Services.** Specific information such as site addresses, numbers of users, and service mix related to Customer's standard implementation will be detailed in the SOR document. UCCaaS implementation includes:

1.2.1.1 **Application Components.** Configuration of existing UCCaaS data center components as required for Customer's UCCaaS solution.

- Configuration of Call Control and/or Voice Mail and/or Presence/IM
- Configuration of Voice on premises ISR Gateway(s)
- Configuration of Single Number Reach ("SNR")
- Configuration of Survivable Remote Site Telephony/Failover on existing premises router (per site)
- One remote Administrator Training Session
- Integration with Customer LDAP/Active Directory
- Configuration of Cisco analog/Cisco IP phones
- Configuration of one Music on Hold ("MoH") per site
- Configuration of one Auto Attendant from Unity Connection per site
- Configuration of 911 via failover ports for each site
- Configuration of SIP Trunking via Verizon Data Centers
- Configuration of Extension Mobility Profiles
- Configuration of Soft Client (IP Communicator/Jabber for Windows/Jabber Mobility Client/CUCILYNC or Verizon-approved client)
- Configuration of fax devices

1.2.1.2 **Premises Components.** Installation/Configuration of UCCaaS premises components as required for Customer's UCCaaS solution to integrate the application premises components with the existing UCCaaS Solution, including telephones and configuration of the SRST application on Customer's router.

Verizon will perform the following:

- Station Reviews
- Phone staging
- Remote Net-Conference End-User Train-the-trainer phone training
- On-site field services for the items below are only included if a location has 5 or more users:
  - Phone placement/testing
  - Implementation Support
  - Day-1 Support
  - Demonstration of how to install and test up to five (5) device applications (IP Communicator, Jabber for Windows, Jabber Mobility Client or CUCILYNC). Customer is responsible for all other remaining desktop installations and configurations.
    - NOTE: If location has less than 5 users, Customer will be provided with documentation explaining how to install and test device applications. Sites with fewer than 5 end users are considered self-installed sites by Customer, unless noted under a separate Statement of Work ("SOW")

1.3 **UCCaaS Services.** Customers may select one or more of the following UCCaaS packages, a la carte capabilities, or features at the rates listed above, if applicable. Packages and capabilities are assigned by Customer to each End User and may vary within Customer's End User base. Each package (and certain a la carte features) is allocated a number of allowed Devices as shown below. "Devices" are defined as physical endpoints, mobile clients, PC-based soft clients, or integration with third party client software.

1.3.1 **Packages:**

1.3.1.1 **Essential.** Essential provides limited Cisco Communications Manager features, including core IP call control (e.g., depending on Device type, call waiting, call transfer, music on hold, redial, and barge-in capabilities) but excluding mobility or single number reach. The Essential package is restricted to a maximum of one physical Device, which can be an analog phone or a low-end Cisco IP phone. Currently, the Cisco IP phones eligible for an Essential license are models 3905 and 6901. Verizon or Cisco may choose to modify IP models available for Essential service from time to time.

1.3.1.2 **Basic.** In addition to Essential capabilities, Basic supports more Cisco Communications Manager features, including additional IP call control features (e.g. call park, call pick-up, authentication codes, do not disturb, ad hoc conferencing, and speakerphone support) plus the ability to forward a call to a series of devices (i.e. single number reach). In addition to IP call control, Basic provides Cisco Unity Connection voicemail. Basic supports one Cisco-approved and certified physical Device.

1.3.1.3 **Enhanced.** In addition to Basic capabilities, Enhanced provides additional functionality including i) an indication to other users that an End User is online and telephony is available (i.e., presence) and ii) instant messaging on the End User's desktop. Enhanced supports one Cisco-approved and certified physical Device, plus one approved soft phone client per End User, or integration with an approved 3rd party soft phone client per End User. If no soft client is selected, End User may have up to two physical Devices.

1.3.1.4 **Premium.** In addition to Enhanced capabilities, Premium provides smart phone and desktop phone integration, and a mobility client for Verizon-specified smart phones which integrates the smart phone with the enterprise communications system or desk phone. Premium also includes support for up to ten Devices, of which one may be a mobile client, and one may be a desktop soft phone client or Cisco Communications Manager integration with another client.

1.3.2 **A la Carte.** Customers may add the following capabilities to a package or with the call control a la carte capability.

1.3.2.1 **Voicemail.** Cisco's Unity Connection voicemail.
1.3.2.2 **Presence/Instant Messaging.** Cisco's Unified Presence on the End User's desktop.
1.3.2.3 **Call Control.** Call Control provides Cisco Communications Manager features including core IP call control (e.g., call waiting, call transfer, music on hold, redial, and barge-in capabilities, call park, call pick-up, authentication codes, do not disturb, ad hoc conferencing, and speakerphone support) plus the ability to forward a call to a series of devices (i.e. single number reach). Call control supports a maximum of one physical Device.

1.3.3 **Laptop/Tablet Client Feature.** UCCaaS can be enabled on computer laptops and tablets with the installation of a Cisco-provided Jabber software client or other Verizon-approved software client that integrates with UCCaaS VoIP features. Customer is responsible for obtaining and downloading such client directly from the providers of such software clients. Once the appropriate client is installed, Verizon will provide UCCaaS functionality over the laptop or tablet, including inbound and/or out-bound calling. Inbound and outbound calling are individual UCCaaS features that must be ordered by Customer separately (each is provided on a stand-alone basis or in conjunction with each other).

1.4 **Management Services.** During production, Verizon is responsible to resolve both logical and physical problems with UCCaaS, with Customer's cooperation. Verizon may resolve a UCCaaS issue from within the i) hosted application in the data center, ii) NOC, or iii) by dispatching a technician to Customer's site, at Verizon's option.

1.4.1 **Monitoring.** Verizon provides proactive monitoring and management of UCCaaS components 24 hours a day, 7 days a week. Verizon will monitor and manage the UCCaaS platform hardware and applications within its data center, and certain UCCaaS related Customer premises WAN router applications (e.g., Cisco survivable remote site telephony "SRST").

1.4.2 **Issue Notification.** Verizon will open a trouble ticket and attempt to electronically notify Customer within 15 minutes of receiving an alarm for a critical application fault or critical service-impacting hardware failure.

1.4.3 **Performance Reporting.** In addition to reports provided by Verizon for Private IP and IP Trunking, Verizon will provide UCCaaS standard performance reports as determined by Verizon.

1.4.4 **Change Management Activities.** Verizon will perform remote change management activities at Customer's request that are included in the MRCs for UCCaaS. Verizon reserves the right to limit the number of change management activities performed by Verizon per month based on the size and complexity of Customer's implementation. Standard Change Management includes system administration, minor modifications, ad hoc data backup requests, application patches, media resource changes, advanced feature and device changes that are not design-impacting.

1.4.5 **Back Up of Data.** Verizon will back-up the UCCaaS platform operating system, Customer's voicemail data, application, application configurations, and End User directory information. Verizon will perform daily incremental differential back-ups and weekly full back-ups. Customer may request Verizon perform an on-demand backup by submitting a change management request.

1.4.6 **Upgrades.** Verizon will perform up to one upgrade per year per UCCaaS data-center based application without additional charge. Customer may be required to upgrade UCCaaS software if Cisco no longer supports Customer's current software or software revision level. Upgrades that require integration with Customer-managed third party applications or Customer-owned hardware are Customer's responsibility.

1.5 **Service Level Agreement ("SLA").** The applicable SLA is contained in the contract.

2. **Customer Responsibilities - General.** Customer will do the following:

2.1 **Information and Access Requests.** Upon request, Customer will provide information to Verizon that is reasonably necessary or useful for Verizon to perform its obligations hereunder. Customer will be responsible for the accuracy and completeness of all information it provides. In addition, upon request

Customer will provide Verizon with access to Customer facilities, installation sites, data connections, and equipment as reasonably necessary or useful for Verizon to perform its obligations under this Service Attachment. Customer will notify Verizon of any site-specific requirements that might impact Verizon's ability to access a site, e.g., safety or security procedures. Verizon will comply with such procedures to the extent communicated to Verizon.

2.2 **Building Space.** Customer will provide adequate building space, circuitry, facility wiring, temperature, humidity, and power to comply with the standards established by the manufacturer of the CPE for proper installation and operation of the UCCaaS.

2.3 **Licenses.** Customer will obtain any necessary permits, licenses, variances, and/or other authorizations required for Customer's operation of UCCaaS at Customer's sites and for Customer's business purposes including without limitation by state and local jurisdictions for installation and operation of any CPE on Customer's premises.

2.4 **IP Addresses.** Verizon reserves the right to determine the IP addressing scheme for Customer's application. If supported, secondary IP addressing will be used, maintaining Customer's existing IP address space. In the case where there are Devices which do not support secondary addressing, Verizon will assign new IP addresses to Customer's IP telephony segment, based on availability in both Verizon's and Customer's address space.

2.5 **Non Standard Hours.** Verizon will perform fault management on a 7 X 24 hour basis. Unless otherwise agreed, Customer-requested change management support will be limited to the hours of 8AM-5PM Eastern United States time Monday through Friday, Verizon holidays excluded (a "Business Day").

2.6 **Non Verizon Circuits.** Unless purchased through Verizon, any required telecommunications circuit is Customer's responsibility to order prior to the installation date for UCCaaS, verify availability and maintain.

2.7 **System Changes and Maintenance.** Changes to Customer's network elements after the SOR is completed will require a Customer change order and new SOW. Customer will schedule and inform Verizon of maintenance on or changes to Customer network elements associated with UCCaaS.

2.8 **UCCaaS Configuration.** Supplier is responsible for ensuring that its UCCaaS, including any optional features, is configured in accordance with Customer's preferences as accepted in writing prior to and after activation of the UCCaaS.

2.9 **Extension Mobility.** Cisco Extension Mobility allows End Users to temporarily access the Cisco Unified Communications Manager configuration from other Cisco Unified IP Phones, such as a hoteling phone. 100% of extension mobility profiles must have an associated call control End User, and be configured as a call control a la carte or Package End User.

2.10 **Customer Equipment.** Should Customer owned or managed applications, firmware, or hardware represent a security vulnerability to the UCCaaS platform or supporting networks, Verizon may require that Customer remediate the security vulnerability.

2.11 **Software.** Customer will not decompile, disassemble or reverse engineer any software obtained pursuant to this service or its implementation.

3. **Customer Contact.**Customer will designate a single point of contact ("Project Lead") who will be responsible and authorized to (i) make all decisions and give all approvals which Verizon may need from Customer, (ii) provide Verizon's personnel on a timely basis with all information, data, access and support reasonably required for its performance, including but not limited to making available appropriate personnel to work with Verizon as Verizon may reasonably request, (iii) provide 24x7 access to Customer facilities, including, where applicable, computer equipment, facilities, workspace and telephone for Verizon's use, and (iv) coordinate all activities between Verizon and any 3rd party vendors used to fulfill Customer's responsibilities. This includes identifying a contact at each Customer location to receive all hardware shipped to the site. Customer has risk of loss once hardware has been received at a Customer location and shall provide secured storage for all shipped hardware until the scheduled on-site installation or on-site staging date. Customer's designated contact will also be responsible for signing off on the Lower Level Design Document, which provides line level detail on planned configuration requirements.

PART III: Service Provisions

1. **SOW Service Provisions.** All SOWs must be in writing, be signed by an authorized representative of each party, and refer to the Agreement by number or by title and date. SOWs may include Customer purchase orders as part of its documentation but any terms and conditions contained in purchase orders are rejected, void and have no force or effect.

   1.1 **Conditions.** An SOW may identify key expectations on which the SOW is based ("Conditions"). Each Party will notify the other promptly if it determines that a Condition has not been met or is unlikely to be met. If Verizon reasonably determines that it has been materially and adversely affected by the failure of a Condition to be met, and Verizon proposes an SOW amendment to resolve it, the Parties will work diligently to reach agreement on a SOW amendment to resolve the material, adverse effect on Verizon, and Verizon may suspend work on the Project until the Parties have reached that agreement. The preceding sentence does not apply if Verizon reasonably could have caused the Condition to be met but did not.

2. **Emergency Calling.** Customer acknowledges that its use of voice services via UCCaaS that include the capability of receiving calls originating on the PSTN and terminating calls to the PSTN generates 911 emergency calling requirements. Customer further acknowledges that 911 emergency calling service laws may apply to Customer and it is solely Customer's responsibility to understand and comply with such laws. The application of 911 emergency calling requirements with respect to UCCaaS is device-specific, and Customer agrees as follows with respect thereto:

   2.1 **UCCaaS IP Telephones.** UCCaaS will only support 911 emergency calling from IP telephones placed at End User's registered primary service location. UCCaaS does not support mobility of IP telephones and an End User may not use its IP telephone from a location that is different from such End User's registered primary service location. In order to change the End User's registered primary service location, the End User must request a change in accordance with Verizon's procedures. UCCaaS may be able to support 911 calling from different locations if Customer has installed a Cisco Emergency Responder or other equipment to detect movement of such IP telephones. However, this capability will only be provided pursuant to a separate agreement with Verizon.

   2.2 **Wireless Devices.** Emergency 911 calling from wireless devices such as smart phones and other devices that provide native voice calling is not supported by UCCaaS. End Users must make such 911 emergency calls via the End User's wireless device over the wireless network provided by the End User's carrier.

   2.3 **Laptops and Tablets.** UCCaaS-enabled 911 emergency calling is prohibited from computer tablets or other similar devices that have been integrated with UCCaaS VoIP features through a software client. UCCaaS will not support 911 calls made over such devices and such calls, if delivered at all, may be delivered to the wrong public safety answering point ("PSAP") and thus delay or preclude emergency service response, which could result in injury or death. End Users of such devices must use other means to make a 911 emergency call.

   2.4 **Customer Responsibilities**. Customer must instruct its End Users about the provisions of this section, specifically that: End Users may not move their IP telephone locations without changing their registered primary service location; End Users may not make 911 calls over the UCCaaS network on computer laptops or tablets, wireless devices that provide native voice calling, or similar devices; End Users must call 911 over the End User's wireless network or other network. Failure to comply with the provisions of this section may cause 911 calls to be sent to the wrong PSAP and thus delay or preclude emergency service response, which could result in injury or death.

   Customer agrees that Verizon is not liable to Customer for any claims or liability arising from the failure of Customer or its End Users to comply with this Section.

3. **Service Disruption.** UCCaaS may be interrupted or degraded by certain conditions. For example (without limitation), UCCaaS relies on Customer's domain name server ("DNS Server") and LAN; Verizon will not be responsible if Customer's DNS Server or LAN fails or performs poorly for LAN and WAN networks not managed by Verizon. Verizon's responsibility for LAN and WAN performance for networks managed by

Verizon is stated in Customer's agreement for such management. Network-related outages also may occur, and service restoration intervals may vary from those associated with traditional telecommunications service. Communications from analog modems may have protocol interaction issues when used over VOIP technology (due to their handshake and error-checking rules) and cannot be assured of the same quality as other communications; UCCaaS is provided without any warranty whatsoever with respect to modems. Modems may not be used on UCCaaS except with Codec G.711 without silence suppression. Alarm lines (whether or not they use modems) are wholly unsupported on UCCaaS (with respect to both service and wiring, without limitation). Customer will be responsible for all inside wiring and special construction charges. Customer may not modify the Verizon installed design and/or configuration without the previous written consent of Verizon.

4. **Security Obligations.** Use of UCCaaS, like other network-based services, carries certain security risks to the systems and networks of Customer, Verizon and third parties including, but not limited to: misuse, unauthorized access; alterations; theft; destruction; corruption; and attacks ("Occurrences"). Neither party shall be liable to the other for Occurrences and for any loss or damage of data. Verizon will endeavor to incorporate Customer preferred security policies within the Customer-specific UCCaaS applications. In addition, Verizon and Customer will, at their own expense for their respective environments, take security measures, including but not limited to use of firewalls, passwords, access restrictions, encryption, policies, and physical access restrictions ("Security Measures") to protect from Occurrences all UCCaaS traffic, facilities and other equipment, software, data and systems located on Verizon or Customer's premises or otherwise in Verizon or Customer's control and used in connection with UCCaaS, whether owned by Customer, Verizon or Verizon's subcontractors. Verizon, including its affiliates and subcontractors, will ensure that Security Measures at all times meet or exceed industry standards

U.S. PRIVATE LINE SERVICE
SERVICE ATTACHMENT

1. **Rates and Charges.**

   1.1 **U.S. Private Line Services (Fractional DS1, DS1, DS3 Private Line, SONET).** U.S. Private Line ("USPL") services are provided on an intrastate and interstate basis. Customer will pay the monthly recurring charges ("MRC") and non-recurring charges, including installation and administrative charges, as set forth in Exhibit A.

2. **Terms and Conditions.**

   2.1 **Local Access Service.** Local access service is required for USPL and is not included.

VOIP PLAN B

Voice Over IP Service
Service Attachment

1. **Service Description**

1.1 **VoIP Service Types.** Verizon will provide to Customer one or more of the following Voice Over IP Service(s) (individually or collectively, the "VoIP Service").
IP Trunking

The VoIP Service types are described herein and in Exhibit B.

1.2 **Burstable Enterprise Shared Trunks.** Subject to the terms and conditions herein and specifically the limitations set forth in Section 4.12, below, Customer's VoIP sites that are provisioned with Burstable Enterprise Shared Trunks will be able to share across Customer's enterprise the simultaneous calling capacity purchased by Customer.

1.3 **VoIP IP Enterprise Routing ("VIPER").** VIPER allows calls between Verizon VoIP customer locations to be terminated without incurring per-minute U.S.-domestic or international usage charges provided both the originating and terminating locations have the VIPER feature enabled.[1] There is no additional fee for VIPER, but Customer must order this feature to obtain its benefits.

2. **Rate and Charges – VoIP Service.** Monthly recurring charges ("MRC") and non-recurring charges ("NRC") and other charges specific to each VoIP Service type are set forth in Exhibit A. Rates and charges for VoIP Service that are designated as "fixed for the Term" are subject to change, upon successful execution of a modification between the parties, if VoIP Service is subjected to regulation by any State, or if Federal regulation of VoIP Service is expanded.

3. **Service Provisions**

3.1 **Letter of Agreement.** To the extent Customer's VoIP Service includes the provision of Verizon's Local voice service and Customer implements PS/ALI, Customer will execute Verizon's Letter of Agreement ("LOA") that lists affected telephone numbers (via range, if applicable) and the attendant street addresses. Verizon will use the LOA to notify the appropriate Incumbent Local Exchange Carrier (ILEC) that Customer, not Verizon, is now responsible for building, loading, and maintaining the location-specific ALI database for the call CPNs (calling party numbers) associated with the BTNs.

3.2 **No Resale Qualification.** Notwithstanding the general prohibition against resale, if Customer subscribes to a tiered or metered pricing plan for VoIP Service, Customer may provide to and be compensated by end-users for VoIP-based services as a component of a larger service offering provided, for example, to a retirement home, campus-living facility, or hotel.

3.3 **Auto Dialers**. Customer may not utilize auto-dialers or any similar type of device in connection with any VoIP Service, except as agreed upon in writing by the Parties.

[1] So long as both the origination and termination endpoints are VIPER-enabled, VIPER calls are delivered from the originating endpoint to the terminating endpoint without conversion to PSTN protocols. However, if one of the locations has a device (e.g., an IP-PBX) that does not register with Verizon's application server, that device must interoperate with the other device originating or terminating the call. In some instances, the two devices do not interoperate successfully. One instance is where a non-registering device needs to re-negotiate an agreed-upon protocol (i.e., a "codec") in the middle of a call. If this re-negotiation is not successful, a dropped call will result. Codec re-negotiation could be triggered by a variety of causes, including but not limited to placing a call on hold, transferring a call to voicemail, the playing of a network announcement, or placing a call into an IP-enabled conference bridge. Verizon is not responsible or liable for calls dropped due to failure of endpoints to interoperate successfully.

3.4 **Customer-Obtained Facilities.** Except as otherwise expressly stated herein or in another Verizon Service Attachment, Customer is responsible for obtaining, installing, configuring and maintaining all equipment (including, but not limited to, SIP Phones, gateways and firewalls), software, wiring, power sources, telephone connections and/or communications services necessary for inter-connection with Verizon's network or otherwise for use in conjunction with VoIP Service ("Facilities"). Customer is responsible for ensuring that such Facilities are compatible with Verizon's requirements (including being certified by Verizon for use with VoIP Service or successful completion of Verizon's VoIP Interoperability Program, where applicable), and that they continue to be compatible with subsequent revision levels of Verizon-provided equipment, software and services. Customer is responsible for operation and configuration of its computer(s) and LAN/WAN. If Customer uses its WAN to connect multiple remote sites through a single site ("hub" site) to the Verizon VoIP network, Customer will be responsible for the quality of VoIP Service ("QOS") on its WAN. The demarcation for VoIP Service QOS will be the hub site. If Customer connects any Facilities to VoIP Service that Customer reasonably should know may not be compatible with VoIP service, Customer is solely responsible for any effects that arise from that connection on VoIP service, equipment or software of Verizon, Customer, or any third party, and Customer waives any claims arising out of Customer's connection of such incompatible facilities against Verizon relating to the performance of VoIP service.

3.5 **Design Approval.** Notwithstanding the inclusion of this VoIP Service Attachment in Customer's contract, availability of VoIP Service on a site-by-site basis is subject to having a site design reviewed and approved by Verizon.

3.6 **Unified Site.** Customer can provision its multi-building campus as a single VoIP termination to maximize network and billing efficiencies provided (i) all the buildings within its campus are in the same rate center; (ii) its PBX is able to send DID level information for 911 calls; and (iii) Customer implements PS/ALI (see the 911 Appendix). For example, if Customer's campus is comprised of 20 buildings all within the same rate center, the 20 buildings can be provisioned as a single Verizon VoIP site subject to the above.

3.7 **Service Disclaimer.** Verizon is not responsible for certain conditions or equipment that may affect VoIP Service, including, without limitation:

- Failure or poor performance of Customer's Domain Name Server ("DNS Server") and/or local area network ("LAN") upon which VoIP Service relies. Network-related outages also may occur, and service restoration intervals may vary from those associated with traditional telecommunications service.
- Communications from analog modems may have protocol interaction issues when used over VoIP technology (due to their handshake and error-checking rules) and cannot be assured of the same quality as other communications;
- Modems – Modems may not be used on VoIP Service except with Codec G.711 without silence suppression.
- Facsimile devices – Fax transmission is highly dependent on Customer's facsimile device, its ability to disable error correction, and other factors.
- Alarm lines (whether or not they use modems) are wholly unsupported on VoIP Service (with respect to both service and wiring, without limitation).
- All inside wiring and special construction not provisioned by Verizon or its subcontractors.

3.8 **Restrictions**

3.8.1 Customer shall not modify the Verizon-installed design and/or configuration without the previous written consent of Verizon. Customer expressly acknowledges Verizon may immediately suspend Customer's use of VoIP Service if Customer violates the foregoing restriction.

3.8.2 At any given time, Customer may only place as many concurrent calls as it has purchased.

3.9 **Call Origination Information.** Customer acknowledges that Verizon classifies local and long distance calls to determine appropriate rate allocation (i.e., local or interstate). Verizon bases this classification on the information in Verizon's systems identifying each call's originating location. As accurate information regarding the origination point of calls is necessary to make the appropriate rate allocation, it is a material condition of this Service Attachment that Customer provide Verizon with accurate information reflecting its calls' originating location. Verizon shall not be liable for any claims arising out of Customer's delivery of call origination information.

3.10 **Burstable Enterprise Shared Trunks (BEST).** To the extent Burstable Enterprise Shared Trunks are available to Customer, the following terms and conditions apply:

3.10.1 When all VoIP traffic is aggregated at Customer's hub location, Customer will only be able to make as many simultaneous calls across its enterprise as is supported via the data access at such hub location.

3.10.2 Customer is solely responsible for purchasing sufficient simultaneous calls across its enterprise to support traffic for its hub and remote locations. Customer acknowledges and understands that purchasing, say, 800 simultaneous calls across its enterprise to serve, say, 800 sites, may diminish the end-user experience, resulting in such occurrences as busy lines.

3.10.3 BEST is only available at locations that use metered or tiered pricing models. If Customer purchases VoIP Service that includes the availability of BEST, all locations receiving VoIP Service within Customer's enterprise must be metered or tiered. That is, only metered or tiered locations within Customer's enterprise will be able to burst using available simultaneous call capacity from other Customer sites that use a metered or tiered pricing model.

3.10.4 BEST does not allow for the sharing of simultaneous calling capacity between Customer locations receiving Local and LD VoIP Service and Customer locations receiving only LD service.

3.10.5 BEST includes a sharing of simultaneous call capacity, not minutes. If Customer uses BEST to share simultaneous call capacity between sites billed on tiered pricing models, the included number of LD minutes per concurrent call will not be shared between sites. For example, if Customer purchases two 250-minute simultaneous call capacity tiers at location A and three 250-minute simultaneous call capacity tiers at location B, location A is entitled to a total of 500 LD minutes in a month before the overage rate applies, and location B is entitled to a total of 750 LD minutes in a month before the overage rate applies; location A is not entitled to share Location B's 750 minutes even if the two locations are using BEST.

3.10.6 BEST is not available with Hosted IP Centrex services with unlimited LD pricing.

3.10.7 BEST is only available to U.S. sites and only the simultaneous call units at U.S. sites contribute to the total available concurrent call capacity. BEST is implemented at the enterprise level; if Customer desires to obtain BEST, it will apply to all Customer sites obtaining VoIP service.

3.10.8 The maximum bursting capacity of each VoIP IP Trunking location is based on two factors – the maximum number of calls that can be supported within the location's data bandwidth and the total number of simultaneous calling units purchased by Customer across its enterprise – and is subject in any case to a maximum of fifty (50)

simultaneous calls in addition to what is provisioned at any single location. Two examples are provided:

If Customer's Location A buys 20 simultaneous calling units on a T1 and Customer's Location B buys 40 simultaneous calls on a DS3, assuming availability, Location A could burst through its allocation of 20 simultaneous calling units up to a maximum of 41 simultaneous calling units because that's the maximum simultaneous calls supportable on a T1.

If Customer's Location C buys 60 simultaneous calling units on a DS3 and Customer's Location D also buys 60 simultaneous calling units on a DS3, assuming availability, Location C could burst through its allocation of 60 simultaneous calling units up to a maximum of 110 simultaneous calling units because any single location is limited to bursting to an additional 50 simultaneous calling units.

3.10.9 Customer must inform Verizon of its data bandwidth at each location so that Verizon can properly configure the maximum simultaneous call setting based on Customer's bandwidth. Verizon will perform a periodic review of Customer's actual simultaneous call bursting and reserves the right, after consulting with Customer, to reallocate simultaneous calling capacity among Customer locations to better reflect actual use.

3.10.10 If Customer changes its data bandwidth and desires more simultaneous calls to be supported at a particular location, it must process a Telecommunications Service Order (TSO) with Verizon to increase the number of available simultaneous calling units.

3.10.11 Every remote site must receive an allocation of at least one simultaneous call on a metered or tiered basis to be able to participate in BEST.

3.10.12 Verizon Technical Support will be able to identify call failures or blockage if Customer exceeds its aggregate (enterprise-level) simultaneous calling capacity. However, Verizon is not responsible for monitoring utilization. Customer is responsible for monitoring location-level traffic requirements to identify sites which require additional simultaneous call capacity to meet traffic requirements.

3.11 **LNP.** Customer can arrange to port its numbers using LNP (Local Number Portability) at the same time VoIP service is made available for use, or delay LNP for up to 10 days afterwards. However, billing for VoIP Service will commence in accordance with Section 3.12, Billing Initiation, below.

3.12 **Billing Initiation.** Billing for VoIP service will begin when the VoIP service is available for use, even if Customer's numbers have not been ported to the VoIP service (see "LNP" above).

3.13 **Access to CPNI.** Customer's use of VoIP Service may enable access to Customer Proprietary Network Information ("CPNI"). As a condition of such access, Customer agrees:

- To execute a "Designation Of Customer VoIP Administrator(s) With CPNI Authorizer" form provided by Verizon (see Appendix II), designating in writing one or more Customer "Administrators" authorized to access CPNI and to identify end-users authorized to access CPNI either directly or via an online application such as the Integrated Communications Package (ICP), if applicable; and

- To cooperate with Verizon's reasonable authentication and security procedures for access to CPNI, including, without limitation, password resets and re-authentication of authorized end-users.

3.14 **E-911 – Emergency Calling.** The FCC's requirements regarding "interconnected VoIP service" are addressed in Appendix I (E-911 – Emergency Calling Terms and Conditions) attached hereto.

Appendix I

E-911 – Emergency Calling
Terms and Conditions

1. **Requirement.** A provider of "interconnected VoIP service" is required by the Federal Communications Commission to route emergency 911 calls in conjunction with such VoIP service where such 911 calling is available. "Interconnected VoIP service" means the VoIP service (1) enables real-time, two-way voice communications; (2) requires a broadband connection from the end-user's location; (3) requires IP-compatible CPE; and (4) permits end-users generally to receive calls that originate on the PSTN and to terminate calls to the PSTN. **911 emergency calling service laws may also apply to Customer and it is solely Customer's responsibility to understand and comply with such laws.**

2. **E-911 Routing.** Enhanced 911 calling ("E-911") enables end-users to access an appropriate public safety answering point ("PSAP") by dialing 911 with Automatic Number Identification ("ANI") and Automatic Location Identification ("ALI") displayed at the PSAP. The ANI may be the calling party number ("CPN") or the billing telephone number ("BTN") depending on Customer's configuration. **Pursuant to FCC requirements, Verizon enables the routing of E-911 calls only in locations where such 911 calling is available and only in the limited circumstances described below.** An end-user's ability to access an appropriate PSAP depends on the type, configuration and location of the phone used. Furthermore, much like access to 911 emergency service via traditional PSTN local service, access to a PSAP will be unavailable if Customer's access circuit or local gateway fails.

   2.1 **ANI/ALI.** E-911 provided via any of the four types of Verizon VoIP Service will pass ANI and the registered primary service address of that ANI as ALI. If VoIP Service is provided to a campus environment where all buildings are within the same rate center, then when 911 is dialed, the call will be routed to the appropriate PSAP based on the primary service address of the calling ANI.

   2.2 **Long Distance Service/Limitations on E-911.** Long Distance Voice Service does not provide access to E-911 calling. Thus, to obtain E-911 access and support, Customer must purchase separate Local service when only Long Distance Voice Service is ordered from Verizon (an option with IP Integrated Access, Hosted IP Centrex, and IP Trunking). If Customer purchases VoIP service for a geographically-distributed multi-site environment and has remote locations outside the Local service footprint covered by VoIP Service, or Customer chooses not to purchase Local service with its VoIP Service at certain remote locations, Customer agrees that it is responsible for obtaining separate Local service at each such location in the Service Attachment to the extent it desires or is required to provide E-911.

   2.3 **PS/ALI.** If Customer requires delivery of location-specific ALI (such as floor and room number within a building) to the PSAP, or otherwise desires E-911 to be provided for multiple user configurations, Customer must implement Private Switch/Automatic Location Identification (PS/ALI). **Customer may obtain the software and support that enable PS/ALI from a third-party provider or Verizon pursuant to a separate contract.** In all cases, VoIP Service can only support the delivery of the caller's station level phone number to a PSAP when such telephone numbers are ported to Verizon during the initial provisioning process or are numbers assigned by Verizon. Before Verizon will support Customer's use of PS/ALI, Customer must execute Verizon's LOA (see Section 4.2 in the Service Attachment). Once PS/ALI is implemented, Verizon will continue to send 911 calls to the PSAP; **however, Customer and not Verizon will be entirely responsible for the content of the information delivered in ALI to the PSAP and for any liability arising from the provision of, or the failure to provide, accurate and up-to-date information**.

   State or local laws may require Customer to implement PS/ALI to ensure required E-911 support for multiple user configurations to enable station-specific 911 ANI and ALI display.

   2.4 **Other Access Limitations.** Common events that can limit access to E-911 via VoIP Service include but are not limited to:

   - **Loss of Electric Service.** A loss of electric service will interrupt VoIP Service. Customers are urged to implement a battery backup system for VoIP Service.
   - **Loss of Broadband Service.** VoIP Service will be interrupted if the attendant broadband connection is not available.

- **Failure of Equipment.** The malfunction or failure of equipment, software or hardware necessary for end-to-end Internet functionality (e.g., routers, IP phones, analog gateways, etc.) can limit access to E-911.
- **Failure to Register New Location of Equipment.** For IP Integrated Access and IP Trunking VoIP services, Verizon is able to provide access to E-911 only at the end-user's registered primary service location. For these VoIP service types, if a VoIP phone is used at a location other than at the end-user's registered primary service location, E-911 will not be available. For Hosted IP Centrex service, mobility is supported for the end-user's IP phone or soft-phone (phone in the PC), but the end-user may only place calls from a location that is, in fact, the end-user's registered address. Otherwise, E-911 calls will not be sent to the correct PSAP. If the end-user's registered address is at a location different from the end-user's "office phone" (the dedicated hand-set that remains at the end-user's registered primary service location), use of the end-user's land-line for 911 calls will not contact the correct PSAP. Customer must inform end-users that it is entirely their responsibility to use the tools available with VoIP Service to update their registered address.
- **Non-Recognition of Phone Number.** If an end-user uses a non-native telephone number (i.e., a telephone number from a local exchange area different from where the caller is located), E-911 access may be limited.

2.5 **End-User Notice Requirements.** Customer will notify all of its end-users of Verizon VoIP of the interaction and/or limitations of E-911 with Verizon VoIP as set forth in the Service Attachment and this Appendix. Customer shall be solely responsible for any liability arising from Customer's failure to so notify its end-users.

3. **E-911 and VoIP IP Trunking Service.** Because Customer's IP Trunking may permit end-users to use VoIP Service at other than Customer's or the end-users' primary service location, and Verizon may not detect when an end-user uses the service at a non-primary service location, Customer will, with respect to IP Trunking, notify its end-users of the need to:

- detect when an end-user has moved his or her VoIP phone (i.e., any device used for VoIP calling) to a non-primary service location, and suspend VoIP Service unless and until either Customer (a) verifies that the end-user is at the location for which the VoIP phone is registered for service or (b) re-registers the VoIP phone for service ("nomadic service") at the end-user's current location;

- only permit nomadic service when E-911 calls made via the nomadic service include the information needed to route that call to the PSAP serving that location in the manner required by the FCC's E-911 requirements for Interconnected VoIP service; and

- otherwise block all VoIP calls attempted to be made via the nomadic service.

Customer shall be solely responsible for all liability arising from Customer's failure to do as required in this Section 3

4. **E-911 and Hosted IP Centrex Service**

4.1 **PSAP Routing.** If an IP phone or soft-phone used with VoIP Hosted IP Centrex Service is moved to a new location, Customer or its end-user must report the change of location. If Customer or its end-user fails to report such a change of location or moves an IP phone or soft-phone outside Verizon's E-911 service area, VoIP Service may be suspended until Customer informs Verizon of the change or moves the IP phone or soft-phone back within Verizon's E-911 service area.

4.2 **Change in Registered Location.** Customer's end-users who want to use a VoIP Service-enabled IP phone or soft-phone other than at its current registered location can register their phone at their temporary location by utilizing the ICP application and client which can be downloaded to the end-user desktop.

Turning the power to a phone off and then back on, or unplugging it and then plugging it back in may indicate to Verizon, via a change in IP address, that the phone may have been moved. Verizon may, but is not obligated to, monitor the IP phone's IP address.

4.3 **Affect of Change in Registered Location.** Customer's end-users who use a phone at a Customer facility for which VoIP Service has been enabled, but for which the ANI has been registered at another location, will still be able to place outbound 911 calls; **however, such calls will be directed to the correct PSAP for the ANI, not necessarily for the PSAP serving the Customer facility at which the phone is located.**

5. **Provider Parity.** For purposes of 47 U.S.C. 615a (*Service provider parity of protection*) and with respect to the provision of Verizon VoIP Service, Verizon is an IP-enabled voice service provider.

[Note: This form must be filled out whenever a new VOIP Service Administrator is named or removed, or whenever an existing VOIP Service Administrator needs a new password (for example, because it has been lost or forgotten).

Appendix II

Designation of Customer VOIP Administrator(s) with CPNI Authorization

Customer	**[INSERT CUSTOMER FULL LEGAL NAME]**
Signature	
Name	
Title	
Date:	
NASP ID AND GUDUNS ID (where available)	

A. Administrator Access to CPNI and Designation as CPNI Authorizer for Users. On behalf of itself and its affiliates, the Customer named above, through its authorized representative's signature, hereby designates the individuals listed below or in an attachment containing the same data elements, as VOIP Administrators, with the authority to designate end users authorized to access CPNI of Customer and its affiliates, as specified below (collectively "Administrators") for MCI Communications Services, Inc., d/b/a Verizon Business Services and its affiliates (collectively or individually "Verizon).

Administrator Name	Title	Tel. No.	Email	Postal Address	Add	Remove
					☐	☐
					☐	☐
					☐	☐

Customer will so designate as Administrators all representatives who are authorized to manage Customer's use of Verizon VOIP service, including through the online applications made available by Verizon to Customer for its use. This designation, and any subsequent additions or removals of Administrators, will be effective within a reasonable period after Verizon has received a signed writing with the content set out above. Administrators are authorized to access the Customer Proprietary Network Information ("CPNI")* of Customer and its affiliates.

B. User Access to CPNI via Online Applications. Customer representatives ("Users") designated by Administrators as authorized to access "ICP" (Integrated Communications Package) or other online applications made available by Verizon in connection with VOIP service are also authorized to access the CPNI of Customer and its affiliates through those online applications. This VOIP-specific CPNI access authorization is independent of any general CPNI authorization or deauthorization, and this authorization is not withdrawn by the withdrawal of a general CPNI authorization. In order to withdraw the VOIP-specific CPNI authorization established hereby, a Customer Administrator must permanently withdraw the User(s) access to ICP and all other VOIP-related online applications that may provide access to CPNI.

* CPNI includes information about the quantity, technical configuration, type, destination, location, and amount of use of telecommunications or interconnected voice over Internet Protocol services purchased from Verizon or its affiliates that is made available to Verizon or its affiliates solely by virtue of your relationship with Verizon or its affiliates and related local exchange or toll billing information.

5 CPE

VOICE AND DATA EQUIPMENT AND RELATED SERVICES ATTACHMENT

Part I: Rates and Charges.

1. Customer will pay all charges for the System and CPE Services as set forth on the applicable quote or SOW, subject to additions and deductions made by written Change Order(s). Terms not defined herein are defined pursuant to the Agreement.
   - 1.1 **Service Provider.** The products and services under this Voice and Data Equipment and Related Services Attachment (the "CPE Service and System Terms") and any related Statements of Work ("SOW") are provided by the entities indicated in the applicable quote (referred to herein, individually and collectively, as "Verizon").
   - 1.2 **Landed Costs.** Customer will pay charges including, freight, shipping, and delivery charges or charges arising in connection with the delivery of the System, as well as tax charges, if applicable (collectively "Landed Costs").

Part II: Service Description and Requirements.

1. **CPE and CPE Services.** Customer may order customer premises equipment ("CPE") and Software (individually and collectively the "System") pursuant to the terms hereof. Where available, Customer may also order CPE Deployment Services, maintenance, or rental of a System or CPE services, each as further defined below, and other services pursuant to a Schedule (individually and collectively "CPE Services"). CPE Services may be detailed in a SOW or a specific CPE Service schedule ("Schedule"), the terms of which shall include the governing end user license agreements and warranties provided by the respective equipment manufacturer, third party supplier, or other third party providing services to Customer (collectively and individually referred to as "Third Party Services Agreement") for the CPE and/or System. Any such SOW, Schedule and applicable Third Party Services Agreement shall become incorporated as part of the Agreement once agreed upon by Supplier and Customer or End User.
2. **Customer Responsibilities.** As applicable for System or CPE Services orders, Customer will:
   - 2.1 Provide suitable building facilities for the System including but not limited to equipment rack space, ducting, conduit, structural borings, etc. for cable and conductors in floors, ceilings and walls; electrical service with suitable terminals and power surge protection devices; and metallic grounds with sufficient slack in the equipment room, installed in conformity with applicable electrical codes, regulations, and laws, including but not limited to electrical, building, safety, and health and as required by Verizon and manufacturer specifications, as applicable.
   - 2.2 Provide a suitable environment in which the System can operate, including, but not limited to, necessary power conditioning, heating, cooling, humidity and dust control, and accessibility for the System as required by Verizon and manufacturer specifications.
   - 2.3 Remove existing equipment or cables that interfere with the provision of CPE Services.
   - 2.4 Identify and disclose to Verizon concealed equipment, wiring or conditions that might be affected by or might affect the CPE Services. If during the provision of CPE Services, Verizon encounters any concealed or unknown condition not expressly set forth in an SOW, and such condition affects the charges or schedule for performance of CPE Services, the charges and/or the schedule will be equitably adjusted using the Change Order procedure.
3. **CPE Deployment Services.** Where available, Verizon can provide CPE Deployment Services as described in this section below. Verizon will provide CPE Deployment Services in accordance with any applicable quote, these CPE Service and System Terms, and any applicable SOWs. Verizon will furnish all supervision, labor, equipment, materials and supplies required to complete CPE Deployment Services.
   - 3.1 **Enhanced Staging.** Verizon will stage, configure and then ship a System to Customer designated locations as shown in the applicable Order. Verizon will work remotely with the SPOC to coordinate staging and delivery of the System and activation of Verizon maintenance, if applicable. Staging occurs within the location designated by Verizon in cooperation with Customer. Verizon will, as applicable, unpack and verify CPE with package documentation, record serial numbers, load operating system and incremental operating system changes, apply Customer-provided asset tags, power-up test, repackage, and ship.
   - 3.2 **Installation.** After completion of the Enhanced Staging services, as applicable, Verizon will deliver the System to the Customer designated locations as shown in the applicable Order and install the System on Customer-provided racks or other facilities. Verizon will verify System power-up and operation of network interfaces. No demarc extension is provided with Installation. Remote activation of the System and transport connectivity will be provided with Verizon transport services only or in certain locations where

Verizon has specifically pre-approved remote activation. Local area network configuration or activation is not included with Installation.

3.3 **Equipment Implementation.** In addition to the activities shown in the Installation section above, for Equipment Implementation Verizon will install Verizon-provided Service equipment required for the relevant Verizon Managed Network Services including out of band access devices, routers, switches, wireless access points, etc. Verizon will also perform on-site tests to ensure equipment, circuit configurations, management applications are properly working and interface with Verizon Managed Network Services to ensure management applications are properly applied, operational, and ready for remote Verizon Managed Network Services remote support.

3.4 **MAC (Move, Add, Change).** Verizon will verify equipment power-up, operation of network interfaces at Customer's designated locations as shown in the applicable Order. No demarc extension is provided with MAC. Remote activation of the equipment and transport connectivity will be provided with Verizon transport services only or in certain locations where Verizon has specifically pre-approved remote activation. Local area network configuration or activation is not included with MAC. MACs are:

3.4.1 **Move.** For moves, Verizon will de-install the Customer designated equipment from the current designated Customer location and then install the same equipment in the new designated Customer location within the same building as shown in the applicable Order. Customer must provide packaging to protect the equipment to be moved.

3.4.2 **Add.** Adds are available via installation service described above.

3.4.3 **Change.** For changes, Verizon will deliver the System components and/or software required to implement the requested change to the Customer designated location as shown in the applicable Order.

3.5 **De-installation.** For De-Installation, Verizon will de-install equipment at Customer's designated locations as shown in the applicable Order. Verizon will power down and pack equipment in Customer provided packaging. Premises cables will be left in place and not removed or changed. Equipment or packaging disposal is not included as part of De-installation.

3.6 **CPE Deployment Service Provisions.**

3.6.1 CPE Deployment Services are available within Virginia.

3.6.2 CPE Deployment Services are performed between the hours of 8:00 a.m. and 5:00 p.m. local time, during a business day, excluding Verizon observed and local holidays ("Business Hours"). Work extending beyond Business Hours and work on the first day of a weekend (according to local custom) is considered "Overtime" work. All other periods of work is "Weekend and Holiday Hours" work. If Customer requests that CPE Deployment Services be performed during Overtime or Weekend and Holiday Hours, Customer will pay Verizon its time and material labor rate in Exhibit A. Verizon will provide Customer written notice indicating the date CPE Deployment Services are complete (the "In-Service Date"). Should Customer request delay of CPE Deployment Services, or should CPE Deployment Services be delayed as a result of Customer's action or inaction, Verizon may store the System, or any portion thereof, provided Customer agrees to reimburse Verizon for any costs incurred for such storage at Customer's expense. Wait time in excess of 30 minutes at Customer's site may result in an additional charge at Verizon's time and material rate in Exhibit A.

3.6.3 Verizon will attempt to meet Customer's requested In-Service Dates, however, Verizon cannot guarantee any In-Service Date. In-Service Dates are subject to the availability of materials and resources.

3.6.4 Verizon will use reasonable efforts to avoid interruption of Customer's network service during Business Hours. If it is necessary to interrupt network service during Business Hours, Verizon will notify the SPOC at least 48 hours in advance.

3.7 **Customer Responsibilities.** As applicable, Customer is responsible to:

3.7.1 Provide asset tags as required, if required by the customer;

3.7.2 Properly dispose of all decommissioned Customer-owned equipment in accordance with applicable law.

4. **Maintenance Service.** Verizon will provide Maintenance Services where available in accordance with these CPE Service and System Terms.

4.1 **Maintenance Service Provisions.**

4.1.1 Maintenance Services that include repair or replacement of System components will be provided with new or like new parts, as applicable, to restore the System to the level of working condition existing prior to the fault or problem. If Verizon determines that the trouble identified is a Customer network condition instead of a problem with the System covered under Maintenance Service, and if Verizon has preapproved written authorization Verizon will coordinate the resolution of the trouble and charge its time and material labor rate in Exhibit A to coordinate the

resolution.

4.2 **Customer Responsibilities.**

4.2.1 Customer will allow Verizon (using reasonable efforts to do so without undue delay or undue impact to Customer's network) to suspend normal operations of the System to inspect, test and/or repair it.

4.2.2 Customer will notify Verizon immediately in writing in the event that any substantial or material modifications are made to Customer's network, and shall provide Verizon with such information as it may reasonably request, in order for Verizon to perform the Maintenance Service. In the event Verizon or the manufacturer ships a replacement part to Customer, Customer is responsible for returning the defective part, in accordance with the instructions contained in the replacement part packaging, to Verizon within 15 business days of installation of the replacement part. If Verizon does not receive the defective part within 15 business days, Customer may be billed for the contract rate of the replacement part.

4.2.3 Customer may only move, modify, relocate or interfere with the System that is under maintenance with Verizon's prior written approval. Customer will not cause the System to be repaired or serviced except by an authorized representative of Verizon or its subcontractors.

4.3 **Exclusions.** Maintenance Service does not include:

4.3.1 Additions, changes, relocations, removals, operating supplies or accessories.

4.3.2 Services necessitated by accident, casualty, neglect, misuse, intentional acts or any cause other than normal use of the System.

4.3.3 Repairs or replacements necessitated by lightning, radio frequency interference, power disturbances, fire, flood, earthquake, excessive moisture, Harmful Code or any event occurring external to the System that directly causes a malfunction in the System, a private network to which the System is connected, or in telephone lines, cable or other equipment connecting the System to the public telephone network or to other Customer equipment. Harmful Code means any virus or machine-readable instructions and data designed to intentionally disrupt the operation of the System or intentionally destroy or damage System or data contained therein.

4.3.4 Services necessitated by use of the System with any other device or system not supplied or approved as to such combined use by Verizon.

4.3.5 Repair or maintenance or increase in normal service time resulting from Customer's failure to provide a suitable environment for the System or any other failure of Customer to perform its responsibilities.

4.3.6 Loss or recovery of Customer data.

4.3.7 Upgrades, enhancements or new releases of software or firmware, and configurations, except as specifically indicated in the Order, these CPE Service and System Terms and any service description.

4.3.8 Operator, system administrator and end user training except as specifically identified.

4.3.9 Repair or replacement of Customer-owned outside plant cable unless specifically set forth in the Order or the applicable SOW.

4.3.10 Services resulting from Customer installation, configuration or other Customer changes to device software.

4.3.11 Application development, scripting, software backups, software customization, application evaluation or troubleshooting, and engineering services.

4.3.12 Damage to the System which is caused by (a) the act or omission of Customer or Customer's breach of the terms of the CPE Service and System Terms; or (b) malfunction or failure of any equipment or facility provided by Customer or its agents, employees, or suppliers, including but not limited to Customer's equipment. Verizon is not liable for any costs incurred arising out of any malfunction or failure of any such equipment or facility.

4.4 **Maintenance Service Provisions.**

4.4.1 **General Maintenance Service Terms.**

4.4.1.1 The determination to order maintenance replacement parts is made by Verizon.

4.4.2 **Verizon Data Maintenance – Network.** "Verizon Data Maintenance - Network" means Verizon will do the following:

4.4.2.1 Use commercially reasonable efforts to isolate any problems with the System following receipt of Customer's notification that the System is inoperative.

4.4.2.2 Investigate trouble reports initiated by Customer and repair or replace, at Verizon's sole discretion, any of the System which fails to meet the manufacturer's published operating specifications for the System.

4.4.2.3 Replace Systems it determines needs to be replaced with equipment of like kind and functionality at the time of replacement ("Exchange Unit"). Before replacing the

System, Verizon will attempt to contact Customer to schedule the replacement. The replaced unit will be returned to Verizon at Verizon's expense. For Systems to which Customer holds title, upon replacement, Customer will obtain title to the Exchange Unit and Verizon will obtain title to the replaced System.

4.4.2.4 **Maintenance Takeover Service.** "Maintenance Takeover Service" means Verizon will provide Verizon Data Maintenance - Network for CPE supplied by Customer (rather than ordered from Verizon) and identified in an Order accepted by Verizon ("Customer-supplied CPE"). Verizon approval of Customer-supplied CPE is required before ordering. For purposes of Maintenance Takeover Service, Customer-supplied CPE will be treated as a System.

Part III: Service Provisions.

1. **Change Orders.** Verizon will comply, to the extent it deems feasible and reasonable, with any proposed changes to the System or CPE Services under these CPE Service and System Terms and any order or any applicable SOW ("Change Orders"). No Change Order will become effective, and no changes in the System or CPE Services will be initiated, until the Change Order is accepted by Verizon. Change Orders are accepted by the same process as orders are accepted. If changes result in an increase or decrease in charges or time needed for performance, such adjustments will be reflected in a written Change Order.
2. **Risk of Loss.** Risk of loss or damage to a System passes to Customer upon the earlier of i) delivery of the System to the Customer site, and ii) when Customer takes shipping responsibility (e.g. when Customer takes over shipping from point of import). Customer shall provide notice of loss or damage to the System as soon as Customer receives notice of such loss or damage.
3. **Resale Title and Security Interest.**
   3.1 For Customer purchases where the System is purchased and delivered within the same jurisdiction and Verizon is incorporated in such jurisdiction, Verizon will retain title to the applicable System elements until full payment for the same has been rendered. Upon final payment, title will pass to Customer. Customer will not grant or convey to any other person or entity a security interest in, or permit placement of a lien on, the System unless and until Customer has paid Verizon in full for such System. As between Verizon (including its suppliers) and Customer, Verizon (or its ultimate suppliers or licensors, as applicable) retains all right, title and interest in and to all software provided by Verizon. Until final payment is received from Customer, Customer grants Verizon a security interest or lien in the System, or similar or equivalent interest pursuant to local law, and agrees that Verizon may file all documents necessary to perfect that interest. At Verizon's request, the Customer will provide all assistance required for the enforceability of retention of title. Upon final payment Verizon will release its security or other interest.
4. **Cancellation.** Prior to Customer Acceptance, Customer may cancel an Order or a SOW for convenience, in whole or in part. A Customer cancelling any Order or a SOW for convenience before it has been accepted is subject to cancellation charges, based on the stage the CPE Service or System has reached toward such acceptance, which may include charges: as identified in Exhibit A of the Contract and shown on the applicable Order or SOW, for any System elements returned, provided such return is permitted by the provider of the System element, and as authorized by Verizon.
5. **EXCLUSIONS.** VERIZON WILL HAVE NO LIABILITY FOR ANY CONSEQUENTIAL OR ANY THIRD-PARTY DAMAGES INCURRED AS A RESULT OF CUSTOMER AND/OR END USERS USE OF THE SYSTEM OR CPE SERVICES PROVIDED UNDER THIS ATTACHMENT IN CONNECTION WITH LIFE SUPPORT SYSTEMS OR DEVICES OR PUBLIC SAFETY SYSTEMS,. EXCEPT AS EXPRESSLY STATED OTHERWISE HEREIN, OR EXCEPT WHERE CUSTOMER OR END USER HAS PROVIDED VERIZON WITH ADEQUATE INFORMATION ABOUT THE NEED FOR INTEROPERABILITY WITH THIRD-PARTY PROVIDERS OR SYSTEMS PRIOR TO COMPLETING ITS ORDER AND SUCH INFORMATION IS REFLECTED IN AN AGREED UPON SOW, VERIZON AND ANY VERIZON ASSIGNEE WILL HAVE NO LIABILITY OR RESPONSIBILITY FOR INTEROPERABILITY OR COMPATIBILITY OF THE SYSTEM WITH THIRD-PARTY PRODUCTS OR SYSTEMS THAT CUSTOMER MAY UTILIZE IN CONJUNCTION WITH THE SYSTEM OR TO WHICH CUSTOMER MAY CONNECT EQUIPMENT
6. **Undisclosed Conditions**. If Customer fails to identify and disclose to Verizon concealed Customer equipment, wiring or conditions, as required under these CPE Service and System Terms, then Customer will hold Verizon harmless from any claim, damage or liability resulting from a failure to disclose this information.
7. **Hazardous Substances.** Except as disclosed to and acknowledged in writing by Verizon, Customer certifies that it is not aware of the presence of any asbestos or other hazardous substance (as defined by any applicable hazardous waste or environmental law or regulation) at any site where Verizon is to perform CPE Services under these CPE Service and System Terms. If during such performance Verizon employees or agents encounter any such substance, Customer agrees to take all necessary steps, at its own expense, to remove or contain the

asbestos or other hazardous substance and to test the premises to ensure that exposure does not exceed the lowest exposure limit for the protection of workers. Verizon may suspend performance under these CPE Service and System Terms until the removal or containment has been completed and approved by the appropriate governmental agency and Verizon. Performance obligations under these CPE Service and System Terms will be extended for the period of delay caused by said cleanup or removal. Customer's failure to remove or contain hazardous substances will entitle Verizon to terminate by virtue of law, without Court intervention, delay, or other formality and liability, an order, or an SOW at Verizon's option. Upon such termination, Customer will permit Verizon to remove any System that has not been accepted, will reimburse Verizon for expenses incurred in performing these CPE Service and System Terms pursuant to the relevant order or SOW until termination (including but not limited to expenses associated with such termination, such as removing a System, terminating leases, demobilization, etc.), and will complete payment for any portion of a System or CPE Services that has been accepted.

8. **Export and Legal Compliance.** Customer acknowledges that the export, import, and use of certain hardware, software, and technical data provided under the Agreement is regulated by the United States and agrees to comply with all applicable laws and regulations, including the U.S. Export Administration Act, the regulations promulgated thereunder by the U.S. Department of Commerce, and any other applicable laws or regulations of the United States or other relevant jurisdictions (collectively, "Export Laws"). Without limiting the generality of the foregoing the parties further agree:
   8.1 Customer shall not export, re-export, release, transfer or allow the diversion of any items, hardware, software, technology, or the direct product of such technology obtained by Customer under these CPE Service and System Terms without first complying fully with all applicable Export Laws and obtaining any and all required licenses from United States and other governmental authorities.
9. **Third Party Services.** The parties agree that third party maintenance and services ("Third Party Services") shall not be provided under this Agreement. Should Customer decide to procure Third Party Services under this Agreement, such services shall be documented in the form of a mutually executed amendment to the Agreement.

10. **Additional Service Provisions for the provision of CPE and CPE Services.**
    10.1 **CPE Solutions Financing Program Options.** Customer may obtain, including by lease or finance, a System or CPE Service from Verizon or from a third party approved by Verizon, pursuant to a Schedule or other relevant terms provided by such third party. Additionally, Customer may rent a System from Verizon pursuant to the terms below. Verizon may assign its rights and obligations with Customer's written consent, not to be unreasonably withheld, including with respect to payment, under these CPE Services and System Terms and related Schedule to a third party, and/or cause such third party to issue a purchase order in a form acceptable to Verizon. Notwithstanding such transaction and/or assignment, Customer will remain responsible for performance of all of its obligations under these CPE Services and System Terms, including payment in full.
        10.1.1 **Rental Service.** Rental service under these CPE Service and System Terms is available only in the contiguous United States and District of Columbia ("U.S. Mainland") for certain specified Systems as defined by Verizon from time to time and will have month to month terms "Rental Service (Monthly)" or longer terms "Rental Service (Term)" (collectively, "Rental Service"). Rental Service includes Verizon Data Maintenance – Network. Customers ordering Rental Service also must order a CPE Deployment Service for the initial deployment of the System to be rented.
        10.1.2 **Rental Service (Monthly).** "Rental Service (Monthly)" means Customer will rent and Verizon will provide Customer with the use of a System in the U.S. Mainland for the Service Term (Rental Service Monthly).
        10.1.3 **Equipment.** Except where explicitly stated otherwise, equipment may not be new but will be in good working order and will meet the specifications in the Order. Verizon may suspend normal operations of the System to inspect, test and/or repair it. Verizon will use reasonable efforts to perform such inspection, testing and repair without undue delay or undue impact to Customer's business.
        10.1.4 **Rental Service Terms and Conditions.** Title to Systems under Rental Service (Monthly and Term) remains with Verizon or its assignee. Customer bears the risk of loss or damage to Systems under Rental Service (Monthly and Term) after delivery to Customer's site and while such System is located at an installation site and will pay Verizon the reasonable and customary costs of repair or replacement of such System if loss or damage occurs, provided such loss or damage is not caused by Verizon. Customer shall provide notice of loss or damage to the System as soon as Customer receives notice of such loss or damage. Customer shall not do anything inconsistent with Verizon or its assignee's interest in the System.

10.2 **CPE Deployment Services Provisions in the United States.**

10.2.1 **Warranty.**

10.2.1.1 **CPE Deployment Services Warranties.** Verizon warrants that any cables and connectors between the System and any other equipment on Customer's premises that are provided by Verizon will be in good working order for a period of thirty days after installation unless the failure of such cables and connectors is caused by Customer's misuse or abuse.

10.2.1.2 These warranties do not cover damage to or malfunction of the System caused in whole or in part by Customer or third parties through other than normal use of the System or caused by an event external to the System that is not within the control of Verizon or any of its employees, affiliates, or subcontractors.

10.3 **Maintenance Service Provisions.**

10.3.1 **Data Maintenance Terms.** Verizon warrants that Verizon Data Maintenance - Network and Maintenance Takeover Service will be performed in a good and workmanlike manner.

VoIP Inbound and IP Interactive Voice Response Service Attachment

1. **Service Description.** VoIP Inbound calling services and IP Interactive Voice Response ("IP-IVR") call treatment service.

1.1 **VoIP Inbound.** VoIP Inbound extends Verizon's traditional Toll Free network to enable Voice over IP terminations via standard types of access such as Internet Dedicated access and Private IP. Calls will terminate to devices certified to accept IP terminations in the United States. Both Toll Free and Local call origination types are receivable via VoIP Inbound.

1.1.1 **Toll Free.** VoIP Inbound calls can be received via traditional North American toll free (8xx) numbers. VoIP Inbound calls may also be received from any country where Verizon offers International Toll Free (ITFS) service or Universal International Freephone Numbers (UIFN) service.

If Customer desires to terminate inbound toll-free traffic to non-IP locations, Customer must execute a separate Service Attachment for Long Distance Voice Services, under which such inbound voice traffic will be handled.

1.1.2 **Local Origination.** Calls made to local telephone numbers are enabled with the same capabilities of intelligent call routing, treatment and management typically used to connect toll-free calls to contact centers ("Local Origination"). Local Origination telephone numbers ("TNs") are Verizon VoIP numbers, or numbers that have been ported to Verizon, which enable inbound calls provisioned with the above-mentioned features. Local Origination is available for TDM-originated (PSTN) and IP-originated (VoIP) calls.

VoIP Inbound Local Origination calls terminated to non-IP switched access locations will be supported for calls terminated to Customer's location served by a rate center in the same local calling area as the rate center associated with the dialed VoIP Inbound Local Origination number. All other calls terminated to non-IP switched access locations will not be supported by VoIP Inbound Local Origination and in the event such calls are terminated, the appropriate rates in Appendix A will apply.

Customer's VoIP Inbound Local Origination calls to non-IP dedicated access locations or IP locations will be supported, and the rates set forth in Appendix A will apply.

Customer's IP-based traffic may originate from Verizon VoIP Service or Verizon's wholesale VoIP service (both services separately contracted) without conversion to TDM service.

Local Origination options include directory listings for TNs. For each TN, one standard listing will be placed in the local exchange carrier's ("LEC's") White Pages and one in the Yellow Pages, to the extent such directory listings are currently offered by the LEC. Additional and alternate listings are available for an additional charge.

1.1.3 **Calling Party Name (CNAM).** CNAM is a VoIP Inbound feature that enables Customer to receive caller ID information. When VoIP Inbound Toll Free or Local Origination calls are delivered to Customer's IP-terminated devices, the CNAM feature will first check the Verizon name database for a "Calling Party Name." Calling Party Names retrieved from the Verizon database will be delivered to Customer's IP-terminated devices with no further provisioning required and at no additional charge to Customer.

If no Calling Party Name is returned from the Verizon database, and Customer has ordered Calling Party Name for specified IP Terminations (URIs) ("Enhanced CNAM"), Verizon will query a third-party database service for Calling Party Name. Customer will be billed for each such Enhanced CNAM query. Customer will be able to activate or disable Enhanced CNAM

at its convenience via the Network Manager application on the Verizon Enterprise Center (VEC).

1.2 **IP-IVR.** IP-IVR is a network-based response capability that provides call routing features for VoIP Inbound calls, enabling routing and transfers to TDM and IP end points.

2. **Customer Requirements.** In order to ensure the proper IP transport for VoIP Inbound if IP terminations are used, Customer must purchase either Internet Dedicated Service or Private IP Service from Verizon (via a separate Verizon service attachment).

3. **Features.**

3.1 **Combined Features Package.** The Combined Features Package is comprised of the following features:

- Time-of- Day/Time-of-Interval Routing
- Cross Corporate Identification Routing (CCID)
- Day-of-Week Routing
- Exchange Routing (for toll free numbers only)
- Geographic/Point-of-Call Routing (for toll free numbers only)
- Percentage Allocation Routing

3.2 **A La Carte Features.** The following advanced features are available individually:

- Alternate Routing. Plans pre-defined by Customer enable re-routing of inbound calls to enable disaster recovery.
- Call Area Selection/Tailored Call Coverage. Customer can block incoming calls based on originating state or area code.
- Day-of-Year/Holiday Routing. Customer can re-route inbound calls based on date (month/day).
- Dialed Number ID Service (DNIS). Customer with multiple toll free numbers terminating in a single location can identify the number dialed by the caller (available only at dedicated access locations).
- Disconnect Message Referral (DMR). DMR is a message to inform callers that a dialed number has been changed or disconnected and, optionally, offers the ability to transfer the call to the specified destination.
- Network Call Redirect. Customer is enabled to send overflow calls to a pre-determined alternate routing group, as defined via a table.
- Supplemental Codes. These are caller-entered digits (such as account number or ID code) that enable call tracking and management.

4. **Service Provisions**

4.1 **Service Activation Date/Service Term**

4.1.1 **Service Activation Date.** The “Service Activation Date” for VoIP Inbound or IP-IVR Service will be the date that Customer’s Verizon account team notifies Customer that the Service is available for Customer’s use in a production environment. Customer will be charged for calls placed by or authorized by the Customer after VoIP Inbound or IP-IVR Service is installed, including those placed prior to the Service Activation Date.

4.2. **Customer Premises Equipment ("CPE")**

4.2.1 **Non-certified CPE.** Customer may use CPE in its IP environment that has not been acquired from or previously certified by Verizon; provided, however, that Customer shall submit to Verizon a list of such non-certified CPE to be used in conjunction with the VoIP Inbound and IP-IVR Services. Such CPE must be approved by Verizon prior to contract execution and if approved, a list of the same will be attached to and made a part of this Service Attachment. Customer and not Verizon is solely responsible for interoperability issues arising from the use of non-certified CPE. When contacting Verizon Customer Support for troubleshooting purposes or Customer support for CPE, Verizon will not provide troubleshooting or Customer support for CPE which has not been Verizon-approved or Verizon-certified.

4.3 **Caller Privacy**

4.3.1 For VoIP Inbound Local Origination calls, if the calling party uses a per call or per line blocking feature to designate a call as private, Verizon will not deliver the Calling Party Number ("CPN") to the Customer.

4.3.2 For VoIP Inbound Toll Free calls, if the calling party uses a per call or per line blocking feature to designate a call as private, Verizon will deliver the CPN along with a privacy indicator to Customer, subject to FCC restrictions on the use of ANI and charge number services information. Customer is permitted to use the information for billing and collection, routing, screening, and completion of the originating caller's call or transaction or for services directly related to the originating caller's call or transaction. Customer is prohibited from reusing or selling such information without the originating caller's affirmative consent.

4.4 **SIP Transfer Restriction/Indemnity.** The Two-Channel Agent-attended SIP Transfer feature shall not be used by Customer agents except to transfer a caller to another Verizon IP-served location. If Customer or its agent(s) use the SIP Transfer feature for any other purpose, (i) Verizon may immediately suspend this Service Attachment until the non-compliant use ceases to Verizon's satisfaction, and (ii) Verizon shall not be liable for any claims arising from customer or customer agent misuse.

4.5 **Use of Sensitive Personal Information.** VoIP Inbound and IP-IVR Services does not provide for the encryption of personal information about individuals ("Sensitive Personal Information" or "SPI"). Accordingly, Verizon intends that SPI not be stored within the VoIP Inbound and IP-IVR Services platform. To the extent Customer does store SPI within the VoIP Inbound and IP-IVR Services platform, Customer does so entirely at its own risk.

ACCEPTABLE USE POLICY

This Acceptable Use Policy specifies the actions prohibited by Verizon, dba Verizon Services ("Verizon") to users of the Verizon IP Network. Verizon reserves the right to modify the Policy at any time, effective upon posting of the modified Policy to this URL: http://www.verizonenterprise.com/terms/ or other notice to customer.

Illegal use

The Verizon IP Network may be used only for lawful purposes. Transmission, distribution or storage of any material in violation of any applicable law or regulation is prohibited. This includes, without limitation, material protected by copyright, trademark, trade secret or other intellectual property right used without proper authorization, and material that is obscene, defamatory, constitutes an illegal threat, or violates export control laws.

System and network security

Violations of system or network security are prohibited, and may result in criminal and civil liability. Verizon will investigate incidents involving such violations and may involve and will cooperate with law enforcement if a criminal violation is suspected. Examples of system or network security violations include, without limitation, the following:

- Unauthorized access to or use of data, systems or networks, including any attempt to probe, scan or test the vulnerability of a system or network or to breach security or authentication measures without express authorization of the owner of the system or network.
- Unauthorized monitoring of data or traffic on any network or system without express authorization of the owner of the system or network.
- Interference with service to any user, host or network including, without limitation, mailbombing, flooding, deliberate attempts to overload a system and broadcast attacks.
- Forging of any TCP-IP packet header or any part of the header information in an e-mail or a newsgroup posting.

E-mail

Sending unsolicited mail messages, including, without limitation, commercial advertising and informational announcements, is explicitly prohibited. A user shall not use another site's mail server to relay mail without the express permission of the site.

Usenet

Posting the same or similar message to one or more newsgroups (excessive cross-posting or multiple-posting) is explicitly prohibited.

INDIRECT OR ATTEMPTED VIOLATIONS OF THE POLICY, AND ACTUAL OR ATTEMPTED VIOLATIONS BY A THIRD PARTY ON BEHALF OF A VERIZON CUSTOMER OR A CUSTOMER'S END USER, SHALL BE CONSIDERED VIOLATIONS OF THE POLICY BY SUCH CUSTOMER OR END USER.

DEPARTMENT OF STATE POLICE
NON-DISCLOSURE AGREEMENT

This Non-Disclosure Agreement is made and entered into as of the _____ day of _____, 201____, by and between the recipient listed below and the Department of Virginia State Police (VSP).

The recipient represents by executing this Non-Disclosure Agreement that he/she will have access to confidential information relative to the Virginia State Police Network. The confidentiality of State Police records are governed by federal and state laws and the unlawful release of information could result in state and federal criminal prosecution, federal and state civil liability and disciplinary action. The recipient understands and agrees not to disseminate this information to anyone in any form (e.g., verbally or in writing) without prior written approval by the VSP.

I hereby acknowledge receipt or review of confidential/proprietary documents concerning the Virginia State Police Network and understand and accept my responsibilities to protect the confidentially of the information.

Recipient:

Printed Name:_____

Firm Name:_____

Title:_____

Address:_____

_____

Signature:_____

Fax No.:_____

Phone No.:_____

E-mail:_____