



Commonwealth of Virginia
Virginia Information Technologies Agency

CABLING PRODUCTS & SERVICES

Mandatory Use Contract for Executive Branch Agencies; Optional User for all other Public Bodies

Date: May 4, 2016

Contract #: VA-160322-HINC

Authorized Users: All public bodies, including VITA, as defined by §2.2-4301 and referenced by §2.2-4304 of the *Code of Virginia*. Also includes private institutions of higher education chartered in Virginia and granted tax-exempt status under §501(c)(3) of the Internal Revenue Code. A list of the private institutions eligible to use this contract can be found at: <http://www.cicv.org/Our-colleges/Profiles.aspx>.

Contractor: Hyperion, Inc.
11480 Commerce Park Drive
Suite 120
Reston, VA 20191

Contact Person: See page 3 for contact information
Voice: 703-848-8850
Fax: 703-848-1722
Email: www.hyperioninc.com

FIN: 54-1505434

Term: March 22, 2016 – March 21, 2018

For Additional Information, Please Contact:

Virginia Information Technologies Agency
Supply Chain Management

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Strategic Sourcing Specialist
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E-Mail: john.tackley@vita.virginia.gov
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NOTES: Individual Commonwealth of Virginia employees are not authorized to purchase equipment or services for their personal use from this Contract.

For updates, please visit our Website at <http://www.vita.virginia.gov/procurement/contracts.cfm>

VIRGINIA INFORMATION TECHNOLOGIES AGENCY (VITA): Prior review and approval by VITA for purchases in excess of \$100,000.00 is required for State Agencies and Institutions only.

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Invitation for Bid (IFB)

SOLICITATION, OFFER AND AWARD

IFB NUMBER 2016-08	DATE ISSUED January 22, 2016	DATE DUE February 19, 2016	REQ. NUMBER n/a
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For more information, please send e-mail to Single Point of Contact (SPOC): doug.jeslie@vita.virginia.gov, or call (804) 416-6161

ISSUING OFFICE VITA - Supply Chain Management 11751 Meadowville Lane Chester, VA 23836	SHIP TO: as specified in each order BILL TO: as specified in each order
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SOLICITATION

This procurement is being conducted on behalf of VITA and other Public Bodies as defined in § 2.2-4301 and referenced by § 2.2-4304 of the Code of Virginia and private institutions of higher education that are listed at <http://www.civ.org/Dur-Colleges/Profiles.aspx>. Sealed Bids for furnishing the Products and/or Services set forth in the Pricing Schedule will be returned to the Issuing Office. If hand carried, deliver to the SCM receptionist located at the Issuing Office address above. Bids must be received prior to 2:00 PM local time on the Date Due indicated above (Public bid opening at 2:30 PM). Please read and understand the attached Solicitation Instructions. This is an advertised solicitation consisting of this cover page, the Solicitation Instructions, Requirements, Pricing Schedule, Certification Regarding Lobbying and the Mandatory Contractual Terms and Conditions, and any other files, exhibits, attachments, provisions, representations, certifications or specifications as are attached or incorporated herein by reference, or any subsequent amendments issued.

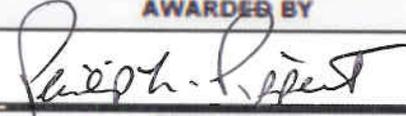
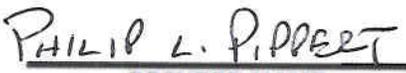
OFFER

In compliance with the Terms and Conditions set forth in this solicitation, the undersigned agrees, if this offer is accepted within 90 days from the Date Due above, to furnish any or all Bid Items awarded at the prices offered in the Pricing Schedule, delivered to the Ship To address within the time specified in individual orders. All offers are subject to the mandatory Terms and Conditions set forth herein.

BIDDER INFORMATION

SUPPLIER FEIN	54-1505434	 BIDDER'S BINDING SIGNATURE Paul Milo, Jr. PRINTED NAME President TITLE
SUPPLIER NAME	Hyperion, Inc.	
ADDRESS	11480 Commerce Park Drive, Suite 120	
CITY/STATE/ZIP	Reston, VA 20191	
E-MAIL	pmilo@hyperioninc.com	
PHONE	(703) 848-8850 ext 3025	
FAX	(704) 848-1722	

AWARD

BID ITEMS AWARDED	AWARDED BY	AWARD DATE	CONTRACT NUMBER
Telecommunications Cabling Services and Associated Materials in the Service Districts identified in Exhibit A, Section III (page 10).	 SIGNATURE for the Chief Information Officer (CIO) of the Commonwealth of Virginia  PRINTED NAME	3/22/16	VA-160322-HINC

NOTE: This public body does not discriminate against faith-based organizations in accordance with the Code of Virginia, § 2.2-4343.1 or against any Bidder because of race, religion, color, sex, national origin, age, disability, or any other basis prohibited by state law relating to discrimination in employment.

INFORMATION TECHNOLOGY CABLING SERVICES CONTRACT
RESULTING FROM IFB NUMBER 2016-08
CONTRACTUAL TERMS AND CONDITIONS
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**INFORMATION TECHNOLOGY CABLING SERVICES CONTRACT
RESULTING FROM IFB NUMBER 2016-08
CONTRACTUAL TERMS AND CONDITIONS**

THIS INFORMATION TECHNOLOGY CABLING 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") and Supplier, to be effective as of the date set forth on the signature page of this Contract ("Contract Award Date" or "Effective Date").

1. PURPOSE AND SCOPE

This Contract sets forth the terms and conditions under which Supplier shall provide and install the Products identified in Exhibit A Requirements and Exhibit B Pricing Schedule and provide various Services to the Authorized Users.

2. DEFINITIONS

A. Acceptance

Successful delivery and performance by the Supplier of its contractual commitments at the location(s) designated in the applicable Statement of Work or order, including completed and successful Acceptance testing in conformance with the Requirements as determined by the Authorized User in the applicable Statement of Work or order.

B. Agent

Any third party independent agent of any Authorized User.

C. Authorized Users

All public bodies, including VITA, as defined by §2.2-4301 and referenced by §2.2-4304 of the Code of Virginia. Authorized Users shall include private institutions of higher education that are listed at: <http://www.cicv.org/Our-Colleges/Profiles.aspx>.

D. Business Day/Hour

Normal operating hours for the Commonwealth of Virginia: Monday-Friday, 8 a.m.-5 p.m. Eastern Standard/Daylight Time, unless otherwise specified on the applicable order or Statement of Work, excluding Commonwealth-designated holidays.

E. 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 or as a result of discussions related to this Contract or any order or SOW 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, or (iii) under the circumstances of disclosure should reasonably be considered as confidential or proprietary information of the disclosing Party or (iv) is identifiable or should be reasonably considered as protected health information; (v) any personally identifiable information, including information about VITA's employees, contractors, and customers, that is protected by statute or other applicable law.

F. Deliverable

The tangible embodiment of the work performed or Services, plans, reports, data, or Products provided by the Supplier in fulfilling its obligations under the Contract or as identified in the applicable Statement of Work or order, including the development or creation of Work Product, if Work Product is authorized under the Contract.

G. Documentation

Those materials (including user manuals, training materials, guides, product descriptions, technical manuals, product specifications, and supporting materials detailing the information and instructions needed in order to allow any Authorized User and its Agents to make productive use of the Product, Service, or Deliverable, and to implement and develop self-sufficiency with regard to the Product, Service, or Deliverable, provided by Supplier in fulfilling its obligations under the Contract or as may be specified in any Statement of Work or order issued hereunder.

H. 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.

I. Eligible Entity

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

J. Party

Supplier, VITA or any Authorized User.

K. Product

Means hardware, cabling, any other equipment, all applicable user documentation and related accessories as set forth in Exhibit A Requirements and Exhibit B Pricing Schedule or as specified in any Statement of Work or order provided pursuant to the Contract.

L. Requirements

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

M. Services

Any work performed or service provided by Supplier in fulfilling its obligations under the Contract or, as applicable, any Statement of Work or order issued under the Contract, including design, Products, implementation, installation, troubleshooting and repair, support, testing, training, or other provision to the Authorized User of any Deliverable described in the applicable Statement of Work or order, as authorized by the Contract scope. Work Product is not authorized under this Contract. For details about the work and services to be provided by Supplier under this Contract, see Exhibit A, Requirements.

N. Statement of Work (SOW)

Any document describing the deliverables, due dates, assignment duration and payment obligations for a specific project, engagement, or assignment that Supplier commits to provide to an Authorized User, which, upon signing by both Parties, shall be deemed a part of the Contract.

O. 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).

P. Warranty Period

The greater of the manufacturer's Standard Warranty, or as specified in Exhibit A Requirements.

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 two (2) years. VITA, in its sole discretion, may extend this Contract for up to three (3) additional one (1) year periods after the expiration of the initial two (2) year period. VITA will issue a written notification to the Supplier stating the extension period thirty (30) days prior to the expiration of any current term. In addition, performance of an order or SOW issued during the term of this Contract may survive the expiration of the term of this Contract, in which case all contractual terms and conditions required for the operation of such order or SOW shall remain in full force and effect until all of Supplier's obligations pursuant to such order or SOW 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 or SOW issued hereunder, in whole or in part, or an Authorized User may terminate an order or SOW, 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, or any order or SOW issued hereunder, in whole or in part, or an Authorized User may terminate an order or SOW, 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 or in any order or SOW issued hereunder.

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 fifteen (15) 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 or SOW issued hereunder, in whole or in part. If an Authorized User deems the Supplier to be in breach and/or default of an order or SOW, such Authorized User shall provide Supplier with notice of breach and/or default and allow Supplier fifteen (15) days to cure the breach and/or default. If Supplier fails to cure the breach and/or default as noted, such Authorized User may immediately terminate its order or SOW, in whole or in part. Any such termination shall be deemed a Termination for Breach or 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, and VITA shall provide written notice to Supplier of such termination. Supplier shall provide prompt 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 from public bodies 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 this Contract, in whole or in part, or any order or SOW, in whole or in part, or an Authorized User may terminate an order or SOW, 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

Upon termination, neither the Commonwealth, nor VITA, nor any Authorized User shall have any future liability except for Deliverables accepted by the Authorized User or Services rendered by Supplier and accepted by the Authorized User prior to the termination date.

In the event of a Termination for Breach or Termination for Default, Supplier shall accept return of any Deliverable that was not accepted by the Authorized User(s), and Supplier shall refund any

monies paid by any Authorized User for such Deliverable, and all costs of de-installation and return of Deliverables shall be borne by Supplier.

F. Termination by Supplier

Termination by Supplier will not be considered.

G. Transition of Services

Prior to or upon expiration or termination of this Contract and at the request of VITA or any Authorized User, Supplier shall provide all assistance as VITA or such Authorized User may reasonably require to transition the Supplier's contractual obligations, or any portion thereof, as requested by VITA or such Authorized User, to any other supplier with whom VITA or such Authorized User contracts for provision of same. This obligation may extend beyond expiration or termination of the Contract for a period of time (i.e., three (3) months, six (6) months, twelve (12) months or as required and defined by VITA or such Authorized User (herein referred to as "Transition Period"). Supplier must provide all reasonable transition assistance requested by VITA or such Authorized User to allow for the expired or terminated portion of the Services to continue without interruption or adverse effect, and to facilitate the orderly transfer of such Services to VITA or any Authorized User. Such transition assistance will be deemed by the parties to be governed by the terms and conditions of this Contract, except for those terms or conditions that do not reasonably apply to such transition assistance.

H. 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 agency project manager(s) or authorized representative(s), technical leads, VITA representatives for SWaM and Sales/IFA reporting, as applicable, 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 Section 6.0 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.

I. 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, other required Small Business (SWaM) Procurement Plan compliance/variance and non-SWaM spend documentation as described in the Reporting section of this Contract, Sales Reports/IFA Payments 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 the Commonwealth's 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. 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 under this Contract are competent and knowledgeable of the contractual arrangements and the applicable order or SOW between Authorized User and Supplier. 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 with the above or whose conduct or behavior is unacceptable or unprofessional or results in a security or safety breach.

B. Supplier Personnel Supervision

Supplier acknowledges that Supplier or any of its agents, contractors, or subcontractors, is and shall be the employer of Supplier personnel, and shall have sole responsibility to supervise, counsel, discipline, review, evaluate, set the pay rates of, provide (to the extent required by law) health care and other benefits for, and terminate the employment of Supplier personnel. Neither VITA nor an Authorized User shall have any such responsibilities for Supplier or subcontractor personnel.

C. Key Personnel

An order or SOW may designate certain of Supplier's personnel as Key Personnel or Project Managers. Supplier's obligations with respect to Key Personnel and Project Managers shall be described in the applicable order or SOW. Failure of Supplier to perform in accordance with such obligations may be deemed a default of this Contract or of the applicable order or SOW.

D. Subcontractors

Supplier shall not use subcontractors to perform its contractual obligations under the Contract or any order or SOW issued thereunder unless specifically authorized in writing to do so by the Authorized User. If an order or SOW issued pursuant to this Contract is supported in whole or in part with federal funds, Supplier shall not subcontract to any subcontractor that is a party excluded from Federal Procurement and Nonprocurement Programs. In no event shall Supplier subcontract 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.

If Supplier subcontracts the provision of any performance obligation under this Contract to any other party, Supplier will (i) act as prime contractor and shall be the sole point of contact with regard to all obligations under this Contract, and (ii) hereby represents and warrants that any authorized subcontractors shall perform in accordance with the warranties set forth in this Contract.

5. NEW TECHNOLOGY

A. Access to New Technology

Supplier will bring to VITA's attention any new products or services within the scope of the Contract that it believes will be of interest to VITA and will work to develop proposals for the provision of any such products or services as VITA requests.

B. New Service Offerings Not Available from Supplier

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

If VITA elects to acquire new products or services as described in the above paragraph and such services replace existing Supplier-provided services, discount tiers and any commitments (as applicable per the Contract) will be reduced to reflect reductions in purchases of the replaced products or services.

6. PRODUCT INSTALLATION, ACCEPTANCE AND CURE

A. Product Installation

Supplier shall provide installation of all Products and provide Services and Deliverables in accordance with the Requirements in Exhibit A of the Contract, the fees in Exhibit B of the Contract and in accordance with the Authorized User's order or SOW and agreed upon schedule. Installation shall include: unpacking, removal of all shipping/packing materials, positioning, testing, and related necessary services to allow for Acceptance by the Authorized User.

B. Late Delivery

Supplier hereby acknowledges and agrees that failure to deliver the Product and Deliverables ordered in strict accordance with the agreed upon delivery schedule determined in accordance with an Authorized User's order or SOW shall constitute a material breach of this Contract resulting in damages to the ordering Authorized User, the total sum of which would be impracticable or difficult to ascertain as of the Effective Date of this Contract. As an estimate of the minimum amount of damages such Authorized User will suffer, Supplier agrees to credit the Authorized User an amount equal to one percent (1%) of the total Product and/or Deliverable's purchase price, for each day that the Product and/or Deliverable is undelivered or nonoperational for a period of fifteen (15) days following the agreed upon delivery date. If the delay lasts longer than fifteen (15) days, the Authorized User may immediately cancel the order or SOW and collect as late delivery damages five percent (5%) of the total purchase price.

In addition, in the event the Supplier fails for any reason to deliver within fifteen (15) days of the agreed upon delivery date set forth in the order/schedule, the ordering Authorized User, at its own discretion, may give Supplier oral or written notice of breach regarding the subject order or SOW. In no event shall any Authorized User 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 such Authorized User's notice of breach. Notwithstanding the foregoing, the Authorized User reserves any and all other remedies available at law or in equity.

C. Acceptance

Product, Services and Deliverables shall be deemed accepted the earlier of when the ordering Authorized User notifies Supplier in writing that such Product, Services and Deliverables have been accepted; or 30 days after Supplier has notified the ordering Authorized User that such Product, Services and Deliverables have been delivered during which Authorized User does not notify Supplier in writing of a failure of same to successfully operate in accordance with the Requirements of this Contract and Authorized User's applicable order or SOW (i.e., non-conformity(ies)).

D. Cure Period

Supplier shall correct any non-conformities identified during Acceptance testing and re-submit such previously non-conforming Product and/or Deliverable for re-testing within seven (7) days of receipt of written notice of non-conformance, or as otherwise agreed between the Authorized User and Supplier in the applicable order or SOW. Should Supplier fail to cure the non-conformity or deliver Product and/or Deliverable which meets the Requirements, such Authorized User may, in its sole discretion: (i) reject the Product and/or Deliverable in its entirety and recover amounts previously paid hereunder; (ii) issue a "partial Acceptance" of the Product or Deliverable with an equitable adjustment in the price to account for such deficiency; or (iii) conditionally accept the applicable Product while reserving its right to revoke Acceptance if timely correction is not forthcoming. Failure of a Product or Deliverable to meet, in all material respects, the Requirements after the second set of acceptance tests may constitute a default by Supplier. In the event of such default, the Authorized User may, at its sole discretion, terminate its order or SOW, in whole or in part, for the Product, Deliverables and any Services to be provided thereunder by Supplier.

7. GENERAL WARRANTY

Supplier warrants and represents to VITA that Supplier will fulfill its contractual obligations and meet all needed requirements as described in Exhibit A Requirements, as follows:

A. Ownership

Supplier has the right to perform and provide all contractual obligations and provide all needed Product and Services without violating or infringing any law, rule, regulation, copyright, patent, trade secret or other proprietary right of any third party.

B. Limited Warranty and Remedy

In addition to any remedies described in Supplier's Standard Warranty for Product and related Services, if Supplier is unable to make the Product conform, in all material respects, to the Requirements within thirty (30) days following notification by an Authorized User, Supplier shall, at such Authorized User's request, either (i) provide a replacement Product and related Services at no additional cost to the Authorized User, or (ii) accept return of the Product and return all monies paid by such Authorized User for the Product, pro-rated on a monthly basis as of the date the Authorized User reported the non-conformity and based on the average life of the Product.

C. Performance Warranty

Supplier warrants and represents the following with respect to Performance:

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

ii. All contractual obligations pursuant to a particular Invitation for Bid ("IFB"), quote, or Request for Quote (RFQ), and any associated Deliverables shall be fit for the particular purposes specified by VITA in the IFB and in this Contract and, if applicable, by the Authorized User requesting such quote or issuing such RFQ, and Supplier is possessed of superior knowledge with respect to its contractual obligations and is aware that all Authorized Users are relying on Supplier's skill and judgment in providing its contractual obligations;

D. Documentation and Deliverables

Supplier warrants the following as applicable to the Contract:

i. The Documentation which Supplier is required to provide under this Contract shall be sufficient in detail and content to allow a user to understand and fully utilize, as applicable, the Services, Products, and Deliverables without reference to any other materials or information.

ii. No engineering change or revision made to Services, Products, or Deliverables provided by Supplier hereunder shall degrade the performance of any Services, Products, or Deliverables to a level below that defined in the Requirements or the Product manufacturer's published specifications, as applicable, or cause any other warranty to be breached, or require an Authorized User to acquire additional hardware equipment or software.

E. Malicious Code

Supplier has used its best efforts through quality assurance procedures to ensure that there are no Computer Viruses or undocumented features in any Deliverables or Product, as obligated and provided by Supplier under the order or SOW, at the time of delivery to the Authorized User. Supplier warrants that the Deliverables and Products, as obligated and provided by Supplier under the order or SOW does not contain any embedded device or code (e.g., time bomb) that is intended to obstruct or prevent any Authorized User's use of the Deliverables and/or Product.

Notwithstanding any rights granted under this Contract or at law, Supplier hereby waives under any and all circumstances any right it may have or may hereafter have to exercise Electronic Self-Help. Supplier agrees that an Authorized User may pursue all remedies provided under law in the event of a breach or threatened breach of this Section, including injunctive or other equitable relief.

F. 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 a

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 order by any court of competent jurisdiction.

G. Supplier's Past Experience

Supplier warrants that it has met similar contractual obligations and fulfilled the Requirements as set forth in Exhibit A and in this Contract, in similar or greater complexity, to other customers without significant problems due to Supplier's performance and without causing a contractual breach or default claim by any customer.

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.

8. FEES, ORDERING AND PAYMENT PROCEDURE

A. Fees and Charges

As consideration for the Supplier's performance obligations and any additional products and services provided hereunder to an Authorized User in accordance with the scope of this Contract and the Requirements, as authorized by Exhibit A, and per the Authorized User's order or SOW, an Authorized User shall pay Supplier the fee(s) set forth on Exhibit B Pricing Schedule, which lists any and all fees and charges. The labor rates and any Product discounts shall be applicable throughout the term of this Contract; provided, however, that in the event the labor rates apply for any period less than the entire term, Supplier agrees that it shall not increase the rates more than once during any twelve (12) month period, commencing at the end of year two (2). No such increase shall exceed the lesser of three percent (3%) or the annual increase in the Consumer Price Index for All Urban Consumers (CPI-U), U.S. City Average, All Items, Not Seasonally Adjusted, as published by the Bureau of Labor Statistics of the Department of Labor (<http://www.bls.gov/cpi/home.htm>), for the effective date of the increase compared with the same index one (1) year prior. Any such change in price shall be submitted in writing to VITA and shall not become effective for sixty (60) days thereafter.

B. E-Rate

Supplier agrees to make available all E-rate Eligible Services as listed and priced herein to any Authorized User 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 Product and 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 Products and 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.

C. Ordering

Notwithstanding all Authorized User's rights to license or purchase Supplier's products or services under this Contract, an Authorized User is under no obligation to purchase or from Supplier any of Supplier's Products or Services. This Contract is optional use and non-exclusive, and all Authorized Users may, at their sole discretion, purchase, or otherwise receive benefits from third party suppliers of products and services similar to, or in competition with, the products and services provided by Supplier.

Supplier is required to accept any order or placed by an Authorized User through the eVA electronic procurement website portal (<http://www.eva.virginia.gov/>). eVA is the Commonwealth of Virginia's e-procurement system. State agencies, as defined in §2.2-2006 of the Code of

Virginia, shall order through eVA. All other Authorized Users are encouraged to order through eVA, but may order through the following means:

- i. Purchase Order (PO): An official PO form issued by an Authorized User.
- ii. Any other order/payment charge or credit card process, such as AMEX, MASTERCARD, or VISA under contract for use by an Authorized User.

This ordering authority is limited to issuing orders or SOWs for the contractual offerings and Requirements available under the scope of this Contract. Under no circumstances shall any Authorized User have the authority to modify this Contract. An order or SOW from an Authorized User may contain additional terms and conditions; however, to the extent that the terms and conditions of the Authorized User's order or SOW are inconsistent with the terms and conditions of this Contract, the terms of this Contract shall supersede.

Notwithstanding the foregoing, Supplier shall not accept any order or SOW from an Authorized User if such order or SOW is to be funded, in whole or in part, by federal funds and if, at the time the order or SOW 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.

ALL CONTRACTUAL OBLIGATIONS UNDER THIS CONTRACT IN CONNECTION WITH AN ORDER OR SOW PLACED BY ANY AUTHORIZED USER ARE THE SOLE OBLIGATION OF SUCH AUTHORIZED USER AND NOT THE RESPONSIBILITY OF VITA UNLESS SUCH AUTHORIZED USER IS VITA.

D. Statement of Work

An SOW may be required for any orders placed by an Authorized User pursuant to this Contract. Supplier shall perform any and all contractual obligations at the times and locations set forth in the applicable SOW and at the rates set forth in Exhibit B herein, or as otherwise agreed upon between Supplier and Authorized User pursuant to the RFQ process set forth herein. Unless VITA issues a written authorization for a time and materials type SOW, any SOW shall be of a fixed price type. In furtherance of compliance, invoicing, and auditing requirements, for time and materials type SOWs, Supplier personnel shall maintain daily time records of hours and tasks performed, which shall be submitted or made available for inspection by the Authorized User upon forty-eight (48) hours advance written notice.

Any change to an SOW must be described in a written change request. Either Party to an SOW may issue a change request that will be subject to written approval of the other Party before it becomes part of this Contract. In no event shall any SOW or any modification thereto require the Supplier to provide any products or services that are beyond the scope of this Contract as such scope is defined in Exhibit A Requirements hereto.

E. Supplier Quote and Request for Quote

Should an Authorized User determine that an additional competitive process is required to ensure it receives the best value for its needed solution, product and/or services under this contract, such Authorized User may, at its sole discretion, use a Request for Quote (RFQ) process to obtain identical or similar solutions, products and/or services to those provided by Supplier pursuant to this Contract. The RFQ process is typically used when an Authorized User requires a complete solution that may be fulfilled by Products and Services herein, but whose complexity or size may result in economies that could not be passed on to the Authorized User within the confines of the established contract catalog discount pricing. When an RFQ is used, the project timing and requirements will be clearly outlined in the RFQ document. In some situations, the Authorized User may not identify the exact specifications required. If that is the case, the RFQ respondents will be given the opportunity to identify and propose their recommended specifications.

Supplier shall respond to the RFQ by providing a quote, which shall include (a) a detailed description of each product or service proposed, including such product and services components, at the Exhibit B line item level, (b) the quantity of each such component, (c) the contract price, (d) any additional percentage discount offered, and (e) an extended price. If requested by the Authorized User, Supplier's quote shall also include a proposal describing the

approach Supplier plans to take in developing, implementing, and maintaining its offering for the Authorized User. Should Supplier be unable to respond to the RFQ due, for example, to resource constraints, Supplier shall notify Authorized User in writing of its inability to perform the work requested by such Authorized User, and provide the reasons for such inability to perform, prior to the due date for the submission of quotes in response to the RFQ.

F. Invoice Procedures

Supplier shall remit each invoice to the "bill-to" address provided with the order promptly after all Supplier's performance obligations have been accepted and in accordance with the milestone payment schedule, if any, in the applicable order or SOW. Invoices issued by the Supplier shall identify at a minimum:

- i. Dates/periods that invoice covers, including any Service or Deliverable, as applicable.
- ii. Line item description of the Deliverable(s), Product(s), Services, as applicable to this Contract, including components thereof or service type, and, if applicable, the project milestone.
- iii. Quantity, charge and extended pricing for each line item
- iv. Applicable order and/or SOW date
- v. This Contract number and the applicable order number and/or SOW number
- vi. Supplier's Federal Employer Identification Number (FEIN)

Any terms included on Supplier's invoice shall have no force or effect and will in no way bind VITA or any Authorized User.

G. Purchase Payment Terms

Supplier is responsible for the accuracy of its billing information. Supplier agrees not to issue invoices hereunder until all Supplier's performance obligations have been Accepted and in accordance with the milestone payment schedule, if any, in the applicable order or SOW, or until after Services have been rendered. Charges for Deliverables, Products, components or Services Accepted more than ninety (90) days prior to receipt of a valid invoice may not be paid. All payment terms are net 30 days after Acceptance.

9. REPORTING AND INDUSTRIAL FUNDING ADJUSTMENT (IFA) FEES

Supplier is required to submit to VITA the following monthly reports:

- i. Report of Sales; and
- ii. Small Business Procurement and Subcontracting Report

These reports must be submitted, and IFA fees paid, using the instructions and further detailed requirements and templates found at the following URL:
<http://www.vita.virginia.gov/scm/default.aspx?id=97>

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

In conjunction with the requirements in the Invoice Procedures section of this Contract, Supplier shall provide to VITA within 30 days of the date of expiration of the contract an accompanying statement certifying that Supplier has fully complied with the Contract's Small Business (SWaM) Procurement Plan, and if Supplier has not fully complied, provide a written explanation of any variances between such Plan and the actual participation. The Supplier's compliance confirmation and/or written explanation of variance shall be maintained by VITA, in the contract file.

Failure by Supplier to comply with its contractually obligated Small Business (SWaM) Procurement Plan may prohibit or delay any renewals of the Contract. Also, Supplier's failure to comply with its Small Business (SWaM) Procurement Plan or to explain any variance between the proposed Plan and actual SWaM subcontracting spend may result in the withholding of any final payment due Supplier.

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

10. DOCUMENTATION

Any documentation necessary for an Authorized User to have full benefit of the Product and Services shall be deemed included in the scope of the applicable order or SOW unless expressly excluded.

11. 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, an Authorized User may disclose the Confidential Information as delivered by Supplier to subcontractors, contractors or agents of such Authorized User that are bound by non-disclosure contracts with such Authorized User. Each Party 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).

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 under The Virginia Freedom of Information Act (§§2.2-3700 et seq. of the Code of Virginia) or similar laws or pursuant to 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 the record required by law) 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.

D. Confidentiality Statement

All Supplier personnel, contractors, agents, and subcontractors performing Services pursuant to this Contract shall be required to sign a confidentiality statement or non-disclosure agreement. Any violation of such statement or agreement shall be deemed a breach of this Contract and may result in termination of the Contract or any order or SOW issued hereunder.

12. INDEMNIFICATION AND LIABILITY

A. Indemnification

Supplier agrees to indemnify, defend and hold harmless the Commonwealth, VITA, any Authorized User, 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"), incurred by, borne by or asserted against any of Commonwealth's Indemnified Parties to the extent such Claims in any way relate to, arise out of or result from: (i) any intentional or willful conduct or negligence of any employee, agent, or subcontractor of Supplier, (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 Supplier-provided products or services, or (v) any actual or alleged infringement or misappropriation of any third party's intellectual property rights by any of the Supplier-provided products or 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 involving the Commonwealth or state agencies, the selection and approval of counsel and approval of any settlement shall be satisfactory to the Commonwealth. In the event of a settlement between Supplier and a private institution of higher education who is an Authorized User of this contract, such settlement shall be satisfactory to that institution.

In the event that a Claim is commenced against any of Commonwealth's Indemnified Parties alleging that use of the Supplier-provided products or services, including any components thereof, or that the Supplier's performance or delivery of any product or service under this Contract infringes any third party's intellectual property rights and Supplier is of the opinion that the allegations in such Claim in whole or in part are not covered by this indemnification provision, Supplier shall immediately notify VITA and the affected Authorized User(s) in writing, via certified mail, specifying to what extent Supplier believes it is obligated to defend and indemnify under the terms and conditions of this Contract. Supplier shall in such event protect the interests of the Commonwealth's Indemnified Parties and secure a continuance to permit VITA and the affected Authorized User(s) to appear and defend their interests in cooperation with Supplier as is appropriate, including any jurisdictional defenses VITA or the affected Authorized User(s) may have.

In the event of a Claim pursuant to any actual or alleged infringement or misappropriation of any third party's intellectual property rights by any of the Supplier-provided Deliverables, Products, and Services, , as applicable, or Supplier's performance, and in addition to all other obligations of Supplier in this Section, Supplier shall at its expense, either (a) procure for all Authorized Users the right to continue use of such infringing Deliverables, Products, and Services, as applicable, or any component thereof; or (b) replace or modify such infringing Deliverables, Products, and Services, as applicable, or any component thereof, with non-infringing Deliverables, Products, or Services, as applicable, satisfactory to VITA. And in addition, Supplier shall provide any Authorized User with a comparable temporary replacement products and/or services or reimburse VITA or any Authorized User for the reasonable costs incurred by VITA or such Authorized User in obtaining an alternative product or service, in the event such Authorized User cannot use the affected Deliverable, Product, and Services, as applicable, or any component thereof. If Supplier cannot accomplish any of the foregoing within a reasonable time and at commercially reasonable rates, then Supplier shall accept the return of the infringing Deliverables, Products, and Services, as applicable, or any component thereof, along with any other components rendered unusable by any Authorized User as a result of the infringing component, and refund the price paid to Supplier for such components.

B. Liability

Except for liability with respect to (i) any intentional or willful misconduct or negligence of any employee, agent, or subcontractor of Supplier, (ii) any act or omission of any employee, agent, or subcontractor of Supplier, (iii) claims for bodily injury, including death, and real and tangible property damage, (iv) Supplier's indemnification obligations, (v) Supplier's confidentiality obligations, (vi) Supplier's security compliance obligations, and (vii) Supplier's data privacy and security obligations as specified under this Contract, Supplier's liability shall be limited to twice the aggregate value of the delivered and accepted Deliverables, Products, and Services, , as applicable, provided by Supplier to all Authorized Users under this 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. 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.

FOR ALL OTHER CONTRACTUAL CLAIMS, IN NO EVENT WILL ANY PARTY BE LIABLE TO ANY OTHER PARTY FOR ANY INDIRECT, INCIDENTAL, CONSEQUENTIAL OR PUNITIVE DAMAGES, INCLUDING (WITHOUT LIMITATION) LOSS OF PROFIT, INCOME OR SAVINGS, EVEN IF ADVISED OF THE POSSIBILITY THEREOF, EXCEPT WHEN SUCH DAMAGES ARE CAUSED BY THE GROSS NEGLIGENCE OR WILLFUL MISCONDUCT OF THE PARTY, ITS EMPLOYEES, AGENTS OR SUBCONTRACTORS.

13. SECURITY COMPLIANCE

Supplier agrees to comply with all provisions of the then-current Commonwealth of Virginia security procedures, published by the Virginia Information Technologies Agency (VITA) and which may be found at: (<https://www.vita.virginia.gov/library/default.aspx?id=537>) or a successor URL(s), as are pertinent to Supplier's operation. Supplier further agrees to comply with all provisions of the relevant Authorized User's then-current security procedures as are pertinent to Supplier's operation and which have been supplied to Supplier by such Authorized User. Supplier shall also comply with all applicable federal, state and local laws and regulations. For any individual Authorized User location, security procedures may include but not be limited to: background checks, records verification, photographing, and fingerprinting of Supplier's employees or agents. Supplier may, at any time, be required to execute and complete, for each individual Supplier employee or agent, additional forms which may include non-disclosure agreements to be signed by Supplier's employees or agents acknowledging that all Authorized User information with which such employees and agents come into contact while at the Authorized User site is confidential and proprietary. Any unauthorized release of proprietary or Personal Information by the Supplier or an employee or agent of Supplier shall constitute a breach of its obligations under this Section and the Contract. Supplier shall immediately notify VITA and Authorized User, if applicable, of any Breach of Unencrypted and Unredacted Personal Information, as those terms are defined in Virginia Code 18.2-186.6, and other personal identifying information, such as insurance data or date of birth, provided by VITA or Authorized User to Supplier. Supplier shall provide VITA the opportunity to participate in the investigation of the Breach and to exercise control over reporting the unauthorized disclosure, to the extent permitted by law. Supplier shall indemnify, defend, and hold the Commonwealth, VITA, the Authorized User, their officers, directors, employees and agents harmless from and against any and all fines, penalties (whether criminal or civil), judgments, damages and assessments, including reasonable expenses suffered by, accrued against, or charged to or recoverable from the Commonwealth, VITA, the Authorized User, their officers, directors, agents or employees, on account of the failure of Supplier to perform its obligations pursuant this Section.

14. 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.

15. BANKRUPTCY

If Supplier becomes insolvent, takes any step leading to its cessation as a going concern, fails to pay its debts as they become due, or ceases business operations continuously for longer than fifteen (15) business days, then VITA may immediately terminate this Contract, and an Authorized User may terminate an order or SOW, on notice to Supplier unless Supplier immediately gives VITA or such Authorized User adequate assurance of the future performance of this Contract or the applicable order or SOW. If bankruptcy proceedings are commenced with respect to Supplier, and if this Contract has not otherwise terminated, then VITA may suspend all further performance of this Contract until Supplier assumes this Contract and provides adequate assurance of performance thereof or rejects this Contract pursuant to Section 365 of the Bankruptcy Code or any similar or successor provision, it being agreed by VITA and Supplier that this is an executory contract. Any such suspension of further performance by VITA or Authorized User pending Supplier's assumption

or rejection shall not be a breach of this Contract, and shall not affect the rights of VITA or any Authorized User to pursue or enforce any of its rights under this Contract or otherwise.

16. GENERAL PROVISIONS

A. Relationship Between VITA and Authorized User and Supplier

Supplier has no authority to contract for VITA or any Authorized User or in any way to bind, to commit VITA or any Authorized User 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. 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, and neither VITA nor any Authorized User 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 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 taxes, interest or penalties, (including, but not limited to, any federal, state or local withholding or employment taxes, and any penalties related to health care or employee benefits laws) that are imposed, assessed or levied as a result of this Contract or Services performed pursuant to this Contract shall be paid or withheld by Supplier or, if assessed against and paid by VITA or any Authorized User, shall be reimbursed by Supplier upon demand by VITA or such Authorized User.

B. 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 on any order or SOW issued pursuant to this Contract.

C. 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:

https://www.vita.virginia.gov/uploadedfiles/VITA_Main_Public/scm/StatutorilyMandatedTsandCs.pdf

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

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.

D. 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 an exhibit 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 §9.1-501.15 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, if any, 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 or a private institution, Supplier's remedies shall be limited to claims for damages 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 license or support services hereunder.

G. Advertising and Use of Proprietary Marks

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

H. 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). To VITA and to Supplier, if Supplier is incorporated in the Commonwealth of Virginia, to the addresses shown on the last page.

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

Pursuant to Title 13.1 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.

I. No Waiver

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

J. 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, subcontract, delegate or otherwise convey this Contract or any of its rights and obligations hereunder, to any entity without the prior

written consent of VITA, which consent will not be unreasonably withheld, and any such attempted assignment or subcontracting 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 the 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.

K. Captions

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

L. 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.

M. Survival

Any provisions of this Contract regarding Software License, Rights To Work Product, Warranty, Escrow, Confidentiality, Content Privacy and Security, Liability, Indemnification, Transition of Services, and the General Provisions shall survive the expiration or termination of this Contract.

N. 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 or SOW affected by such postponement or delay.

O. Remedies

The remedies set forth in this Contract are intended to be cumulative. In addition to any specific remedy, VITA and all Authorized Users reserve any and all other remedies that may be available at law or in equity.

P. Right to Audit

VITA reserves the right to audit those Supplier records that relate to the Contract or any SOWs or orders issued there under. VITA's right to audit shall be limited as follows:

- i. Three (3) years from end date of the Contract;
- ii. Performed at Supplier's premises, during normal business hours at mutually agreed upon times; and
- iii. Excludes access to Supplier cost information. In no event shall Supplier have the right to audit, or require to have audited, VITA or any Authorized User.

Q. Taxes—Federal, State and Local

The Commonwealth of Virginia is exempt from Federal excise and all State and Local taxes. Such taxes shall not be included in Contract prices. Tax certificates of exemption, Form ST-12 can be obtained online at <http://www.tax.virginia.gov/>. 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.

R. 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.

The Account Manager's responsibilities should include (i) resolution of technical support questions and issues which have not been resolved by Supplier's technical support division; (ii) preparation of account information and response to and resolution of inquiries regarding billing and payment; and (iii) investigation and resolution of customer service issues and complaints.

S. 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 - Requirements

Exhibit B - Pricing Schedule

Exhibit C - Small Business (SWaM) Procurement Plan

Exhibit D - Certification Regarding Lobbying

This Contract, its Exhibits, and any prior non-disclosure agreement 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. Any and all terms and conditions contained in, incorporated into, or referenced by the Supplier's Bid shall be deemed invalid. 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. In the event of a conflict, the following order of precedence shall apply: this Contract document, Exhibit A, any individual SOW, Exhibit B, any individual Order An Authorized User and Supplier may enter into an ordering agreement pursuant to this Contract. To the extent that such ordering agreement, or any order or SOW issued hereunder, include any terms and conditions inconsistent with the terms and conditions of this Contract, such terms and conditions shall be of no force and 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.

Supplier Address for Notice:

Hyperion, Inc.

11480 Commerce Park Drive

Reston, VA 20191

Attention: Supplier Contact

VITA Address for Notice:

CESC – VITA Supply Chain Management

11751 Meadowville Ln.

Chester, VA 23836

Attention: Contract Administrator

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I. GENERAL

A. Services



Hyperion, Inc. is an integrated solution provider supplying advanced systems integration solutions, LAN/CAN/WAN infrastructure design and installation, and software engineering services to a worldwide customer base. Hyperion was established in 1991 and is headquartered in Reston, VA. Hyperion also has an Integration/Logistics facility in Chantilly, VA and a field office in Cherry Hill, NJ. Additionally, we have a European-Union (EU) partner to provide EU-based personnel services. Hyperion offers a wide range of technical services in support of the management, design, installation, integration, testing and operations of IT equipment, plant, software and systems. We have extensive experience in managing the Installation, termination and testing of horizontal twisted pair cabling and any other Category 5e and higher performance TIA-568-compliant copper cabling; Installation, termination and testing of fiber optic cabling; and Other cabling services to include but not be limited to the installation, termination and testing of Category 3 backbone cabling and coaxial cabling, performance of miscellaneous cabling services and removal of abandoned cabling.

Hyperion has an established national and international logistics network. We have scores of suppliers and manufacturers around the world that provide us with a capability to identify and acquire material that will meet US technical and safety standards. We have an integration facility that allows us to coordinate the receipt of multi-vendor components and to “rack and stack”, inspect, integrate and certify interoperability prior to shipment to clients. We have a security and personnel administrative system that provides us with the ability to deploy technical teams, fully credentialed and outfitted, around Virginia within hours of notification to proceed.

There is no company better capable of supporting VITA in managing and executing the deployment of solutions across the Commonwealth than Hyperion. As a small business no one can better provide clients with the experience, flexibility and rapid response capabilities that are so critical to successfully carrying out IT projects. Hyperion has the people, partners, suppliers, project management and logistics in place to carry out this project – we can have Hyperion personnel on-site to manage any effort, any time, any place, any where.

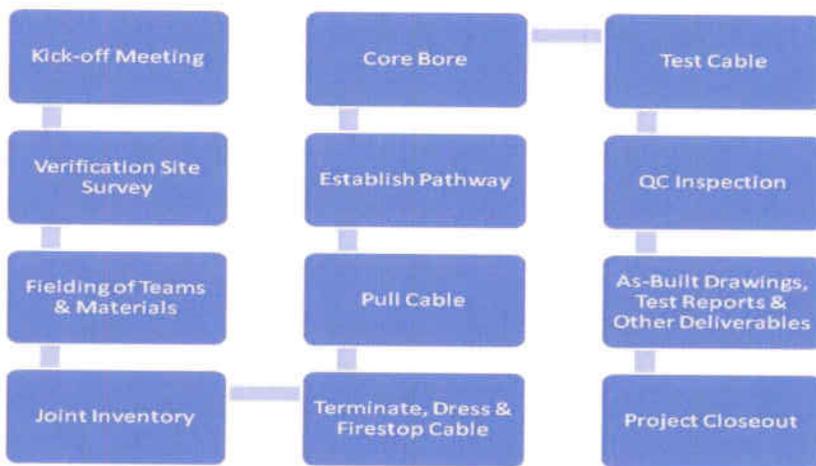
As evidence of our ability to provide the Statewide Cabling Services we offer three recent projects as examples. The first is a large scale project for multiple buildings on several Air National Guard bases across the US called ISP ITS Modernization, the second is a small scale single room ISP installation for Keesler Air Force Base, MS called Bldg 6902 Test Center LAN Drops, and the third is a contract where we installed a new UTP and wireless data network for the Department of Defense Education Activity (DODEA) – Pacific in Guam showing our ability to perform these services in a school environment.

The Air National Guard ISP ITS Modernization provided an integrated, high bandwidth, structured cabling system providing sufficient information transport capability to support current and future mission requirements of the Air National Guard (ANG). This ANG project provided upgrades for all Inside Plant (ISP) Information Transport System (ITS) components including fiber and copper backbone cabling, copper and fiber to the end-user/desktop, telecommunications grounding connections, entrance facilities, communications cross-connects, communications equipment rooms, telecommunications closets, distribution support system (raceways and pathways), communications cables, user outlets, riser system, patch panels, patch cords and mounting hardware. Hyperion was responsible for all systems engineering services required to install the CAT6 and SM/MM fiber optic cable for this project. Hyperion designed,

installed and tested 1094 quad drops (CAT6 and SM/MM) in 14 buildings for the 144th Fighter Wing Fresno Air National Guard base (ANGB) in Fresno, CA alone. Concurrent and similarly sized projects were also conducted at Selfridge ANGB, MI; Savannah ANGB, GA; and Rosecrans ANGB, MO.

Keesler Air Force Base, MS is the home of the 81st Training Wing. They required the installation of a high concentration of CAT6 ports in a testing room. Hyperion arranged delivery of all materials to the site through our Chantilly, VA warehouse to ensure a just-in-time delivery right before the work was scheduled to start. We coordinated with the work schedule with the 81st Communications Squadron/customer and the Test Center so that the noisy work of core boring and anchoring of the J-hooks to the concrete walls and ceiling would not be conducted while students were taking tests. Cable was routed down the walls in Panduit raceway and terminated in quad outlets that we labeled to the customers site specific labeling scheme. All cables were tested and passed all criteria.

The DoDEA Pacific – Guam schools required the Installation and Testing of a Supplementary Data Network that included installation of additional wired network connections in strategic locations and the installation of government provided wireless network communications device access throughout the DoDEA Guam district campuses. Hyperion provided all labor, tools, equipment, materials, parts and transportation required to support this requirement. The installation requirements covered three campuses with the following number of wired Unshielded Twisted Pair (UTP) Single Drop Data Outlet installations and Wireless Device installations: Anderson Elementary School – 91 UTP drops & 37 WAPs; Guam High School – 38 UTP Drops & 15 WAPs; and McCool Elementary School – 80 UTP Drops & 38 WAPs.



Typical Cable Project Flow Chart

B. Hourly Labor Rates

We are prepared to meet VITA’s needs for cabling services using the hourly rates detailed later in this proposal. While other companies may only have experience in Firm Fixed Price contracts, Hyperion has considerable experience serving customer’s needs on a Time & Materials basis using pre-negotiated contract line item pricing as VITA has instructed here. The pricing per hour for each specific item includes all necessary unpacking, preparation, installation, testing, documentation and clean-up time for that item.

C. Products

We have provided VITA a list of products by manufacturer, model number and description that show we will provide VITA with all new products from major manufacturers whose products are designed to meet ANSI/TIA/EIA and NFPA-70 standards. These companies all also have their own internal ISO 9001 Quality Control processes to make sure those standards are met consistently in their manufacturing processes. The product manufacturers include Panduit, Corning, Cooper/B-Line, Superior Essex, Legrand and other major manufacturers.

D. Negotiation of a Fixed Price

If a customer wishes to negotiate a fixed quantity of services and materials, we will prepare a fixed price quote for them for that specific project. Having a fixed quantity known in advance will allow us to offer quantity discounts that may not be possible otherwise. We are also open to other circumstances that the customer may be able to bring to the negotiation table that may assist in bringing the fixed price to a more palatable amount.

E. Standards and Codes

As previously mentioned, all materials listed in our proposal meet all ANSI/TIA/EIA and NFPA standards applicable to the product. Furthermore, our installers will utilize Hyperion Standard Operating Procedures (SOPs) that instruct them and ensure that all installations will be conducted in accordance with TIA/EIA and other industry standards as well as BICSI best practices.

F. Warranties:

Hyperion offers a standard warranty of one year on all workmanship. We also are able to extend the manufacturer's warranties of all of our installed products to our customers by being certified partners and having received the manufacturer installer training on most products.

II. SCOPE OF WORK

A. General Requirements

1. Hyperion will install for the customer the necessary CAT3/CAT5e/CAT6A copper and/or fiber optic and/or coaxial cabling as specified in the task order. The installation will be a complete turnkey cabling system that includes all cable, cable tray, cable supports, conduit, raceway, faceplates, boxes, backboards, cabinets, racks, patch panels, 110 blocks, adapter panels, cable management, terminations, and testing to ensure the total cabling solution meets TIA/EIA 568 specifications. Hyperion provides complete turn-key systems ready for the customer to connect their network or other equipment.

2. Inside Plant Cable Routing

Standards:

All cable routing installed by Hyperion personnel will be installed in accordance with industry standards as identified by the following standards.

- ANSI/TIA/EIA-569-A - Commercial Building Standard for Telecommunications Pathways and Spaces

- ANSI/TIA/EIA-568-B –Commercial Building Telecommunications (568B-1, 568B-2, 568B-3) Cabling Standard
- BICSI TDM Manual - Building Industries Consulting Services International Telecommunications Distribution Methods (TDM) Manual
- IBM GA27-3361-07 - LAN Cabling System - Planning and Installation
- IBM GA27-3773-0 –Cabling System Technical Interface Specifications
- ICEA S-80-576 - Communications Wire and Cable for Wiring of Premises
- NFPA 70 - National Electric Code.
- Virginia Uniform Statewide Building Code
- Safety Codes Commission of the Commonwealth of Virginia rules, issued by the Department of Labor and Industry under Title 40.1 of the Code of Virginia.

Definitions:

- Inside Plant (ISP) is defined as intra-building distribution of cable media such as both fiber and copper station cable, station jack hardware, Building Distribution Frames (BDF), Intra building Distribution Frame (IDF) terminals, sleeves, conduit, raceways, distribution frame hardware, etc. All other physical plant such as grounding, power, conduit, and raceway not considered Outside Plant (OSP) are part of the ISP.
- Cable Pathway is supporting infrastructure providing for the organized and effective means of cable passage from the BDF, or IDF to the user interface.
- BDF - Building Distribution Frame - primary telecommunications closet for a building or functionally-grouped area of a building
- IDF - Intra-building Distribution Frame - subcloset for installation of electronic equipment and cable termination when, and only when, the distance between any telecommunications outlet and the BDF exceeds 290 cable ft.
- User interface is the wall outlet (jack) providing for the physical connection of the user to the network by installation of a connecting patch cord.
- Voice Cable – cabling which carries Telecommunications System signals, either integrated voice/data or voice only signals.
- Data Cable – cabling which carries only data communications signals.
- Video Cable – cabling which carries only video or TV communications signals.
- Single mode Fiber Optic Cable- Cabling which carries both voice and data.
- Multimode Fiber Optic Cable- Cabling which carries both voice and data.

Cable Installation

- All data and voice cable runs shall consist of continuous, unbroken, unspliced cables of maximum 290 ft. length between BDF/IDF and outlet terminations. Daisy-chaining is not permitted.
- Video cable shall be run in direct "home runs" from the distribution frame to each receptacle.
- Cable shall not be bent in radii less than 1 inch or that specified in installation standards for the category rating.
- Cable jackets shall be protected during installation, and installed in such a manner, to avoid nicks, abrasions, burning, kinks and scuffing.
- Clearance spacing from Electrical Cables and sources of Electromagnetic interference
- Use of Velcro Tie wraps shall secure cable bundles in a neat and orderly fashion with Velcro ties placed at no greater than 10 foot intervals along the path.

Drop Location Cable Pathway Installation

At locations for user interface outlets (Wall Jacks) the cable will be fished down the inside of the wall to the wall jack location wherever possible. For locations where inter wall routing is not possible the cabling

will be routed on the outside of the wall using a wall mountable latch duct of appropriate size for the size and number of cables being routed.

Cable Labeling

- All labeling will be with machine labelers and are to be neat and legible
- All cable outlets and termination panels/bays or blocks will be appropriately labeled to match the cable using the following labeling scheme (unless otherwise specified in the Task Order):
 - Floor number
 - – (dash)
 - Face plate number
 - Outlet number on the plate in sequence
- Example 1-2A would represent the first data outlet on the second faceplate in series on the first floor.
- Avoid the use of other dashes in this labeling as this could result in long labels that might not fit as well on the plates, panels/bays or blocks.
- All cables themselves will be labeled within 12 inches of each end of termination points.

3. Cable Pathway

Cable Pathway shall be installed to provide for a secure method of passage of the premise cabling from the data cabinet to the end user outlet. Pathway installation requirements may be dictated by contract or PWS instructions and shall be adhered to as required. Where no direction is given, the details of Hyperion’s SOP 03-003 will provide for minimum pathway requirements.

Main Pathway Routing: Where high volume cables are to be placed the use of cable tray is required. The cable tray may be of ladder rack style, basket style or solid bottom tray. The pathway will be suspended from the building support structure beams and above drop ceiling panels in all cases where space exists. Where above drop ceiling installation is not possible or in facilities with open air ceilings the use of basket tray is preferred except in industrial environments or other areas where the cabling may be exposed to damage. In these areas closed tray is preferred.

Single drop and Multiple drop cable pathways: Where low volume cables are to be placed the use of “j-hooks” or “D-rings” is preferred. The installation of the supporting hardware will be placed no further than on 5’ intervals.

4. Pathway shall be installed in a grid pattern consistent with the wall directions of the building and in such a manners as to allow cable bending radius to be achieved of not less than 10 times the outside diameter of the cable. Pathway installations shall maintain required separations between data and electrical sources as identified below:

Electrical Wiring in grounded Metal Conduit	(no closer than 6”)
Electrical Wiring un-encased or in non-metalic conduit	(no closer than 24”)
Fluorescent Light Fixtures	(no closer than 6”)
Motor Generators	(no closer than 36”)
Electrical Transformers or other Electrical Equipment	(no closer than 24”)

5. Hyperion will prepare a project schedule for each task order and will coordinate it through the Authorized User and Authorized User’s Representative so that inputs can be provided by the facility users and other contractors performing construction/renovation duties and subsequent adjustments to the schedule can be made.

6. Hyperion's technicians will be experienced in installing the cabling solution required by the task order. If required by the task order we will provide BICSI certified installers. We generally provide at least one BICSI Installer certified individual per team. Hyperion Site Leads are designated as the site safety representative, conduct initial safety briefings before the start of work, and use Hyperion's SOP 01-001 Safety Manual – General and other applicable Safety SOPs to guide the work. Hyperion Safety SOPs are designed to apply all applicable OSHA safety regulations to the work we do.
7. Any damage to existing utilities, equipment, or finished surfaces will be repaired as close as possible to original condition or better within 24 hours. Hyperion will insure the Authorized User or Authorized User's Representative is satisfied with the repair.
8. Our technicians will maintain workspace cleanliness throughout the day for safety purposes, knowing that others will most likely need to traverse the work area while we are active. If it is necessary to pull cable off the spools/reels, which could cause a tripping hazard, cones or other warning devices will be placed. At the end of each work day all materials and tools will be secured in a location designated by the Authorized User's Representative and ceiling tiles will be replaced. All debris, waste materials and removed legacy materials will be disposed of in accordance with federal, state and local environmental regulations.
9. Hyperion will sleeve all new wall penetrations and firestop all firewall penetrations using firestop putty or re-enterable devices as directed in the task order and in accordance with NFPA 70 and BICSI.
10. Hyperion will provide manufacturers cut-sheets and product specifications as required by the IFB and as part of the deliverables at the end of the project.

B. Backbone Cable Requirements

1. Conduit and Innerduct Systems

- a) Existing EMT conduit or innerduct will be used only if specified in the IFB or otherwise specifically permitted in writing by the Authorized User and only if it is of the appropriate size for the number of cables to be installed there. New EMT conduit will be installed within walls as needed to meet industry standards or and anywhere environmental conditions require it to prevent damage to cables or to satisfy IFB requirements.
- b) One inch (1") nominal diameter orange in color corrugated innerduct will be installed anytime fiber optic backbone cabling part of the IFB. Any deviation from the in innerduct color, size, or type in the IFB by the Authorized User will be evaluated to determine if it can be done within the Market Basket pricing.

All conduit and innerduct used will have a pull string installed for future use as the new cable is pulled through the duct. Adequate length will be provided at each end to allow for tying off to a secure point.

2. Copper Backbone Cable

Hyperion is prepared to install CAT3/CAT5e/CAT6A copper backbone cabling between the Authorized User's telecommunications rooms as requested in their IFB. Installed cable will be up to 300 pair and rated for the circumstances in which it is used. All applicable TIA standards will be used for backbone cabling just as with other aspects of work under this contract. Backbone cabling will be terminated in 110

blocks or 66 blocks or 110 to RJ45 type patch panels are required by the IFB. The use of patch panels will be encouraged for modernization purposes.

3. Optical Fiber Backbone Cable

Optical fiber backbone cable will be 62.5/125 micron OM1 or 50/125 micron OM3 multimode or singlemode cable rated for the circumstances in which it will be installed. All backbone fiber will be installed in innerduct and properly supported.



A Typical Fiber Optic Distribution Panel with Splice Tray and Fiber Management

A minimum of 15 feet (15') of slack shall be coiled in the cabinet (or a separate enclosure designed for this purpose) Terminations will be duplex SC connectors or SC pigtails unless specifically requested otherwise in the IFB. Dust covers will be replaced once testing is complete.

Fiber Optic Patch Cords (jumpers) will be provided in the quantities specified in the IFB, but will normally be two times the number of fibers installed. Patch cords will be provided in original packaging with dust caps in place.

Optical Fiber will be tested using the following Hyperion standard testing procedures:

Testing Standards Required

EIA/TIA-526-14A Method B for Multi-mode Fiber.
EIA/TIA-526-7A Method A.2 for Single-mode Fiber

All new ISP/OSP OPTICAL FIBER CABLE Systems will be tested:

- ISP FTTD (Fiber to the desktop) OPTICAL FIBER CABLES will be tested at the distribution terminal/patch panel location or other origination point, to the serving facility termination point (wall jack, outlet, terminal, or other location) as shown on the Project Drawings. Each facility will be tested and must meet all requirements of the referenced documents and project requirements. All terminated optical fiber will be tested.
- ISP OPTICAL FIBER TIE CABLES will be tested at the distribution terminal/patch panel location or other origination point, to the serving facility termination point (distribution terminal/patch panel location). All terminated optical fiber will be tested.
- OSP BACKBONE OPTICAL FIBER CABLES will be tested at the distribution terminal/patch panel location or other origination point, to the serving facility termination point (distribution terminal/patch panel location). All terminated optical fiber will be tested.

Types of Testing to be Performed

Visual Tracing – applying a visible light source to one end of the fiber and visually checking that the light is emitted from the far end. Used for cable reel checks as well as installed visual verifications on un-powered installations

Visual Fault Location – applying a high powered red laser through the fiber to visually check for breaks, or connector loss.

Visual Connector Inspection – viewing the connector with a hand held microscope to review the connector's integrity and quality of fiber polish at the fiber end.

OTDR Testing – Measurement of the optical signal backscatter within a cable to determine signal loss and to determine locations and types of losses.

Optical Power – Measurement of the power output of the source or received power at the receiver using a power meter and a test reference cable.

Optical Loss – Measurement of the power differential between the transmitter end and receiver end in a cable being measured.

Test Equipment

1. Fiber Tracer or Visual Fault Locator.
2. Fiber Scope and cleaning materials - lint free cleaning wipes and pure alcohol.
3. OTDR and launch cable for outside plant jobs.
4. Reference test cables that match the cables to be tested and mating adapters, including hybrids if needed.
5. Source and power meter, optical loss test set or test kit with proper equipment adapters for the cable plant you are testing.

Testing Procedures

Connector Inspection and Cleaning

In each of the test procedures described hereafter, you should inspect and clean the connectors before hooking them up to the test equipment or another device. Dirty connectors can induce errors during network testing or commissioning; so you should also clean the test patchcords and the patch panel. Both ends of every fiber junction need to be squeaky clean. Failing to do this can cause high loss and high reflection, as well as contaminate the equipment to which the connectors and patchcords will be connected. Be careful if you are using compressed air, for it is not always perfectly pure and will sometimes leave dirt on the connector's end face. When removing the protective caps, be sure to place them where they will not get contaminated themselves. Once cleaned, the connector should be inspected again to double-check the cleaning.

Visual Tracing:

Cable Reel Tests

(Perform this test on each fiber in the cable to be installed prior to installation)

Clean the end of the fiber to be tested using the alcohol wipe. Apply the fiber to the light source and view the opposite end of the fiber for visual verification the fiber has no breaks.

Patch Panel Tests.

Clean the end of the connectorized fiber to be tested using the alcohol wipe. Connect the visual light source to the connector on one end and view the opposite end of the fiber for visual verification that the two fibers to be connected at the opposite end are the correct two fibers and to verify the transmit and receive fibers.

Visual Fault Location

(Performing this test is a rapid way to identify obvious cable path problems in some types of cables)

Clean the end of the connectorized fiber and connect to the red laser light source. View the path for losses by emitted light at connectors and splices.

Visual Connector Inspection

Clean the end of the connectorized fiber and connect to microscope with the proper adapter for the connector being inspected. View the fiber for evidence of chips, scratches or out of position placement within the connector.

OTDR Testing

The OTDR plots the backscattered signal power as a function of distance within the fiber. It easily locates all events (bends, bad splices, etc.) that contribute to the overall loss and calculates the overall reflectance level. In addition, the OTDR accurately measures the fiber's length, so cuts or misrouted connections can be found.

Identify the type and model of OTDR being used and refer to the manufacturer's users manual for set-up and use instructions. All new terminated optical fiber cables will have bi-directional OTDR measurement traces performed according to the following parameters:

Multimode Fiber-

- Test one strand in each buffer tube within the optical fiber cable bi-directionally (launch pulse from each end).
- 1000 Meter optical fiber launch box will be inserted in pathway between OTDR and fiber connector on strand to be tested. [Optical fiber launch box will be of same fiber type (Core 50u or 62.5u) as optical fiber strand being tested]
- 500 Meter optical fiber termination (receive cable) box will be connected at final termination point of optical fiber cable. [Optical fiber termination box will be of same fiber type (Core 50u or 62.5u) as optical fiber strand being tested]
- OTDR will be set to 850nm with proper pulse width to get required detail in trace.

Singlemode Fiber-

- Test one strand in each buffer tube within the optical fiber cable bi-directionally (launch pulse from each end).
- 1000 Meter optical fiber launch box will be inserted in pathway between OTDR and fiber connector on strand to be tested.
- 500 Meter optical fiber termination (receive cable) box will be connected at final termination point of optical fiber cable.
- OTDR will be set to 1550nm with proper pulse width to get required detail in trace.

The OTDR tests will verify the number and location of splices and overall length of strands tested. Certain events, such as mismatched core sizes, cause an amount of loss that is different whether the light comes from one direction or the other—which is why it is recommended to test the link in both directions.

Optical Power Testing

Using the specific procedures required of the test equipment being utilized prepare the equipment for test. The power meter test requires the use of a test reference cable.

Test Reference Cable Testing.

The reference test cables (Launch and Tail Cords) are first determined to be good by connecting to a known power source and to the Meter. This validation of the reference cables is required to prevent any losses in the reference cable from being interpreted as losses in the path to be tested. Set the meter to measure in “dBm” and apply the known power light source. Review the digital read out of power on the meter. The meter indication should match the known light source power. Once verified the meter should be set to 0 dB with the reference test cables in place. The test cable has now been “referenced” to eliminate it from the readings in the following tests.

Use of Mandrels or Coils

For MMF, the Light Source & Power Meter (LSPM) Tester must have the correct Coupling Power Ratio for the cable under test. Alternatively, this can be achieved by using a Mandrel Wrap on the Launch Cord for mode stripping during Reference Setting and Testing. For a 3 mm Launch Cord,

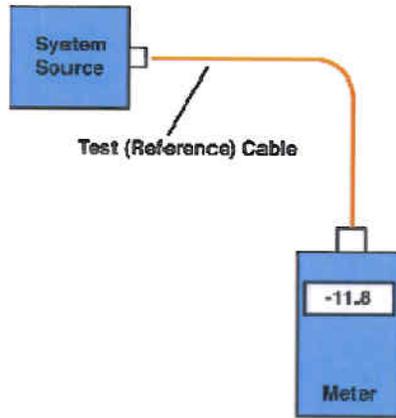
- 5 turns on 17 mm for 62.5 μm .
- 5 turns on 22 mm for 50 μm .

For SMF, the LSPM launch cord shall have at least 2 turns of 40 \pm 5 mm diameter, air-coiled or on a mandrel, for stripping light out of the cladding and more consistent readings.

Launch and Tail Cords for MMF & SMF LSPM testing shall be 1m to 5m each and shall have a matching connector to the cable being tested at one end and a connector matching the test unit on the other end.

Transmitter Source Testing

The validated test reference cable is now connected to the transmitter source and to the test meter. The measurement of the transmitter power will display on the meter’s display. The amount of transmitter output power is required to determine the “Optical Power Budget” which will be used to determine the “Net Optical Power Budget” which is the amount of received signal power and is used to identify if there is sufficient signal power to reliably maintain communications.



Optical Power Budget: The relationship between the transmitter power source signal strength and the receiver sensitivity is used to calculate the Optical Power Budget. The formula used is as follows:

$$\text{Optical Power Budget (dB)} = \text{Transmitter Source Power (dBm)} - \text{Receiver Sensitivity (dBm)}$$

Net Optical Power Budget Calculation: The Net Optical Power Budget is a calculated number based on the attenuation loss of the type of fiber being used and the distance between the transmitter power source and the receiver along with losses from connectors and splices along the path.

To determine the power losses along the path identify the length of the path, the number of splices in the path and the number of connectors in the path. The losses per length of cable or connection or splice are given by the following table.

Average Fiber Optical Losses					
Wavelength and Mode	Cable Size (µm)	Attenuation (per km)	Splice Attenuation (per splice)	Connector Attenuation (per connection)	Modal Bandwidth (MHz×km)
850nm / MM	62.5/125	3.5 dB	0.3 dB	.75 dB	160
1300nm / MM	62.5/125	1.5 dB	0.3 dB	.75 dB	500
850nm / MM	50/125	3.5 dB	0.3 dB	.75 dB	400
1300nm / MM	50/125	1.5 dB	0.3 dB	.75 dB	500
1310nm / SM	9/125	0.5 dB	0.3 dB	.75 dB	Infinite
1550nm / SM	9/125	0.5 dB	0.3 dB	.75 dB	Infinite

The formula to use to determine the Net Optical Power Budget is as follows:

$$\text{Net Optical Power Budget (dB)} = \text{Optical Power Budget (dB)} - \text{Signal Losses (dB)}$$

Signal Losses are calculated as the attenuation losses for the type of cable multiplied by the distance of the cable and adding the number of losses per splice and connector as follows:

$$\text{Signal Loss} = \text{Cable Attenuation (dB)} \times \text{Distance (Km)} + \text{Attenuation per splice (dB)} \times \text{Splice Count} + \text{Attenuation per connector} \times \text{Connector Counts.}$$

A sample of the calculation for Net Optical Power Budget is as follows:

Example

A Fiber connection consisting of a 1310nm Single Mode cable of 1.2 KM with a single splice point and a connector on each end between an output source of -16 dBm and a receiver sensitivity of -32 dBm would yield the following calculations:

$$\text{Optical Power Budget} = (-16 \text{ dBm}) - (-32 \text{ dBm}) = 16 \text{ dB}$$

$$\text{Net Optical Power Budget} = 16 \text{ dB} - ((.5 \text{ dB} \times 1.2 \text{ Km}) + (.3 \text{ dB} \times 1) + (.75 \text{ dB} \times 4)) = 13.54 \text{ dB}$$

Optical Loss Testing

All new terminated optical fiber cables will have bi-directional light source/power meter measurement traces performed according to the following parameters:

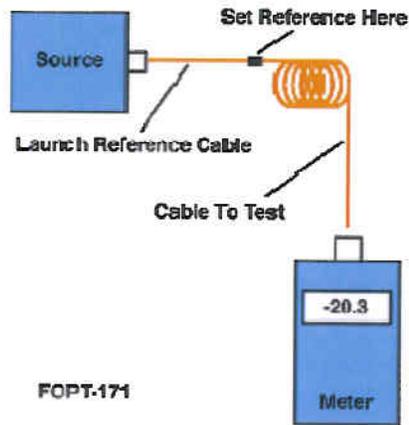
Multimode Fiber-

- Test equipment must be zeroed at start of day and/or as specified by equipment manufacturer.
- Use the TIA/EIA-526-14A Method B to connect to optical fiber under test. Method B requires a single launch cord to be used at a time and that the fiber be tested in both directions.
- All new strands in an optical fiber cable shall be tested bi-directionally with a bi-directional light source/power meter such as a Fluke DSP 4300 or equivalent with the correct optical test heads for the type of fiber [(FTA-440 (VCSEL for 850nm and FP for 1300nm)for 50 μm] or [FTA-420 (LED) for 62.5 μm].
- If the Fluke DSP 4300 is used the test parameters (number of adapters and splices between test heads) must be set according to number of adapters and splices previously determined with OTDR qualification traces to allow headroom calculations.
- Bi-directional testing of optical fiber cable will be performed at 850nm and 1300nm for 62.5um and 50um MM optical fiber.

Singlemode Fiber-

- Test equipment must be zeroed at start of day and/or as specified by equipment manufacturer.
- Use the TIA/EIA-7A Method A.2 to connect to optical fiber under test.
- All new strands in an optical fiber cable shall be tested bi-directionally with a bi-directional light source/power meter such as a Fluke DSP 4300 with the correct optical test heads for the type of fiber (FTA-430 for SM).
- If the Fluke DSP 4300 is used the test parameters (number of adapters and splices between test heads) must be set according to number of adapters and splices previously determined with OTDR qualification traces to allow headroom calculations.
- Bi-directional testing of optical fiber cable will be performed at 1310nm and 1550nm.

The bi-directional light source/power meter will validate end-to-end loss factors for each strand and will verify if labeling and port locations are correct on each end.



C. Telecommunications Room (TR) Requirements

1. Backboards

Any installed backboard will be 4' x 8' x 3/4" AC-grade free of voids and treated with at least two coats of fire retardant. Fire retardant may be pre-applied or treated at the site. If the Authorized User directs any size other than 4' x 8' or if the on-site situation requires trimming of the backboard due to space constraint or obstacles, such direction will be obtained in writing from the Authorized User and the cut edges will be treated with fire retardant prior to installation. Backboards will be secured to wall studs, unistrut or some similar secure mounting option suitable to the location and weight load. The weight load considered will include the possibility of future expansion.

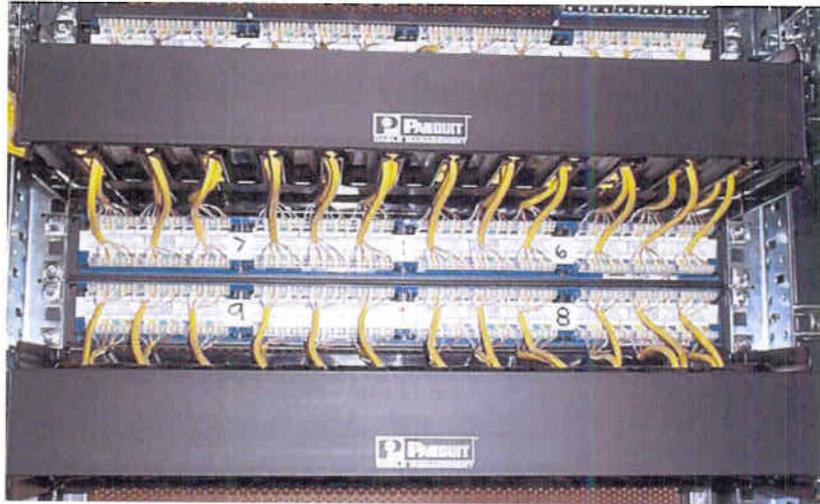
2. Distribution Racks

Distribution racks will be installed as required by the Authorized User's Task Order. Per the Market Basket pricing, three options will be available -- a 21 RMU hinged wall mount rack, a 7' tall 45 RMU floor mounted two-post rack, or a 3' tall 24 RMU floor mounted two-post rack. Enclosed cabinets and racks of other sizes are not listed in the Market Basket, but are available in our complete catalog. All racks and cabinets will feature standard 19" TIA/EIA mounting and predrilled holes.



3. Patch Panels

All CAT5e and CAT6a patch panels installed by Hyperion will be fully loaded RJ45 in front and 110 punch-down type in back. Strain relief and cable management will be used.



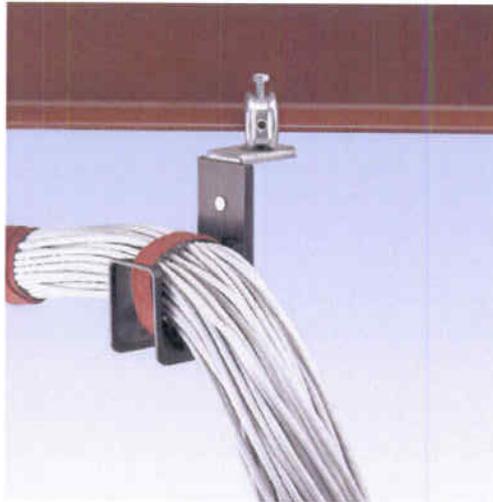
4. Cable routing

Cable routing will be accomplished using ladder rack, cable tray, Arlington loops, J-hooks and EMT conduit in accordance with industry standards, the number of cables being run, the environmental conditions along the pathway and the catalog items selected by the Authorized User. Fiber optic cable will be installed in corrugated innerduct unless specifically directed otherwise in writing by the Authorized User. Copper and fiber may be routed in the same pathway, but will be provided separation whenever possible for maintenance purposes. Backboard will be equipped with adequate numbers of D-rings to route and support the cables there. Hook & Loop cable ties will be used, not zip ties.

Cable Pathway will be installed to provide for a secure method of passage of the premise cabling from the data cabinet to the end user outlet. Pathway installation requirements may be dictated by contract or PWS instructions and shall be adhered to as required. Where no direction is given, the details of this SOP will provide for minimum pathway requirements.

Main Pathway Routing: Where high volume cables are to be placed the use of cable tray is required. The cable tray may be of ladder rack style, basket style or solid bottom tray. The pathway will be suspended from the building support structure beams and above drop ceiling panels in all cases where space exists. Where above drop ceiling installation is not possible or in facilities with open air ceilings the use of basket tray is preferred except in industrial environments or other areas where the cabling may be exposed to damage. In these areas closed tray is preferred.

Single drop and Multiple drop cable pathways: Where low volume cables are to be placed the use of “j-hooks” or “D-rings” is preferred. The installation of the supporting hardware will be placed no further than on 5’ intervals and may be either supported from the building support structure beams as shown below. Existing ceiling grid supports will not be used.



Pathway shall be installed in a grid pattern consistent with the wall directions of the building and in such a manner as to allow cable bending radius to be achieved of not less than 10 times the outside diameter of the cable. Pathway installations shall maintain required separations between data and electrical sources as identified below:

Electrical Wiring in grounded Metal Conduit	(no closer than 6")
Electrical Wiring un-encased or in non-metallic conduit	(no closer than 24")
Fluorescent Light Fixtures	(no closer than 6")
Motor Generators	(no closer than 36")
Electrical Transformers or other Electrical Equipment	(no closer than 24")

All data and voice cable runs shall consist of continuous, unbroken, unspliced cables of maximum 290 ft. length between BDF/IDF and outlet terminations. Daisy-chaining is not permitted. Video cable shall be run in direct "home runs" from the distribution frame to each receptacle. Cable shall not be bent in radii less than 1 inch or that specified in installation standards for the category rating. Cable jackets shall be protected during installation, and installed in such a manner, to avoid nicks, abrasions, burning, kinks and scuffing. Clearance spacing from Electrical Cables and sources of Electromagnetic interference. Use of Velcro Tie wraps shall secure cable bundles in a neat and orderly fashion with Velcro ties placed at no greater than 10 foot intervals along the path.

All labeling will be with machine labelers and are to be neat and legible. All cable outlets and termination panels/bays or blocks will be appropriately labeled to match the cable using the following labeling scheme:

- o Floor number
- o – (dash)
- o Face plate number
- o Outlet number on the plate in sequence

Example 1-2A would represent the first data outlet on the second faceplate in series on the first floor. Avoid the use of other dashes in this labeling as this could result in long labels that might not fit as well on the plates, panels/bays or blocks. All cables themselves will be labeled within 12 inches of each end of termination points.

Cables will be so as to be fully concealed within ceilings, walls and columns, and fished into modular furniture as required. Outlets will be flush mount when possible or surface mount when raceway, data poles or conduit is directed by the IFB.

5. Patch Cable Management

All new racks and cabinets will be installed with front horizontal cable management in a number commensurate with the copper and fiber patch panels ordered. Rear horizontal and vertical cable management devices will be available in our catalog and used as ordered by the Authorized User. Cable management devices may also be ordered for installation in existing racks and cabinets.



Front Side of Patch Panels with Horizontal Cable Management

6. Patch panel administration

All patch panels, cabinets, and end user ports will be labeled in accordance with TIA-606 and Authorized User direction.

7. Patch cords

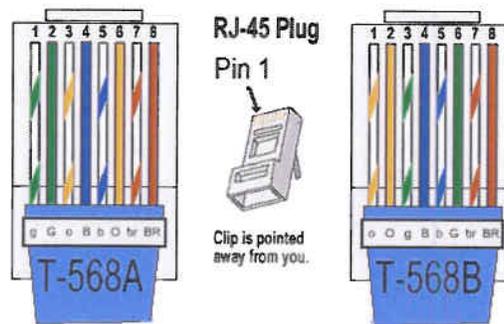
All CAT5e and CAT6A patch cords and fiber optic jumpers will be factory terminated and factory tested to meet or exceed TIA specifications. Patch cords and jumpers will be available in a variety of lengths from 1 meter to 5 meters.

8. Drawings

Hyperion's Site Lead will maintain accurate redline drawings during the course of any project awarded by an Authorized User. These redlines will be QC'd at the end of the project and converted to official as-built drawings in AutoCAD format. Drawings will only be to scale if scale building drawings in AutoCAD can be provided by the Authorized Users for Hyperion to work with. Otherwise, drawings will be as close to scale as practicable under the conditions. Conversion from AutoCAD to Microstation or Visio is available.

D. Horizontal Cabling Requirements

1. Hyperion will install all CAT5e and CAT6A cabling in compliance with TIA-568. The T-568A termination color coding/pairing will be used in most instances. The T568B pin/pair assignment may only be used when all pre-existing cabling in the building being cabled is wired per T568B, or when the Authorized User has standardized on, and requested in writing, T568B. In those cases, the Contractor shall ensure that all equipment racks and patch panels used for such cable terminations bear a sign clearly reading, "ATTENTION: PIN-OUT T568B IN USE," unless otherwise requested in writing by the Authorized User.



2. Test Procedures

Hyperion will test all installed cable to the same high standards that we do under our current contract to provide cable testing service to the US Department of State at US Embassy around the worlds. The following is a list of standard operating procedures to be completed with all CAT6 Testing.

When Cable tester is assigned to site the site manager/testing official is to:

- Verify Calibration date of the equipment
- Inventory for appropriate channel/link adaptors and all equipment with tester
- Verify battery condition

Prior to any testing site manager/testing official is to perform the following functions:

- Charge both the tester and remote to 100%
- Verify media storage card
- Perform a basic set-up as follows
 - With the Cable Analyzer dial set to the setup position power on Cable Analyzer
 - Select Twisted Pair from the drop down menu
 - Select Test Limit from the drop down menu
 - Select appropriate Test Limit (CAT6 Channel, CAT6 Link, Ect..) and press Enter
 - Select Cable Type from the drop down menu and press Enter
 - Select NVP from the drop down menu and enter the NVP value of the cable listed from the manufacturer, and press Enter.
 - Select Outlet Configuration from the drop down menu and press Enter.
- Exit back to the main menu on the Cable Analyzer
 - Select Instrument Settings from the menu
 - Select Store Plot Data and press Enter
 - Verify **Standard** is selected and press Enter
 - Select Current Folder and press Enter
 - Select Create Folder. This folder will be the Job name and/or task number and press enter
 - Verify the Job Folder on the main menu
 - Select Result Storage Location and verify it is set to Media Card
- Push the right Arrow on the tester to highlight the second tab of the instrument settings
 - Select operator. Enter the **Operator/testing official** that will be testing and press enter
 - Select Site Name. Enter the name of the site and building number you are testing in.
 - Select Company. Enter Company name

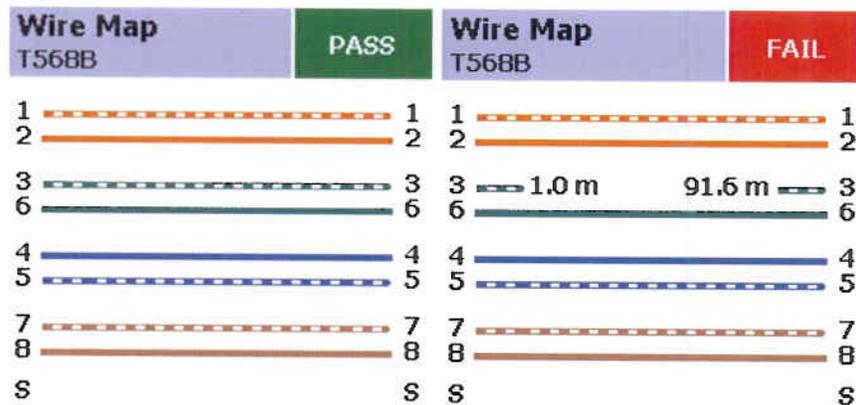
- Turn the Cable Analyzer dial to the Special Functions position
 - Select Set Reference. Follow manufacturer’s instructions to perform this function for your applicable test.

This set up must be performed **BEFORE** any testing or **EVERY 30 DAYS**.

Testing

With the Tester set to Auto Test, and the Analyzer and remote plugged in to the line press test. The following tests will occur:

Wire Map



Wire map results show the connections between the main and remote testers. The tester checks the cable pairs required by the selected test limit.

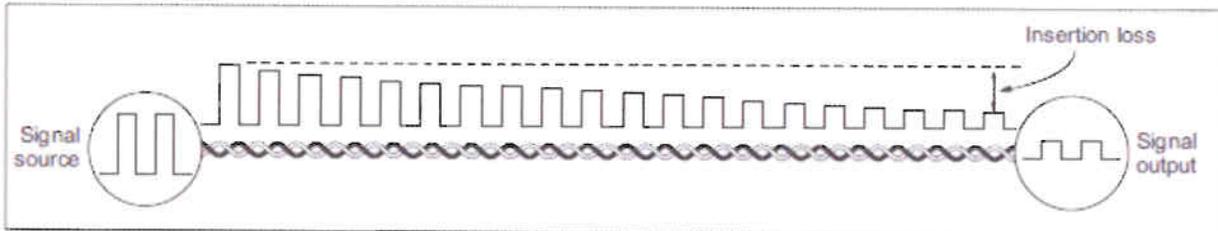
- **Resistance**
 Resistance results show the dc loop resistance for each cable pair. The remote shorts the end of each pair to create the loops. A pair’s resistance depends on the integrity of the contacts in the connector, the length of the pair, and its wire gauge. Resistance problems always affect other tests.
For example: A link that is too long has higher-than-normal resistance and will fail the length test. High-resistance connections reflect signals that cause the return loss test to fail. The tester’s HDTDR test tells you the distance to the bad connection.
- **Length**
 Length results show the length of each cable pair. The **PASS/FAIL** result is assigned based on the shortest measured length
- **Propagation Delay**
 Propagation delay is the time taken for a test pulse to travel the length of a cable pair. The delay is measured in nanoseconds. One nanosecond is one-billionth of a second, or 0.000000001 second. Propagation delays vary slightly among pairs because of small differences in electrical characteristics and length.
- **Delay Skew**

Delay skews are the differences in propagation delays between the shortest delay and the delays of the other cable pairs. The shortest delay is shown as “0 ns” in the delay skew results.

- **Insertion Loss**

Note: Insertion loss is also known as attenuation.

Insertion loss is the loss of signal strength over the cabling, as shown in the figure below. Insertion loss is caused by the resistance of the copper wire and connecting hardware and by leakage of electrical energy through the cable’s insulation. At higher frequencies, signals tend to travel only near the surface of a conductor. This “skin effect”, along with the cabling’s inductance and capacitance, cause insertion loss to increase with frequency.



- **NEXT (Near-End Crosstalk)**

NEXT results show the crosstalk attenuation between cable pairs. NEXT is the difference in amplitude (in dB) between a transmitted signal and the crosstalk received on other cable pairs at the same end of the cabling. Higher NEXT values correspond to better cabling performance. Because of insertion loss, crosstalk signals occurring farther from the signal source are weaker and cause less trouble than crosstalk nearer the source. For this reason, NEXT is measured from both ends of the cabling.

- **ACR (Attenuation to Crosstalk Ratio)**

ACR is like a signal-to-noise ratio. ACR values indicate how the amplitude of signals received from a far-end transmitter compares to the amplitude of crosstalk produced by near-end transmissions. The tester calculates ACR as the difference (in dB) between NEXT and attenuation (insertion loss). Higher ACR values mean received signals are much larger than crosstalk signals. Higher ACR values correspond to better cabling performance.

- **Return Loss**

Return loss is the difference between the power of a transmitted signal and the power of the signals reflected back. The signal reflections are caused by variations in the cable’s impedance. High return loss means the cabling reflects very little of the transmitted signal back to the source. High return loss is especially important for high-speed systems, such as Gigabit Ethernet. The bi-directional (full-duplex) transceivers used in these systems use directional couplers to distinguish between incoming and outgoing signals. The couplers may interpret strong reflected signals as incoming data, resulting in data errors. A return loss plot indicates how well a cable’s impedance matches its rated impedance over a range of frequencies.

- **PSNEXT (Power Sum Near End Crosstalk) Test**

PSNEXT results show how much each cable pair is affected by the combined crosstalk from the other pairs. PSNEXT is the difference (in dB) between the test signal and the crosstalk from the other pairs received at the same end of the cabling. The tester uses the NEXT values to calculate PSNEXT. Higher PSNEXT values correspond to better cabling performance. PSNEXT results are typically a few dB lower (worse) than worst-case NEXT results.

- **PSACR (Power Sum Attenuation to Crosstalk Ratio) Test**
PSACR values indicate how the amplitude of signals received from a far-end transmitter compares to the combined amplitudes of crosstalk produced by near-end transmissions on the other cable pairs. PSACR is the difference (in dB) between PSNEXT and attenuation (insertion loss). The tester uses the PSNEXT and attenuation results to calculate PSACR values. Higher PSACR values mean received signals are much larger than the crosstalk from all the other cable pairs. Higher PSACR values correspond to better cabling performance. PSACR is the difference (in dB) between each wire pair's attenuation (insertion loss) and the combined crosstalk received from the other pairs. The tester uses the PSNEXT and attenuation values to calculate PSACR values. PSACR results are typically a few dB lower (worse) than worst-case ACR results
- **ELFEXT (Equal Level Far-End Crosstalk) Test**
While NEXT is measured at the same end as the signal source, FEXT (far-end crosstalk) is measured at the far end. Because all far-end crosstalk signals travel the same distance, they experience the same amount of attenuation, as shown in Figure 3-20. This means that all crosstalk signals contribute equally to noise at the far end. This is different from near-end crosstalk. At the near end, crosstalk occurring closer to the source contributes more to noise than crosstalk occurring farther from the source. (Figure 3-14). Because of attenuation, FEXT on longer cables is less than FEXT on shorter cables of the same type. Subtracting the effects of attenuation normalizes the results for length and produces ELFEXT (equal level far end crosstalk) values. Since ELFEXT does not depend on length, it is used instead of FEXT to evaluate cable performance. Because all far-end crosstalk signals travel the same distance, they tend to add up in phase. Therefore, high ELFEXT is critical when two or more wire-pairs carry signals in the same direction. 1000BASE-T carries bi critical parameter for 1000BASE-T certification. Like ACR, ELFEXT represents a signal-to-noise ratio for the cabling. Higher ELFEXT values mean that data signals received at the far end of the cabling are much larger than crosstalk signals received at the far end. Higher ELFEXT values correspond to better cabling performance. NEXT and ELFEXT performance tends to be similar in cable, but may differ greatly in connecting hardware. Some connectors achieve good NEXT performance by balancing the inductive and capacitive currents that cause crosstalk. Since these currents are 180° out of phase at the near-end of the cabling, they cancel out, which eliminates crosstalk at the near end. However, currents that cancel at the near end add up at the far end, causing far-end crosstalk and poor ELFEXT performance.
- **PSELFEXT Test**
PSELFEXT results show how much the far end of each cable pair is affected by the combined far-end crosstalk from the other pairs. PSELFEXT is the difference (in dB) between the test signal and the crosstalk from the other pairs received at the far end of the cabling. The tester uses the ELFEXT values to calculate PSELFEXT. Higher PSELFEXT values correspond to better cabling performance. PSELFEXT results are typically a few dB lower than worst case FEXT results.

Upon the tester finishing the test process all test results must be saved in accordance with the tester manufacturer. An example of such follows:

- Push the Save button on the tester
- Input the cable designation
- Press save button

At the end of each shift all test results are to be downloaded by the project manager\testing official from the tester and stored in a back-up file. Upon completion of all testing and obtaining passing results for all cables the test data is to be turned in to the corporate office for processing and final documents turned over to the customer.

Copy of Results

Results are turned in two (2) formats:

Summary

Cable ID Summary	Test Standard	Length	Headroom	Date / Time	Printed
CHAS AFB 01A-A	TIA Cat 6 Perm. Link	189 (ft)	4.7 dB	03/19/2007	11:37pm



Cable ID: CHAS AFB 01A-A

Test Summary: PASS

Date / Time: 03/19/2007 11:37:14pm
 Headroom: 4.7 dB (NEXT 45-78)
 Test Limit: TIA Cat 6 Perm. Link
 Cable Type: UTP 100 Ohm Cat 6
 Fault Anomaly Threshold: 15%

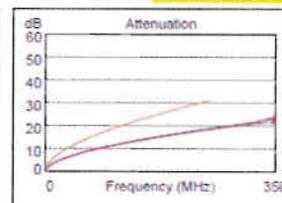
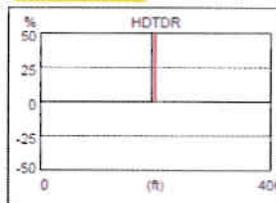
Operator: Your Name
 Software Version: 1.925
 Limits Version: 5.17
 NVP: 69.0%
 Shield Test: N/A

Model: DSP-4300
 Main S/N: 8298024
 Remote S/N: 8298024
 Main Adapter: PM-006
 Remote Adapter: PM-006

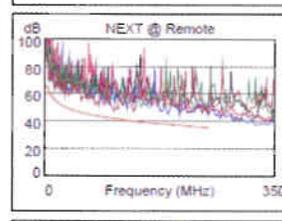
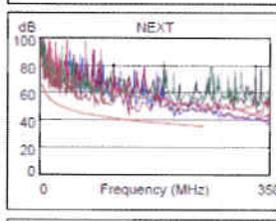
Wire Map	1 2 3 4 5 6 7 8 S
PASS	
	1 2 3 4 5 6 7 8



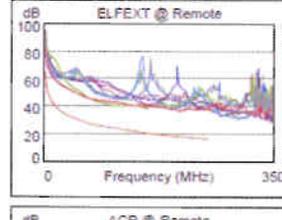
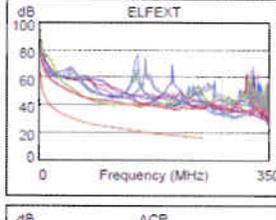
Length (ft), Limit 295	[Pair 36]	189
Prop. Delay (ns), Limit 498	[Pair 45]	290
Delay Skew (ns), Limit 44	[Pair 45]	11
Resistance (ohms)		N/A
Attenuation Margin (dB)	[Pair 45]	12.2
Frequency (MHz)	[Pair 45]	250.0
Limit (dB)	[Pair 45]	31.1



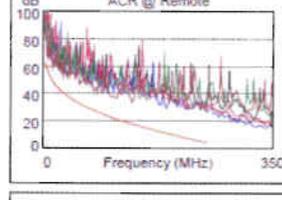
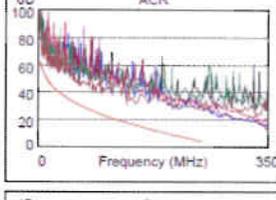
	MAIN	SR	MAIN	SR
Worst Pair	45-78	45-78	12-36	12-36
NEXT (dB)	4.7	5.3	5.3	8.3
Freq (MHz)	135.5	110.5	204.5	249.5
Limit (dB)	39.7	41.2	36.8	35.3
Worst Pair	12	78	12	36
PSNEXT (dB)	6.9	7.6	6.9	9.0
Freq (MHz)	204.5	110.0	204.5	249.5
Limit (dB)	34.2	38.7	34.2	32.7



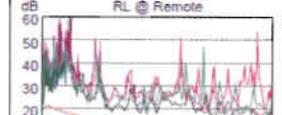
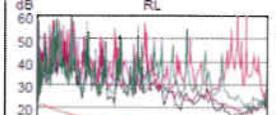
	MAIN	SR	MAIN	SR
Worst Pair	78-12	78-12	78-36	78-36
ELFEXT (dB)	16.4	16.4	18.6	18.6
Freq (MHz)	109.0	109.0	213.0	213.0
Limit (dB)	23.5	23.5	17.6	17.6
Worst Pair	78	78	36	36
PSELFEXT (dB)	16.8	16.8	20.9	20.6
Freq (MHz)	86.8	109.0	245.0	244.0
Limit (dB)	22.4	20.5	13.4	13.4



	MAIN	SR	MAIN	SR
Worst Pair	45-78	45-78	12-36	12-36
ACR (dB)	8.3	8.0	16.4	20.8
Freq (MHz)	5.0	5.0	204.5	249.5
Limit (dB)	58.7	58.7	9.1	4.2
Worst Pair	78	78	45	36
PSACR (dB)	10.2	9.9	22.0	21.4
Freq (MHz)	5.0	4.9	245.5	249.5
Limit (dB)	56.4	56.6	2.1	1.7



	MAIN	SR	MAIN	SR
Worst Pair	36	36	36	45
RL (dB)	8.1	4.3	8.3	7.3
Freq (MHz)	67.6	106.5	218.5	249.0
Limit (dB)	15.7	13.7	10.6	10.0



Compliant Network Standards:
 10BASE-T 100BASE-TX 100BASE-T4
 100BASE-T ATM-25 ATM-51
 ATM-155 100VG-AnyLan TR-4
 TR-16 Active TR-16 Passive

Site: CHAS AFB

Test Results CHAS AFB.flw



Sample Test Report from an ISP Task Order Hyperion Performed at Charleston AFB, SC

All testing will Comply and meet or exceed the requirements for the following references along with industry best practice and contract/work order requirements:

- Technical Specifications for 100 Ohm Screened Twisted-Pair Cabling (superceded by TIA/EIA-568-B.1, TIA/EIA-568-B.2, and TIA/EIA-568-B.3)
- Commercial Building Telecommunications Cabling Standard - Part 1: General Requirements (ANSI/TIA/EIA-568-B.1-2001)
- Commercial Building Telecommunications Cabling Standard - Part 2: Balanced Twisted Pair Cabling Components (ANSI/TIA/EIA-568-B.2-2001)
- Commercial Building Telecommunications Cabling Standard - Part 2: Balanced Twisted Pair Components - Addendum 1 - Transmission Performance Specifications for 4-Pair 100 Ohm Category 6 Cabling (ANSI/TIA/EIA-568-B.2-1-2002)
- Commercial Building Telecommunications Cabling Standard - Part 2: Balanced Twisted-Pair Cabling Components - Addendum 2 (ANSI/TIA/EIA-568-B.2-2-2001)
- Commercial Building Telecommunications Cabling Standard - Part 2: Balanced Twisted-Pair Cabling - Addendum 3 - Additional Considerations for Insertion Loss and Return Loss Pass/Fail Determination (ANSI/TIA/EIA-568-B.2-3-2002)

3. Category 5e, Category 6A, or Coaxial Connections

Outlet Box

The Authorized User will specify single or double gang outlet boxes. The preference should be for double gang electrical boxes of at least 2-1/8" (54 mm) depth to provide dedicated space for current and possible future fiber optic cable installation. For single connector outlets, such as voice-only, cable television (CATV) or closed circuit television (CCTV), Authorized Users can use a single gang 2" by 4" by 2-1/4" (51 mm x 102 mm x 57 mm), electrical box recess mounted, with the faceplate flush with the wall surface. Locate a service power outlet within 6 inches (152 mm) of all CATV/CCTV outlets. The power outlet circuits must be based on a loading assumption that each location of two duplex receptacles will power one personal computer with a monitor along with typical office appurtenances such as task lights; also assume that there will be no diversification of this load. Telephone boxes will be 48" AFF.

Outlet Faceplate

Use a full (double gang) faceplate for standard administrative outlet locations, with connectors for all copper and (if used) fiber optic cable. Standard administrative outlets may, by specific user request, use single gang outlet faceplates in conjunction with a reducing ring. For single gang outlet boxes, use a single gang outlet faceplate with appropriate connector locations and, if required, mounting lugs for wall phones. Outlet faceplate must include two blanks position for future applications.

Outlet Connectors

The following specifications pertain to copper, fiber optic and coaxial cable outlet/connector. The category for cable, jacks, termination blocks, and patch panels must be the same throughout each circuit and system. Specify more than one category only if providing more than one system requiring different categories. In general for horizontal cable, use Category 6 for all voice and data circuits on Army and Navy projects, and use Cat 5 or better for USAF projects.

Copper Outlet/connector

Copper outlet/connector must be TIA/EIA category 6 (Cat 6) for Army and Navy projects, and Cat 5 or better for USAF projects. All connectors must be 8-pin/8-position insulation displacement terminations wired per T568A. The T568B configuration must only be used by exception if required to maintain system configuration uniformity, security or other user-specified reasons. Category 3 (Cat 3) rated connectors must not be used in new construction, or rehabilitation projects. Copper outlet/connector and plugs should be unkeyed unless the user requires keyed outlet/connector and plugs to maintain system uniformity, security, or other user specified reasons.

Fiber Optic Outlet/connector

Terminate all fiber optic work area cables in dual 568SC connectors. Provide fiber optic connectors in accordance with the paragraph entitled "Fiber Optic Terminations" in this UFC. The default choice for fiber optic outlet/connector must be TIA/EIA "SC" type (568SC). Other type connectors (small-form-factor) (MT-RJ, VF-45, etc.) may be substituted as required by the user. Small form factor connectors (available from several manufacturers), offer a potential for significant installation cost reduction. Any type of fiber connector used must meet the performance requirements specified within Annex A of TIA/EIA-568-B.3, and meet the requirements of the corresponding TIA Fiber Optic Connector Interchangeability Standard (FOCIS) document.

Coaxial Outlet/connector

Coaxial outlet/connector should normally be "F" type connectors. Use of other type connectors (i.e., BNC, etc.) should be considered only if specifically required by the user. The designer must coordinate with the cable service provider where franchise agreements are in place. The Navy requires that all passive CATV devices support 1 GHz bandwidth.

Outlet/Connector Markings

Each communications outlet must have a unique identifying number in accordance with TIA/EIA 606-A. In the telecommunications room (TR), this unique identifying number must be associated with the position on the patch panel or cross-connect to which the outlet is connected. Each horizontal cable must be labeled both at the outlet and patch panel or cross-connect position in the communications closet. Connector voice and data dedication use may be reassigned as requirements dictate. Note: in the standard cabling scheme, the designations "voice" and "data" are arbitrary and do not imply that one outlet is better than the other, the outlets are identical in capability.

Outlet Types and Density

The following outlet types are commonly used in military construction projects. The outlet types do not cover all possible user required configurations. The designer must certify that all user-defined outlets have a corresponding valid requirement, such as fiber for various levels of classification. Outlet configurations must comply with this UFC, TIA/EIA-568-B, and TIA/EIA-569-B. Outlet densities are provided for planning purposes, when actual outlet locations are not known and cannot be determined with available information. The designer can develop reasonably accurate total outlet count estimates based on the size and dedicated usage of the space. These factors fall within the ranges given in TIA/EIA-569-B, and are based on gross area (overall building footprint without deducting for hallways, equipment rooms, restrooms, etc.).

Outlet densities and locations for all special-purpose spaces and non-administrative facilities must be determined by the Authorized User and must follow the guidelines in TIA/EIA-569-B.

A minimum of six feet (6') of "service slack" will be located in the TR, plus enough additional cable length to allow any cable to be relocated within the patch panel while still maintaining the minimum six feet of slack. Typically this will be a total of 10' at the cabinet end. If possible, and permitted by the

Authorized User, 3' of slack will also be provided at/near the End-user end of the cable to allow for ease of maintenance there as well. Cable and connectors listed in the catalog only indicate one color, however a wide variety of colors are available at no additional cost.

E. Miscellaneous Cabling Services

Hyperion will provide Miscellaneous Cabling Services in accordance with the RFP definition of “field testing, documentation, labeling, cross-connecting, reconfiguring, troubleshooting and repairing of previously installed cabling systems.” These services are understood to be just as important as and requiring the technical skill level equal to, if not higher than, an initial installation of a cabling system. Therefore Hyperion will provide the same level of certified technician that would be required as appropriate to the circumstances.

F. Abandoned Cable

Hyperion will remove any legacy cabling as required by the IFB at standard contract labor rates. Our Site Lead will notify the Authorized User of any cabling found that is in violation of the National Electrical Code or the Virginia Fire Code that has not been included in the contract. It is preferable to remove legacy cabling prior to installation of new cabling when the same pathway will be used in order to prevent damage to cable that will be reused or to the new cabling. We will explain these dangers to the Authorized User who will designate the order of these tasks and which legacy cables will be removed in writing.

G. As-built Drawings

Hyperion will provide the Authorized User with as-built drawings depicting all work completed under the contract as part of the close-out documentation. The authorized user will be given 10 working days for review and comments unless otherwise specified in the IFB. Corrections will be provided within 10 working days. Drawings will be provided in AutoCAD unless another format is specifically requested in the IFB. As-Built Drawings will only be to scale if scale drawings of the facility are provided by the Authorized User.

H. System Acceptance and Performance Requirements

1. All installed cabling will be testing in accordance with industry standards and Hyperion’s cable testing SOPs as appropriate to the type of copper, fiber or coaxial cabling installed. The Authorized User will be notified at least 24 hours prior to testing so that the tests can be witnessed. A final walk-through will be coordinated at this time. The walk-through will consist of a preliminary review of the test results, an inspection of the workmanship of installed cable and related components, and a review of the redline drawings.
2. Once the walk-through is completed and any noted discrepancies are corrected, a 30 burn-in period will begin. During this burn-in period Hyperion will provide all product documentation, warranty certificates, formal test report and As-Built CAD drawings. Upon successful completion of the 30 day burn-in period the Hyperion Site Lead and the Authorized User will sign a formal system acceptance document. If the Authorized User’s agency does not have their own acceptance documentation, Hyperion will create documentation that meets the needs of the Authorized User, VITA and Hyperion.

I. Delivery and Storage

Hyperion will coordinate delivery and storage of materials and tools with the Authorized User at the location(s) they designate. If no secure space sheltered from the weather is available at the work site, we will arrange for the delivery of items from our Chantilly, VA warehouse, our suppliers warehouse or other secure off-site location on an as needed basis to prevent theft or interfering with the Authorized Users day-to-day operations. Market Basket pricing does not include a line item for the rental of storage space or storage containers.

Hyperion will ensure that a company representative is on site when delivery is made to sign for and place into storage any items delivered by a third party shipping agency. In most VA locations delivery can be made by the Hyperion Team as they start work.

Hyperion's Site Lead will conduct a joint inventory with the Authorized User after delivery of the materials to the job site and before installation begins. Any discrepancies noted between the ordered materials and the delivered materials will be addressed to the Authorized User's satisfaction and the inventory will be signed by both parties as agreement that the materials listed will be purchased by the Authorized User and installed by Hyperion's team. No items will be delivered more than 48 hours prior the start of work at a site. If necessary, delivery can be made concurrent with the start of work.

Hyperion will provide lockable job boxes and chains with padlocks for securing tools and smaller material items at the site. Large items such as full size cabinets and large quantities of cable will be kept in their protective packaging until the time of installation and a method of securing them will be used that is conducive to that packaging.

J. Quality of Work

1. Hyperion is an ISO 9001:2008 Quality certified company. All work will be completed according to our Standard Operating Procedures that have been developed so that our quality of work meets or exceeds industry standards.
2. Hyperion's technicians will be experienced in installing the cabling solution required by the task order. If required by the task order we will provide BICSI certified and/or manufacturer trained installers. We generally provide at least one BICSI Installer certified individual per team. Hyperion Site Leads are designated as the site Quality Control representative, conduct initial project quality standards briefings and review of SOPs that are designed to apply all applicable quality standards to the work we do.
3. Hyperion provides a one year warranty on all workmanship and extends the manufacturer's warranty on all installed products. Hyperion employees will be trained as required to be able to pass on these warranties.
4. All Hyperion employees will maintain a high standard of conduct suitable for working in state, county or local government and other business office buildings and schools locations. Dress and appearance will be maintained with no offensive clothing or questionable advertising. Employee identification will be displayed above the waist on the outer garment worn while working or in an arm band. Failure to maintain these standards may be grounds for removal from the job site.

K. Licensing and E-rate Certification

1. All Bidders must currently hold a valid Virginia State Contractor’s “A” or “B” License and Registration with an “Electrical Contractors” classification (ELE) or a “Special Services Classification” to perform “Electronic/Communication Service Contracting” (ESC). Enter license number and designation below.

Virginia Contractor License Number: 2705127061
 Designation: Class A
 Specialty Classification: Electronic / Communication Service (ESC)

2. All Bidders must be qualified under applicable Federal Communications Commission and Virginia State Corporation Commission rules to apply for and receive Universal Service Fund allocations/disbursements for Products and Services provided pursuant to this Contract to E-rate Eligible Entities (i.e., public schools and public libraries) on behalf, and for the benefit, of those Eligible Entities. Bidders also agree to maintain these qualifications, and to assist Eligible Entities in applying for and receiving these allocations/disbursements. Bidder certifies that it currently meets and will continue to meet these requirements, and has a current, valid Universal Service Administrative Company (USAC)-assigned Service Provider Identification Number (SPIN). Enter SPIN below.

FCC Registration Number: 0025242819
 Service Provider Identification Number (SPIN)(Form 498 ID): 143048642

III. CABLING SERVICE DISTRICTS

Hyperion is a Virginia SWaM Certified business and it’s headquarters is located in Reston, VA. All contract administration and management will be handled out of this Northern VA office and appropriate personnel will be dispatched from locations across Virginia, Tennessee, North Carolina, West Virginia, and Maryland as best fits the location of the Authorized User and the work to be done. This is the same concept as we use to support cable and infrastructure projects in Europe, Asia and the Middle East. Hyperion has additional resources available through long-time business partnerships.

Service District	Will be served from the following address or addresses:
Bristol	Hyperion, Inc., 11480 Commerce Park Drive, Suite 120, Reston, VA 20191
Culpeper	Hyperion, Inc., 11480 Commerce Park Drive, Suite 120, Reston, VA 20191
Fredericksburg	Hyperion, Inc., 11480 Commerce Park Drive, Suite 120, Reston, VA 20191
Hampton Roads	Hyperion, Inc., 11480 Commerce Park Drive, Suite 120, Reston, VA 20191
Lynchburg	Hyperion, Inc., 11480 Commerce Park Drive, Suite 120, Reston, VA 20191
Northern Virginia	Hyperion, Inc., 11480 Commerce Park Drive, Suite 120, Reston, VA 20191
Richmond	Hyperion, Inc., 11480 Commerce Park Drive, Suite 120, Reston, VA 20191
Salem	Hyperion, Inc., 11480 Commerce Park Drive, Suite 120, Reston, VA 20191
Staunton	Hyperion, Inc., 11480 Commerce Park Drive, Suite 120, Reston, VA 20191

EXHIBIT B

Pricing Schedule

I. EVALUATION AND AWARD(S)

It is Hyperion's desire to be evaluated for award of any or all VITA/VDOT Districts. We have completed the required pricing documents in two versions. All Service Districts will have equivalent product pricing. Service Districts Hampton Roads, Northern Virginia and Richmond have been determined to require a higher labor rate. Service Districts Bristol, Culpeper, Fredericksburg, Lynchburg, Salem, and Staunton have been determined to have a lower labor rate. These determinations have been made based on the rates of existing and previous Hyperion employees as well and labor market research of the current competitive labor situation. Hyperion's pricing is valid for a period of 90 days for evaluation and award purposes. If the evaluation period exceeds 90 days we will work with VITA on any necessary re-submittal of pricing or extension of the validity period.

II. PRICING SCHEDULE SPREADSHEET/EXCEL FILE

A. Service Districts Hampton Roads, Northern Virginia and Richmond

See Attached Schedule B Excel File "IFB 2019-08 Exhibit B Pricing Schedule_NVA-Ham-Rich_Submittal"

B. Service Districts Bristol, Culpeper, Fredericksburg, Lynchburg, Salem, and Staunton

See Attached Schedule B Excel File "IFB 2019-08 Exhibit B Pricing Schedule_Bri-Cul-Fre-Lyn-Sal-Sta_Submittal"

III. EVALUATION MODEL

TOTAL PRICE = SUM (Items 1 through 87) \$

Service District	TOTAL PRICE = SUM:
Hampton Roads	\$32,130.08
Northern Virginia	
Richmond	

Service District	TOTAL PRICE = SUM:
Bristol	\$30,319.87
Culpeper	
Fredericksburg	
Lynchburg	
Salem	
Staunton	

IV. PRICING INCLUSIVE OF FEES AND COSTS

All prices offered, including labor rates, include the eVA fee of 1% with a cap of \$500 due to our SWaM/DSBSD Small Business Certification.

V. PRODUCT PRICING

The provided Index Price List URLs are for suppliers that openly publish Manufacturer’s Suggested Retail Prices (MSRPs) of the products listed. The prices found here are what our product discounts are based on, however Hyperion has no control over MSRPs or the supplier’s websites. Hyperion also is not limited to just those suppliers listed and will make every effort to use the supplier that will provided the best value to the Authorized User. As such, additional discounts may be made available on a specific IFB based on these fluctuating supplier prices and potential quantity discounts. The listed discounts are the minimum that an Authorized User can expect on the listed items.

VI. SERVICES PRICING (CONTRACT LABOR RATES)

A. Services will be provided at the following rates during “normal” Business Day/Hours for the term of the Contract: (Bidder is to fill in its Labor Rates below.

- 1) Installation, termination and testing of horizontal twisted pair cabling and any other Category 5e and higher category TIA-568-compliant copper cabling, including cost of incidental materials (cable ties, screws, nuts, bolts, etc.):

LABOR RATE, PER HOUR: \$

Service District	LABOR RATE, PER HOUR:
Hampton Roads	\$55.85
Northern Virginia	
Richmond	

Service District	LABOR RATE, PER HOUR:
Bristol	\$44.32
Culpeper	
Fredericksburg	
Lynchburg	
Salem	
Staunton	

- 2) Installation, termination and testing of fiber optic cabling, including cost of incidental materials (cable ties, screws, nuts, bolts, cloths, etc.):

LABOR RATE, PER HOUR: \$

Service District	LABOR RATE, PER HOUR:
Hampton Roads	\$55.85
Northern Virginia	
Richmond	

Service District	LABOR RATE, PER HOUR:
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Bristol	\$44.32
Culpeper	
Fredericksburg	
Lynchburg	
Salem	
Staunton	

3) Other cabling services to include but not be limited to the installation, termination and testing of Category 3 backbone cabling and coaxial cabling, performance of miscellaneous cabling services (see section II.E) and removal of abandoned cabling (see section II.F), including cost of incidental materials (jumper wire, screws, nuts, bolts, cable ties, etc.):

LABOR RATE, PER HOUR: \$

Service District	LABOR RATE, PER HOUR:
Hampton Roads	\$55.85
Northern Virginia	
Richmond	

Service District	LABOR RATE, PER HOUR:
Bristol	\$44.32
Culpeper	
Fredericksburg	
Lynchburg	
Salem	
Staunton	

B. Services provided at the following rates for performing the Services on weekdays after school hours, starting between 3:00 PM and 4:00 PM and ending between 11:30 PM and 12:30 AM as requested in writing by the Authorized User, for the term of the Contract.

1) Installation, termination and testing of horizontal twisted pair cabling and any other Category 5e and higher category TIA-568-compliant copper cabling, including cost of incidental materials (cable ties, screws, nuts, bolts, etc.):

LABOR RATE (After School Hours), PER HOUR: \$

Service District	LABOR RATE, PER HOUR:
Hampton Roads	\$55.85
Northern Virginia	
Richmond	

Service District	LABOR RATE, PER HOUR:
Bristol	\$44.32
Culpeper	
Fredericksburg	
Lynchburg	
Salem	
Staunton	

2) Installation, termination and testing of fiber optic cabling, including cost of incidental materials (cable ties, screws, nuts, bolts, cloths, etc.):

LABOR RATE (After School Hours), PER HOUR: \$

Service District	LABOR RATE, PER HOUR:
Hampton Roads	\$55.85
Northern Virginia	
Richmond	

Service District	LABOR RATE, PER HOUR:
Bristol	\$44.32
Culpeper	
Fredericksburg	
Lynchburg	
Salem	
Staunton	

3) Other cabling services to include but not be limited to the installation, termination and testing of Category 3 backbone cabling and coaxial cabling, performance of miscellaneous cabling services (see section II.E) and removal of abandoned cabling (see section II.F), including cost of incidental materials (jumper wire, screws, nuts, bolts, cable ties, etc.):

LABOR RATE (After School Hours), PER HOUR: \$

Service District	LABOR RATE, PER HOUR:
Hampton Roads	\$55.85
Northern Virginia	
Richmond	

Service District	LABOR RATE, PER HOUR:
Bristol	\$44.32
Culpeper	
Fredericksburg	
Lynchburg	
Salem	
Staunton	

EXHIBIT C

Small Business (SWaM) Procurement Plan

All small businesses must be certified by the Commonwealth of Virginia, Department of Small Business and Supplier Diversity Enterprise (DSBSD) by the contract award date to participate in the SWAM program. Certification applications are available through DSBSD online at <http://www.sbsd.virginia.gov/>.

Offeror Name: Hyperion, Inc.

Preparer Name: Paul Milo, Jr., President **Date:** February 18, 2016

Instructions

A. If you are certified by the DSBSD as a small business or as a micro business, complete only Section A of this form. This shall not exclude DSBSD-certified women, minority, or service-disabled veterans-owned businesses when they have received DSBSD small business certification.

B. If you are not a DSBSD-certified small business, complete Section B of this form.

Section A

If your firm is certified by the DSBSD, are you certified as a (**check all that apply**):

- Small Business
- Small and Women-owned Business
- Small and Minority-owned Business
- Small Service Disabled Veteran-owned Business
- Micro Business
- Micro Business and Women-owned Business
- Micro Business and Minority-owned Business
- Micro Service Disabled Veteran-owned Business

Certification Number: 686599

Certification Date: 07-02-2014

Section B

Populate the table below to show your firm's plans for utilization of DSBSD-certified small businesses in directly performing the Requirements of this contract. This shall not exclude DSBSD-certified micro businesses or women, minority, or service disabled veteran-owned businesses when they have received the DSBSD small business certification. Include plans to utilize small businesses as part of joint ventures, partnerships, subcontractors, suppliers, etc.

Small Business Name & Address DSBSD Certificate #	Status if Small Business is also: Women (W), Minority (M), Service-Disabled Veteran (D), Micro Business (MB)	Contact Person, Telephone & Email	Type of Goods and/or Services	Planned Involvement During Initial Period of the Contract	Planned Contract Dollars During Initial Period of the Contract
N/A	N/A	N/A	N/A	N/A	N/A

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: _____



Printed Name: Paul Milo, Jr.

Organization: Hyperion, Inc.

Date: February 18, 2016