



Commonwealth of Virginia  
Virginia Information Technologies Agency

**NEXT GENERATION SOFTWARE ANALYTICS**

**Optional Use Contract**

Date: December 30, 2015

Contract #: VA-150915-VION

Authorized User: Authorized User (AU): 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: VION Corporation  
196 Van Buren Street  
Suite 300  
Herndon, VA 20170

FIN: 52-1167763

Contact Person: Dwayne Dahl  
Phone: (571) 353-6013  
Fax: (703) 707-0987  
Email: [Dwayne.Dahl@vion.com](mailto:Dwayne.Dahl@vion.com)

Pricing: Exhibit B

Term: September 15, 2015 – September 14, 2018

Payment: Net 30 days

For Additional Information, Please Contact:

Contract Information:

Supply Chain Management  
Virginia Information Technologies Agency  
Mike Novak  
Phone: 804-416-6168  
E-Mail: [michael.novak@vita.virginia.gov](mailto:michael.novak@vita.virginia.gov)  
Fax: 804-416-6361

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://vita2.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.





# **Information Technology Solution Contract**

between

**The Virginia Information Technologies Agency**

on behalf of

**The Commonwealth of Virginia**

and

**ViON Corporation**

**INFORMATION TECHNOLOGY SOLUTION CONTRACT  
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## INFORMATION TECHNOLOGY SOLUTION CONTRACT

THIS INFORMATION TECHNOLOGY Solution 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 ViON Corporation (“Supplier” or “ViON”), a Delaware corporation headquartered at 196 Van Buren Street, Suite 300, Herndon, VA 20170-5349, to be effective as of September 15, 2015 (“Effective Date”).

### 1. PURPOSE AND SCOPE

This Contract sets forth the terms and conditions under which Supplier shall provide Next generation software analytics to the Authorized Users. This includes next-generation analytics, supporting tools, the services needed to deploy and tune these tools, and training services. These tool sets include Business Intelligence (BI), predictive, prescriptive, statistical analytics, simulation, data visualization, data quality, data governance, unstructured data, Hadoop, MapReduce, and Sentiment Analysis.

### 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

Except for telecommunications contracts, means 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 of Virginia-designated holidays.

#### E. Component

Software or Deliverable delivered by Supplier under this Contract, including under all orders or Statements of Work.

#### F. Computer Virus

Any malicious code, program, or other internal component (e.g., computer virus, computer worm, computer time bomb, or similar component), which could damage, destroy, alter or disrupt any computer program, firmware, or hardware or which could, in any manner, reveal, damage, destroy, alter or disrupt any data or other information accessed through or processed by such software in any manner.

#### G. 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.

**H. Deliverable**

The tangible embodiment of the work performed or Services, Maintenance Services, Licensed Services, Solution, Component, Software, plans, reports, data, Product, Supplier Product and Updates 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.

**I. (reserved)**

**J. Documentation**

Those materials (including user manuals, training materials, guides, product descriptions, technical manuals, product specifications, supporting materials and Updates) detailing the information and instructions needed in order to allow any Authorized User and its Agents or Application Users to make productive use of the Application, Software, Solution, Component, Product, Service, Licensed Services or Deliverable, and to implement and develop self-sufficiency with regard to the Application, Software, Solution, Component, Product, Service, Licensed Services 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.

**K. Electronic Self-Help**

Any use of electronic means to exercise Supplier's license termination rights, if allowable pursuant to the Contract, upon breach or cancellation, termination or expiration of this Contract or any Statement of Work or order placed hereunder.

**L. Health Record**

"Health record" means any written, printed or electronically recorded material maintained by a health care entity in the course of providing health services to an individual concerning the individual and the services provided. "Health record" also includes the substance of any communication made by an individual to a health care entity in confidence during or in connection with the provision of health services or information otherwise acquired by the health care entity about an individual in confidence and in connection with the provision of health services to the individual. (§ 32.1-127.1:03, Code of Virginia)

**M. (reserved)**

**N. Maintenance Level**

The defined parameters of Maintenance Services, including the times during which and time-frames in which Supplier shall respond to a request for Maintenance Services. The available Maintenance Levels shall be as defined in this Contract or as defined in any Statement of Work or order issued hereunder. The actual Maintenance Level for a unit of Software or Product shall be set forth in the executed order or Statement of Work for Maintenance of that Software or Product referencing this Contract.

**O. Maintenance Services (or "Maintenance" or "Software Maintenance")**

If authorized by the Contract, means those services, preventive and remedial, provided or performed by Supplier under the Contract or for an Authorized User in order to ensure continued operation of the Software or Product, including Software Updates. Maintenance Services shall include support services defined in this Contract. Software Maintenance Services may include the development of Work Product, if so authorized in the Contract.

**P. Party**

Supplier, VITA or any Authorized User.

**Q. Protected Health Information**

Protected health information means individually identifiable health information that is (i) transmitted in electronic media, (ii) maintained in electronic media, or (iii) transmitted or

maintained in any other form or medium. Protected health information excludes individually identifiable health information in (a) education records covered by the Family Educational Rights and Privacy Act (20 U.S.C. § 1232g); (b) records of any student who is 18 years of age or older, or is attending a postsecondary school, that are made or maintained by a physician, psychiatrist, psychologist, or other recognized professional or paraprofessional acting in his professional or paraprofessional capacity, or assisting in that capacity, and that are made, maintained, or used only in connection with the provision of treatment to the student and are not available to anyone other than persons providing such treatment, except that such records may be personally reviewed by a physician or other appropriate professional of the student's choice; and (c) employment records held, in its role as employer, by a health plan, health care clearinghouse, or health care provider that transmits health information in electronic form. (§ 37.2-1032, Code of Virginia)

**R. Receipt**

An Authorized User or its Agent has physically received or has unfettered access to any Deliverable at the correct "ship-to" location.

**S. Requirements**

The functional, performance, operational, compatibility, Acceptance testing criteria and other parameters and characteristics of the Product, Software, Solution, Component, Service(s), Application and Licensed Services and Deliverables, as authorized by the Contract and/or as set forth in Exhibit A 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.

**T. 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, and development of software and modifications, software updates, solution, products, implementation, installation, maintenance, 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. As permitted by the scope of the Contract, may include the discovery, creation, or development of Work Product, if any. If Work Product is authorized, refer to definition for Work Product. This definition does not include Licensed Services.

**U. Software**

If Software is authorized under the Contract, means the programs and code provided by Supplier under the Contract or any order or SOW issued hereunder as a component(s) of any Deliverable or Component of any Solution, and any subsequent modification of such programs and code, excluding Work Product. For COTS (boxed) software, means the programs and code, and any subsequent releases, provided by Supplier under this Contract as set forth in Exhibit B or as described on Supplier's US and International price lists in effect at time of Authorized User's placement of order or Statement of Work. For Software Maintenance contracts Software also includes the programs and code provided by Supplier under the Contract or any order or SOW issued hereunder in the form of Software Updates.

**V. Software Publisher**

If Software is authorized under the Contract, means the licensor of the Software, other than Supplier, provided by Supplier under this Contract.

**W. Solution**

The Supplier's contractually committed technical approach for solving a technology business objective and associated Requirements as defined and authorized by the scope of the Contract or any order or Statement of Work issued under the Contract. Solution means all Supplier and Supplier's third-party providers' Components making up the Solution, including but not limited to Software, Product, configuration design, implementation, Supplier-developed interfaces, Services and Work Product.

**X. Statement of Work (SOW)**

The document template attached as Exhibit D (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.

**Y. 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).

**Z. Update**

As applicable, any update, modification or new release of the Software, System Software, Application, Documentation or Supplier Product that Supplier makes generally available to its customers at no additional cost. Software Updates include patches, fixes, upgrades, enhancements, improvements, or access mode, including without limitation additional capabilities to or otherwise improve the functionality, increase the speed, efficiency, or base operation of the Software.

**AA. Work Product**

Inventions, combinations, machines, methods, formulae, techniques, processes, improvements, software designs, computer programs, strategies, specific computer-related know-how, data and original works of authorship (collectively, the "Work Product") discovered, created, or developed by Supplier, or jointly by Supplier and an Authorized User(s) in the performance of this Contract. Work Product shall not include configuration of software.

**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 three (3) years. VITA, in its sole discretion, may extend this Contract for up to two (2) additional one (1) year periods after the expiration of the initial three (3) 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, including as applicable, Licensed Services and Maintenance 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, Supplier shall provide all assistance as VITA or an Authorized User may reasonably require to transition the Supplier's contractual obligations, or any portion thereof, as requested by VITA or the 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 not to exceed six (6) months. In the event of a termination for breach and/or default of Supplier, Supplier shall provide such assistance at no charge or fee to VITA or any Authorized User; otherwise, Supplier shall provide such assistance at the hourly rate or a charge agreed upon by Supplier and VITA or an Authorized User.

**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. SOFTWARE LICENSE

If Authorized User is a state agency, board, commission, or other quasi-political entity of the Commonwealth of Virginia or other body referenced in Title 2.2 of the Code of Virginia, the license shall be held by the Commonwealth. If Authorized User is a locality, municipality, school, school system, college, university, local board, local commission, or local quasi-political entity, the license shall be held by that public body. If Authorized User is a private institution of higher education which is listed at: <http://www.cicv.org/Our-Colleges/Profiles.aspx>, the license shall be held by that private institution.

### A. License Grant

Supplier grants to the Authorized User a fully paid, non-exclusive, transferable, restricted (see Options 1 and 2 below, and the associated pricing in Exhibit B) license to use the Software solely on or in connection with the hardware identified in Exhibit B and in accordance with the terms and conditions set forth herein and subject only to the limitations and/or restrictions explicitly set forth in this Contract. ViON reserves all rights in the Software not expressly granted in the Contract. Without limiting the foregoing, Authorized User acknowledges and agrees that no license is granted under this agreement to make any use of the Software on any device other than the Hardware on which it is originally delivered and Authorized User expressly agrees not use the Software on any other device.

The term of the license for Option 1 is 36 months, and then renewable annually thereafter.

The term of the license for Option 2 is a minimum of 12 months, and continues thereafter until the Authorized User cancels the service.

The Software is the property of Supplier, and no title or ownership of the Software or any of its parts, including Documentation, shall transfer to the Commonwealth or any Authorized User.

The Commonwealth or all Authorized Users shall have the right to use and transfer the Software for their benefit, for government use and purposes, and for the benefit of their Agents, including internal and third-party information processing.

The Commonwealth and any Authorized User may allow access to the Software by third party vendors who are under contract with an Authorized User to provide services to or on behalf of such Authorized User, or by other entities as required for conducting the business of government. Access includes loading or executing the Software on behalf of such Authorized Users or their Agents.

In the event that all of an Authorized User's copies of the Software, including all backup copies, are destroyed, irreparably damaged or otherwise lost due to fire, explosion, sabotage, flood or other disaster, Supplier shall provide to such Authorized User, at no additional cost, replacement

copies of the Software and Documentation. Nothing contained in this Section shall obligate Supplier to replace or assist in the recovery of data lost concurrent with the loss of the Software.

Except as expressly authorized, an Authorized User shall not distribute the Software to any third party without Supplier's prior written consent.

Except as provided or allowed by law, no Party shall reverse engineer, decompile, disassemble, or otherwise attempt to derive source code or other trade secrets from any software or other intellectual property of any other Party.

For L-3 Communications software: Any Software provided by Supplier shall be part of its Solution. Such Software that is licensed directly from the Software Publisher through an end user licensing agreement (EULA) shall be subject to the License Agreement Addendum (LAA), both of which are attached hereto as Exhibit F. Supplier shall have sole responsibility for ensuring that any such Software Publisher executes the LAA. The Software Publisher's EULA, along with the LAA executed by Software Publisher shall be added to Exhibit F for reference, but shall not become a part of this Contract.

Nothing contained herein shall be construed to restrict or limit the rights of the Commonwealth or any Authorized User to use any technical data, which the Commonwealth or such Authorized User may already possess or acquire under proper authorization from other sources.

Compliance with the terms and conditions of any license granted pursuant to this Contract is solely the responsibility of the Authorized User which purchased such license or for which such license was purchased and not the responsibility of VITA, unless VITA purchased such license on its own behalf.

## **B. License Type**

All licenses granted, regardless of the type, include all uses set forth above. License type may vary by Software product and shall be set forth in Exhibit B and identified on any order or SOW issued pursuant to this Contract.

option C1 - Designated CPU License

The license(s) granted under this Section authorizes use of the Software only on the number of CPU(s) listed in the applicable order or SOW. An Authorized User may transfer the Software to a different machine to the extent that the license price for such new CPU(s) is equivalent to the CPU(s) initially licensed. If the licensed CPU is inoperative because of (i) malfunction, (ii) performance of maintenance, or (iii) modification to the licensed CPU, or (iv) because the Software is being transferred to another CPU, such Authorized User may use the Software on a replacement CPU as long as required by the mentioned conditions.

option C2 - Concurrent User License

The license(s) granted under this Section authorizes use of the Software on any system based on the total number of Concurrent Users. The number of "Concurrent Users" is defined as the maximum number of concurrent Sessions connected at a given point in time. A "Session" is defined as an active user executing the Software. The Authorized User shall specify an initial number of Concurrent User licenses in its initial order or SOW pursuant to this Contract. An Authorized User may increase the number of Concurrent User licenses upon issuing an order or SOW for additional Concurrent User licenses. The license fee for additional Concurrent User licenses and payment of the license fee is set forth on Exhibit B.

option C3 – Site License

The license(s) granted under this Section authorizes use of the Software on any system located at the "Site" as such term is defined in the applicable order or SOW.

option C4 – Project Specific License

The Project Specific License authorizes use of the Software on any CPU; system owned or opted by the Commonwealth or an Authorized User, and by any user, without limitation as to quantity or location for Project \_\_\_\_\_.

option C5 – Enterprise Wide License

The Enterprise Wide License authorizes use of the Software on any CPU, on any system, and by any user within the “Enterprise”, as such term is defined in the applicable order or SOW, without limitation as to the quantity or location or project.

**C. No Subsequent, Unilateral Modification of Terms by Supplier (“Shrink Wrap”)**

Notwithstanding any other provision or other unilateral license terms which may be issued by Supplier after the Effective Date of this Contract, and irrespective of whether any such provisions have been proposed prior to or after the issuance of an order for a Solution, the components of which are licensed under this Contract, or the fact that such other agreement may be affixed to or accompany Software upon delivery (“shrink wrap”), the terms and conditions set forth herein shall supersede and govern licensing and delivery of all products and services hereunder.

**7. RIGHTS TO WORK PRODUCT**

If Authorized User is a state agency, board, commission, or other quasi-political entity of the Commonwealth of Virginia or other body referenced in Title 2.2 of the Code of Virginia, any license to pre-existing work shall be held by, and all rights in, title to, and ownership of Work Product shall vest with the Commonwealth. If Authorized User is a locality, municipality, school, school system, college, university, local board, local commission, or local quasi-political entity, any license to pre-existing work shall be held by, and all rights in, title to, and ownership of Work Product shall vest with that public body. If Authorized User is a private institution of higher education which is listed at: <http://www.cicv.org/Our-Colleges/Profiles.aspx>, any license to pre-existing work shall be held by, and all rights in, title to, and ownership of Work Product shall vest with that private institution.

**A. Work Product**

VITA and Supplier each acknowledge that performance of this Contract may result in Work Product. The Parties shall document all Work Product specifications and such specifications shall be made an incorporated exhibit to this Contract. Supplier agrees that it shall promptly and fully disclose to the Commonwealth or the Authorized User any and all Work Product generated, conceived, reduced to practice or learned by Supplier or any of its employees, either solely or jointly with others, during the term or performance of this Contract, which in any way relates to the business of the Commonwealth, VITA or any Authorized User. Supplier further agrees that neither Supplier nor Supplier’s employees, contractors, agents or subcontractors, nor any party claiming through Supplier or Supplier’s employees, shall, other than in the performance of this Contract, make use of or disclose to others any proprietary information relating to the Work Product. All Services performed hereunder shall include delivery of all source and object code and all executables and documentation for all Work Product. Supplier shall at no time deny access to the Work Product, regardless of form, by the Commonwealth or the Authorized User.

**B. Ownership**

Supplier agrees that, whether or not the Services are considered “works made for hire” or an employment to invent, all Work Product discovered, created or developed under this Contract shall be and remain the sole property of the Commonwealth and its assigns or the Authorized User and its assigns. Except as specifically set forth in writing and signed by both VITA and Supplier, or Authorized User and Supplier, Supplier agrees that the Commonwealth or the Authorized User shall have all rights with respect to any Work Product discovered, created or developed under this Contract without regard to the origin of the Work Product.

If and to the extent that Supplier may, under applicable law, be entitled to claim any ownership interest in the Work Product, Supplier hereby irrevocably transfers, grants, conveys, assigns and relinquishes exclusively to the Commonwealth or the Authorized User any and all right, title and interest it now has or may hereafter acquire in and to the Work Product under patent, copyright, trade secret and trademark law in perpetuity or for the longest period otherwise permitted by law. If any moral rights are created, Supplier waives such rights in the Work Product. Supplier further agrees as to the Work Product to assist the Commonwealth or the Authorized User in every reasonable way to obtain and, from time to time, enforce patents, copyrights, trade secrets and other rights and protection relating to the Work Product, and to that end, Supplier and its

employees shall execute all documents for use in applying for and obtaining such patents, copyrights, and other rights and protection, and in protecting trade secrets, with respect to such Work Product, as the Commonwealth or the Authorized User may reasonably request, together with any assignments thereof to the Commonwealth or the Authorized User or entities designated by the Commonwealth or the Authorized User.

**C. Pre-existing Work**

If and to the extent that any pre-existing rights are embodied or reflected in the Work Product, Supplier hereby grants to the Commonwealth or the Authorized User the irrevocable, perpetual, non-exclusive, worldwide, royalty-free right and license to (i) use, execute, reproduce, display, perform, distribute copies of and prepare derivative works based upon such pre-existing rights and any derivative works thereof and (ii) authorize others to do any or all of the foregoing.

**D. Return of Materials**

Upon termination of this Contract or in the event Authorized User terminates any order or SOW issued hereunder, Supplier shall immediately return to VITA or the appropriate Authorized User all copies, in whatever form, of any and all Confidential Information, Work Product and other properties provided by VITA or such Authorized User, which are in Supplier's possession, custody or control.

**8. 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 as follows:

**A. Ownership**

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

**B. Limited Warranty**

During the warranty period of ninety (90) days, or as specified in the applicable order or SOW, Supplier warrants that the Services, Solution, Solution Components, Deliverables, Product, Software, Updates, as authorized and provided by Supplier under this Contract, shall meet or exceed the Requirements. Supplier shall correct, at no additional cost to any Authorized User, all errors identified during the warranty period that result in supplier's failure to meet the Requirement or its contractual obligations.

**C. Component Warranty**

For any Software or Deliverable ("Component"), the applicable warranty period shall be the period from written acceptance of the Component until final acceptance of the Solution, or as specified in the applicable order or SOW.

**D. Interoperability Warranty**

Supplier warrants that each Component, regardless of the origin of the Component, delivered under this Contract or pursuant to an order or SOW shall be interoperable with other Components so as to meet or exceed the performance specified in the Requirements and the applicable order or SOW.

**E. 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 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 Request for Proposal ("RFP") or 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 RFP/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;

**F. Documentation and Deliverables**

Supplier warrants the following as applicable to the Contract:

- i. The Solution or Software is pursuant to a particular Request for Proposal ("RFP") or Invitation for Bid ("IFB"), quote, or Request for Quote (RFQ), and therefore such Solution or Software shall be fit for the particular purposes specified by VITA in the RFP/IFB and in this Contract, and if applicable, by the Authorized User requesting such quote or issuing such RFQ. Further, Supplier is possessed of superior knowledge with respect to the Solution of Software and is aware that all Authorized Users are relying on Supplier's skill and judgment in providing the Solution or Software;
- ii. If the RFP/IFB or RFQ specified or if Exhibit A or Supplier's quote specifies the hardware equipment an Authorized User shall use to run the Solution, then Supplier warrants the Solution, and any subsequent Solution Component Software release, is compatible with and shall perform well with such hardware equipment;
- iii. The Solution provided hereunder includes Component Software at the current release level unless an Authorized User specifies an older version in its order or SOW;
- iv. No corrections, work arounds or future Software or Solution Component Software releases provided by Supplier under the warranty provisions or under maintenance shall degrade the Solution, cause any other warranty to be breached, or require an Authorized User to acquire additional hardware equipment or software;
- v. Supplier warrants that the Documentation and all modifications or amendments thereto which Supplier is required to provide under this Contract shall be sufficient in detail and content to allow a user/programmer to understand fully the Solution or Solution Component or to load/use/operate the Software without reference to any other materials or information.

**G. 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 Solution, Solution Component, Deliverables, Product, Software, System Software, Update, Application and/or Licensed Service, as obligated and provided by Supplier under the order or SOW, at the time of delivery to the Authorized User. Supplier warrants that the Solution, Solution Components, Deliverables, Product, Software, System Software, Update, Application and/or Licensed Services, 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 Solution, Solution Components, Deliverables, Product, Software, System Software, Application and/or Licensed Service.

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.

**H. Open Source**

Supplier will notify all Authorized Users if the Solution, Solution Components, Deliverables, Product, Software, Updates, Application and/or Licensed Services, as obligated and provided by Supplier, contains any Open Source code and identify the specific Open Source License that applies to any embedded code dependent on Open Source code, provided by Supplier under this Contract.

**I. 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.

**J. 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.

**9. DELIVERY AND INSTALLATION**

**A. Scheduling**

Supplier shall deliver the Solution, including any Component parts, and complete performance of Services according to the delivery dates set forth on the appropriate order or SOW.

Supplier shall make available all appropriate and/or related Documentation at the time of delivery of the relevant Component of the Solution. Any Solution Component delivered without the appropriate and required Documentation shall be considered "shipped short" until the applicable documentation has been received.

**B. Deployment of Solution**

**1. Supplier Deployment of Solution**

The Solution fee includes initial deployment of the complete Solution. Supplier is required to deploy the Solution in accordance with the deployment schedule set forth on the order or SOW. Deployment shall include the installation of any Software Component and, if agreed, any hardware Component, of the Solution. Supplier shall conduct its standard appropriate diagnostic evaluation at the Authorized User's user site to determine that the Solution is properly deployed and fully ready for productive use, and shall supply such Authorized User with a copy of the results of the diagnostic evaluation promptly after completion of deployment.

Supplier agrees that failure to deploy the Solution in accordance with the delivery schedule in the applicable order or SOW shall constitute a material breach of this Contract resulting in damages to such Authorized User. As an estimate of the damages such Authorized User shall suffer, Supplier agrees to credit such Authorized User an amount equal to one percent (1%) of the total Solution fee, for each day after the scheduled deployment date that the Solution has not been deployed for a period of thirty (30) days following the agreed upon delivery date. If the delay lasts longer than thirty (30) days, such Authorized User may immediately cancel the order or SOW and collect damages for each day of that period of late delivery. Such Authorized User reserves any and all other remedies available at law or in equity for delays lasting longer than thirty (30) days or for non-deployment.

**2. Authorized User Installation of Software**

If the Solution includes Software which may be installed by an Authorized User and such Authorized User elects to install the Software itself, the Software shall be deemed to be installed when all programs, program libraries and user interfaces are copied to and initialized on the appropriate equipment as executable by having the ordering Authorized User invoke the primary function of each major Component of the Software or when Acceptance criteria as specified in the Authorized User's order or SOW have been met. Authorized User shall provide to Supplier written notice of Acceptance upon completion of installation and successful Acceptance testing. Supplier shall proceed with full deployment of the Solution concurrently with or after Authorized User's installation of the Software, as agreed between the Authorized User and Supplier in the order or SOW.

**C. Documentation of Software Configuration**

If the Solution includes configuration of Software by Supplier, Supplier shall provide to the appropriate Authorized User documentation containing a description of the configuration. Such documentation shall be sufficiently detailed such that any appropriately trained employee or Agent of any Authorized User may reconstruct the configuration of the Software.

**10. ACCEPTANCE****A. Software and Deliverable Acceptance Criteria**

Software and Deliverables shall be deemed accepted when the Authorized User determines that such Software and Deliverables successfully operate in accordance with the Requirements and applicable order or SOW. At a minimum, Acceptance Criteria for Software and Deliverables, and for the Solution as a whole, shall ensure that all of the functionality described in the Requirements set forth in Exhibit A and required by the Authorized User in the applicable order or SOW has been delivered to the Authorized User. Acceptance of any one Deliverable shall not imply Authorized User's concurrence that the Deliverable will function properly with or within the Solution. Supplier shall be responsible for ensuring that all Deliverables function properly within the Solution. Should a previously Accepted Deliverable require further modification in order to work properly with or within the Solution, Supplier shall be responsible for all costs associated with such modification. Such Authorized User agrees to commence Acceptance testing within five (5) days, or within such other period as set forth in the applicable order or SOW, after receipt of the Software or Deliverable. Acceptance testing will be no longer than fifteen (15) days, or such other period as may be agreed in writing between Authorized User and Supplier, for the first instance of each product type set forth in Exhibit B. Supplier agrees to provide to such Authorized User such assistance and advice as such Authorized User may reasonably require, at no additional cost, during such Acceptance testing, other than pre-approved travel expenses for time and materials type orders or SOWs or for fixed price type orders or SOWs in which travel expenses were expressly excluded from the total price of the order or SOW. Any such travel expenses must be pre-approved by the Authorized User and shall be reimbursable by such Authorized User at the then-current per diem amounts as published by the Virginia Department of Accounts (<http://www.doa.virginia.gov>), or a successor URL(s)). If the Authorized User is a private institution chartered in Virginia and and granted tax-exempt status under &sect;501(c)(3) of the Internal Revenue Code, such private institution may have its own per diem amounts applicable to Supplier's pre-approved travel expenses. Authorized User shall provide to Supplier written notice of Acceptance upon completion of successful Acceptance testing. Should Authorized User fail to provide Supplier written notice of successful or unsuccessful Acceptance testing within five (5) days following the Acceptance testing period, the Service shall be deemed Accepted.

**B. Software and Deliverable Cure Period**

Supplier shall correct any non-conformities identified during Acceptance testing and re-submit such non-conforming Software or Deliverable for re-testing within fifteen (15) days of receipt of the appropriate Authorized User's written notice of non-conformance, or as otherwise agreed between such Authorized User and Supplier in the applicable order or SOW. Should Supplier fail to cure the non-conformity or deliver Software or a Deliverable which meets the Requirements, such Authorized User may, in its sole discretion: (i) reject the Software or Deliverable in its entirety and recover amounts previously paid hereunder; (ii) issue a "partial Acceptance" of the Software or Deliverable with an equitable adjustment in the price to account for such deficiency; or (iii) conditionally accept the applicable Software or Deliverable while reserving its right to revoke Acceptance if timely correction is not forthcoming. Failure of the Software or a Deliverable to meet, in all material respects, the Requirements after the second set of acceptance tests shall 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 Solution to be provided thereunder by Supplier.

**C. Solution Acceptance Criteria**

Solution shall be deemed accepted when the Authorized User determines that such Solution successfully operates in accordance with the Requirements. Such Authorized User agrees to

commence Acceptance testing within five (5) days after deployment of the Solution. Acceptance testing will be completed within fifteen (15) days, or such other period as may be agreed in writing between Authorized User and Supplier, after deployment of the Solution. Supplier agrees to provide to such Authorized User such assistance and advice as such Authorized User may reasonably require, at no additional cost, during such Acceptance testing, other than pre-approved travel expenses for time and materials type orders or SOWs or for fixed price type orders or SOWs in which travel expenses were expressly excluded from the total price of the order or SOW. Any such travel expenses must be pre-approved by the Authorized User and shall be reimbursable by such Authorized User at the then-current per diem amounts as published by the Virginia Department of Accounts <http://www.doa.virginia.gov>, or a successor URL(s)). If the Authorized User is a private institution chartered in Virginia and and granted tax-exempt status under &sect;501(c)(3) of the Internal Revenue Code, such private institution may have its own per diem amounts applicable to Supplier's pre-approved travel expenses. Authorized User shall provide to Supplier written notice of Acceptance upon completion of successful Acceptance testing. Should Authorized User fail to provide Supplier written notice of successful or unsuccessful Acceptance testing within five (5) days following the Acceptance testing period, the Service shall be deemed Accepted.

**D. Solution Cure Period**

Supplier shall correct any non-conformities identified hereunder and shall thereafter re-submit such previously non-conforming Solution or Component products or Services for re-testing within fifteen (15) business days of receipt of written notice of non-conformance to Supplier, or as otherwise agreed between the Authorized User and Supplier. Should Supplier fail to deliver a Solution which meets the Requirements, such Authorized User may, in its sole discretion: (i) reject the Solution in its entirety and recover amounts previously paid hereunder; (ii) issue a "partial Acceptance" of the Solution with an equitable adjustment in the price to account for such deficiency; or (iii) conditionally accept the applicable Solution while reserving its right to revoke Acceptance if timely correction is not forthcoming. Failure of the Solution to meet, in all material respects, the specifications and performance standards after the second set of acceptance tests shall 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 Solution to be provided hereunder by Supplier.

**11. WARRANTY AND MAINTENANCE SERVICES**

At any time during the Warranty or Maintenance Period, as applicable, Supplier shall provide the following warranty or maintenance services (including unlimited telephonic support and all necessary travel and labor) to maintain the Solution in accordance with the Requirements. During the Warranty Period, such services shall be performed without additional charge to any Authorized User. During the Maintenance Period, charges shall be in accordance with this Section and Exhibit B.

**A. Known Defects**

Promptly notify all Authorized Users in writing of any defects or malfunctions in the Solution or Documentation of which it learns from any source, correct any such defects or malfunctions or provide a work around until corrected, within five (5) days of Supplier's knowledge of such defect or malfunction and provide all Authorized Users with corrected copies of same.

**B. New Releases**

Provide to all Authorized Users no later than the first day of general release, copies of the Software and Documentation revised to reflect any enhancements, including all new releases, upgrades, and access modes, to the Software made by Supplier, including, without limitation, modifications to the Software which can increase the speed, efficiency or base of operation of the Software or add additional capabilities to or otherwise improve the functionality of the Software.

**C. Coverage**

Twenty-four (24) hours per day, seven (7) days a week, provide to any Authorized Users all reasonably necessary telephone or written consultation requested by such Authorized Users in connection with use, problems and operation of the Solution.

**D. Service Levels**

The VSC (ViON Solution Center) is staffed 24/7/365 with Level 1, 2, and Technical support specialists. Additional backline support is available to ViON from manufacturers. The VSC is located in northern Virginia with a backup location in Ogden, Utah.

The VSC will take ownership of an issue from the moment it is reported to the moment the client agrees that it is resolved. Whether clients call to report a complex integration issue or simply to request information, they will speak to highly trained specialists with a deep understanding of data center environments. These specialists will strive to resolve issues over the phone or, when appropriate, quickly deploy field staff and coordinate with them onsite. In addition, our longstanding relationships with technology manufacturers enable the VSC to serve as a single point of contact for multi-vendor environments.

ViON uses a comprehensive case management platform for our ticketing and service desk solution. Integrated Customer Portal Access, email / event correlation and integration, as well as mobility, plus live help desk provide a complete customer experience.

Though it is anticipated that most issues will be resolved by the VSC remotely, ViON provides 24/7/365 dedicated on-call service staff that respond to support service calls. The Field Engineers can be dispatched either by the call home paging function or a direct call to the ViON support center using the toll free service number. Field Engineers dispatched may be ViON employees or may be the manufacturer's Field Engineer.

**Included Services:**

- ▶ Telephone Support
- ▶ Real time services dispatching and diagnostics
- ▶ Online Technical Information Access
- ▶ Corrective Maintenance (repairs)
- ▶ Engineering Changes
- ▶ Spares support
- ▶ Preventive Maintenance
- ▶ Concurrent Maintenance

**E. Software Evolution**

Should Supplier or Software Publisher merge or splinter the Software previously provided to any Authorized User, such action on the part of

Supplier or Software Publisher shall not in any way result in any Authorized User being charged additional license or support fees in order to receive enhancements, releases, upgrade or support for the Software.

If Supplier or Software Publisher reduces or replaces functionality contained in a licensed Software product and provides the same or substantially similar functionality as or within a separate or renamed Software product, then the Commonwealth or the Authorized User shall be entitled to license such Software product at no additional license or maintenance fee, and subject to the terms and conditions herein.

If Supplier or Software Publisher releases an option, future Software product or other release that has substantially the same functionality as the Software products provided under this Contract, and Software Publisher and/or Supplier ceases to provide maintenance for the older Software product, then Supplier shall offer the Commonwealth or the Authorized User the option to exchange licenses for such replacement Software product or function at no additional charge.

**F. Escalation Procedures**

### Escalation and Severity Level Response Time

Severity	Impact	Response Time
1	Major Business Impact -System Down	15 Minutes
2	Significant Business Impact -System performance severely degraded	60 Minutes
3	Minor Impact -Possible impact to individual users - Workaround/circumvention available	24 Hours
5	No Impact -Informational	None Required

#### Escalation

Utilizing call-home capabilities and automated alert paging systems ViON service technicians and our vendors respond to failed components and degraded equipment in real-time and are able to react to service requests immediately. Also on the receipt of a direct call, by the customer, to the ViON support center the appropriate Field Engineer will be paged. Once paged the engineer will acknowledge and accept the service request. If neither the primary or secondary engineers respond to the service request the paging system automatically begins to escalate to the on call service duty manager. For all severity level 1 and 2 issues the duty manager will immediately be notified and engaged. If not resolved within 4 hours executive level management will be notified

#### G. Remedies

If Supplier is unable to make the Solution or any Component thereof conform, in all material respects to the order or SOW issued by the Authorized User, within thirty (30) days following notification by an Authorized User, Supplier shall, at such Authorized User's request, accept return of the tangible Solution Components, and (a) during the Warranty Period, return all monies paid by such Authorized User for the returned Solution Components and Documentation or (b) during any subsequent Maintenance Period, return all monies paid by such Authorized User for the returned Solution Components and Documentation, pro-rated using the straight-line method for an estimated Solution life cycle of seven (7) years. Authorized User shall discontinue use of any Solution Component Software or product.

#### H. Solution Support Services (Maintenance) and Renewal Options

Sixty (60) days prior to the expiration of the Warranty Period, Supplier shall notify the Authorized User in writing of such expiration, and the Authorized User, at its sole discretion, may order from Supplier Solution support Services ("Maintenance Services"), including new Software releases, updates and upgrades, for a period of one (1) year ("Maintenance Period"). Supplier shall notify the Authorized User sixty (60) days prior to the expiration of the Maintenance Period, and the Authorized User, at its sole discretion, may renew Maintenance Services for an additional one (1) year period. The annual fee for Maintenance Services shall not exceed the fee charged for the

preceding year's Maintenance Services by more than three percent (3%), or the annual change in CPI, as defined in the Fees and Charges section, in effect at the time, whichever is less. Supplier warrants that it shall make Support Services available for all the Solution components listed in Exhibit B for a period of at least five (5) years from the expiration of the initial Warranty Period of any Solution provided to an Authorized User pursuant to this Contract. Cancellation of Maintenance Services by an Authorized User shall not affect this Contract or the grant of any license by Supplier.

## 12. 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, which lists any and all fees and charges. The fees and any associated discounts shall be applicable throughout the term of this Contract; provided, however, that in the event the fees or discounts apply for any period less than the entire term, Supplier agrees that it shall not increase the fees more than once during any twelve (12) month period, commencing at the end of year one (1). 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 to the Authorized User if such change impacts any SOW or order and in accordance with the above and shall not become effective for sixty (60) days thereafter. Supplier agrees to offer price reductions to ensure compliance with the Competitive Pricing Section.

### B. 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 license 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, license 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.

**C. Reproduction Rights for Supplier-Provided Software**

At an Authorized User's request, Supplier shall provide the Authorized User with a reproducible diskette or CD of Software and Updates. Such Authorized User shall be responsible for making copies and distributing the Software and Updates as required. Within thirty (30) days of the end of each calendar quarter, such Authorized User shall provide to Supplier a report of the net number of additional copies of the Software and/or Updates deployed during the quarter. Supplier shall invoice such Authorized User for the net number of new licenses reported as deployed.

**D. Reimbursement of Expenses**

If allowable pursuant to an Authorized User's Statement of Work, such Authorized User shall pay, or reimburse Supplier, for all reasonable and actual travel-related expenses for greater than thirty (30) miles from portal to portal incurred by Supplier during the relevant period; provided, however, that such Authorized User shall only be liable to pay for Supplier's travel-related expenses, including transportation, meals, lodging and incidental expenses, that have been authorized by such Authorized User in advance in the Statement of Work and which will be reimbursable by such Authorized User at the then-current per diem amounts as published by the Virginia Department of Accounts (<http://www.doa.virginia.gov/>, or a successor URL(s)). Authorized Users who are not public bodies may have their own per diem amounts applicable to Supplier's pre-approved travel expenses.

All reimbursed expenses will be billed to the Authorized User on a pass-through basis without any markup by Supplier. At Authorized User's request, Supplier shall provide copies of receipts for all travel expenses over US\$30.00.

**E. Demonstration and/or Evaluation**

If the Supplier's contractual obligations include the provision of a Solution, an Application and Licensed Services, or Software-as-a-Service, at the request of any Authorized User, Supplier shall perform a demonstration of its Solution, or its Application and Licensed Services or Software-as-a Service at such Authorized User's location and at no charge.

If the Supplier's contractual obligations include the provision of Software, the Supplier shall make available to any Authorized User the Software for evaluation purposes at no charge. The evaluation period will be determined by the complexity of testing but will be a period not less than thirty (30) days. Each new project is entitled to an evaluation copy regardless of whether an Authorized User has previously purchased the Software.

**F. Statement of Work**

An SOW, the template provided in Exhibit D, shall 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. Unless VITA issues a written authorization for a time and materials type SOW, any SOW shall be of a fixed price type but may, with the written approval of VITA, contain a cost-reimbursable line item(s) for pre-approved travel expenses. 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 (template provided as Exhibit E). 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 hereto.

**G. Supplier Quote and Request for Quote**

Should an Authorized User determine that a 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, on a case-by-case basis and upon approval by VITA, 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.

**H. 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. Payment for any support services, as authorized in the Contract and the Authorized User's applicable order or SOW, shall be annually in arrears unless otherwise stated herein, or in any order or SOW referencing this Contract. No invoice shall include any costs other than those identified in the executed order or SOW, which costs shall be in accordance with Exhibit B. Without limiting the foregoing, all shipping costs are the Supplier's responsibility except to the extent such charges are identified in Exhibit B, or as noted in any executed order or SOW referencing this Contract. Invoices issued by the Supplier shall identify at a minimum:

- i. Dates/periods that invoice covers, including any service or subscription periods, as applicable.
- ii. Line item description of the Deliverable(s), Product(s), Software, Hardware, Services, Solution and Solution Components, Maintenance Services, and/or Licensed 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.

**I. 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, components or services accepted more than ninety (90) days prior to receipt of a valid invoice may not be paid. Should Supplier

repeatedly over bill Authorized User, Authorized User may assess a one percent (1%) charge for the amount over-billed for each month that such over-billing continues.

### **13. REPORTING**

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 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.

### **14. STATUS MEETINGS**

The account team will be prepared to conduct monthly stewardship meetings with VITA to provide a broad review of all services, projects and ongoing operations. Supplier should also be prepared to conduct semi-annual meetings/presentations to discuss new products and services and their potential benefit to VITA.

### **15. STEERING COMMITTEE**

In order to facilitate mutually beneficial contractual relationships with suppliers, VITA has procedures for establishing a steering committee ("Steering Committee"), consisting of senior management personnel, including personnel involved in the contractual relationship, from VITA and Supplier.

Roles of the Steering Committee include but are not be limited to a) identifying potential issues which may arise during the performance of a contract, b) discussing and assigning roles and responsibilities, c) establishing methods for quickly resolving potential disputes, d) setting rules for communication and decision making, e) monitoring and measuring the business relationship between the parties, and f) acting as a final decision board for escalated problems.

A meeting of the Steering Committee is intended to be a forum for brainstorming and sharing ideas, emphasizing respect, cooperation, and access, with the end goal of developing relationships to avoid conflict. A facilitator may, but is not required to, conduct a meeting of the Steering Committee.

A Steering Committee for this Contract will be formed at VITA's option. Meetings may be held at any time during the Contract term, should VITA, at its sole discretion, determine that a meeting(s) would be beneficial to the contractual relationship, and Supplier agrees to participate in such meeting(s). In addition, Supplier may at any time submit a written request to VITA for a meeting of the Steering Committee, which VITA will not unreasonably deny.

Supplier shall ensure the availability of the appropriate personnel to meet with the VITA contract management team. Additional Steering Committee meetings involving representatives from VITA, the Supplier, and an Authorized User may be required prior to or during performance on any specific SOW issued pursuant to this Contract.

## **16. RESERVED**

## **17. TRAINING AND DOCUMENTATION**

### **A. Training**

In addition to any online tutorial training Supplier may make available, Supplier's fee, unless expressly excluded, includes all costs for any and all training as agreed upon for the training of one (1) Authorized User trainer per order or SOW on the use and operation of the Deliverable provided to Authorized User, to allow full benefit of the applicable Deliverable to Authorized User, including instruction in any necessary conversion, manipulation or movement of such Authorized User's data. Supplier shall provide personnel sufficiently experienced and qualified to conduct such training at a time and location mutually agreeable to Supplier and Authorized User. Available additional and optional training, and applicable pricing and discounts, are described in Exhibit B.

### **B. Documentation**

Supplier shall deliver to Authorized User three (3), or such number as agreed upon between the parties under an order or SOW, complete hard copies or electronic media of Documentation applicable to Supplier's Deliverable provided to Authorized User, as requested by such Authorized User. Should Supplier revise or replace the Documentation, or should Documentation be modified to reflect Updates, Supplier shall deliver to the Authorized User such updated or replacement Documentation, in the same quantity and media format as originally requested by such Authorized User, or as agreed upon between the parties. Any Authorized User shall have the right, as part of any license grant, to make as many additional copies of the Documentation, in whole or in part, for its own use as required. This Documentation shall include, but not be limited to, overview descriptions of all major functions, detailed step-by-step installation and operating procedures for each screen and activity, and technical reference manuals. Such Documentation shall be revised to reflect any modifications, fixes or updates made by Supplier. Any Authorized User shall have the right, as part of the license granted by Supplier, at its own discretion, to take all or portions of the Documentation, modify or completely customize it in support of the authorized use of the licensed application or software and may duplicate such Documentation and include it in such Authorized User's document or platform. All Authorized Users shall continue to include Supplier's copyright notice.

## **18. AUTHORIZED USER SELF-SUFFICIENCY**

Prior to or at any time during Supplier's performance of an order or SOW issued pursuant to this Contract, an Authorized User may require that Supplier provide to Authorized User a detailed plan to develop Authorized User self-sufficiency and to transition operation and management to Authorized User or its Agent, which Agent may be VITA, or an agent of VITA, or a third party provider under contract with Authorized User. At Authorized User's request and pursuant to an order or SOW for Supplier's Services issued hereunder, Supplier shall provide all assistance reasonably required by Authorized User to develop Authorized User's self-sufficiency in operating and managing the Solution, Software, Products and/or Services that Supplier provided to Authorized User under the applicable order or SOW. During and/or after the transition period, Authorized User may, at its sole discretion, elect to order or continue Maintenance Services from Supplier, if authorized under the scope of the Contract, for any of the Software or hardware Product, components or Solution Components delivered to Authorized User by Supplier.

## **19. COMPETITIVE PRICING**

Supplier warrants and agrees that each of the charges, economic or product terms or warranties granted pursuant to this Contract are comparable to the equivalent charge, economic or product term or warranty being offered to any commercial or government customer of Supplier. If Supplier enters

into any arrangements with another customer of Supplier or with an Authorized User to provide the products and services, available under this Contract, under more favorable prices, as the prices may be indicated on Supplier's current U.S. and International price list or comparable document, then this Contract shall be deemed amended as of the date of such other arrangements to incorporate those more favorable prices, and Supplier shall immediately notify VITA of such change. The foregoing shall not be impacted by promotional offers or offers with substantially different terms and conditions. Supplier shall have the right to offer promotional discounts to Authorized Users of this Contract.

## 20. RESERVED

## 21. 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.

**E. Health Insurance Portability and Accountability Act**

Supplier agrees to comply with all applicable provisions of the Health Insurance Portability and Accountability Act of 1996 (HIPAA) and, as applicable to the performance of this Contract or to any SOW or order issued hereunder. Supplier shall:

- i. Not use or further disclose protected health information (PHI) other than as permitted or required by the terms of this Contract or any SOW or order issued hereunder or as required by law;
- ii. Use appropriate safeguards to prevent use or disclosure of PHI other than as permitted by this Contract or any SOW or order issued hereunder;
- iii. Report to VITA or Authorized User, as applicable, any use or disclosure of PHI not provided for by this Contract or the applicable SOW or order;
- iv. Mitigate, to the extent practicable, any harmful effect that is known to the Supplier of a use or disclosure of PHI by the Supplier or its employees, agents or subcontractors in violation of the requirements of this Contract or the applicable SOW or order;
- v. Impose the same requirements and restrictions contained in this provision on its employees, subcontractors and agents performing on this Contract or a SOW or order issued hereunder;
- vi. Provide access to PHI contained in its records to VITA or the requesting Authorized User, in the time and manner designated by VITA or the requesting Authorized User, or at the request of VITA or an Authorized User, to an individual in order to meet HIPAA access;
- vii. Make available PHI in its records to VITA or an Authorized User for amendment and incorporate any amendments to PHI in its records at VITA's or an Authorized User's request; (end of HIPAA additional language)

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

**22. 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, Software, Services, Solution, including Solution Components, Application and Licensed 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, Software, Services, Solution, including Solution Components, Application and Licensed Services, as applicable, or any component thereof; or (b) replace or modify such infringing Deliverables, Products, Software, Services, Solution, including Solution Components, Application and Licensed Services, as applicable, or any component thereof, with non-infringing Deliverables, Products, Software, Services, Solution or Solution Component(s), Application and Licensed 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, Software, Services, Solution or Solution Component(s), Application and Licensed 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, Software, Services, Solution, Solution Component, Application and Licensed 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, Software, Services, Solution, including Solution Components, Application and Licensed 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.

**23. INSURANCE**

In addition to the insurance coverage required by law as referenced in the Incorporated Contractual Provisions section of this Contract, Supplier shall carry:

Errors and omissions insurance coverage in the amount of \$2,000,000 per occurrence.

**24. 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: (<http://www.vita.virginia.gov/library/default.aspx?id=537#securityPSGs>) 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.

**25. 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.

**26. 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.

## 27. 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. Incorporated Contractual Provisions

The then-current contractual provisions at the following URL are mandatory contractual provisions, required by law or by VITA, and that are hereby incorporated by reference: [http://www.vita.virginia.gov/uploadedfiles/VITA\\_Main\\_Public/scm/StatutorilyMandatedTsandCs.pdf](http://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 [http://www.vita.virginia.gov/uploadedfiles/VITA\\_Main\\_Public/scm/eVATsandCs.pdf](http://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 aforementioned URLs are subject to change pursuant to action by the legislature of the Commonwealth of Virginia, change in VITA policy, or the adoption of revised eVA business requirements. If a change is made to the terms and conditions, a new effective date will be noted in the document title. Supplier is advised to check the URLs periodically.

### C. Compliance with the Federal Lobbying Act

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

### D. Governing Law

This Contract shall be governed by and construed in accordance with the laws of the Commonwealth of Virginia without regard to that body of law controlling choice of law. Any and all litigation shall be brought in the circuit courts of the Commonwealth of Virginia. The English language version of this Contract prevails when interpreting this Contract. The United Nations Convention on Contracts for the International Sale of Goods and all other laws and international treaties or conventions relating to the sale of goods are expressly disclaimed. UCITA shall apply to this Contract only to the extent required by §59.1-501.15 of the Code of Virginia.

### E. 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.

**F. 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.

**G. 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 signature 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.

**H. No Waiver**

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

**I. 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, 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.

**J. Captions**

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

**K. 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.

**L. Survival**

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

**M. 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.

**N. 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.

**O. 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.

**P. Offers of Employment**

During the first twelve (12) months of the Contract, should Supplier hire an employee of any Authorized User who has substantially worked on any project covered by this Contract without prior written consent, the Supplier shall be billed for fifty percent (50%) of the employee's annual salary in effect at the time of termination.

**Q. 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.

**R. 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 - Options List; Fees, Service Charges, and Payment Schedule

Exhibit C - Reserved

- Exhibit D - Statement of Work (SOW) Template
- Exhibit E - Change Order Template
- Exhibit F - End User Licensing Agreement (for reference only)
- Exhibit G - Certification Regarding Lobbying

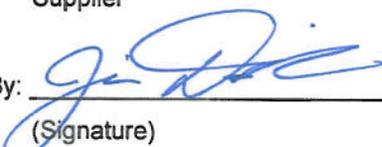
This Contract, its Exhibits, and any prior non-disclosure agreement constitute the entire agreement between VITA and Supplier and supersede any and all previous representations, understandings, discussions or agreements between VITA and Supplier as to the subject matter hereof. Any and all terms and conditions contained in, incorporated into, or referenced by the Supplier's Proposal 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.

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.

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

Supplier

By:   
 (Signature)

Name: Jim Davidson  
 (Print)

Title: Executive Vice President

Date: October 30, 2015

Address for Notice:  
 196 Van Buren Street  
 Suite 300  
 Herndon, VA 20170  
 Attention: Business Operations

VITA

By:   
 (Signature)

Name: Nelson P. Moore  
 (Print)

Title: CIO

Date: 11-19-2015

Address for Notice:  
11751 Meadowville Lane  
Chester, VA 23536

Attention: Contract Administrator



**EXHIBIT A REQUIREMENTS  
 CONTRACT NUMBER VA-150915-VION  
 BETWEEN  
 VIRGINIA INFORMATION TECHNOLOGIES AGENCY  
 AND  
 VION CORPORATION**

Exhibit A is hereby incorporated into and made an integral part of Contract Number VA-150915-VION (“Contract”) between the Virginia Information Technologies Agency (“VITA” or “Commonwealth” or “State”) and ViON Corporation (“Supplier”). In the event of any discrepancy between this Exhibit A and the Contract, the provisions of the Contract shall control.

**A PRODUCT SPECIFICATIONS & STANDARDS**

**A.1 Product Specifications & Standards Requirements Matrix**

	REQUIREMENTS	A	B
1	Does your solution comply with all current COV ITRM Policies and Standards, as applicable, found at: <a href="http://www.vita.virginia.gov/library/default.aspx?id=537">http://www.vita.virginia.gov/library/default.aspx?id=537</a> . If proposed solution does not, please provide details that specify the Standard/Policy and how Supplier's solution does not comply.	Yes	Team ViON's DataAdapt A3000 Platform complies with the Commonwealth's COV ITRM Policies and Standards. It is based on an Open Standards architecture with numerous application programming interface (APIs)
2	Do your proposed interfaces to Commonwealth systems comply with or have approved exceptions to all applicable Commonwealth Data Standards as found at <a href="http://www.vita.virginia.gov/oversight/default.aspx?id=10344">http://www.vita.virginia.gov/oversight/default.aspx?id=10344</a> . If not, please explain.	Yes	Team ViON's DataAdapt A3000 Platform complies with the Commonwealth's Data Standards. It handles hundreds of data types and exchange protocols, and new interface protocols can be written on the fly.

REQUIREMENTS		A	B
3	<p>Does your solution provide effective, interactive control and use with nonvisual means and provide 508 Compliance in accordance with the following standard regarding IT Accessibility and 508 Compliance: <a href="http://www.vita.virginia.gov/uploadedFiles/Library/AccessibilityStandard_GOV103-00_Eff_11-04-05.pdf">http://www.vita.virginia.gov/uploadedFiles/Library/AccessibilityStandard_GOV103-00_Eff_11-04-05.pdf</a> (Refer to <a href="http://www.section508.gov">www.section508.gov</a> and <a href="http://www.access-board.gov">www.access-board.gov</a> for further information)</p> <p>If yes, please describe how this functionality is achieved and include a completed Voluntary Product Accessibility Template (VPAT) with your proposal: (The VPAT template is located in APPENDIX C of the Accessibility Standard (GOV103-00)). If no, does your solution provide alternate accessibility functionality? Please describe.</p>	Yes	<p>Team ViON’s DataAdapt A3000 Platform is accessed via an intuitive web-based graphical user interface (GUI) that is delivered to standard web browsers, including Microsoft Internet Explorer, Google Chrome, Mozilla Firefox, and Apple Safari. These interfaces are already 508 compliant, and the DataAdapt Platform does not provide an impediment to that existing 508 compliant interface.</p> <p>The DataAdapt A3000 Platform also offers local and remote configuration and monitoring by means of a Command Line Interface (CLI) accessible through a separate terminal (a console). CLI-based applications are fully accessible to screen reader technology and keyboard use without a mouse and are by definition, inherently accessible. Use of a CLI conforms to Section 508.</p>

**B GENERAL**

**B.1 General Requirements Matrix**

REQUIREMENTS		A	B
1	Selected vendors, if asked, will need to perform a selected vendor proposed pilot within one year of contract award. Does your Solution meet this requirement?	Yes	The ViON Team will perform a pilot within one year of contract award, and we have extensive experience preparing these pilot programs for Federal, as well as State, Local, and Commercial customers.
2	There will be no cost to the Commonwealth or the participating agencies for the use of tools or Supplier resources utilized during this evaluation and pilot(s). Does your Solution meet this requirement?	Yes	Team ViON will provide all technical, operational, and other necessary resources to conduct the pilot(s) at no charge to the Commonwealth.
3	Vendors selected for pilots will need to work with any agency providing data to support that pilot to develop a mutually agreed upon document before a pilot can commence. That agreement needs to address exactly how the vendor intends to analyze any agency data and all of the controls and associated roles that will be applied to that data. Does your Solution meet this requirement?	Yes	Before any pilot commences, Team ViON will work with the appropriate agency to develop and design the pilot’s requirements, goals, and dependencies. This includes describing how we will analyze the data, as well as identifying all of the controls and associated roles that will be applied to the data. Once these items have been documented, Team ViON will submit a final Pilot Agreement for the Commonwealth’s review and approval prior to starting any work.
4	All applicable state and federal laws concerning the protection of this data must be complied with. Does your Solution meet this requirement?	Yes	The DataAdapt A3000 Platform was designed to comply with the most stringent compliance standards, and meets all applicable state and federal laws concerning data protection. This includes, but is not limited to: HIPAA, HITECH, PII, etc. Additionally we are compliant with the three specifications and standards noted in A.1.1-A.1.3 of this response. Detailed descriptions of the security features built-in to the Platform are provided throughout the response.

	REQUIREMENTS	A	B
5	All Commonwealth data utilized during pilots must remain at the hosting agency. No Commonwealth data is to be analyzed offsite, copied, transformed to obscure Commonwealth's ownership, or transmitted in any way without formal agency approval. Does your Solution meet this requirement?	Yes	Team ViON will ensure that all data used for pilot demonstration purposes will remain at the hosting agency. We will do this by deploying the DataAdapt Platform at the hosting agency's data center, or at VITA's data center. The system, pilot plan, and personnel will not transform the data to obscure the Commonwealth's ownership of it, or transmit it in any way without first gaining the agency's formal approval in writing.
6	Pilots are to be performed on dedicated devices (laptops) supplied by VITA or on vendor supplied appliances. Vendor provided appliances will need an approved plan (by VITA & participating agencies) for protecting and deleting Commonwealth data. Does your Solution meet this requirement?	Yes	The pilot(s) will be performed on Team ViON's DataAdapt A3000 Platform, which will be provided to the Commonwealth for use in its data center. All access to the data, as well as to the Platform's analysis and visualization tools will be performed on VITA or agency supplied laptops. As we develop the Pilot Agreement with the appropriate agency, we ensure that a plan for protecting and deleting all of the Commonwealth's data is included. Work will not begin until the Pilot Agreement has been approved by the Commonwealth.
7	<ul style="list-style-type: none"> <li>▶ VITA supplied laptops and vendor supplied appliances must be under full control of the pilot hosting agency for the duration of the pilot. Vendor will have no administrative rights to VITA supplied laptop. Agency or VITA staff will load any required software.</li> <li>▶ Pilot should be accomplished with the minimum amount of Commonwealth data as possible/practical</li> <li>▶ The agency may require that the analytic methods be demonstrated to agency staff by the vendor on agency provided test data and any analysis of actual agency data would only be performed by agency staff</li> <li>▶ Vendor access to agency data may require vendor staff to attend specific training provided by the agency.</li> </ul> Does your Solution meet these requirements?	Yes	<ul style="list-style-type: none"> <li>▶ VITA supplied laptops and the DataAdapt Platform will be under the hosting agency's full control throughout the pilot's duration. We anticipate needing neither administrative rights to, nor additional software loaded on, the VITA supplied laptop.</li> <li>▶ Team ViON will coordinate the pilot's data requirements design with the hosting agency to minimize the amount of data necessary to accomplish the pilot's goals.</li> <li>▶ Team ViON will demonstrate the pilot's analytic methods to agency staff on test data, and will empower agency staff to use these analytic methods on actual data by providing administrator and user training.</li> <li>▶ Team ViON Pilot staff will attend any necessary training to gain access to the data relevant for the pilot's purpose.</li> </ul>
8	Suppliers will provide subject matter experts as need to support the pilots. Does your Solution meet this requirement?	Yes	Team ViON will provide the necessary subject matter experts (SMEs) to support the pilot, including business SMEs, technical SMEs, and analytics SMEs.

REQUIREMENTS		A	B
9	Does your Solution safeguard sensitive data? If yes, explain how.	Yes	The DataAdapt A3000 Platform supports Role-Based Access Controls (RBAC) and Identity and Access management (IdAM) systems and procedures through its data repository design. In addition to the inherent confidentiality provided by our unified dataspace, our security architecture enables authentication and authorization with pre-existing Commonwealth systems. Our built in central authentication service (CAS) will interface with the Commonwealth's already existing systems to ensure proper user authentication and will validate user authorizations with the Commonwealth's security policies, and will allow or disallow personnel, based on their role, access to data and other resources. Or, the Commonwealth can use DataAdapt's own CAS services for these controls, such as would be needed in an isolated environment.
10	Does your solution have mechanisms that will prevent one entity from viewing another entity's data if applicable if the toolset was deployed on a shared platform? If yes, explain how they work.	Yes	The DataAdapt Platform's mechanisms to prevent one entity from viewing another entity's data are enabled by the Unified Dataspace's use of Apache Accumulo to store and present the data to end-users. Accumulo is a column-oriented NoSQL data store that was originally invented at the National Security Agency specifically for enhanced, big data security. The Platform's Unified Dataspace is dynamic and flexible, with no fixed schema. This allows it to store, index, and retrieve structured, semi-structured, and unstructured data in a consistent manner, and then tag that data at the cell-level with security policies. The Platform uses this highly granular security tagging to provide data and application segregation through the use of access groups. Users can only see data and applications marked with access permissions for groups to which they belong. This allows different agencies sharing space on the same Platform Datastore to protect their data and applications.
11	Does your solution have the ability to extract data from multiple existing analytic tool sets (Cognos, SAS, Business Objects, MicroStrategy, Microsoft Analytics, etc.)? If so, please list.	Yes	The Platform's ElasticIngest is able to extract data from a wide variety of sources. Most existing analytics tools use common file formats (e.g., CSV and XML) to exchange and store data. Often SQL databases are used as back-end storage. The DataAdapt Platform is able to extract and ingest data stored in this manner out of the box. ElasticIngest can also be customized to extract data from other storage, and transfer formats. For example, our team has created a custom extractor for retrieving documents from a Microsoft SharePoint site. Our past performance has proven that we are able to design, configure, and deploy a data analytics engine that can negotiate data source connection processes and service levels, connect, ingest, process, store, analyze, exploit and disseminate from over 200 simultaneous structured, unstructured, and miscellaneous media data sources.

	REQUIREMENTS	A	B
12	Supplier staff will submit to background checks conducted and paid for by the Commonwealth. Does your Solution meet this requirement?	Yes	All Team ViON staff will submit to background checks conducted and paid for by the Commonwealth. A majority of Team ViON's staff members hold Top Secret federal clearances, and must undergo periodic reinvestigations and frequent background checks. We will submit this data to the Commonwealth during the development of the Pilot Agreement to speed the process and help achieve additional cost savings.
13	Agencies may need expertise/resources in utilizing these next-generation analytics tools to address business needs. Role examples include: Data Scientists, Data Analysts, Data Hygienists, Data Explorers, Data Visualizers, Does your Solution have the ability to provide these types of resources? If so, what roles can you provide?	Yes	<p>In addition to the training that we will provide, Team ViON can also provide additional expertise and resources to use the Platform's next-generation analytics tools. Our team of Data Scientists can perform many roles, including those associated to Data Analysts, Data Hygienists, Data Explorers, and Data Visualizers.</p> <p>Because this is a growing field, our team has also developed internship and employment cooperatives with several universities. We provide internships for post-graduate and doctoral candidates in the data sciences as they complete their studies. Post-graduation, we offer successful interns full time employment. This ensures that the research and development of our products is informed by the most current academic research, and that our customers have access to the expert resources they need.</p>

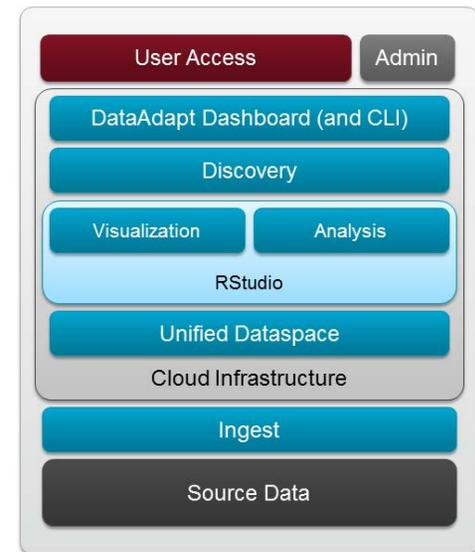
## B.2 DataAdapt Analytic Platform Components

ViON’s DataAdapt A3000 Platform (the Platform) is a commercial off-the-shelf appliance solution consisting of commodity storage, Cisco server and networking components, and Big Data Ecosystem (BDE) software developed by our partner, L-3 DataTactics. This appliance-based solution can be housed on VITA’s data center floor, or at a location of its choosing. The solution may and can be procured via outright purchase or by subscription for delivery by VITA to its customers. Licensing is based on the total amount of data ingested into the Platform. The Platform’s Unified Dataspace is capable of ingesting data from myriad number of sources, including data from a public cloud. Once ingested, the data is made available to end-users for analysis and visualization. The role-based access to the Platform’s Analysis and Visualization tools is accessible through an intuitive GUI delivered to standard web browsers, such as Internet Explorer, Google Chrome, Mozilla Firefox, and Apple Safari. Management of the data and appliance is also accessible via the same GUI, as well as Command Line Interface (CLI).

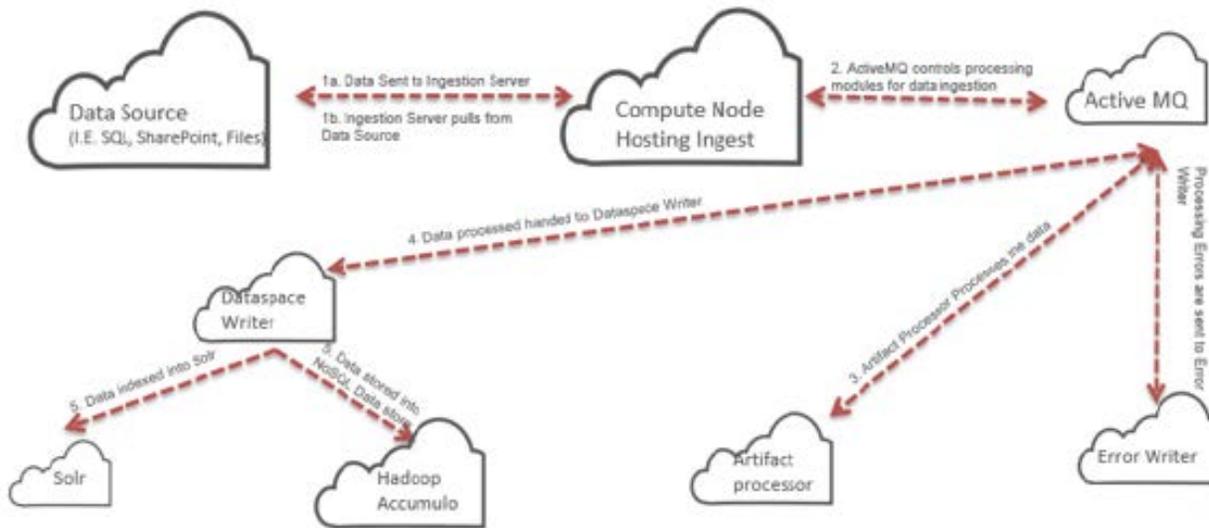
DataAdapt provides next-generation analytics by rapidly ingesting structured, unstructured, and semi-structured data regardless of source or model. Once ingested, the platform automatically populates time charts, geospatial mapping, and query capabilities across the data. Figure 1 depicts the six components of each DataAdapt implementation: Ingest, Unified Dataspace, Dashboard, Discovery, Analysis, and Visualization.

The first platform component used to provide next-generation analytics is the Ingest component. This component provides an elastic ingest system that can receive data directly from accessible data sources. This could mean, for example, that a site that collects data from sensors could allow the DataAdapt Platform to receive that data directly in concert with the local system, via a web service, RSS feed, socket connection, or similar methodology. Trusted file transfer agents can be used to move larger blocks of data between sites. SafeMove is a government off the Shelf (GOTS) application used by the Defense Common Ground Station – Army (DCGS--- A) program and several others to move data between sites reliably. Commercial options such as Aspera and Digital Fountain also perform this function.

The Platform provides a data ingest service that builds on Hadoop, Accumulo, and Solr. The following figure shows the Ingest component’s workflow.



**Figure 1: Platform Components.** The DataAdapt Platform’s six components include Ingest, Unified Dataspace, Dashboard, Discovery, Analysis, and Visualization.



**Figure 2: Ingest Process.** The DataAdapt Platform can negotiate data source connection processes and service levels, connect, ingest, process, store, analyze, exploit and disseminate from over 200 simultaneous structured, unstructured, and miscellaneous media data sources.

- ▶ **Distributed** – Our ingest components are hosted on the same Compute Nodes as the Hadoop and Accumulo cloud processes. Apache ActiveMQ provides a distributed work queue mechanism that allows the ingest processes to communicate.
- ▶ **Scalable** – The ingest system will automatically initiate more processes as the workload grows, and will release resources when they are no longer required.
- ▶ **Fault-tolerant** – The ingest system monitors and automatically restarts any failed processes. ActiveMQ persists data that is in process, so if a node fails, another node can take over processing that data.
- ▶ **Extensible** – The ingest systems is modular and presents an application programming interface to allow custom parsers for new data types, and custom processors to add functionality.
- ▶ **Manageable** – The system provides graphical tools for configuration, monitoring, and error handling. Easily add new data sources, configure the load balancing characteristics of the ingest system, view volume and performance statistics, and manage errors in data ingestion.

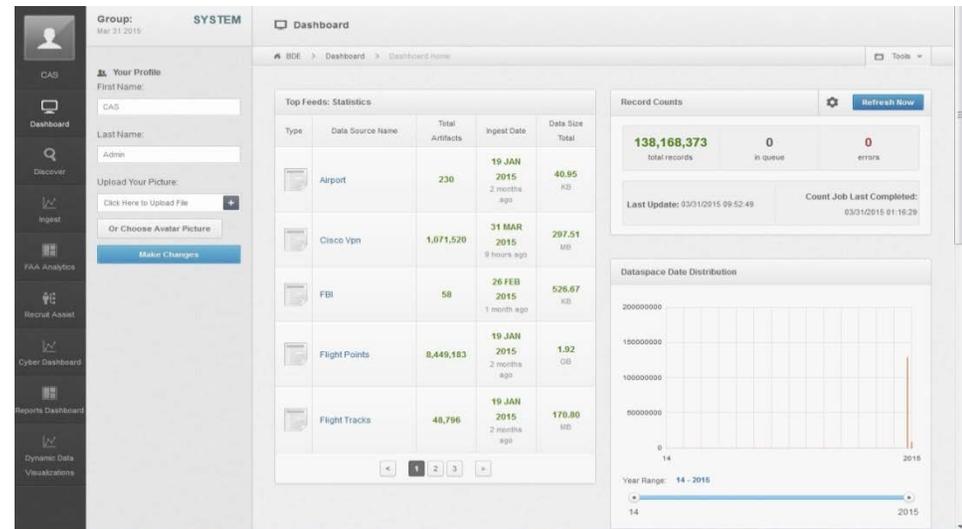
The DataAdapt Unified Dataspace component provides the data storage and warehousing foundation for all of the applications and analytics. The dataspace is a column-oriented NoSQL data store implemented in Apache Accumulo, originally invented at the National Security Agency specifically for enhanced, big data security. This dataspace is dynamic and flexible, with no fixed schema. This allows the Platform to store, index, and retrieve structured, semi-structured, and unstructured data in a consistent manner.

One dataspace row represents one “object.” An object may be an ingested file, database row, etc. Each cell of a row represents one object “attribute.” Attributes may be extracted features of files (file size, extracted text, DTG, geo coordinates, etc.), columns of a database row, entity (person, place, thing) attributes, etc. While it is not expected that attributes of ingested “artifacts” will change over time, entity modification must be supported. Note that it may be true that artifact attributes may change, should new analytics be developed that are capable of extracting new information.

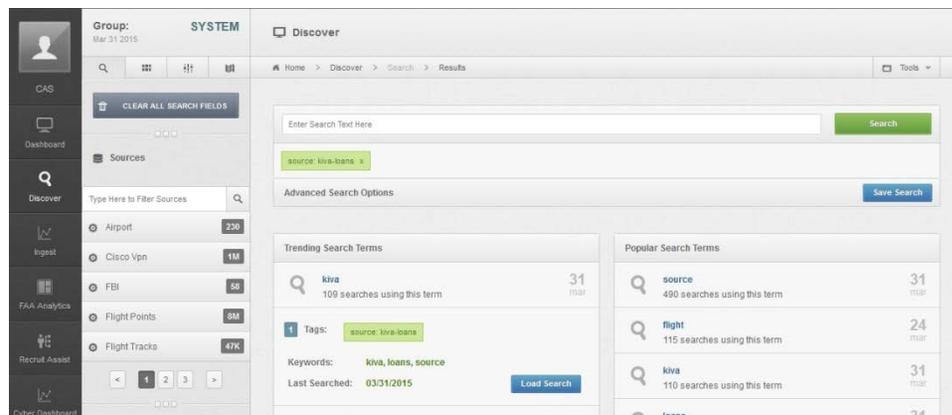
The Row ID must obviously be globally unique. It will be composed of the source or entity type, followed by the separator and a unique identifier. The identifier will depend on the object type. For files, it could be the SHA-1 hash. For database rows, it might be the primary key of the row. The Column Family will be composed of the attribute name, followed by the separator, followed by the attribute type. By including the type in the column family, the model need not be loaded prior to loading and interpreting the attribute. The attribute type will be a dot-separated string representing the hierarchical structure of the attribute. The column qualifier contains the transaction ID, a globally unique identifier used to uniquely identify this cell. An ID is used instead of a timestamp due to the possibility that multiple processes may write to the same object at the same time. A sequence ID is used to group and uniquely identify multiple attribute instances and complex attributes. A valid date/userid pair identifies who created this attribute and when. An invalid date/userid pair identifies who “deleted” this attribute and when. If true deletes are required, they are supported.

The DataAdapt Dashboard component provides a user-customizable overview over all of the data stored in the Unified Dataspace. All data sources are listed along with the number of artifacts in that source, when the last update to that source happened, and the total size of the data stored for that source. The dashboard provides a histogram display of the temporal distribution of the data and allows the user to drill down through years to months, days, and hours to see the distribution data. Dashboard provides uses a graphically friendly way to quickly move to the areas where data they want is located, saving time, and more rapidly delivering answers.

Once ingested into the Unified Dataspace, the Dashboard provides access to the Platform’s Discover component. Discover provides the interface for general queries over all data stored in the Unified Dataspace. The basic form of query is simple keyword searching. Discover is also interoperable with existing BI analytic tools sets. Discover allows those tools to take advantage of the entire data management features of the Platform, including the on-board features we describe next. Temporal querying can be used to target specific dates and times via its easy to use graphical user interface. For spatial queries, users simply draw geometric shaped boundaries to define queries bound queries to geographical areas.



**Figure 4. Dashboard Component.** The Dashboard is an intuitive web-based GUI that provides easy access to use the Platform’s Discovery, Analytic, and Visualization components.

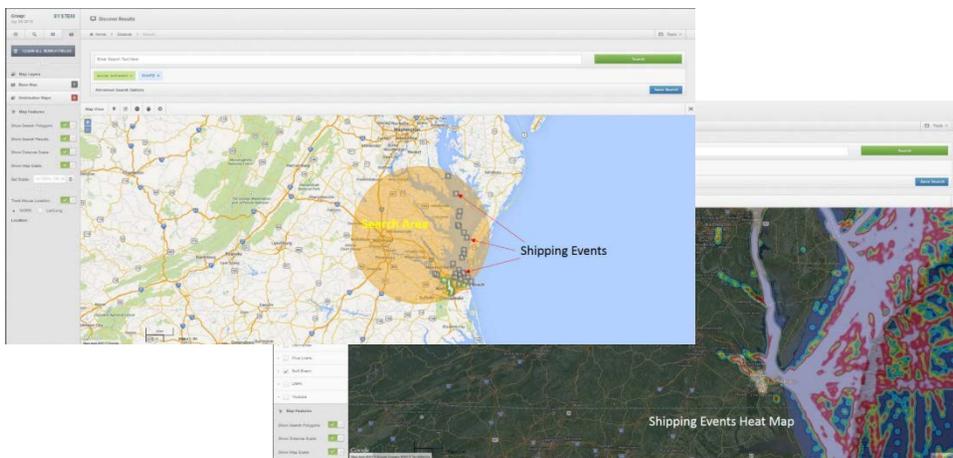


More advanced queries well as data model

The DataAdapt Analysis the user with an over the data in the available for simple maximum, mean, and fields. Histograms and as well as a means to

DataAdapt integrates environment into the develop ad-hoc statistical programming analytic application analytic applications to example, analytics visualization) can be

application programming interfaces to allow custom analytics and applications to be developed and deployed. Customers can deploy their own analytics. The VION Team can also assist in the development and deployment of custom analytics. The Platform's dynamic visualizations also protect the Commonwealth's investment in other tools as, post set-up, interoperates with existing BI and other Commonwealth analytics packages and data sets.



**Figure 5: Analysis and Visualization: The DataAdapt Platform provides the capability to build highly sophisticated exploitation tools and applications that connect all the dots in any way that makes sense from any mission perspective.**

by source and facet are also provided, as specific querying by field value.

and Visualization Components provide interface for ad-hoc descriptive statistics Unified Dataspace. Functions are statistical analysis such as the minimum, standard deviation values for numerical various charting functions are available, export data for use in other applications.

the R Studio integrated development client interface to allow data scientists to analytics and reporting using the R language. The Platform provides an display framework to allow customized be hosted in the client interface. For developed using R and Shiny (for displayed in this area. BDE includes

application programming interfaces to allow custom analytics and applications to be developed and deployed. Customers can deploy their own analytics. The VION Team can also assist in the development and deployment of custom analytics. The Platform's dynamic visualizations also protect the Commonwealth's investment in other tools as, post set-up, interoperates with existing BI and other Commonwealth analytics packages and data sets.

### B.3 Cloud Component Platforms for Deployment

The Platform's BDE software is an analytic framework built on top of a Hadoop/Map Reduce cloud platform that is fully compliant with established ISO, IEEE, Open and commonly accepted integration standards. It can rapidly integrate any application or data set built for a Hadoop/MapReduce stack. As such, the Platform:

- ▶ Improves data management performance in speed, and diversity of data types
- ▶ Processes Data at Scale
- ▶ Increases security for data in transit and at rest with NSA-type features
- ▶ Allows for rapid integration of new and existing analytic tools, and new data sources
- ▶ Fastest time from bare metal to ready-for-business in its class
- ▶ Updates are available from ViON on a regular basis
- ▶ Can be aligned to latest builds from other Apache reference baselines as required

BDE is deployed on Linux operating systems based on the Red Hat Package Manager (RPM) distribution system. This includes Red Hat Enterprise Linux (RHEL), Fedora Core, and the Community Enterprise Operating System (CentOS). With minor adjustments the Platform can be deployed on other, non-Fedora-core variants of Linux such as Debian or Slackware. Should a client desire, the Platform can be deployed on UNIX variants including Solaris and AIX through recompiling and other adjustments.

The administrative and user-facing components of the Platform are accessed via web browser. No client installation is required to use the Platform. This deployment methodology provides significant near and long-term and costs savings through the avoidance of client software, plug-ins, or end-user version updates. This simplistic approach also streamlines security policy and system administration.

No external software is required to support the Platform (e.g. no pre-existing Oracle database). The Platform is interoperable with other data bases and other analytic packages, protecting the existing Commonwealth’s investment, and providing a roadmap for simplification of the enterprise and resulting cost savings. As Commonwealth users, data scientists and analysts build widgets, applications and other tools from their web browsers,

The Platform can integrate with an existing LDAP or ActiveDirectory server for authentication, or can provide its own authentication, as required. It can also, as described in an earlier question integrate with any existing or planned identity management mechanism.

Web Services	CloudCore, Discover, Artifact Viewer , Analytics , Workspace, Help, CMS, CloudCore Map, File Upload, Ingest Monitor , Ingest Error Manager, Ingest Configuration, User Mgt, Oozie, Timeline, Timewheel, Calendar, Category Filter, Chart, Scatterplot, TagCloud, Time Filter, Workspace, Contextual Search, CloudCore Integrated Search
Software As a Service	Analytics: Tag Cloud, pivot search, facet search, contextual query Web Services: Apache Web, Tomcat, CAS, OpenGeo Web Suite, Google Earth Service (optional)
Platform As a Service	Interfaces: Unified Dataspace and Lucene Indexing Dataspace: UDS, Security Labeling Architecture, RBAC, Data Architecture Core: MapR, Accumulo, HBase, Solr, ActiveMQ, Zookeeper, HDFS, MapReduce, Condor, Ganglia, CMS, Elastic Ingest, Java, Flume, Oozie, MySQL, Oozie Client, DataMove, Shared libs
Infrastructure As a Service	DNS, DHCP, LDAP, MySQL, NFS Security Architecture, Puppet, CentOS 6.4, YUM, Kickstart Cisco Networking NetApp Storage

**Figure 6: Deployment Extensibility.** The DataAdapt A3000 provides an extensible platform that enables the Commonwealth to adapt it to its needs.

INFRASTRUCTURE AND INTEGRATED COMPONENTS	
DNS	The Domain Name System (DNS) is a hierarchical distributed naming system for computers, services, or any resource connected to the internet or private network.
DHCP	The Dynamic Host Configuration Protocol (DHCP) is a standardized networking protocol used on Internet Protocol (IP) networks for dynamically distributing network configuration parameters, such as IP addresses for interfaces and services. With DHCP, computers request IP addresses and networking parameters automatically from a DHCP server, reducing the need for a network administrator or a user from having to configure these settings manually.
LDAP	The Lightweight Directory Access Protocol (LDAP) is an application protocol for accessing and maintaining distributed directory information services over an IP network.
NFS	Network File System (NFS) is a distributed file system protocol originally developed by Sun Microsystems in 1984, allowing a user on a client computer to access files over a network; much like local storage is accessed. NFS, like many other protocols, builds on the Open Network Computing Remote Procedure Call (ONC RPC) system. The NFS is an open standard defined in RFCs, allowing anyone to implement the protocol.
MySQL	MySQL is an open-source relational database management system (RDBMS).
Puppet	Puppet is an open source configuration management tool from Puppet Labs. It is written in Ruby and released as free software under the GPL up to version 2.7.0 and the Apache 2.0 license after that.

CLOUD COMPUTING ENVIRONMENT COMPONENTS	
Apache Hadoop	Apache Software Foundation's Hadoop is an OSS framework for storage and large-scale processing of data sets on clusters of commodity hardware. Hadoop is an Apache top-level project being built and used by a global community of contributors and users.
Apache HDFS	HDFS is a distributed, scalable, and portable file-system written in Java for the Hadoop framework.
Apache HBase	HBase is an open source, non-relational, distributed database modeled after Google's BigTable and is written in Java. It is developed as part of Hadoop and runs on top of HDFS.
Apache MapReduce	MapReduce is a programming model for processing large data sets with a parallel, distributed algorithm on a cluster.
Apache Zookeeper	ZooKeeper is a software project of the Apache Software Foundation. It provides an open source distributed configuration service, synchronization service, and naming registry for large distributed systems. ZooKeeper's architecture supports high-availability through redundant services.
Apache Flume	Flume is a distributed, reliable, and available service for efficiently collecting, aggregating, and moving large amounts of log data. It has a simple and flexible architecture based on streaming data flows. It is robust and fault-tolerant with tunable reliability mechanisms and many failover and recovery mechanisms.
Apache Oozie	Oozie is a server based workflow scheduling system used to manage Hadoop MapReduce jobs.
Apache Accumulo	Accumulo is a sorted, distributed, key/value big data store based on the BigTable technology from Google. It is a system built on top of Apache Hadoop, Apache ZooKeeper, and Apache Thrift. Written in Java, Accumulo has cell-level access labels and server-side programming mechanisms.
Apache Solr	Solr is an open source Enterprise search platform from the Apache Lucene project. Its major features include full-text search, hit highlighting, faceted search, dynamic clustering, database integration, and rich document (e.g., Word, PDF) handling. Providing distributed search and index replication, Solr is highly scalable. Solr is the most popular Enterprise search engine.
Apache ActiveMQ	ActiveMQ is an open source message broker written in Java together with a full Java Message Service (JMS) client. It provides "Enterprise features", such as fostering the communication from more than one client or server.

WEB SERVICE COMPONENTS	
JASIG Central Authentication Service	CAS is an authentication system originally created by Yale University to provide a trusted way for an application to authenticate a user. It integrates with ActiveDirectory or LDAP to provide unified login to BDE services.
Apache Tomcat	Apache Tomcat is an open source web server and servlet. Tomcat implements the Java Servlet and the Java Server Pages (JSP) specifications from Sun Microsystems and provides a "pure Java" HTTP web server environment in which to run the Java code.
Apache HTTPD	The Apache HTTP Server, commonly referred to as Apache is a popular and robust web server application.
RStudio Server	RStudio is a free and open source integrated development environment (IDE) for R, a programming language for statistical computing and graphics.
Shiny Server	Shiny is an open-source web application plugin for the R programming language. It provides easy-to-deploy analytics visualization capability with user-configurable controls.
Storm	Apache Storm is a free and open source, distributed, real-time computation system. Storm makes it easy to reliably process unbounded streams of data, doing for real-time processing what Hadoop does for batch processing.

WEB SERVICE COMPONENTS	
OpenGeo	OpenGeo is the geospatial division of OpenPlans which supports the development of a number of OSS packages for the Geospatial analysis, management, and publication of geo-spatial information; these include PostGIS, GeoServer, GeoWebCache, GeoExt, and OpenLayers.
Ganglia	Ganglia is a scalable distributed system monitor tool for high-performance computing systems such as clusters and grids. It allows the user to remotely view live or historical statistics.

LIBRARIES AND PROGRAMMING INTERFACES	
Oracle Java	Java is a popular client and server side programming language that has been in use for over 2 decades.
Apache Commons	The Apache Commons libraries provide commonly-used application programming interfaces for such functions as logging, data manipulation, encoding, parsing, and storage.
Apache Lucene	Apache Lucene is the indexing engine behind Solr, providing full text, temporal, and geospatial indexing for all data in the Unified Dataspace.
HTML5	HTML5 is a markup language used for structuring and presenting content for the World Wide Web and a core technology of the Internet. HTML5 is also a candidate for cross-platform mobile applications. Many features of HTML5 have been built with the consideration of being able to run on low-powered devices such as smartphones and tablets.
jQuery	jQuery is a fast, small, and feature-rich JavaScript library, which allows easy HTML document traversal and manipulation, event handling, animation, and Ajax implementation. It works across a multitude of browsers.
OpenMap	BBN Technologies' OpenMap package is a JavaBeans-based programmer's toolkit. OpenMap enables quick building of applications and applets that access data from legacy databases and applications, and provides the means to allow users to see and manipulate geospatial information.
R Statistical Programming Language	R is a free software programming language and software environment for statistical computing and graphics. The R language is widely used among statisticians and data miners for developing statistical software and data analysis.
General Architecture for Text Engineering (GATE)	GATE is an open source framework for the development of text analytics. It provides services for natural language processing, entity extraction, semantic analysis, sentiment analysis, and many other text analytic functions.

## B.4 Licensing

All of the DataAdapt A3000 appliance’s BDE software licensing is based on the total amount of data ingested into the appliance. The license is a non-exclusive term license provided for three years, and to be used exclusively by the Commonwealth, its public bodies, and private institutions of higher education as described in Section 1.A – RFP Objective and Project Overview of the solicitation. The software may not be transferred to other hardware, but may be accessed by any authorized user. Any additional hardware and software licensing is tied directly to the appliance. Complete details of all licensing components are provided in ViON’s End User License Agreement (EULA) attached later in this response as Appendix 6-2 - ViON Corporation DataAdapt A3000 EULA.

## B.5 Training

Each DataAdapt Platform purchase includes a five-day course for Commonwealth administrators, a one-day end-user course, and access to large repositories of Platform literature.

The five-day course for administrators provides in-depth training on the Platform’s architecture, how it operates, and how to manage the Platform. It includes the following subjects:

DAY ONE	DAY TWO	DAY THREE
Overview of BDE and Architecture Hadoop ZooKeeper Accumulo Solr	Using BDE Configuration Management Adding Data to the Platform Data Parsers	Ingest Configuration Security APIs Monitoring

End-user training is a one day course designed to guide users through the capabilities, features, and functions of the DataAdapt User Dashboard. This course will teach users to do queries, understand and customize visualization tools, navigate the system, and use the elements and components of the dashboard.

Additional training courses can be purchased upon request. Course topics include, but are not limited to: Common Infrastructure Components; Compressed MapReduce Development; Hadoop Administration; Introduction to Accumulo; and, Linux Primer.

### **B.6 Installation Services**

The DataAdapt A3000 Platform is a pre-configured appliance delivered with all of the data storage, networking, rack, cabling, and BDE components. Upon delivery, our staff will unpack and uncrate the hardware and prepare it for integration into the Commonwealth’s IT infrastructure.

### **B.7 Implementation Services**

ViON and L-3 DataTactics (Team ViON) combine our experience and expertise to provide all implementation services. We follow a four step process to fully customize and tune the installation to meet the Commonwealth’s business objectives, no matter how diverse.

- ▶ **Step One: Define Goals and Objectives**—We start with a discussion of your business objectives; discovering pain points, identifying target data sources, and defining use cases. Custom use cases are developed alongside your stakeholders in order to build a common vocabulary and understanding.
- ▶ **Step-Two: Architect and Implement Solution**—We will evaluate your current infrastructure and architect a complete Big Data solution to fit your business requirements. We’ll then rapidly ingest your unstructured, semi-structured, and structured business data and intermesh with relevant public data sources.
- ▶ **Step Three: Demonstrate Proof of Concept**—Then our team will demonstrate a Proof of Concept environment to validate use cases. This environment builds a 3 dimensional world of sequence neutral analytic data enabling anyone inside your business process chain to understand clues in data both forward, and backwards in time.
- ▶ **Step Four: Deliver a Big Data Roadmap**—To finish the initial implementation we deliver a Quick Start report with next steps roadmap. This roadmap delivers a tailored Big Data strategy and brings your management team clarity to Big Data analytics and demonstrates what it can do to ensure your business vision can be achieved.

Team ViON’s data scientists, computer scientists, and business consultants will work with the Commonwealth’s personnel to assist their initial use of the Platform to help solve difficult challenges. We will integrate, as directed, all your legacy applications, data sources, and personnel profiles.

We will stay with your team and ensure that the implementation sticks, the operating procedures are understood, and that the roadmap clearly leads the team and VITA in the right direction to ingest all your data, integrate all your existing analytics, and allow personnel to perform their jobs more effectively, with better, faster and more content rich results.

Post successful implementation, our team will remain at the ready to assist you throughout the period of performance. You will also hear from us through patches, updates, enhancements, integration requests, SME needs, releases and/or any remediation throughout the period of performance

We will stay with your team and ensure that the implementation sticks, the operating procedures are understood, and that the roadmap clearly leads the team and VITA in the right direction to ingest all your data, integrate all your existing analytics, and allow personnel to perform their jobs more effectively, with better, faster and more content rich results.

**C SOLUTION INFORMATION (BY CATEGORY)**

**C.1 Business Intelligence (BI)**

**C.1.1 Business Intelligence Requirements Matrix**

	REQUIREMENTS	A	B
1	Identify the components of your analytics tool set that fit this category	n/a	Business Intelligence (BI) capabilities are delivered via the Platform’s Analysis, Discovery, and Visualization components. The BI that these components can provide is facilitated by the Platform’s Unified Dataspace, which brings together many disparate data sets. A complete description of the Platform’s components is included in Section B.2 DataAdapt Analytic Platform Components. Specific BI capabilities are described in Section C.1.2 Business Intelligence Capabilities Description.
2	Identify platforms for deployment (cloud, Intel, appliance, OSs, database versions etc.) for the tools you have included in this category	n/a	BI analysis, discovery, and visualization is delivered via the Platform’s Dashboard. This web-based GUI provides access to all of the data stored in the Unified Dataspace. A complete description of the Dashboard is provided in Section B.2 DataAdapt Analytic Platform Components. These capabilities are also available through the Platform’s CLI.
3	Explain licensing options for the tools you have included in this category	n/a	BI capabilities are included in the DataAdapt license. All licensing is based on the total amount of data ingested into the Platform.
4	Does your Solution allow for your tool sets to be deployed in order to support shared use among Commonwealth agencies? Explain how.	Yes	Shared use of DataAdapt’s Unified Dataspace provides BI capabilities via the Platform’s Dashboard. This intuitive web GUI does not require any software to be deployed to user or client sites, systems, or appliances. These capabilities are also available through the Platform’s CLI.
5	Do you provide training on your solution? If yes, please explain the options.	Yes	An overview of the Platform’s BI capabilities is provided in both the administrator and user training described in Section B.5 Training. Additional training courses can be purchased upon request.
6	Do you provide installation (including configuration) services for these tool components above?	Yes	BI capabilities are an integral part of the Platform’s BDE software. All installation and configuration services required to enable the Platform’s BI capabilities are included. Because it was designed as an appliance, the Platform can be installed quickly; usually within one day.
7	Do you provide implementation services for the above tool components? (working with an agency to deploy a solution based on these tools to meet a business need)	Yes	Team ViON’s implementation services provide professional services to assist customers design, develop, and deploy algorithms and visualization tools that provide specific business intelligence. Our approach to this implementation is detailed in Section B.7 Implementation Services.

	REQUIREMENTS	A	B
8	For your Solution, provide examples of how the tools were used by both business and IT users and the level of training and skill required by each. Include what entity used the tools. If possible, use government related examples.	n/a	Team ViON ingested Gigabytes of spreadsheet data from a pharmaceutical company that documented the health of its IT networks. Our team developed a customized business intelligence algorithm using the Platform’s Discovery, Analysis, and Visualization components that discovered the company was paying \$3.5 million per year in maintenance for equipment they were no longer using. Our analysis also made their yearly network diagnostics no longer necessary. Prior to our involvement, these diagnostics required three months to perform. Another business intelligence insight we provided enabled a large cell phone carrier to reduce fraudulent activity on its network. We did this by developing a customized business intelligence algorithm using the Platform’s Discovery, Analysis, and Visualization components to identify hijacked phone numbers. These hijacked numbers were identified by correlating call time records with call location records. Numbers placed by the same phone number at the same time, but in different locations were highlighted and reported for further action.

**C.1.2 Business Intelligence Capabilities Description**

**C.1.2.1 Business Intelligence**

ViON’s DataAdapt Platform provides the Commonwealth with a set of BI analytic tools for the transformation of raw data into meaningful and useful information for business analysis purposes. Analysts can use on-board analytics, write algorithms, create widgets, or formulate queries that take advantage of the power of the Platform’s Unified Dataspace right from their web browser.

Users can also access legacy VITA analytic BI applications from DataAdapt. Results from both analytic platforms can be shared and compared. Resultant data from the legacy tools can be ingested into DataAdapt for further analysis.



**Figure 7: Business Intelligence.** This plot within the BDE dashboard displays the number of records available over time. Clicking on a bar for a given year takes the user to a similar graph showing monthly record counts for each month during that year. This drill down capability extends down to individual hours on a given day.

VITA can rapidly integrate newly acquired analytic platforms to interoperate with DataAdapt so that users can take advantage of the synergistic power of cross analysis. From the Dashboard, the user is able to see all of their data sets in a single location and see trends, outliers, connections, where the data lies in time, where it lies geographically, and other visually useful intelligence.

The Unified Dataspace component provides the data storage and warehousing foundation for all of the business intelligence applications and analytics. Python is commonly used as a wrapper for external code and/or applications, and can be used to run legacy VITA applications or existing code already written in other languages.

Some of DataAdapt’s common functions include querying, reporting, online analytical processing (OLAP), "alerts", dashboards, process mining, complex event processing, business performance management, benchmarking, data warehousing, data marts, etc. The Platform’s Discover component provides the query interface for general queries over all data stored in the Unified Dataspace. The Dashboard also provides an overview over all of the data stored in the Unified Dataspace. The Platform provides reporting on analysis, as well as the ability to set up alerts on data and data streaming. Automatic alerts are inherent to the platform for ingest errors, for example.

The Platform also offers NowCast, a tool that can be used to analyze time stamped data and quickly spot change points or sharp changes in the behavior of various processes over time. Histograms and

smoothing lines enable clear visualization of trends with robustness to data noise and outliers. A chief discriminator of the Platform’s business intelligence capabilities is its ability to perform these operations on massive data sets, sometimes reaching sizes into the hundreds of Gigabytes, and even Petabytes.

**C.1.2.2 Descriptive Analytics**

DataAdapt looks at past performance and understands that performance by mining historical data to look for the reasons behind past success or failure. Oftentimes, analyses begin with a question. When little is known about the data in hand, however, questions need to be discovered in order to be asked. The Platform’s Analysis component can find patterns in data that were previously unknown in order to generate new questions and new insights. Correlations between variables and hence new relationships between various driving forces can be found quickly and investigated further. This enables the underlying 'story' of the data to be revealed with minimal human effort.

A recent descriptive analytics project involved the analysis of wireless carrier data to understand forces driving cell phone tower failure. The Platform’s Analysis, Discovery, and Visualization capabilities enabled efficient investigation into the forces driving the rate of failures. By allowing analysts to easily partition towers into various groups (i.e., high, low, medium usage) and investigate relationships between variables in these varied groups, a greater level of understanding of the underlying forces could be achieved and confounding factors could be identified (i.e., those which might appear to be an underlying cause while actually having a small effect—in this case usage level). These descriptive analytic capabilities provided valuable business intelligence to the carrier.

**C.2 Predictive and Prescriptive Analytics**

**C.2.1 Predictive and Prescriptive Analytics Requirements Matrix**

	REQUIREMENTS	A	B
1	Identify the components of your analytics tool set that fit this category	n/a	Predictive and Prescriptive Analytics capabilities are delivered via the Platform’s Analysis, Discovery, and Visualization components. The analysis that these components can provide is facilitated by the Platform’s Unified Dataspace, which brings together many disparate data sets. A complete description of the Platform’s components is included in Section B.2 DataAdapt Analytic Platform Components. Specific predictive and prescriptive analytics capabilities are described in Section C.2.2 Predictive and Prescriptive Analytics Capabilities Description
2	Identify platforms for deployment (cloud, Intel, appliance, OSs, database versions etc.) for the tools you have included in this category	n/a	The discovery, analysis, and visualization of predictive and prescriptive analytics is delivered via the Platform’s Dashboard. This web-based GUI provides access to all of the data stored in the Unified Dataspace. A complete description of the Dashboard is provided in Section B.2 DataAdapt Analytic Platform Components. These capabilities are also available through the Platform’s CLI.
3	Explain licensing options for the tools you have included in this category	n/a	Predictive and prescriptive analytics capabilities are included in the DataAdapt license. All licensing is based on the total amount of data ingested into the Platform.
4	Does your Solution allow for your tool sets to be deployed in order to support shared use among Commonwealth agencies? Explain how.	Yes	Shared use of DataAdapt’s Unified Dataspace provides predictive and prescriptive analytics capabilities via the Platform’s Dashboard. This intuitive web GUI does not require any software to be deployed to user or client sites, systems, or appliances. These capabilities are also available through the Platform’s CLI.
5	Do you provide training on your solution? If yes, please explain the options.	Yes	An overview of the Platform’s predictive and prescriptive analytics capabilities is provided in both the administrator and user training described in Section B.5 Training. Additional training courses can be purchased upon request.

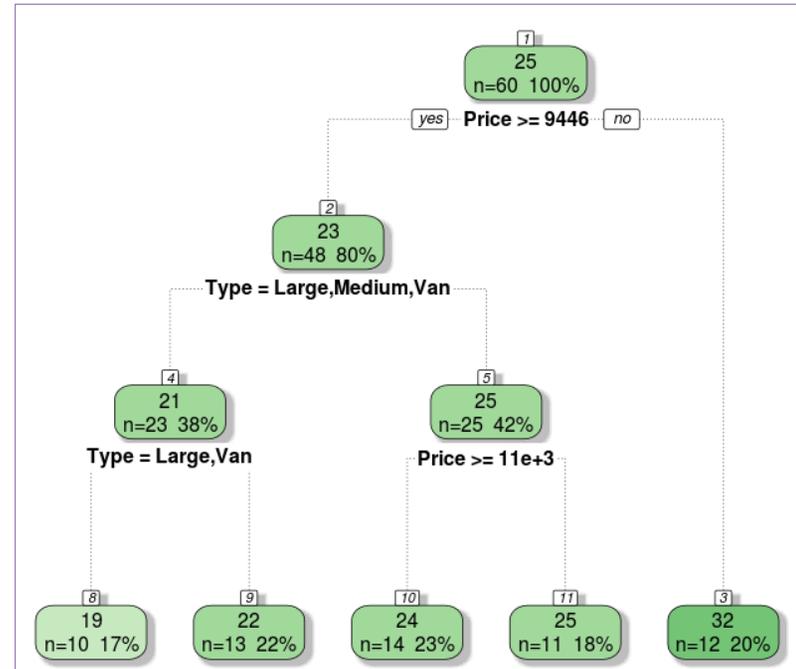
	REQUIREMENTS	A	B
6	Do you provide installation (including configuration) services for these tool components above?	Yes	Predictive and Prescriptive analytics capabilities are an integral part of the Platform’s BDE software. All installation and configuration services required to enable the Platform’s predictive and prescriptive analytics capabilities are included. Because it was designed as an appliance, the Platform can be installed quickly; usually within one day.
7	Do you provide implementation services for the above tool components? (working with an agency to deploy a solution based on these tools to meet a business need)	Yes	Team ViON’s implementation services provide professional services to assist customers design, develop, and deploy algorithms and visualization tools that provide specific predictive and prescriptive analytics capabilities. Our approach to this implementation is detailed in Section B.7 Implementation Services.
8	For your Solution, provide examples of how the tools were used by both business and IT users and the level of training and skill required by each. Include what entity used the tools. If possible, use government related examples.	n/a	For an oil and gas company, we used the Platform’s predictive and prescriptive analytics capabilities to determine the probability of each employee’s exposure to hazardous materials. This was done using data containing hourly employee locations for each day. If an employee claimed that they were exposed to harmful materials, analysts could assess the probability that their claim was valid.

**C.2.2 Predictive and Prescriptive Analytics Capabilities Description**

**C.2.2.1 Predictive Analytics**

DataAdapt’s predictive analytics capabilities include predictive modeling, decision analysis and optimization, and transaction profiling. After ingesting historical performance data, the DataAdapt platform combines rules, algorithms, and external data to determine the probable future outcome of an event or the likelihood of a situation occurring. Ensemble methods, for example, which are easily parallelizable, can be deployed on the Platform. These models have been shown in research literature to offer state-of-the-art predictive capabilities and are often the models of choice amongst top data scientists. Ensemble methods work by combining many diverse statistical models in a particular way and in doing so the accuracy of predictions is improved to a level that far outweighs that of a single, optimal model. Tools engineered based on these algorithms are extremely customizable and can be tailored to the level of expertise of the end-user depending on the types of analysis for which the tool will be used. Once the model-building process is complete, exploration of results and report generation can often be completed by users trained to extract insights from various types of models. Instructions can also be implanted in tools to guide the user to an understanding of the implications of various model outputs and visualizations.

Ensembles are a collection of base models aggregated in a way that greatly improves the model’s predictive capabilities. Decision trees, an example of which is depicted in figure 2, are most-often the models used as base learners since they



**Figure 8: Decision Trees.** The DataAdapt Platform not only provides predictions, but decision trees also help users understand what attributes of the data led to the selected prediction.

have several properties that make them ideal for this role. A decision tree finds partitions in the data between which the greatest 'spread' or distinction in a factor of interest exists. The first number in each node is the variable of interest—here miles per gallon. Moving down the tree, we 'enter' the partitions in which we may observe how levels of different variables affect this factor of interest. At each node, we may also observe how many observations exist in each partition (n=) and the proportion of the total number of observations in this partition.

**C.2.2.2 Prescriptive Analytics**

The DataAdapt platform ingests hybrid data, a combination of structured (numbers, categories) and unstructured data (videos, images, sounds, texts), and business rules to predict what lies ahead and to prescribe how to take advantage of this predicted future without compromising other priorities. Various algorithms deployable on the Platform via RStudio allow deep insights into data which enable identification of forces driving various business and system processes and their likely effects. Hence, decision-makers can be better informed and more efficiently identify the best ways to move forward. One benefit of using the Platform is scalability: these exploration and modeling projects can be executed on a petabyte scale with ease and efficiency.

Several tools are available as part of the Platform for the exploration of massive data sets. NowCast can be used to examine time-stamped data. RStudio currently has thousands of packages available for data exploration and modeling. The fact that these tools can be used in an extremely scalable environment sets the DataAdapt Platform apart from others. A recent example of this is a use case implemented on the Platform for the analysis of auto insurance fraud, which is described in depth in Pilot 3. Decision trees were constructed to partition the data to examine differences between fraudulent cases and non-fraudulent cases. Projects such as these illustrate the Platform's potential to save the enterprise significant amounts of capital.

**C.3 Statistical Analysis and Simulation**

**C.3.1 Statistical Analysis and Simulation Requirements Matrix**

	REQUIREMENTS	A	B
1	Identify the components of your analytics tool set that fit this category	n/a	Statistical Analysis and simulation capabilities are delivered via the Platform's Analysis, Discovery, and Visualization components. The analysis that these components can provide is facilitated by the Platform's Unified Dataspace, which brings together many disparate data sets. A complete description of the Platform's components is included in Section B.2 DataAdapt Analytic Platform Components. Specific statistical analysis and simulation capabilities are described in Section C.3.2 Statistical Analysis and Simulation Capabilities Description.
2	Identify platforms for deployment (cloud, Intel, appliance, OSs, database versions etc.) for the tools you have included in this category	n/a	Statistical analysis and simulation capabilities are delivered via the Platform's Dashboard. This web-based GUI provides access to all of the data stored in the Unified Dataspace. A complete description of the Dashboard is provided in Section B.2 DataAdapt Analytic Platform Components. These capabilities are also available through the Platform's CLI.
3	Explain licensing options for the tools you have included in this category	n/a	Statistical analysis and simulation capabilities are included in the DataAdapt license. All licensing is based on the total amount of data ingested into the Platform.
4	Does your Solution allow for your tool sets to be deployed in order to support shared use among Commonwealth agencies? Explain how.	Yes	Shared use of DataAdapt's Unified Dataspace provides statistical analysis and simulation capabilities via the Platform's Dashboard. This intuitive web GUI does not require any software to be deployed to user or client sites, systems, or appliances. These capabilities are also available through the Platform's CLI.
5	Do you provide training on your solution? If yes, please explain the options.	Yes	An overview of the Platform's statistical analysis and simulation capabilities is provided in both the administrator and user training described in Section B.5 Training. Additional training courses can be purchased upon request.

	REQUIREMENTS	A	B
6	Do you provide installation (including configuration) services for these tool components above?	Yes	Statistical analysis and simulation capabilities are an integral part of the Platform's BDE software. All installation and configuration services required to enable the Platform's statistical analysis and simulation are included. Because it was designed as an appliance, the Platform can be installed quickly; usually within one day.
7	Do you provide implementation services for the above tool components? (working with an agency to deploy a solution based on these tools to meet a business need)	Yes	Team ViON's implementation services provide professional services to assist customers design, develop, and deploy algorithms and visualization tools that provide specific statistical analysis and simulation capabilities. Our approach to this implementation is detailed in Section B.7 Implementation Services.
8	For your Solution, provide examples of how the tools were used by both business and IT users and the level of training and skill required by each. Include what entity used the tools. If possible, use government related examples.	n/a	One recent implementation of the Platform's statistical analysis and simulation capabilities used forecasting techniques and visualization in the Dashboard's implementation of RStudio to provide analysis of border crossing apprehensions for the Department of Homeland Security (DHS).

**C.3.2 Statistical Analysis and Simulation Capabilities Description**

C.3.2.1 Statistical Programming

DataAdapt provides a traditional analysis of methods and statistical visualization techniques. provides traditional analysis of variance (ANOVA) methods and statistical visualization techniques. employ these classical techniques upon the data Linear and logistic regression techniques, for strength of relationships between different relationships between continuous variables generated) while the latter models how variables (how does level of education affect the likelihood of divorce). Finally, ANOVA techniques can be applied to determine the significance of differences across groups (e.g., is the average number of traffic tickets issued in different counties statistically significant).

RStudio on the Platform offers various implementations of Linear Regression and ANOVA out of the box. These techniques can be easily integrated into customized analytics tools to accomplish various types of analyses. Information can also be provided within the application itself to make suggestions regarding interpretation of model output. NowCast, a tool that is part of the Platform ecosystem, is an example of time series analysis which employs linear regression techniques.

### C.3.2.2 Operations Research

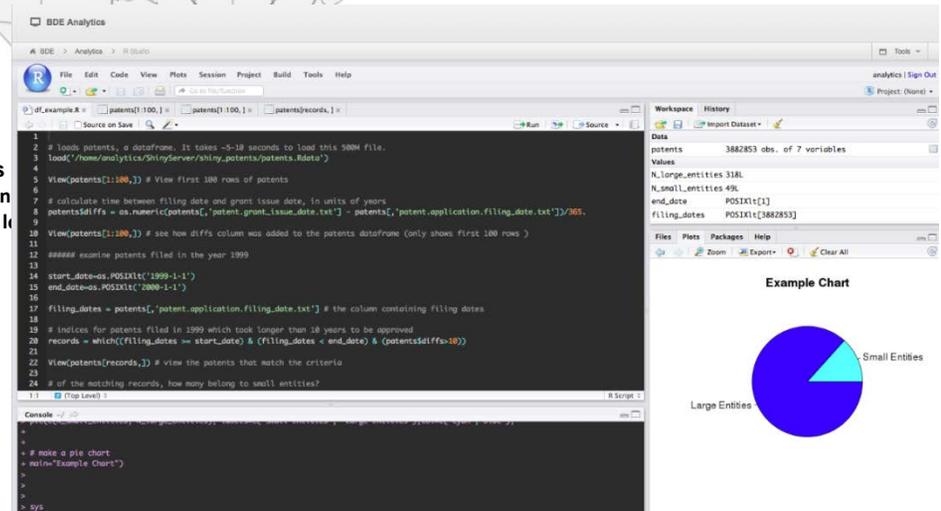
Team ViON has employed various modeling methodologies, including state-of-the-art methods such as ensembling, to identify actions that will produce the best results based on many possible options and outcomes. These Operations Research methodologies are accomplished using a special tool that was developed using RStudio, which is included in the Platform’s Analytic component. Other tools may be customized to perform analyses of a similar character in alternate domains for improved strategic and tactical planning.

The algorithms that these tools employ can be used in scheduling, simulation, and related modeling processes to optimize business processes and management challenges. Metrics used to determine optimality may be customized and tailored to the task at hand and/or user preferences. Regression and ANOVA may be used during interpretation to elucidate a clearer perspective on modeling results and an optimal path to take in moving forward.

As an example, one component of our analytics toolset is currently being used at a large federal government contractor to predict the likelihood of a proposed contract’s acceptance. It does this by analyzing data containing features that are predictive of the acceptance or rejection of contracts and learning



**Figure 10: Operations encountered in operation visiting a list of example l using RStudio.**



**Figure 9: Statistical Programming.** RStudio is accessed from within the DataAdapt platform using the Dashboard. This RStudio interface allows users to execute programs, edit their code, and view plots.

variance and linear regression to exact The Platform’s Discover component and linear regression capabilities to exact Using the Dashboard, end-users can sets housed in the Unified Dataspace. example, can be used to identify the variables. The former identifies linear (dollars spent on advertising vs. profits affect the likelihood of events occurring

relationships between the features and the outcomes. The relationships that are learned through this operations research can then be used to refine business processes so that they achieve desired outcomes with greater frequency.

### C.3.2.3 Econometrics

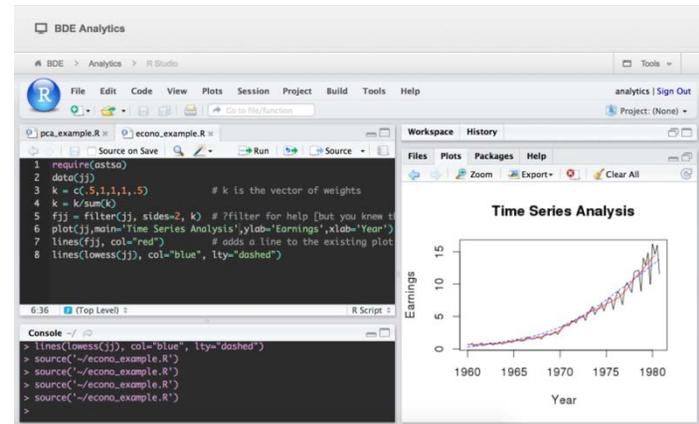
A significant edge that the Platform holds over competitors is its enablement of robust modeling, forecasting, and simulation of business processes on a massive scale, while also offering a greater degree of confidence in the conclusions that may be drawn from model outputs. As well, the ease of customization of our analytics tools and the ability to offer in-tool interpretational aids allow domain experts to focus on finding relevant results without advanced degrees in quantitative disciplines. These econometric functions are made possible by the development of tools engineered using RStudio, which is included as a part of the Platform's Analytic Component.

Team ViON recently engineered one such econometric tool by using autoregressive modeling, a forecasting technique commonly used in econometric applications, to model and examine border crossing data for the Department of Homeland Security. This analysis helped the agency to quickly identify the optimal allocation of resources for management of the border based on many possible scenarios. The tool may be customized to perform analyses of a similar character in alternate domains for improved strategic and tactical planning.

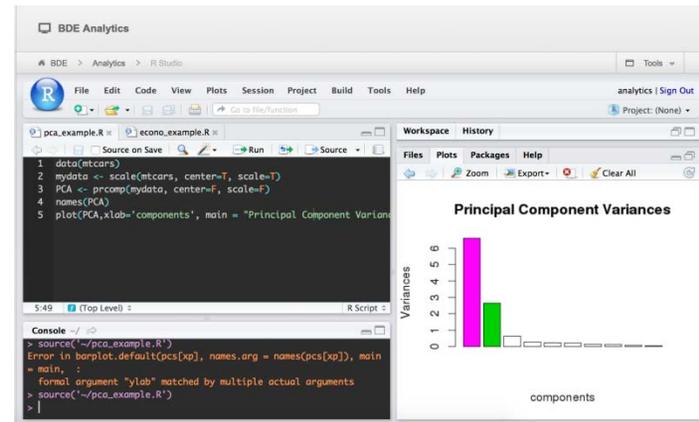
### C.3.2.4 Matrix Programming

The Platform ecosystem enables the use of powerful computer techniques for implementing customized statistical methods and exploratory data analysis using row operation algorithms in several programming languages including R and Python. RStudio is already installed and integrated on the Platform and is readily used for various matrix computations and factorizations. BDE, in conjunction with RStudio packages 'bigmemory' and 'biganalytics', enable efficient matrix calculations on massive data sets.

Spectral clustering is a technique which uses matrix calculations to quickly find important modes of variation in data. These modes are used to transform data in such a way that, when groups are present, separation between them is greater which makes them easier to identify and investigate. This technique was used in a tool recently developed by our team to quickly visualize and spot suspicious network intrusion attempts. Development was done in the RStudio IDE. Also in development is a scalable OPTICS clustering algorithm that provides the same insights as general matrix analysis in less computational time.



**Figure 11: Econometrics.** An example of a time series analysis of yearly earnings, showcased within RStudio.



**Figure 12: Matrix Programming: RStudio,** which is included within the Platform's Dashboard, offers numerous matrix capabilities. Above, a matrix tool known as principal component analysis is used to analyze a high dimensional dataset. The results of the calculation are displayed on the right.

### C.3.2.5 Statistical Visualization

Visual interfaces and dashboards can be engineered with R and D3 for fast, interactive statistical analysis and exploratory capabilities, and can be used to understand data and build models efficiently. NowCast, a tool contained in the Platform ecosystem, offers dynamic visualization of trends in time stamped data and efficient analysis via histogram charts and smoothing lines.

Recently, our team constructed a tool for visualization which enables users to quickly spot and identify suspicious network activity with a dynamic exploratory interface. Customized flagging metrics allow fast, interactive statistical analysis of the likelihood that certain activity needs to be examined further. In a separate project, a spectral clustering based solution is deployed with similar objectives:

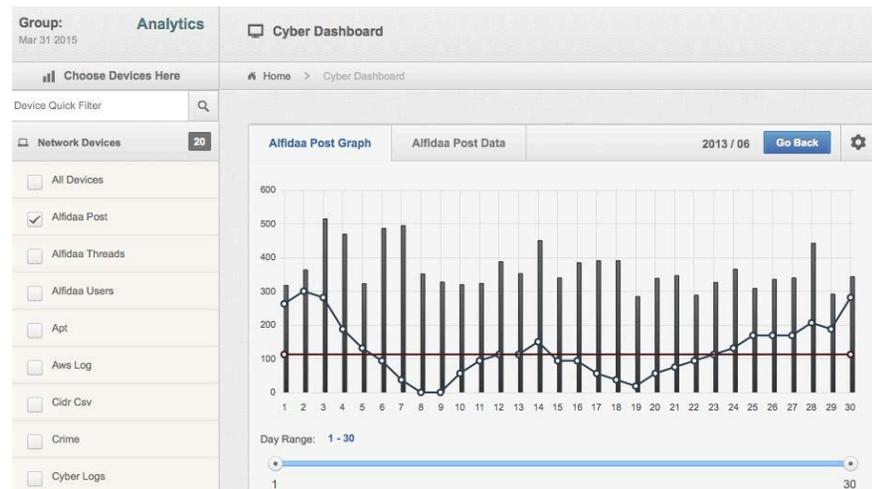
### C.3.2.6 Statistical Quality Improvement

Several members of our data science team have been trained in Experimental Design, a field of mathematics which is devoted to the study of optimal design structure for experiments in which it is of interest to measure the quality or reliability of a particular process under various conditions where uncertainty is present. Experimental design theory incorporates many ideas from various mathematical and statistical subfields including sampling theory, Bayesian statistics, and group theory. Applications are not limited to the improvement of industrial processes, but also lay in the tuning of optimization and machine learning algorithm parameters--the primary area where our team has employed principles of this field of study and do so at the conclusion of each model-building project in order to ensure the effectiveness and generalizability of the solutions obtained. All tools engineered by our team that employ statistical models are rigorously checked and tested for quality and robustness using these techniques.

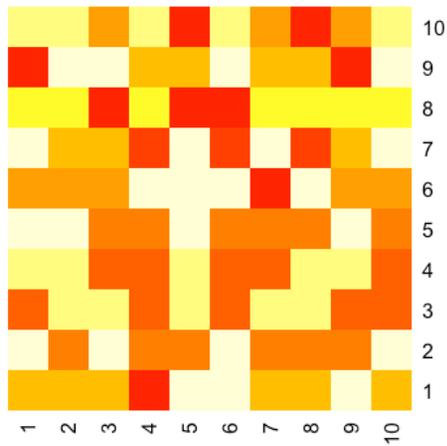
### C.3.2.7 High-performance Statistics

BDE is a high-performance parallel solution leveraging state-of-the-art big data techniques with in-memory infrastructures and parallel processing that can fit predictive models faster, perform more modeling iterations and use complex techniques for faster results. In addition, our data science team has experience integrating Apache Spark into this environment when required to meet certain customers' real-time analytics requirements. Spark has been gaining momentum in recent years as the de facto platform for high-performance computing in the enterprise and contributions to its continuing development are being made by faculty members at prominent universities around the globe.

As data sets become larger and larger, the ability to efficiently ingest and analyze them is paramount. Many state-of-the-art algorithms data scientists commonly deploy involve computations which are parallelizable. These types of algorithms are easily deployed in architectures which allow sub-tasks to be split up and performed simultaneously on different clusters. BDE is based on parallel processing and is a platform which enables this capability. Spark, a 'top-level' Apache project, is currently planned as an 'add-on' to the Platform ecosystem in coming months.



**Figure 13: Statistic Visualization.** The Platform's NowCast feature allows users to quantitatively assess growth rates within time series data, which is especially valuable for detecting overall trends amid noisy data.



**C.3.2.8 Simulation**

RStudio and Python, which are installed and integrated on the Platform, contain packages that allow users to simulate and observe an operation without actually performing that operation. This capability enables rigorous analysis--at petabyte scale--of possible outcomes under various hypothetical conditions.

A simulation tool recently developed by our data science team involves the use of simulated annealing to analyze categorical data. Another tool uses a local, unsupervised-as-supervised learning, bagged probability model currently employed in the analysis of geo-spatial data. False observations are generated in spatio-temporal neighborhoods based on structures inherent in the data being analyzed, and hence the tool can be easily customized for alternate domains to allow for the examination and/or analysis of hypothetical situations and impending possible outcomes based on any combination of a set of various present conditions.

**C.4 Data Visualization**

**C.4.1 Data Visualization Requirements Matrix**

**Figure 14: Simulation.** A sample simulation of fire propagation programmed within RStudio is depicted by this grid. It represents a region of land viewed from above. Red squares represent areas with flammable materials. Light areas are at lower risk for fire spreading.

	REQUIREMENTS	A	B
1	Identify the components of your analytics tool set that fit this category	n/a	The Platform’s Visualization capabilities are delivered via the Platform’s Analysis, Discovery, and Visualization components. The visualizations that these components can provide are facilitated by the Platform’s Unified Dataspace, which brings together many disparate data sets. A complete description of the Platform’s components is included in Section B.2 DataAdapt Analytic Platform Components. Specific visualization capabilities are described in Section C.4.2 Data Visualization Capabilities Description.
2	Identify platforms for deployment (cloud, Intel, appliance, OSs, database versions etc.) for the tools you have included in this category	n/a	Data visualization capabilities are delivered via the Platform’s Dashboard. This web-based GUI provides access to all of the data stored in the Unified Dataspace. A complete description of the Dashboard is provided in Section B.2 DataAdapt Analytic Platform Components. These data visualization capabilities can also be programmed using the Platform’s CLI.
3	Explain licensing options for the tools you have included in this category	n/a	Data Visualization capabilities are included in the DataAdapt license. All licensing is based on the total amount of data ingested into the Platform.
4	Does your Solution allow for your tool sets to be deployed in order to support shared use among Commonwealth agencies? Explain how.	Yes	Shared use of DataAdapt’s Unified Dataspace provides data visualization capabilities via the Platform’s Dashboard. This intuitive web GUI does not require any software to be deployed to user or client sites, systems, or appliances. These capabilities are also available through the Platform’s CLI.
5	Do you provide training on your solution? If yes, please explain the options.	Yes	An overview of the Platform’s data visualization capabilities is provided in both the administrator and user training described in Section B.5 Training. Additional training courses can be purchased upon request.

	REQUIREMENTS	A	B
6	Do you provide installation (including configuration) services for these tool components above?	Yes	Data visualization capabilities are an integral part of the Platform’s BDE software. All installation and configuration services required to enable the Platform’s visualization capabilities are included. Because it was designed as an appliance, the Platform can be installed quickly; usually within one day.
7	Do you provide implementation services for the above tool components? (working with an agency to deploy a solution based on these tools to meet a business need)	Yes	Team ViON’s implementation services provide professional services to assist customers design, develop, and deploy algorithms and visualization tools that provide specific data visualization capabilities. Our approach to this implementation is detailed in Section B.7 Implementation Services.
8	For your Solution, provide examples of how the tools were used by both business and IT users and the level of training and skill required by each. Include what entity used the tools. If possible, use government related examples.	n/a	One recent data visualization tool that we customized for the Air Force compared an airborne flight’s real-time GPS coordinates, origination, and destination points with data from previous flight path data for the same origination and destination points. This enabled analysts to track and identify those flights that deviated significantly from previous flight paths. The flights that deviated were colored red or yellow depending on the significance of their deviation. Little training was required to explain how the visualizations worked and how to access them. This visualization can be seen in Figure 16.

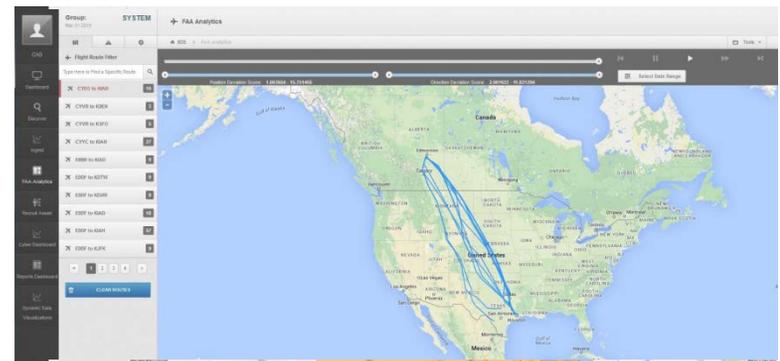
**C.4.2 Data Visualization Capabilities Description**

The DataAdapt Platform provides extensive data visualization capabilities to create pictorial representations of data. These visualizations may take the form of an animation, a cloud, a map, a chart, or a simple picture. Users can do this in the Dashboard by selecting which data sets they wish to view (or all data sets) and how they want to view them.

This can include visualizing the data as an infographic, geographic maps, sparklines, heat maps, and detailed bar, pie and fever charts with dials and gauges. The Visualization component’s map feature, for example, allows users to visualize where in the world their data sits, and narrow their searches based off of the location of that data (see Figure 15).

The images may include interactive capabilities, as well, enabling users to manipulate them or drill into the data for querying and analysis. In the previous map example, users are able to draw shapes around areas on the map to see how many data sources they have in a given area, and are then able to click on the results to open the record. Users are then able to drill down into the data from the Platform’s Dashboard.

In addition the extensive data visualizations that the Platform provides out of the box, it also provides the analytic framework to build customized visualizations that are dynamic and interactive regardless of the data’s structure, model, type, or source. This powerful extensibility feature is made possible by the Platform’s web interface, which is built on HTML5 and commonly-used open source libraries. As a result, the Analytics and Visualization components allow analytic applications to be developed and plugged in to the Platform directly. For example, analytics developed in the R programming language using the Shiny web interface can be displayed in this



**Figure 16: Customizable Data Visualizations. The Platform provided the Air Force with the capability to visualize flight paths in progress and compare them with historical trends.**

framework, as well as other custom analytics. As a result, the Commonwealth is provided with the flexibility to use the Platform’s preconfigured data visualization capabilities, or it can deploy its own. Team ViON also has the expertise to assist the Commonwealth develop and deploy new custom analytics through additional professional services engagements.

## C.5 Data Quality

### C.5.1 Data Quality Requirements Matrix

	REQUIREMENTS	A	B
1	Identify the components of your analytics tool set that fit this category	n/a	The Platform’s data quality capabilities are delivered via the Platform’s Ingest component. The data quality capabilities that this component can provide are facilitated by the Platform’s Unified Dataspace, which brings together many disparate data sets. A complete description of the Platform’s components is included in Section B.2 DataAdapt Analytic Platform Components. Specific data quality capabilities are described in Section C.5.2 Data Quality Capabilities Description.
2	Identify platforms for deployment (cloud, Intel, appliance, OSs, database versions etc.) for the tools you have included in this category	n/a	Data quality capabilities are managed via the Platform’s Dashboard. This web-based GUI provides access to all of the data stored in the Unified Dataspace. A complete description of the Dashboard is provided in Section B.2 DataAdapt Analytic Platform Components. These data quality capabilities can also be programmed using the Platform’s CLI.
3	Explain licensing options for the tools you have included in this category	n/a	Data quality capabilities are included in the DataAdapt license. All licensing is based on the total amount of data ingested into the Platform.
4	Does your Solution allow for your tool sets to be deployed in order to support shared use among Commonwealth agencies? Explain how.	Yes	Shared use of DataAdapt’s Unified Dataspace provides data quality capabilities via the Platform’s Dashboard. This intuitive web GUI does not require any software to be deployed to user or client sites, systems, or appliances. These capabilities are also available through the Platform’s CLI.
5	Do you provide training on your solution? If yes, please explain the options.	Yes	An overview of the Platform’s data quality capabilities is provided in both the administrator and user training described in Section B.5 Training. Additional training courses can be purchased upon request.
6	Do you provide installation (including configuration) services for these tool components above?	Yes	Data quality capabilities are an integral part of the Platform’s BDE software. All installation and configuration services required to enable the Platform’s data quality capabilities are included. Because it was designed as an appliance, the Platform can be installed quickly; usually within one day.

	REQUIREMENTS	A	B
7	Do you provide implementation services for the above tool components? (working with an agency to deploy a solution based on these tools to meet a business need)	Yes	Team ViON’s implementation services provide professional services to assist customers design, develop, and deploy tools that provide specific data quality capabilities. Our approach to this implementation is detailed in Section B.7 Implementation Services.
8	For your Solution, provide examples of how the tools were used by both business and IT users and the level of training and skill required by each. Include what entity used the tools. If possible, use government related examples.	n/a	In one use case, our Natural Language Processing (NLP) system was tested against over 1,000 classification markings used by the Department of Defense and United States Government agencies. While creating markings is prescribed in published guidelines, they are prone to human error and are sometimes used incorrectly. Our NLP system was able to properly detect and normalize all tested classification markings. In the rare case that it was not able to determine a valid classification marking, our NLP system flagged the data, which was then sent to an error queue for human analysis. In no case, was an improper classification allowed to pass through the system. Our NLP system is also adept at identifying named entities within embedded documents, such as a MS Office Word document that contains attached documents (other MS Office documents, pdfs, etc.). Through the use of an open source library called Apache TIKa, which is a content analysis toolkit, we are able to also extract metadata from files, such as pictures (e.g., JPEG, GIF, TIFF, etc.), MS Office documents, pdfs, etc. In the case of picture files, this provides the ability to identify the location where a picture was taken, information about the device used to take the picture, and information about the picture itself. In the case of office documents, it provides the ability to identify the users, and historical create and edit information.

**C.5.2 Data Quality Capabilities Description**

**C.5.2.1 Parsing and Standardization**

DataAdapt decomposes text fields into component parts and formatting of values into consistent layouts based on industry standards, local standards, user-defined business rules, and knowledge bases of values and patterns using the Platform’s Ingest component. It does this by configuring data sources using the IngestConfig widget, which allows the administrator to define certain basic characteristics of incoming data. This ensures that the data being loaded conforms to the expectations of the source. When ingesting from disk files, the expected file extension(s) can be defined to prevent other kinds of files from being ingested. A minimum and maximum size can also be defined, which for some data types can prevent malformed files from being ingested. The parsing process can also be automated or semi-automated by developing data loaders using the Platform’s API.

A combination of the Platform’s on-board data parsing and standardization tools has demonstrated increased ingest throughput that is ten-fold over competing standard COTS analytics platforms. Furthermore, the Platform’s ingest data integrity is near 100%, which is much higher than competitors. This data integrity also significantly minimizes the need to go back and adjust automated and semi-automated processes.

**C.5.2.2 Generalized “Cleansing”**

The DataAdapt Platform provides for the modification of data values to meet domain restrictions, integrity constraints, or other business rules that define sufficient data quality for the organization by establishing data quality criteria thresholds through the Ingest component’s data parsers and data loaders. This

includes: validity criteria (e.g., format, rules/pattern adherence, structure, etc.) that are usually based on legacy or proscribed understanding of context; error detection and removal; completeness or establishment of an essential set of information within a record. These generalized cleansing functions, when appropriate, help achieve confidence that the data contains all of the necessary information required.

Specific cleansing techniques, including auditing, workflow specification, execution, and final post processing before mark-up, can be completed early in the data lifecycle, or later in the analysis phase. This ensures, when required, that “cleansed” data is further processed, stored, and made available for analysis and visualization. Ingest component modules that provide these techniques include ErrorManager, IngestMonitor, IngestConfig, data parsers, data loaders, and Analytics.

Data cleansing is a delicate process and requires careful consideration of the source data before being performed. It is the stance of Team ViON that it is much better to ingest the bad data and deal with it in the analytic phase than to clean it in the ingest phase. This keeps the data's provenance and is much easier to manipulate than pre-cleaned data. In one use case involving a large corpus of emails, our considered approach to data cleansing involved normalizing dates to a standard format, "year, month day hour:minute:second timezone" (yyyy MMM dd, HH:mm:ss zzz), which ensured the accurate extraction and normalization of only those dates that were "cleanable", such as dates that were fully formed with time zone information.

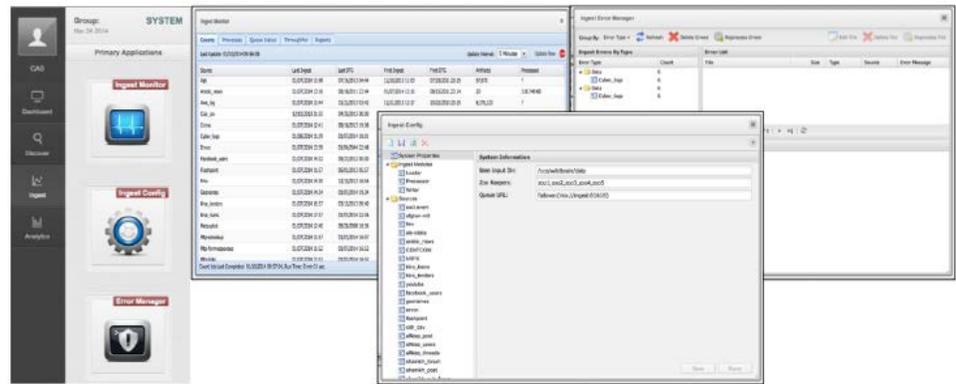
### C.5.2.3 Matching

Identification, linking, or merging related entries within or across sets of data can be readily integrated into the DataAdapt Platform. While these features are not included with the base installation, they can be enabled by the MapReduce Framework at scale using a technique known as canopy clustering. Canopy clustering can enable the analysis of massive, diverse, depersonalized data sets (e.g., anonymization and resolution and the functions that support this type of technology: standardization, masking/hashing, encryption, linkage of records, etc.). It does this by grouping records that exhibit high similarity scores between each other, matching them, and then merging that matched data into a single ‘entity.’

Team ViON has extensive experience quantifying the similarity between different records using this matching methodology. One such demonstration matched millions of test records for the Department of Homeland Security (DHS). This test gathered information from multiple sources to correlate records about a single individual, but that were different through error (e.g., spelling) or missing fields. This matching and linkage allowed our analysts to provide DHS with an example of how consolidating data gathered from multiple agencies create new records that are more complete.

### C.5.2.4 Profiling

Analysis of data to capture statistics (metadata) that provide insight into the quality of the data and aid in the identification of data quality issues is provided in the Platform through on-board data auditing and



**Figure 17: Data Quality at Ingest.** The Platform ensures data quality starting at ingest with management tools that monitor, configure, and alert administrators to errors as it is being ingested—all in real time.

automated techniques during the ingest processes. During this process, we test data quality and apply correct cleansing techniques. IngestMonitor is an Ingest component module that aids in this process. It allows for measurement and pedigree associations with data collections and sources, and applies corrective action on the fly.

#### C.5.2.5 Monitoring

The DataAdapt Platform deploys controls to ensure ongoing conformance of data to business rules that define data quality for the organization via its on-board IngestConfig widget. This widget, which is a part of the Ingest component, allows the administrator to define certain basic characteristics of incoming data to ensure that the data being loaded conforms to the expectations of the source. For example, when ingesting from disk files, the expected file extension(s) can be defined to prevent other kinds of files from being ingested.

#### C.5.2.6 Enrichment

The DataAdapt Platform enhances the value of internally held data by appending related attributes from external sources using a natural language processing (NLP). This system is based on the Generalized Architecture for Text Engineering (GATE), an open-source NLP framework. It detects certain kinds of standard attributes within the data, allowing for the extraction of fields such as: dates; geolocation coordinates; person names; place names; postal address; phone numbers; IP addresses; URLs; and, e-mail addresses.

The platform can also enrich the data automatically using detecting and matching techniques and aligning enhanced attributes (like geolocations) to known data. When data is retrieved, it is delivered with all its enriched information, providing much more information than standard query or algorithmic processes.

In one use case, our Natural Language Processing (NLP) system was tested against over 1,000 classification markings used by the Department of Defense and United States Government agencies. While creating markings is prescribed in published guidelines, they are prone to human error and are sometimes used incorrectly. Our NLP system was able to properly detect and normalize all tested classification markings. In the rare case that it was not able to determine a valid classification marking, our NLP system flagged the data, which was then sent to an error queue for human analysis. In no case, was an improper classification allowed to pass through the system.

Our NLP system is also adept at identifying named entities within embedded documents, such as a Microsoft Office Word document that contains attached documents (e.g., other MS Office documents, pdfs, etc.). Through the use of an open source library called Apache TIKA, which is a content analysis toolkit, we are able to also extract metadata from files, such as pictures (e.g., JPEG, GIF, TIFF, etc.), MS Office documents, pdfs, etc. In the case of picture files, this provides the ability to identify the location where a picture was taken, information about the device used to take the picture, and information about the picture itself. In the case of office documents, it provides the ability to identify the users, and historical create and edit information.

## C.6 Data Governance

### C.6.1 Data Governance Requirements Matrix

	REQUIREMENTS	A	B
1	Identify the components of your analytics tool set that fit this category	n/a	Data governance capabilities are delivered via the Platform's Ingest, Unified Datastore, and Dashboard components. The data governance that these components can provide is facilitated by the Platform's Hadoop and Accumulo features, which provide the ability to store and manage many disparate data sets securely. A complete description of the Platform's components is included in Section B.2 DataAdapt Analytic Platform Components. Specific data governance capabilities are described in Section C.6.2 Data Governance Capabilities Description.
2	Identify platforms for deployment (cloud, Intel, appliance, OSs, database versions etc.) for the tools you have included in this category	n/a	The data governance features are delivered via the Platform's Dashboard. This web-based GUI provides access to all of the data stored in the Unified Dataspace. A complete description of the Dashboard is provided in Section B.2 DataAdapt Analytic Platform Components. These features are also available through the Platform's CLI.
3	Explain licensing options for the tools you have included in this category	n/a	Data governance capabilities are included in the DataAdapt license. All licensing is based on the total amount of data ingested into the Platform.
4	Does your Solution allow for your tool sets to be deployed in order to support shared use among Commonwealth agencies? Explain how.	Yes	Shared use of DataAdapt's Unified Dataspace is made secure using the data governance features delivered via the Platform's Dashboard. This intuitive web GUI does not require any software to be deployed to user or client sites, systems, or appliances. These features are also available through the Platform's CLI.
5	Do you provide training on your solution? If yes, please explain the options.	Yes	An overview of the Platform's data governance features is provided in both the administrator and user training described in Section B.5 Training. Additional training courses can be purchased upon request. .
6	Do you provide installation (including configuration) services for these tool components above?	Yes	Data governance features are an integral part of the Platform's BDE software. All installation and configuration services required to enable the Platform's data governance features are included. Because it was designed as an appliance, the Platform can be installed quickly; usually within one day.
7	Do you provide implementation services for the above tool components? (working with an agency to deploy a solution based on these tools to meet a business need)	Yes	Team VION's implementation services provide professional services to assist customers design, develop, and deploy tools that provide specific data governance capabilities. Our approach to this implementation is detailed in Section B.7 Implementation Services.
8	For your Solution, provide examples of how the tools were used by both business and IT users and the level of training and skill required by each. Include what entity used the tools. If possible, use government related examples.	n/a	Implementations include automated ingest, markup and segregation of PII and HIPAA restricted information, a full implementation of CAPCO security markings and integration of data governance capabilities with RBAC systems across the data lifecycle, including data expiration and purge actions

## **C.6.2 Data Governance Capabilities Description**

### **C.6.2.1 Data Governance**

The DataAdapt Platform provides a quality control discipline for assessing, managing, using, improving, monitoring, maintaining, and protecting information beginning with the data connection and ingest process. As data is ingested, a data model is formulated. Data is then marked up accordingly for classification and other security handling requirements. It then formulates data storage schemas, and stores the information accordingly in the Unified Dataspace. This process is an indispensable part of the Platform's operations.

The Unified Dataspace is based on Apache Accumulo, an open source implementation of the Google BigTable specification. Developed by the National Security Agency before being released into open source, Accumulo provides cell-level security controls. Each cell of data is assigned one or more visibility tokens. Only users that have authorization for all of the visibility tokens on a cell can see the existence of the cell and read the data contained there. The Platform assigns visibility tokens to all data stored in the dataspace and controls the assignment of the visibility tokens by access group. It also maintains metadata for each cell in the dataspace. The history of the cell, including when it was created, when it was last changed, and the id of the user that made the change are all maintained in the cell's column qualifier in Accumulo – the metadata stays with the data.

Users are authenticated using the Platform's JASIG Common Authentication Service. Each user session is assigned a CAS token, which is passed to every component during the session. This ensures positive identification of the user performing every action. Users also belong to access groups, each of which is assigned appropriate permissions to applications and data. Users only see the applications for which they have the proper access, and only the data that is authorized for the group or groups of which they are members. It controls access and abilities to data and applications using an interoperable methodology that can leverage the Commonwealth's enterprise RBAC infrastructure and client security policies (e.g., LDAP or ActiveDirectory), or can provide its own authentication.

The Platform automatically tracks changes, detects and reports attempts to override or change privileges, baselines, or other violations of security policies, and checks baseline configurations on a periodic basis. If needed, it restores configuration and privileges. User logins and access to the system are tracked, and user information is tied directly to changes of individual cells of data. Each cell is tagged with the user who last wrote to that cell, either to first write the cell, modify the cell, or to mark the cell for deletion.

In sum, the DataAdapt platform's data governance process ensures that a system of decision rights and accountabilities for information-related processes is executed according to agreed-upon models which describe who can take what actions with what information, and when, under what circumstances, using what methods.

### **C.6.2.2 Metadata Management**

The DataAdapt Platform provides an end-to-end process and governance framework for creating, controlling, enhancing, attributing, defining and managing a metadata schema, model or other structured aggregation system. During the ingest process, the Platform checks, parses, identifies, and builds a data model based on incoming source and content. It then applies the associated metadata during the preprocessing phase, and tags information based on governance and security policies. The end-state raw data is stored for both processes. Saving this data greatly enhances both querying and use by analytic tools, algorithms and governance tracking mechanisms, including forensic analysis and usage reports.

These metadata management features are available immediately after the Platform’s installation. They can also be enhanced though manual intervention and integration with other data management applications. Furthermore, these Platform features are automated. Other products on the market require a manual, cumbersome, source-by-source/type-by-type/content-by-content data management exercise.

## C.7 Hadoop, MapReduce, Etc.

### C.7.1 Hadoop, MapReduce, Etc. Requirements Matrix

	REQUIREMENTS	A	B
1	Identify the components of your analytics tool set that fit this category	n/a	The entire DataAdapt Platform was built from the ground up to leverage Hadoop and MapReduce, and is capable of being deployed on any distribution of Hadoop that is API-compatible with the reference apache implementation (i.e., CDH, Hortonworks, and MapR). As a result, all Platform components utilize Hadoop and MapReduce.
2	Identify platforms for deployment (cloud, Intel, appliance, OSs, database versions etc.) for the tools you have included in this category	n/a	The Platform’s Hadoop and MapReduce features are managed via the Platform’s Dashboard. This web-based GUI provides access to all of the data stored in the Unified Dataspace. A complete description of the Dashboard is provided in Section B.2 DataAdapt Analytic Platform Components. These data quality capabilities can also be programmed using the Platform’s CLI.
3	Explain licensing options for the tools you have included in this category	n/a	Hadoop and MapReduce capabilities are included in the DataAdapt license. All licensing is based on the total amount of data ingested into the Platform.
4	Does your Solution allow for your tool sets to be deployed in order to support shared use among Commonwealth agencies? Explain how.	Yes	Shared use of DataAdapt’s Unified Dataspace provides the Hadoop and MapReduce functionality via the Platform’s Dashboard. This intuitive web GUI does not require any software to be deployed to user or client sites, systems, or appliances. These capabilities are also available through the Platform’s CLI.
5	Do you provide training on your solution? If yes, please explain the options.	Yes	An overview of the Platform’s Hadoop and MapReduce capabilities are provided in both the administrator and user training described in Section B.5 Training. Additional training courses can be purchased upon request.
6	Do you provide installation (including configuration) services for these tool components above?	Yes	Hadoop and MapReduce are an integral part of the Platform’s BDE software. All installation and configuration services required to enable the Platform’s Hadoop and MapReduce capabilities are included. Because it was designed as an appliance, the Platform can be installed quickly; usually within one day.
7	Do you provide implementation services for the above tool components? (working with an agency to deploy a solution based on these tools to meet a business need)	Yes	Team ViON’s implementation services provide professional services to assist customers design, develop, and deploy tools that provide specific Hadoop and MapReduce capabilities. Our approach to this implementation is detailed in Section B.7 Implementation Services.
8	For your Solution, provide examples of how the tools were used by both business and IT users and the level of training and skill required by each. Include what entity used the tools. If possible, use government related examples.	n/a	All of the previous examples cited have relied upon the Platform’s Hadoop and MapReduce functionality.

### C.7.2 Hadoop, MapReduce, Etc. Capabilities Description

#### C.7.2.1 Hadoop, MapReduce, Etc.

The DataAdapt Platform provides tools that address the analysis of collections of data sets that are so large and/or complex that it is difficult/expensive to process using traditional data management tools or approaches. It was built from the ground up to leverage Hadoop and MapReduce for processing large volumes of data, and is capable of being deployed on any distribution of Hadoop.

MapReduce is the distributed programming framework pioneered by Google that forms the basis for the Platform's analytic capabilities. MapReduce works in concert with HDFS to perform highly parallel computation on the cluster nodes where the data is stored. It provides a number of standard analytics tools in its Dashboard and Visualization components that leverage periodic MapReduce jobs that produce statistical analysis of the data.

All Big Data solutions require some level of system customization, and we work with customers from the initial creation of a Big Data plan, through education, to development and deployment of the solution. We also provide the expertise to add continuous improvement and capabilities. Our team consists of seasoned architects, engineers, Big Data integration engineers, data analysts, data scientists, and industry leading experts in Hadoop and MapReduce. As the Commonwealth's needs change, new Hadoop MapReduce jobs can be created and integrated into the Platform's analytics and visualizations. This is as simple as writing the code and scheduling the job as appropriate.

#### C.7.2.2 Unstructured Data Analysis

The Platform's ability to analyze/process information that either does not have a pre-defined data model or is not organized in a pre-defined manner is made possible by its Hadoop and MapReduce functionality. The Platform's Unified Dataspace is capable of ingesting data from myriad number of sources, including data from a public cloud. Once ingested, the data is made available to end-users for analysis and visualization.

The role-based access to the Platform's Analysis and Visualization tools is accessible through an intuitive GUI delivered to standard web browsers, such as Internet Explorer, Google Chrome, Mozilla Firefox, and Apple Safari. Management of the data and appliance is also accessible via the same GUI, as well as Command Line Interface (CLI).

DataAdapt provides next-generation analytics by rapidly ingesting structured, unstructured, and semi-structured data regardless of source or model. Once ingested, the platform automatically populates time charts, geospatial mapping, and query capabilities across the data. As such, the Platform is able to account for irregularities and ambiguities in unstructured data, as required.

## C.8 Other

### C.8.1 Other Requirements Matrix – Sentiment Analysis

	REQUIREMENTS	A	B
1	Identify the components of your analytics tool set that fit this category	n/a	Sentiment analysis capabilities are delivered via the Platform's Analysis, Discovery, and Visualization components. The sentiment analysis that these components can provide is facilitated by the Platform's Unified Dataspace, which brings together many disparate data sets. A complete description of the Platform's components is included in Section B.2 DataAdapt Analytic Platform Components. Specific capabilities are described in Section C.8.2 Other Capabilities Description – Sentiment Analysis.
2	Identify platforms for deployment (cloud, Intel, appliance, OSs, database versions etc.) for the tools you have included in this category	n/a	Sentiment analysis, discovery, and visualization is delivered via the Platform's Dashboard. This web-based GUI provides access to all of the data stored in the Unified Dataspace. A complete description of the Dashboard is provided in Section B.2 DataAdapt Analytic Platform Components. These capabilities are also available through the Platform's CLI.
3	Explain licensing options for the tools you have included in this category	n/a	Sentiment analysis capabilities are included in the DataAdapt license. All licensing is based on the total amount of data ingested into the Platform.
4	Does your Solution allow for your tool sets to be deployed in order to support shared use among Commonwealth agencies? Explain how.		Shared use of DataAdapt's Unified Dataspace provides sentiment analysis capabilities via the Platform's Dashboard. This intuitive web GUI does not require any software to be deployed to user or client sites, systems, or appliances. These capabilities are also available through the Platform's CLI.
5	Do you provide training on your solution? If yes, please explain the options.		An overview of the Platform's sentiment analysis capabilities is provided in both the administrator and user training described in Section B.5 Training. Additional training courses can be purchased upon request.
6	Do you provide installation (including configuration) services for these tool components above?		Sentiment analysis capabilities are an integral part of the Platform's BDE software. All installation and configuration services required to enable the Platform's sentiment analysis capabilities are included. Because it was designed as an appliance, the Platform can be installed quickly; usually within one day.
7	Do you provide implementation services for the above tool components? (working with an agency to deploy a solution based on these tools to meet a business need)		Team ViON's implementation services provide professional services to assist customers design, develop, and deploy algorithms and visualization tools that provide specific sentiment analytics. Our approach to this implementation is detailed in Section B.7 Implementation Services.
8	For your Solution, provide examples of how the tools were used by both business and IT users and the level of training and skill required by each. Include what entity used the tools. If possible, use government related examples.	n/a	Our sentiment analysis work for the Federal Communications Committee (FCC) aggregated social media data to monitor public opinion about various topics.

## C.8.2 Other Capabilities Description – Sentiment Analysis

Social media data from sites like Twitter and Facebook have created a new channel for sharing opinions and posting status. We have used sentiment analysis to monitor public opinion about various topics. This could be valuable to VITA for assessing the overall attitude towards certain Commonwealth-related programs. We have used sentiment mining in the past for the FCC in order to analyze millions comments posted on their website. Traditional methodologies would require a team of analysts weeks to read the comments, whereas our analysis could be performed within minutes.

### D PILOT

#### General

After contract award, ViON will consult with VITA and agency personnel to determine the most suitable pilot to conduct. This pilot will be performed within one year at no cost to the Commonwealth of Virginia. In consultation with the appropriate agency, we will endeavor to execute the pilot using actual Commonwealth data. If using the Commonwealth's data is not possible or feasible, Team ViON will attempt to utilize publically available data (e.g., social media, federal).

To ensure that ViON's pilots demonstrate specific the Platform's next-generation analytics functional capabilities, Team ViON will work with the appropriate agency to develop and design the pilot's requirements, goals, and dependencies. This includes describing how we will analyze the data, as well as identifying all of the controls and associated roles that will be applied to the data. Once these items have been documented, Team ViON will submit a final Pilot Agreement for the Commonwealth's review and approval prior to starting any work.

When applicable, Team ViON will include the construction of a financial business case for tool set implementation. These scope and expectations of these business cases will be outlined in the final Pilot Agreement. Each case will utilize data specific to the pilot to substantiate its recommendations. We will further substantiate those recommendations using our previous state, federal, locality or relevant private sector customers. The pilots will demonstrate Team ViON's experience and innovation, and will include metrics, where practical.

#### General Approach Methodology

Each pilot will utilize the same approach methodology. That approach consists of the following four steps:

Step 1 – POC Scope, Deliverables, ViON and Customer Requirements:

1. Determine target customer inquiry to pilot. For instance, a pilot selected from one of the four listed in the RFP:
  - a. cost savings and revenue enhancement,
  - b. efficacy,
  - c. predictive analytics, or
  - d. unstructured data.
2. Determine target department: a single department is desired, where the number of people and the scope of the problem and business domain is manageable to perform tests of the DataAdapt solution. The more departments and systems involved in the pilot, the broader the reach required for data ingest and purification, and more permissions and system access schemas are required. For the DataAdapt pilot, we prefer a core group of pilot participants.
3. VITA Pilot would be governed by a Statement of Work (SOW) that describes agreed to scope, deliverables, ViON and customer responsibilities and incorporate a change control process to ensure success and signoff by both parties

4. Determine staffing: customer to provide the necessary staff with assigned Project manager, at least one resource with domain experience (business analyst, for instance), network, database and storage administrators available to the ViON team when both onsite and offsite to participate in POC activities as required to ensure POC success. This is necessary to develop the overall objective for the pilot inquiry, plus staff to obtain permissions and rights to the relevant data sources. ViON to provide a Project Manager, solution architect and data scientist to perform the pilot.
5. Determine data sources: databases with in-application analytics are preferred, as are direct data sources (versus slow database engines, or data warehouses architected for OLAP and reports only, for example). Data sources would be limited to ensure specific scope of project POC is met.
6. Plan the timeline, Day 0 to Day 60.
7. Determine success criteria agreed to by both parties and signed off before pilot kickoff
8. VITA will provide ViON with VITA facility access and adequate workspace for each of its consultants as well as access to telephones, copiers, conference rooms as reasonably necessary for completion of the proof of concept.
9. VITA shall promptly respond to ViON requests, particularly concerning data, documentation and acceptance of POC criteria
10. VITA will ensure that the service location is prepared for the POC and that all required power, cooling, cabling environmental and telecommunication requirements have been addressed prior to POC installation.
11. VITA will provide ViON with appropriate access to host systems and networks. Appropriate access and information requirements will be identified during the POC kickoff and documented to ensure security requirements are met and scope of POC remain intact.
12. ViON will deliver results of POC, a set of report definitions and table of key observations for the POC including data sets analyzed, visualization of results and recommendations for eventual production use.
13. ViON will document all of the above and submit a final Pilot Agreement for the Commonwealth's review and approval prior to starting any work.

Step 2 – Resource the Pilot

1. Customer assigns pre-defined pilot team, facilities space, other customer –side resources, etc. as per the agreed-up SOW
2. ViON sets up pilot environment on customer site

Step 3 – Perform the Pilot According to Pilot Agreement

Step 4 – Document the Pilot and Deliver Final Pilot Briefing

## D.1 Pilot 1: Cost Savings and Revenue Enhancement

### D.1.1 Pilot 1 Requirements Matrix

	REQUIREMENTS	A	B
1	Describe your suggested approach (include Supplier resources necessary to complete the pilot and their general qualifications)	n/a	Team ViON will approach the Cost Savings and Revenue Enhancement pilot using its General Pilot Methodology, which is described on page 34. Specific emphasis will be placed on those analytic methods and approaches that we have shown to achieve the maximum cost savings and revenue enhancement outcomes.
2	What next-generation analytics tool set components would be utilized to perform the pilot?	n/a	The Efficacy pilot will utilize the entire ViON DataAdapt Platform, inclusive of the components listed and described in Section A Product Specifications & Standards.
3	What platform would be used?	n/a	The Cost Savings and Revenue Enhancement pilot will utilize the DataAdapt Platform's web-based GUI (Dashboard) and CLI to ingest and store data to the Unified Dataspace, as well as to provide discovery, analysis, and visualization.

	REQUIREMENTS	A	B
4	Where have you done something similar before? Please provide references that may be contacted concerning this use.	n/a	We have extensive experience executing pilots that demonstrate cost savings and revenue enhancement. That experience is detailed in the following pages. Contact information for past performance data is included in the Supplier Profile.
5	How long would the pilot take?	n/a	We expect that our Cost Savings and Revenue Enhancement pilot will be executed within six to eight weeks, which is our typical performance standard. We install and configure the capability during Week 1. Weeks 1-3 include data discovery, data loading, use case requirements, and visualization requirements. Weeks 4-6 include analytics support for the data that was loaded, and that supports the use cases and visualizations associated with the user-required look and feel. Weeks 6-8 include final documentation and presentation, as well as removal of all Platform data and hardware, as required.
6	Given a go-ahead, how long would it take to start the pilot?	n/a	We expect that our team can start the Cost Savings and Revenue Enhancement pilot within 10-30 days of notice. Accelerated schedules can be negotiated if the need is urgent.
7	Which agencies or types of businesses would need to participate and what is the projected agency commitment (what kind of resources and for how long)?	n/a	Next-generation analytics for cost savings and revenue enhancement can benefit many of the Commonwealth's agencies and programs (e.g., Medicaid, centralized IT systems modernization, the State Police Bureau of Criminal Investigation). For example: a) In the case of a Medicaid pilot, we would recommend looking for subtle anomalies that detect fraudulent or missing payments from the Federal government. Desired participants would include individuals from departments involved with any part of the Medicaid program, as well as a financial forensics investigator from the Virginia State Police BCI, to provide data access and knowledge for inquiry development. A pilot of this type can quickly uncover what would normally take investigators weeks to tease out reams of information. b) For a centralized IT systems modernization pilot, we recommend working with the State's CIO and VITA/Northrop Grumman to gather all of the Commonwealth's IT infrastructure health and operations data. We would use this data to determine potential areas for savings based on the correlation of the disparate data sets. Previous corporate customer pilots of this nature have resulted in as much as \$35 million in first year savings. The Cost Savings and Revenue Enhancement pilot will require that VITA be involved to facilitate access to network connectivity, data, and other core information technology needed to perform the pilot. A lead "business user" agency will be involved, providing domain expertise and executive sponsorship to aid the planning, structuring, and execution of the pilot, and to ensure desired outcomes are reached.

**D.1.2 Pilot 1 Objectives**

Team ViON's Cost Savings and Revenue Enhancement Pilot will create a business case for significant cost savings and revenue enhancement through the deployment of the DataAdapt Platform's next-generation analytics tool set. Our team will deploy three (3) distinct and integrated methods to substantiate the claims made in this business case study. Namely, those methods include:

1. Data Connectivity through our provided API;
2. Transactional and historical data collection from the data repositories to collect all necessary intelligence generated from the Commonwealth's data; and,
3. Data Compliance by analyzing that data for any variances in the data gathered in real-time and historically.

Team ViON will focus the business case for the short-term return on investment (ROI) on costs savings or revenue enhancement, and cost avoidance will be included for long-term only. We will do this by ingesting the Commonwealth's data, and then profiling usage/costs for each entity and analyzing if there are outliers or high-

Team ViON will identify cost savings as early as possible within the business process (i.e., identifying fraudulent tax refunds before they are issued). The Platform is able to do this because the profiling that we are able to accomplish using the data sets allows to immediately identify those high usage outliers and where they appear in the business process lifecycle. BDE can analyze multiple data sets of unstructured and structured data, enabling the deployment of advanced data-driven strategies.

### **D.1.3 Pilot 1 Notes**

Team ViON's approach will be approved by the agency hosting the pilot. This is an inherent portion of our Discovery process. Our focus will be to analyze the data that the Commonwealth provides to predict cost savings and/or revenue enhancement using the Platform's Analytic, Search, and Visualization capabilities.

We will compare the results of this analysis using a set of use cases implemented at another state/locality of the Commonwealth's choosing to predict and validate the Pilot's cost savings and or/revenue enhancement findings. We will also use statistical hypothesis testing to validate the significance of our Pilot findings.

Team ViON will extrapolate predicted cost savings and/or revenue enhancement to the entire population. This will be done using the algorithms that we help the Commonwealth define during the Discovery phase.

### **D.1.4 Pilot 1 Deliverables**

Team ViON will present the Commonwealth with a completed business case; including range of projected cost savings, revenue enhancements, short-term ROI and optionally long-term cost avoidance. This business case will be supported by the analysis and visualization results that the Platform provides.

Documentation on how the business case was derived, including all calculations and assumptions will also be provided. Our final case study will include the methodologies, as well as interactive visualizations, that highlight the cost savings and revenue enhancement findings. The interactive visualizations will enable end-users to drill down into the data and analyze specific instances for further research.

References to validate business case and approach will be included. These references will be presented in the pilot demonstration's visualizations that are built around the use case, and delivered in the final presentation.

Team ViON will successfully demonstrate the DataAdapt Platform's ability to learn and self-tune. This learning and self-tuning will be demonstrated in the platform's automated analysis of new data as it is ingested into the platform. Should the use case require it, our team can develop algorithms designed to ascertain optimal parameter settings for the best generalizability on new the data. This can be accomplished automatically on the Platform, and will further demonstrate its ability to learn and self-tune.

## D.2 Pilot 2: Efficacy

### D.2.1 Pilot 2 Requirements Matrix

	REQUIREMENTS	A	B
1	Describe your suggested approach (include Supplier resources necessary to complete the pilot and their general qualifications)	n/a	Team ViON will approach the Efficacy pilot using the General Pilot Methodology described on page 34. Specific emphasis will be placed on those analytic methods and approaches that we have shown to achieve the maximum efficacy outcomes.
2	What next-generation analytics tool set components would be utilized to perform the pilot?	n/a	The Efficacy pilot will utilize the entire ViON DataAdapt Platform, inclusive of the components listed and described in Section A Product Specifications & Standards. Such tools may include prescriptive and predictive analytics, categorization, temporal, and geospatial analytics.
3	What platform would be used?	n/a	The Efficacy pilot will utilize the DataAdapt Platform’s web-based GUI (Dashboard) and CLI to ingest and store data to the Unified Dataspace, as well as to provide discovery, analysis, and visualization.
4	Where have you done something similar before? Please provide references that may be contacted concerning this use.	n/a	We have extensive experience executing pilots that demonstrate the Platform’s efficacy capabilities (i.e., identifying a sub-group that would receive quantifiable benefits in the form of better outcomes or better coordination of services). That experience is detailed in the following pages. Contact information for past performance data is included in the Supplier Profile.
5	How long would the pilot take?	n/a	We expect that our Efficacy pilot will be executed within six to eight weeks, which is our typical performance standard. We install and configure the capability during Week 1. Weeks 1-3 include data discovery, data loading, use case requirements, and visualization requirements. Weeks 4-6 include analytics support for the data that was loaded, and that supports the use cases and visualizations associated with the user-required look and feel. Weeks 6-8 include final documentation and presentation, as well as removal of all Platform data and hardware, as required.
6	Given a go-ahead, how long would it take to start the pilot?	n/a	We expect that our team can start the Efficacy pilot within 10-30 days of notice. Accelerated schedules can be negotiated if the need is urgent.
7	Which agencies or types of businesses would need to participate and what is the projected agency commitment (what kind of resources and for how long)?	n/a	The Efficacy pilot will require that VITA be involved to facilitate access to network connectivity, data, and other core information technology needed to perform the pilot. A lead “business user” agency will be involved, providing domain expertise and executive sponsorship to aid the planning, structuring, and execution of the pilot, and ensure desired outcomes are reached. The core group of resources would be needed for stints of time along the 60 day pilot period, and at the end to review results, perform an after-action-review (AAR, aka/ post mortem) and plan for next steps for successful procurement, deployment, and continuing use of the platform.

### D.2.2 Pilot 2 Objectives

After direction from the appropriate Commonwealth Agency, Team ViON will identify a sub-group of that Agency’s data that would receive quantifiable benefits (better outcomes, better coordination of services) as a part of our Efficacy Pilot. This efficacy use case will be defined and documented in our Discovery phase, and the relevant data will be identified and ingested into the Platform. In coordination with the Agency, our team will develop algorithms to analyze and visualize that data, so that sub-sets that would benefit from better outcomes or better coordination of services can be easily identified.

To ensure that members will only be identifiable to the original data source, Team ViON will identify the fields that require primitives like encryption hashing and other unique custom to appropriately mask the data. This will be supported by using the inherent capabilities BDE’s Accumulo data security features, that limit access to the data based on the user’s role/privileges.

Our Pilot 2 efforts will leverage previous Pharmaceutical experience using the DataAdapt Platform to address a similar need. Our customer, a large multinational pharmaceutical company, had a procedure in place to allow them to audit their current IT inventory, IT usage, and IT contracts every year. They asked the DataAdapt team if we could use the Platform to streamline this audit that was taking nearly 4 months to complete and make it more efficient.

During the Week 1 of the pilot the team performed discovery and installed and configured the DataAdapt platform. During the discovery portion of the pilot the team was given all of the IT inventory records for more than 1100 sites worldwide, their IT contract information for all of the equipment, and the latest network scans. We then As mentioned above, the customer was using an audit process to compare their network scans to their actual IT inventory and contracts to ensure there was no excessive waste.

Week 2 was spent ingesting the data and performing data discovery across the data sets, use requirement development, and visualization review and development. In Week 3 the team performed our advanced analytics across the data sets. We were prepared to present our findings and our newly customized platform to the customer by Week 4.

The DataAdapt Team took these records and, using the DataAdapt platform, we were able to determine that the company was paying \$3,500,000 per year in service agreements to vendors for equipment that is no longer in use anywhere on their networks. The customer was subsequently able to cancel those subscriptions and realize this huge cost savings. The customer was also able to replace their archaic and time consuming audit process with a near real time monitoring and alerting system within the DataAdapt platform. This resulted in saving hundreds of thousands more in labor and wasted resources for the audits.

### **D.2.3 Pilot 2 Notes**

Team ViON's approach will be approved by the agency hosting the pilot. This is an inherent portion of our Discovery process. Our focus will be to analyze the data that the Commonwealth Agency provides to identify sub-groups of data that would benefit from better outcomes or better coordination of services using the Platform's Analytic, Search, and Visualization capabilities.

We will configure the DataAdapt Platform to utilize data from multiple sources, as well as multiple data types (i.e. structured and unstructured). During ingest, the Platform's parser/loader can be configured to tag data for potential anonymization. Additionally, one of the Platform's key features is its ability to tag data at the cell level. Using the ingest tag coupled with the Platform's cell-level security, a subsequent analytics job can appropriately anonymize the Agency's data for the Pilot's use based on user permissions and attributes. This ensures the data's compartmentalization, and demonstrates the platform's ability to safeguard source data utilizing anonymizing/resolution.

### **D.2.4 Pilot 2 Deliverables**

Pilot 2 will document a business case that provides the value of implementing the DataAdapt Platform for the Commonwealth of Virginia by clearly demonstrating and visualizing the efficacy objectives of providing better outcomes or better coordination of services.

Sub-group identification processes will also be documented and presented in our final report presentation. In this presentation we will provide a model that shows how the identified sub-group can benefit from interaction (quantified, if possible) through visualizations and analytical results. This report will include the algorithms, the code, the methodology, and the report findings in addition to any lessons learned that we encountered in the process.

The data in this report will also demonstrate how the Platform ensured that members can only be linked back to source data. Any anonymization tools, techniques, or special parsing instructions that were developed will also be included in this report.

## D.3 Pilot 3: Predictive Analytics

### D.3.1 Pilot 3 Requirements Matrix

	REQUIREMENTS	A	B
1	Describe your suggested approach (include Supplier resources necessary to complete the pilot and their general qualifications)	n/a	Team ViON will approach the Predictive Analytics pilot using its General Pilot Methodology, which is described on page 34. Specific emphasis will be placed on those analytic methods and approaches that we have shown to achieve the maximum cost savings and revenue enhancement outcomes.
2	What next-generation analytics tool set components would be utilized to perform the pilot?	n/a	The Predictive Analytics pilot will utilize the entire ViON DataAdapt Platform, inclusive of the components listed and described in Section A Product Specifications & Standards.
3	What platform would be used?	n/a	The Predictive Analytics pilot will utilize the DataAdapt Platform’s web-based GUI (Dashboard) and CLI to ingest and store data to the Unified Dataspace, as well as to provide discovery, analysis, and visualization.
4	Where have you done something similar before? Please provide references that may be contacted concerning this use.	n/a	We have extensive experience executing pilots that the Platform’s predictive analytics capabilities. That experience is detailed in the following pages. Contact information for past performance data is included in the Supplier Profile.
5	How long would the pilot take?	n/a	We expect that our Predictive Analytics pilot will be executed within six to eight weeks, which is our typical performance standard. We install and configure the capability during Week 1. Weeks 1-3 include data discovery, data loading, use case requirements, and visualization requirements. Weeks 4-6 include analytics support for the data that was loaded, and that supports the use cases and visualizations associated with the user-required look and feel. Weeks 6-8 include final documentation and presentation, as well as removal of all Platform data and hardware, as required.
6	Given a go-ahead, how long would it take to start the pilot?	n/a	We expect that our team can start the Predictive Analytics pilot within 10-30 days of notice. Accelerated schedules can be negotiated if the need is urgent.
7	Which agencies or types of businesses would need to participate and what is the projected agency commitment (what kind of resources and for how long)?	n/a	The Predictive Analytics pilot will require that VITA be involved to facilitate access to network connectivity, data, and other core information technology needed to perform the pilot. A lead “business user” agency will be involved, providing domain expertise and executive sponsorship to aid the planning, structuring, and execution of the pilot, and ensure desired outcomes are reached. The core group of resources would be needed for stints of time along the 60 day pilot period, and at the end to review results, perform an after-action-review (AAR, aka/ post mortem) and plan for next steps for successful procurement, deployment, and continuing use of the platform.

### D.3.2 Pilot 3 Objectives

Team ViON’s will process historical data and outcomes in order to create a model that predicts the likelihood that a future event or behavior might occur. Our team will coordinate with the appropriate agency that would define the data that would provide valuable in the ability to conduct predictive analytics. The predictive analytics use case will be defined and documented in our Discovery phase, and the relevant data will be identified and ingested into the DataAdapt platform. In coordination with the Agency, our team will develop algorithms to analyze and visualize that data, so that sub-sets would benefit from the predictive outcomes.

Team ViON will leverage previous predictive modeling experience that was used to predict litigation risk using the DataAdapt Platform to address similar needs. Our customer, a large multinational natural resources company, was served with multiple litigations due to chemical exposure. The analytical effort was established to identify:

1. The risk of additional litigations from other employees with possible exposure quantified by number of litigations and degree of exposure.
2. Identify possible fraud in litigations by those that had no possible exposure risks.

The analytics were based on Spatio–Temporal Analytics of the chemical dispersion, chemical saturation, and atmospheric weather patterns. Additional relevant data sources were used to provide variables in the analytical calculations such as; chemical sensors, duration of exposure, proximity, and historical health records.

During Week 1 of the pilot the team performed discovery and installed and configuration the DataAdapt platform. During the discovery portion of the pilot the team was given all of the historical data pertaining to the chemical release, sensor data to include individual chemical exposure detectors, geo-locations of personnel and equipment, and the chronological timeline for events prior to and following the release of the chemicals.

Week 2 was spent identifying the use case requirements, defining the data to identify the success objectives, identifying key analytical techniques, ingesting the data and performing data discovery, time event sequencing across the holistic data sets, and developing the visualization tools for the analysis.

Week 3 the team performed the analytics across the data sets and prepared a presentation and demonstration of the findings on the newly created predictive analytic and the included visualization capabilities inherent in the DataAdapt Platform.

The ViON Team took the results of the analytics and were able to determine that rate of potential litigations would increase by 25% over the next 5 years at which point the number of litigations would decrease by 40% the following 2 years. Additionally, evidence was provided that refuted 10% of the active litigation claims.

### **D.3.3 Pilot 3 Notes**

Team ViON’s approach will be approved by the agency by the agency hosting the pilot. This is an inherent portion of our Pilot strategy. Our focus will be to analyze the data that the Commonwealth Agency provides to identify sub-groups of data that would benefit from prediction using the DataAdapt Platform’s Analytic, Search, and Visualization capabilities.

We will use the DataAdapt Platform to evaluate the data and choose the best set of variables that results in the best prediction using historical data providing trending and pattern recognition.

To derive the best value form the advanced analytics in conducting predictive analytics, the ViON team will utilize data supplied by multiple agencies to provide variables that affect the predictive outcomes.

During the evaluation specific analytics can be used to provide the predictive model similar to the past use case using the integrated R and RStudio statistical tools such as Directional Spatio-Temporal Analytics focusing on changes in morphology of the distribution of observations, Local Classifications focusing on similarities within and between group correlations, and Regression Modeling focusing on spatial regression and spatial regime models.

### **D.3.4 Pilot 3 Deliverables**

Pilot 3 will document a business case that provides the value of implementing the DataAdapt Platform for the Commonwealth of Virginia by clearly demonstrating and visualizing the Predictive Analytics objectives. The demonstration will provide the ability to select the best methodology based on the variables and analytics that predict the highest quality result.

Sub-group identification processes will also be documented and presented in our final report presentation. In this presentation we will provide a model that shows how the identified sub-group can benefit from interaction through visualization and analytical results. This report will include the algorithms, the code, the methodology, and the report findings in addition to any lessons learned that we encountered in the process.

Predictive Analytics Pilot will create a business case for providing predictive analytics through the deployment of the DataAdapt Platform’s integrated analytical tool set. VION will integrate historical disparate datasets that contain Events and geospatially significant data sets.

## D.4 Pilot 4: Unstructured Data

### D.4.1 Pilot 4 Requirements Matrix

	REQUIREMENTS	A	B
1	Describe your suggested approach (include Supplier resources necessary to complete the pilot and their general qualifications)	n/a	Team ViON will approach the Unstructured Data pilot using its General Pilot Methodology, which is described on page 34. Specific emphasis will be placed on those analytic methods and approaches that we have shown to achieve the maximum cost savings and revenue enhancement outcomes.
2	What next-generation analytics tool set components would be utilized to perform the pilot?	n/a	The Unstructured Data pilot will utilize the entire ViON DataAdapt Platform, inclusive of the components listed and described in Section A Product Specifications & Standards.
3	What platform would be used?	n/a	The Unstructured Data pilot will utilize the DataAdapt Platform’s web-based GUI (Dashboard) and CLI to ingest and store data to the Unified Dataspace, as well as to provide discovery, analysis, and visualization.
4	Where have you done something similar before? Please provide references that may be contacted concerning this use.	n/a	We have extensive experience executing pilots that the Platform’s unstructured capabilities. That experience is detailed in the following pages. Contact information for past performance data is included in the Supplier Profile.
5	How long would the pilot take?	n/a	We expect that our Unstructured Data pilot will be executed within six to eight weeks, which is our typical performance standard. We install and configure the capability during Week 1. Weeks 1-3 include data discovery, data loading, use case requirements, and visualization requirements. Weeks 4-6 include analytics support for the data that was loaded, and that supports the use cases and visualizations associated with the user-required look and feel. Weeks 6-8 include final documentation and presentation, as well as removal of all Platform data and hardware, as required.
6	Given a go-ahead, how long would it take to start the pilot?	n/a	We expect that our team can start the Unstructured Data pilot within 10-30 days of notice. Accelerated schedules can be negotiated if the need is urgent.
7	Which agencies or types of businesses would need to participate and what is the projected agency commitment (what kind of resources and for how long)?	n/a	The Unstructured Data pilot will require that VITA be involved to facilitate access to network connectivity, data, and other core information technology needed to perform the pilot. A lead “business user” agency will be involved, providing domain expertise and executive sponsorship to aid the planning, structuring, and execution of the pilot, and ensure desired outcomes are reached. The core group of resources would be needed for stints of time along the 60 day pilot period, and at the end to review results, perform an after-action-review (AAR, aka/ post mortem) and plan for next steps for successful procurement, deployment, and continuing use of the platform.

### D.4.2 Pilot 4 Objectives

ViON’s Unstructured Data Pilot will demonstrate the flexibility of the DataAdapt Platform to handle and provide value from a variety of unstructured data types including Images, Videos, Documents, Reports, Email, Web Content, Notes, Social Media, etc.

- ▶ The DataAdapt Platform will leverage contextual analytics to include natural language processing (NLP) to understand the meaning and context of human language within textual information found in multiple unstructured data sources.

- ▶ The DataAdapt Platform will demonstrate the ability to interact with media based data to include hosted and remote video with embedded audio as well as imagery

Team ViON will leverage previous unstructured text utilization experience using the DataAdapt Platform to address similar needs for the Commonwealth of Virginia. Our customer, a government intelligence organization, required the use of social media to determine Centers of Gravity and Sentiment trends driving actionable intelligence.

Due to the sensitivity of the organization and the Centers of Gravity that the organization was attempting to exploit the requirements were based on the abstract. This evaluation was based on trend and pattern discovery using social media as it related to the NFL Super bowl.

During Week 1 of the pilot the team conducted Use Case Ideation and installed the DataAdapt platform. During the Use Case Ideation the team was given the requirements to:

1. Conduct streaming ingestion from selected social media sites
2. Monitor Sentiment of the social sites as it pertains to the game in near-real time.
3. Visualize graphically the changes in author sentiment based on Team
4. Visualize graphically the change from the corpus of data for the overall "Power rating" of the game as a whole.
5. This simulation would be used to predict the high value "events" based on social media trends and patterns.

Week 1 the team reviewed the data sources and the use cases to identify the appropriate analytics and evaluate the requirements for the real time data ingestion. Additionally the team identified and developed the appropriate visualization tools using the included D<sub>3</sub> library.

Week 2 the team performed validation and verification of the ingestion process and performance, designed and developed the text analytics capabilities, and conducted validation and verification of the process and performance.

Week 3 the team conducted the analytics against the live streaming data associated with the Super Bowl.

The ViON Team took the results of the analytics and was able to determine:

- ▶ Prior to the initial kickoff there was Positive sentiment from both team's fans, with negative sentiment at 12%
- ▶ Within 7 minutes of the first quarter there was 60% increase in Negative Sentiment from fans of Team A.
- ▶ Before halftime there was a 60% increase in Negative sentiment form fans of Team B.
- ▶ Within 7 minutes of the second half the overall "Power Rating" decreased dramatically and it coincided with the volume of data created by authors.

Note: Super Bowl was a blowout and was out of reach for the Broncos 7 minutes into the second half.

#### **D.4.3 Pilot 4 Notes**

Team ViON's approach will be approved by the agency by the agency hosting the pilot. This is an inherent portion of our Pilot strategy. Our focus will be to analyze the data that the Commonwealth Agency provides to identify sub-groups of data that would benefit from prediction using the DataAdapt Platform's Analytic, Search, and Visualization capabilities.

The Team will derive actionable insights through the identification of trends, patterns and relationships in unstructured data through text analytics.

ViON provides the DataAdapt Advanced Insight platform to address two Big Data Challenges; the difficulties and complexity in creating a complete hardware to application Hadoop-based solution, and a need for polished Big Data solutions built on top of hardened Big Data Infrastructure and Analytics addressing target specific, high-value business challenges.

ViON solution is a converged and integrated Hadoop-based analytics platform integrated on a private cloud architecture that focuses on a time-to-value approach to a Big Data solution. We provide petabyte-scale storage and processing capabilities, high-speed data access, leading to immediate insight the customer needs.

Our platform provides:

- ▶ Elastic Ingest – An adaptive ingestion process that expands velocity capabilities to conduct real time streaming of data, structured, unstructured and semi-structured
- ▶ Information Exploration – Lucene Solr indexing of all context for ad hoc searching capabilities; an automated faceting capability on both structured and unstructured data using text analytics during the ingestion process
- ▶ Geospatial Integration – Automated extraction of coordinate systems (Lat/Long, DD, UTM, MGRS) from unstructured text and structured content; automatically displayed, interactive, and geographically faceted on multiple service oriented maps
- ▶ Security Framework – Using Accumulo as the unified data space provides cellular level security capabilities tied to Role Based Access Control (RBAC)
- ▶ Data Visualization – Unified Dashboard for data management, data ingestion, data discovery, geospatial display, and analytics
- ▶ Content Analytics - Semantic analysis through Natural Language Processing and Entity Extraction. Entity extraction is performed in various ways using a number of related technologies. Some types of named entities, such as telephone numbers and IP addresses are easily recognized using regular expression matching. Other types of named entities, such as proper names of people, places, organizations, and facilities require more advanced techniques such as gazetteer lookup, ontology, and grammar-based transduction. The combination of these technologies is generally referred to as Named Entity Recognition (NER), which is a subset of the field known as Natural Language Processing (NLP). Our team has developed a set of technologies to perform some portions of the NER process using the General Architecture for Text Engineering (GATE), an open source alternative to commercial NLP applications.

Our solution provides the framework and tools necessary to provide real-time analysis in support of business-critical objectives. Adhering to the Big Data mindset, our platform was designed on open standards-based architecture and is integrated with open source software components to minimize the total cost of ownership. This solution provides a new concept of managing, hosting, and protecting content that scales with data, provides a platform for advanced analytics, and is architecture built for the future.

#### **D.4.4 Pilot 4 Deliverables**

Pilot 4 will document a business case that provides the value of implementing the DataAdapt Platform for the Commonwealth of Virginia by clearly demonstrating and visualizing the Unstructured Text objectives.

Sub-group identification processes will also be documented and presented in our final report presentation. In this presentation we will provide a model that shows how the identified sub-group can benefit from interaction through visualization and analytical results. This report will include the algorithms, the code, the methodology, and the report findings in addition to any lessons learned that we encountered in the process.

The Unstructured Text Analytics Pilot will create a business case for providing text analytics through the deployment of the DataAdapt Platform's integrated analytical tool set. ViON will integrate multiple types of unstructured disparate datasets that contain entities and geospatially significant data sets.



**EXHIBIT B PRICING**  
**CONTRACT NUMBER VA-150915-VION**  
**BETWEEN**  
**VIRGINIA INFORMATION TECHNOLOGIES AGENCY**  
**AND**  
**VION CORPORATION**

Exhibit B is hereby incorporated into and made an integral part of Contract Number VA-150915-VION (“Contract”) between the Virginia Information Technologies Agency (“VITA” or “Commonwealth” or “State”) and ViON Corporation (“Supplier”). In the event of any discrepancy between this Exhibit B and the Contract, the provisions of the Contract shall control.

ViON’s DataAdapt A3000 is a commercial off-the-shelf appliance solution consisting of Cisco server, storage and networking hardware combined with Big Data Ecosystem (BDE) software developed by our partner L-3 DataTactics. The solution may be procured via outright purchase or by subscription for delivery by VITA to its customers (Options 1 and 2). Licensing is based on the total amount of data ingested into the DataAdapt 3000 appliance. The A3000’s Unified Dataspace is capable of ingesting data from a myriad number of sources, including data from a public cloud. Once ingested, the data is made available to end-users for analysis and visualization. The role-based access to the A3000’s analysis and visualization tools is accessible through an intuitive GUI delivered to standard web browsers, such as Internet Explorer, Google Chrome, Mozilla Firefox, and Apple Safari. Management of the data and appliance is also accessible via the same GUI, as well as Command Line Interface.

There are two different methods to acquire the A3000 Appliance as follows:

- Purchase (Option 1) — Standard purchase for a 36 month term
- ViON on Demand (Option 2) — Private infrastructure-as-a-service subscription

Both acquisition options contain all of the components of the ViON DataAdapt A3000 Appliance and support the data capacities listed. The pricing in each case also includes:

- Application costs
- Implementation costs
- Training costs
- Post deployment support and maintenance costs
- ViON maintains ownership of all equipment deployed under a ViON On Demand program (Option 2)

Pricing of the various DataAdapt A3000 solutions are based upon data capacity of the associated appliance.

All software licensing options in this Exhibit B are for solutions hosted at the Authorized User’s location.

**STANDARD PRICING (OPTION 1)**

<b>Product</b>	<b>Description</b>	<b>Price</b>
A3000 DataAdapt Development Platform Appliance	Development Platform Appliance for up to 100TB Data. (Non-Production License) including three years Basic Support Services with 9-5 support 5 days a week with bug fixes, patches, and ticketing/phone support. Includes onsite BDE installation and configuration for a maximum of 5 days, one week onsite training, Information and Assurance Security Architecture and Basic	\$ 1,352,720.97

	Monitoring Package. Also includes Enterprise Hadoop Platform Annual Subscription Node Licensing for the three year term. Not for use in Production as features supporting high availability and data backup are not included.	
A3000 DataAdapt Entry Production Platform Appliance	Entry Production Environment Appliance and Licensing for up to 100TB including three years Basic Support Services with 9-5 support 5 days a week with bug fixes, patches, and ticketing/phone support. Includes onsite BDE installation and configuration for a maximum of 5 days, one week onsite training, Information and Assurance Security Architecture and Basic Monitoring Package. Also includes Enterprise Hadoop Platform Annual Subscription Node Licensing for the three year term.	\$ 1,775,312.96
A3000 DataAdapt Medium Scale Production Platform Appliance	MediumScale Production Environment Appliance and Licensing for up to 500 TB including three years of Basic Support Services. Includes onsite BDE Installation and Configuration for a maximum of 5 days, one week onsite training, Information and Assurance Security Architecture, and Basic Monitoring Package. Also includes Enterprise Hadoop Platform Annual Subscription Node Licensing for the three year term.	\$ 4,251,518.40
A3000 DataAdapt Large Scale Production Platform Appliance	]Large Scale Production Environment Appliance and Licensing for up to 1.5 PB including three years of Basic Support Services. Includes onsite BDE Installation and Configuration for a maximum of 5 days, one week onsite training, Information and Assurance Security Architecture, and Basic Monitoring Package. Also includes Enterprise Hadoop Platform Annual Subscription Node Licensing for the three year term.	\$ 10,387,646.13

<i>Annual Maintenance and License Renewals after 3 years</i>		
A3000 DataAdapt Development Platform Appliance - Annual Renewal	Maintenance and Software License Renewal year 4	\$ 374,359.53
A3000 DataAdapt Development Platform Appliance-Annual Renewal	Maintenance and Software License Renewal year 5	\$ 380,330.02
A3000 DataAdapt Entry Production Platform Appliance-Annual Renewal	Maintenance and Software License Renewal year 4	\$ 472,240.18
A3000 DataAdapt Entry Production Platform Appliance-Annual Renewal	Maintenance and Software License Renewal year 5	\$ 479,807.39
A3000 DataAdapt Medium Scale Production Platform Appliance-Annual Renewal	Maintenance and Software License Renewal Year 4	\$ 1,052,489.27
A3000 DataAdapt Medium Scale Production Platform Appliance-Annual Renewal	Maintenance and Software License Renewal Year 5	\$ 1,057,757.28
A3000 DataAdapt Large Scale Production Platform Appliance-Annual Renewal	Maintenance and Software License Renewal Year 4	\$ 2,466,535.92
A3000 DataAdapt Large Scale Production Platform Appliance-Annual Renewal	Maintenance and Software License Renewal Year 5	\$ 2,480,583.94

**ON DEMAND PRICING (OPTION 2)**

Description	Qty		Contract Year 1	Contract Year 2	Contract Year 3
A3000 Development Platform Appliance	1	Base Monthly Service Fee	\$55,908.9	\$50,318.05	\$44,727.15
		<b>Contract Year Total</b>	\$670,907.28	\$603,816.60	\$536,725.80

Description	Q		Contract Year 1	Contract Year 2	Contract Year 3
A3000 DataAdapt Entry Production Platform Appliance	1	Base Monthly Service Fee	\$70,622.05	\$63,559.85	\$56,497.64
		<b>Contract Year Total</b>	\$847,464.60	\$762,718.20	\$677,971.68

Description	Qty		Contract Year 1	Contract Year 2	Contract Year 3
A3000 DataAdapt Medium Scale Production Platform Appliance	1	Base Monthly Service Fee	\$163,732.99	\$147,359.69	\$130,986.39
		<b>Contract Year Total</b>	\$1,964,795.88	\$1,768,316.28	\$1,571,836.68

Description	Qty		Contract Year 1	Contract Year 2	Contract Year 3
A3000 DataAdapt Large Scale Production Platform Appliance	1	Base Monthly Service Fee	\$390,474.32	\$351,426.89	\$312,379.46
		<b>Contract Year Total</b>	\$4,685,691.84	\$4,217,122.68	\$3,748,553.52

**ON DEMAND (OPTION 2) TERMS AND CONDITIONS**

<b>1</b>	All assets deployed by ViON in fulfillment of this Capacity Services program remain the property of ViON Corporation.		
<b>2</b>	Details of Authorized User’s license term to be defined in the applicable Statement of Work.		
<b>3</b>	Authorized User shall be responsible for ensuring sufficient facilities (i.e., power, A/C, network connectivity, floor space) are available to ViON for the installation and configuration of all equipment provided by ViON.		
<b>4</b>	Capacity Services are inclusive of acquisition; equipment de-installation; transportation and packaging; hardware maintenance and software support; as well as installation and configuration of capacity upgrades following initial equipment deployment.		
<b>5</b>	The minimum initial term of any order is 12 full months.		
<b>6</b>	The following Contract Year Index (CYI) is applied to the Base Monthly Service Fees in the Rate Table of this Quote		
	Contract Year 1	1 X Base Monthly Service Fee	100%
	Contract Year 2	0.9 X Base Monthly Service Fee	90%
	Contract Year 3	0.8 X Base Monthly Service Fee	80%
	Contract Year 4	0.7 X Base Monthly Service Fee	70%
	Contract Year 5	0.6 X Base Monthly Service Fee	60%



**EXHIBIT D SOW TEMPLATE  
CONTRACT NUMBER VA-150915-VION  
BETWEEN  
VIRGINIA INFORMATION TECHNOLOGIES AGENCY  
AND  
VION CORPORATION**

Exhibit D is hereby incorporated into and made an integral part of Contract Number VA-150915-VION (“Contract”) between the Virginia Information Technologies Agency (“VITA” or “Commonwealth” or “State”) and ViON Corporation (“Supplier”).

In the event of any discrepancy between this Exhibit D and the Contract, the provisions of the Contract shall control.

**EXHIBIT D-~~X~~ STATEMENT OF WORK (SOW) TEMPLATE  
BETWEEN (NAME OF AUTHORIZED USER) AND VION CORPORATION**

**ISSUED UNDER**

**CONTRACT NUMBER VA-150915-VION  
BETWEEN  
VIRGINIA INFORMATION TECHNOLOGIES AGENCY  
AND  
VION CORPORATION**

Exhibit D-~~X~~, between (Name of Agency/Institution) and ViON Corporation (“Supplier”) is hereby incorporated into and made an integral part of Contract Number VA-150915-VION (“Contract”) between the Virginia Information Technologies Agency (“VITA”) on behalf of the Commonwealth of Virginia and Supplier.

In the event of any discrepancy between this Exhibit D-~~X~~ and the Contract, the provisions of the Contract shall control.

Any Service, Licensed Services, Solution or Software provided under this SOW must comply with all COVA Security and Enterprise Architecture ITRM policies, standards and guidelines located at: <http://www.vita.virginia.gov/library/default.aspx?id=537> and all COVA Enterprise Architecture Data Standards and requirements located at: <http://www.vita.virginia.gov/oversight/default.aspx?id=10344>.

If Authorized User is a State Agency and determines any area of non-compliance with the ITRM PSGs at the above links in the Service, Licensed Services, Solution or Software to be provided by Supplier under this SOW, such Authorized User’s Project Manager must obtain written waiver from VITA in accordance

with the waiver process prior to placing any related order or authorizing Supplier to commence any work. Agency should collaborate with their designated Customer Account Manager to obtain such waiver.

*[Note to Template Users: Instructions for using this template to draft a Statement of Work are in gray highlight and **italics**. These instructions should be deleted after the appropriate text has been added to the Statement of Work. Contractual language is **not italicized** and should remain in the document. Text that is highlighted in **blue** is variable based on the nature of the project.]*

## STATEMENT OF WORK

This Statement of Work (SOW) is issued by the **(Name of Agency/Institution)**, hereinafter referred to as "Authorized User" under the provisions of the Contract. The objective of the project described in this SOW is for the Supplier to provide the Authorized User with a **Solution ("Solution") or Services ("Services") or Software ("Software") or Hardware and Maintenance or Licensed Application Services** for **Authorized User Project Name**. *(Customize the last sentence to state what you are getting from the Supplier, based on the VITA Contract language, and with your project name.)*

### 1. PERIOD OF PERFORMANCE

The work authorized in this SOW will occur within **XX (XX) months** of execution of this Statement of Work. This includes **delivery, installation, implementation, integration, testing and acceptance all of products and services** necessary to implement the Authorized User's **Solution, training, and any support, other than on-going maintenance services**. The period of performance for **maintenance services shall be one (1) year after implementation or end of Warranty Period and may be extended for additional one (1) year periods**, pursuant to and unless otherwise specified in the Contract. *(Customize this section to match what you are getting from the Supplier, based on the allowable scope of the VITA Contract and your project's specific needs within that allowable scope.)*

### 2. PLACE OF PERFORMANCE

*(Assign performance locations to major milestones or any other project granularity, depending on your transparency and governance needs, if needed.)*

Tasks associated with this project will be performed at **the Authorized User's location(s) in City/State, at Supplier's location(s) in City/State**, or other locations as required by the effort.

### 3. PROJECT DEFINITIONS

*Provide project unique definitions so that all stakeholders have the same understanding. Ensure these do not conflict with the Contract definition.)*

All definitions of the Contract shall apply to and take precedence over this SOW. Authorized User's specific project definitions are listed below:

### 4. PROJECT SCOPE

*(Provide a description of the scope of your project and carve out what is NOT in the scope of your project. Remember that it must fit within the VITA Contract scope.)*

#### A. General Description of the Project Scope

#### B. Project Boundaries

### 5. AUTHORIZED USER'S SPECIFIC REQUIREMENTS

*(Provide information about your project's and your agency's specific requirements for this particular project including, but not limited to the following subsections):*

- A. Authorized User-Specific Requirements
- B. Special Considerations for Implementing Technology at Authorized User's Location(s)
- C. Other Project Characteristics to Insure Success

## 6. CURRENT SITUATION

*(Provide enough background information to clearly state the current situation to Supplier so that Supplier cannot come back during performance claiming any unknowns or surprises. Some example subsections are provided below. You may collapse/expand as you feel is necessary to provide adequate information and detail.)*

- A. Background of Authorized User's Business Situation
- B. Current Architecture and Operating System
- C. Current Work Flow/Business Flow and Processes
- D. Current Legacy Systems
- E. Current System Dependencies
- F. Current Infrastructure (Limitations, Restrictions)
- G. Usage/Audience Information

## 7. PRODUCTS AND SERVICES TO SUPPORT THE PROJECT REQUIREMENTS (AND/OR SOLUTION)

### A. Required Products (or Solution Components)

*(List the products, or if your project is for a Solution, the Solution components, (hardware, software, etc.) provided by Supplier that will be used to support your project requirements. Identify any special configuration requirements, and describe the system infrastructure to be provided by the Authorized User. Provide an overview that reflects how the system will be deployed within the Authorized User's environment. You are urged to refer to the VITA Contract for allowable scope and other guidance in drafting language for this section.)*

### B. Required Services

*(List the services (e.g., requirements development, Solution design, configuration, interface design, data conversion, installation, implementation, testing, training, risk assessment, performance assessment, support and maintenance) that will be provided by Supplier in the performance of your project. You are urged to refer to the VITA Contract for the definition of Services and for the allowable scope in drafting language for this section. You will notice subsections "C" and "D" below offer areas for expanded detail on training, support and maintenance services. You may add other subsections in which you wish to expand the information/details/requirements for other service areas as well. It is likely some of this detail will be a combination of your known needs and the Supplier's proposal. In all cases the provisions should include all negotiated commitments by both parties, even if you reference by incorporation the Supplier's proposal in any subsection.)*

### C. Training Requirements and/or Authorized User Self-Sufficiency/Knowledge Transfer

*(Provide an overview and details of training services to be provided for your project and any special requirements for specific knowledge transfer to support successful implementation of the Solution. If the intent is for the Authorized User to become self-sufficient in operating or maintaining the Solution, determine the type of training necessary, and develop a training plan, for such user self-sufficiency. Describe how the Supplier will complete knowledge transfer in the event this Statement of Work is not completed due to actions of Supplier or the non-appropriation of funds for completion affecting the Authorized User. You may refer to the VITA Contract for guidance on the allowable scope for this.*

### D. Support and Maintenance Requirements

*(Document the level of support, as available under the Contract, required by your project to operate and maintain the Solution. This may include conversion support, legacy system integration, transition*

assistance, Solution maintenance (including maintenance level), or other specialized consulting to facilitate delivery or use of the Solution.

**E. Personnel Requirements**

(Provide any supplier personnel qualifications, requirements, licenses, certifications or restrictions including project manager, key personnel, subcontractors, etc., but ensure they do not conflict with the VITA Contract terms.)

**F. Transition Phase-In/Phase-Out Requirements**

(Describe any specific requirements for orientation or phasing in and/or phasing out of the project with the Supplier. Be specific on what the project needs and expected results are, the duration and other pertinent detail, but ensure they do not conflict with the VITA Contract provision(s) regarding Transition of Services or with any other training requirements in the SOW.)

**8. TOTAL PROJECT PRICE**

The total Fixed Price for this Project shall not exceed \$US XXX.

Supplier's invoices shall show retainage of [redacted]. Following completion of Solution implementation, Supplier shall submit a final invoice to the Authorized User, for the final milestone payment amount shown in the table in section 9 below, plus the total amount retained by the Authorized User. If travel expenses are not included in the fixed price of the Solution, such expenses shall be reimbursed in accordance with Commonwealth of Virginia travel policies as published by the Virginia Department of Accounts (<http://www.doa.virginia.gov>). In order to be reimbursed for travel expenses, Supplier must submit an estimate of such expenses to Authorized User for approval prior to incurring such expenses.

(Sections 9 through 11 should be used or deleted depending on the project's complexity, risk and need for governance. For a simple project you may only need the section 10 table, but for a more complex project, or a major IT project, you may need a combination of or all of the tables for check and balance and redundancy.)

**9. PROJECT DELIVERABLES**

(Provide a list of Supplier's deliverable expectations. The table is to be customized for the Authorized User's project. You may want to categorize deliverables for each phase or major milestone of the project and then categorize other interim deliverables and/or performance and status reports under one of them or under an Administrative or Project Management section.)

The following deliverables are to be provided by Supplier under this SOW. Subsequent sections may include further detail on the content requirements for some deliverables.

No.	Title	Due Date	Format Required (i.e., electronic/hard copy/CD/DVD)	Distribution Recipients	Review Complete Due Date	Final Due Date
	Project Plan					
	Design Plan					
	Implementation Plan					
	Data Conversion Plan					
	Risk Assessment Plan					
	Test Plan					

Training Plan					
Performance Plan					
Contingency Plan					
Disaster Recovery Plan					
Cutover Plan					
Change Management Plan					
Transition Plan					
Monthly Status Reports					
Quarterly Performance /SLA Reports					
Training Manual					
Final Solution Submission Letter					
Final Acceptance Letter					

**10. MILESTONES, DELIVERABLES, PAYMENT SCHEDULE, AND HOLDBACKS**

*(This table should include the project’s milestone events, associated deliverables, when due, milestone payments, any retainage amount to be held until final acceptance and the net payment you promise to pay for each completed and accepted milestone event. This table includes sample data only and must be customized for your project needs.)*

The following table identifies milestone events and deliverables, the associated schedule, any associated payments, any retainage amounts, and net payments.

Milestone Event	Associated Milestone Deliverable(s)	Schedule	Payment	Retainage	Net Payment
Project kick-off meeting	---	-----	---	---	---
-----	-----	-----	---	---	---
-----	-----	-----	-----	-----	-----
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-----	-----	-----	-----	-----	-----
-----	-----	-----	-----	--	-----
Final Acceptance		-----	--	--	-----

**11. EVENTS AND TASKS FOR EACH MILESTONE**

*(If needed, provide a table of detailed project events and tasks to be accomplished to deliver the required milestones and deliverables for the complete Solution. Reference each with the relevant milestone. A Work Breakdown Structure can be used as shown in the table below or at the very least a Project Plan should have this granularity. The Supplier's proposal should be tailored to the level of detail desired by the Authorized User's business owner/project manager for project governance.)*

The following table identifies project milestone events and deliverables in a Work Breakdown Structure format.

WBS No.	Milestone	Milestone Event	Milestone Task	Interim Task Deliverables	Duration
1.0					
1.1					
1.1.1					
1.1.2					
1.2					

**12. ACCEPTANCE CRITERIA**

*(This section should reflect the mutually agreed upon UAT and Acceptance Criteria specific to this engagement. Please read the VITA contract definitions for the definitions or Requirements and Acceptance. Ensure the language in this section does not conflict with the VITA Contract language.)*

Acceptance Criteria for this Solution will be based on a User Acceptance Test (UAT) designed by Supplier and accepted by the Authorized User. The UAT will ensure that all of the requirements and functionality required for the Solution have been successfully delivered. Supplier will provide the Authorized User with a detailed test plan and acceptance check list based on the mutually agreed upon UAT Plan. This UAT Plan check-list is incorporated into this SOW in Exhibit B-X.

Each deliverable created under this Statement of Work will be delivered to the Authorized User with a Deliverable Acceptance Receipt. This receipt will describe the deliverable and provide the Authorized User's Project Manager with space to indicate if the deliverable is accepted, rejected, or conditionally accepted. Conditionally Accepted deliverables will contain a list of deficiencies that need to be corrected in order for the deliverable to be accepted by the Project Manager. The Project Manager will have ten (10) days from receipt of the deliverable to provide Supplier with the signed Acceptance Receipt unless an alternative schedule is mutually agreed to between Supplier and the Authorized User in advance.

**13. PROJECT ASSUMPTIONS AND PROJECT ROLES AND RESPONSIBILITIES**

*(This section contains areas to address project assumptions by both the Supplier and the Authorized User and to assign project-specific roles and responsibilities between the parties. Make sure that all assumptions are included to alleviate surprises during the project. Ensure that all primary and secondary (as needed) roles and responsibilities are included. You will tailor the Responsibility Matrix table below to fit your project's needs.)*

**A. Project Assumptions**

The following assumptions are specific to this project:

**B. Project Roles and Responsibilities**

The following roles and responsibilities have been defined for this project:

**(Sample Responsibility Matrix)**

Responsibility Matrix	Supplier	Authorized User
Infrastructure – Preparing the system infrastructure that meets the		√

recommended configuration defined in <a href="#">Section 2B herein</a>		
Server Hardware		√
Server Operating		√
Server Network Connectivity		√
Relational Database Management Software (Installation and Implementation)		√
Server Modules – Installation and Implementation	√	
PC Workstations – Hardware, Operating System, Network Connectivity		√
PC Workstations – Client Software		√
Application Installation on PC Workstations	√	
Wireless Network Access Points	√	
Cabling, Electric and User Network Connectivity from Access Points		√
Wireless Mobile Computing Products – Scanners, printers	√	
Project Planning and Management	√	√
Requirements Analysis	√	√
Application Design and Implementation	√	
Product Installation, Implementation and Testing	√	
Conversion Support	√	
Conversion Support -- Subject Matter Expertise		√
Documentation	√	
Training	√	
Product Maintenance and Support	√	
Problem Tracking	√	√
Troubleshooting – IT Infrastructure		√
Troubleshooting – Solution	√	

**14. COMMONWEALTH AND SUPPLIER-FURNISHED MATERIALS, EQUIPMENT, FACILITIES AND PROPERTY**

*(In this section, provide details of any materials, equipment, facilities and property to be provided by your Agency or the Supplier in performance of this project. If none, so state so that the requirements are clear. If delivery of any of these is critical to the schedule, you may want to identify such delivery with hard due dates tied to “business days after project start” or “days after [event/milestone](#).” Be sure to specify the delivery and point of contact information.)*

**A. PROVIDED BY THE COMMONWEALTH**

**B. PROVIDED BY THE SUPPLIER**

**15. SECURITY REQUIREMENTS**

*(Provide (or reference as an Attachment) Authorized User’s security requirements.)*

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 information by the Supplier or an employee or agent of Supplier shall constitute a breach of the Contract.

Supplier shall comply with all requirements in the Security Compliance section of the Contract

## 16. REQUIRED STANDARDS, CERTIFICATIONS AND SPECIFICATIONS

In addition to any standards and specifications included in the Contract, Supplier shall follow the standards and specifications listed below during performance of this effort.

*(List any specific Commonwealth, VITA, Federal, engineering, trade/industry or professional standards, certifications and specifications that Supplier is required to follow or possess in performing this work. The first bullet includes a link to COVA-required standards for all Commonwealth technology projects. The rest are examples only and highlighted to reflect this. If you need an exception of any COVA-required standard, please follow the process located at this link: <http://www.vita.virginia.gov/oversight/default.aspx?id=10344> and select the Data Standards Guidance bulleted link. Your AITR can assist you.*

- COV ITRM Policies and Standards: <http://www.vita.virginia.gov/library/default.aspx?id=537>
- IEEE 802®
- HIPAA
- SAS 70 Type II

## 17. U.S. ENVIRONMENTAL PROTECTION AGENCY'S AND DEPARTMENT OF ENERGY'S ENERGY STAR GUIDELINES RISK MANAGEMENT

*(Risk is a function of the probability of an event occurring and the impact of the negative effects if it does occur. Negative effects include schedule delay, increased costs, failure of dependent legacy system interoperability, other project dependencies that don't align with this project's schedule, and poor quality of deliverables. Depending on the level of risk of this project, as assessed by your Project Manager and/or Steering Committee, this section may contain any or all of the following components, at a level of detail commensurate with the level of risk. Remember to add them to the Deliverables table.)*

### C. Initial Risk Assessment

Authorized User and Supplier shall each provide an initial assessment from their point of view.

### D. Risk Management Strategy

*(The list below is taken from VITA PMD template discussing what should go into a Risk Management Strategy. Don't forget to consider and plan for any budget contingencies to accommodate potential risks that are identified.)*

1. **Risk Identification Process:** The processes for risk identification.
2. **Risk Evaluation and Prioritization:** How risks are evaluated and prioritized.
3. **Risk Mitigation Options:** Describe the risk mitigation options. They must be realistic and available to the project team.
4. **Risk Plan Maintenance:** Describe how the risk plan is maintained during the project lifecycle.
5. **Risk Management Responsibilities:** Identify all project team members with specific risk management responsibilities. (e.g., an individual responsible for updating the plan or an individual assigned as a manager).

### E. Risk Management Plan

*(Include a description of frequency and form of reviews, project team responsibilities, steering and oversight committee responsibilities and documentation. Be sure to add all deliverables associated with risk strategizing and planning to the list of Deliverables.)*

**18. DISASTER RECOVERY**

Planning for disaster recovery for your project is paramount to ensure continuity of service. The criticalness and complexity of your project, including its workflow into other dependent systems of the Commonwealth or federal systems, will help you determine if you require a simple contingency plan or a full-blow contingency plan that follows the Commonwealth’s ITRM Guideline SEC508-00 found at this link:

[http://www.vita.virginia.gov/uploadedFiles/Library/ContingencyPlanningGuideline04\\_18\\_2007.pdf](http://www.vita.virginia.gov/uploadedFiles/Library/ContingencyPlanningGuideline04_18_2007.pdf)

It is advisable that you visit the link before making your decision on how you need to address contingency planning and related deliverables in this SOW; as well as, how this will impact your planned budget. A likely deliverable for this section would be a Continuity of Operations Plan. You may choose to include the above link in your final SOW to describe what the Plan will entail. The same link includes the following processes, which you may choose to list in your final requirements for this section, to be performed by your team, the Supplier or both and/or a steering committee if your project warrants such oversight and approval:

- Development of the IT components of the Continuity of Operations Plan (COOP)
- Development and exercise of the IT Disaster Recovery Plan (IT DRP) within the COOP
- Development and exercise of the IT System Backup and Restoration Plan

**19. PERFORMANCE BOND**

(If your project is sizeable, complex and/or critical, and the VITA Contract does not already provide for a performance bond, you may want the Supplier to provide one. The VITA Contract may include an Errors and Omissions insurance requirement, which would cover the Supplier’s liability for any breach of the Contract or this SOW. Be sure to read the Contract for this information. However, if you feel that this project warrants further performance incentive due to the project or the Supplier’s viability, you may include the following language in this section.)

[Redacted]

**20. OTHER TECHNICAL/FUNCTIONAL REQUIREMENTS**

(Provide any other unique project technical and functional requirements and expectations in sufficient detail in this section. Ensure they do not conflict with existing requirements in the VITA Contract. Several examples are listed.)

F. [Redacted]

G. [Redacted]

H. [Redacted]

I. [Redacted]

**21. REPORTING**

(The following are examples of reporting requirements which may be included in your SOW depending on the project’s need for governance. In an effort to help VITA monitor Supplier performance, it is strongly recommended that the SOW include “Supplier Performance Assessments”. These assessments may be performed at the Project Manager’s discretion and are not mandated by VITA.)

**A. Weekly/Bi-weekly Status Update.**

The weekly/bi-weekly status report, to be submitted by Supplier to the Authorized User, should include: accomplishments to date as compared to the project plan; any changes in tasks, resources or schedule with new target dates, if necessary; all open issues or questions regarding the project; action plan for addressing open issues or questions and potential impacts on the project; risk management reporting.

**B. Supplier Performance Self-Assessment.**

Within thirty (30) days of execution of the project start, the Supplier and the Authorized User will agree on Supplier performance self-assessment criteria. Supplier shall prepare a monthly self-assessment to report on such criteria. Supplier shall submit its self-assessment to the Authorized User who will have five (5) days to respond to Supplier with any comments. If the Authorized User agrees with Supplier's self-assessment, such Authorized User will sign the self-assessment and submit a copy to the VITA Supplier Relationship Manager.

**C. Performance Auditing**

*(If you have included service level requirements in the above section entitled, Other Technical/Functional Requirements, you will want to include a requirement here for your ability to audit the results of the Supplier's fulfillment of all requirements, Likewise, you may want to include your validation audit of the Supplier's performance reporting under this Reporting section. It is important, however, that you read the VITA contract prior to developing this section's content so that conflicts are avoided. Suggested language is provided below, but must be customized for your project.)*

*\_\_\_\_\_ (If none, you may add your escalation procedure in this section.)*

**D. Supplier Performance Assessments**

*(You may want to develop assessments of the Supplier's performance and disseminate such assessments to other Authorized Users of the VITA Contract. Prior to dissemination of such assessments, Supplier will have an opportunity to respond to the assessments, and independent verification of the assessment may be utilized in the case of disagreement.)*

**22. CHANGE MANAGEMENT**

*(Changes to the baseline SOW must be documented for proper project oversight. Depending on your project, you may need to manage and capture changes to configuration, incidents, deliverables, schedule, price or other factors your team designates as critical. Any price changes must be done in compliance with the Code of Virginia, § 2.2-4309. Modification of the contract, found at this link: <http://leg1.state.va.us/cgi-bin/legp504.exe?000+coh+2.2-4309+500825>. Changes to the scope of this SOW must stay within the boundaries of the scope of the VITA Contract.*

*For complex and/or major projects, it is recommended that you use the VITA PMD processes and templates located at: <http://www.vita.virginia.gov/oversight/projects/default.aspx?id=567>. Administrative or non-technical/functional changes (deliverables, schedule, point of contact, reporting, etc.) should extrapolate the affected sections of this SOW in a "from/to" format and be placed in a numbered modification letter referencing this SOW and date, with a new effective date. The VITA Contract may include a template for your use or you may obtain one from the VITA Contract's Point of Contact. It is very important that changes do not conflict with, but do comply with, the VITA Contract, which takes precedence. The following language may be included in this section, but additional language is needed to list any technical/functional change management areas specific to this SOW; i.e., configuration, incident, work flow, or any others of a technical/functional nature.)*

All changes to this SOW must comply with the Contract. Price changes must comply with the Code of Virginia, § 2.2-4309. Modification of the contract, found at this link: <http://leg1.state.va.us/cgi-bin/legp504.exe?000+coh+2.2-4309+500825>

All changes to this SOW shall be in written form and fully executed between the Authorized User's and the Supplier's authorized representatives. For administrative changes, the parties agree to use the change template, attached to this SOW. For technical/functional change management requirements, listed below, the parties agree to follow the processes and use the templates provided at this link: <http://www.vita.virginia.gov/oversight/projects/default.aspx?id=567>

**23. POINT OF CONTACT**

For the duration of this project, the following project managers shall serve as the points of contact for day-to-day communication:

Authorized User: \_\_\_\_\_

Supplier: \_\_\_\_\_

By signing below, both parties agree to the terms of this Exhibit.

**Supplier:**

**Authorized User:**

\_\_\_\_\_

\_\_\_\_\_

(Name of Supplier)

(Name of Agency/Institution)

By: \_\_\_\_\_

By: \_\_\_\_\_

(Signature)

(Signature)

Name: \_\_\_\_\_

Name: \_\_\_\_\_

(Print)

(Print)

Title: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

Date: \_\_\_\_\_



**EXHIBIT E CHANGE ORDER TEMPLATE  
CONTRACT NUMBER VA-150915-VION  
BETWEEN  
VIRGINIA INFORMATION TECHNOLOGIES AGENCY  
AND  
VION CORPORATION**

Exhibit E is hereby incorporated into and made an integral part of Contract Number VA-150915-VION (“Contract”) between the Virginia Information Technologies Agency (“VITA” or “Commonwealth” or “State”) and ViON Corporation (“Supplier”).

In the event of any discrepancy between this Exhibit E and the Contract, the provisions of the Contract shall control.

This Change Order No. **XXX** hereby modifies and is made an integral part of Statement of Work **D-X** (“SOW”), between **NAME OF AGENCY/INSTITUTION** (“Authorized User”) and ViON Corporation (“Supplier”), which was issued under Contract Number VA-150915-VION (“Contract”) between the Virginia Information Technologies Agency (“VITA”) and Supplier, on behalf of the Commonwealth of Virginia and its Authorized Users.

*[Note: Instructions for using this template to draft a Change Order are in gray. These instructions should be deleted after the appropriate text has been added to the Change Order. Contractual language is not in gray and should remain in the document. Text that is highlighted in blue is contractual language that is variable based on the nature of the project and in final form should not be highlighted. Agency/Institution should remove the first two lines of the heading, which pertain to this template as an Exhibit to the VITA Contract and remove the Exhibit reference from the header.]*

**CHANGE ORDER**

This is Change Order No. **XXX** to a SOW issued by **Authorized User** to Supplier under which Supplier is to provide the Authorized User with a **Authorized User Project Name Solution (“Solution”)**.

The following item(s) is/are hereby modified as follows: *[Note: Include only the sections of the SOW that are being changed. Do not include sections not being modified. Changes should be clearly identified as “From” (copy/paste from current SOW section) and “To” (fully describe the change(s) to the referenced section). Here is an example, using SOW section 1.]*

**1. PERIOD OF PERFORMANCE**

**[Redacted]**

This Change Order No. **XXX** is issued pursuant to and, upon execution, shall become incorporated in the SOW, which is incorporated in the Contract. In the event of conflict, the following order of precedence shall apply:

- i). The Contract
- ii). Statement of Work E-X, as amended by this and previous Change Orders, with the more current Change Orders superseding older Change Orders.

The foregoing is the complete and final expression of the agreement between the parties to modify the SOW and cannot be modified, except by a writing signed by duly authorized representatives of both parties hereto.

ALL OTHER TERMS AND CONDITIONS OF THE REFERENCED SOW REMAIN UNCHANGED.

By signing below, the authorized parties agree to the terms of this Change Order No. XXX, effective (INSERT EFFECTIVE DATE).

Supplier  
By: \_\_\_\_\_  
(Signature)  
Name: \_\_\_\_\_  
(Print)  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_

Authorized User  
By: \_\_\_\_\_  
(Signature)  
Name: \_\_\_\_\_  
(Print)  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_



**EXHIBIT F END USER LICENSE AGREEMENT  
CONTRACT NUMBER VA-150915-VION  
BETWEEN  
VIRGINIA INFORMATION TECHNOLOGIES AGENCY  
AND  
VION CORPORATION**



L-3 Data Tactics Big  
Data Ecosystem EULA

## LICENSE AGREEMENT ADDENDUM

The Virginia Information Technologies Agency (hereinafter referred to as "VITA"), pursuant to §2.2-2012 of the Code of Virginia and on behalf of the Commonwealth of Virginia, and L-3 Data Tactics Corporation ("Supplier"), a business incorporated in Virginia, F.E.I.N. 20-3560920, having its principal place of business at 791 Jones Branch Drive, suite700, McLean, VA 22102, are this day entering into a contract and, for their mutual convenience, the parties are using the standard form contract ("End User License Agreement") provided by Supplier. This addendum, duly executed by the parties, is attached to and hereby made a part of Supplier's standard form contract and together shall govern the use of any and all Big Data Ecosystem Software licensed by the Commonwealth under this agreement whether or not specifically referenced in the order document.

Supplier represents and warrants that it is a corporation authorized to do in Virginia the business provided for in this contract. If Supplier is not a U.S.-based entity, Supplier maintains a registered agent and a certification of authority to do business in Virginia.

This contract is executed by VITA on behalf of all public bodies, including VITA, as defined by §2.2-4301 and referenced by §2.2-4304 of the Code of Virginia, and private institutions of higher education which are listed at: <http://www.cicv.org/Our-Colleges/Profiles.aspx>, and hereinafter referred to as "Authorized Users."

If Authorized User is a state agency, board, commission, or other quasi-political entity of the Commonwealth of Virginia or other body referenced in Title 2.2 of the Code of Virginia, any license granted by Supplier shall be held by the Commonwealth. If Authorized User is a locality, municipality, school, school system, college, university, local board, local commission, or local quasi-political entity, such license shall be held by that public body. If Authorized User is a private institution of higher education listed at: <http://www.cicv.org/Our-Colleges/Profiles.aspx>, the license shall be held by that private institution.

As used herein, the term "contract" shall mean the Supplier's standard form contract and any and all exhibits and attachments thereto. The term(s) "Customer," "You," and/or "you," as used in the contract, shall mean, as applicable, VITA, the Commonwealth, any Authorized User, or any of their officers, directors, agents or employees.

Supplier's standard form contract is, with the exceptions noted herein, acceptable to VITA. Nonetheless, because certain standard clauses that may appear in, or be incorporated by reference into, Supplier's standard form contract cannot be accepted by VITA, and in consideration of the convenience of using that form, and this form, without the necessity of specifically negotiating a separate contract document, the parties hereto specifically agree that, notwithstanding any provisions appearing in the attached Supplier's standard form contract, none of the following shall have any effect or be enforceable against VITA, the Commonwealth, any Authorized User, or any of their officers, directors, employees or agents:

1. Requiring the application of the law of any state other than the Commonwealth of Virginia in interpreting or enforcing the contract or requiring or permitting that any dispute under the contract be resolved in any court other than a circuit court of the Commonwealth of Virginia;
2. Requiring any total or partial compensation or payment for lost profit or liquidated damages by VITA, the Commonwealth, any Authorized User, or their officers, directors, employees or agents if the contract is terminated before its ordinary period;
3. Imposing any interest charge(s) contrary to that specified by §2.2-4347 et seq. of the Code of Virginia;
4. Requiring the Commonwealth, VITA, or any Authorized User to maintain any type of insurance either for the benefit of the Commonwealth, VITA, or such Authorized User or for Supplier's benefit;
5. Granting Supplier a security interest in property of the Commonwealth, any Authorized User, or any of their officers, directors, employees or agents;

6. Requiring the Commonwealth, VITA, any Authorized User, or any of their officers, directors, employees or agents to indemnify or to hold harmless Supplier for any act or omission;
7. Limiting or adding to the time period within which claims can be made or actions can be brought (Reference *Code of Virginia* §8.01 et seq.);
8. Limiting selection and approval of counsel and approval of any settlement in any claim arising under the contract and in which the Commonwealth, VITA, any Authorized User, or any of their officers, directors, employees or agents is a named party;
9. Binding the Commonwealth, VITA, any Authorized User, or any of their officers, directors, employees or agents to any arbitration or to the decision of any arbitration board, commission, panel or other entity;
10. Obligating the Commonwealth, VITA, any Authorized User, or any of their officers, directors, employees or agents to pay costs of collection or attorney's fees;
11. Requiring any dispute resolution procedure(s) other than those in accordance with §2.2-4363 et seq. of the Code of Virginia;
12. Permitting Supplier to access any Commonwealth or Authorized User records or data, except pursuant to court order;
13. Permitting Supplier to use any information provided by the Commonwealth or any Authorized User except for Supplier's own internal administrative purposes;
14. Requiring the Commonwealth, VITA, or any Authorized User to limit its rights or waive its remedies at law or in equity, including the right to a trial by jury; and
15. Bestowing any right or incurring any obligation that is beyond the duly granted authority of the undersigned representative of VITA to bestow or incur on behalf of the Commonwealth of Virginia..
16. Establishing a presumption of severe or irreparable harm to Supplier by the actions or inactions of VITA or any Authorized User;
17. Limiting the liability of Supplier for property damage or personal injury;
18. Permitting Supplier to assign, subcontract, delegate or otherwise convey the contract, or any of its rights and obligations thereunder, to any entity without the prior written consent of VITA except as follows: Supplier may assign all or any of its rights and obligations to a third party as a result of a merger or acquisition or sale of all or substantially all of its assets to such third party provided assignee agrees in writing to be bound by the terms and conditions set forth in the contract and provided such third party is a U.S.-based entity or maintains a registered agent and a certification of authority to do business in Virginia, or to an affiliate of Supplier, provided Supplier remains liable for affiliate's compliance with the terms and conditions set forth in this Contract;
19. Not complying with the contractual provisions at the following URL, which are mandatory provisions, required by law or by VITA, that are hereby incorporated by reference:  
<http://www.vita.virginia.gov/uploadedFiles/SCM/StatutorilyMandatedTsandCs.pdf>  
 The terms and conditions in documents posted to the aforementioned URL are subject to change pursuant to action by the legislature of the Commonwealth of Virginia or a change in VITA policy. 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 URL periodically;
20. Not complying with the contractual claims provision §2.2-4363 of the Code of Virginia which is also incorporated by reference;
21. Enforcing 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. They are expressly disclaimed. UCITA shall apply to this contract only to the extent required by §59.1-501.15 of the Code of Virginia;
22. Not complying with all applicable federal, state, and local laws, regulations, and ordinances;
23. Requiring that the Commonwealth waive its sovereign immunity or its immunity under the Eleventh Amendment;
24. Requiring that the Commonwealth, which is tax exempt, be responsible for payment of any taxes, duties, or penalties;

25. Requiring or construing that any provision in this contract conveys any rights or interest in Commonwealth or Authorized User data to Supplier;
26. Requiring the use of foreign currency. The currency which shall be used for this contract is United States Dollars. Any claim which may arise hereunder shall be settled in United States Dollars;
27. Obligating the Commonwealth beyond approved and appropriated funding. All payment obligations from public bodies under this contract are subject to the availability of federal, state, and/or local appropriations for this purpose. In the event of non-appropriation of funds for the items under this contract, VITA may terminate, in whole or in part, this contract or any order, for those goods or services for which funds have not been appropriated. This may extend to the renewal of maintenance services for only some of the licenses granted by Supplier. Written notice will be provided to the Supplier as soon as possible after legislative action is completed. There shall be no time limit for termination due to termination for lack of appropriations;
28. Permitting unilateral modification of the contract by Supplier;
29. Permitting termination by Supplier of the contract or the licenses granted thereunder, or permitting suspension of services by Supplier, except pursuant to an order from a court of competent jurisdiction;
30. Requiring or stating that the terms of the Supplier's standard form contract shall prevail over the terms of this addendum in the event of conflict;
31. Renewing or extending the contract beyond the initial term or automatically continuing the contract period from term to term;
32. Requiring that the contract be "accepted" or endorsed by the home office or by any other officer subsequent to execution by an official of VITA before the contract is considered in effect;
33. Delaying the acceptance of the contract or its effective date beyond the date of execution;
34. Defining "perpetual" license rights to have any meaning other than license rights that exist in perpetuity unless otherwise terminated in accordance with the applicable provisions of the contract;
35. Permitting modification or replacement of the contract pursuant to any new release, update or upgrade of Software or subsequent renewal of maintenance. If Supplier provides to any Authorized User an update or upgrade subject to additional payment, such Authorized User shall have the right to reject such update or upgrade;
36. Requiring purchase of a new release, update, or upgrade of Software or subsequent renewal of maintenance in order for the Commonwealth, VITA, or any Authorized User to receive or maintain the benefits of Supplier's indemnification of the Commonwealth, VITA, or such Authorized User against any claims of infringement on any third-party intellectual property rights;
37. Prohibiting the Commonwealth, VITA, or any Authorized User from transferring or assigning to any entity the contract or any license to Software pursuant to the contract;
38. Granting Supplier or an agent of Supplier the right to audit or examine the books, records, or accounts of VITA or any Authorized User;

The parties further agree as follows:

39. Supplier warrants that it is the owner of the Software or otherwise has the right to grant to all Authorized Users the license to use the Software granted hereunder without violating or infringing any law, rule, regulation, copyright, patent, trade secret or other proprietary right of any third party.
40. Supplier agrees to indemnify, defend and hold harmless the Commonwealth, VITA, any Authorized User, their officers, directors, agents and employees ("Commonwealth's Indemnified Parties") from and against any and all third party claims, demands, proceedings, suits and actions, including any related liabilities, obligations, losses, damages, fines, 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 or subcontractor of Supplier, (ii) any act or omission of any employee or subcontractor of Supplier, (iii) breach of any representation, warranty or covenant of

Supplier contained herein, (iv) any defect in the Software, or (v) any actual or alleged infringement or misappropriation of any third party's intellectual property rights by any of the Software. Selection and approval of counsel and approval of any settlement shall be accomplished in accordance with all applicable laws, rules and regulations. For state agencies the applicable laws include §§ 2.2-510 and 2.2-514 of the Code of Virginia. In all cases the selection and approval of counsel and approval of any settlement shall be satisfactory to VITA or the Authorized User against whom the claim has been asserted.

- 41. Any Authorized User may rely on independent contractors, acting on behalf of such Authorized User, to perform functions requiring the use of and access to the Supplier's Software. Nothing in the Supplier's standard form contract shall limit such third parties' from using or accessing the Software in order to perform such functions. If any invention, work of authorship, or confidential information is developed exclusively by an employee, consultant, contractor, or subcontractor of an Authorized User during the performance of Services by Supplier, Supplier shall have no ownership claim to such invention, work of authorship, or confidential information.
- 42. Any travel expenses incurred by Supplier in the course of performing the services must be pre-approved by the appropriate Authorized User and shall be reimbursed at the then-current per diem rates published by the Virginia Department of Accounts.
- 43. An Authorized User may require that Supplier personnel submit to a criminal background check prior to performance of any services under this contract.

This contract, consisting of this VITA addendum and the Supplier's standard form contract, constitute the entire agreement between the parties and may not be waived or modified except by written agreement between the parties.

This contract has been reviewed by staff of VITA. Its substantive terms are appropriate to the needs of VITA.

IN WITNESS WHEREOF, the parties have caused this contract to be duly executed as of the last date set forth below by the undersigned authorized representatives of the parties, intending thereby to be legally bound.

<p>VITA</p> <p>By: <u>Nelson P. Moe</u> (Signature)</p> <p>Name: <u>Nelson P. Moe</u> (Print)</p> <p>Title: <u>CIO</u></p> <p>Date: <u>11-19-2015</u></p>	<p>L-3 Data Tactics Corporation</p> <p>By: <u>Jackie Hughes</u> (Signature)</p> <p>Name: <u>Jackie Hughes</u> (Print)</p> <p>Title: <u>VP, Operations</u></p> <p>Date: <u>10/30/15</u></p>
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**EXHIBIT G LOBBYING CERTIFICATION  
CONTRACT NUMBER VA-150915-VION  
BETWEEN  
VIRGINIA INFORMATION TECHNOLOGIES AGENCY  
AND  
VION CORPORATION**

Exhibit G is hereby incorporated into and made an integral part of Contract Number VA-150915-VION (“Contract”) between the Virginia Information Technologies Agency (“VITA” or “Commonwealth” or “State”) and ViON Corporation (“Supplier”).

In the event of any discrepancy between this Exhibit G and the Contract, the provisions of the Contract shall control.

**CERTIFICATION REGARDING LOBBYING**

The undersigned certifies, to the best of his or her knowledge and belief, that:

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.

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.

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: \_\_\_\_\_

Organization: \_\_\_\_\_

Date: \_\_\_\_\_