



Commonwealth of Virginia
Virginia Information Technologies Agency

APPLICATION MIGRATION SERVICES

OPTIONAL USE CONTRACT

Date: March 13, 2015

Contract #: VA-150206-FUJT

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*. Authorized Users also include 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.ciev.org/Our-Colleges/Profiles.aspx>.

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FIN: 77-0554941

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Term: February 6, 2015 – February 5, 2018

Payment: Net 30 days

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NOTES: Individual Commonwealth of Virginia employees are not authorized to purchase equipment or services for their personal use from this Contract.

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



Information Technology Services Contract

between

The Virginia Information Technologies Agency

on behalf of

The Commonwealth of Virginia

and

Fujitsu America, Inc.

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INFORMATION TECHNOLOGY SERVICES CONTRACT

THIS INFORMATION TECHNOLOGY SERVICES CONTRACT ("Contract") is entered into by and between the Virginia Information Technologies Agency (VITA) pursuant to §2.2-2012 of the Code of Virginia and on behalf of the Commonwealth of Virginia (hereinafter referred to as "VITA"), and Fujitsu America, Inc. ("Supplier"), a corporation headquartered at 1250 East Arques Avenue, Sunnyvale, CA 94085-3470 to be effective as of February 6, 2015 ("Effective Date").

1. PURPOSE AND SCOPE

This Contract sets forth the terms and conditions under which Supplier shall provide services ("Services") to migrate applications from their current Unisys mainframe environment to a Windows server / SQL Server database environment within the Commonwealth's secure network for Authorized Users. This will include services to convert existing applications and designated related interfaces and ensure that those converted, migrated applications and interfaces function in the new environment as they did in the mainframe environment. This will include services to ensure the converted applications comply with all VITA security standards. It will also include services to assist and support staff as it transitions to and operates its applications in this new environment. Each of the foregoing shall be as further described in the Statement of Work.

2. DEFINITIONS

A. Acceptance

Successful performance of the Services at the location designated in the applicable Statement of Work, or completed and successful Acceptance testing in conformance with the Requirements as determined by the Authorized User (such determination not to be unreasonably withheld) in the applicable order or Statement of Work.

B. Agent

Any third party independent agent of any Authorized User.

C. Authorized Users

All public bodies, including VITA, as defined by §2.2-4301 and referenced by §2.2-4304 of the Code of Virginia. Authorized Users also include 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>.

D. Confidential Information

Any confidential or proprietary information of a Party that is disclosed in any manner, including oral or written, graphic, machine readable or other tangible form, to any other Party in connection with 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.

E. Deliverable

The tangible embodiment of the Services, including the development or creation of Work Product, performed or provided by Supplier as identified in the applicable Statement of Work or order.

F. Party

Supplier, VITA, or any Authorized User.

G. Requirements

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

H. Service

Any work performed or service provided, including provision to the Authorized User of any Deliverable, by Supplier under this Contract. Service includes the discovery, creation, or development of Work Product, if any.

I. Statement of Work (SOW)

Any document in substantially the form of Exhibit B (describing the deliverables, due dates, assignment duration and payment obligations for a specific project, engagement, or assignment for which Supplier shall be providing Services to an Authorized User), which, upon signing by both Parties, shall be deemed a part of this Contract.

J. 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).

K. 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 or "pre-existing rights" (as defined below).

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, not less than thirty (30) days prior to the expiration of any current term. 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 terms and conditions required for the operation of such order or SOW shall remain in full force and effect until Services 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) business 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 to which the breach relates, 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) business 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 to which the breach relates, in whole or in part. Any such termination shall be deemed a Termination for Breach or a Termination for Default. In addition, if Supplier is found by a court of competent

jurisdiction to be in violation of or to have violated 31 USC 1352 or if Supplier becomes a party excluded from Federal Procurement and Nonprocurement Programs, VITA may immediately terminate this Contract, in whole or in part, for breach. VITA shall provide written notice to Supplier of such termination and Supplier shall provide written notice to VITA if Supplier is charged with violation of 31 USC 1352 or if federal debarment proceedings are instituted against Supplier.

D. Termination for Non-Appropriation of Funds

All payment obligations 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 any order or SOW, in whole or in part, or an Authorized User may terminate its order or SOW, in whole or in part, for those goods or services for which funds have not been appropriated. Written notice will be provided to the Supplier as soon as possible after legislative action is completed.

E. Effect of Termination

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

In the event of a Termination for Breach or Termination for Default, Supplier shall accept return of any Deliverable that was not accepted by the Authorized User(s), and Supplier shall refund any monies paid by any Authorized User for such Deliverable, and all costs of de-installation and return of Deliverables shall be borne by Supplier.

F. 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 Services to any other supplier with whom VITA or such Authorized User contracts for provision of services identical or similar to the Services provided by Supplier pursuant to this Contract. 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 for a period not to exceed eighty (80) hours of Supplier effort; otherwise, Supplier shall provide such assistance at the hourly rate or a charge agreed upon by Supplier and VITA or an Authorized User.

G. Contract Kick-Off Meeting

Within 30 days of Contract award, Supplier may be required to attend a contract orientation meeting, along with the VITA contract manager/administrator, the VITA and/or other CoVa Agency project manager(s) or authorized representative(s), technical leads, VITA representatives for SWaM and 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.

H. Contract Closeout

Prior to the contract's expiration date, Supplier may be provided contract close out documentation and shall complete, sign and return to VITA Supply Chain Management within 30 days of receipt. This documentation may include, but not be limited to: Patent/Royalty Certificate, Tangible Property/Asset Certificate, Escrow Certificate, SWaM Reports Completion Certificate, 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. SERVICES

A. Nature of Services and Engagement

This Contract is optional use and non-exclusive and all Authorized Users may, at their sole discretion, receive benefits from third party suppliers of services similar to, or in competition with, services provided by Supplier.

By operation of this Contract, any order or SOW resulting in a commitment of any individual employee or contractor of Supplier, whether employed by Supplier or a contractor or subcontractor of Supplier, for more than one thousand (1,000) hours of work during any six (6) month period or of any such individual employee or contractor for more than eight (8) months in any twelve (12) month period shall allow VITA to require the replacement or removal of any such employee or contractor of Supplier, in its sole discretion.

B. Statement of Work (SOW)

All Services shall be performed at the times and locations set forth in the applicable SOW and at the rates set forth in Exhibit D 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, all Supplier personnel performing Services under an SOW issued under this Contract shall maintain daily time records of hours and tasks performed, which shall be submitted or made available for inspection by the Authorized User upon reasonable advance written notice.

C. Change Orders

All changes to the Services to be provided pursuant to any given SOW must be described in a written change request (template provided as Exhibit C), which includes any appropriate adjustments to the SOW. 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 perform any work beyond the scope of this Contract as such scope is defined in Exhibit A hereto.

D. Acceptance

Service(s) shall be deemed accepted when the Authorized User determines that such Service(s) meets the Requirements set forth in the applicable order or SOW. If applicable, Supplier shall be responsible for ensuring that any individual Deliverable functions properly with any other Deliverable provided pursuant to the order or SOW. Should a previously Accepted Deliverable require further modification in order to work properly with any other Deliverable, Supplier shall be responsible for all costs associated with such modification.

Authorized User shall commence Acceptance testing within five (5) business days, or within such other period as set forth in the applicable order or SOW, after receipt of the Service. Acceptance testing will be no longer than ten (10) business days, or such longer period as may be agreed in writing between Authorized User and Supplier, for each Deliverable or for the first instance of each Service type set forth in Exhibit B. Supplier agrees to provide to the Authorized User such assistance and advice as the Authorized User may reasonably require, at no additional cost, during such Acceptance testing. Authorized User shall provide to Supplier written notice of Acceptance upon completion of installation and 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.

E. Cure Period

Supplier shall correct any non-conformities identified during Acceptance testing and re-submit such non-conforming Service for re-testing within fifteen (15) business 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 SOW. Should Supplier fail to cure the non-conformity or deliver a Service which meets the Requirements, the Authorized User may, in its sole discretion: (i) reject the Service in its entirety, and any Service rendered unusable due to the non-conforming Service, and recover amounts previously paid hereunder for all such Services; (ii) issue a "partial Acceptance" of the Service with a mutually agreed equitable adjustment in the price to account for such deficiency; or (iii) conditionally accept the applicable Service while reserving its right to revoke Acceptance if timely correction is not forthcoming. Failure of a Service to meet, in all material respects, the Requirements after the second set of acceptance tests may constitute a default by Supplier. In the event of such default, the Authorized User may, at its sole discretion, terminate its order or SOW, in whole or in part, for the Services to be provided thereunder by Supplier in accordance with Section 3.C.

5. 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 chartered in Virginia and granted tax-exempt status under §501(c) (3) of the Internal Revenue Code, 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 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. Supplier further agrees that neither Supplier nor any of 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 Work Product source code, object code, executables, and documentation. Supplier shall at no time deny access to the Work Product, regardless of form, by the Commonwealth or the Authorized User, except in accordance with this Agreement.

B. Ownership

Supplier agrees that, whether or not the Services are considered "works made for hire" or an employment to invent upon payment therefore, all Work Product discovered, created or developed under this Contract shall be and shall remain the sole and exclusive property of the Commonwealth of Virginia 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, subject to any limitations set forth herein.

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, and other rights and protection, and in protecting trade secrets, with respect to such 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 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 Service Deliverables, Supplier hereby grants to the Commonwealth or the Authorized User an irrevocable, perpetual, non-exclusive, worldwide, royalty-free right and license to (i) use, modify, transmit, 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, each solely to the extent necessary for proper use of the Service Deliverable (and not on a standalone basis). It is expressly understood that "perpetual" license rights shall commence upon delivery of the Service Deliverables and shall exist in perpetuity unless otherwise terminated in accordance with the applicable provisions of the Contract or as a result of the Commonwealth's or an Authorized User's violation of its obligations with respect to such pre-existing rights. As used herein, the term "pre-existing rights" means all software, methodologies, tools, compilers, specifications, concepts, techniques, documentation and/or data utilized by Supplier in the performance of Services, together with any and all additions, enhancements, improvements or other modifications thereto (whether or not made during the performance of the Services), which (a) has been originated or developed by Supplier, its affiliates or by third parties outside of the scope of the Services, or (b) has been purchased by or licensed to Supplier. Pre-existing rights includes all patent, copyright, trade secret and other intellectual property rights related to any of the foregoing. Except for the license expressly granted in this Section 5.C., nothing contained in this Contract or otherwise shall be construed to grant to any party any right, title, license or other interest (whether by estoppel, implication or otherwise), in the pre-existing rights. VITA agrees that Supplier, its employees and agents shall be free to use and employ their general skills, know-how and expertise, and to use, disclose and employ any generalized ideas, concepts, know-how, methods, techniques or skills gained or learned during the course of any Services performed hereunder, subject to its obligations respecting Confidential Information pursuant to Section 13.

D. Return of Materials

Upon termination of this Contract, 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.

6. SUPPLIER PERSONNEL

A. Selection and Management of Supplier Personnel

Supplier shall take such steps as may be necessary to ensure that all Supplier personnel performing Services under this Contract are competent and knowledgeable of the contractual arrangements and the applicable 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 provided to Supplier, as well as applicable federal, state and local laws, including export regulations. Authorized User reserves the right to require the immediate removal from such Authorized User's premises of any employee, subcontractor or agent of Supplier whom such Authorized User believes has failed to comply or

whose conduct or behavior is unacceptable or unprofessional or results in a security or safety breach.

B. Supplier Personnel Supervision

Supplier acknowledges that, the personnel provided by Supplier, or any of its agents, contractors, or subcontractors, are and shall be the employees or contractors of Supplier, and Supplier shall have sole responsibility to supervise, counsel, discipline, review, evaluate, set the pay rates of (with respect to employees), provide (to the extent required by law) health care and other benefits for, and terminate the employment or engagement of such 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. Key Personnel cannot be removed without Authorized User's written permission. Such permission shall not be unreasonably withheld (for example: death, termination of employment). Supplier's obligations with respect to Key Personnel and Project Managers shall be described in the applicable SOW. Failure of Supplier to perform in accordance with such obligations may be deemed a default of this Contract or of the applicable SOW.

D. Subcontractors

Supplier shall not use subcontractors to perform the Services 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 any Services pursuant to such order or SOW to any subcontractor that is a party excluded from Federal Procurement and Nonprocurement Programs. In no event shall Supplier subcontract any Services to any subcontractor which is debarred by the Commonwealth of Virginia or which owes back taxes to the Commonwealth and has not made arrangements with the Commonwealth for payment of such back taxes.

7. GENERAL WARRANTY

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

A. Ownership

Supplier has the right to provide the Services, including Deliverables, without violating or infringing any law, rule, regulation, copyright, patent, trade secret or other proprietary right of any third party and the remedies for a breach of this warranty shall be as set forth in Section 14.A with respect to infringement indemnification and available remedies.

B. Supplier's Viability

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

C. Supplier's Past Experience

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

D. Performance

- i). All Services shall be performed with care, skill and diligence, consistent with or above applicable professional standards currently recognized in its profession, and Supplier shall be responsible for the professional quality, technical accuracy, completeness and coordination of all plans, information, specifications, Deliverables and Services furnished under this Contract (subject to any Authorized User performance terms in the applicable Statement of Work);
- ii). Supplier is possessed of superior knowledge with respect to the Services and Deliverables;

- iii). The documentation which Supplier is required to provide under this Contract shall be sufficient in detail and content to allow a user to understand and fully utilize the Deliverables without reference to any other materials or information.

E. Malicious Code

Supplier will use commercially reasonable efforts through quality assurance procedures to ensure that there are no computer viruses or undocumented features in any of the media or means used to deliver the Services. Supplier will use commercially reasonable means to scan any media on which Deliverables are provided to the Authorized User.

F. Limited Warranty Period and Remedy

During the warranty period of ninety (90) days, or as specified in the applicable order or SOW, Supplier warrants that the Services 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 a failure of the Services to meet the Requirements. If Supplier is unable to make the Service/Deliverable conform, in all material respects, to the Requirements within a reasonable period of time following written notification by an Authorized User, the Authorized User shall have the right to pursue its remedies at law to recover direct damages. The foregoing warranty is expressly conditioned upon (i) the Authorized User providing Supplier with prompt written notice during the warranty period of any claim hereunder, which notice must identify with particularity the non-conformity; (ii) the Authorized User's cooperation with Supplier in all reasonable respects relating thereto; and (iii) with respect to any Deliverable, the absence of any alteration or other modification of such Deliverable by anyone other than Supplier. The foregoing warranties will not apply if the alleged breach of warranty is due to third party hardware, software and any other services or goods supplied by third parties (including VITA or any Authorized User) not conforming to their respective technical, functional and performance specifications and criteria, and Supplier shall have no liability or obligation as a result thereof. Supplier does not warrant and is not responsible for the products or services of any third party.

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

8. TRAINING AND DOCUMENTATION

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

9. ORDERS AND COMPENSATION

A. Request for Quote

Authorized Users of this Contract, depending on the complexity of services required and/or each supplier's available resources, have the option to select one or more suppliers to provide services. In addition, an Authorized User may determine that a competitive process is required to ensure it receives the best value. In either or both of such circumstances, the Authorized User may, at its sole discretion, use a Request for Quote (RFQ) process to obtain services identical or similar to those provided by Supplier pursuant to this Contract.

Supplier shall respond to the RFQ by providing a quote, including an estimated total price, and, if requested by the Authorized User, a proposal and documentation of the qualifications of the individual(s) proposed for providing services to the Authorized User. In no event shall Supplier's quote exceed Supplier's Contract pricing. 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. Supplier's repeated failure to provide a quote in response to an RFQ may be grounds for termination of this Contract.

B. Order

Supplier is required to accept any mutually agreed upon order 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.

This ordering authority is limited to issuing orders or SOWs for the Services available under 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 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. Purchase Price and Price Protection

Exhibit D sets forth the fees and the appropriate Commonwealth discounts. Fees shall not increase and discounts shall not decrease for a period of not less than two (2) years from the Effective Date. 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 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.

D. Invoice Procedures

For an order or SOW with a period of performance not expected to exceed one (1) month, Supplier shall remit each invoice to the "bill-to" address provided with the order or SOW promptly after all Deliverables or Services have been accepted and in accordance with the milestone payment schedule, if any, in the applicable order or SOW. For a time and materials type order or SOW with a period of performance expected to exceed one (1) month, Supplier shall submit invoices to the ordering Authorized User monthly in arrears, unless otherwise specified in such order or SOW. For a fixed price type order or SOW, Supplier shall invoice in accordance with the milestone payment schedule, if any, in the applicable order or SOW; if such order or SOW does not include a milestone payment schedule, Supplier shall invoice after all Deliverables or Services have been accepted by the ordering Authorized User. No invoice shall include any costs other than those identified in the executed order or SOW, which costs shall be in accordance with Exhibit D. Without limiting the foregoing, all shipping costs are the Supplier's responsibility except to the extent such charges are identified in Exhibit D, or as noted in any executed order or SOW referencing this Contract. Any cost reimbursable work performed or expenses incurred by Supplier prior to the effective date of the order shall not be billed to or reimbursed by the Authorized User. Invoices issued by the Supplier shall identify at a minimum:

i). Deliverable or Service type, or project milestone, and description

- ii). Quantity, charge and extended pricing for each Deliverable and/or Service item or milestone; or, for a time and materials type order or SOW, the name(s) of the assigned employee(s), the hourly rate(s), and the number of hours worked;
- iii). Applicable order date or SOW date
- iv). This Contract number and the applicable order number
- v). 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.

E. Purchase Payment Terms

Supplier is responsible for the accuracy of its billing information. Supplier agrees not to issue invoices hereunder until Services have been performed and Accepted or items, deliverables, components and milestones have met Acceptance criteria. Charges for Services accepted more than ninety (90) days prior to receipt of a valid invoice may not be paid, except in accordance with a milestone payment schedule.

If there are any disputed items, the appropriate Authorized User shall pay all undisputed charges and promptly notify Supplier in writing of any disputed amount. Supplier shall thereupon review its records, and, if it does not concur with such Authorized User, provide such Authorized User with documentation to support the charge. If such charges remain in dispute, such dispute shall be resolved in accordance with the Dispute Resolution section of this Contract. In the absence of the Supplier's written evidence identifying the merit of the disputed amounts, Authorized User may not pay the disputed amounts and may consider the matter concerning the specific identified amounts closed. All payment terms are net 30 days after receipt of invoice.

F. Reimbursement of Expenses

If allowable pursuant to an Authorized User's order or SOW, 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 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)). If the Authorized User is a private institution chartered in Virginia and granted tax-exempt status under §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.

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.

G. Taxes

Supplier shall invoice, and the Authorized User agrees to pay, amounts equal to any applicable Federal, state or local sales, use, excise, intangibles, property, privilege or other taxes or assessments, however designated and levied, relating to any charges or Services rendered by Supplier pursuant to this Agreement, exclusive of taxes based on Supplier's net income. This sub-Section 9.G "Taxes" shall not apply if Authorized User provides Supplier with appropriate tax exemption documentation.

10. REPORTING

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

- Report of Sales; and
- 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.

11. 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 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 Statement of Work issued pursuant to this Contract.

12. RESERVED

13. 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 (provided such contracts contain provisions at least as restrictive as the provisions set forth herein). 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.

14. 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 by a third party 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 which results in personal injury, death or damage to real or tangible personal property, (ii) any failure by Supplier to comply with Section 13 (Confidentiality) which results in a breach of Confidentiality with respect to personally identifiable information (information that describes, locates or indexes anything about an individual including financial transactions, Social Security numbers, medical history, ancestry, religion, political ideology, criminal or employment record and photographs) or protected health information (as defined in HIPPA) as a result of Supplier's gross negligence or willful misconduct or (iii) any actual or alleged infringement or misappropriation of any third party's intellectual property rights by any of the Deliverables 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 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, the settlement shall be satisfactory to such institution.

Supplier shall have no obligation under this Section 14.A. or other liability for any infringement or misappropriation claim resulting or alleged to result from: (1) use of the Deliverables or any part thereof in combination with any non-Supplier approved equipment, software or data, or in any manner for which the same was not designed, or if same has been modified or altered by an person or entity other than Supplier; (2) any aspect of the Commonwealth, VITA, or an Authorized User's software, documentation or data which existed prior to Supplier's performance of Services; (3) any use of a superseded or altered release of some or all of the Deliverables if infringement would have been avoided by the use of a subsequent unaltered release of the Deliverables; or (4) any claim arising from any instruction, information, design, specification, software, data or other materials furnished by the Commonwealth, VITA or an Authorized User or any third party to Supplier hereunder (excluding any of the foregoing to extend approved by Supplier's signature in a Statement of Work). This Section 14 sets forth the exclusive remedy and entire liability and obligation of each party with respect to intellectual property infringement or misappropriation claims, including patent or copyright infringement claims and trade secret misappropriation.

In the event that a Claim is commenced against any of Commonwealth's Indemnified Parties alleging that use of any Deliverable or that the provision of Services 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 Services or Deliverables, 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 Services or Deliverables; (b) replace or modify such infringing Services or Deliverables with non-infringing functionally equivalent deliverables or services or (c) provide any Authorized User with comparable temporary replacement deliverables and services. If Supplier cannot accomplish any of the foregoing within a reasonable time and at commercially reasonable rates, then Supplier shall cease performance of the infringing Service, accept the return of the infringing Services or Deliverables, along with any other Services or Deliverables rendered unusable by any Authorized User as a result of the infringing Services or Deliverables, and refund the price paid to Supplier for such Services and Deliverables (subject to 5 year straight line depreciation).

B. Liability

To the extent permitted by applicable law, whatever the legal basis for, or characterization of, the claim, Supplier's liability hereunder shall be limited to two (2) times the annual value of this Contract, except with respect to (i) personal injury, death, or damage to real or tangible personal property caused by Supplier's negligence or willful misconduct, or (ii) Supplier's fraud, 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.

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

15. INSURANCE

In addition to the insurance coverage required by law as specified in the URL identified in the Incorporated Contractual Provisions section of this Contract, Supplier shall carry errors and omissions insurance coverage in the amount of \$1,000,000 per claim.

16. 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 each of which shall be identified in the applicable SOW. 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. Any modifications to the foregoing policies which results in a change to the scope of work or cost of services shall be addressed pursuant to the change control process.

Supplier shall promptly upon discovery by Supplier, 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.

17. 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.

18. 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.

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/SCM/StatutorilyMandatedTsandCs.pdf>

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

The then-current 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 E hereto.

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 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's name 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

The provisions of this Contract regarding License, Rights To Work Products, Warranty, Purchase Payment Terms, Reimbursement of Expenses, Confidentiality, Liability and 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 Services rendered or the amounts due Supplier for such Services under this Contract. VITA's right to audit shall be limited as follows:

- i). Three (3) years from Service performance date;
- ii). Performed not more than once per year;
- iii). Performed at Supplier's premises, during normal business hours at mutually agreed upon times; and
- iv). Excludes access to Supplier cost information.

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

P. Non-solicitation

During the term of each SOW and for a period of twelve (12) months thereafter, neither party shall, directly or indirectly, solicit for employment or engagement or employ or engage, whether as an employee or independent contractor, or accept services provided by, any employee, officer or independent contractor of the other party who performed any work in connection with or related to the Services under such SOW..

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:

- i). Exhibit A Service Requirements
- ii). Exhibit B Statement of Work (SOW) Template
- iii). Exhibit C Change Order Template
- iv). Exhibit D Service Fees
- v). Exhibit E 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 or SOW 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 D.

Any modification to an order or SOW that extends the period of performance beyond one (1) year or increases the value of such order or SOW above US\$100,000 shall, absent the prior written

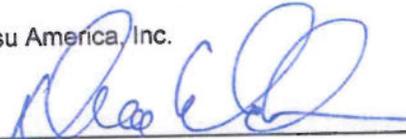
approval of VITA, be voidable by VITA, in its sole discretion. If an order or SOW is voided by VITA, such SOW shall no longer be binding on either Party and all obligations with respect to such SOW shall expire.

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.

Fujitsu America, Inc.

By: 
(Signature)

Name: Duane Wichman
(Print)

Title: Commercial Manager

Date: February 6, 2015

Address for Notice:

1250 E. Arques Avenue
Sunnyvale, CA 94085

Attention: Legal Department

VITA

By: 
(Signature)

Name: SAM NIXON
(Print)

Title: CIO

Date: February 18, 2015

Address for Notice:

Attention: Contract Administrator

**EXHIBIT A SERVICE REQUIREMENTS
 CONTRACT NUMBER VA-150206-FUJT
 BETWEEN
 VIRGINIA INFORMATION TECHNOLOGIES AGENCY
 AND
 FUJITSU AMERICA, INC.**

Exhibit A is hereby incorporated into and made an integral part of Contract Number VA-150206-FUJT (“Contract”) between the Virginia Information Technologies Agency (“VITA” or “Commonwealth” or “State”) and Fujitsu America, Inc. (“Supplier”). In the event of any discrepancy between this Exhibit A and the Contract, the provisions of the Contract shall control.

1.1 General

	Requirements	A	B
1	<p>Does your solution comply with all current COV ITRM Policies and Standards, as applicable, found at: http://www.vita.virginia.gov/library/default.aspx?id=537.</p> <p>If proposed solution does not, please provide details that specify the Standard/Policy and how Supplier's solution does not comply.</p>	Yes	<p>Fujitsu’s proposed solution is based on Microsoft .Net software and platform for all aspects of the Application from Online, Batch, Interface and Database. Fujitsu’s approach and solution complies with COV ITRM Policies and Standards for the Enterprise Architecture targeted at standardizing and simplifying the many technologies and products used in the Commonwealth today.</p> <p>Fujitsu’s proposed solution, promotes reduction in the number of technologies and products used to develop and support production systems in the Commonwealth through the use of standard software such as Visual Studio, SQL Server management studio and Team Foundation Server.</p>
2	<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:</p>	Yes	<p>Fujitsu’s proposed solutions support the implementation of legacy evolution projects that are compliant with Section 508 of the Rehabilitation Act of the United States, legislation which requires that electronic and information technology, Web-based Intranet and Internet information, and applications that are procured, developed, maintained or used by Federal agencies be accessible to people with disabilities. We are proud to support these accessibility standards so that our customers can make information technology available to all users, including those with visual, auditory and mobility impairments.</p>

	Requirements	A	B
	<p>http://www.vita.virginia.gov/uploadedFiles/Library/AccessibilityStandard_GOV103-00_Eff_11-04-05.pdf</p> <p>(Refer to www.section508.gov and www.access-board.gov 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: (<i>The VPAT template is located in APPENDIX C of the Accessibility Standard (GOV103-00)</i>).</p> <p>If no, does your solution provide alternate accessibility functionality? Please describe.</p>		<p>The proposed solution may include developer tools, client software and server software (each product line includes unique combinations of these elements).</p> <ul style="list-style-type: none"> ■ Fujitsu Progression is 508 compliant and supports the implementation of 508 compliant user interfaces. Please be aware, our service is subject to any limitations resulting from the of the underlying client platform (Windows, .NET or Web Browser) in regards to 508 compliance. <p>Fujitsu Windows-based products can take advantage of the various accessibility options built into Windows. These options allow users to manipulate features such as the keyboard, display, mouse and sound. In addition, our software provides automatic text generation and has out-of-the-box, built-in support for direct interfacing with the Windows and Java speech synthesis features, allowing developers to incorporate spoken text into the product. Fujitsu products are compatible with adaptive equipment - screen readers, Braille displays, TTYs and others - that people with disabilities use for information and communication access.</p> <p>Fujitsu understands the importance of supporting users with disabilities, and is committed to offering legacy evolution software solutions that support current accessibility standards.</p> <p>For details on Fujitsu’s Section 508 compliance including required VPAT please see http://solutions.us.fujitsu.com/www/content/accessibility/index.php.</p>
3	<p>DHRM will assign a Commonwealth qualified Project Manager to manage the project associated with your solution and to submit the required deliverables as described in the Commonwealth Project Management Standards (http://www.vita.virginia.gov/oversight/projects/default.aspx?id=551). Does your solution provide resources that can provide inputs into the deliverables referenced therein as needed?</p> <p>Please explain and provide details.</p>	Yes	<p>Fujitsu’s proposed solution does provide resources that will contribute as inputs into the PMIS standard deliverables to be produced. Fujitsu will utilize its Project Management method, Macroscopic® Project, to control and implement the PMIS (and all its subsystems) Migration Project. Macroscopic® Project is part of Fujitsu Macroscopic® methodology.</p> <p>Macroscopic® Project processes and procedures comply with the principles and framework proposed in the Guide to the Project Management Body of Knowledge (PMBOK) published by the Project Management Institute (PMI). Fujitsu is a PMI Registered Education Provider.</p> <p>Fujitsu will work closely with the DHRM Commonwealth team to create a Project Statement that correctly reflects the scope, requirements, constraints, and assumptions of the project. The Fujitsu project manager will work with the DHRM Commonwealth team to define a process for review, assessment, and approval for scope change and to determine how to effectively handle any changes to the scope definition.</p>

	Requirements	A	B
			<p>The Fujitsu Project Manager will customize templates from Macroscopic® Project in support of the deliverables described in the Commonwealth Project Management Standards.</p>
4	<p>Does your solution comply with the requirements stipulated in the COV ITRM SEC 501 Security Standard (http://www.vita.virginia.gov/uploadedFiles/VITA_Main_Public/Library/PSGs/Information_Security_Standard_SEC501.pdf)? Please explain and provide details.</p>	Yes	<p>The four essential components of this Proposed solution are:</p> <ul style="list-style-type: none"> ■ Secure by design. Software requires a secure design as a foundation for repelling attackers and protecting data ■ Secure by default. You should not have to work to make a fresh installation secure; it should be that way by default ■ Secure in deployment. Software should help to keep itself updated with the latest security patches and assist in maintenance ■ Communications. Communicate best practices and evolving threat information so that you can proactively protect your systems <p>Fujitsu Expertise and Experience</p> <p>This solution will leverage and benefit from all components listed above. For many years now the processes in Legacy Modernization have been adapted to minimize or eliminate security risks. The three core processes are:</p> <p>Attack surface reduction (ASR) – This process looks at all entry points in the code (network, file etc.) and reviews for controlled privilege access. (i.e. Authenticated versus Anonymous, UDP versus TCP etc.) The objective is to reduce the surface to the smallest possible size. Attack surface analysis focuses on portions of an application that are exposed to unauthenticated or unauthorized users. Objectives are:</p> <ul style="list-style-type: none"> ■ Reducing access to entry points by untrusted users; ■ Reducing application privileges to limit damage potential; ■ Minimize or eliminate anonymous threat paths; ■ Disable unused protocols. <p>Threat Analysis – This process includes: Modeling and Identification of threats, and creating a Mitigation Strategy and Test Plan for every threat. (i.e. Spoofing has authentication tests, tampering has integrity tests, elevation of privilege has authorization tests)</p> <p>Security testing - This process includes techniques like “fuzzing” where a method that takes valid data and subtly changes the data and injects it into the application. The application can then be assessed by its response to the fuzzed data.</p>

	Requirements	A	B
			<p>This can include:</p> <ul style="list-style-type: none"> ■ Randomly exchanging bytes in a file; ■ Writing a random series of bytes of a random size at a random location in file; ■ Look for known integers to change the sign, or make them too large or too small etc. <p>Tools to support secure code development may include: PRefast, FxCop and Visual Studio Application Verifier, Code Metrics , Code Analysis Policy tools.</p> <p>Security designations</p> <p>Fujitsu has world class trained secure developers and has built secure code applications globally for the highest security applications. Fujitsu will bring this expertise to the DHRM and VITA team and this solution.</p> <p>Plans to minimize or eliminate vulnerabilities</p> <p>Intrusion – The proposed solution includes Microsoft ISA and Forefront Intrusion detection and prevention technology.</p> <p>Cross-Site Scripting – The principals apply to strongly validate all input. Input is constrained, rejected and sanitized. Each web service in the solution shares common application blocks that embed these security principals to eliminate XSS.</p> <p>SQL Injection – Best practices eliminate SQL Injection by enforcing in-line authentication through to the database. This eliminates exposed accounts and passwords. All services are ACL controlled and role/privilege protected and system level errors are never propagated directly to an end-user. All SQL is review for adherence to secure computing guidelines including fully parameterized queries.</p> <p>Database Connection close – The database connection to be open requires an active authenticated user by default. The process will close automatically if an exception is generated or time exceeded.</p> <p>Broken authentication and session management – We use only inbuilt session management mechanisms and Windows Authentication. Logins are from encrypted pages only and we use timeout periods and include logout links on each page.</p> <p>Transmission and storage – All communications are IPSEC external to the Datacenter and sensitive information can be encrypted in production and for backup/transmission as will be determined by the security design process.</p>

1.2 Project Based Expertise

	Requirements	A	B
1	Does your solution include project-dedicated resources with prior experience developing any server-based application? Please explain and provide details.	Yes	<p>Fujitsu’s proposed solution does include project-dedicated resources with prior experience developing any server-based application.</p> <p>The Fujitsu team <u>is composed of project-dedicated specialists</u> who have built, successfully deployed and operated many server-based application for complex organizations, taking into account multiple constraints. Fujitsu will capitalize on its large pool of resources specializing in the delivery of Microsoft applications to deliver the VITA project.</p> <p>To support DHRM and VITA in reaching the desired outcomes for this project, Fujitsu will not hesitate to share their knowledge, approaches, methodologies, and tools in Technology Modernization and the delivery of large system developments based on over 30 years of experience in this area.</p> <p>Together, the Fujitsu team possesses all the credentials and capabilities required to address the Modernization of the Legacy Unisys System. Fujitsu is introducing a unique approach to Legacy Modernization that has been developed and refined through the combination of several projects of exact same legacy and target technologies executed over the last 10 years.</p>
2	Does your solution include project-dedicated resources with prior experience transitioning any mainframe-based applications to a server-based environment? Please explain and provide details.	Yes	<p>Fujitsu’s proposed solution does include project-dedicated resources with prior experience transitioning any mainframe-based applications to a server-based environment.</p> <p>The Fujitsu team <u>is composed of project-dedicated specialists</u> who have successfully transition Mainframe based to server-based application for complex organizations, taking into account multiple constraints. Fujitsu will capitalize on its large pool of resources specializing in the delivery of Microsoft applications to deliver the VITA project.</p> <p>To support DHRM and VITA in reaching the desired outcomes for this project, Fujitsu will not hesitate to share their knowledge, approaches, methodologies, and tools in Technology Modernization and the delivery of large system developments based on over 30 years of experience in this area.</p> <p>Together, the Fujitsu team possesses all the credentials and capabilities required to address the Modernization of the Legacy Unisys System. Fujitsu is introducing a unique approach to Legacy Modernization that has been developed and refined through the combination of several projects of exact same legacy and target technologies executed over the last 10</p>

	Requirements	A	B
			years.
3	Does your solution include project-dedicated resources with prior experience transitioning any production application that replicates system functionality from one environment to another? Please explain and provide details.	Yes	<p>Almost all of Fujitsu’s modernization/transition projects from Mainframe to server based were <u>mission critical Production applications that replicates system functionality from one environment to another.</u></p> <p>The Fujitsu team <u>is composed of project-dedicated specialists</u> with prior experience transitioning production mainframe-based (IBM, Unisys, HP, Fujitsu) applications to a server-based environment which is the core capability and capability of the Fujitsu Legacy Modernization offering.</p> <p>Fujitsu will capitalize on its large pool of resources specializing in the transition of legacy Mainframe (such as Unisys) applications to the Microsoft platforms.</p> <p>To support DHRM and VITA in reaching the desired outcomes for this project, Fujitsu will not hesitate to share their knowledge, approaches, methodologies, and tools in Legacy Modernization/transition of large system based on over 30 years of experience in this area. Together, The Fujitsu team and dedicated resources possess all the credentials and capabilities required to address the Modernization of the DHRM Unisys Sperry Legacy System to the .NET platform. Fujitsu is introducing a unique automated conversion approach via the use of its own Fujitsu progression solution to Legacy Modernization that has been developed and refined through the combination of several projects of exact same legacy and target technologies executed over the last 10 years.</p> <p>Those projects covered all project lifecycle stages, from project start-up to closure. Most notably, the capability and experience of the team combines the skills required to deliver the Modernized PMIS application (and all its subsystems). This Fujitsu dedicated team has experience in the modernization of several Unisys Sperry application system successfully delivered at :</p> <ol style="list-style-type: none"> 1) <i>New Brunswick - Department of Public Safety – Motor Vehicle</i> 2) <i>Washington State - Department of Licensing (DOL)</i>
4	For the current DHRM Personnel Management Information System (PMIS) application with 900+ active users across 238 State agencies, the	Yes	The Fujitsu team <u>is composed of project-dedicated specialists</u> with prior experience migrating mainframe-based applications to run as a web application in a server-based environment with robust transaction turnaround time as this is the core capability of the

	Requirements	A	B
	<p>transaction turnaround time norm for its 300+ data-entry-intensive display and update transactions is less than one second; and this norm is currently maintained even during periods of heavy system usage. The replicated application will need equivalent transactional robustness characteristic of its Windows server / .Net and web-based environment (hereinafter "new environment").</p> <p>Does your solution include project-dedicated resources with prior experience migrating existing mainframe applications to run as web applications in a server-based environment with robust transaction turnaround time norm(s)? Please explain and provide details.</p>		<p>Fujitsu Progression Solution offering which has been successfully used on many previous projects of same legacy technology (Unisys Sperry COBOL) to .Net (using either C# or Fujitsu NetCOBOL for .NET as the target language).</p> <p>In all our previous migration implementation of this nature, we have always delivered a robust application with proper response time that meets our customer's requirement.</p> <p>Fujitsu will also capitalize on its large pool of resources specializing in the migration of legacy Mainframe (such as Unisys) applications to the Microsoft platforms.</p> <p>Together, The Fujitsu team and the dedicated resources possess all the credentials and capabilities required to address the Modernization of the DHRM Unisys Sperry Legacy System to the .NET platform. Fujitsu is introducing a unique approach to Legacy Modernization that has been developed and refined through the combination of several projects of exact same legacy and target technologies executed over the last 10 years.</p>
5	<p>The current PMIS application employs dynamic security agency access controls that accommodate different Commonwealth of Virginia (COV) agency types or subsets (that include but are not limited to: executive branch agencies, "exempt" or independent agencies, higher-education agencies and agencies with parent/sub-agency structures). The dynamic agency access controls allow for agencies individually to be in one, some or all of PMIS and its subsystems. In addition, the current PMIS application employs dynamic application user controls that include (but is not limited to) allowing user access dynamically to one or more agencies; and within an agency to one or more PMIS subsystem or user function (e.g. transactions) depending upon the user's approved permissions. The online transaction programs work with the application user access controls to dynamically present transaction screens according to user access permissions.</p>	Yes	<p>Fujitsu's proposed solution does include a strong project-dedicated team resources with over 10 years of prior experience migrating mainframe applications to run as web applications in a server-based environment that had similar or greater complexity.</p> <p>Fujitsu has a long history of successfully delivering system implementation projects of a similar size, scale, scope and complexity as the PMIS application (and all its subsystems) Migration Project such as</p> <ol style="list-style-type: none"> 1) <i>New Brunswick - Department of Public Safety – Motor Vehicle</i> 2) <i>Washington State - Department of Licensing (DOL)</i> <p>In both of the above successful migration projects referenced, The legacy System were Unisys Sperry COBOL, DPS/TIP, DMS, ECL and the target technology were the same web based C#, IIS/ASP.Net proposed solution.</p> <p>Also, the proposed solution based on our Progression Automated tool suite and used in several previous Unisys Sperry COBOL to .Net project, does carry forward all the security dynamic found within the business logic to determine user rights and permissions and present and/or open the proper data and field to the user. PMIS application security administered through the online transaction such as PBS017 will be replicated to ensure so the same security admin and functionality is consistent in the new environment.</p>

	Requirements	A	B
	<p>Does your solution include project-dedicated resources with prior experience migrating mainframe applications to run as web applications in a server-based environment that had similar or greater complexity?</p> <p>Please explain and provide details.</p>		
6	<p>The current PMIS application and related subsystem applications processes 25,000 transactions per day during peak periods of operation with the expectation that this peak daily volume will increase in the future.</p> <p>Does your solution provide project dedicated resources with prior experience migrating mainframe applications that continue to process high transaction volumes with similar quick mainframe response times? Please explain and provide details.</p>	Yes	<p>Fujitsu’s proposed solution does provide project dedicated resources with prior experience migrating mainframe applications that continue to process high transaction volumes with similar quick mainframe response times.</p> <p>As example, in both of the following delivered projects, the transaction volumes were similar or greater to the PMIS application (and all its subsystems) transaction volume of 25,000 transaction per days.</p> <p>The modernized application for the New Brunswick currently supports an average of 100,000 transactions per days with peaks exceeding that average.</p> <p>As for the Washington State Department of Licensing modernized applications, the volumes of transactions was even greater.</p>
7	<p>The current PMIS application resides in the Unisys (Sperry) mainframe. The PMIS database uses the Unisys Data Management System (DMS 2200) and a Codasyl Data Model (1969). The PMIS mainframe transactions use the Unisys Display Processing System (DPS 2200) for screen processing to execute in the TIP environment. Batch processing uses Unisys Executive Control Language (ECL) [including processors such as SORT, SSG and others] and Ansi COBOL and other Unisys mainframe environment processors and utilities.</p>	Yes	<p>Fujitsu’s solution include project-dedicated resources with working technical knowledge of the Unisys products as described in this questions from having successfully working and delivered the following projects which were from the exact same Unisys Sperry reported technology going to the Microsoft .NET platform (see project references and detail for more information on project scope and technology involved):</p> <ol style="list-style-type: none"> 1) <i>New Brunswick - Department of Public Safety – Motor Vehicle</i> 2) <i>Washington State - Department of Licensing (DOL)</i> <p>Utilizing the experience gained from the types of projects listed above, we will engage our</p>

	Requirements	A	B
	<p>Application operations, maintenance and development employs Unisys Query Language Processor (QLP), Unisys UDSMON & DBE, KMSystems IQU/QLINK/IQU-Plus-1, and the Mapper environment (manual functions and runs).</p> <p>Does your solution include project-dedicated resources with working technical knowledge of the Unisys products as described above? Please explain and provide details.</p>		<p>subject matter experts (i.e. Legacy Unisys Technology) to consult on the project to ensure we successfully comply and meet DHRM and VITA's requirements.</p>
8	<p>Does your solution include project-dedicated resources with prior experience of the Unisys products as described in the preceding requirements above? Please explain and provide details.</p>	Yes	<p>Fujitsu' proposed solution does include project-dedicated resources with working technical knowledge of the Unisys products as described in this questions from having successfully working and delivered the following projects which were from the exact same Unisys Sperry reported technology going to the Microsoft .NET platform (see project references and details for more information on project scope and technology involved):</p> <ol style="list-style-type: none"> 1) <i>New Brunswick - Department of Public Safety – Motor Vehicle</i> 2) <i>Washington State - Department of Licensing (DOL)</i> <p>Utilizing the experience gained from the types of projects listed above, we will engage our subject matter experts (i.e. Legacy Unisys Technology) to consult on the project to ensure we successfully comply and meet DHRM and VITA's requirements.</p>
9	<p>DHRM needs the replicated applications to run as web applications in a Windows .Net environment with the underlying application code to be written in a version of COBOL that runs/compiles into .Net code or C#.Net and integrates with the Microsoft Visual Studio environment (including Team Foundation Server).</p> <p>Does your solution provide project-dedicated</p>	Yes	<p>Fujitsu proposed solution does provide project-dedicated resources with prior experience replicating Unisys mainframe applications as web applications that are written in a version of COBOL that runs in a Windows .Net environment which was achieved using our Fujitsu Net COBOL for .NET compiler (WADOL project) or C#.Net (New Brunswick Project) and integrates with the Microsoft Visual Studio environment (including Team Foundation Server). The skills, competency and expertise comes from having successfully working and delivered the following projects using Net COBOL for .NET, C# and TFS (see project references and detail for more information on project scope and technology involved):</p> <ol style="list-style-type: none"> 1) <i>New Brunswick Department of Public Safety – Motor Vehicle</i> <ol style="list-style-type: none"> a. <i>Unisys COBOL to Microsoft C# .NET</i>

	Requirements	A	B
	<p>resources with prior experience replicating Unisys mainframe applications as web applications that are written in a version of COBOL that runs in a Windows .Net environment or C#.Net and integrates with the Microsoft Visual Studio environment (including Team Foundation Server)?</p> <p>Please explain and provide details.</p>		<p><i>b. Integration with Visual Studio and TFS</i></p> <p>2) <i>Washington State Department of Licensing (DOL)</i></p> <p><i>a. Unisys COBOL to Fujitsu NetCOBOL for .NET</i></p> <p><i>b. Integration with Visual Studio and source safe</i></p>
10	<p>The completed PMIS replication shall include the following:</p> <ol style="list-style-type: none"> 1. necessary hardware to support the replicated applications in three target environments (i.e., development, test and production) 2. necessary .Net development and other software to maintain, update and operate the replicated applications 3. appropriate change and configuration management procedures for maintaining and updating the replicated applications <p>Does your solution provide the expertise that will make recommendations for each of the three areas specified above? Please explain and provide details.</p>	Yes	<p>Fujitsu’s proposed solution will provide the expertise to make recommendations for each of the three areas specified. This is a standard service in all our modernization projects. We engage subject matter experts to recommend hardware/software configuration that will allow the modernized system to run at high efficiency.</p> <p>As part of the project, we will work together to establish the proper change and configuration management procedure for maintaining and updating the replicated applications. This is done together so DHRM and/or VITA staff can learn at the same time as the project is being executed thus allowing all parties to be up to speed with the new procedure post go-live.</p> <p>Please refer to the training response for more details about knowledge transfer processes.</p>
11	<p>Does your solution include a full-time project manager, dedicated to delivering your solution, who has successfully managed mainframe to server migration projects?</p>	Yes	<p>Fujitsu’s proposed solution does include a full-time project manager that has successfully managed mainframe to server migration projects in the past. The Project manager will be solely dedicated to delivering your solution.</p> <p>The Fujitsu Project Manager has over 35 years’ experience in the Information Technology consulting business, specializing in project management and in Fujitsu’s Macroscopic method. Specialized in managing application system delivery projects including analysis, design, construction, testing and implementation, on mainframe and Windows technologies. Proven track record of successfully managing major system delivery projects involving the</p>

	Requirements	A	B
			<p>entire system development life cycle.</p> <p>The Fujitsu Project Manager has worked on multiple application system delivery projects, including major modernization projects over the last 15 years including as example:</p> <ul style="list-style-type: none"> ■ Province of New Brunswick – Department of Public Safety - Motor Vehicle Modernization project <ul style="list-style-type: none"> • Applications replicated and transitioned from Unisys Sperry COBOL to Windows .Net using C#, IIS, SQL server ■ Washington State - Department of Licensing - Modernization projects <ul style="list-style-type: none"> • Applications transitioned from Unisys Sperry COBOL to Windows .Net using Fujitsu NetCOBOL for .NET, IIS, SQL server ■ Washington State Department of Licensing - Modernization projects <ul style="list-style-type: none"> • Applications replicated and transitioned from TRANSACT code from an HP-3000 Mainframe to Windows platform using VB.NET, IIS, SQL Server
12	Does your solution provide resources that have previous experience with the Unisys 2200 mainframe environment (DMS-2200, DPS-2200, ECL)?	Yes	<p>Fujitsu’s proposed solution will provide resources that have previous experience with the Unisys 2200 mainframe environment (DMS-2200, DPS-2200, ECL). The skills, competency and expertise comes from having successfully worked and delivered the following Unisys Sperry to .NET projects (see project references and details for more information on the project scope and technology involved):</p> <ol style="list-style-type: none"> 1) <i>New Brunswick Department of Public Safety – Motor Vehicle</i> 2) <i>Washington State Department of Licensing (DOL)</i>
13	Does your solution provide resources knowledgeable in the conversion of Unisys mainframe DMS-2200 network database to SQL server relational database?	Yes	<p>Fujitsu’s proposed solution will provide resources that have previous experience with the Unisys 2200 mainframe environment (DMS-2200, DPS-2200, ECL). The skills, competency and expertise comes from having successfully worked and delivered the following Unisys Sperry to .NET projects (see project references and details for more information on the project scope and technology involved):</p> <ol style="list-style-type: none"> 1) <i>New Brunswick Department of Public Safety – Motor Vehicle</i> 2) <i>Washington State Department of Licensing (DOL)</i>

	Requirements	A	B
14	Does your solution provide resources that have previous conversion experience in converting a Unisys mainframe DMS-2200 network database to SQL server relational database?	Yes	<p>Fujitsu’s proposed solution will provide resources that have previous experience with the Unisys 2200 mainframe environment (DMS-2200, DPS-2200, ECL). The skills, competency and expertise comes from having successfully worked and delivered the following Unisys Sperry to .NET projects (see project references and details for more information on the project scope and technology involved):</p> <ol style="list-style-type: none"> 1) <i>New Brunswick Department of Public Safety – Motor Vehicle</i> 2) <i>Washington State Department of Licensing (DOL)</i>
15	Does your solution provide resources to write and execute programs to perform database strip and load processing from the current DMS-2200 database to the new SQL Server database?	Yes	<p>Fujitsu’s proposed solution will provide resources that have previous experience with the Unisys 2200 mainframe environment (DMS-2200, DPS-2200, ECL). The skills, competency and expertise comes from having successfully worked and delivered the following Unisys Sperry to .NET projects (see project references and details for more information on the project scope and technology involved):</p> <ol style="list-style-type: none"> 1) <i>New Brunswick Department of Public Safety – Motor Vehicle</i> 2) <i>Washington State Department of Licensing (DOL)</i>
16	Does your solution provide resources knowledgeable in the conversion of Unisys mainframe batch ECL run streams to Windows Server environment?	Yes	<p>Fujitsu’s proposed solution will provide knowledgeable resources in the conversion of Unisys mainframe batch ECL run streams to Windows Server environment. The skills, competency and expertise comes from having successfully worked and delivered the following Unisys Sperry to .NET projects (see project references and details for more information on the project scope and technology involved):</p> <ol style="list-style-type: none"> 1) <i>New Brunswick Department of Public Safety – Motor Vehicle</i> 2) <i>Washington State Department of Licensing (DOL)</i>
17	Does your solution provide resources that have previous conversion experience in converting Unisys mainframe batch ECL run streams to Windows Server environment?	Yes	<p>Fujitsu’s proposed solution will provide knowledgeable resources in the conversion of Unisys mainframe batch ECL run streams to Windows Server environment. The skills, competency and expertise comes from having successfully worked and delivered the following Unisys Sperry to .NET projects (see project references and details for more information on the project scope and technology involved):</p> <ol style="list-style-type: none"> 1) <i>New Brunswick Department of Public Safety – Motor Vehicle</i>

	Requirements	A	B
			2) <i>Washington State Department of Licensing (DOL)</i>
18	Does your solution provide resources knowledgeable in the conversion of Unisys on-line TIP DPS-2200 environment to Windows Server environment?	Yes	<p>Fujitsu’s proposed solution will provide resources knowledgeable in the conversion of Unisys on-line TIP DPS-2200 environment to Windows Server environment. The skills, competency and expertise comes from having successfully worked and delivered the following Unisys Sperry to .NET projects (see project references and detail for more information on project scope and technology involved):</p> <p>1) <i>New Brunswick Department of Public Safety – Motor Vehicle</i></p> <p>2) <i>Washington State Department of Licensing (DOL)</i></p>
19	Does your solution provide resources that have previous conversion experience in converting a Unisys on-line TIP DPS-2200 environment to a Windows Server environment?	Yes	<p>Fujitsu’s proposed solution will provide resources that have previous experience in converting a Unisys on-line TIP DPS-2200 environment to a Windows Server environment. The skills, competency and expertise comes from having successfully worked and delivered the following Unisys Sperry to .NET projects (see project references and detail for more information on project scope and technology involved):</p> <p>1) <i>New Brunswick Department of Public Safety – Motor Vehicle</i></p> <p>2) <i>Washington State Department of Licensing (DOL)</i></p>

1.3 Methodology & Approach

	Requirements	A	B
1	<p>Upon completion and rollout, the replicated PMIS application (and all its subsystems) shall include all application functionalities (including database, transactions and batch processes replication) from the current Unisys environment migrated to the new environment. The replicated applications needs to run as web applications in the .Net environment with the equivalent look, feel and security (including agency control and user access control as described above) in the new environment as they had in the Unisys environment. The replicated application (Production instance) shall be used by the same user population as is the current mainframe application.</p> <p>Does your solution provide a methodology to organize and complete the replication of PMIS and its subsystems? Please explain and provide details.</p>	Yes	<p>Fujitsu’s proposed solution will provide a methodology called Macroscopic to organize and complete the replication of PMIS and its subsystems. This methodology and Fujitsu’s modernization approach will mitigate mainframe migration risks via a number of means including but not limited to its Macroscopic® application development and maintenance methodology,</p> <p>In addition to the Macroscopic Methodology, Fujitsu will utilize Progression Tool Suite and method to automatically migrate Unisys Sperry to .Net platform using a detail process to assure successful delivery of all replicated PMIS and its subsystems components and data.</p> <p><u>Project Management and control Method</u></p> <p>As stated above, Fujitsu will utilize its Macroscopic® Project methodology to control and implement the PMIS Modernization Project.</p> <p>Our confidence as a professional IT services firm rests on our project management track record stretching back over three decades, many thousands of projects and many generations of IT. We employ mature project management processes and invest continuously to upgrade our capabilities in this field. We are committed to keeping our processes, techniques, tools, and people at the leading edge of the field of project management.</p> <p>Fujitsu’s Project Management Method processes and procedures comply with the principles and framework proposed in the Guide to the Project Management Body of Knowledge (PMBOK) published by the Project Management Institute (PMI). Fujitsu is a PMI Registered Education Provider.</p> <p>Macroscopic® Project supports all the Key Process Areas of the Software Engineering Institute (SEI) Capability Maturity Model (CMM) related to project management.</p> <p>Macroscopic® Project is adaptable for accommodating day-to-day project management activities. This adaptability requires the project manager to determine the coverage, scope, formality, and level of detail of required for documentation, early in the project life cycle. In some instances, to meet project management requirements, it may be justified to add new topics into a deliverable or merge topics into a single one. The idea is to satisfy the requirements while still maintaining adequate control over the project.</p> <p><u>Application Modernization Method</u></p> <p>We intend to utilize Fujitsu’s Macroscopic® Solution domain methodology and deliverable templates. The Macroscopic® Solution domain incorporates Fujitsu's best practices in the area of system modernization and delivery.</p> <p>The deliverables will be grouped according to the follow major aspects of the modernization project: System Architecture, System Components / Databases, Quality / Results and Implementation.</p>

	Requirements	A	B
			<p>During the Architecture, Analysis and Design phase, Fujitsu will cover the right level of detail across multiple subjects such as: inventory of the existing systems, screen standards, interfaces, data conversion, code migration (online and batch), ECL conversion, security, reporting, performance testing, prototyping, QAT testing.</p> <p>Our Methodology and Deliverable templates is adaptable to DHRM and/or VITA deliverable standard.</p>
2	<p>The replicated PMIS application and its subsystems shall include separate development, test and production instances.</p> <p>Does your solution provide for building separate development, test and production instances of the replicated PMIS application and its subsystems? Please explain and provide details.</p>	Yes	<p>Fujitsu’s proposed solution does provide for building separate development, test and production instances of the replicated PMIS application and its subsystems.</p> <p>Fujitsu’s configuration management process aims at establishing and maintaining the integrity and consistency of all the information system components throughout their lifecycle.</p> <ul style="list-style-type: none"> ■ System components are managed under Team Foundation Server (TFS). <ul style="list-style-type: none"> ● Extensive configuration and version management will be applied to system components using Team Foundation Server. At every step, a specific version of all components is retained making it easier to identify all changes that have been applied. If any changes in the system components are required for ongoing maintenance, their integration into the test cycle is possible by using TFS allowing comparison and merging of converted components.
3	<p>Does your solution use a proven methodology that successfully (i.e., on-time, on-budget, functionally equivalent, with comparable performance) migrates a client from a mainframe (source environment) to server/relational database (target) environment? Please explain and provide details.</p>	Yes	<p>Fujitsu’s proposed solution uses a proven methodology call Macroscopic combined with a Progression tool suite approach and method that has successfully (i.e., on-time, on-budget, functionally equivalent, with comparable performance) been used to delivered several previous Mainframe Unisys Sperry to .NET (Web Based using SQL Server) migration project.</p> <p>The use of the Macroscopic methodology and Fujitsu’s modernization approach has been a key to the success of previous Mainframe Unisys Sperry modernization to the .Net platform using SQL server.</p> <p>Added to the Macroscopic Methodology, Fujitsu brings its Progression Tool Suite and method to automatically migrate Unisys Sperry to .Net platform using a detail process to assure successful delivery of all replicated PMIS and its subsystems components and data.</p>
4	<p>Does your solution provide a project management strategy to manage the replication process that includes timelines,</p>	Yes	<p>Fujitsu ‘s proposed solution does provide a project management strategy to the replication process that includes timelines, baselines, dependencies, milestones and client personnel commitments.</p> <p>Fujitsu will utilize its Project Management method to control and implement the VITA Migration Project, which is part of our Macroscopic® methodology.</p>

	Requirements	A	B
	<p>baselines, dependencies, milestones and client personnel commitments? Please explain and provide details.</p>		<p>Macroscope-Project supports all Key Process Areas of the Software Engineering Institute (SEI) Capability Maturity Model (CMM) related to project management.</p> <p>Macroscope-Project is adaptable for accommodating day-to-day project management activities. This adaptability requires the project manager to determine the coverage, scope, formality, and level of detail of required for documentation, early in the project life cycle. In some instances, to meet project management requirements, it may be justified to add new topics into a deliverable or merge topics into a single one. The idea is to satisfy the requirements while still maintaining adequate control over the project.</p> <p>Balancing Needs, Resources and Solution</p> <p>The objective of a project is to provide quality solutions on time and within budget. Quality is being defined as the totality of the characteristics of a product or service that bear on its ability to satisfy the stated or implied needs of DHRM and VITA . Delivering quality can also be viewed as delivering the enabling capability to harness the targeted business benefits that justified continuing the project to completion.</p> <p>This objective can be achieved through a balanced division of the concerns of the different project participants. Viewing the management of the project from the following three perspectives can help balancing among these concerns:</p> <ul style="list-style-type: none"> ■ Needs: definition of business and user needs, ensuring their satisfaction, transition to the solution, reaping benefits and control of information system operation ■ Resources: planning, organizing, leading, and controlling human and financial resources allocated to the project and monitoring delivery dates ■ Solution: designing and constructing the solution, and maintaining the solution’s quality <div data-bbox="961 993 1732 1412" style="text-align: center;"> </div>

	Requirements	A	B
			<p>Roles and responsibilities must be defined to ensure balance between the three management perspectives in terms of the power to make decisions, to recommend and to exercise influence. Experience has shown that any imbalance increases the risk of project failure.</p> <p>These management perspectives must not be considered in isolation. Achieving balance implies cooperation and exchanges or, as shown in the figure above, an overlapping of the perspectives</p>
5	<p>Does your solution provide a specific phased or step methodology or approach to design the relational database for PMIS and its subsystems in the new environment?</p> <p>Please explain and provide details.</p>	Yes	<p>Fujitsu’s proposed solution does provide a specific phased methodology/approach as part of Macroscopic Methodology to <u>design the relational database</u> for PMIS and its subsystems in the new environment.</p> <p>Fujitsu intends to utilize Fujitsu’s Macroscopic® Solution domain methodology and deliverable templates and/or DHRM or VITA templates. The Macroscopic® Solution domain incorporates Fujitsu's best practices in the area of data modeling and design.</p> <p>During the Architecture, Analysis and Design phase, Fujitsu will cover the right level of detail across multiple data subjects to design the new relational Database while taking into account the approach to replicate the database to support the current replicated business logic and not to enhance or extend the data model. If enhancement is required, this will be discussed and design during the architecture phase.</p> <p>Fujitsu proposed solution includes deliverable(s) that document the SQL Server database design via UML data modeling technic and associated mapping of data of Unisys to SQL Server. The following is an outline of the main deliverables in the scope of this project to be use to execute the design of the relational database:</p> <p>The following paragraphs describe in more detail each activities involved with the phased methodology/approach to design the new relational database for PMIS and its subsystems in the new environment.</p> <p><u>Planning</u></p> <p>Development of the data model and the data transformation process will be one of the first activities in the plan, so as not to inhibit progress on the activities that must follow.</p> <p>The planning must recognize the dependencies within the whole migration project. For example, test databases must be populated with test data before those project resources performing unit testing can complete their work. Test baseline data must be migrated in advance of User Acceptance testing. Trial production migrations must be performed early and frequently enough to give the Agency confidence in the results and also allow time for data cleanup.</p> <p><u>Inventory</u></p> <p>As part of the Source code modernization, Fujitsu will perform a full source analysis scan in an attempt to identify discrepancies early and avoid wasting effort migrating obsolete data related components. An inventory of all flat files and indexed files is required. This will be done by using two complementary techniques:</p> <ul style="list-style-type: none"> ■ Listings of the native file system of the production UNISYS machines;

	Requirements	A	B
			<ul style="list-style-type: none"> ■ Scanning of batch job for references to files. <p>Further investigation will be required when the inventory uncovers files that are never referenced in batch job, or files referenced in batch job that are not found on the file system.</p> <p><u>Analysis</u></p> <p>Two separate analytical tasks are needed – one for flat files and indexed files and the other for the DMS and RDMS (if any) databases.</p> <p>For flat files, we need to transport only ones containing permanent data. When files are used as intermediate between 2 steps, then they don't need to be transported. Similarly, not all cycle files need to be transported, depending on the timing of the cut-over. This will be analyzed in detail to determine exactly what needs to be transported.</p> <p>For flat files being migrated, we will analyze the records and fields. Because of the fundamental differences between Unisys and Windows relating to the byte and word format (9 bits vs. 8 bits, 36 bits vs. 32 bits), will be necessary to eliminate all binary fields from files by developing extract programs to reformat the records and transforming COMP to a DISPLAY format.</p> <p>For DMS and RDMS (if any) data, the unload program developed will include the conversion of all data to SQL compatible format. For example, the unload will take care of translating PIC 1 data to a numeric display format, field data to a display format and binary data to a display format. We will perform a field-by-field examination to reconcile data type versus content. We then perform a survey of the DML statements found in the COBOL source code in order to determine which SQL stored procedures will have to be designed. This latter step will also help in the discovery of missing code – whenever there is code using FIND or FETCH, we would expect to also find STORE operations in other code.</p> <p><u>Design</u></p> <p>Once we identify the flat files, we will design file transformation programs to convert them to pure ASCII. The files would be FTP'd from UNISYS to Windows. The restructured files will be stored on Windows folder structure.</p> <p>Supporting Indexed files (If any) under .Net represents a small challenge. Options include:</p> <ul style="list-style-type: none"> ■ Transform the Indexed file to an SQL table ■ Encapsulate access to the Indexed file within a Fujitsu custom file handler class ■ Use a third-party licensed product for data access <p>Since the last option requires the Agency to license software, Fujitsu prefers the first two alternatives.</p> <p>After the design of the new SQL Server database has been established and created, Fujitsu has a tool that can understand the original DMS/RDMS schema and the new SQL Server Schema and provide the information in order to setup and execute our data migration tools.</p>

	Requirements	A	B
			<p>The following is a list of the deliverables involved to the design of the new relational database:</p> <p>P170S - Information Structure</p> <p>Purpose</p> <ul style="list-style-type: none"> ■ To define the components of each facet (Entity Data Model) and their associations from the user viewpoint. <p>Contents</p> <ol style="list-style-type: none"> 1. Facet (one section per facet) <ol style="list-style-type: none"> 1.1 Facet Overview 1.2 Facet Content 1.3 Facet Component (one section per component (class, association, entity, relationship)) <p><u>P510C – Database Structure</u></p> <p>Purpose</p> <ul style="list-style-type: none"> ■ To describe the specific structure and distribution of a database or file. ■ To provide a basis for database definition coding. <p>Contents</p> <ul style="list-style-type: none"> ■ Database Structure Description ■ Database Tables <ul style="list-style-type: none"> • Database Table (one section per database table) <p>Fujitsu as used several Data Model software to document the new data model such as SQL Modeler, visio, CA-ErWin,</p>
6	Does your solution provide for a method or approach to develop, test and validate the design of the relational database	Yes	<p>Fujitsu’s proposed solution does provide a method or approach to develop, test and validate the design of the relational database of PMIS and its subsystems in the new environment.</p> <p>Fujitsu intends to utilize Fujitsu’s Macroscopic® Solution domain methodology and deliverable templates and/or DHRM or VITA templates. The Macroscopic® Solution domain incorporates Fujitsu's best practices in the area of data</p>

	Requirements	A	B
	<p>of PMIS and its subsystems in the new environment? Please explain and provide details.</p>		<p>conversion and migration.</p> <p>During the Architecture, Analysis and Design phase, Fujitsu will cover the right level of detail across multiple data subjects to develop, test and validate the design the new relational Database.</p> <p>The following paragraphs describe in more detail each activities involved to develop, test and validate the design of the relational database of PMIS and its subsystems in the new environment.</p> <p>Build/Develop</p> <p>After the design of the new SQL Server database has been established and created,</p> <p>Fujitsu has a tool part of the Progression tool suite that can understand the original DMS/RDMS(if any) schema and the new SQL Server Schema and provide the information in order to setup and execute our data migration tools.</p> <p>These tools are TableLoader and TableChecker.</p>

	Requirements	A	B
			<p>TableLoader is a tool that implements the standard parts of the process to load a SQL table from an extract file. TableChecker is a tool to assist in the development of data verification programs. It is capable of loading an extract file record description into an internal data structure. It also implements a field level comparison and discrepancy logging. TableChecker makes it very easy to build programs to verify legacy database records against the transformed equivalent data within SQL.</p> <p>Fujitsu has other tools that support the generation of required SQL Stored Procedures and data access component.</p> <p>The Build/develop task involves 3 main steps: the data extraction, data transformation and data load. Besides running the data conversion tools to execute the ETL processes, we will create and/or adjust some of our data conversion tool (data conversion programs/scripts) for specific task as follow:</p> <ul style="list-style-type: none"> ■ UNISYS data extraction; ■ Flat-file and indexed file extraction; ■ Data/flat-file transformation and reformatting; ■ SQL table & indexed file loading; ■ SQL data verification. <p>As part of the build/develop, we have identify all flat files in the scope of the conversion, we will design file transformation programs to convert them to pure ASCII. The files would be FTP'd from UNISYS to Windows. The restructured files will be stored on Windows folder structure.</p> <p>Supporting Indexed files (If any) under .Net represents a small challenge. Options include:</p> <ul style="list-style-type: none"> ■ Transform the Indexed file to an SQL table; ■ Encapsulate access to the Indexed file within a Fujitsu custom file handler class; ■ Use a third-party licensed product (such as Pervasive Software's Btrieve) for data access. <p>Since the last option requires the Agency to license software, Fujitsu prefers the first two alternatives.</p> <p><u>Testing, Data Verification and Cleansing</u></p> <p>Fujitsu views the data migration as a repetitive process, not a one shot effort. We expect to perform several trial migrations throughout the project with the objective of catching any defects in the migration process long before the implementation day.</p> <p>One side product of these trial migrations will be verification reports produced by the TableChecker tool showing discrepancies between the legacy data extract and the SQL data. Using these reports the data architecture team can correct data quality issues by providing conversion rules on how to handle each discrepancy.</p> <p>Once a trial data conversion is completed, Fujitsu will examine the coded fields using SELECT DISTINCT queries.</p>

	Requirements	A	B
			<p>The data architecture team can then review the query results to see if the data content matches the expected range of values.</p> <p><u>Deployment</u></p> <p>Trial migrations will be performed using a “pre-production” environment part of DHRM and/or VITA network.</p> <p>DHRM staff will initiate the data migration on the cutover weekend (or evening). Fujitsu’s Data Migration Architect will monitor progress on site and perform any manual interventions as needed. Fujitsu will collect statistics from the control reports and assemble metrics so that DHRM will have a concise summary of the data migration results. This and the data verification discrepancy reports will constitute the Data Migration Certification decision package.</p> <p>Performance test is also part of the process to validate the new Database design and assure the new design does not impact the performance of the application. If, some area of the new design impact the performance and optimization is not enough to mitigate the issue, Fujitsu and DHRM will together apply agreed changes to the design to allow optimum performance of the application.</p>
7	Does your solution provide for a method or approach to develop, unit test and validate the replication of the transactions? Please explain and provide details.	Yes	<p>Fujitsu’s proposed solution does provide a method and approach to develop, unit test and validate the replication of the transactions.</p> <p><u>Develop</u></p> <p>The application transaction development (TIP/DPS/COBOL to ASP.NET/C#) will be automated using our Progression migration suite. Progression is highly configurable using parameters and templates which will allow implementing all coding techniques, standards and packaging agreed on and documented using MacroScope Solution methodology deliverables during the Architect and design phase. The use of the tool will also make sure that there is a very high level of consistency in the resulting application, while minimizing the risk of introducing human error. The main software development tool is Visual Studio and Progression will generate all required C# project for all classes and components. All manual modifications/adjustment (if needed) are inspected (peer review) before any promotion to the next level using Version Control tool.</p> <p><u>Unit test and Validate</u></p> <p>The new application is then tested and fixed accordingly. Testing and Quality Assurance represents a key phase of a large modernization project, it begins very early in the conversion life cycle and continues until deployment.</p> <p>Starting with the system modernization phase, testing will proceed through different steps as follows: Unit Test, Integration/System tests, Quality Assurance (QA), Acceptance, and Performance/Stress.</p> <p>Part of Fujitsu’s methodology for legacy modernization includes the use of Baseline Mainframe Scripts to assist analysts, developers and testers.</p> <p>The Baseline Mainframe Scripts are created on the mainframe and describes the legacy system behavior through the</p>

	Requirements	A	B
			<p>use of transactions, screen captures and database snapshots. The tester will gather screen captures at key points throughout the transaction. As well, a database snapshot will be taken prior to the commencement of the scripting, after the completion of all online transactions and then again after batch processes have run. These deliverables will be utilized as a comparison for both screen layout and the data retrieved is accurate and to validate the replication of the transactions.</p> <p>Fujitsu will execute its Integration/System Tests using a copy of baseline data from the mainframe. Using the same source of data is mandatory to maintain testing integrity between the two environments and to facilitate easier reproduction of defects.</p>
8	<p>Does your solution provide for a method or approach to develop, unit test and validate the replication of the batch processes? Please explain and provide details.</p>	Yes	<p>Fujitsu’s proposed solution provides a method and approach to develop, unit test and validate the replication of the batch processes job, programs and outputs.</p> <p><u>Develop</u></p> <p>The application batch development (ECL/COBOL to PowerShell/C#) will be automated using our Progression migration suite. Progression is highly configurable using parameters and templates which will allow implementing all coding techniques, standards and packaging agreed on and documented using our Macroscopic Solution methodology deliverables during the 3.1 phase. The use of the tool will also make sure that there is a very high level of consistency in the resulting application, while minimizing the risk of introducing human error. The main software development tool is Visual Studio and Progression will generate all required C# project for all classes and components. All manual modifications/adjustment (if needed) are inspected (peer review) before any promotion to the next level using Version Control tool.</p> <p><u>Unit test and Validate</u></p> <p>The new application is then tested and fixed accordingly. Part of Fujitsu’s methodology for legacy modernization includes the use of Baseline Mainframe Scripts to assist analysts, developers and testers.</p> <p>The Baseline Mainframe Scripts are created on the mainframe and describes the legacy system behavior through the capture of batch output report/data files and database snapshots. As well, a database snapshot will be taken prior to the commencement of the scripting, after the completion of all online transactions and then again after batch processes have run. These deliverables will be utilized as a comparison to validate the accuracy of the replicated batch processes.</p> <p>Fujitsu will execute its Integration/System Tests using a copy of baseline data from the mainframe. Using the same source of data is mandatory to maintain testing integrity between the two environments and to facilitate easier reproduction of defects.</p>
9	<p>Does your solution provide for</p>	Yes	<p>Fujitsu’s proposed solution does provide for a method or approach to ensure each component of the replicated</p>

	Requirements	A	B
	<p>a method or approach to ensure each component of the replicated application has been migrated and tested in the new environment? Please explain and provide details.</p>		<p>application has been migrated and tested in the new environment.</p> <p>During the Architecture Phase, Fujitsu will develop a Technical Architecture and an Application Migration strategy deliverables which will cover the right level of detail across multiple subjects such as: inventory of the existing systems, screen standards, interfaces, data conversion, code migration and delivery sequence, Job/CL conversion, security, reporting, performance testing, prototyping, QAT testing.</p> <p>Using the Technical Architecture and Application Migration strategy deliverable, the Fujitsu QA Manager will develop a detailed Test Strategy and Plan that will include scheduling, scope, deliverables, processes and standards that will meet DHRM and VITA’s expectations.</p> <p>Before the start of each Phase, the Fujitsu Testing team will analyze the readiness of the testing environment; gather all the required test scripts and report outputs and data provided by DHRM. The test scripts will encompass Online, Batch, Interface and Security applications transactions and will be used throughout the Development and Testing Cycles.</p> <p>As the project progresses through the different phases of testing and extends its coverage, Fujitsu will include more tests in the automated regression step in order to validate the quality of the entire scope produced thus far and mitigate any unforeseen problems that may occur. Each Source Code Release will represent a logical evolution in the solution, and regression testing will be utilized at each iteration to validate that the quality of the overall solution is maintained and that meets DHRM and VITA requirements. The scope of the testing does include each component of the migrated application.</p>
10	<p>Does your solution include opportunities for DHRM to review and have input incorporated into the following:</p> <ol style="list-style-type: none"> 1) project approach, timeline, methodology 2) conventions used in code that is replicated into target environment 3) relational database design for new DHRM environment 4) testing methodology & approach 	Yes	<p>Fujitsu Project Managers realize that DHRM’s and/or VITA’s involvement is absolutely necessary to influence the outcome of the project and to meet user requirements and priorities. As well, DHRM and/or VITA intervention is required in the planning, control, testing, approval, and decision processes of the project.</p> <p>DHRM and/or VITA involvement simplifies acceptance when the team feels ownership in the project and has the chance to discuss and clarify any ambiguities. It also facilitates the management of the Commonwealth’s expectations and stimulates positive DHRM, VITA and Fujitsu relationships.</p> <p>In Macroscopic-Project, DHRM and/or VITA’s involvement is encouraged by allotting responsibilities in the project’s organizational structure and by assigning key project roles to designated members of DHRM and/or VITA’s organization, such as the Business Solution Owner, Business Solution Manager, Stakeholder, and the Steering Committee.</p> <p>Therefore Fujitsu’s proposed solution does include and strongly recommend DHRM and/or VITA to review and have input incorporated into the following:</p> <ol style="list-style-type: none"> 1) Project approach, timeline, methodology

	Requirements	A	B						
	<p>5) configuration of DHRM's new environment</p> <p>Please explain and provide details.</p>		<p>2) Conventions used in code that is replicated into target environment</p> <p>3) Relational database design for new DHRM environment</p> <p>4) Testing methodology & approach</p> <p>5) Configuration of DHRM 's new environment</p>						
11	<p>DHRM has a limited number of personnel who can work on a project to transition off of the mainframe and into a server environment. Does your solution provide estimates for the type (functional, technical, other) and time commitments for these personnel by solution phase? Please explain and provide details.</p>	Yes	<p>We have identified a series of touch points where the Fujitsu team will need DHRM and/or VITA business and technical resource participation. The approach is for Fujitsu to come up with targeted questions and funnel them to the right person based on a DHRM provided list of contacts. Fujitsu will identify a technical expert to funnel Fujitsu questions.</p> <p>Fujitsu will request the support of Client resources with knowledge of the current business systems for testing. A significant portion of the DHRM business knowledge and expertise will be brought to the team using that mechanism.</p> <p>In addition, we expect a deliverable review and approval process to be set up, identifying key DHRM business and technical resources that will review and approve Fujitsu produced deliverables.</p> <p>Fujitsu will discuss this subject further with DHRM upon project start-up and come up with mutually agreeable approach that will benefit the project the most while minimizing the workload on DHRM resources.</p> <table border="1" data-bbox="720 964 2001 1409"> <thead> <tr> <th data-bbox="720 964 1125 1005">Title</th> <th data-bbox="1125 964 2001 1005">Role and Responsibilities</th> </tr> </thead> <tbody> <tr> <td data-bbox="720 1005 1125 1341"> Project Manager (full time) </td> <td data-bbox="1125 1005 2001 1341"> <ul style="list-style-type: none"> ■ DHRM PM will manage the activities of DHRM personnel ■ In collaboration with Fujitsu PM, escalate issues, risks and problems to the identified authority when the situation so requires ■ Main point of contact between DHRM and Fujitsu for contractual issues – may escalate issues within Fujitsu, as needed ■ Along with Fujitsu’s PM, control deliverables review and obtain written approvals for them ■ Carry out project progress and status reviews with Fujitsu Team and DHRM Project Management Team </td> </tr> <tr> <td data-bbox="720 1341 1125 1409"> Application SME (up to 2 days per week) </td> <td data-bbox="1125 1341 2001 1409"> Represent the business users for the purpose of the project. In this role, they provide guidance and advice to the project team and facilitate </td> </tr> </tbody> </table>	Title	Role and Responsibilities	Project Manager (full time)	<ul style="list-style-type: none"> ■ DHRM PM will manage the activities of DHRM personnel ■ In collaboration with Fujitsu PM, escalate issues, risks and problems to the identified authority when the situation so requires ■ Main point of contact between DHRM and Fujitsu for contractual issues – may escalate issues within Fujitsu, as needed ■ Along with Fujitsu’s PM, control deliverables review and obtain written approvals for them ■ Carry out project progress and status reviews with Fujitsu Team and DHRM Project Management Team 	Application SME (up to 2 days per week)	Represent the business users for the purpose of the project. In this role, they provide guidance and advice to the project team and facilitate
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Application SME (up to 2 days per week)	Represent the business users for the purpose of the project. In this role, they provide guidance and advice to the project team and facilitate								

	Requirements	A	B								
			<p>access to business knowledge. They are ultimately responsible for validating that the delivered solution is successfully adopted and accepted by DHRM users.</p> <p>Technical Resource Role (up to 2 days per week) In that role, the technical resource works collaboratively with Fujitsu to validate that the delivered system meets the functional, non-functional and technical requirements of the project. He/she is responsible for validating that the technical solution (hardware platform, application solution, system interfaces, etc.) is of an acceptable quality and that it meets the needs of DHRM .</p> <p>Quality Assurance Manager (full time) DHRM QA Manager’s responsibility encompasses User Acceptance test, gathering of benchmark metrics, system baselines, and others. DHRM will also create a User Acceptance Test team consisting of several testers (system/user expert) responsible to:</p> <ul style="list-style-type: none"> ■ Identify test cases, ■ Write test scripts to support testing activities of the modernized applications and ■ Perform the User Acceptance testing for the project. <p>Quality Assurance Testers (full time) He/she will be responsible for executing the System Acceptance tests under the guidance of the QA Manager.</p> <p>Fujitsu assumes that DHRM will be providing access to resources and support in the following areas on an as-needed basis</p> <table border="1" data-bbox="720 1055 2003 1388"> <thead> <tr> <th data-bbox="720 1055 1125 1101">Resources</th> <th data-bbox="1125 1055 2003 1101">Degree of Access / How utilized</th> </tr> </thead> <tbody> <tr> <td data-bbox="720 1101 1125 1175">Desktop Support</td> <td data-bbox="1125 1101 2003 1175">Assistance with getting on-site workstations operational during project kickoff phase</td> </tr> <tr> <td data-bbox="720 1175 1125 1318">SQL Administrator</td> <td data-bbox="1125 1175 2003 1318">Assistance with establishing databases on Testing and Production environments during all phases Assistance with the granting of database permissions and execution of baseline backups and restores</td> </tr> <tr> <td data-bbox="720 1318 1125 1388">Unisys Developers</td> <td data-bbox="1125 1318 2003 1388">Occasional assistance in understanding program logic related to current business function, or help in finding missing source, etc.</td> </tr> </tbody> </table>	Resources	Degree of Access / How utilized	Desktop Support	Assistance with getting on-site workstations operational during project kickoff phase	SQL Administrator	Assistance with establishing databases on Testing and Production environments during all phases Assistance with the granting of database permissions and execution of baseline backups and restores	Unisys Developers	Occasional assistance in understanding program logic related to current business function, or help in finding missing source, etc.
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12	<p>Does your solution provide a methodology or approach that includes integrated system testing/validation for:</p> <p>A. the design of the relational database of PMIS and its subsystems</p> <p>B. the replication of on-line transactions</p> <p>C. the replication of batch processes?</p> <p>Please explain and provide details.</p>	Yes	<p>Fujitsu will utilize its Macroscopic methodology for Testing of the Relational Database, the online and batch processes which will be adapted to DHRM unique needs, if any.</p> <p>Fujitsu has a unique approach and methodology to facilitate the testing efforts, which occurs early in the project therefore allowing for more testing time and reducing project risk. The DHRM testing strategy will be developed at the beginning of the project life cycle in order to determine the required level of testing, test cycles, groups of components to be tested and their dependencies. The testing strategy is reviewed with DHRM to ensure complete understanding and agreement of the requirements.</p> <p>Starting with the system modernization phase, testing will proceed through different steps as follows: Unit Test, Integration/System tests, Quality Assurance (QA), Acceptance, and Performance/Stress.</p> <p>The Integration/System (also called end-to-end) testing phase ensures that all aspects of the application has been delivered by the Development/Modernization Team, the environment is usable, the new SQL databases are accessible by both Online and Batch applications at the same time, and that the application can be traversed from screen-to-screen and all batch run stream processes can be executed thus providing a full coverage to validate the design of the relational database of the PMIS application and all its subsystem as well as and integration test between all online and batch processes.</p> <p>Example of integration would be to create test script that simulate daily online transaction (including interface as needed) and after, run the daily batch processes .. the result is compared with the baseline results captured from running the same integrated test script on the Unisys, and so one</p>								
13	<p>Does your solution provide for a method or approach to rollout the replicated system to Production operation? Please explain and provide details.</p>	Yes	<p>Fujitsu's proposed solution does provide a method to rollout the replicated system to Production operation.</p> <p>Before implementing any change into the production environment (e.g. information technology, business process, organizational design, etc.), steps must be taken to ensure the readiness of both the business solution and the operational group accepting the change. There are several processes and techniques that this project will employ in order to create the proper mechanisms for project and business readiness to be established and validated prior to the implementation of any change into the production environment.</p>								

	Requirements	A	B
			<p style="text-align: center;"> Pre-Implementation Implementation Weekend </p> <p style="text-align: center;">Business and System Preparedness Checklist</p> <p>A Business and System Preparedness Checklist is a helpful tool to bring focus and discipline to the process of defining readiness criteria and assessing a project and organization’s readiness to implement a business solution. The Checklist is a quality control mechanism that is used to assess readiness. It is based on an acceptance framework assigning approval authority to key stakeholders for project results. It helps to remove the guess work from determining whether a business solution should be implemented in an organization. It is focused equally on the preparedness of the business organization and the technology solution.</p>

	Requirements	A	B
			<div data-bbox="1066 267 1648 698" data-label="Diagram"> </div> <p data-bbox="718 743 1999 803">The Checklist will define the activities, milestones and conditions that must be met by the business and the project prior to an implementation. Typical considerations within of the Checklist include the following:</p> <ul data-bbox="718 820 1932 1177" style="list-style-type: none"> ■ Testing Results (includes Unit, Functional, End to End Business Transaction, User Acceptance, Performance, Infrastructure, Site-Based testing) ■ Data Conversion Results ■ Training Completeness ■ Implementation of Policies and Procedures ■ Implementation of Legislation and Regulations ■ Delivery of Communications ■ Implementation Site Readiness ■ System Security ■ Program and Operational Support Readiness <p data-bbox="718 1185 1974 1307">The development of the Checklist will be done collaboratively by gathering readiness criteria and activities from business and project stakeholders. Once developed, the Checklist will be monitored on a regular basis by the Project Management Team. When implementation is eminent, an Executive Management / Steering Committee review of the Checklist will be conducted.</p>

	Requirements	A	B
			<pre> graph TD A[Draft Straw Model Preparedness Checklist] --> B[Review and Refine Approach with Project Director] B --> C[Conduct Meetings Workshop and Ratify Checklist] C --> D[Review and Finalize Preparedness Checklist] D --> E[Monitor and Track Completion of Checklist Items] E --> F[Conduct Executive Management Checkpoint Prior to Implementation] </pre>
14	Does your solution provide for a method or approach to turn over to DHRM, Production system operations, administration and maintenance? Please explain and provide details.	Yes	<p>Fujitsu does provide an approach to turn over to DHRM and/or VITA , Production system operations, administration and maintenance.</p> <p>During classroom-style training activities, Fujitsu trainers will take DHRM and/or VITA system operators, administration and maintenance developer through a series of hands-on exercises to provide developers/users with the opportunity to execute system maintenance, code updates, system builds and deployment tasks on the modernized system (in a training environment) themselves rather than simply listen to a lecture-style training session.</p> <p>With each Code Delivery, Fujitsu will work with DHRM and/or VITA to assist in the setup, system rebuild and deployment of the application into their testing environments. This approach allows the maintenance group to being working with the modernized application early in the development phase and will be fully operational when User Acceptance begins.</p> <p>The degree of training required and therefore the approach to training will vary depending on the scale of user impact expected for each production deployment.</p>
15	Does your solution provide recommendations on hardware and software needed for the new environment? Please explain and provide	Yes	<p>Typical system configuration includes multiple servers handling a combination of purposes. For example, one server can be dedicated to support the development of web application, database and testing, one dedicated to live production web applications, and one dedicated to production databases.</p> <p>It is a good practice to have dedicated physical servers or resources in production to face the users demand, high throughput and failover requirements. It is also a good practice to segregate development and testing environments accessible to developers and testers from production, where access is limited to end users and production support</p>

Requirements	A	B																		
details on recommended hardware and software needed for the new environment.		<p>personnel. Although development and testing servers require similar configuration as production servers, they can be shared or virtual resources since the capacity required is usually far less than production.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #d9e1f2;">Server</th> <th style="background-color: #d9e1f2;">Description</th> </tr> </thead> <tbody> <tr> <td>Web/Application Server</td> <td>Web/Application servers provide fault tolerance to the presentation and business components of the application.</td> </tr> <tr> <td>Generic Application Server</td> <td>Required for batch and reporting scheduling. This environment has to be redundant for fault tolerance.</td> </tr> <tr> <td>Database Server</td> <td>Redundant and clustered database servers provide data storage for the application running on SQL Server 2012.</td> </tr> <tr> <td>Windows Active Directory Server (AD)</td> <td>AD is used to manage the authentication and authorization of the access at the Windows resources, such as website, web page, DLL, server, printers, etc.</td> </tr> <tr> <th style="background-color: #d9e1f2;">Other components</th> <td></td> </tr> <tr> <td>End-user client</td> <td>DHRM users use a personal computer to access the application via a Web browser.</td> </tr> <tr> <td>Load Balancing</td> <td>A hardware or Software load balancer is used to ensure fault tolerance of the web application.</td> </tr> <tr> <td>Storage Area Network</td> <td>File storage for the application. Further analysis will be required to assess DHRM SAN's needs.</td> </tr> </tbody> </table> <p>Software and Licenses</p> <p>The proposed Fujitsu solution requires the standard Windows product stack to maintain a Web based application: OS Windows Server 2012, Active Directory, Visual Studio 2012, SQL Server 2012, and IIS.</p> <p>If Modernizing From COBOL to C# solution is selected (Fujitsu's Current Proposal):</p> <ul style="list-style-type: none"> ■ No additional software is needed <p>If Modernizing From COBOL to COBOL on .NET solution is selected (Optional Alternative):</p>	Server	Description	Web/Application Server	Web/Application servers provide fault tolerance to the presentation and business components of the application.	Generic Application Server	Required for batch and reporting scheduling. This environment has to be redundant for fault tolerance.	Database Server	Redundant and clustered database servers provide data storage for the application running on SQL Server 2012.	Windows Active Directory Server (AD)	AD is used to manage the authentication and authorization of the access at the Windows resources, such as website, web page, DLL, server, printers, etc.	Other components		End-user client	DHRM users use a personal computer to access the application via a Web browser.	Load Balancing	A hardware or Software load balancer is used to ensure fault tolerance of the web application.	Storage Area Network	File storage for the application. Further analysis will be required to assess DHRM SAN's needs.
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	Requirements	A	B
			<ul style="list-style-type: none"> ■ Fujitsu NetCOBOL for .NET is needed
16	<p>Changes to legislation and changes in health benefits programs can occur with little advance notice. Affected programs need to then be modified and implemented for the effective legislated/health benefits changes. For this reason some programs will need to be re-converted for the new environment after the initial program source code is delivered for conversion.</p> <p>Does your solution allow for conversion of programs modified after initial source code delivery? Please explain and provide details.</p>	Yes	<p>The use of the proposed Fujitsu Progression automated tool suite enables DHRM to incorporate ongoing maintenance changes during or late in the migration process. Fujitsu uses the Progression tool suite to automate the code migration, which enables the reparsing of DHRM changes as close as possible to the deployment cutover milestone. There is no need for an early code freeze that can hamper DHRM 's ability to respond to pressing maintenance requirements or legislative changes. Fujitsu is used to dealing with such business and maintenance requirements while modernizing application systems and has used this process very successfully on previous Mainframe modernization project including Unisys Sperry to .Net. Note: Once the modified code is migrated there is still a requirement to perform regression testing on the latest code set.</p>
17	<p>Changes to legislation and changes in health benefits programs may require the database schema to be modified after the initial schema definition is delivered for conversion. (DHRM will avoid schema changes unless absolutely necessary after initial schema definition delivery)</p>	Yes	<p>The use of the proposed Fujitsu Progression automated tool suite enables DHRM to incorporate ongoing maintenance changes to the schema definition during or late in the migration process. Fujitsu uses the Progression tool suite and data model software to enables the discovery of the DHRM changes done to the Schema and SubSchemas and allows to isolate the data structure change and its impact to the application.</p> <p>There is no need for an early Schema freeze that can hamper DHRM's ability to respond to pressing maintenance requirements or legislative changes. Fujitsu is used in dealing with such business and maintenance requirements while modernizing application systems and has used this process very successfully on previous Mainframe modernization project including Unisys Sperry to .Net. Note, once the modified code is migrated there is still a requirement to perform regression testing on the latest code set.</p> <p>Note that any changes to the Schema/SubSchema (data Structure) carry a higher level of risk and impact to the system (as oppose to code changes) and as stated in this question, Fujitsu also recommend to minimize any data structure changes during the migration unless absolutely required. Any data structure changes should be push post go-live if at all possible as it is much easier to implement such changes once the application and data are on the .NET platform and</p>

	Requirements	A	B
	<p>Does your solution allow for modifications to database SQL schema structure after initial schema definition delivery?</p> <p>Please explain and provide details.</p>		<p>in SQL Server.</p>
18	<p>Does your solution identify by resource type and solution phase the extent that your team will be on-site? Please explain and provide detail.</p>	Yes	<p>Fujitsu has accounted for in its proposal and will ensure sufficient on-site presence to guarantee the successful delivery of this project.</p> <p>Fujitsu will fully comply with DHRM and VITA policies regarding authorized on-site and off-site project activities. Fujitsu will have a full-time Project Manager on site in order to work directly with the DHRM Project Director. Since many of our experts reside in remote locations, many of the project activities will occur remotely as needed. For example, the code conversion activities will be performed mostly off-site as well as some of the testing activities. Fujitsu will review with DHRM on-site and off-site project activities during the project planning and make sure to comply with the project policies. We intend to bring resources onsite to DHRM as determined by the project needs.</p>

Requirements		A	B							
Roles			Planning	Architecture & Design	Code Conversion	Data Conversion	Final QA Testing	UAT support	Training	Implementation Support
Project Manager			100%	100%	100%	100%	100%	100%	100%	
Quality Assurance Manager			50%	25%	As Needed	As Needed	25%	100%	50%	As Needed
Solution Architect			25%	50%	As Needed	As Needed	25%	As Needed	As Needed	As Needed
Technical Architect			25%	50%	As Needed	As Needed	25%	As Needed	As Needed	As Needed
Data Architect/Migration Specialist			25%	25%	As Needed	100%	0%	As Needed	As Needed	100%
Lead Developer			0%	0%	As Needed	As Needed	As Needed	50%	As Needed	0%
Developers			0%	0%	As Needed	As Needed	As Needed	50%	As Needed	0%
Senior Tester			0%	0%	As Needed	As Needed	As Needed	As Needed	0%	0%
QA testers			0%	0%	As Needed	As Needed	As Needed	As Needed	0%	0%
Performance SME			As Needed	25%	As Needed	As Needed	100%	As Needed	0%	As Needed
Security SME			As Needed	25%	As Needed	As Needed	100%	As Needed	0%	As Needed
Infrastructure SME			As Needed	25%	As Needed	As Needed	100%	As Needed	0%	As Needed
Trainer			as needed	25%	0%	0%	0%	0%	100%	0%

The production data will reside on the DHRM OR VITA Network and approved DHRM OR VITA remote desktop connection will be used to access Development and Test servers from outside DHRM OR VITA offices if possible.

	Requirements	A	B
19	DHRM needs to understand the steps and timeframe that a vendor will take to migrate its existing applications from the mainframe to DHRM's new environment. Does your solution (including your RFP response) include a resource-loaded schedule (for DHRM and vendor resources) that indicates the steps and timeframe for this migration? Please provide that schedule.	Yes	<p>Fujitsu's proposed solution does (including in Fujitsu's RFP response) include a resource-loaded schedule (for DHRM and vendor resources) that indicates the steps and timeframe for this migration.</p> <p>Please refer to the attached document "<i>Proposed PMIS LM Plan.mpp</i>" for more information.</p>
20	Will all replication/migration phases be done using Commonwealth of Virginia hardware (servers, etc.)? Please explain and provide details.	Yes	All replication/migration phases will be done using Commonwealth of Virginia hardware (servers, etc.) except for the activities that Fujitsu intend to use its own Modernization Servers located in Fujitsu's Secured Data Center such as for the automated code migration (online, batch, job) activities and other activities that do not involve DHRM production data or un-sanitized/scrambled data.

1.4 Database, Data & Code Conversion

	Requirements	A	B
1	Based on the DHRM’s network Unisys DMS database, does your solution allow for the design and implementation of a functionally equivalent relational SQL Server 2012 database? Please explain and provide detail.	Yes	<p>Fujitsu’s proposed solution does allow for the design and implementation of a functionally equivalent relational SQL Server 2012 database.</p> <p>The business logic (C#) generated will retain all original data access logic as per the original DMS-2200 data access logic to produce an equivalent access and update functionality of the SQL Server. This is provided by the data access component (DAC) automatically generated by the progression tool suite during the data conversion process.</p> <p>These skills, competency and expertise come from having previously successfully worked and delivered the following Unisys Sperry to .NET projects (see project references and detail for more information on project scope and technology involved):</p> <ol style="list-style-type: none"> 1) <i>New Brunswick Department of Public Safety – Motor Vehicle</i> 2) <i>Washington State Department of Licensing (DOL)</i>
2	Does your solution use automated tools to aid in the migration of applications from UNISYS Cobol to either a version of Cobol that runs on the .Net platform or into C#.Net. If yes, explain how these tools provide value.	Yes	<p>Fujitsu’s proposed solution does use automated tools to aid in the migration of applications from UNISYS Cobol to either Fujitsu NetCOBOL for .NET or C#.Net.</p> <p>The migration and conversion of the Unisys Sperry COBOL to either NetCOBOL for .NET or C# will be automated using our Fujitsu Progression migration tool suite. Fujitsu Progression is highly configurable using parameters and templates which will allow implementing all coding techniques, standards and packaging (Visual Studio Project and Solution) agreed on and documented using Macroscopic Solution methodology deliverables during the Architect and design phase. The use of the tool will also make sure that there is a very high level of consistency in the resulting application, while minimizing the risk of introducing human error. The main software development tool is Visual Studio and Progression will generate all required C# project for all classes and components.</p> <p>The following graphic represent the overall Fujitsu Progression solution and how it will be used to migrate and modernize DHRM’s PMIS application and all its subsystems from the Unisys Sperry Mainframe to the .NET platform.</p>

	Requirements	A	B
3	Does your solution load and transform production data from the old Unisys mainframe application to the new environment? Please explain and provide detail.	Yes	<p>Fujitsu’s proposed solution does load and transform production data from the old Unisys mainframe application to the new environment.</p> <p>The following paragraphs describe in more detail each activities involved to Extract, Transform and Load the Legacy DMS data into the new SQL Server relational database of PMIS and its subsystems in the new environment.</p> <p><u>ETL process</u></p> <p>After the design of the new SQL Server database has been established and created,</p> <p>Fujitsu has a tool part of the Progression tool suite that can understand the original DMS/RDMS(if any) schema and the new SQL Server Schema and provide the information in order to setup and execute our data migration tools.</p>

	Requirements	A	B
			<p>Data extraction ECL and COBOL programs will be generated according to the understanding of the original DMS schemas, to execute the data extraction from DMS into data files.</p> <p>TableLoader and TableChecker tools.</p> <p>TableLoader is a tool that implements the standard parts of the process to load a SQL table from an extract file. TableChecker is a tool to assist in the development of data verification programs. It is capable of loading an extract file record description into an internal data structure. It also implements a field level comparison and discrepancy logging. TableChecker makes it very easy to build programs to verify legacy database records against the transformed equivalent data within SQL.</p> <p>Fujitsu has other tools that support the generation of required SQL Stored Procedures and data access component.</p> <p>The ETL task involves 3 main steps: the data extraction, data transformation and data load. Besides running the data conversion tools to execute the ETL processes, we will create and/or adjust some of our data conversion tool (data conversion programs/scripts) for specific task as follow:</p>

	Requirements	A	B
			<ul style="list-style-type: none"> ■ UNISYS data extraction; ■ Flat-file and indexed file extraction; ■ Data/flat-file transformation and reformatting; ■ SQL table & indexed file loading; ■ SQL data verification. <p>As part of the build/develop, we have identify all flat files in the scope of the conversion, we will design file transformation programs to convert them to pure ASCII. The files would be FTP'd from UNISYS to Windows. The restructured files will be stored on Windows folder structure.</p> <p>Supporting Indexed files (If any) under .Net represents a small challenge. Options include:</p> <ul style="list-style-type: none"> ■ Transform the Indexed file to an SQL table; ■ Encapsulate access to the Indexed file within a Fujitsu custom file handler class; ■ Use a third-party licensed product (such as Pervasive Software's Btrieve) for data access. <p>Since the last option requires the Agency to license software, Fujitsu prefers the first two alternatives.</p>
4	Does your solution require that your project resources safeguard and protect sensitive and personally identifiable information (PII). Please explain and provide details.	Yes	<p>For activity that require access to production and sensitive data such system integration, user acceptance testing and production data conversion activities.</p> <p>For all other activities, such as code conversion, unit and functional testing, our preference is to work using sanitized and/or test data.</p>
5	Does your solution provide data conversion of all legacy database records so that historical records are available for display in the migrated on-line application? Please explain and provide detail.	Yes	<p>Because Fujitsu's data conversion process is highly automated using our Progression tool suite, we are able to support the data conversion of all legacy database records so that historical records are available for display in the migrated on-line application.</p> <p>We assume historical records have been archived, and if so, these records will need to be restored onto the DMS 2200 in order to be converted through the data conversion process.</p>

	Requirements	A	B
6	A significant change in Cobol levels is apparent by the presence of the END-IF scope terminator. Our version of Cobol predates the introduction of optional reserved word THEN and the reserved word END-IF scope terminator for the IF statement. Does your solution work with this early level of Cobol?	Yes	Fujitsu Progression automated tool suite that we used for parsing the COBOL business logic has been used in the past to parse old Unisys Sperry COBOL that did not contain the word THEN and the reserved word END-IF scope terminator for the IF statement. Our Parser/generator are built on Artificial Intelligence logic that recognized many variation of COBOL and apply the appropriate transformation rules.
7	Our batch programs SELECT files and ASSIGN TO DISC in the FILE-CONTROL INPUT-OUTPUT SECTION for both SDF disk and SDF virtual tapes on the Unisys host with the physical device assignments specified in the ECL run stream. Does your solution address items/features not supported in your code conversion plans and provide a functional equivalent? Please explain and provide detail.	Yes	Everything that is part of the code conversion will be supported as long as it is compatible with Microsoft platform and technology. If specific migration scheme is necessary for special data such as archival tapes, We can leverage Fujitsu large pool of expert to work with DHRM and design an appropriate solution. Related to this specific situation of Virtual Tapes used by the programs, Fujitsu assumed that all Virtual tapes are to be migrated to disk on the new platform.
8	Our primary snapshot file for data interchange is a 1,792 byte fixed-width text file snapshot of PMIS data known as the PME480 file or "480" produced daily with the semi-monthly files saved to tape on the Unisys host for scheduled reporting. The "480" does not contain every PMIS database field though it is a comprehensive composite of personnel data. The file layout is available in RFP 2015-08 PMIS Migration Section 4 appendices-Appendix E. Does your Solution replicate this file?	Yes	All interface and interface data file will be migrated to support the same existing business logic and process.
9	Our primary log record file for data interchange is the 3,500 byte fixed-width text file "Employee Log type-03" containing a composite of personnel data capturing the "before the update" (old) data value, and the "after the update" (new) data value along with the Reason Code that explains the reason for the update	Yes	This log data file will be migrated to support the same existing business logic and process. Migration of the similar before and after log data file and process was successfully implemented during the Washington DOL Unisys Sperry to .NET modernization project.

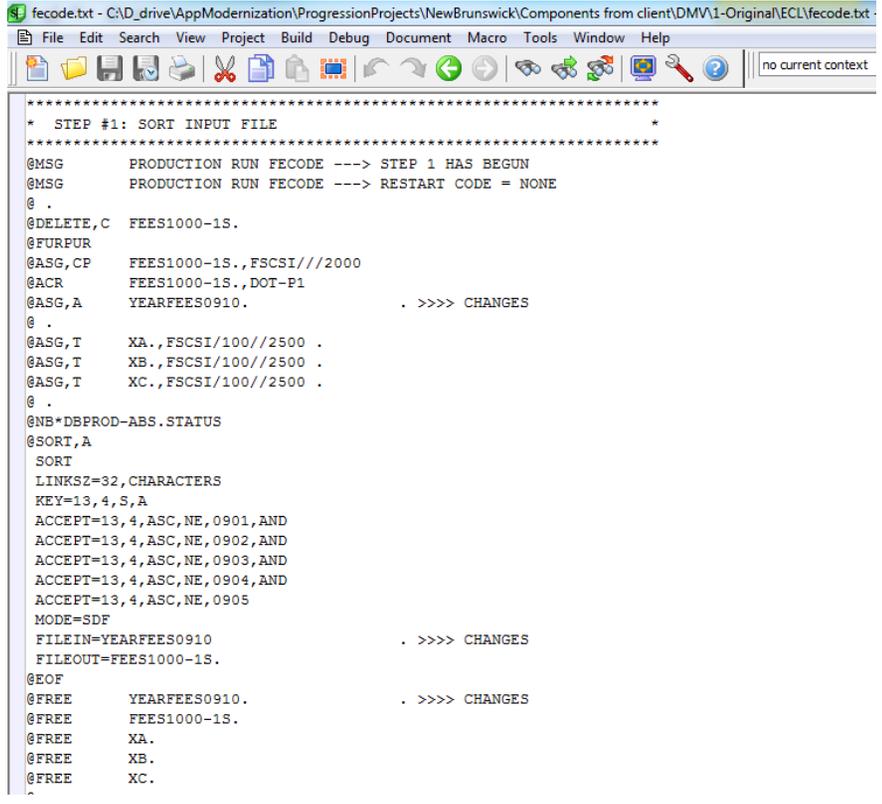
	Requirements	A	B
	<p>action. The "Employee Log type-03" file layout is available in RFP 2015-08 PMIS Migration Section 4 appendices-appendix F. The Reason Code table is available at our Web site http://web1.dhrm.virginia.gov/itech/ (refer to the Documentation section and then to PMIS User Guides - Other Tables used in PMIS (HTML version and see the Pay Adjustment Reasons tab).</p> <p>Does your solution replicate the production of this file? Please explain and provide detail.</p>		
10	<p>Does your solution provide new environment source code that, in its entirety, is wholly owned and open to modification by DHRM staff (non-proprietary source code) without additional charge to DHRM?</p>	Yes	<p>Fujitsu’s proposed solution does provide a new environment source code that, in its entirety, is wholly owned and open to modification by DHRM staff (non-proprietary source code) without additional charge to DHRM.</p> <p>One of the main benefits it that Fujitsu Progression tool suite generates 100% .NET source code (e.g. C#) that will be entirety owned by DHRM. The Solution does not contain or used any 3rd party software that would require extra licenses nor does it include any black box dll (object w/o source code).</p> <p>Progression solution also includes several Progression supporting objects (.NET framework extension) that are used to support the execution of the modernized application such as the Data Layer, Communication object and so on, as well as PowerShell module that allows for supporting cycle files, and all other ECL command as needed. DHRM will be provided with the source code of all Progression generated code as well as framework object.</p>
11	<p>Does your solution include any proprietary content?</p> <p>Please explain and provide detail.</p>	No	<p>Fujitsu’s solution does not include any proprietary content.</p> <p>One of the main benefits it that Fujitsu Progression tool suite generates 100% .NET source code (e.g. C#) that will be entirety owned by DHRM. The Solution does not contain or used any 3rd party software or proprietary content that would require extra licenses nor does it include any black box dll (object w/o source code).</p> <p>Progression solution also includes several Progression supporting objects (.NET framework extension) that are used to support the execution of the modernized application such as the Data Layer, Communication object and so on, as well as PowerShell module that allows for</p>

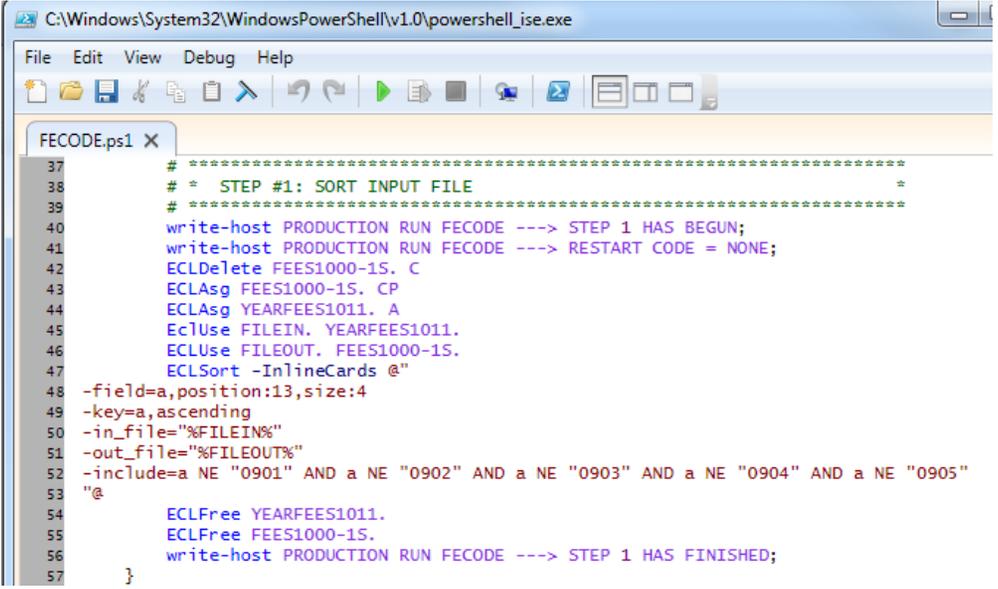
	Requirements	A	B
			<p>supporting cycle files, and all other ECL command as needed.</p> <p>Progression solution uses an open source/free object called Castle.Core that allows a full implementation instrumentation control that provides performance metrics data during application execution for performance optimization and tuning. This instrumentation feature of Fujitsu Progression can be turned on or off via a setting in the config file or can be completely remove if not needed.</p> <p>DHRM will be provided with the source code of all Progression generated code as well as framework object.</p>
12	<p>Solution needs to convert all Cobol code, copyprocs, subprograms, screens and ECL runs from Unisys to the new environment.</p> <p>Does your solution provide for complete system transformation from Unisys 2200 to Windows Server environment?</p>	Yes	<p>Fujitsu’s proposed solution provides for complete system transformation from Unisys 2200 to Windows Server environment</p> <p>The migration and conversion of all Cobol code, copyprocs, subprograms, screens and ECL from the Unisys 2200 Sperry COBOL to .NET will be automated using our Fujitsu Progression migration tool suite.</p> <p>Fujitsu Progression solution has been successfully used to delivered the following Unisys 2200 Sperry to .NET projects (see project references and detail for more information on project scope and technology involved):</p> <ol style="list-style-type: none"> 1) <i>New Brunswick Department of Public Safety – Motor Vehicle</i> 2) <i>Washington State Department of Licensing (DOL)</i>
13	<p>Does your solution provide for converted on-line DPS-2200 screens and associated programs to produce the same screen processing (look, feel and function) on the new Windows Server environment?</p>	Yes	<p>Fujitsu’s proposed solution provide the conversion of all on-line DPS-2200 screens and associated programs to produce the same screen processing (look, feel and function) on the new Windows Server environment</p> <p>The migration and conversion of all on-line 2200 screens (TIP/DPS) and associated programs from the Unisys 2200 Sperry to .NET will be automated using our Fujitsu Progression migration tool suite. The screens generated (asp.net) will be of same look and feel and function/behavior as the original screen to minimize user training (if any required)</p> <p>Fujitsu Progression solution has been successfully used to delivered the following Unisys 2200 Sperry to .NET projects (see project references and detail for more information on project scope and technology involved):</p>

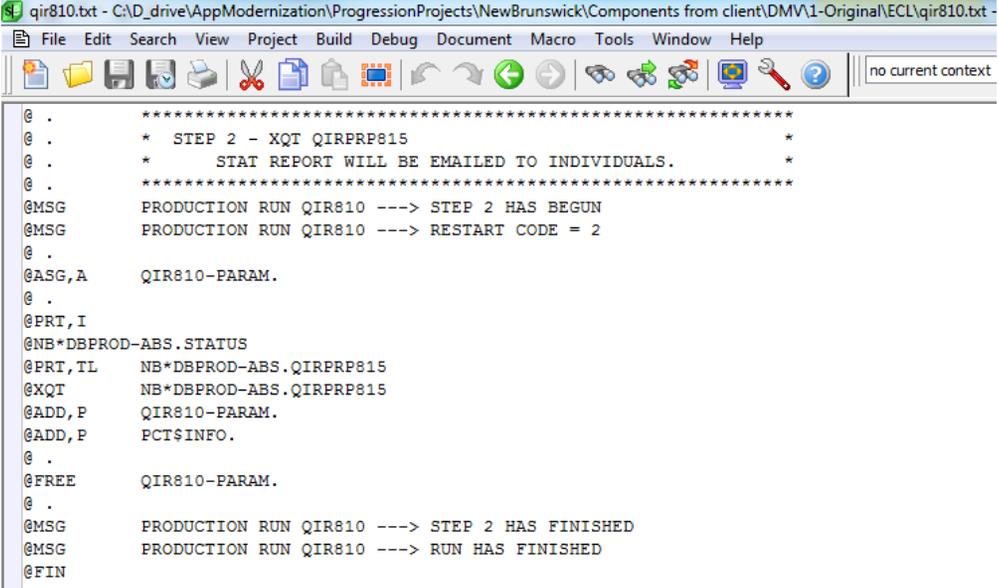
	Requirements	A	B
			<ol style="list-style-type: none"> 1) <i>New Brunswick Department of Public Safety – Motor Vehicle</i> 2) <i>Washington State Department of Licensing (DOL)</i>
14	Does your solution provide for converted on-line DPS-2200 screens and associated programs that access and update the DMS-2200 database to produce equivalent access and update in the new SQL Server database?	Yes	<p>Fujitsu’s proposed solution provides for the conversion of on-line DPS-2200 screens and associated programs that access and update the DMS-2200 database to produce equivalent access and update in the new SQL Server database</p> <p>The migration and conversion of all on-line 2200 screens (TIP/DPS) and associated programs (COBOL) from the Unisys 2200 Sperry to .NET will be automated using our Fujitsu Progression migration tool suite. The screens (asp.net) and programs (C#) generated will retain all original data access logic as per the original DMS-2200 data access logic to produce an equivalent access and update functionality of the SQL Server. This is provided by the data access component (DAC) automatically generated by the progression tool suite during the data conversion process.</p> <p>Fujitsu Progression solution has been successfully used to delivered the following Unisys 2200 Sperry to .NET projects (see project references and detail for more information on project scope and technology involved):</p> <ol style="list-style-type: none"> 1) <i>New Brunswick Department of Public Safety – Motor Vehicle</i> 2) <i>Washington State Department of Licensing (DOL)</i>
15	Does your solution provide for converted batch programs and ECL run streams to produce identical files and reports on the new Windows Server environment?	Yes	<p>Fujitsu’s proposed solution provides for the conversion of batch programs and ECL run streams to produce identical files and reports on the new Windows Server environment</p> <p>The migration and conversion of all batch programs (COBOL) and ECL run streams from the Unisys 2200 Sperry to .NET will be automated using our Fujitsu Progression migration tool suite. The batch programs (C#) and Run Script (PowerShell) generated will retain all original functionality to produce identical files and reports on windows platform/hard disk drive.</p> <p>All reports produced by the programs will be migrated to .NET but not redesigned, therefore they will remain unchanged and produce the same output as currently on the PMIS system.</p>

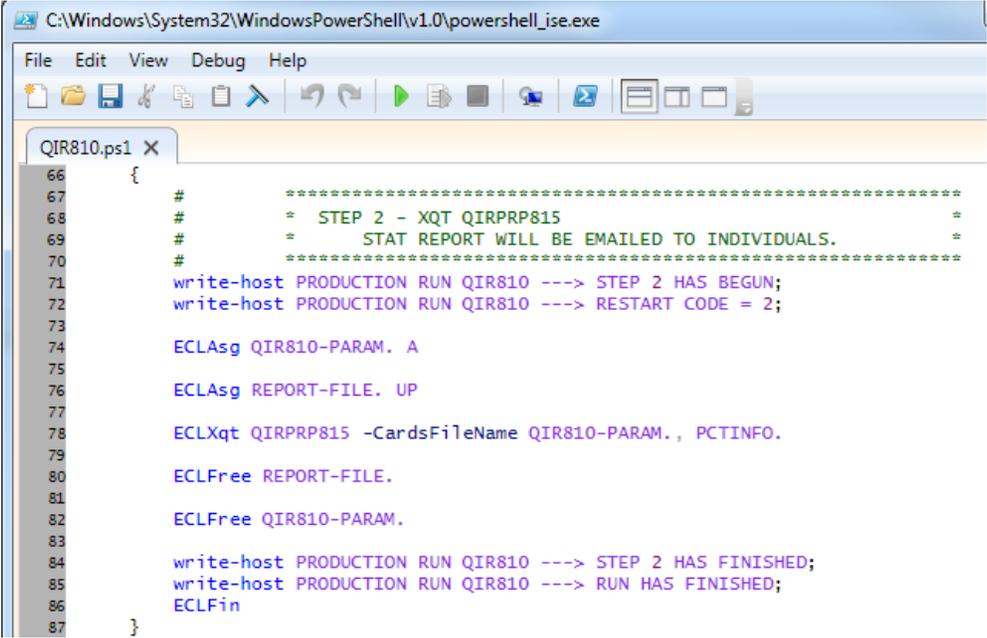
	Requirements	A	B
			<p>Fujitsu Progression solution has been successfully used to delivered the following Unisys 2200 Sperry to .NET projects (see project references and detail for more information on project scope and technology involved):</p> <ol style="list-style-type: none"> 1) <i>New Brunswick Department of Public Safety – Motor Vehicle</i> 2) <i>Washington State Department of Licensing (DOL)</i>
16	<p>Does your solution provide for converted batch DMS-2200 programs that access and update the database to produce equivalent updates in the new SQL Server environment?</p>	Yes	<p>Fujitsu’s proposed solution provides for the conversion of batch DMS-2200 programs that access and update the database to produce equivalent updates in the new SQL Server environment</p> <p>The migration and conversion of all batch programs (COBOL) from the Unisys 2200 Sperry to .NET will be automated using our Fujitsu Progression migration tool suite. The batch programs (C#) generated will retain all original data access logic as per the original DMS-2200 data access logic to produce an equivalent access and update functionality of the SQL Server. This is provided by the data access component (DAC) automatically generated by the progression tool suite during the data conversion process.</p> <p>Fujitsu Progression solution has been successfully used to delivered the following Unisys 2200 Sperry to .NET projects (see project references and detail for more information on project scope and technology involved):</p> <ol style="list-style-type: none"> 1) <i>New Brunswick Department of Public Safety – Motor Vehicle</i> 2) <i>Washington State Department of Licensing (DOL)</i>
17	<p>Many of the current batch processes include reading and writing virtual tape files as part of the ECL run. Unisys files, including tape files, are saved as file cycles with a current file cycle and prior file cycles, i.e. (-1) file cycle is the previous file cycle. As part of the batch process conversion, does your solution convert the current virtual tape library to an equivalent batch process in the Widows Server environment?</p> <p>Please explain how you expect to handle conversion</p>	Yes	<p>Fujitsu does support the concept of cycle file processing as per original Unisys concept.</p> <p>As part of the build/develop of the data/file conversion, we will identify all virtual tapes and data files in the scope of the conversion, we will design virtual tape/file transformation programs to convert them to pure ASCII or non-virtual device. The files would be FTP’d from UNISYS to Windows. The restructured files will be stored on Windows folder structure.</p> <p>The VTL concept basically converts high capacity SATA drives into virtual tapes, emulating real existing tape hardware. Therefore, once on the Windows platform, there will be no need to support the concept of tape hardware and Fujitsu’s proposed solution will take care of the conversion of the required logic to no longer depend on the concept of tape but rather use a standardize logic to access data files on disk (not virtual)</p>

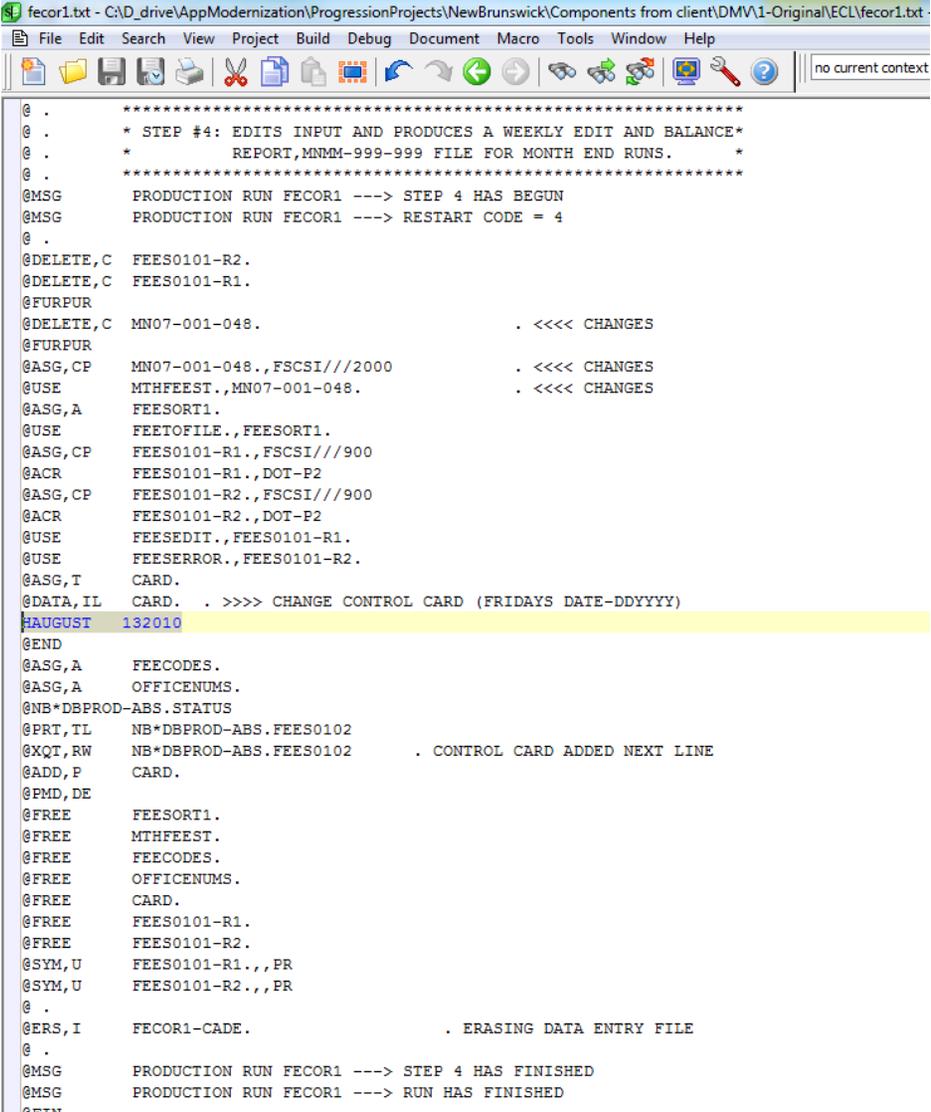
	Requirements	A	B
	of virtual tape processing from Unisys virtual tape file cycles		
18	<p>Many of the current batch processes include Sort/Merge processing of files as part of the ECL run (@SORT). @SORT processing is used for various file processing, such as, sorting, sorting and selecting only desired records, merging files, etc.</p> <p>As part of the batch process conversion, does your solution for batch processing produce equivalent Sort/Merge file processing?</p> <p>Please explain and provide detail.</p>	Yes	<p>Fujitsu's proposed solution does support batch processing that produce equivalent Sort/Merge file processing.</p> <p>The migration and conversion of all ECL run streams from the Unisys 2200 Sperry to .NET will be automated using our Fujitsu Progression migration tool suite. The batch Run Script (now PowerShell) generated will retain all original functionality to produce identical files and reports on windows platform/hard disk drive.</p> <p>All required utility such as SORT, FTP (when still required), file copy/manipulation, .. will be retained. The Fujitsu PowerShell solution (that simulate the ECL command) integrate with Windows Sort utility or any Market standard utility such as NSORT, PowerBSORT, ..</p> <p>Depending on the SORT functionality requirements and performance needed, the window SORT utility might not provide the proper performance and DHRM might be required to acquire a SORT utility such as NSORT to keep this functionality as equivalent to the original Unisys SORT utility. In the sample code below, you will notice that we have replace the original SORT command with the PowerShell sort function.</p> <p>Before (Original Unisys ECL SORT step)</p>

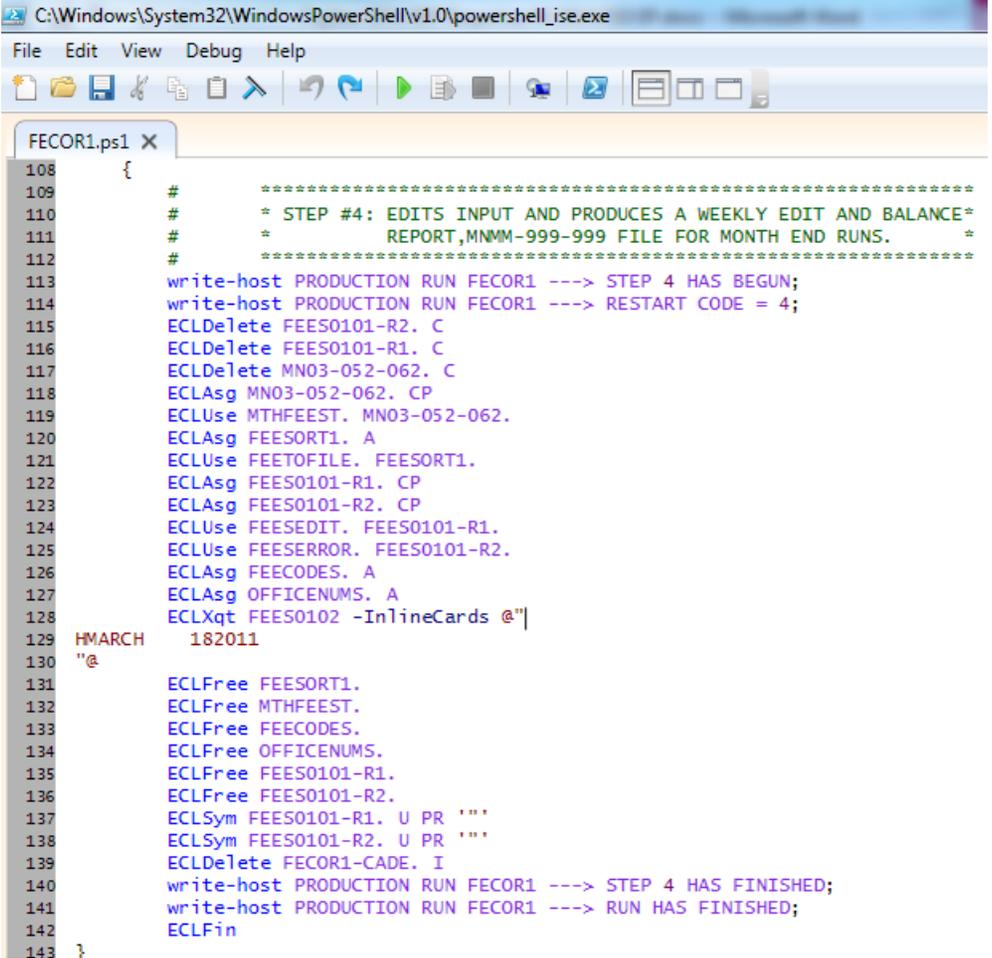
	Requirements	A	B
			 <pre> ***** * STEP #1: SORT INPUT FILE ***** @MSG PRODUCTION RUN FECODE ---> STEP 1 HAS BEGUN @MSG PRODUCTION RUN FECODE ---> RESTART CODE = NONE @ . @DELETE,C FEES1000-1S. @FURPUR @ASG,CP FEES1000-1S.,FSCSI///2000 @ACR FEES1000-1S.,DOT-P1 @ASG,A YEARFEES0910. . >>>> CHANGES @ . @ASG,T XA.,FSCSI/100//2500 . @ASG,T XB.,FSCSI/100//2500 . @ASG,T XC.,FSCSI/100//2500 . @ . @NB*DBPROD-ABS.STATUS @SORT,A SORT LINKSZ=32,CHARACTERS KEY=13,4,S,A ACCEPT=13,4,ASC,NE,0901,AND ACCEPT=13,4,ASC,NE,0902,AND ACCEPT=13,4,ASC,NE,0903,AND ACCEPT=13,4,ASC,NE,0904,AND ACCEPT=13,4,ASC,NE,0905 MODE=SDF FILEIN=YEARFEES0910 . >>>> CHANGES FILEOUT=FEES1000-1S. @EOF @FREE YEARFEES0910. . >>>> CHANGES @FREE FEES1000-1S. @FREE XA. @FREE XB. @FREE XC. ^ </pre> <p>After (replicated SORT step in Fujitsu PowerShell “ECL emulation” solution)</p>

	Requirements	A	B
			 <p>Fujitsu Progression solution for ECL run streams emulation has been successfully used to delivered the following Unisys 2200 Sperry to .NET projects (see project references and detail for more information on project scope and technology involved):</p> <ol style="list-style-type: none"> 1) New Brunswick Department of Public Safety – Motor Vehicle 2) Washington State Department of Licensing (DOL)
19	<p>Many of the current batch processes include control data input to the Cobol program via ECL run input. This control data is used by the Cobol program to pass parameters and other data used to control its run function, agencies to be processed, etc.</p> <p>As part of the batch process conversion, does your solution allow for control data input to Cobol programs and produce identical processing results?</p>	Yes	<p>Fujitsu’s proposed solution does allow for control data input to C# (retain original Cobol program functionality) and produce identical processing results.</p> <p>The migration and conversion of all ECL run streams from the Unisys 2200 Sperry to .NET will be automated using our Fujitsu Progression migration tool suite. The batch Run Script (now PowerShell) generated will retain all original functionality to relate to the Control Data exchange to the Business Logic as per the original program logic to produce identical processing results.</p>

	Requirements	A	B
	Please explain and provide detail.		<p>Original ECL passes control data to the COBOL program using 2 concepts which are both supported by Fujitsu Progression PowerShell “ECL emulation” solution.</p> <ol style="list-style-type: none"> 1) Parameter/control data files 2) Inline parameter/control data <p>The following are code snippet/sample of both technique that are supported.</p> <p>1) <u>ECL executing COBOL using Parameter/control data Files</u></p> <p>Before</p>  <pre> @ . @ . * STEP 2 - XQT QIRPRP815 @ . * STAT REPORT WILL BE EMAILED TO INDIVIDUALS. @ . * @ . * @MSG PRODUCTION RUN QIR810 ---> STEP 2 HAS BEGUN @MSG PRODUCTION RUN QIR810 ---> RESTART CODE = 2 @ . @ASG,A QIR810-PARAM. @ . @PRT,I @NB*DBPROD-ABS.STATUS @PRT,TL NB*DBPROD-ABS.QIRPRP815 @XQT NB*DBPROD-ABS.QIRPRP815 @ADD,P QIR810-PARAM. @ADD,P PCT\$INFO. @ . @FREE QIR810-PARAM. @ . @MSG PRODUCTION RUN QIR810 ---> STEP 2 HAS FINISHED @MSG PRODUCTION RUN QIR810 ---> RUN HAS FINISHED @FIN </pre> <p>After</p>

	Requirements	A	B
			 <pre> 66 { 67 # ***** 68 # * STEP 2 - XQT QIRPRP815 * 69 # * STAT REPORT WILL BE EMAILED TO INDIVIDUALS. * 70 # ***** 71 write-host PRODUCTION RUN QIR810 ---> STEP 2 HAS BEGUN; 72 write-host PRODUCTION RUN QIR810 ---> RESTART CODE = 2; 73 74 ECLAsg QIR810-PARAM. A 75 76 ECLAsg REPORT-FILE. UP 77 78 ECLXqt QIRPRP815 -CardsFileName QIR810-PARAM., PCTINFO. 79 80 ECLFree REPORT-FILE. 81 82 ECLFree QIR810-PARAM. 83 84 write-host PRODUCTION RUN QIR810 ---> STEP 2 HAS FINISHED; 85 write-host PRODUCTION RUN QIR810 ---> RUN HAS FINISHED; 86 ECLFin 87 } </pre> <p>2) <u>ECL executing COBOL program using inline parameter/control data</u></p> <p>Before</p>

	Requirements	A	B
			 <pre> fecor1.txt - CAD_drive\AppModernization\ProgressionProjects\NewBrunswick\Components from client\DMV1-Original\ECL\fecor1.txt File Edit Search View Project Build Debug Document Macro Tools Window Help no current context @ . @ . * STEP #4: EDITS INPUT AND PRODUCES A WEEKLY EDIT AND BALANCE* @ . * REPORT,MNMM-999-999 FILE FOR MONTH END RUNS. * @ . ***** @MSG PRODUCTION RUN FECOR1 ---> STEP 4 HAS BEGUN @MSG PRODUCTION RUN FECOR1 ---> RESTART CODE = 4 @ . @DELETE,C FEES0101-R2. @DELETE,C FEES0101-R1. @FURPUR @DELETE,C MN07-001-048. . <<<< CHANGES @FURPUR @ASG,CP MN07-001-048.,FSCSI///2000 . <<<< CHANGES @USE MTHFEEST.,MN07-001-048. . <<<< CHANGES @ASG,A FEESORT1. @USE FEETOFILE.,FEESORT1. @ASG,CP FEES0101-R1.,FSCSI///900 @ACR FEES0101-R1.,DOT-P2 @ASG,CP FEES0101-R2.,FSCSI///900 @ACR FEES0101-R2.,DOT-P2 @USE FEEDIT.,FEES0101-R1. @USE FEESERROR.,FEES0101-R2. @ASG,T CARD. @DATA,IL CARD. . >>>> CHANGE CONTROL CARD (FRIDAYS DATE-DDYYYY) HAUGUST 132010 @END @ASG,A FEECODES. @ASG,A OFFICENUMS. @NB*DBPROD-ABS.STATUS @PRT,TL NB*DBPROD-ABS.FEES0102 @XQT,RW NB*DBPROD-ABS.FEES0102 . CONTROL CARD ADDED NEXT LINE @ADD,P CARD. @PMD,DE @FREE FEESORT1. @FREE MTHFEEST. @FREE FEECODES. @FREE OFFICENUMS. @FREE CARD. @FREE FEES0101-R1. @FREE FEES0101-R2. @SYM,U FEES0101-R1.,,PR @SYM,U FEES0101-R2.,,PR @ . @ERS,I FECOR1-CADE. . ERASING DATA ENTRY FILE @ . @MSG PRODUCTION RUN FECOR1 ---> STEP 4 HAS FINISHED @MSG PRODUCTION RUN FECOR1 ---> RUN HAS FINISHED @FIN </pre>

	Requirements	A	B
			<p>After</p>  <pre> 108 { 109 # ***** 110 # * STEP #4: EDITS INPUT AND PRODUCES A WEEKLY EDIT AND BALANCE* 111 # * REPORT,MNMM-999-999 FILE FOR MONTH END RUNS. * 112 # ***** 113 write-host PRODUCTION RUN FECOR1 ---> STEP 4 HAS BEGUN; 114 write-host PRODUCTION RUN FECOR1 ---> RESTART CODE = 4; 115 ECLDelete FEES0101-R2. C 116 ECLDelete FEES0101-R1. C 117 ECLDelete MN03-052-062. C 118 ECLAsg MN03-052-062. CP 119 ECLUse MTHFEEST. MN03-052-062. 120 ECLAsg FEESORT1. A 121 ECLUse FEETOFI. FEESORT1. 122 ECLAsg FEES0101-R1. CP 123 ECLAsg FEES0101-R2. CP 124 ECLUse FEESEDIT. FEES0101-R1. 125 ECLUse FEESERROR. FEES0101-R2. 126 ECLAsg FEECODES. A 127 ECLAsg OFFICENUMS. A 128 ECLXqt FEES0102 -InlineCards @" 129 HARCH 182011 130 "@ 131 ECLFree FEESORT1. 132 ECLFree MTHFEEST. 133 ECLFree FEECODES. 134 ECLFree OFFICENUMS. 135 ECLFree FEES0101-R1. 136 ECLFree FEES0101-R2. 137 ECLSym FEES0101-R1. U PR "" 138 ECLSym FEES0101-R2. U PR "" 139 ECLDelete FECOR1-CADE. I 140 write-host PRODUCTION RUN FECOR1 ---> STEP 4 HAS FINISHED; 141 write-host PRODUCTION RUN FECOR1 ---> RUN HAS FINISHED; 142 ECLFin 143 } </pre>

	Requirements	A	B
20	<p>Does your solution provide at least the following database and database-related deliverables:</p> <p>1) Conceptual, logical and physical Relational Database models</p> <p>2)</p> <p>3) A database normalized to 3rd Normal Form</p>	Yes	<p>Fujitsu intend to utilize Fujitsu’s Macroscopic® Solution domain methodology and deliverable templates and/or DHRM templates. The Macroscopic® Solution domain incorporates Fujitsu's best practices in the area of data Modeling and Architecture.</p> <p>During the Architecture, Analysis and Design phase, Fujitsu will cover the right level of detail across multiple subjects such as: inventory of the existing systems, screen standards, interfaces, data design and conversion, code migration, ECL conversion, security, reporting, performance testing, QAT testing.</p> <p>Fujitsu proposed solution includes deliverable(s) that document:</p> <ul style="list-style-type: none"> ■ The Conceptual, logical and physical Relational Database models. ■ Data Dictionary including but not limited to data element definitions, table definitions, trigger definitions, database security model, stored procedure definitions, database schema, entity relationship model of data <p>The following is an outline of the main deliverables in the scope of this project to provide that database and data related documentation:</p> <p>P170S - Information Structure (Conceptual/Logical)</p> <p>Purpose</p> <ul style="list-style-type: none"> ■ To define the components of each facet (Entity Data Model) and their associations from the user viewpoint. <p>Contents</p> <ol style="list-style-type: none"> 1. Facet (one section per facet) <ol style="list-style-type: none"> 1.1 Facet Overview 1.2 Facet Content 1.3 Facet Component (one section per component (class, association, entity, relationship)) <p><u>P510C – Database Structure (Physical)</u></p> <p>Purpose</p>

	Requirements	A	B
			<ul style="list-style-type: none"> ■ To describe the specific structure and distribution of a database or file. ■ To provide a basis for database definition coding. <p>Contents</p> <ul style="list-style-type: none"> ■ Database Structure Description <ul style="list-style-type: none"> • database security model • stored procedure definitions • database schema ■ Database Tables <ul style="list-style-type: none"> • Database Table (one section per database table) <ul style="list-style-type: none"> → data element definitions → trigger definitions <p>Fujitsu as used several Data Model software to document the new data model such as SQL Modeler, Visio, CA-ErWin</p> <p><u>SQL Server Database</u></p> <ul style="list-style-type: none"> ■ The 3rd normal form is our standard targeted data model design, unless performance is impacted by some exceptional case, and if so, a compromise will be designed to achieve the best and most efficient data model possible.
21	Does your solution provide protection of data at rest through the use of encryption protocols? If so, list the proposed protocols to be used. Please explain and provide details.	Yes	Fujitsu’s proposed solution do not impose the use of a specific encryption protocol for data at read and is therefore compatible with the implementation of standard windows protocol supported by the functionality of the windows server 2012 operating system. It is recommended data encryption at rest should only include strong encryption methods such as AES , RSA , and SHA-256 .
22	Does your solution translate/convert all DHRM-provided on-line transactions from their current Unisys environment to run as applications in the DHRM target environment including having the applications	Yes	The migration and conversion of all on-line 2200 online transaction and associated programs (COBOL) from the Unisys 2200 Sperry to .NET will be automated using our Fujitsu Progression migration tool suite. The online screens (asp.net) and programs (C#) generated will continue to accept the same inputs as exist in the current application environment and will also retain all original data access logic as per the original DMS-2200 data access logic to produce an equivalent access and update functionality to store and access data using the

	Requirements	A	B
	<ul style="list-style-type: none"> - accept the same inputs as exist in the current application environment - store and access data using the SQL Server 2012 database - produce the same outputs as the current application, except that both inputs and outputs will be within the new environment? <p>Please explain and provide detail.</p>		<p>SQL Server 2012 database</p> <p>Also, the solution and transaction will continue to produce the same outputs as the current application, except that both inputs and outputs will be within the new environment</p> <p>Fujitsu’s progression solution has been successfully used to delivered the following Unisys 2200 Sperry to .NET projects (see project references and detail for more information on project scope and technology involved):</p> <ol style="list-style-type: none"> 1) <i>New Brunswick Department of Public Safety – Motor Vehicle Washington</i> 2) <i>State Department of Licensing (DOL)</i>
23	<p>Does your solution translate/convert all Unisys batch processing (i.e. individual ECL jobs and programs) to run as corresponding individual batch job processes in this new environment? That is, the translated/converted batch jobs and programs:</p> <ul style="list-style-type: none"> • needs to accept the same inputs, or dynamic run parameters, as exist in the current application environment • store and access data using the SQL Server database mentioned above as needed • produce the same outputs as the current Unisys batch job processes, except that both inputs and outputs will be within the new environment. (Note: The current Unisys batch job processing performs sort processing and other functions and also uses virtual tapes to access and store files for daily, monthly and other processing. These processing capabilities will need to continue in some equivalent form in the proposed new 	Yes	<p>The migration and conversion of all on-line 2200 batch transaction and associated programs (COBOL) and ECL Jobs from the Unisys 2200 Sperry to .NET will be automated using our Fujitsu Progression migration tool suite. The batch programs (COBOL to C#) and the batch Jobs (ECL to PowerShell) generated will continue to accept the same inputs, or dynamic run parameters, as exist in the current application environment and will also retain all original data access logic as per the original DMS-2200 data access logic to produce an equivalent access and update functionality to store and access data using the SQL Server 2012 database</p> <p>Also, the solution will continue to produce the same outputs as the current Unisys batch job processes, except that both inputs and outputs will be within the new environment. As explained in previous answers, Unisys batch job performing sort processing and using virtual tapes to access and store files for daily, monthly will continue in some equivalent form to be supported in the proposed new environment</p> <p>Fujitsu Progression solution has been successfully used to delivered the following Unisys 2200 Sperry to .NET projects (see project references and detail for more information on project scope and technology involved):</p> <ol style="list-style-type: none"> 1) <i>New Brunswick Department of Public Safety – Motor Vehicle</i> 2) <i>Washington State - Department of Licensing (DOL)</i>

	Requirements	A	B
	environment.) Please explain and provide details.		
24	Does your solution provide protection of data in transit through the use of encryption protocols? If so, list the proposed protocols to be used. Please explain and provide details.	Yes	Fujitsu's proposed solution leverages standard Microsoft windows or other market standard communication encryption protocols such as SSL, HTTPS, and so on, which can be implemented as required.
25	Does your solution provide protection of user authentication credentials at through the use of encryption protocols? If so, list the proposed protocols to be used. Please explain and provide details.	Yes	Fujitsu's proposed solution leverages standard Microsoft windows offering such as active directory to implement proper user authentication credentials through the use of encryption protocols such as integrated security..
26	Does your solution provide protection of user authentication credentials in transit through the use of encryption protocols? If so, list the proposed protocols to be used. Please explain and provide details.	Yes	Fujitsu's proposed solution leverages standard Microsoft windows or other market standard communication encryption protocols such as SSL, HTTPS, and so on, which can be implemented as required.

1.5 Testing & Solution Acceptance

	Requirements	A	B
1	<p>Does your solution provide a means to test through operational cycles in the new environment before DHRM's acceptance of the solution?</p> <p>Please explain and provide details.</p>	Yes	<p>Fujitsu's proposed solution does provide a means to test through operational cycles in the new environment before DHRM's acceptance of the solution.</p> <p>Fujitsu will utilize its Macroscopic methodology for Testing which will be adapted to DHRM unique needs, if any.</p> <p>Fujitsu has a unique approach and methodology to facilitate the testing efforts, which occurs early in the project therefore allowing for more testing time and reducing project risk. The DHRM testing strategy will be developed at the beginning of the project life cycle in order to determine the required level of testing, test cycles, groups of components to be tested and their dependencies. The testing strategy is reviewed with DHRM to ensure complete understanding and agreement of the requirements.</p> <p>Testing begins very early in the development life cycle and continues until implementation. The testing activities to develop reusable test cases and scripts are planned in conjunction with the development strategy and delivery sequence of modernized components. Therefore, the source code delivery sequence to DHRM is known during the planning phase. As a result, the test strategy is created and aligned with the delivery sequence. During the planning phase the testing techniques, processes and standards will be established in partnership with DHRM's QA manager for review and approval.</p>
2	<p>When DHRM tests code that the chosen vendor has replicated, DHRM wants the code to be thoroughly tested before beginning its testing. Does your solution deliver thoroughly tested / defect free code to DHRM for testing?</p> <p>Please explain and provide details.</p>	Yes	<p>Starting with system code migration and transition, testing will proceed through different steps as follows: unit test, integration/system tests, acceptance tests and implementation check-out. Throughout these testing steps, additional targeted tests will be done such as performance testing, conversion testing and any other testing deemed appropriate.</p> <p>Here is a short explanation of the different levels of testing.</p> <p>Unit</p> <ul style="list-style-type: none"> ■ Performed by the Fujitsu Development team, which verifies the proper execution of one programming unit at a time, on the unit-testing environment <p>Integration/System</p> <ul style="list-style-type: none"> ■ Performed by the Fujitsu Test Team ■ Fujitsu will execute the test scripts using Microsoft Test Manager ■ Fujitsu will use and validate the baselined converted test data

	Requirements	A	B
			<ul style="list-style-type: none"> ■ Fujitsu will execute each test script; will verify the proper execution of the programs and will validate that the test produces the same results as on the current system <p>Fujitsu will investigate the defect tracking process for any anomaly discovered during Integration/System testing and will track its process for resolution of the defect prior to delivery</p> <p>This testing phase ensures that all aspects of the application has been delivered by the Development/Modernization Team, the environment is usable, the new SQL databases are accessible by Online, Batch and Interface applications, and that the application can be traversed from screen-to-screen.</p>
3	Does your solution allow for parallel/integrated testing of the new system to verify results against the current mainframe system? Please explain and provide details.	Yes	<p>Throughout the testing lifecycle of planning, testing and tracking the progress Fujitsu will be using Visual Studio that integrates with Team Foundation Server and Microsoft Test Manager. Both Tool Suites will be used to define, create, execute and manage the testing effort throughout proper test plans. These test plans enable us to measure progress as we run the tests and report on how much testing remains.</p> <p>The proposed Fujitsu testing methodology and tool suites are already integrated with the Visual Studio. We can save the test results, generate test reports, and review resulting test data. As part of this process, defects are submitted directly from Visual Studio or Microsoft Test Manager with detailed information that is collected when the tests are executed.</p> <p>Team Foundation Server and SharePoint are tools that Fujitsu uses in support of our Configuration Management process.</p> <p>Fujitsu will utilize Team Foundation Server to retrieve the built converted source code into executable that will be deployed to the different testing environments.</p>

	Requirements	A	B
			<p>The diagram illustrates the workflow between three environments:</p> <ul style="list-style-type: none"> Mainframe Environment: A User interacts with Test Data, Test Cases, Reports & Outputs, and a Legacy Application. Windows Development & Testing Environment: Test Data is converted and used in Visual Studio, TFS, SharePoint, Microsoft Test Manager, and Controller/Load Agent. This leads to a Build Process, which feeds into VM Development, System Integration, and VM Performance/Stress. Windows QA Environment: A User interacts with Visual Studio, TFS, SharePoint, and Microsoft Test Manager. <p>The process flow includes: Defect Review, Resolve, Redeploy; Execute Job from Scheduler; Execute Test Case; Pass or Failed decision; Write Defect; Update Test Results; and Prepare QA Delivery (Source, Executables, Test Data, Test Results).</p>
4	Does your solution provide a means for verifying each component of the migrated application? Please explain and provide details.	Yes	As the project progresses through the different phases of testing and extends its coverage, Fujitsu will include more tests in the automated regression step in order to validate the quality of the entire scope produced thus far and mitigate any unforeseen problems that may occur. Each Source Code Release will represent a logical evolution in the solution, and regression testing will be utilized at each iteration to validate that the quality of the overall solution is maintained and that meets DHRM requirements. The scope of the testing does include each component of the migrated application.
5	Does your solution provide a means to verify that	Yes	Fujitsu’s proposed solution does provide a means to verify that screen processing on the new environment retrieves data from the SQL database identical to the data retrieved on the

	Requirements	A	B
	<p>screen processing on the new environment retrieves data from the SQL database identical to the data retrieved on the Unisys environment?</p> <p>Please explain and provide details.</p>		<p>Unisys environment. Part of Fujitsu’s methodology for legacy modernization includes the use of Baseline Mainframe Scripts to assist analysts, developers and testers.</p> <p>The Baseline Mainframe Scripts are created on the mainframe and describes the legacy system behavior through the use of original screen captures and database snapshots. The tester will gather original screen captures at key points throughout the transaction. As well, a DMS database snapshot will be taken prior to the commencement of the scripting, after the completion of all online transactions and then again after batch processes have run. These deliverables will be utilized as a comparison for both new screen layout, process and the validate data updated and retrieved is accurate and identical to the data updated and retrieved on the Unisys environment.</p> <p>Fujitsu will execute its Integration/System Tests using a copy of baseline data from the mainframe. Using the same source of data is mandatory to maintain testing integrity between the two environments and to facilitate validation and easier reproduction of defects.</p> <p>Below is a high level approach</p> <p>The diagram illustrates a high-level approach for legacy modernization testing across three releases (R1, R2, R3). It is organized into three horizontal layers: Legacy, Fujitsu, and DHRM.</p> <ul style="list-style-type: none"> Legacy (Green): Shows the sequence of script writing & data prep, script & batch execution, and script writing & data prep for each release (R1, R2, R3). Data baselines (1a, 2a, 3a) are captured after each execution phase. Fujitsu (Red): <ul style="list-style-type: none"> Dev: R1 application modernization, R2 application modernization, and R3 application modernization. Functional Testing: R1 Functional Testing, R2 Functional Testing, and R3 Functional Testing. Each phase includes: <ul style="list-style-type: none"> environment prep (create all websites, create all services, load 1a data, R1 test scripts) execute R1/R2/R3 scripts execute defect process prepare delivery to DPS Website Data: R1 website, R2 website, and R3 website. Each website phase includes: <ul style="list-style-type: none"> load 1a/2a/3a data R1/R2/R3 test scripts DHRM (Blue): <ul style="list-style-type: none"> QA Testing: R1 QA Testing, R2 QA Testing, and R3 QA Testing. Each phase includes: <ul style="list-style-type: none"> execute R1/R2/R3 scripts execute defect process Website Data: R1 website, R2 website, and R3 website. Each website phase includes: <ul style="list-style-type: none"> environment prep (create all websites, create all services, load 1a data, R1 test scripts, receive FAI delivery) load 2a/3a data R2/R3 test scripts execute defect process receive FAI delivery <p>Arrows indicate the flow of data and dependencies between these components across the releases.</p>

	Requirements	A	B
6	<p>Does your solution provide a means to verify that screen processing that updates the SQL database on the new environment is equivalent to the associated updates on the Unisys environment?</p> <p>Please explain and provide details.</p>	Yes	<p>Fujitsu’s proposed solution does provide a means to verify that screen processing that updates the SQL database on the new environment is equivalent to the associated updates on the Unisys environment using the same testing approach, technique and process of Baseline Mainframe Scripts described in the previous answer (2.5.5),</p> <p>Before the start of each testing phase, Fujitsu Test team will analyze the readiness of the testing environment, gather all the required test cases/scripts, screen capture, report outputs and data from the Baseline Test Activities. The Fujitsu Testing team will utilize Microsoft Test Manager for test script execution, defect tracking and track testing status.</p> <p>Fujitsu performs these tests by using the Baselined Test Cases/Scripts, to determine if the programs that directly interact with humans behave the same and produce the same screen displays, reports, and database updates/changes as the programs did on the Unisys.</p> <p>Baselined Test Cases/Scripts will be grouped by business domain and will align with the overall architecture rollout of the modernized application. Detailed Test Cases will be comprised of the following:</p> <ul style="list-style-type: none"> ■ Test Case ID ■ Test Case Name ■ Test Case Description ■ Required Preconditions / Data Setup ■ Test Steps ■ Expected Results ■ Mainframe key point screen shots
7	<p>Does your solution provide a means to verify that data files and reports produced on the new environment are identical to files and reports produced on Unisys?</p> <p>Please explain and provide details.</p>	Yes	<p>Fujitsu’s proposed solution does provide a means to verify that data files and reports produced on the new environment are identical to files and reports produced on Unisys.</p> <p>Fujitsu performs these tests by using the Baselined Test Cases/Scripts, to determine if the batch jobs executed in the Windows environment collect and process data correctly to produce the same database changes, reports, error logs, and exported outputs as they did on the Unisys. Side by Side compare of the original baselined reports and data file to the new reports and data file is performed to validate that both are identical.</p>
8	<p>During new environment testing phase will on-site resources be available to discuss and correct any</p>	Yes	<p>Fujitsu will have onsite presence available to discuss and correct any defects and/or issues discovered during the testing phase. This activity is also defined and planned accordingly</p>

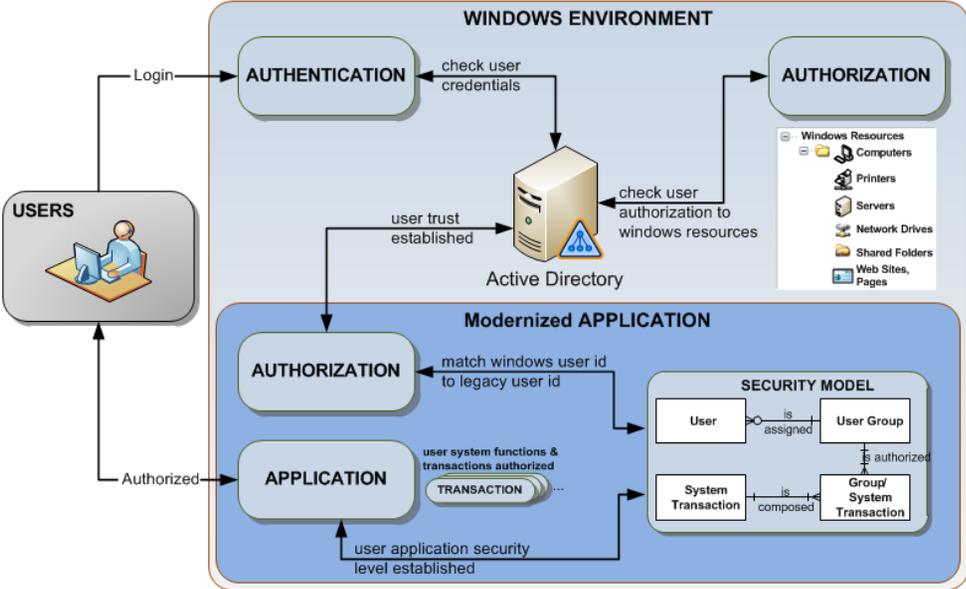
	Requirements	A	B
	<p>problems found during testing?</p> <p>Please explain and provide detail.</p>		<p>during the creation of the of the overall testing strategy deliverable during the Planning phase of the project.</p>
9	<p>Does your solution provide a means to verify that batch database updates on the new environment are equivalent to batch database updates on Unisys?</p> <p>Please explain and provide details.</p>	Yes	<p>Fujitsu’s proposed solution does provide a means to verify that batch database updates on the new environment are equivalent to batch database updates on Unisys using the same testing approach, technique and process of Baseline Mainframe Scripts described in the previous answer (2.5.5) but this time for the batch update processes.</p> <p>Before the start of each testing phase, the Fujitsu test team will analyze the readiness of the testing environment, gather all the required test cases/scripts, input file, control data, report outputs and data file from the Baseline Test Activities. The Fujitsu Testing team will utilize a combination of testing run streams setup in the soft tree scheduler to execute the test script and Microsoft Test Manager for defect tracking and track testing status.</p> <p>Fujitsu performs these tests by using the Baselined Test Cases/Scripts, to determine if the batch jobs executed in the Windows environment collect and process data correctly to produce the same database changes, reports, error logs, and exported outputs as they did on the Unisys</p> <p>Baselined Test Cases/Scripts will be grouped by business domain and will align with the overall architecture rollout of the modernized application. Detailed Test Cases will be comprised of the following:</p> <ul style="list-style-type: none"> ■ Test Case ID ■ Test Case Name ■ Test Case Description ■ Required Preconditions / Data Setup ■ Test Steps ■ Expected Results ■ Mainframe key point Reports, input control data, and output data files
10	<p>Does your solution provide a means of comparing the UNISYS database to the target SQL Server database to verify data accuracy and integrity?</p>	Yes	<p>Fujitsu’s proposed solution does provide a means of comparing the UNISYS database to the target SQL Server database to verify data accuracy and integrity.</p> <p>Fujitsu views the data migration as a repetitive process, not a one shot effort. We expect to perform several trial migrations throughout the project with the objective of catching any defects in the migration process long before the implementation day.</p>

	Requirements	A	B
			<p>One side product of these trial migrations will be verification reports produced by the TableChecker tool showing discrepancies between the legacy data extract and the SQL data. Using these reports the data architecture team can correct data quality issues by providing conversion rules on how to handle each discrepancy.</p> <p>Once a trial data conversion is completed, Fujitsu will examine the coded fields using SELECT DISTINCT queries. The data architecture team can then review the query results to see if the data content matches the expected range of values.</p>

1.6 Delivered Solution

	Requirements	A	B
1	(M) Supplier must be able to deliver the completed Solution by June 30, 2016. Do you meet this requirement; please explain.	Yes	Fujitsu has always successfully met and delivered on time all its previous modernization project. Fujitsu will only commit to projects we are sure we can meet the delivery date.
2	Does your solution provide a means to convert all the security settings and have them work in the new environment as they do in the current mainframe environment?	Yes	<p>First, consider that all current custom application security already implemented in the system will be automatically modernized as part of the project thru the use of Fujitsu Progression Tool Suite that convert all Cobol code to C#, thus 100% retained on the .NET version of the system. Furthermore, in the .Net framework, transport security, dialog security, and the security infrastructure built into SQL Server work together to help make the application secure. Each application has unique security requirements and part of managing security is to carefully plan security requirements for the whole application. Security services can be implemented at the level of the screen if required.</p> <p>Fujitsu will assign a Microsoft Security expert to the project to implement a security solution based on Microsoft Active Directory (AD) insuring that the modernized applications comply with DHRM and/or VITA security requirements. The security solution will preserve existing security functionality while improving overall security controls for the modernized applications. The following describes a security framework that can be used for the Modernized PMIS application (and all its subsystems); some of the items in the text are assumed [User Group, Group System/Transaction].</p> <ul style="list-style-type: none"> ■ Authentication <p>The modernized PMIS application (and all its subsystems) will be deployed as a web based application and Windows Active Directory is used for the authentication model. DHRM users are trusted by the application through their registration in the Active Directory. Internal and external users and organizations that are trusted by DHRM will have an identity managed in Active Directory.</p> <p>Application user's identity is confirmed through username and password credentials and access PMIS application (and all its subsystems) based on their employment roles and responsibilities, with the limitations as defined in the security system [see Authorization Section below].</p> <p>The modernized application implemented on .NET framework on Windows Server 2012,</p>

	Requirements	A	B
			<p>Active Directory offers features and components that can supplement, in the future, the current application security model:</p> <ul style="list-style-type: none"> • Active Directory Lightweight Directory Services (AD LDS, also known as Active Directory Application Mode (ADAM)) • Active Directory Federation Services (AD FS): provides Web single sign-on (SSO) • Group Policy • Active Directory Domain Services (AD DS) <p>■ Authorization</p> <p>The Windows Active Directory, out of the box, is used to manage the authorization of the access with the Windows resources, such as website, web page, DLL, server, printers, etc.</p> <p>All the security logic embedded in the Legacy application is carried over to the modernized applications. User access authorization is implemented consistently across all levels of the system, using specific application role definitions. The Windows user ID is processed through a lookup table and the modernized application user ID is retrieved and used to establish the right level of user privileges (see <i>Figure - Security Model</i> below).</p> <p>The following are common security functions allowing the maintenance of user access privileges that is likely to be used in the PMIS application (and all its subsystems).</p> <p>Maintenance of user profiles allowing user creation, activation/deactivation, security level selection, user categorization, as well as its association to a user group;</p> <p>Maintenance of user groups, which represents a collection of users authorized to perform specific functions [transactions] in a system;</p> <p>Maintenance of transactions associated to a system allowing to break it down into multiple transactional parts;</p> <p>Maintenance of system/transactions association to user groups;</p> <p>Maintenance of group transactions, which is the association of user groups to transactions of a system.</p>

	Requirements	A	B
			<p>All the above security functions ultimately allow the definition of the security level or level of access rights of a user group to PMIS applications (and all its subsystems). It allows control of the transactions or system functions that users can access and execute, such as inquiring [user can be limited to “read only” access], creating, deleting and updating records within specific applications.</p>  <p>The diagram, titled "Figure: Security Model", illustrates the security process. It is divided into two main sections: "WINDOWS ENVIRONMENT" and "Modernized APPLICATION".</p> <ul style="list-style-type: none"> WINDOWS ENVIRONMENT: Contains "AUTHENTICATION" and "AUTHORIZATION" components. "USERS" (represented by a person at a computer) perform a "Login" to the "AUTHENTICATION" component, which "check[s] user credentials". The "AUTHENTICATION" component then interacts with "Active Directory" (represented by a server icon) to "check user authorization to windows resources". The "AUTHORIZATION" component also interacts with Active Directory. A list of "Windows Resources" is shown, including Computers, Printers, Servers, Network Drives, Shared Folders, and Web Sites, Pages. Modernized APPLICATION: Contains "AUTHORIZATION" and "APPLICATION" components. The "AUTHORIZATION" component "match[es] windows user id to legacy user id". The "APPLICATION" component handles "user system functions & transactions authorized" (represented by a "TRANSACTION" icon) and "user application security level established". SECURITY MODEL: A separate box showing relationships between "User", "User Group", "System Transaction", and "Group/ System Transaction". <ul style="list-style-type: none"> "User" is "assigned" to "User Group". "User Group" is "authorized" to "Group/ System Transaction". "System Transaction" is "composed" of "Group/ System Transaction". <p>Flow: "USERS" login to "AUTHENTICATION" in the "WINDOWS ENVIRONMENT". "AUTHENTICATION" checks credentials and interacts with "Active Directory". "Active Directory" checks authorization to "Windows Resources". "AUTHORIZATION" in the "WINDOWS ENVIRONMENT" also checks authorization. "AUTHORIZATION" in the "Modernized APPLICATION" matches the "windows user id to legacy user id". The "APPLICATION" component then processes "TRANSACTION"s, with the "user application security level established". The "SECURITY MODEL" defines the relationships between "User", "User Group", "System Transaction", and "Group/ System Transaction".</p> <p><i>Figure: Security Model</i></p>
3	Does your solution provide a means to have the current reports and files reproduced identically (i.e., same look and data) in the new environment?	Yes	<p>Reports and files produced by the modernized programs will be migrated to .NET but not redesigned, therefore they will remain unchanged and produce the same output as currently on the PMIS Application (and all its subsystems). The delivery and output file format of the reports might be impacted to better integrate with Windows platform. For example, print spooler does not exist on Windows consequently report outputs could be printed directly,</p>

	Requirements	A	B
			<p>stored in Windows folder structure as ASCII files, or to PDF. This is to be define, decided and accepted during the Architecture/Design phase of the project and properly documented into the Technical Architecture deliverable.</p>
4	<p>Does your solution allow for the conversion of all DHRM-provided on-line transactions so they will run in the new environment using the same inputs that exist in the current UNISYS application environment? If yes, please explain in detail.</p>	Yes	<p>The Fujitsu proposed solution is fully based on the Automated Tool Suite called Fujitsu Progression and does not involve any 3rd party software or emulation tools. Fujitsu Progression solution and approach use as input the Legacy Unisys assets, our knowledge of the Unisys platform behavior and customized templates to modernize all COBOL programs, TIP/DPS Screen and DMS into a modern 3-tier design that will ensure a complete and independent implementation of the presentation, business and data layer while keeping all business logic and system behavior like the current application.</p> <p>The presentation layer will migrate all user interfaces (TIP and DPS screens) and related screen handling and validations into an ASP.NET Web Form application running in IIS and using Internet Explorer as a display interface (thin client). All of the screen code will reside in a standard C# code-behind and will exhibit the expected object oriented event and message driven standards. Communication between the presentation and business layers will be done using a class object through the MFC.</p> <p>The Business layer will become a C# ASP.NET library component (DLL) where all program data is part of new local or shared class components. Everywhere possible common functionalities will be implemented using shared common components. Although the new C# business logic will be fully object oriented, <u>it will also retain the integrity of all existing business rules and behaviors</u>.</p> <p>The above solution and approach that Fujitsu has used successful on several previous Unisys Sperry to .NET modernization projects, allows for the conversion of all DHRM-provided on-line transactions so they will run in the new environment using the same inputs that exist in the current UNISYS application environment.</p>
5	<p>Does your solution allow for the conversion of all DHRM-provided on-line transactions so they will access / store identical data in comparable data types and produce the same output in the SQL Server database in the new environment? Please explain and</p>	yes	<p>The Fujitsu proposed solution is fully based on the Automated Tool Suite called Fujitsu Progression and does not involve any 3rd party software or emulation tools. Fujitsu Progression solution and approach use as input the Legacy Unisys assets, our knowledge of the Unisys platform behavior and customized templates to modernize all COBOL programs, TIP/DPS Screen and DMS into a modern 3-tier design that will ensure a complete and</p>

	Requirements	A	B
	provide detail.		<p>independent implementation of the presentation, business and data layer while keeping all business logic and system behavior like the current application.</p> <p>The Business layer will become a C# ASP.NET library component (DLL) where all program data is part of new local or shared class components. Everywhere possible common functionalities will be implemented using shared common components. Although the new C# business logic will be fully object oriented, <u>it will also retain the integrity of all existing business rules and behaviors.</u></p> <p>The data layer will be implemented through database objects and a shared C# Data Access Component (DAC) that ensures very low impact or change to the current data access logic of the current system. This approach minimizes risk while providing flexibility for future maintenance and enhancement of the application. This shared component is automatically generated based on the original design of the current DMS database. Once generated, some optimization could be applied where necessary.</p> <p>The above solution and approach that Fujitsu has used successful on several previous Unisys Sperry to .NET modernization projects, allows for the conversion of all DHRM provided on-line transactions so they will access / store identical data in comparable data types and produce the same output in the SQL Server database in the new environment.</p>
6	<p>Catalogued and un-catalogued virtual tapes are used extensively in our nightly batch production approach.</p> <p>Does your Solution support this or an equivalent to this practice?</p>	Yes	The Catalogued and un-catalogued feature is fully supported and all Virtual tapes are to be converted to standard data file on disk.
7	<p>Most of the current batch processes include the FTP of output files from the mainframe to a DHRM FTP server as part of the ECL run. Files are FTP'd with a date extension on the filename. The FTP file format is filename-mmddyyyy.txt where mm is month, dd is day and yyyy is the year, e.g. PM0026-DAILY-02212014.txt</p> <p>As part of the batch process conversion, will your</p>	Yes	<p>Actually this is exactly the same solution that Fujitsu as implemented and deployed in its previous successful Unisys Sperry to.NET migration project.</p> <p>The Fujitsu Progression tool suite, automatically converts ECL to PowerShell that provide very similar batch job process as the original ECL process including FTP in and out and file setup for batch processing. Because Progression is 100% owned and maintain by Fujitsu and uses customized template (per customer requirements) to generate the new code and scripts, we are able to adjust the solution according to our customer specific request such as the one related to this specific question about the file names. This is what we have done on previous projects for WADOL and New Brunswick to avoid file being overwritten and to keep file</p>

	Requirements	A	B
	<p>solution be able to produce output files in the above naming format?</p>		<p>history.</p> <p>As an option and alternative, if required, we also support adding time (time HHMMSSMM) to the end of the file (filename-mmddyyyy-hhmmssmm.txt as well to avoid even future issue or file contention if the current transaction or FTP transaction volume mandate such solution.</p>
8	<p>In replicating/migrating the current system / subsystems in a new environment, does your solution take advantage of features of that new environment and allow DHRM to choose whether to implement those features?</p> <p>Please explain and provide details</p>	Yes	<p>In some levels, the following features of the new platform allows us or our customer to integrate new functionalities. The following is a sample list of these features</p> <ul style="list-style-type: none"> ■ Imbedded instrumentation and performance data metrics (turn on or off via Config file) ■ Identification of dead code components and potential removal ■ Browser Auto-Complete ■ Multiple Web Session ■ SQL Server Studio feature such tables browser, Adhoc Queries, BI, Reporting services, .. ■ VS2012 feature such as Debugger, Version Control, Code Analysis, ...
9	<p>For the current DHRM Personnel Management Information System (PMIS) application with 900+ active users across 238 State agencies, the transaction turnaround time norm for its 300+ data-entry-intensive display and update transactions is less than one second; and this norm is currently maintained even during periods of heavy system usage. The replicated application will need equivalent transactional robustness characteristic of its Windows server / .Net and web-based environment (hereinafter "new environment").</p> <p>Will your solution migrate DHRM's existing mainframe applications to run as web applications in a server-based environment with robust transaction turnaround time norm(s)? Please explain and provide details including which target language (C#.Net or a version of COBOL that runs in the .Net environment) you will deliver the proposed solution as well as the</p>	Yes	<p>The ability to scale and provide excellent tactile, transactional and reporting performance is a product of two key items:</p> <ul style="list-style-type: none"> ■ The capability of the proposed architecture provide linear scalability thru load balancing and performance will increase as more hardware/processor is added (The Fujitsu Progression solution does not create any bottleneck) ■ The processes in code delivery and test to help the solution perform to your requirements. <p>Architecture Capability</p> <p>The Microsoft enterprise technologies proposed in this solution such as C#, IIS, ASP.NET and SQL Server support some of the world's largest and high performance systems. The Core Web application servers are fully network extensible, meaning that no matter what the peak performance requirements for the application are, that the addition of cost effective server hardware can extend the solution to handle increased processing requirements. The proposed approach leverages enterprise SQL Server database technology which scales well beyond the performance requirements of this solution. While the architecture is capable of scaling, the correct approach is to optimize the application code and database d for the most cost effective infrastructure that is capable of handling peak loads effectively.</p>

	Requirements	A	B
	<p>transactional response times that your solution will deliver and how those times will be measured.</p>		<p>Process</p> <p>Most applications will be deployed on a web farm of (n) servers and use a SQL Server cluster of (n) servers as data store. Both development and performance teams work together in the earliest points of migrated code delivery and database design to address performance. For performance testing, and to validate that the modernized system performs as well as the current system or within an acceptable range, DHRM will provide to Fujitsu proper benchmark metrics to be used as a basis of comparison with the new system performance results.</p> <p>A performance testing team will run each of the applications through a series of load tests to determine their performance characteristics. This exercise will enable us to determine whether the application meets the performance criteria, what optimizations are required and what resources are needed. In the context of performance testing, automated tools such as Microsoft Test Manager run scenarios to validate pre-recorded results. By combining this tool with existing instrumentation currently imbedded and included within our Progression application framework, these tests can be reused for regression test as well during the project . By adding an orchestrator for carrying out the tests and other tools for the detection of ineffective trials, DHRM will have a test environment that can verify the performance of treatments on a regular basis.</p> <p>This provides a comprehensive suite of testing tools for Web applications and services that are integrated into the Visual Studio environment such as test load agent. These testing tools enable testers to author, execute, and manage tests and related work items. The tool includes:</p> <ul style="list-style-type: none"> ■ Comprehensive Web testing tools for Web Services, HTTP, XML, and ASP.NET applications; ■ Load testing to simulate production loads and diagnose performance issues in labs and pre-production environments; ■ Simulation of approximately 2,000 users per processor; ■ Very accurate simulation and performance testing of real-world Web applications and servers. <p>Demonstration to DHRM</p> <p>To demonstrate the capability of the delivered system, the performance test should include:</p> <ul style="list-style-type: none"> ■ End User scenarios automated to show real world usage at peak volume loads; ■ Volume simulation from all externally integrated systems;

	Requirements	A	B
			<ul style="list-style-type: none"> ■ Full production-scale runs on any batch and reporting processes that could impact daily operations. <p>The above solution and approach that Fujitsu has used successful on several previous Unisys Sperry to .NET modernization projects, allows us to migrate DHRM's existing mainframe applications to run as web applications in a server-based environment with robust transaction turnaround time norm(s).</p>
10	<p>The completed PMIS replication includes the actual production rollout of the new PMIS application and its subsystems once a “go live” date is established. Actual production rollout and “go live” includes:</p> <ol style="list-style-type: none"> 1. Ensuring the new PMIS database, all replicated transactions and equivalent batch processes are production ready and integrated as needed into the new environment; 2. Moving/loading production data from Unisys to the new PMIS application and environment, including the PMIS database and all supporting batch files (e.g. virtual tapes); 3. Validating the load of production data into the new application and system environment; 4. Initializing, configuring the new system production parameters, as needed; and 5. Turning the new application “On” for Production operation. <p>Does your solution include production rollout support for the replicated PMIS application? Please explain and provide details of how your solution includes support for the efforts listed above and any additional</p>	Yes	<p>Fujitsu’s proposed solution includes a production rollout support for the replicated PMIS application.</p> <ol style="list-style-type: none"> 1. Ensuring the new PMIS database, all replicated transactions and equivalent batch processes are production ready and integrated as needed into the new environment; During the Project the PMIS system will undergo a series of testing activities and each type of test is designed to demonstrate to the business and to the project team the readiness of the application to be implemented into the production environment. The results of each series of tests will feed into the Business and System and Preparedness Checklist process along with the results of other preparation activities. Types of testing to be undertaken leading up to any implementation include but are not limited to the following: <ul style="list-style-type: none"> ■ Unit Testing ■ Functional Testing ■ End to End Business Transaction Testing ■ Business Transaction Performance Testing ■ Regression Testing ■ User Acceptance Testing ■ Stress and Performance Testing ■ Data Migration Testing 2. Moving/loading production data from Unisys to the new PMIS application and environment, including the PMIS database and all supporting batch files (e.g. virtual tapes); <p>The application will be installed, tested and ready to go prior to go live on the infrastructure that will become the production environment (we call that pre-production).</p>

	Requirements	A	B
	rollout support options that your solution provides.		<p>Therefore, during the roll out weekend or go-live, the application is already installed and only data conversion, data files and interface activations are the main tasks to be executed including all other checklist activities.</p> <p>As part of the data/file conversion, all data, virtual tapes and data files have already been identified and are part of the scope of the go-live conversion,</p> <p>Virtual tape/file transformation programs to convert them to pure ASCII or non-virtual device will be executed during roll out. The files will then be FTP'd from UNISYS to Windows. The restructured files will be stored on the Windows folder structure.</p> <p>The result of the DMS data conversion will produce the new DHRM SQL database during roll out.</p> <p>Pre-defined regression test done over the roll out weekend will assure that the application is ready and DHRM will decide to go or no go.</p> <p>3. Validating the load of production data into the new application and system environment;</p> <p style="padding-left: 40px;">DHRM staff will initiate the data migration on the cutover weekend (or evening). Fujitsu's Data Migration Architect will monitor progress on site and perform any manual interventions as needed. Fujitsu will collect statistics from the control reports and assemble metrics so that DHRM will have a concise summary of the data migration results. This and the data verification discrepancy reports will constitute the Data Migration Certification decision package.</p> <p>4. Initializing, configuring the new system production parameters, as needed; and</p> <p style="padding-left: 40px;">Part of standard deployment approach and these are activities to be executed and monitored via the go-live checklist</p> <p>5. Turning the new application "On" for Production operation.</p> <p style="padding-left: 40px;">Part of go-live checklist where Interfaces are activated and legacy one of shut down,</p>
11	Does the solution that you deliver/operate in the following technologies:	Yes	Fujitsu, thru its very close relationship and partnership with Microsoft, is always keeping its tool and solution to support latest version of Microsoft software and framework.

	Requirements	A	B
	1) SQL Server 2012 2) Microsoft Windows Server 2012 3) Active Directory 4) Either C.Net or a version of COBOL that runs in the .Net Environment 5) Softree 24x7 Scheduler 6) Visual Studio 2012 or higher 7) SQL Server Management Studio 8) JGSoft tools		<p>We do support all the listed version and technology.</p> <p>We also have expertise to convert Unisys Sperry COBOL to either C# or Fujitsu NetCOBOL for .NET, which allows DHRM to select the target language of its choice as needed. We are proposing to convert the COBOL directly to C#, but it is to be noted that we do have expertise, experience and successful migration project converting Sperry COBOL to NetCOBOL for .Net as well as C#.</p> <p>Cloud alternative supported</p> <p>It should be noted that the migrated application using our Fujitsu Automated Progression tool suite, is cloud ready code. This mean that if DHRM wishes to deploy in the future full or partial functionality of the application to a cloud platform such as AZURE, nothing will prevent to proceed with this deployment and this would be easily achievable. This is a by-product of our Progression Solution.</p>
12	Does your solution replicate the DHRM PMIS application (and all its subsystems)in its totality including all application functionalities and processes from the current Unisys environment to a Windows / .Net environment? Please explain and provide details.	Yes	The Fujitsu proposed solution is a Legacy Modernization approach using an automated suite of migration tools. The tools use, as input, <u>ALL</u> DHRM Legacy assets, our knowledge of the Unisys platform behavior to produce a full windows 3-tier, object oriented, thin client web application using IIS, .NET, ASP.NET and SQL server 2012 database. The resulting system will undergo a full test cycle <u>to insure it will retain all the integrity and robustness of all the current system</u> when deployed on a suitable high performance, fault tolerant hardware platform.
13	Does your solution deliver replicated applications that are fully operational, run as web applications and have the same external user interface and security in the DHRM target environment as they had in the Unisys environment? Please explain and provide details.	Yes	The Fujitsu proposed solution is a Legacy Modernization approach using an automated suite of migration tools. The tools use, as input, <u>ALL</u> DHRM Legacy assets, our knowledge of the Unisys platform behavior to produce a full windows 3-tier, object oriented, thin client web application using IIS, .NET, ASP.NET, SQL server 2012 database and Windows Active Directory. All current custom application security already implemented in the system will be automatically modernized as part of the project thru the use of Fujitsu Progression Tool Suite. The resulting system will undergo a full test cycle <u>to insure it will retain all the integrity and robustness of all the current system</u> when deployed on a suitable high performance, fault tolerant hardware platform under Active directory to assure the External User Interface will be migrated as-is with same look and feel as the current application Optional: A new look and feel could be implemented via Master Page and CSS as per

	Requirements	A	B
			<p>DHRM’s standard if needed and via Customized Progression generated screen templates XSLT. This does not include any web 2.0 enhancements, but just header, footer, and color scheme.</p> <p>All user interface (screens) and related screen handling and validations will become C# ASP.NET Web Form application running in IIS and using Internet Explorer as a display interface (thin client). All the screen code will reside in a standard C# code-behind and will exhibit the expected Object Oriented event and message driven standards. it will also retain the integrity of all existing business rules and behaviors.</p>
14	Does your solution implement a two-tier or three-tier architecture? Please explain and provide details.	Yes	<p>The Fujitsu proposed solution is fully based on the Automated Tool Suite called Fujitsu Progression. Fujitsu Progression solution and approach will modernize all COBOL programs into C# and generate a modern 3-tier design that will ensure a complete and independent implementation of the <u>presentation</u>, <u>business</u> and <u>data</u> layer.</p> <ol style="list-style-type: none"> 1) The <u>presentation layer</u> will migrate all user interfaces (TIP/DPS screens) and related screen handling and validations into an ASP.NET Web Form application running in IIS and using Internet Explorer as a display interface (thin client). All of the screen code will reside in a standard C# code-behind and will exhibit the expected object oriented event and message driven standards. Communication between the presentation and business layers will be done using a class object through the MCF. 2) The <u>Business layer</u> will become a C# ASP.NET library component (DLL) where all program data is part of new local or shared class components. Everywhere possible common functionalities will be implemented using shared common components. Although the new C# business logic will be fully object oriented, it will also retain the integrity of all existing business rules and behaviors. 3) The <u>data layer</u> will be implemented through database objects and a shared C# Data Access Component (DAC) that ensures very low impact to the data access logic of the current system. This approach minimizes risk while providing flexibility for future maintenance and enhancement of the application. This shared component is automatically generated based on the original design of the current DMS database.
15	Does your solution allow the web service and database service to exist on separate physical servers? Please explain and provide details.	Yes	<p>Fujitsu’s proposed solution allow and we actually recommend that the Web Service and the Database service be deployed onto separate Machine as we have done on previous successful Unisys Sperry COBOL to .NET modernization projects similar to PMIS application (and all its subsystems).</p>

	Requirements	A	B
			<p>Separation of the Web Service and the database service is achievable because Fujitsu Progression solution and approach will modernize all COBOL programs into C# and generate a modern 3-tier design that will ensure a complete and independent implementation of the presentation, business and data layer.</p> <p>This provide greater flexibility and scalability of the infrastructure and the overall application enterprise architecture while providing for optimization of performance and avoidance of bottlenecking.</p>
16	Does your solution provide one entry point for internal users and a separate entry point for external users? Please explain and provide details.	Yes	<p>Fujitsu has successfully implemented Unisys Sperry COBOL to .NET on a previous project It included separation of application entry point according to specific security requirement such as internal and external user.</p> <p>This is feasible with Fujitsu’s proposed solution because the <u>presentation layer (User Entry Point to the application)</u> is created by the migration of all user interfaces (TIP/DPS screens) and related screen handling and validations into an ASP.NET Web Form application running in IIS and using Internet Explorer as a display interface (thin client).</p> <p>Therefore, the concept is to create multiple clone Websites of the online application setup with different security and authentication such as Anonymous, Integrated, ... which will behave differently according to if the User if internal or external.</p> <p>Alternative Option:</p> <ul style="list-style-type: none"> ■ We have also use the technique of multiple entry point control by the application via a dispatch control service according to the User security setup in Active Directory that would present the Entry Point to the Application as different transaction according to internal or external setup (AD user Group). ■ We have also use this technique of clone website to provide multiple concurrent session to the User to simulate when the USER start multiple Terminal Emulation session on the Unisys online transaction and work in parallel. We changes the Background Color via CSS to identify the different website session which facilitated the user working on different session and/or environment.
17	(M) Your solution must ensure that any work	Yes	The Fujitsu Solution ensures that the production data will reside on the DHRM or

	Requirements	A	B
	performed on or with data in systems to be migrated is conducted on-site at DHRM offices and only within the Commonwealth of Virginia network. Do you meet this requirement? Please explain		VITA Network and only approved DHRM or VITA remote desktop connection will be used to access Development and Test servers from outside DHRM OR VITA offices if possible.

1.7 Knowledge Transfer & Operational Support

	Requirements	A	B
1	Does your solution provide for the inclusion, documentation of and training for, a change control procedure for the replicated system? Please explain and provide details of training materials and other proposed documentation.	Yes	<p>Fujitsu’s proposed solution does provide the inclusion, documentation of and training for, a change control procedure for the replicated system. Our training plans are developed as close to the beginning of the project as practical. Development of the plan includes an analysis of the technical roles at DHRM to:</p> <ul style="list-style-type: none"> ■ Ensure an understanding of the activities of each role and how the key skills / competencies associated with these roles will be affected by the change. ■ Determine the optimum way of providing the coaching or training to maintain the appropriate level of skills / competencies. ■ Identify supporting interventions that could be used to increase the effectiveness of the knowledge transfer and minimize the amount of formal training required. <p>Technical personnel prefer to ‘learn by doing’, exploring ideas for themselves and getting guidance as needed. The training will be very action oriented, focused on exercises, with the foundational theory delivered though the coaching or as part of the take up of the exercises.</p> <p>When the above concepts are considered, classroom training will usually be delivered in smaller modules, focused on specific roles, and centered on exercises or case studies directly relevant to the group being trained. This provides more flexibility in scheduling the delivery and, results in approximately the same amount of training materials being developed, although less classroom time is required per person.</p>
2	Does your solution provide for the documentation of each replicated transaction? Please explain and provide details.	Yes	<p>Fujitsu’s proposed solution does provide documentation for each replicated transaction through the creation of Test Cases/Scripts for each Transaction. Because Fujitsu’s proposed solution does an exact replication of each transaction all current documentation of the system such as User Guides will all remain valid and accurate. The only change could be the access to the system through a browser.</p>
3	Does your solution provide for the documentation of each replicated batch process? Please explain and provide details.	Yes	<p>Fujitsu’s proposed solution does provide documentation for each replicated batch process through the creation of Test Cases/Scripts for each Batch Job. Because Fujitsu’s proposed solution does an exact replication of each batch process all current documentation of the system such as User Guides and Run Books will all remain valid and accurate. The only change could be the use of SoftTree Scheduler.</p>

	Requirements	A	B
4	Does your solution provide for the documentation of each replicated system support or admin function? Please explain and provide details.	Yes	Fujitsu’s proposed solution does provide documentation for each replicated system support or admin function. Because Fujitsu’s proposed solution does an exact replication of each system support or admin function all current documentation of the system such as Support and Admin Guides will all remain valid and accurate. The only change could be the access to the system through a browser.
5	Does your solution provide for the documentation of system operations? Please explain and provide details.	Yes	Fujitsu’s proposed solution does provide documentation of system operation through the creation of an Operation Guide that will be developed during the Development Phase of the project and will be part of the Training activities. Any current system operation documentation will be used as a foundation and updated as per the new platform.
6	Does your solution provide for any training of DHRM staff on the replicated system? Please explain and provide details.	Yes	<p>Fujitsu’s proposed solution does provide for the training of DHRM staff of the replicated system.</p> <p>One of the most important parts of any migration program is to prepare the client organization to support the new environment. Because we know that this is critical to success, training is built into all of our projects.</p> <p>Training is not always done at the end of the project, and definitely must be planned from the beginning, remembering that the purpose is not simply to provide training, but to prepare the technical personnel to support the system when the project is completed.</p> <p>Fujitsu uses many approaches throughout the project to minimize the formal training required.</p> <ul style="list-style-type: none"> ■ For roles that will be very complex and for which it is critical to have in-depth knowledge in the new environment, we often recommend an individual be assigned to ‘shadow’ one of our architects, with the accent on coaching the individual, both in the knowledge required, and in the reasoning behind it – this is particularly relevant to those in an architectural role. ■ Many technical personnel prefer to learn by doing, getting injections of theory only as they need it to accomplish a task. To address this, we will often provide developers or programmers a base amount of training and then get them involved in testing the new system. This provides them with in-depth knowledge of the system in a way that is meaningful to them. ■ Technical personnel often do not have the time to get involved in the new system; they are busy supporting the legacy system or are geographically distributed. ‘Lunch and

	Requirements	A	B
			<p>learn' sessions are often used to present aspects of the new system and hold informal discussions.</p> <p>In addition to all of the above, formal training programs are often required. Fujitsu has a core competency specifically for this purpose; Education Services has experience in providing the full range of services including design, development, delivery, and administration. In addition, we have a program specifically aimed at the training and certifying instructors.</p> <p>We have found that direct involvement is the most effective way of transferring knowledge. Where this has not been an alternative, small classroom sessions that are action oriented and allow a high-level of hands-on work have the most success.</p>
7	<p>DHRM's goal is to have a support staff that can learn and operate the solution as it is being designed, developed and delivered so that it can adequately be supported. Does your solution allow DHRM resources to work side-by-side with your resources through the duration of the project to learn and to support all deliverables and the delivered solution? Please explain and provide details.</p>	Yes	<p>Fujitsu's proposed solution does allow VITA resources to work side-by-side with Fujitsu resources during the project to learn and support all deliverables of the delivered solution.</p> <p>For roles that will be very complex and for which it is critical to have in-depth knowledge in the new environment, we often recommend an individual be assigned to 'shadow' one of our architects, with the accent on coaching the individual, both in the knowledge required, and in the reasoning behind it – this is particularly relevant to those in an architectural role.</p>
8	<p>Does your solution include deliverable(s) that document the SQL Server database design and associated mapping of data of Unisys to SQL Server? Please explain and provide detail.</p>	Yes	<p>Fujitsu intends to utilize Fujitsu's Macroscopic® Solution domain methodology and deliverable templates and/or VITA templates. The Macroscopic® Solution domain incorporates Fujitsu's best practices in the area of system delivery.</p> <p>The deliverables will be grouped according to the follow major aspects of the modernization project: System Architecture, System Components / Databases, Quality / Results and Implementation.</p> <p>During the Architecture, Analysis and Design phase, Fujitsu will cover the right level of detail across multiple subjects such as: inventory of the existing systems, screen standards, interfaces, , data conversion, code migration, ECL conversion, security, reporting, performance testing, QAT testing.</p> <p>Fujitsu proposed solution includes deliverable(s) that document the SQL Server database design and associated mapping of data of Unisys to SQL Server. The following is an outline of the main deliverables in the scope of this project to provide that documentation:</p> <p>P170S - Information Structure</p>

	Requirements	A	B
			<p>Purpose</p> <ul style="list-style-type: none"> To define the components of each facet (Entity Data Model) and their associations from the user viewpoint. <p>Contents</p> <ol style="list-style-type: none"> Facet (one section per facet) <ol style="list-style-type: none"> Facet Overview Facet Content Facet Component (one section per component (class, association, entity, relationship)) <p><u>P340S - Conversion Strategy</u></p> <p>Purpose</p> <ul style="list-style-type: none"> To describe the strategy that will be used to convert the information, both automated and manual, from the data of the Unisys to the new SQL Database system. To describe the state of the current system's information which includes all Schemas, SubSchemas and inventory of all DML verbs embedding in the COBOL. To describe the conversion rules that will be used to convert existing information/data to the new SQL Server database model. <p>Contents</p> <ol style="list-style-type: none"> Conversion Assessment Conversion Strategy Conversion Rules <p><u>P510C – Database Structure</u></p> <p>Purpose</p>

	Requirements	A	B
			<ul style="list-style-type: none"> ■ To describe the specific structure and distribution of a database or file. ■ To provide a basis for database definition coding. <p>Contents</p> <ul style="list-style-type: none"> ■ Database Structure Description ■ Database Tables <ul style="list-style-type: none"> • Database Table (one section per database table) <p>Fujitsu as used several Data Model software to document the new data model such as SQL Modeler, Visio, CA-ErWin, ..</p>
9	<p>Does your solution provide a means for DHRM staff to learn any relevant, non-proprietary tools needed to maintain and support migrated programs, batch runs and database(s) in the new environment?</p> <p>Please explain and provide details.</p>	Yes	<p>Fujitsu’s proposed solution will provide proper documentation and training materials for DHRM Developer and IT staff to understand what was done to migrate the application and how it was achieved. This includes mapping of TIP/DPS Screen attributes and form to ASPX components, DMS Schemas/SubSchemas to SQL tables, ECL command converted to PowerShell and Cobol program converted to C#.</p> <p>Fujitsu’s proposed solution, promotes reduction in the number of technologies and products used to develop and support production systems in the Commonwealth thru the use of standard software such as Visual Studio, SQL Server management studio and Team Foundation Server. The Fujitsu solution does not introduce any 3rd party proprietary software beside Microsoft Software Stack.</p> <p>Therefore, Fujitsu recommends that DHRM staff targeted to maintain and support the migrated programs, batch runs and database in the new environment attend standard training of Microsoft products listed as part of Fujitsu Proposed solution.</p>
10	<p>Once the new environment goes live in production will you provide resources to assist in resolving any problems that may come up once in production?</p> <p>If yes, please explain and provide details on the on-site and off-site resources that will be available and for how long.</p>	Yes	<p>Fujitsu is proposing an onsite post-implementation warranty of 30 calendar days from Production Go-Live date.</p> <p>The start of this post-implementation will begin once the application has been deployed into Production according to the Implementation strategy. At the end of this period, DHRM will be fully responsible for the ongoing maintenance of the delivered code.</p> <p>Components that are updated or changed by DHRM during the warranty period will cease to</p>

	Requirements	A	B
			<p>be Fujitsu’s responsibility.</p> <p>If DHRM requires additional post-implementation support, Fujitsu can provide an updated cost specific to DHRM ’s requirements</p>
11	<p>Does your solution provide options to DHRM to have you provide operational support services for an initial 3 month period starting with system acceptance and being renewable for 6 month periods thereafter?</p> <p>Please explain and provide detail.</p>	Yes	<p>Fujitsu commonly offers Application Management Services to many of its North American clients. AMS is a core competency of Fujitsu’s consulting services practice and is governed by a rigorous delivery methodology and a Center of Excellence that refines approaches and ensures delivery consistency. Fujitsu’s AMS services feature:</p> <ul style="list-style-type: none"> ■ Tailored engagement models – current engagement range from a single part-time resource to full IT outsourcing arrangements involving hundreds of staff ■ Flexible resourcing – Fujitsu has the ability to scale and tune AMS approaches responsively to our clients’ needs, leveraging our onshore, near-shore, and offshore capabilities to optimize return on our client’s investments <p>Fujitsu is confident in our ability to meet DHRM’s requirements with regard to post-implementation support.</p>
12	<p>Does your solution provide training of the replicated applications to the DHRM Information Technology (ITECH) staff? Please explain and provide detail.</p>	Yes	<p>Fujitsu’s proposed solution does provide training of the replicated applications to the DHRM Information Technology (ITECH) staff. Please refer to Question 2.7 #6 for detailed Training approach and techniques which does apply to both DHRM Staff and ITECH Staff. Each training will be developed according to the targeted audience.</p>
13	<p>Does your solution deliver operational, systems and application documentation for the replicated applications including the documentation for the following?</p> <ol style="list-style-type: none"> 1. the new relational database design 2. each converted transaction, program and batch process 3. any new processes 	Yes	<p>Fujitsu solution does deliver operational, systems and application documentation for the replicated applications including the documentation for the following.</p> <ol style="list-style-type: none"> 1. the new relational database design <p>This documentation is provided through the creation of the following deliverables: P170 Information Structure & P510 Database Structure</p> <ol style="list-style-type: none"> 2. each converted transaction, program, batch process and any new process <p>This documentation is provided through the creation of Technical Architecture Deliverables, Test Cases/Scripts for each Transaction, Program and Batch Process</p>

	Requirements	A	B
			and any new Process. Also Fujitsu uses specific software to produce technical documentation of all replicated system code (C#, Project Solution, asp.Net, and etc...)

**EXHIBIT B-X STATEMENT OF WORK (SOW) TEMPLATE
BETWEEN (NAME OF AUTHORIZED USER) AND FUJITSU AMERICA, INC.**

ISSUED UNDER

**CONTRACT NUMBER VA-150206-FUJT
BETWEEN
VIRGINIA INFORMATION TECHNOLOGIES AGENCY
AND
FUJITSU AMERICA, INC.**

Exhibit B-X, between (Name of Agency/Institution) and Fujitsu America, Inc. ("Supplier") is hereby incorporated into and made an integral part of Contract Number VA-150206-FUJT ("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 B-X and the Contract, the provisions of the Contract shall control.

*[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 ten percent (10%). 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)	Distribution Recipients	Review Complete	Final Due Date
-----	-------	----------	---	-------------------------	-----------------	----------------

			copy/CD/DVD		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	---	Execution + 5 days	---	---	---
Site survey	Site survey report	Execution + 10 days	---	---	---
Requirements Analysis & Development	Design Plan	Execution+45 days	\$30,000	\$15,000	\$15,000
	Project Plan	Execution+45 days			
	Implementation	Execution + 45			

	Plan	days			
Begin Implementation		Execution + 60 days			
Data Conversion & Mapping		Execution + 90 days	\$10,000	\$3,000	\$7,000
Installation of software	---	Execution + 90 days	\$10,000	\$1,000	\$9,000
Installation of hardware	---	Execution + 90 days	\$10,000	\$1,000	\$9,000
Configuration and testing	---	Execution + 120 days	---	---	---
Training	Training manual	Execution + 130 days	\$10,000	\$1,000	\$9,000
30-Day User Acceptance Testing	---	Execution + 160 days	\$20,000	\$2,000	\$18,000
Implementation complete	Solution	Execution + 160 days	\$10,000	--	\$10,000
Final Acceptance		Execution + 210 days	--	--	\$23,000

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	Site survey				
1.1		Conduct interviews			
1.1.1			Schedule interviews	None	20 days after contract start
1.1.2			Complete interviews	Interview Results Report	25 days after contract start
1.2		Receive AU information			

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 Section 2B herein		√
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

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.)

The Supplier shall post performance bond in an amount equal to one hundred percent (100%) of the total contract value and provide a copy of the bond to Authorized user within (10) days of execution of this SOW Agreement. In the event that the Supplier or any subcontractor or any officer, director, employee or agent of the Supplier or any subcontractor or any parent or subsidiary corporation of the Supplier or any subcontractor fails to fully and faithfully perform each material requirement of this SOW Agreement, including without limitation the Supplier's obligation to indemnify the Authorized User, the performance bond shall be forfeited to Authorized User. The bond shall be in a form customarily used in the technology industry and shall be written by a surety authorized to do business in Virginia and that is acceptable to Authorized User.

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.)

A. Service Level Requirements

B. Mean-Time-Between-Failure Requirements

C. Data Access/Retrieval Requirements

D. Additional Warranties

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.)

Authorized User (or name of IV&V contractor, if there is one), will audit the results of Supplier's service level obligations and performance requirements on a monthly/quarterly basis, within ten (10) days of receipt of Supplier's self-assessments and service report(s). Any discrepancies will be discussed between the Authorized User and Supplier and any necessary invoice/payment adjustments will be made. If agreement cannot be reached, the Authorized User and Supplier will

escalate the matter in accordance with the Escalation provision of the Contract. (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: _____

(Print)

Title: _____

Date: _____

Name: _____

(Print)

Title: _____

Date: _____

EXHIBIT C CHANGE ORDER TEMPLATE
CONTRACT NUMBER VA-150206-FUJT
BETWEEN
VIRGINIA INFORMATION TECHNOLOGIES AGENCY
AND
FUJITSU AMERICA, INC.

Exhibit C is hereby incorporated into and made an integral part of Contract Number VA-150206-FUJT (“Contract”) between the Virginia Information Technologies Agency (“VITA” or “Commonwealth” or “State”) and Fujitsu America, Inc. (“Supplier”).

In the event of any discrepancy between this Exhibit C 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 B-X (“SOW”), between **NAME OF AGENCY/INSTITUTION** (“Authorized User”) and Fujitsu America, Inc. (“Supplier”), which was issued under Contract Number VA-150206-FUJT (“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 B-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

Authorized User

By: _____

By: _____

(Signature)

(Signature)

Name: _____

Name: _____

(Print)

(Print)

Title: _____

Title: _____

Date: _____

Date: _____

EXHIBIT D SERVICE FEES
CONTRACT NUMBER VA-150206-FUJT
BETWEEN
VIRGINIA INFORMATION TECHNOLOGIES AGENCY
AND
FUJITSU AMERICA, INC.

Exhibit D is hereby incorporated into and made an integral part of Contract Number VA-150206-FUJT (“Contract”) between the Virginia Information Technologies Agency (“VITA” or “Commonwealth” or “State”) and Fujitsu America, Inc. (“Supplier”).

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

Labor Category	Hourly Labor Rates
Project Manager	\$ 225.00
Solution Architect	\$ 170.00
Enterprise Architect	\$ 170.00
Senior Data Architect	\$ 120.00
Senior Developer	\$ 115.00
Developer	\$ 85.00
QA lead.Manager	\$ 135.00
QA tester	\$ 80.00
Infrastructure and Secuirty SME	\$ 140.00
Unisys SME	\$ 125.00
Trainer	\$ 125.00

EXHIBIT E LOBBYING CERTIFICATION
CONTRACT NUMBER VA-150206-FUJT
BETWEEN
VIRGINIA INFORMATION TECHNOLOGIES AGENCY
AND
FUJITSU AMERICA, INC.

Exhibit E is hereby incorporated into and made an integral part of Contract Number VA-150206-FUJT ("Contract") between the Virginia Information Technologies Agency ("VITA" or "Commonwealth" or "State") and Fujitsu America, Inc. ("Supplier").

In the event of any discrepancy between this Exhibit E 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:

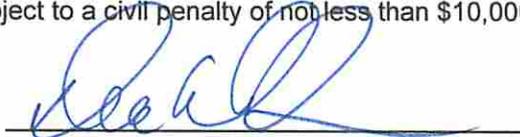
No Federal appropriated funds have been paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee or an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding 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:

Duane Wichman

Organization:

Fujitsu America Inc.

Date:

February 6, 2015