



Amendment Approval Form

Contract Between:

Northrop Grumman Systems Corporation

7575 Colshire Drive
McLean, VA 22102-7508

and

The Commonwealth of Virginia

11751 Meadowville Lane
Chester, VA 23836

Contract Number	VA-051114-NG
Amendment Number	102
Description of Contract Change – Provide a brief description of contract change	Adds Disaster Recovery Support for AIX LPARs.
Section(s) of CIA Referenced – Identify section(s) of CIA modified, including Attachments and Schedules	<ul style="list-style-type: none">• Appendix 13 to Schedule 3.3 (Other Services SOW)• Addendum 1 to Appendix 13 to Schedule 3.3 (Other Services Technical Approach)• Schedule 10.1 (Fees)

This is Amendment No. 102 to the Comprehensive Infrastructure Agreement between the Commonwealth and Vendor originally dated as of November 14, 2005 and as subsequently amended (hereinafter, "Amendment No. 102"). The Commonwealth and Vendor have agreed to modify the Comprehensive Infrastructure Agreement as set forth below. Except as expressly modified in Amendment No. 102, the terms and conditions of the Agreement shall remain in full force and effect. Capitalized terms used but not defined in Amendment No. 102 shall have the meanings assigned to them in the Agreement. Amendment No. 102 is effective as of September 1, 2013.

1. In Appendix 13 to Schedule 3.3 (Other Services SOW) under the *Statement of Work for AIX LPAR Service* Section, the "AIX LPAR Service Excluded Roles and Responsibilities" table is modified to delete the row that references "Section 3.1.3.4 (IT Service Continuity and Disaster Recovery (DR) Services)" in its entirety.
2. In Appendix 13 to Schedule 3.3 (Other Services SOW), a new section is added to the end as follows.

"Statement of Work for AIX LPAR Disaster Recovery Support

Vendor will provide Tier 2 Disaster Recovery Services for the AIX LPARs as set forth Addendum 2 to Appendix 1 to Schedule 3.3 (Disaster Recovery Services) in accordance with the technical approach (the "AIX DR LPAR Service"). Vendor will provide the AIX DR LPAR Service by configuring six IBM Power 7 physical servers at SWESC and replicating the Tier 1 SAN storage volumes assigned to the production and infrastructure AIX LPARs to Tier 1 SAN storage at SWESC (the "AIX DR LPARs"). Vendor will utilize existing infrastructure management and monitoring systems, including asset management, availability monitoring, remote support, network monitoring, and intrusion prevention. Vendor will configure and manage of all infrastructure LPARs required to support the AIX DR LPARs.

The AIX DR LPARs are different from a DR Virtual Server based on the following:

- In order to maximize the software investment in IBM WebSphere and other software products purchased for the SOA-EDM project, VITA required the pooled processor and granular system provisioning features of IBM Power 7 Systems architecture.
- Six Power 7 physical servers are located at SWESC and dedicated to support disaster recovery operations for the VITA-MITA program.
- Personnel with specific expertise are required to support AIX and PowerVM virtualization running on the DR IBM Power 7 servers.
- AIX DR LPAR security is based on PowerSC and use of enterprise Intrusion Prevention System (IPS) to block malicious traffic.
- AIX DR LPARs are integrated with the CoV Active Directory utilizing Quest UNIX integration software.
- VITA requires that the AIX DR LPARs support the encrypted file system (EFS) feature.
- VITA requires implementation of multiple instances of IBM PowerHA clustering.
- Vendor will not install HPOV Monitoring – Performance Agent (SV11) and Operations Agent (SV12), nor Altiris Inventory Agent (DT02.6) on the DR IBM Power 7 servers or AIX DR LPARs."

3. In Addendum 1 to Appendix 13 to Schedule 3.3 (Other Services Technical Approach), a new section is added after the "Technical Approach for AIX LPAR Service" section.

“Technical Approach for AIX DR LPAR Service

The AIX DR LPARs are deployed on six Power 740 physical servers (16 CPU cores and 256GB memory) at SWESC. These SWESC physical servers are configured to support the disaster recovery version of CESC-based AIX LPARs subscribed to the AIX DR LPAR Service. When a CESC AIX LPAR is subscribed to the AIX DR LPAR Service, it is configured with Tier 1 SAN storage that is replicated to SWESC. The profile of the CESC AIX LPAR is configured on one of the SWESC physical servers. The profile includes the identity of the CESC AIX LPAR including the network name and IP address.

During a disaster recovery event (formally declared disaster or scheduled disaster recovery test), storage replication is paused and the AIX DR LPAR is brought online by connecting the six Power 740 physical servers at SWESC to the replicated storage at SWESC. The AIX DR LPAR assumes the identity of the CESC AIX LPAR including all software and configuration features.

Vendor will allocate at least 13 infrastructure AIX DR LPARs at SWESC for system administration and management; these and any infrastructure AIX DR LPARs will not be separately invoiced to the Commonwealth. The infrastructure AIX DR LPARs comprise of 12 virtual I/O servers (*i.e.*, two per physical hardware platform) and one Network Installation Manager Server (NIM).

Vendor will configure the SWESC physical hardware platforms as boot from SAN and disk storage is allocated using Vendor’s existing storage infrastructure at SWESC to support the environment as specified by VITA. As part of the AIX DR LPAR Service, Vendor will provide operations support for three additional hardware components: WAF, inline tap, and enterprise IPS.”

4. Paragraph 3 of Amendment No. 87 incorrectly references “Section 5.3.12” of Schedule 10.1. The correct reference is “Section 5.3.14.”

5. In Schedule 10.1 (Fees), a new Section 5.3.16 is added as follows.

“5.3.16 Fees for AIX DR LPAR Service

The following shall apply to the AIX DR LPAR Service:

- VITA agrees to pay the amounts specified in the statement attached to Amendment No. 102 as Exhibit A.
- VITA must submit detailed requirements for additional or new (a) physical server hardware, or (b) physical infrastructure to scale or add DR LPAR capacity, which cost is not included in the Fees. The Commonwealth will be financially responsible for the costs associated with one-time labor (including labor to configure and integrate (a) or (b) and to reconfigure the current environment), software, hardware, and recurring third-party maintenance for hardware or software to expand the environment. The recurring RU Fees will be the AIX DR LPAR ARC Rate. The ARC Rate is based on 25 DR LPARs.
- The Fees do not include hardware, hardware warranty support, software, or software maintenance for the IBM Power 7 physical servers or associated software, or any upgrades thereto. The Commonwealth will be financially responsible for all hardware, hardware warranty support, software, and software maintenance along with any upgrades thereto and must provide detailed requirements when requesting the same.
- The Fees do not include the equipment costs or third-party warranty and maintenance for security hardening, such as the WAF, inline tap, and PowerHA, or PowerSC components.

- The Fees do not include Active Directory integration software for AIX DR LPARs, migration, rebuilds, or network enhancements including 10GB network connectivity.
- Storage for the AIX DR LPAR Service will be invoiced at the Tier 2 - DR - Allocated Storage Resource Unit Rate.”

6. Exhibit B to Amendment No. 87 incorrectly references “Additional Services Technical Approach” on the cover page. The correct reference is “Other Services Technical Approach.” In the first full paragraph of Exhibit B to Amendment No. 87 incorrectly includes the sentence that reads “Vendor’s technical approaches for the Services under this SOW are provided in the attached Addendum 1.” and such sentence is deleted in its entirety.

7. Exhibit D to Amendment No. 87 incorrectly references “Appendix 13” and “Other Services” in the header. The correct references in the header are “Schedule 3.3 to the Comprehensive Infrastructure Agreement” and “Statements of Work.”

8. In Attachment 10.1.3-A to Schedule 10.1 (Definition of Resource Units), the following rows of new text are inserted at the end under “Other Services” (the header row is shown for context only).

Other Services	Unit	Definition
AIX DR LPAR IMAC	Per Project	Per project cost for migration of existing AIX DR LPAR data between physical servers, rebuilding an AIX DR LPAR from installation media or changes that impact software licensing.
AIX DR LPAR Service	Per AIX DR application LPAR	Per each AIX DR application LPAR on the IBM Power 7 Systems Infrastructure, per month.

9. In Attachment 10.1.4-B to Schedule 10.1 (Additional Resource Unit Baselines), the following row of new text is inserted at the end under “Other Services.” The values for the periods prior to Contract Year 8 shall be “N/A.” The values for Contract Years 8 through 13 are as shown below (the header row is shown for context only).

Other Services	Unit
AIX DR LPAR Service	Per AIX DR application LPAR

Year 8	Year 9	Year 10	Year 11	Year 12	Year 13
0	0	0	0	0	0

10. In Attachment 10.1.5-A to Schedule 10.1 (Post-Transition Phase Fees - Fixed Recurring Fees and Baseline Resource Unit Rates by Service Tower), the following row of new text is inserted at the end under “Other Services.” The values for the periods prior to Contract Year 8 shall be “N/A.” The values for Contract Years 8 through 13 are as shown below (the header row is shown for context only).

Other Services	Unit
AIX DR LPAR Service	Per AIX DR application LPAR

Year 8	Year 9	Year 10	Year 11	Year 12	Year 13
N/A	N/A	N/A	N/A	N/A	N/A

11. In Attachment 10.1.7 to Schedule 10.1 (Post-Transition Phase Fees - Additional Resource Charges (ARC) Rates by Service Tower), the following row of new text is inserted at the end under "Other Services." The values for the periods prior to Contract Year 8 shall be "N/A." The values for Contract Years 8 through 13 are as shown below (the header row is shown for context only).

Other Services	Unit
AIX DR LPAR Service	Per AIX DR application LPAR

Year 8 Truncated	Year 8 Stub	Year 9	Year 10	Year 11	Year 12	Year 13
200.00	200.00	200.00	200.00	200.00	200.00	200.00

12. In Attachment 10.1.8 to Schedule 10.1 (Post-Transition Phase Fees - Reduced Resource Credits (RRC) Rates by Service Tower), the following row of new text is inserted at the end under "Other Services." The values for the periods prior to Contract Year 8 shall be "N/A." The values for Contract Years 8 through 13 are as shown below (the header row is shown for context only).

Other Services	Unit
AIX DR LPAR Service	Per AIX DR application LPAR

Year 8 Truncated	Year 8 Stub	Year 9	Year 10	Year 11	Year 12	Year 13
N/A	N/A	N/A	N/A	N/A	N/A	N/A

The Parties have executed this Amendment No. 102 on the dates indicated below.

VITA for the Commonwealth of Virginia	Northrop Grumman Systems Corporation
By: 	By: 
Name: Francine C. Barnes	Name: Roxanne Esch
Contract Manager	Director, Contracts
Date: <i>May 20, 2014</i>	Date: <i>May 13, 2014</i>

