

## **Tab B – PERFORMANCE WORK STATEMENT**

### **1. Overview**

As a component of the United States (U.S.) Department of Homeland Security (DHS), Customs and Border Protection (CBP) is responsible for protecting our Nation's borders in order to prevent terrorists and terrorist weapons from entering the U.S. while facilitating the flow of legitimate trade and travel. CBP is also responsible for apprehending individuals attempting to enter the U.S. illegally.

Supporting this responsibility, the Office of Technology Innovation and Acquisition (OTIA) has been charged with implementing a comprehensive multi-year plan to facilitate securing the U.S. borders and reducing illegal migration. The OTIA Program Management Office (PMO) is charged with acquiring, fielding, testing, and sustaining layered technical capabilities to achieve improved situational awareness along the U.S. border. Our customers are the agents and officers of CBP the Office of Border Patrol (OBP), the Office of Field Operations (OFO), and the Office of Air and Marine (OAM).

As a part of its assignment, OTIA is to pursue an upgrade of the existing Remote Video Surveillance System (RVSS) deployed in Arizona, with options to deploy additional systems in the Rio Grande Valley (RGV) Sector. This project is identified as the "RVSS Upgrade Program."

The United States Border Patrol currently employs the RVSS as its persistent wide area day/night motion imagery surveillance and monitoring capability in protecting the U.S. borders from illegal incursions and activities. Located on dedicated elevated fixed towers or tall structures, RVSS cameras provide the persistent ground surveillance capability needed by Border Patrol Agents (BPA) to effectively deter, detect, track, identify, classify, and respond to Items of Interests (IoI) located along the U.S. borders. While current or legacy RVSS equipment have performed relatively well, gaps have been identified in areas of effectiveness and suitability, as well as technology obsolescence, limited vendor support, and the end-of-useful life of many RVSS subsystems.

The Remote Video Surveillance System (RVSS) procurement is one element of a broader CBP strategy to rapidly acquire non-developmental (and ideally commercially available) systems to support border enforcement efforts. Technology combines with other resources and capabilities; notably personnel, infrastructure, and intelligence; to improve the overall efficiency and effectiveness of our border enforcement efforts.

The current strategy for the acquisition and deployment of technology derives from lessons learned from past experience. Most notably, the recent effort to develop and deploy a system known as the Secure Border Initiative-*network* (SBI*net*) provided key insights about CBP's past approaches. Among other things, the SBI*net* experience taught us:

- Industry (often in response to military needs) appears to have already available many systems that could provide the type of capabilities offered by at least portions of SBI*net*, although they may not meet all of the aspirations for SBI*net*.
- Quantitative analysis on the benefits of technology for border enforcement is extremely limited. Nonetheless, Border Patrol experience to date provides compelling evidence that

technology is useful in (1) detecting incursions across the border, (2) identifying or classifying those incursions, (3) providing more efficient application of personnel to respond to incursions, and (4) enhancing agent safety through increased awareness of each tactical situation. Technology also offers opportunities to measure the amount of cross-border traffic and changes in that traffic over time. The Border Patrol primarily uses technology for detection and surveillance between ports of entry, enabling CBP to maximize its effectiveness in responding to and disrupting illicit activity. In other words, technology enhances situational awareness of the amount and types of illegal activity at the border, enabling officers to spend more of their time responding to incursions and less of their time detecting them.

The RVSS systems that are the subject of this procurement are part of the overall Arizona plan. Offerors should understand this solicitation within the overall context of CBP's plan for technology.

First and foremost, CBP is NOT interested in any kind of a system development. CBP understands it is unlikely that there are existing (non-developmental) systems that meet ALL of its aspirations and desires. Instead, CBP is interested in selecting a non-developmental (and preferably commercially available) system that represents the best mix of capabilities. CBP has prepared a Functional Specifications Document that includes both thresholds and objectives for a variety of performance parameters. CBP is providing this information so that offerors may have a better understanding of the totality of characteristics that CBP values in a system. There will be a few Critical Performance Parameters that the system must meet. However, except as described elsewhere in this solicitation, CBP is willing to forego lower priority parameter performance (even at the threshold level) where the overall value of the total system outweighs missing lower priority parameters. Offerors who cannot meet some lower priority parameters, but otherwise offer good performance and high confidence at an attractive price, should expect to compete favorably in this procurement. Offerors who offer higher performance at a higher price should also expect to compete favorably if the increased performance is worth the marginal increase in price. CBP is interested in selecting from among a wide range of offerings, trading combinations of performance against price. CBP also values the participation of small businesses and will give more weight to offerors who make extensive use of small businesses, assuming those small businesses have the capacity to succeed with low risk to the Government. In all cases, CBP will seek strong confirmation that each offeror's system is truly non-developmental. Offerors must provide strong assurance that the proposed system is now ready, deployable and will not require additional engineering development effort if they hope to receive favorable consideration.

The Government has conducted extensive market research and has high confidence that there are currently existing, non-developmental systems that will warrant an eventual contract award under this solicitation. However, if the Government concludes there are no offerors who provide adequate confidence in the non-developmental nature of their providers, or no offerors who provide enough performance at reasonable cost, CBP will cancel the solicitation altogether rather than procure an ineffective or high risk offering.

The ultimate contract requirements will be the specifications, capabilities and performance proposed by the successful offeror. Offerors who fail to meet the performance levels they themselves propose should not expect tolerance from the Government. All offerors are on notice that the Government will be ready, willing, and able to terminate for default any successful

offeror who fails to meet the performance characteristics asserted and presented in the offeror's proposal.

Offeror's should be aware that CBP expects to gain important experience through deployment and operation of its technology systems. These immediate procurements will provide a sort of technology baseline of which CBP can assess the value of potential enhancements in the future. Operation of the non-developmental systems will also enable CBP to collect data about the effectiveness of technology. These data, in turn, will assist CBP in building quantitative models to advise future technology procurement strategies.

Put another way, CBP has not forsaken technology development and improvement. CBP remains very interested in gaining increased capability and value from technology in the future. But technology development is NOT an interest for the systems, which are the subject of this instant solicitation. Instead, this procurement, along with the other technology elements of our Arizona plan, will form the comprehensive technology baseline of which we will establish the requirements and relative values for future technology. That future technology will be a concern for future procurement activities—not this one.

## **2. Scope**

General Dynamics **shall** install, configure, and test a fully functional Remote Video Surveillance System (RVSS) for the U.S. Customs and Border Protection (CBP). General Dynamics **shall** install new systems as well as replace legacy systems at designated locations as directed by CBP. The RVSS **shall** be a system of systems comprised of a sensor suite, a communications backbone, and a command and control facility. Sensor suites include an electro-optical and infrared camera, other devices such as spotlights and loud hailer, and other components that send information via the communications backbone to the command and control facility where the border agent can detect, track, identify, and respond to activity within the Area of Responsibility (AoR). Sensor suites **shall** be installed on new towers, existing towers, on buildings or other structures as directed by CBP and **shall** provide full motion video meeting all threshold requirements. The communications backbone **shall** be comprised of a ring topology with overlapping coverage and hot standby radios, ensuring reliable network communications coverage. The command and control facility **shall** support the CBP's agents in detecting, identifying, tracking, and apprehending an illegal person or persons in that C2's area of operation during daylight or nighttime operations. The technology approach for the RVSS upgrade **shall** use Commercial Off-the-Shelf (COTS) equipment and software and will require NO developmental processes **(existing COTS components)**. Normal technology integration and configuration **shall** be used, **meaning we shall configure the equipment to the specific RVSS requirements**. Proven COTS products available on the market will provide easy sparring and replacement when needed, reducing and easing legacy RVSS logistical issues. **Logistical support shall** be implemented in accordance with **applicable CDRLs** and this Performance Work Statement (PWS) **to sustain the installed system and meet prescribed operational availability**. General Dynamics **shall** apply our proven ISO 9001-based management system to the CBP's RVSS project. Our management approach includes 100% responsibility for superior project performance and on-schedule project completion. We manage and monitor our subcontractors from start to finish. We have quality reviews throughout the project to ensure approved and required practices are followed, installations are within standards, testing is accomplished and recorded **in accordance with the approved test plan**, and the resulting work meets all

requirements. This is the true spirit of ISO 9001 registration – quality from start to finish with full customer satisfaction. As the prime contractor, we are fully responsible for every action taken by the team in execution of this project. General Dynamics shall execute the approved program management plan from contract award to contract completion, ensuring all timelines, schedules, reports, and meetings are accomplished on time and in a manner that is satisfactory to CBP. Constant communications between the Program Management Office (PMO), the program and project managers, General Dynamics leadership, and CBP will ensure the delivery of a successful RVSS.

### 3. Applicable Documents

General Dynamics' work shall be performed in accordance with the following specifications, standards, and codes.

**Table 3-1. Specifications, Standards and Codes Referenced**

Title	Number
Standard American National Standard Safety Levels with Respect to Human Exposure to Radio Frequency, Electromagnetic Fields, 3 kHz to 300 GHz	ANSI C95.1
American National Standard Recommended Practice for the Measurement of (Potentially) Hazardous Electromagnetic Fields – RF and Microwave	ANSI 95.3 and 95.5
American National Standard for the Safe Use of Lasers	ANSI Z136.1
National Environmental Policy Act of 1969 (NEPA)	42 U.S.C. 4321-4335
DHS Management Directives, Environmental Planning Program	Directive 023-01
Occupational Safety and Health Act (OSHA)	(29 CFR 1926); (29 CFR 1910)
American National Standard for Electromagnetic Compatibility-Radiated Emission Measurement in Electromagnetic Interference (EMI) Control-Calibration of Antennas	ANSI C63.5
Motorola Standards and Guidelines for Communications Sites	Motorola R-56
FCC Electro-Magnetic Compatibility (EMC) Compliance for Un-intentional Radiators	FCC Title 47, CFR Part 15, Class A
ANSI Standard for Structural Standard for Antenna Supporting Structures and Antennas	ANSI/TIA-222-G
Federal Information Processing Systems (FIPS) for “certified” devices	FIPS 140-2
Lightning and Surge Protection, Grounding, Bonding and Shielding Requirements for Facilities and Electronic Equipment	FAA_STD-19e*
National Fire Protection Association Life Safety Code	NFPA 101
National Electric Code	NFPA 70
GSA Facilities Standards	P100
International Building Code	IBC 2009
International Fire Code	IFC 2009

Title	Number
International Energy Conservation Code	IECC 2009
International Mechanical Code	IMC 2009
RVSS Functional Specification Document	OTIA06-RVSSU-12-000001
NIST Federal Information Processing Standards Publications	
NIST Special Publications	800 Series
USCBP H.2 Security Procedures	
CBP Personnel Security Handbook	HB 1400-07A
CBP Information Systems Security Policies and Procedures	HB 1400-05D
Operations Security Program	DHS MD 11060.1
Safeguarding Sensitive but Unclassified (For Official Use Only) Information	DHS 11042.1
DHS 4300A Sensitive Systems Handbook	

*\* All new components shall be designed and installed to meet the required specifications. All new mounts and cabinets shall be ground to the existing site ground system. Polyphasers and surge arrestors shall be installed to ensure lightning protection for any RF and signal lines. A ground run shall be included from the upper platform to the existing ground ring at the base of the tower. The lead shall be exothermically connected to the existing ground ring. A post-installation ground test shall be performed on the system. If the system does not meet specifications, the customer shall be notified of the deficiency. Ground system enhancements can be designed and installed as needed. Present pricing assumes that the existing ground system is compliant and that the new installation will connect into that system without the need for any enhancements or modifications.*

#### **4. Performance Requirements**

Selective Performance Standards are included in this section following the performance requirements.

##### **4.1. RVSS Upgrade System**

(CLINs: 0001, 0002, 0003, 0004, 0005, 0006, 0007, 0008, 0009, 0010, 0011, 0012, 0013)

The existing RVSS utilizes multiple color cameras and thermal infrared detection video cameras and ancillary equipment that are integrated into a remotely controlled system that can monitor and record activity within an AoR during both daytime and nighttime. The RVSS sensor images are transmitted via a dedicated communications sub-system to a Border Patrol Station where the information is processed and displayed, monitored and controlled by Border Patrol personnel.

The RVSS Upgrade system will have Government provided power at both Tower and C2 facilities.

Products include all hardware and software associated with the sensor suite and supporting subsystems, communications subsystem and command and control subsystem. The RVSS Upgrade system hardware and software shall be provided as a system, not as individual components. Contractor shall deliver a non-developmental item (NDI) fully integrated system, making maximum use of an open systems approach.



General Dynamics' **proposal includes** a Concept of Operations (CONOPS) for the proposed technology solution (system) to expand USBP's surveillance capabilities in accordance with the Arizona Border Surveillance Technology Plan and RVSS Operational Scenarios **with our RVSS Upgrade proposal**. The approach highlighted the expansion of surveillance capabilities that will be achieved through the deployment of existing, proven technology solutions tailored to the unique operational constraints along the border. **We believe** General Dynamics' solution reflects a complete and comprehensive understanding of USBP mission, including considerations of how technology will be used in the operational environment, "user friendliness," vulnerability to environment and threats. **Our CONOPS shall be coordinated and fine-tuned with CBP throughout the development process. This CONOPS is flexible enough to provide you an enhanced customer experience and can be used across all AoRs.**

The RVSS Upgrade system may vary by geography and operational needs. Existing upgrade and new sites to include locations and technology are outlined in Section J Attachment RVSS Upgrade Equipment and Tower Laydown Document.

#### **Performance Standard:**

The RVSS Upgrade System performance capabilities are outlined in the RVSS Upgrade System Functional Specifications Document (FSD) and FSD Matrix. – Section J Attachment J-2 and RFP Exhibit 1. Threshold (minimum) performance characteristics of the system are identified as (T) and objective performance characteristics that are desired by the Government are identified as (O).

Existing upgrade and new sites to include locations and technology are outlined in Section J Attachment J-3 RVSS Upgrade Equipment and Tower Laydown Document. The system shall be operationally effective under the operating and environmental conditions detailed in Section J Attachment J-4 RVSS Upgrade Operating Environment, and the draft Concept of Operations.

#### **4.1.1. Performance Standard Expanded**

General Dynamics **shall** deliver a system of systems integrated to operate as one system. Utilizing Commercial Off-the-Shelf (COTS) products capable of meeting all requirements **defined in the FSD (Vol. I, Appendix D1 – Exhibit 1 Functional Specification Document Matrix)**, General Dynamics shall design and provide a test program and test procedures to validate a fully capable system of systems functioning smoothly as one integrated component called RVSS. The RVSS system shall be designed utilizing an open architecture structure and will require NO development (non-developmental item (NDI)).

General Dynamics shall procure materials, install, integrate, test, and verify performance, and document the RVSS technology baseline instrumentation system in fulfillment of the Functional Specification Document (FSD). All requirements listed in the FSD **(Vol. I, Appendix D1 – Exhibit 1 Functional Specification Document Matrix) shall** be met. General Dynamics shall define and maintain a system baseline for the fielded and tested system; this baseline shall be established prior to the start of testing and shall be maintained through system acceptance.

The RVSS shall alert an agent of an Item of Interest (IoI) in the AoR then detect, track, and identify the IoI, which will allow the agent time to respond and disrupt any illicit activity. The new RVSS system fills the gap that was inherent in the legacy RVSS system. The installation of

high end specification cameras allows an expansion of the surveillance areas and efficiencies of a border patrol agent.

General Dynamics has designed the RVSS system based on a full understanding of CBP operational requirements. The system is the best technology available on the market today. The key performance design concept is to ensure the system is easy to use and requires minimum training to operate – in other words, user friendly. The environment and weather conditions are unique along the border and equipment needed to be ruggedized and harden where possible. All equipment selected must meet all threshold environmental requirements and the RVSS Upgrade Operating Environment.

#### **4.2. Operating Environment**

(CLINs: 0001, 0002, 0003, 0004, 0005, 0006, 0007, 0008, 0009, 0010, 0011, 0012, 0013)

The RVSS Upgrade System shall be capable of operating within the southwest border while mounted on the Government towers and structures. These weather environments and their associated environmental parameters such as temperature, rainfall, humidity etc., are identified in Section J Attachment J-4 Operating Environment.

Performance Standard:

The RVSS Upgrade system shall perform to functional specifications detailed in Section J Attachment J-2 RVSS Upgrade Functional Specification Document (FSD). General Dynamics' proposed system shall operate in the operational weather conditions in accordance with IAW Section J Attachment J-4 RVSS Upgrade Operating Environment.

The environment can be harsh on the southern border and extreme weather is the norm. All products purchased for the RVSS shall meet Threshold Acceptable Capability requirements listed in the RVSS solicitation section J-4 Titled Remote Video Surveillance System (RVSS) Operating Environment; however, it is our goal to meet CBPs Nominal Desired Capability and Goal when possible. General Dynamics shall document and track weather events during all testing phases and shall track any system degradation during these events. The system shall be documented and tracked against the requirements in the Functional Specification Document. All equipment shall be delivered with specifications sheets or documented evidence of environmental specifications. Weather conditions shall be documented in the test procedures as they occur and shall be included in the test report.

#### **4.3. Government-Furnished Information and Property**

(CLINs: 0001, 0002, 0003, 0004, 0005, 0006, 0007, 0008, 0009, 0010, 0011, 0012, 0013)

The Government will provide Government Furnished Information (GFI) consisting of Equipment and Tower Laydown in Section J Attachment J-3 RVSS Upgrade Equipment and Tower Laydown Document.

The Government will provide access to Government Property consisting of installation tower sites (real estate), physical towers, access roads, and power. At Border Patrol Station facilities, the Government will provide physical spaces to accommodate Local Area Network (LAN) servers, communications equipment, workstations, display systems and power.

General Dynamics shall perform a site survey at each RVSS location. During the site survey a structural analysis shall be performed on each tower. The towers shall be inspected and if any defects or deficiencies are noted, they shall be included in a report to CBP. The Structural Analysis evaluation shall be submitted to CBP. The site survey shall include an evaluation of the command and control facility. Recommendations or deficiencies shall be documented, and a report shall be generated to highlight any issues or concerns.

#### **4.4. Program Management**

(ALL CLINs: 0001 through 0088)

General Dynamics shall deliver a Program Management Plan (PMP) IAW CDRL OTIA-RVSSU01\_CDRL\_RevA\_Program Management Plan.

General Dynamics has designed, and shall continue to employ, a management strategy and organizational structure for executing the RVSS program that will enable effective, efficient, and rapid task execution, and will achieve all PWS and program requirements. Our complete life-cycle management approach is based on our ISO 9001:2008 registered and compliant Quality Management System (QMS), which contains specific processes and procedures for effective and efficient program management. In today's environment, we fully understand that plans change, and our managers will continue to maintain a flexible approach. General Dynamics shall execute all aspects of the PMP, as well as documenting the completion, testing, verification, and reporting of RVSS contractual tasks for all CLINs.

##### **4.4.1. Program Management Meetings & Reports**

(ALL CLINs: 0001 thru 0088)

General Dynamics shall conduct and support meetings with the Government.

General Dynamics shall be a member of the Integrated Logistics Support (ILS) Working Group.

The ILS Working Group (ILSWG) shall meet quarterly. The meetings can be held in Tucson, AZ; Washington, DC; General Dynamics' designated facility or via a teleconference. ILSWG meetings could be scheduled sooner than on a quarterly basis if so designated by the RVSS Upgrade Assistant Program Manager – Logistics (APML).

An open communications line is critical to the success of RVSS and the understanding of all management processes. General Dynamics shall be a team member on all invited IPTs and shall provide input that will enhance the success of the project and a better understanding of any issue that may arise. As a team member of the Integrated Logistics Support Working Group, we shall meet quarterly or as needed as directed by CBP. General Dynamics' test director shall be a member of the Test and Evaluation Group and shall attend meetings every two weeks or as directed by CBP.

General Dynamics shall be a member of the Test and Evaluation (T&E) Working Group.

The frequency of the T&E Working Group Meetings is every two weeks. 75% of meetings shall be teleconferences. The location of meetings that are not telecons shall be 50% Tucson, 25% Washington, DC and 25% contractor location.

General Dynamics shall:



- Prepare and deliver monthly program management reports IAW CDRL OTIA-RVSSU-02\_CDRL\_RevA Monthly Program Management Report. This report, accomplished by General Dynamics, is supported by the Weekly Status Reports and is submitted to the Government Contracting Officer Representative. This report contains: Activity Summary, Major Milestones, Open Action Items. Program Risks and Response/Actions to reduce risk, Schedule Performance to Baseline (variance analysis and impact), Status of Baseline Changes, Non-conformance and Resolutions. The Monthly Report is prepared in a narrative format, submitted electronically 3 working days prior to the monthly meeting, and is reviewed during the Monthly Meeting with the Government and General Dynamics.
- Prepare and deliver CMLS Services Monthly Activity Report IAW CDRL OTIA-RVSSU-03\_CDRL\_RevA\_CMLS Services Monthly Activity Report. This monthly activity report, accomplished by General Dynamics, includes all maintenance and logistics support actions on the system and subsystems for the RVSS Upgrade System, and is submitted electronically no later than 10 days following each AoR SAT and subsequent months of CMLS Services.
- Prepare and deliver Integrated Logistics Support Meeting Minutes IAW CDRL OTIA-RVSSU-04\_CDRL\_RevA\_Integrated Logistics Support Meeting Minutes. General Dynamics shall electronically submit minutes for all formal ILS conferences, meetings, reviews, audits, evaluations, etc., no later than 5 days after the meeting is completed. The Government will provide comments/approval within 5 days after receipt, with General Dynamics updating minutes, as required, within 5 days after receipt of Government comments.
- Prepare and deliver Monthly Warranty Status Report IAW CDRL OTIARVSSU-05\_CDRL\_RevA\_Monthly Warranty Status Report. General Dynamics shall accomplish this monthly report with information on items under warranty; contractor repair, replacement and reimbursement; and equipment failure data. General Dynamics shall submit this report no later than 10 days following each AoR SAT and subsequent months of CMLS Services.
- Prepare and deliver Network Operations Center (NOC)/Security Operations Center (SOC) Activity Report IAW CDRL OTIA-RVSSU-06\_CDRL\_RevA\_NOCSOC Activity Report. General Dynamics shall deliver an electronic monthly NOC/SOC Matrix Report beginning with the first full month after the AoR C2 is operational. This report includes all requisition activity related to maintenance and support actions for the deployed RVSS Upgrade System and related equipment. This report also tracks all activities and status through closure. The data is archived for historical purposes and reporting.

#### **4.5. Configuration Management**

(ALL CLINs: 0001 through 0088)

General Dynamics shall perform Configuration Management consisting of planning, identification, change control, status accounting and verification of approved acquisition baselines.

General Dynamics and the Government shall conduct Physical Configuration Audit(s) (PCA). The PCA must be conducted at a mutually agreeable contractor and/or CBP facility. During the PCA, General Dynamics and the CBP will verify that as-built versions of the configuration items are identical to the technical documentation requirements. The PCA must be in accordance with the Schedule Milestones. General Dynamics shall deliver Configuration Management IAW (CDRL OTIA-RVSSU-07) CDRL Baseline Technical Data Package (TDP) prior to the PCA being performed. First draft submittal of the TDP is due thirty (30) days after each AoR Deployment Readiness Review (DRR). Upon completion of the PCA by General Dynamics and the Government, the resultant documentation must include and incorporate all redlines to denote the as-built state of the system.

General Dynamics shall deliver Configuration Status Accounting (CSA) IAW CDRL OTIA-RVSSU08\_CDRL\_RevA\_Configuration Status Accounting (CSA).

General Dynamics shall establish and maintain a configuration identification process to select RVSS Configuration Items (CIs), to determine the necessary types of documentation to describe them, to issue identifiers for CIs to release configuration documentation, and to organize that documentation to progressively describe the RVSS baselines.

#### **4.6. Work Breakdown Structure (WBS)**

(ALL CLINs: 0001 through 0088)

General Dynamics shall deliver a Work Breakdown Structure (WBS). References: MIL-HDBK-881A or most current available version and GAO Cost Estimating and Assessment Guide, March 2009 for guidance in creating the WBS. This WBS will be based on the Level 3 WBS delivered with the proposal.

A WBS Dictionary shall be provided with the WBS to describe the work for all elements of the WBS. The WBS shall be delivered in an outline format with a successive and additive numbering scheme (i.e., 1, 1.1, 1.1.1 and 2, 2.1, 2.1.2) as well as indentation for each level of the WBS.

General Dynamics shall develop and deliver a WBS IAW CDRL OTIA-RVSSU-09\_CDRL\_RevA\_Work Breakdown Structure (WBS).

Performance Measures/Metrics: On-time delivery in the specified format. Document is revised as necessary throughout the RVSS upgrade program for all CLINs.

#### **4.7. Integrated Master Plan (IMP)**

(ALL CLINs: 0001 through 0088)

General Dynamics shall deliver and maintain an Integrated Master Plan (IMP) defining the following Program Events (PEs):

- Deployment Readiness Review (DRR)
- Initial Operating Capability (IOC)
- Full Operating Capability
- Transition to Operations and Maintenance (Contractor)
- Transition to Operations and Maintenance (Government)

General Dynamics may identify additional Program Events as necessary to plan, manage and execute the contract.

General Dynamics shall develop and deliver an IMP IAW CDRL OTIA-RVSSU-10\_CDRL\_RevA\_Integrated Master Plan (IMP).

**4.7.1. Integrated Master Plan (IMP)**

The IMP shall be directly traceable to the WBS defining all of the needed Program Events in order to plan, manage, and execute. The IMP is event-based, but it does provide traceability to the product-based WBS and the program PWS.

Reference documents used: General Dynamics Program Management Plan conforming to RVSS Upgrade program and General Dynamics' quality processes and Program WBS, as well as the applicable OTIA PMO Scheduling Standards, DHS SELC, and applicable DoD IMP and IMS Preparation and User Guides.

Performance measures/metrics: On-time delivery in the specified format. Document is revised as necessary throughout the RVSS upgrade program for all CLINs.

**4.8. Integrated Master Schedule (IMS)**

(ALL CLINs: 0001 through 0088)

General Dynamics shall prepare, deliver and maintain an Integrated Master Schedule that encompasses the entire scope of work to include sub-contractor efforts, external relationships and hand-offs such as required **Government-owned**, all products, supplies, data and services that are to be delivered and the dates and location of delivery.

General Dynamics shall develop and deliver an IMS IAW CDRL OTIA-RVSSU-11\_CDRL\_RevA\_Integrated Master Schedule (IMS).

The RVSS Upgrade IMS shall capture all events and be traceable to the 4th and 5th level work pages of the delivered WBS. The IMS is hierarchical and allows for the tracking of all program events from program kick-off through design, procurement, deployment, testing, and O&M services.

Reference documents used: General Dynamics Program Management Plan according to General Dynamics' quality processes and Program WBS, as well as the applicable OTIA PMO Scheduling Standards, DHS SELC, applicable DoD IMP and IMS Preparation and User Guides, and the DoD standard IMS DID, DI-MGMT-81650.

Performance measures/metrics: On-time delivery in the specified format. Document is revised as necessary throughout the RVSS upgrade program for all CLINs.

**4.9. Kick-off Meeting**

(CLIN: 0001)

A post-award conference shall be conducted within 5 days after contract award with representatives of General Dynamics, at the CBP OTIA office in Arlington, VA. Both parties will mutually agree upon the specific date and time. The Contracting Officer, or designated representative, initiating the conference will designate, or act as, the chairperson.

The RVSS Upgrade program Kick-Off Meeting occurs once at the start of the program.

Reference documents used: General Dynamics Program Management Plan, draft IMP and draft IMS.

Performance measures/metrics: On-time delivery in the specified format. Meeting minutes of the Kick-Off Meeting shall be delivered within 5 business days after the meeting

#### **4.10. Deployment Readiness Reviews (DRRs)**

(CLINs: 0001, 0002, 0003, 0004, 0005, 0006, 0007, 0008, 0009, 0010, 0011, 0012, 0013)

General Dynamics shall conduct a Deployment Readiness Review no later than five (5) business days prior to the deployment into each AoR. The meetings **shall** occur within the station AoR or an adjacent AoR at a contractor provided facility. No two DRRs shall be held on the same day.

The DRR shall be performed **per** IAW CDRL OTIA-RVSSU-12\_CDRL\_RevA\_Deployment. **Per DID OTIA-007 the** Readiness Review Package shall include the following:

- Site Preparation Plan to include mobilization, storage, sanitation, waste removal, etc.
- Environmental Planning Data
- Final Site Construction Drawing Packages (and applicable permits)
- Project Construction Specification
- Continuity of Operations Plan to include:
  - Coordinated Outage Schedule
  - Plan for Early Operations
  - Plan for sustainment for early operation (spares, maintenance response, training)
- Specialty Engineering Analysis
- Integrated Contractor Support Plan (ICSP)
- Training Materials

DRR occurs once for each of the 13 RVSS upgrade AoRs.

The DRR shall be performed with the delivery of a DRR Package that consists of all subsystem lay-downs and site designs for all surveillance and communications relay sites within the AoR and for the C2 Facility within the AoR.

A detailed AoR IMS shall be presented as well as the events requiring coordination with the appropriate CBP officials for site and facility access.

Reference documents used: General Dynamics Program Management Plan, IMP, and IMS.

Performance measures/metrics: On-time execution in the specified format once per AoR.

#### **4.11. Quality Management**

(ALL CLINs: 0001 through 0088)

General Dynamics shall ensure Quality Management practices are implemented during the RVSS Upgrade Program. **General Dynamics shall execute Quality Management principles and practices throughout all RVSS CLINs as an integral and integrated practice in the performance of contract deliverables and requirements.**



General Dynamics shall prepare and deliver a Quality Control and Inspection Plan (QCP) IAW CDRL OTIA-RVSSU-13\_CDRL\_RevA\_Quality Control and Inspection Plan outlined in the CBP provided Quality Assurance Surveillance Plan (QASP) Section J Attachment J-5 RVSS Upgrade Program Quality Assurance Surveillance Plan (QASP).

The Quality Control and Inspection Plan shall be based on and update of the QCP delivered with the proposal.

The QCP shall be based upon the CBP-provided Quality Assurance Surveillance Plan (QASP) and in accordance with General Dynamics' Quality Management System (QMS) derived from General Dynamics' ISO 9001:2008–registration (Certificate CERT-0055724, August 2, 2011).

The following specific metrics shall be collected and reported on:

- Project Schedule – Dates, both planned and actual, associated with project milestones and deliverables, along with exit criteria that defines completion of milestones and deliverables that are tracked.
- Materials Quality / Systems Testing – Various measures are collected at different times throughout the acquisition and O&M processes to include defect type and source, type and number of trouble reports received by Customer Support, and the defect removal rate achieved by specific reviews and audits. These metrics are analyzed and reported on a periodic basis to help discern areas of concentration for future development, quality assurance emphasis or for process improvement opportunities.
- Vendor Management – Including timeliness of project requirement communications and issuance of purchase orders, risk management and mitigation, and reporting on good faith efforts to meet the small business utilization goals. Vendor evaluations are provided to the subcontractors as one continuous improvement tool.
- Customer Satisfaction – Indications are collected as to the degree to which delivered materials and services meets the needs, requirements, and desires of its customers.
- Continuous Improvement – Measures of how responsive management is to make adjustments in response to performance metrics or customer satisfaction feedback.

The QCP processes shall be updated as the working environment evolves and improvement opportunities are identified.

The QA Plan shall provide for the following Quality Assurance (QA) audits:

- Peer Reviews
- Milestone Reviews
- System Test & Evaluation
- Post-Release Reviews & Lessons Learned
- Customer Feedback

**4.12. Safety Compliance**

(ALL CLINs: 0001 through 0088)

General Dynamics shall develop and deliver a System Safety Program Plan IAW CDRL OTIA-RVSSU-14\_CDRL\_RevA\_System Safety Program Plan (SSPP). General Dynamics shall execute safety compliance IAW with the SSPP throughout the performance of all CLINs.

**4.13. Environmental Considerations**

**4.13.1. National Environmental Policy Act (NEPA)**

(CLINs: 0001, 0002, 0003, 0004, 0005, 0006, 0007, 0008, 0009, 0010, 0011, 0012, 0013)

Environmental objectives for the RVSS Upgrade procurement are as follows:

- Full compliance with all environmental, health and safety laws and regulations, including but not limited to, the NEPA requirements and related regulations under the National Historic Preservation Act, and the Endangered Species Act, the Clean Water Act, the Resource Conservation and Recovery Act, the Comprehensive Environmental Response, Compensation and Liability Act, and other environmental laws and regulations as applicable to the RVSS procurement.
- Encouragement of the use of renewable energy resources and eco-friendly solutions, via the competitive procurement process: and
- Achieve USBP operational objectives without undue environmental impact.

General Dynamics shall deliver an Environmental Plan IAW CDRL OTIA-RVSSU-15\_CDRL\_RevA\_Environmental Plan. General Dynamics shall execute environmental compliance IAW with the Environmental Plan throughout the performance of CLINs 001 through 0013.

The Environmental Plan shall cover the following:

- NEPA
- National Historic Preservation Act
- Endangered Species Act
- Clean Water Act
- Resource Conservation and Recovery Act
- Comprehensive Environmental Response, Compensation and Liability Act.

**4.14. Electro-Magnetic Interference (EMI) Compliance**

(CLINs: 0001, 0002, 0003, 0004, 0005, 0006, 0007, 0008, 0009, 0010, 0011, 0012, 0013)

General Dynamics shall ensure that all sub-systems (e.g. sensor suites, control system hardware, cabling) and the wide area architecture are engineered/designed to mitigate both intra-site and inter-site (co-site) electromagnetic interference.

General Dynamics shall ensure all intentional radiator sub-systems (e.g. microwave or radar) and the wide area architecture are engineered/designed (for example using a RF planning tool such as ADTI HTZ Warfare) to mitigate both intra-site and inter-site (co-site) electromagnetic interference through an inter-modulation study. General Dynamics shall apply an International

513 Telecommunication Union (ITU) recommended propagation “model” for the analysis and deliver  
514 the results to OTIA for examination.

515 General Dynamics shall ensure all transmitting sites and subsystem equipment complies with the  
516 interference mitigation criteria of Motorola R-56 “Standards and Guidelines for Communications  
517 Sites”.

518 General Dynamics shall prepare and deliver to the Government a EMI/EMC/ NTIA Compliance  
519 Report IAW CDRL OTIA-RVSSU-16\_CDRL\_RevA\_EMC-EMI\_Verification.

520 Propagation modeling shall be run at 160KM radius with RCV antenna at 2 meter height and  
521 at -115 dbm threshold with a standard for receiver sensitivity threshold at -119 dbm, the model  
522 used for this is Lonely Rice with a clutter TSB 88.

523 Map increment shall be run at 30, 90, or 180 meter map data and provide a output that shows  
524 system coverage that is acceptable or non-acceptable for use.

525 General Dynamics shall ensure that an authorized frequency assigned by NTIA for the location  
526 and duration of operation follows NTIA’s Manual of Regulations and Procedures for Federal  
527 Radio Frequency Management.

528 General Dynamics shall ensure that equipment is tuned, operated, maintained, and serviced in  
529 accordance with the Radio Frequency Authorization (RFA) and the equipment’s operator  
530 manuals. Reference documents that might be used for this task include the following:

- 531 • Motorola R-56 “Standards and Guidelines for Communications Sites”
- 532 • Government Master File (GMF)
- 533 • J/F-12 documents

#### 534 **4.15. Electro-Magnetic Compatibility (EMC) Compliance for Intentional Radiators**

535 (CLINs: 0001, 0002, 0003, 0004, 0005, 0006, 0007, 0008, 0009, 0010, 0011, 0012, 0013)

536 General Dynamics shall ensure all “intentional radiator” portions of the system (e.g. microwave  
537 systems) are engineered and tested to prevent mutual interference compatibility issues that affect  
538 system performance in compliance with Motorola R-56 “Standards and Guidelines for  
539 Communications Sites”.

540 General Dynamics shall prepare and deliver to the Government an EMI/EMC Compliance  
541 Report IAW CDRL OTIA-RVSSU-16\_CDRL\_RevA\_EMC-EMI\_Verification.

542 General Dynamics shall ensure all “intentional radiator” portions of the system (e.g., microwave  
543 systems) are engineered and tested to prevent mutual interference compatibility issues that affect  
544 system performance in compliance with Motorola R-56 “Standards and Guidelines for  
545 Communications Sites.”

546 General Dynamics shall prepare and deliver to the Government an EMI/EMC Compliance  
547 Report IAW CDRL OTIA-RVSSU-16\_CDRL\_RevA\_EMC-EMI\_Verification.

#### 548 **4.16. Electro-Magnetic Compatibility (EMC) Compliance for Un-intentional Radiators**

549 (CLINs: 0001, 0002, 0003, 0004, 0005, 0006, 0007, 0008, 0009, 0010, 0011, 0012, 0013)

General Dynamics shall ensure all “un-intentional radiator” portions of the system (e.g. personal computers) are FCC Title 47, CFR Part 15, and Class A compliant to prevent mutual interference compatibility issues that affect system performance.

General Dynamics shall prepare and deliver to the Government an EMI/EMC Compliance Report IAW CDRL OTIA-RVSSU-16\_CDRL\_RevA EMC-EMI\_Verification.

**4.17. National Telecommunications and Information Administration (NTIA) Compliance**  
(CLINs: 0001, 0006)

NTIA Spectrum Band and Channeling Compliance:

General Dynamics shall develop and deliver, a frequency usage plan of recommended frequency assignments in accordance with the NTIA approved spectrum bands (see equipment certification) for all subsystems that transmit/radiate. The Government shall be responsible for requesting specific RF assignments to NTIA.

Communication subsystems shall use a combination of NTIA approved channel widths/spacing and standard signal encoding methods to optimize the use of spectrum space while still ensuring adequate RF signal fade margin resiliency and channel throughput.

General Dynamics shall:

Deliver NTIA Form 44 NTIA Certification of Spectrum Supportability IAW CDRL OTIA-RVSSU-17\_CDRL\_RevA\_NTIA\_Equipment Certification Form.

Develop and deliver a frequency usage plan IAW with CDRL OTIA-RVSSU-18\_CDRL\_RevA\_Freq\_Usage\_Plan.

Develop and deliver Requests for RF Assignment on the OTIA RFA Request Form IAW with CDRL OTIA-RVSSU-19\_CDRL\_RevA\_RF Assignment Requests.

**4.18. Logistics**

(CLINs: 0014 through 0075)

General Dynamics shall be responsible of sustaining the RVSS Upgrade system and subsystems to meet the prescribed Operational Availability (Ao) as stated in Attachment J-2 RVSS Upgrade Functional Specification Document (FSD) during the original 24-month contractor maintenance and logistics support services options for each AoR, and to include any execution of additional option years.

Operational Availability (Ao) –The ratio of the system’s Mission Capable Time (MCT) divided by total time, which is the sum of MCT plus Down Time. Mathematically, this can be described by the following equation:

$$Ao = \frac{\sum MCT \text{ Display}}{\sum MCT \text{ Display} + \sum \text{Down Time Display}} \times \frac{\sum MCT \text{ RVSS units}}{\sum MCT \text{ RVSS units} + \sum \text{Down Time RVSS units}}$$

General Dynamics shall execute logistics to sustain the RVSS Upgrade system and subsystems to meet the prescribed operational availability (Ao).



As part of the **Integrated Logistics Support (ILS) Working Group**, General Dynamics shall establish a Reliability, Maintainability and Availability (RMA) program to analyze the proposed solution's logistics parameters as follows:

Parameter	Definition	Approach
MTBF	Mean Time Between Failure	Average time between failures; typically includes all failures without regard to any fault tolerance that may exist.
MTBCF	Mean Time Between Critical Failure	Used when redundancy exists in a system. It is often used to differentiate system reliability from series mean time between failure (MTBF).
MDT	Mean Down Time	Sum of Mean Time To Repair (MTTR) and Mean Logistics Down Time (MLDT).
Ao	Operational Availability	The percentage of time that a system will be available to perform its operational functions; $A_o = (\text{Mission Capable Time}) / (\text{Total Time})$ . To determine how to increase availability, the components of Total Time (i.e., up time plus down time) must be quantified. Up time is simply Mission Capable Time or Mean Time Between Maintenance (MTBM). Down time is the sum of MTTR and MLDT (Mean Logistics Down Time). Therefore, the formula for predicting $A_o$ can be written as $A_o = (\text{MTBM}) / (\text{MTBM} + \text{MTTR} + \text{MLDT}) = (\text{MTBM}) / (\text{MTBM} + \text{MDT})$ .

#### 4.18.1. $A_o$ Exclusions

General Dynamics shall not be held responsible for the Contractor's contribution to the Operational Availability ( $A_o$ ) formula under this contract due to causes beyond the control of the Contractor. Examples of such causes include:

- Interference of preventative and/or corrective maintenance activities due to night time failures, or unsafe working conditions due to unusually severe weather or adverse access road conditions.
- Vandalism, Intentional Maliciousness, and other types of catastrophic damage due to external sources.
- Interference of preventative and/or corrective maintenance activities caused by Custom & Border Protection direction due to high risk operations in the area.
- Force Majeure such as Natural Disasters or lightning strikes.

#### 4.18.2. Failure Definitions and $A_o$ Reporting

The CBP failure prioritization model includes three levels: Priority 1 (P1), Priority 2 (P2), and Priority 3 (P3). General Dynamics shall use the following definitions for priority to clarify how failures experienced by the deployed system should be counted for calculating  $A_o$ :

- **Priority 1** is a failure of the system's primary functions and/or any safety related issue. Priority 1 failures are all counted as system failures/downtime in the  $A_o$  calculations. Examples of Priority 1 failures include:

- Any failure of a mission critical sensor or PTU (mission critical sensor defined as any day or Infrared cameras). Software restarts for mission critical sensors (both commanded and un-commanded) will be included in downtime for Ao calculations.
  - Failure of a communications package impacting the ability of the user to receive sensor data, or causes a degradation of sensor controls.
  - Failure of a DAQ, VMS, Domain Control Server, Secondary Display Server, Video Record Archive Server, Microsoft System Center Server, or any system degradation that inhibits users from achieving mission operations.
  - Loss of multiple C2 user workstations; no less than 75% of user workstations shall be operational at any given time in each AOR.
  - Failure of the SOC workstation or security functions.
  - Loss of operational use of more than one Secondary Display Monitor per Secondary Display Server. Exception where specific AOR has only 6 monitors or less (i.e. Ajo Papago Farms). With this exception, loss of one display would be considered a Priority 1 failure.
  - Any condition preventing a C2 user from logging into or using a workstation.
- **Priority 2** is a partial failure or degradation of primary system functions that impact primary functionality but mission operations are achievable with alternative methods (i.e. work-around solution). Repair of a Priority 2 failure may induce a Priority 1 failure during the repair which will then be counted in the downtime for calculating Ao. A Priority 2 failure may escalate to a Priority 1 failure if the redundant capability fails and causes a failure of a primary system function. Priority 2 failures do not affect the calculated Ao unless they induce a Priority 1 failure. Examples of Priority 2 failures include:
    - Loss of a single monitor at an individual C2 user workstation.
    - Loss of Laser Illuminator capability.
    - Loss of NOC workstation.
- **Priority 3** is a failure that causes minimal degradation to system operations. To clarify, an issue that results in degraded operations of minor functionality or where a workaround is available to enable operations to continue would be considered a Priority 3 failure. These failures do not have any effect on the calculated Ao. Examples of Priority 3 failures include:
    - Loss of a single Secondary Display Monitor.
    - Loss of loud hailer capability.
    - Loss of the spotlight capability.

#### Performance Metrics (monthly)

General Dynamics shall provide the Government Ao calculations each month as defined: 1) monthly and cumulative Contractor Contributed Ao for each AOR, and 2) monthly and cumulative overall Ao of each AOR. This information will be delivered in the CMLS Services Monthly Activity Report IAW CDRL OTIA-RVSSU-03\_CDRL\_RevA.

#### ~~Performance Metrics (monthly)~~

~~1. Ao, Operational Availability—Achieved by Region (“Region” referring to the Area of Responsibility (AoR)), with Graphical Trending (reporting with graphics and trend analysis).~~

#### **4.18.3. Integrated Contractor Support Plan**

(CLINs: 0014 through 0075)

General Dynamics shall perform contractor maintenance and logistics support services as described in the Integrated Contractor Support Plan (ICSP).

General Dynamics shall deliver an Integrated Contractor Support Plan to conduct Contractor Maintenance and Logistics Support Services (CMLS) to sustain the system, to include routine operational support and preventive maintenance to include NOC/SOC functions, fault detection, and removal and replacement of faulty line replaceable units (LRUs) and the repair of unserviceable assets up to the depot level and second party vendor repairs.

General Dynamics shall propose a refresh schedule and approach to be included in the CMLS option periods. The refresh schedule shall address all major Line Replaceable Units (LRUs) according to manufactures recommendations and projected technology upgrades. General Dynamics shall include the refresh schedule in the Integrated Contractor Support Plan (ICSP) and Pricing Schedule.

Additionally, ICSP shall include the process of removing a Non-Ready for Issue (NRFI) bar-coded Government Property Asset and installing with a contractor furnished equipment asset as a replacement until the Government asset is repaired, returned and reinstalled. The process includes accountability, responsibility and security/safeguarding of Government property (asset).

General Dynamics draft ICSP shall be prepared IAW CDRL OTIA-RVSSU-20\_CDRL\_RevA\_Integrated Contractor Support Plan.

General Dynamics is providing an open architecture, non-proprietary interface (SNMP) for future consolidated Network and Security Operations (NOC/SOC) support at a location outside of the RVSS Upgrade AoRs.

CDRL Requirements:

- The Integrated Contractor Support Plan is due IAW the DRR CDRL.
- General Dynamics shall update the plan as required for each AoR and during Contractor Maintenance and Logistics Support Services Options exercised by the Government.
- All electronic deliveries must be without restrictions that would prevent the Government from reproducing or editing the information. Electronic deliveries submitted shall be compatible with:
  - Microsoft Office Word, Version 2003 or compatible Suite 2003
  - Microsoft Project 2003
  - Adobe Acrobat .pdf searchable or native format

#### **4.18.4. Contractor Maintenance and Logistics Support (CMLS) Services**

(CLINs: 0014 through 0075)

687 General Dynamics shall perform contractor maintenance and logistics support services as  
688 described in the ICSP.

689 General Dynamics shall provide first and second level preventive and corrective maintenance as  
690 required to ensure operational availability meets specifications. This includes but is not limited to  
691 site remove/replace of LRUs, component test, system test, asset management, personnel training,  
692 and shipping as needed.

693 An appropriate level of FRACAS shall be employed to manage and mitigate failure trends and to  
694 drive reliability growth over the lifecycle, lowering Total Ownership Cost to the Government.

695 Performance Metrics (monthly):

- 696 1. FRACAS – Summary by AOR with trending data
- 697 2. Spares – Usage by AOR, Current Inventory Levels
- 698 3. Repair Costs (if returned to OEM)
- 699 4. Repair Turnaround Time
- 700 5. Obsolescence Tracking
- 701 6. Security Bulletins and Status
- 702 7. Support Personnel – headcount, issues, safety concerns

703

704

#### 705 **4.18.5. Operations and Maintenance (O&M) Manuals**

706 (ALL CLINs: 0014 through 0075)

707 General Dynamics shall deliver Operator and Maintenance Manuals that provides, at the  
708 appropriate maintenance levels, for PMCS, troubleshooting, maintaining, and repairing the  
709 RVSS Upgrade System.

710 General Dynamics shall develop and deliver Operations and Maintenance Manuals IAW CDRL  
711 OTIARVSSU-21\_CDRL\_RevA\_Operations and Maintenance Manuals.

712 General Dynamics shall deliver draft O&M manuals to support the RVSS early operations.

713 General Dynamics shall deliver to the Government, updates/change pages to the RVSS Upgrade  
714 System O&M manuals as a result of approved configuration baseline changes as part of the  
715 engineering change control/configuration management process.

716 Final O&M manuals shall be delivered thirty (30) days after completion of each AoRs PCA.

717 General Dynamics shall develop electronic O&M manuals, maximizing efficient use of  
718 operations and service personnel.

719 All electronic deliveries will be without restrictions that would prevent the Government from  
720 reproducing or editing the information. Electronic deliveries submitted shall be compatible with:

- 721 • Microsoft Office Word, Version 2003 or compatible Suite 2003
- 722 • Microsoft Project 2003
- 723 • Adobe Acrobat .pdf searchable or native format



**4.18.6. Contractor Recommended Spares and Consumables Lists**

(CLINs: 0001, 0002, 0003, 0004, 0005, 0006, 0007, 0008, 0009, 0010, 0011, 0012, 0013)

General Dynamics shall develop and deliver a Contractor Recommended Spares and Consumables List IAW CDRL OTIA-RVSSU-22\_CDRL\_RevA\_Contractor Recommended Spares and Consumables List.

General Dynamics's spares analysis shall minimize the cost of sparing to meet the operational availability requirement over the system's lifecycle. Material obsolescence, provisioning, maintainability, acquisition cost, sustainment cost, calibration requirements, and LRU MTBF shall all be considered.

**4.18.7. System Training**

(CLINs: 0001, 0006; and 0014 through 0075)

General Dynamics shall deliver an interactive training environment that replicates multiple operator workstations, including hardware and software but does not include operator workstation furniture, to provide the full functionality as defined for the delivered system.

The training environment shall be scalable and expandable to support multiple, integrated, fully functional operator training workstations. Current Government requirement is for six (6) training workstations.

General Dynamics shall develop and deliver System training IAW CDRL OTIA-RVSSU-23\_CDRL\_RevA\_System Training.

A training management plan shall be developed, coordinated with and approved by CBP.

A Training Development Team (TDT) will be set up by General Dynamics to offer a collaborative environment for customer participation, if desired, of training development: analysis, design, evaluation, and delivery. Training shall be designed IAW OTIA-RVSSU23\_CDRL\_RevA\_System Training and US CBP OTD Training Development Standards.

An analysis of training needs provided by the planning team shall be accomplished prior to the design. The analysis may identify additional tasks and responsibilities that will need to be trained. The training plan will be updated with this information.

General Dynamics shall deliver updates if the system configuration changes the content of the training material or training environment portion of the training. The TDT shall outline the purpose and goals of each training event and each training program course. All learning objectives shall be clearly stated so that course structures meet all CBP goals. The TDT shall develop all courseware for evaluation by CBP.

For Operator Training, Train the Trainer (T3) operator Instructor-Led Training (ILT) shall be delivered using a fully functional stand-alone six workstation training system. This training includes all aspects of Operator operations of the RVSS Upgrade system functions. General Dynamics shall conduct T3 operator classes at the CBP primary support facility in Tucson, Arizona. Training shall begin No Earlier Than (NET) 45 days and No Later Than (NLT) 30 days prior to the start of RVSS Early Operations for the first AoR. General Dynamics shall not conduct Operator training utilizing the installed system.

General Dynamics shall conduct Train-the-Trainer (T3) operator classes at the CBP Primary Support Facility (PSF) in Tucson, AZ or as directed by CBP. Duration shall not exceed two weeks for each training session. Laptop computers are set up as part of the laboratory as RVSS, SOC, and NOC workstations. Operators can interact with the lab as if they were at their actual workstations. Indoor cameras are provided to demonstrate and train analytic software provided by the PureActiv software. The training class shall accommodate up to twelve (12) students per class for two (2) separate classes. We shall have the capability to train up to 12 operators at a time using the portable training lab. The 12 operators shall have their own workstations for training.

For Maintenance Training, classes shall be conducted at a single centrally located site to be determined by General Dynamics and approved by CBP. General Dynamics shall deliver Original Equipment Manufacturer (OEM) maintenance training and RVSS System maintenance classes. General Dynamics shall deliver updates if the system configuration changes the content of the training material or training environment portion of the training. Maintenance Training shall accommodate 10 students per class with a total of three classes, not exceeding three weeks in duration (total of 30 students to be trained). Maintenance Training shall begin four months prior to the conclusion of the final CMLS Services Option, as exercised.

The training team shall complete final production of all course material and a quality audit will be conducted on all material.

General Dynamics shall train personnel using a multitude of interactive training techniques. We will provide instructor led training involving multi-media presentations and interactions with the student. Courseware will be presented and student evaluations will be accomplished. General Dynamics utilizes a portable training system laboratory. The laboratory is a scaled down replica of the installed RVSS system.

General Dynamics shall provide training materials (training manuals, workbooks, CD/DVD, etc.) for each student.

General Dynamics shall deliver a master electronic copy that contains all of the training materials for use as (Master Copy) to include updates and grant the Government all rights of ownership.

#### **4.18.8. Support Equipment and Tools List**

(CLINs: 0001, 0002, 0003, 0004, 0005, 0006, 0007, 0008, 0009, 0010, 0011, 0012, 0013)

General Dynamics shall develop a Support Equipment and Tools List IAW CDRL OTIA-RVSSU24\_CDRL\_RevA\_Support Equipment and Tools List.

General Dynamics shall conduct a Level of Repair Analysis using COMPAS or an equivalent tool to minimize impact on service personnel. Any required Support Equipment or Tools shall be noted and provided IAW the above CDRL.

#### **4.18.9. Integrated Logistics Support System (ILSS)**

(CLINs: 0014 through 0088)

During the original 24-month contractor maintenance and logistics support services options for each AoR, including any execution of additional option years, General Dynamics will be given

access to the ILSS database in the Government Primary Inventory Control Activity (PICA) located at the Federal Aviation Administration (FAA) in Oklahoma City, OK. General Dynamics shall input Maintenance Data and Logistics Management Information Data from the CMLS Services Monthly Activity Report, Shipping Accountability of Legacy Assets Report and Integrated Logistics Support Assessment Report into the ILSS database.

**4.18.10. DELETED**

CDRL\_RVSSU-25\_DELETED

**4.18.11. System Updates**

(CLINs: 0014 through 0075)

General Dynamics shall utilize the RVSS Upgrade training environment located at the Customs and Border Protection (CBP) Primary Support Facility (PSF) in Tucson, AZ for testing of patches, firmware, and any hardware or software updates prior to release into the system production environment(s).

The training lab configuration provides the ability for validation of Windows operation system (OS) updates for both client and server, as well as PureTech software updates. The additional Microsoft and Symantec software proposed shall be installed on the existing GDOS-furnished spare Dell R720 spare server and one of the existing GDOS-furnished Dell T-3600 training workstations. Microsoft Hyper-V shall be installed on the physical server to allow virtual instances of Microsoft System Center, Operations Manager, Configuration Manager, Domain Controller, and Archive Controller to be configured to create a representative C2 environment. GDOS shall have the ability to temporarily bring planned spare microwave and sensor suite assets into the training lab configuration to support firmware testing and in-depth video management (VMS) software testing prior to release into the product environment(s).

General Dynamics shall provide the configuration for this test environment by identifying the existing training system assets (Hardware and Software with versions) and clearly identifying additional hardware or software required to create a production representative system configuration. The final configuration information will be captured in the Version Description Document and System Description Document as part of ongoing configuration control. General Dynamics shall provide justification for any configuration items not included in, or not anticipated to be tested in this test environment. Once configured as a test environment, General Dynamics shall maintain this test/training system located at the PSF as part of CMLS services.

General Dynamics shall perform an assessment of security patches, including prioritization and scheduling (e.g., critical security patches versus routine patches), and they shall be installed in accordance with the RVSS configuration management plan and within the timeframe or direction stated in the Information Security Vulnerability Management (ISVM) messages. General Dynamics shall obtain the appropriate CCB approvals in accordance with the RVSS Configuration Management Plan prior to any release into the system production environment(s).

General Dynamics shall define in the CDRL OTIA-RVSSU-20\_CDRL\_RevA\_Integrated Contractor Support Plan the process to be followed for the testing, sequencing, and roll-out plans (including back-out plans) of the updates to the system production environment(s).

**4.18.12. Contractor Maintenance and Logistics Support Services Transition Plan**

(CLINs: 0076 through 0088)

General Dynamics shall develop and deliver a transition plan IAW OTIA-RVSSU-26\_CDRL\_RevA\_CMLS Transition Plan, to identify requirements to transition contractor maintenance and logistics support services to the Government for each Area of Responsibility (AoR). Transition of each AoR shall be executed upon the Government's acceptance of the Transition Plan and prior to the end of the CMLS CLINs for each AoR.

Once the Transition Plan is approved by the Government, General Dynamics shall begin executing the Transition Plan. A joint General Dynamics and Government meeting shall be conducted 15 days after the AoR Transition Option is exercised. The Transition shall be executed during the CMLS period of performance of the AoR CLIN that is parallel to the AoR Transition CLIN. General Dynamics shall present a schedule to CBP that shall depict the transition activities with the associated General Dynamics support within this period of performance. General Dynamics shall ensure a seamless transition occurs while continuing the maintenance and logistics support as the role is transitioned to the Government. The spares and supply chain shall be transferred from General Dynamics to the Government without disruption to operations. The Field Service Support shall continue in parallel to both support the system and train the Government Staff. A closeout transition meeting shall be jointly held by General Dynamics and the Government to agree on the completion of the transition prior to the end of the AoR's period of performance.

**4.18.13. Barcode and Stock Number Assignment and Unique Item Identification**

(ALL CLINs: 0001 through 0088)

The use of automated identification technology (AIT), such as barcodes shall be used to rapidly and accurately identify assets traveling through the supply chain. The Government will provide appropriate barcodes to General Dynamics. The capability to track assets through the supply chain will be critical to maintaining accountability as well as operational readiness. General Dynamics shall maintain a list of all systems with all part numbers, serial numbers, and bar codes for each asset assigned to that system with its implementation date and removal date. After the barcodes have been affixed, the following information about the asset will be collected and documented:

- Barcode number
- Serial number
- Manufacturer name
- Manufacturer model and part number
- Category (asset type)
- Location

General Dynamics shall use automated identification technology (AIT) IAW CDRL OTIA-RVSSU27\_CDRL\_RevA\_Barcode and Stock Number Assignment and Unique Item Identification

General Dynamics shall manage the As-Maintained Configuration of all sites, serializing and marking all LRUs IAW best government practices. General Dynamics shall use U.S. CBP



884 Property and Asset Identification and Tagging Standard Revision 4.1 dated 21 Dec 2011 for  
885 barcoding CBP Government property per the applicable CDRL.

886 A 2-dimensional barcoding process shall be employed to the LRU level to track each asset's  
887 CAGE Code, Original Part Number, and unique Serial Number. This data shall be merged with  
888 additional Logistics Management Information from both General Dynamics and the government  
889 to provide a comprehensive data set of all assets.

890 General Dynamics' logistics program shall employ scanners as required to conveniently record  
891 changes in field configuration, and to record any contractor depot arrivals/departures.

#### 892 **4.19. Enterprise Architecture**

893 (CLINs: 0001, 0002, 0003, 0004, 0005, 0006, 0007, 0008, 0009, 0010, 0011, 0012, 0013)

894 General Dynamics shall support the Government while its solution is incorporated into the DHS  
895 and CBP enterprise architecture (EA), and the DHS and CBP Technical Reference Model  
896 (TRM).

897 Where feasible, General Dynamics shall consider the use of DHS/CBP approved products,  
898 standards, services, and profiles as reflected by the hardware software, application, and  
899 infrastructure components of the DHS/CBP TRM/standards profile. The DHS/CBP  
900 TRM/standards profile will be updated as technology insertions are accomplished.

901 General Dynamics shall support the Government to add all items, currently not in the TRM, into  
902 the TRM. The Government may decide to provide as **Government-owned** software products that  
903 are in General Dynamics' system, and which are in the TRM.

904 General Dynamics shall provide support to the Government IAW:

- 905 • CDRL OTIA-RVSSU-28\_CDRL\_RevA\_Version Description Document
- 906 • CDRL OTIA-RVSSU-29\_CDRL\_RevA\_Technology Insertion Request
- 907 • CDRL OTIA-RVSSU-30\_CDRL\_RevA\_Data Architecture Document (DAD).and
- 908 • CDRL OTIA-RVSSU-31\_CDRL\_RevA\_System Description Document (SDD).

#### 909 **4.20. System Accreditation**

910 (CLINs: 0001, 0002, 0003, 0004, 0005, 0006, 0007, 0008, 0009, 0010, 0011, 0012, 0013)

911 The RVSS Upgrade shall provide an adequate level of security to mitigate risk associated with  
912 unauthorized system events in compliance with DHS/CBP Enterprise and Security Architecture  
913 requirements for a system categorized as Moderate/Moderate/Moderate under FIPS-199 and  
914 collecting privacy sensitive information. Products acquired with embedded security capabilities  
915 shall support the System Security Authorization Process.

916 General Dynamics shall develop and deliver a System Security Plan IAW:

- 917 • CDRL OTIA-RVSSU-32\_CDRL\_RevA\_Security Plan
- 918 • CDRL OTIA-RVSSU-33\_CDRL\_RevA\_Security\_RA\_sRTM
- 919 • CDRL OTIA-RVSSU-34\_CDRL\_RevA\_Security\_POAM
- 920 • CDRL OTIA-RVSSU-35\_CDRL\_RevA\_Security\_BIA

- 921 • CDRL OTIA-RVSSU-36\_CDRL\_RevA\_Security Contingency Plan
- 922 • CDRL OTIA-RVSSU-37\_CDRL\_RevA\_Security Contingency Plan Test
- 923 • Privacy Impact Assessment (PIA) – Document CDRL added by General Dynamics

924 General Dynamics shall follow guidance in NIST SP 800-37 Revision 1, Guide for Applying the  
925 Risk Management Framework to Federal Information Systems, NIST SP 800-53 rev 3,  
926 Recommended Security Controls for Federal Information Systems and Organizations, Agency-  
927 specific requirements, and other applicable guidelines to develop a comprehensive Security  
928 Authorization package for the RVSS Upgrade Program that includes the following:

- 929 1. Security Plan (SP)
- 930 2. Risk Assessment Report & Security Requirements Traceability Matrix (sRTM)
- 931 3. Plan of Action & Milestones (POA&M)
- 932 4. Business Impact Analysis (BIA)
- 933 5. Contingency Plan (CP)
- 934 6. Contingency Plan Test (CPt)
- 935 7. Privacy Impact Assessment (PIA) – This CDRL was added in by General Dynamics IA

936 General Dynamics shall validate the assigned security categorization impact level of  
937 Moderate/Moderate/Moderate that has been determined. NIST SP 800-60 ver 2, *Guide for*  
938 *Mapping Types of Information and Information Systems to Security Categories*, and FIPS  
939 Publication 199, *Standards for Security Categorization of Federal Information and Information*  
940 *Systems*, will be consulted and used to verify the security categories of Confidentiality, Integrity,  
941 and Availability. General Dynamics shall, in accordance with (IAW) organizational policy,  
942 register the information system with the appropriate organizational program/management offices.

943 General Dynamics shall prepare the Security Authorization package in accordance with the six-  
944 step Risk Management Framework (RMF) described in NIST 800-37 rev 1. The RMF includes  
945 security categorization, security control selection and implementation, security control  
946 assessment, information system authorization, and security control monitoring.

947 General Dynamics shall develop and deliver a System Security Plan IAW NIST SP 800-37 rev 1  
948 and apply the NIST SP 800-53 rev 3 security controls as tailored in the DHS 4300A, *Sensitive*  
949 *Systems handbook, Attachment M* specific to the RVSS Upgrade Program security objective at  
950 the impact level of Moderate/Moderate/Moderate.

951 Section 1 of the Security Plan, the system identification section, shall describe the following:

- 952 • Purpose, functions, and capabilities of the system and mission/business processes  
953 supported
- 954 • Location of the system and environment in which the system operates
- 955 • Architectural description of the system including network topology, and how the system is  
956 integrated into the enterprise architecture
- 957 • Status of the system with respect to acquisition and/or system development life cycle
- 958 • Accreditation boundary of the system for risk management and security authorization  
959 purposes

- System users including organizational affiliations, access rights, privileges, and citizenship if applicable
- Hardware devices and software applications included with the system
- Network connection rules for communicating with external systems and identifiers for any interconnected systems
- Encryption techniques used for information processing, transmission, and storage
- Security authorization date and authorization termination date
- Incident response points of contact
- Other information as required by DHS/CBP

Sections 2 through 18 of the Security Plan shall describe the implementation details of all applicable Managerial, Operational and Technical security controls. All controls will be selected based on the security categorization of the system and, if required, tailored or supplemented to ensure that the controls adequately mitigate the risk to the organizations operations, assets, and individuals. All security controls will be identified as System Specific (i.e., controls that provide a security capability for a particular information system only); Common (i.e., controls that provide a security capability for multiple information systems); or Hybrid Controls (i.e., controls that have both system-specific and common characteristics). Identified Common Controls will be reviewed to ensure the security capability provided by the inherited control is sufficient. For all controls deemed as “Implemented,” General Dynamics shall describe (1) what solution is implemented in order to comply with the control requirement, (2) identify the entity responsible for implementing and maintaining the control, (3) how often the solution is implemented and/or reassessed, and (4) how the solution meets the requirements of the control. For all controls deemed as “Planned,” General Dynamics shall develop a Plan of Action and Milestones (POA&M).

General Dynamics shall ensure that sound privacy practices and controls are integrated into the RVSS Upgrade Program IAW the Office of Management and Budget (OMB) Memorandum 03-22, *Guidance for Implementing the Privacy Provisions of the E-Government Act of 2002*, *DHS Management Directive (MD) 0470.1*, and the *Official DHS Privacy Impact Assessment Guidance*. In order to properly manage privacy practices and controls, General Dynamics shall complete a Privacy Threshold Analysis (PTA) to determine and document whether or not a Privacy Impact Analysis (PIA) and/or System of Records Notice (SORN) are required. If the PTA determined that a PIA is required, General Dynamics shall develop and deliver a PIA that includes an analysis of the Personally Identifiable Information (PII) that is collected, stored, and shared. If the PTA determined that a SORN is required, General Dynamics shall develop and deliver a SORN that describes the categories of records, the routine uses of the data, and how individuals can gain access to records and correct errors.

General Dynamics shall develop and deliver a detailed Risk Assessment Report that documents the threat-vulnerability pairing that will correspond to the guidelines of NIST SP 800-30, *Risk Management Guide for Information Technology Systems*, and the *DHS Security Authorization Process Guide*. An impact will be assessed for each risk. The residual risk will be documented in a Risk Assessment Report. The results of the risk assessment will be used to directly address the security controls that will be documented in the Security Plan and implemented within the

1002 System. General Dynamics shall transfer results from the Risk Assessment Report to the Plan of  
1003 Action and Milestone to track completion status.

1004 General Dynamics shall develop and deliver a Security Requirements Traceability Matrix  
1005 (sRTM) based on a pre-assessment of the RVSS Upgrade infrastructure. The sRTM will be  
1006 developed using the SecureInfo RMS® (Risk Management System) tool that will identify all  
1007 applicable security controls tailored to the RVSS Upgrade Program system environment.  
1008 Security controls that are currently in place or planned to be implemented will be documented in  
1009 the sRTM. These controls will be mapped back to the appropriate security control family within  
1010 the Management, Operational, and Technical Control areas of the Security Plan.

1011 General Dynamics shall develop and deliver Plan of Action and Milestones (POA&M) that will  
1012 describe the specific tasks that are planned to, remediate any weaknesses or deficiencies  
1013 identified during the assessment, and to address any residual vulnerability within the RVSS  
1014 Upgrade Program system. Remediation of the weaknesses or deficiencies will take into  
1015 consideration the, root cause, actions or activities needed to remediate, and the resources  
1016 required. For any weakness or deficiency older than 90 days, General Dynamics shall develop, at  
1017 least one milestone, including a timeline for resolution and include it in the POA&M. The  
1018 POA&M will identify (1) the specific weakness or deficiency in the security control, (2) the  
1019 point of contact responsible for remediation, (3) the importance of the identified security control  
1020 weakness or deficiency, (5) the proposed risk mitigation approach to remediate the identified  
1021 weakness or deficiency, (6) the resources required to mitigate the weakness or deficiency,  
1022 (7) any milestones in the approach, (8) and the scheduled completion dates for the milestones.  
1023 The POA&M shall be developed IAW DHS 4300A, *Sensitive Systems handbook, Attachment H*  
1024 – *Plan of Action and Milestone (POA&M) Process Guide*.

1025 General Dynamics shall develop and deliver a Business Impact Analysis (BIA) to identify and  
1026 prioritize the RVSS Upgrade Program system and components to support the organization's  
1027 mission/business process. The BIA is a key part of the Contingency Plan development process  
1028 and is essential in identification of critical organizational assets. The BIA will (1) determine  
1029 mission/business processes and recovery criticality, (2) include outage impacts and estimated  
1030 downtime, (3) identify resource requirements, and (4) identify recovery priorities for system  
1031 resources. General Dynamics shall identify, if feasible and cost effective, contingency planning  
1032 preventative security controls. Outage impacts identified in the BIA may be mitigated or  
1033 eliminated through preventive measures that deter, detect, and/or reduce impacts to the system.

1034 General Dynamics shall develop and deliver a Contingency Plan IAW NIST SP 800-34 rev 1,  
1035 *Contingency Planning Guide for Federal Information Systems*. The Contingency Plan will  
1036 document a coordinated strategy involving plans, procedures, and technical measures to enable  
1037 the recovery of the information system, system operations, and the system data after a disruption.  
1038 The Contingency Plan will contain detailed guidance and procedures for restoring the system  
1039 that are unique to the system's security impact level and recovery requirements. The Plan will  
1040 define the three phases that will govern the actions to be taken following a system disruption.  
1041 The first phase, Activation/Notification Phase, will describe the process of activating the plan  
1042 based on outage impacts identified in the Business Impact Analysis and notifying recovery  
1043 personnel. The second phase, Recovery Phase, will detail the course of action for recovery teams  
1044 to restore system operations at an alternate site or using contingency capabilities. The third and  
1045 final phase, Reconstitution, will include activities to test and validate system capability and



1046 functionality and outline a course of actions that can be taken to return the system to normal  
1047 operating condition and prepare the system against future outages.

1048 General Dynamics shall develop a Contingency Plan Test (CPT) in accordance with NIST SP  
1049 800-84, *Guide to Test, Training, and Exercise Programs for IT Plans and Capabilities*. The CPT  
1050 will validate the recovery capabilities as detailed in the Contingency Plan. The CPT will be  
1051 developed for use as a training exercise in order to prepare the recovery personnel for plan  
1052 activation and to identify Contingency planning gaps. The type of test detailed in the CPT will be  
1053 a Tabletop exercise. Tabletop exercises are discussion-based exercises where personnel meet in a  
1054 classroom setting or in breakout groups to discuss their roles during an emergency and their  
1055 responses to a particular emergency situation. A facilitator presents a scenario and asks the  
1056 exercise participants questions related to the scenario, which initiates a discussion among the  
1057 participants of roles, responsibilities, coordination, and decision-making. A tabletop exercise is  
1058 discussion-based only and does not involve deploying equipment or other resources.

1059 **4.21. Site Specific Requirements**

1060 **4.21.1. Installation, Lay-down and Configuration Designs**

1061 (CLINs: 0001, 0002, 0003, 0004, 0005, 0006, 0007, 0008, 0009, 0010, 0011, 0012, 0013)

1062 General Dynamics shall prepare installation, lay-down and configuration designs (drawings,  
1063 analysis, specifications) to accommodate local site requirements. Government will review and  
1064 approve all designs prior to DRR.

1065 Communication subsystem design shall be optimized for the CBP area of operations based on  
1066 feasible frequency bands and architectures that consider terrain impacts, RF channel availability,  
1067 channel bandwidth required, path distance, fade margins, minimum antenna sizes for reduced  
1068 tower loading, reduced need for repeater sites, and minimizing Government administrative  
1069 processing requirements. All design of link availability and LOS analysis will be performed with  
1070 the microwave planning tool Pathloss.

1071 The Communications lay-down (network cloud architecture) provided by the Government shall  
1072 be used as the baseline to establish known/planned node sites and suggested backhaul links.  
1073 Existing backhaul systems whether fiber or microwave that have been recently installed by CBP  
1074 will be considered in the proposed design. The vendor may modify the “cloud” architecture, but  
1075 not the site locations. Innovative solutions for the communication lay-down architecture such as  
1076 ring topologies and fiber integration shall be considered when and if they enhance operational  
1077 continuity and effectiveness, and meet the required operational availability.

1078 The vendor communication design shall consider the impact of single points of failure on Border  
1079 Patrol operations beyond link redundancy to provide a well-balanced communication traffic and  
1080 site loading across the target AoRs.

1081 General Dynamics shall provide site-specific installation drawings for each location which will  
1082 detail the work to be performed for each site. These drawings shall be provided in Auto CAD  
1083 and PDF formats and stamped by a professional engineer licensed by the State in which the site  
1084 is located. These installation drawings shall be provided to the Government for their review and  
1085 comment and will form the basis for all work to be performed at the site including the



1086 installation of camera surveillance equipment, microwave communications equipment, R56  
1087 grounding tasks, and general installation methodologies.

1088 The Communications topology or “lay-down” is designed to ensure that the network continues to  
1089 function in the presence of single points of failure by utilizing a ring architecture. Although not  
1090 required to meet the communications system availability (see Section D1.3.2) requirement, we  
1091 have included Hot Standby (HSB) radios. Should the requirement for HSB radios be removed, a  
1092 1+0 radio configuration may be used in conjunction with a ring topology where HSB radios are  
1093 only used on spur sites. Upon completion of the link design in Pathloss, site surveys shall be  
1094 performed where Line-of-Sight (LOS) is verified and antenna heights are determined. Link  
1095 budget calculations shall be finalized to include antenna sizes, transmit power, and radio  
1096 parameters such as frequency and modulation. Path verification using tower climbs and link  
1097 flashing may have to take place if the survey cannot establish LOS.

1098 A ring architecture shall be used to balance traffic over the AoR by spreading it across 2-3 chains  
1099 of sites whose endpoint is the C2 Facility. The average site count per chain shall be 6 sites where  
1100 chains are connected through failover links that stand idle during normal operation. New relay  
1101 sites shall be designed into the laydown to provide closure to ring topologies as required due to  
1102 LOS challenges from landscape and terrain.

1103 A structural analysis and mapping shall be performed on each existing tower in order to  
1104 determine the towers ability to support the new RVSS equipment. General Dynamics shall  
1105 attempt to obtain an existing, current mapping report and as built drawings for the foundation for  
1106 the tower from the tower owner. A tower mapping using on-site verification shall be required to  
1107 obtain a detailed inventory of all of the existing appurtenances, cable, structural members and  
1108 hardware required to perform the structural analysis. The proposed loading shall be added to the  
1109 existing inventory and an analysis shall be performed, stamped and submitted for the tower. The  
1110 structural analysis of each existing tower shall be performed in accordance with IAW TIA-222/G  
1111 and certified by a licensed engineer. The analysis of the tower shall be run in accordance with  
1112 State of Arizona Building Code. If we find a tower which would be over its load constraints with  
1113 our equipment mounted, we shall inform the CBP so that they can modify the tower structure to  
1114 hold the weight of the new RVSS equipment.

1115 **4.21.2. Legacy Government Equipment**  
1116 (ALL CLINs: 0001 through 0088)

1117 General Dynamics shall provide the Government with a plan to remove all legacy RVSS  
1118 equipment from both the RVSS Towers and the C2/LAN/Equipment room Facilities within each  
1119 AoR and to install the RVSS Upgrade System at both the tower and C2/LAN/Equipment room  
1120 Facility sites. This plan shall detail the time required to remove the equipment at each tower site  
1121 and C2 Facility. General Dynamics shall be required to coordinate their proposed schedule with  
1122 the Government to ensure no conflicts with the pre-determined Government schedule for  
1123 removal and installation of equipment at each of the facilities.

1124 General Dynamics shall develop and deliver to the Government a Shipping Accountability of  
1125 Legacy Assets Report IAW with OTIA-RVSSU-38\_CDRL\_RevA\_Shipping Accountability of  
1126 Legacy Assets Report.

1127 General Dynamics shall develop and deliver to the Government a plan to remove all legacy  
1128 RVSS equipment IAW CDRL OTIA-RVSSU-39\_CDRL\_RevA\_Equipment Removal Plan.

1129 General Dynamics shall remove and dispose of all existing RVSS surveillance, communications,  
1130 and C2 equipment in accordance with CDRL OTIA-RVSSU-39\_CDRL\_RevA\_Equipment  
1131 Removal Plan and OTIA-RVSSU-38\_CDRL\_RevA\_Shipping Accountability of Legacy Assets  
1132 Report.

1133 Depending on the specific site, the Decommissioning Plan may specify one or more of the  
1134 following activities to be performed.

- 1135 • Equipment removal (antennas, cables, cameras, radios, etc.)
- 1136 • Infrastructure removal equipment cabinet, etc.)
- 1137 • Site clean-up (debris removal)

1138 General Dynamics shall first install all the new command and control headend VMS and  
1139 microwave equipment in government furnished facilities. This equipment shall be tested and  
1140 operational prior to proceeding with the installation of site level camera or communications  
1141 equipment. In accordance with the Government's requirement to minimize site downtime as  
1142 reference in section 4.21.3, we **shall** first remove all legacy site equipment and then install the  
1143 new site equipment. All removed equipment **shall** be transported back to the General Dynamics  
1144 warehouse and inventoried. General Dynamics shall coordinate with the government property  
1145 officer and contracting officer on the disposition of the equipment. General Dynamics shall use  
1146 industry best practices and follow environmental laws for all equipment that the property officer  
1147 deems to be disposed or destroyed.

1148 General Dynamics shall comply with ISO 9001. For CLIN 0001 and all Option CLINs, General  
1149 Dynamics shall prepare and submit DHS form 700-21, Material Inspection Acceptance and  
1150 Receiving Report to the Government Contracting Officer. This submittal is after successful  
1151 completion of SAT Entrance Criteria, SAT successful completion, and completion and  
1152 acceptance of the other contract deliverables. For the CMLS Option CLINs 0014 through 0088,  
1153 General Dynamics shall prepare and submit each month a Certificate of Conformance for  
1154 services to the Government Contracting Officer for successful performance of CLIN  
1155 deliverables.

#### 1156 **4.21.3. Installation**

1157 (CLINs: 0001, 0002, 0003, 0004, 0005, 0006, 0007, 0008, 0009, 0010, 0011, 0012, 0013)

1158 General Dynamics shall be responsible for the mounting, cabling and connection of the RVSS  
1159 Upgrade system. While the design and structure may vary from location to location, it is  
1160 incumbent upon General Dynamics to manage these differences in design, configuration and  
1161 installation.

1162 Under CBP guidance, no more than two tower sites within each AoR shall be inoperable at any  
1163 one time for a period not to exceed five (5) calendar days (de-installation, re-installation and  
1164 tower by tower test needs to be completed within 5 days) before proceeding to the next tower.  
1165 The Government reserves the right to designate specific tower outages based on BP operational  
1166 requirements. General Dynamics shall be responsible for the removal and disposal of all debris  
1167 related to the installation.

**4.21.4. Tower Sites**

(CLINs: 0001, 0002, 0003, 0004, 0005, 0006, 0007, 0008, 0009, 0010, 0011, 0012, 0013)

General Dynamics shall ensure all RVSS Upgrade communications equipment and related site infrastructure (e.g. racks, cabinets, cabling, grounding, bonding, shielding, and lightning protection) is installed in IAW Motorola R-56, “Motorola Standards and Guidelines for Communications Sites”.

General Dynamics shall verify that any equipment they install on the **Government-owned** tower does not exceed the towers structural threshold and is compliant as a “Class III Structure” in accordance with ANSI/TIA-222-G “Structural Standard for Antenna Supporting Structures and Antennas”. Note – Class III tower structures are specified for law enforcement and public safety communications purposes with added loading requirements.

General Dynamics shall connect to the existing grounding system at the tower site. If **the Government** determines that the existing grounding system does not meet the requirements, the Government will make the necessary corrections.

General Dynamics shall provide a PE stamped tower structural analysis on each site in accordance with EIA TIA 222 Rev G to ensure to tower loading for each site is structurally sufficient to accommodate the new equipment. This structural analysis will take into account the law enforcement nature of the proposed tower use to include the additional loading margin required by the standard.

**4.21.5. Command and Control (C2) Facilities**

(CLINs: 0001, 0002, 0003, 0004, 0005, 0006, 0007, 0008, 0009, 0010, 0011, 0012, 0013)

Operator, NOC and SOC User Interfaces, Displays and Data Management hardware and software as described in the Functional Specification Document, Attachment J-2 RVSS Upgrade Functional Specification Document (FSD), shall be delivered, installed and tested by General Dynamics for all RVSS Upgrade C2 facilities as awarded. All **Government-owned** workstation furniture positions will have a minimum of 2 voice/2data connections and 2-duplex power receptacles available for each workstation. Voice and data cabling will be terminated to workstation and patch panels in the LAN room. General Dynamics is responsible for installing any additional cabling or power required for the system to operate to include cabling between the Operator, NOC and SOC workstations and data/voice jacks, cabling between patch panels and system servers and/or data storage equipment. The specific requirements are provided in Section J Attachment J-3 RVSS Upgrade Equipment and Tower Laydown Document.

Disposition of legacy RVSS equipment shall be IAW OTIA-RVSSU-39\_CDRL\_RevA\_Equipment Removal Plan.

**4.22. Test**

**4.22.1. Scope of Tests and Test Support**

(CLINs: 0001, 0002, 0003, 0004, 0005, 0006, 0007, 0008, 0009, 0010, 0011, 0012, 0013)

General Dynamics shall conduct a test program that executes the test strategy stated in the RVSS Upgrade Test and Evaluation Master Plan (TEMP). General Dynamics test events shall verify the requirements in the RVSS Functional Specification. General Dynamics shall provide contractor

1208 support to the Government System Acceptance Test in the case of system failures during test  
1209 conduct.

1210 **4.22.2. Contractor Tests**

1211 (CLINs: 0001, 0002, 0003, 0004, 0005, 0006, 0007, 0008, 0009, 0010, 0011, 0012, 0013)

1212 General Dynamics shall conduct testing in factory and/or in the field to verify the full set of  
1213 contract functional and performance requirements specified in the Vol. I, Appendix D1 – Exhibit  
1214 1 Functional Specification Document Matrix.

1215 General Dynamics shall conduct the first five (5) New Tower Test at the Nogales AoR to verify  
1216 functional and performance requirements in a field environment. The first five (5) New Tower  
1217 Test shall consist of the new RVSS Upgrade sensors, the new C2, and the new communications  
1218 capability. To ensure complete testing of all camera options of the RVSS Upgrade, General  
1219 Dynamics shall include all short, medium and long range day and night cameras, wide angle  
1220 cameras and the optimal short range high definition day and night cameras even if the specific  
1221 camera will not be deployed on the five (5) new towers at Nogales. At the end of the test activity,  
1222 General Dynamics shall return the first five new towers into its operational configuration.

1223 After the first five (5) New Tower Test has been completed, General Dynamics shall conduct the  
1224 Tower-by-Tower Test to check out the performance of each individual tower and to determine  
1225 whether it functions properly as it is introduced into the AoR upgraded capability to verify  
1226 functional and performance requirements in a field environment.

1227 General Dynamics testing shall be performed IAW Section J Attachment J-6 RVSS Upgrade  
1228 Program Test and Evaluation Master Plan (TEMP).

1229 **4.22.3. Test Plans, Test Procedure and Test Reports**

1230 (CLINs: 0001, 0002, 0003, 0004, 0005, 0006, 0007, 0008, 0009, 0010, 0011, 0012, 0013)

1231 General Dynamics shall prepare and deliver for CBP approval Test Plans and Procedures for an  
1232 In-Factory Test, a first five (5) New Tower Test and the Tower-by-Tower Test.

1233 General Dynamics shall provide Test Reports for an In-Factory Test, the first five (5) New  
1234 Tower Test and the Tower-by-Tower Test. Test reporting shall include a Quick Look Report  
1235 delivered no later than five (5) calendar days after the completion of test conduct and a Final  
1236 Test Report NLT thirty (30) calendar days after test conduct.

1237 General Dynamics testing shall align with the RVSS Test and Evaluation Master Plan (TEMP)  
1238 and accommodate contractor prepared and CBP approved contractor Test Plans, Test Procedures  
1239 and Test Reports.

1240 Test plans and procedures shall be IAW:

- 1241 • CDRL OTIA-RVSSU-40\_CDRL\_RevA\_Test Plan
- 1242 • CDRL OTIA-RVSSU-41\_CDRL\_RevA\_Test Procedures
- 1243 • CDRL OTIA-RVSSU-42\_CDRL\_RevA\_Test Report

1244 Before the conduct of each test event, General Dynamics shall conduct a Test Readiness Review  
1245 (TRR). General Dynamics shall conduct each TRR IAW CDRL OTIA-RVSSU-  
1246 43\_CDRL\_RevA\_Test Readiness Review (TRR).

1247 The test plans and procedures shall be delivered to CBP for review. A preliminary draft shall be  
1248 delivered forty-five (45) calendar days before the scheduled test event, a final draft thirty (30)  
1249 calendar days before the scheduled test event, a final fifteen (15) calendar days prior to the start  
1250 of contractor testing so the Government will provide approval to the documents.

1251 **4.22.4. Government Systems Acceptance Test Requirements**

1252 (CLINs: 0001, 0002, 0003, 0004, 0005, 0006, 0007, 0008, 0009, 0010, 0011, 0012, 0013)

1253 The Government shall conduct a Government System Acceptance Test for each AoR. General  
1254 Dynamics shall provide contractor support to the Government SAT in case of system failures  
1255 during test conduct.

1256 **5. Deliverables and Deliverable Schedule:**

1257 See RVSS Upgrade system Master CDRL List Attachment J-7 RVSS Upgrade Contract Data  
1258 Requirements List (CDRL) and Associated Data Item Descriptions (DID).

1259 General Dynamics Program Management Office shall track and monitor all CDRL deliverables.  
1260 Metrics shall be in place to ensure schedules, timelines, reviews, validations, and verifications  
1261 are accomplished and products are delivery on time and in the correct format.

1262 **6. Special Considerations:**

1263 **RVSS Upgrade System Usage and Early Operations**

1264 (CLINs: 0001, 0002, 0003, 0004, 0005, 0006, 0007, 0008, 0009, 0010, 0011, 0012, 0013)

1265 The deployment of RVSS equipment includes upgrading existing capabilities as well as  
1266 installing sensors on new towers along the southern border. USBP uses the existing RVSS  
1267 system 24 hours a day for operational use in border surveillance. This existing capability  
1268 provides the Border Patrol with detection and monitoring of United States border. It is the  
1269 Government's goal to minimize the impact to USBP operations by avoiding the loss of existing  
1270 sensor functionality to the maximum extent possible while the deployment of new sensor  
1271 equipment and C2 facility is in progress. The Government desires to allow "early operations"  
1272 whereby the Border Patrol agents will utilize the complete/partial system when field deployment  
1273 work; maintenance or testing is not being performed on the system. It is recognized that the early  
1274 operations will require close coordination to ensure there is no impact to the technology  
1275 deployment and installation while accommodating the operational needs of USBP. During "early  
1276 operations" General Dynamics will provide the same level of accountability (including  
1277 configuration control, fault identification and documentation) and support to the USBP agents as  
1278 they would if their own personnel were using the system. Onsite technical and operational  
1279 support personnel knowledgeable in the operation of the system will support the operators by  
1280 answering questions, providing Subject Matter Experts (SMEs) to perform specific system  
1281 functions, capturing system issues and system feedback.



## **6.1. Early Operations and RVSS System Usage Expanded**

General Dynamics fully understands USBP's operation and the importance of that operation continuing 24 hours a day 7 days a week. We shall support and work all upgrades as well as new installations insuring minimum impact to the ongoing operations. Equipment shall be installed in an expeditious manner and all action with be pre-coordinated with CBP personnel. We support CBP's early operations concept and as soon as equipment and functions have been installed and appropriately tested in accordance with agreed-to test procedures, operations may begin on that equipment. Our engineering staff and on-site installation crews shall provide hands on training to facilitate early operations. Close coordination and communication will be the key to the success of the new RVSS installation process with little or no disruptions to CBP's critical ongoing operations.

### **General Dynamics Deployment Strategy for Nogales**

Deployment of the RVSS Upgrade in the existing AoRs in Arizona requires careful planning and coordination in order to avoid any extended outages for existing RVSS Sensor towers. We shall begin tower equipment installation at the five new Nogales towers. At the same time we shall install the new C2 system in Nogales C2 center. The initial five tower test shall then be conducted. At the completion of the five tower test and Government authorization for full AoR deployment, these five RVSS towers are ready to be put into service, pending any reconfigurations that may be required to adjust from the five tower test configuration to the operational configuration and completion of operator training.

After the first five Nogales towers are operating with the updated C2 center equipment, with Government approval installation and test of the additional RVSS towers in Nogales shall begin. For this, we plan to proceed by working on two towers at a time, being careful to meet the requirement that no two adjacent towers be out of service simultaneously. The process uses two teams, an equipment removal and installation team and a test team. The equipment team removes the legacy equipment and installs the new equipment and then moves to the next site. After completion of the equipment installation, the test team takes over and performs a two-day configuration, integration, and test. After the first two days, there will be two sites in process at a time, one undergoing installation and the other undergoing test. The basic process for each tower is as follows:

1. Remove legacy equipment at the site (cameras and support equipment, microwave backhaul): 1 day
2. Install new equipment (cameras, support equipment and microwave): 1 day
3. Test microwave backhaul: 1 day
4. Integrate RVSS tower site with the C2 center and Test: 1 day

At the completion of this four-day deinstall, install, integrate, and test period, the RVSS Tower site shall be put into service (available for operational use).

The sequence of tower sites must be carefully planned in order to insure that microwave backhaul is available at the site since the overall microwave network is a ring, and most RVSS Tower sites will require several hops to connect to the C2 Center.

1322 Since CBP may begin operating the new RVSS Upgrade after completion of the 5 Tower Test  
1323 and upgrade of the first existing RVSS Tower, Train-the-Trainer (T3) operator classes shall be  
1324 conducted no earlier than 45 days and no later than 30 days prior to the start of RVSS Early  
1325 Operations. The training class shall accommodate up to 12 students per class for 2 separate  
1326 sessions, not to exceed 2 weeks for each training session IAW OTIA-  
1327 RVSSU23\_CDRL\_RevA\_System Training. Additional information on General Dynamics'  
1328 training strategy is detailed in PWS Section 4.18.7 above.

1329 With this approach to deployment, CBP will be operating both the legacy RVSS system and the  
1330 RVSS upgrade system simultaneously for the deployment period. The duration of this  
1331 simultaneous operation varies with the number of sites in each AoR. For Nogales this is six  
1332 weeks.

1333 **Travel**

1334 Travel shall be required for activities such as meeting attendance and visits in support of the  
1335 contract.