

ATTACHMENT 1  
STATEMENT OF WORK

**STATEMENT OF WORK  
For  
AN/WSC-6(V)5/7 Super High Frequency (SHF)  
Antenna Repairs**

**13 May 2010**

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**STATEMENT OF WORK for  
AN/WSC-6(V)5/7 SHF Antenna Repairs**

**1.0 SCOPE**

This Statement of Work (SOW) sets forth contractor tasks required to repair Super High Frequency (SHF) Satellite Communication (SATCOM) Antenna Pedestal Groups (APGs) for surface ships. Variants of APGs considered under this SOW include AN/WSC-6(V)5 and AN/WSC-6(V)7. The objective of the repair efforts is to provide superior mission support and services which result in enhanced overall system availability with predictable program costs. This SOW defines the contractor tasks necessary to provide consistently high-quality APG repairs in order to sustain reliable SHF SATCOM antenna pedestals for the Fleet.

**2.0 APPLICABLE DOCUMENTS**

The following specifications, standards and handbooks form a part of this SOW to the extent specified herein. Unless otherwise specified, the issues of these documents will be listed in the Department of Defense Index of Specifications and Standards (DODISS) and supplements thereto. Unless otherwise stipulated, the applicable versions will be the versions identified in the following list. Documents referenced within the documents cited herein are applicable to this SOW. To ensure complete and accurate understanding of the requirements of this SOW, versions of the documents are identified when specific paragraphs of the documents have been cited in the SOW. In the event of a conflict between the documents referenced herein and the contents of this SOW, the text of the SOW takes precedence.

**2.1 MILITARY/FEDERAL DOCUMENTS**

<b>Reference Number</b>	<b>Document Title</b>
FED-STD-313	Material Safety Data, Transportation Data and Disposal Data for Hazardous Materials Furnished to Government Activities
MIL-STD-882	System Safety Program
NAS 411	Hazardous Material Management Program
DoD Directive 5000.1	The Defense Acquisition System
DoDI 5000.2	Operation of the Defense Acquisition System
MIL-HDBK-502	DoD Handbook Acquisition Logistics
MIL-HDBK-61A	Configuration Management Guidance
H6 Cataloging Handbook	Federal Item Name Directory for Supply Cataloging
MIL-HDBK-61A(SE)	Configuration Management Guidance
MIL-HDBK-454B	General Guidelines for Electronic Equipment
MIL-P-15024/5	Identification Plate
MIL-STD-1840C	Automated Interchange of Technical Information (26 June 1997)
MIL-STD-1916	DOD Preferred Methods for Acceptance of Product

MIL-STD-1920	Item Unique Identification (IUID)
MIL-STD-2073-1E	Standard Practice for Military Packaging
MIL-STD-2110(EC)	Restoration, Overhaul, and Repair of Electronic Equipment

## 2.2 INDUSTRY DOCUMENTS

ANSI X12	Electronic Data Interchange Messages Specification
ISO 9001	Quality Management Systems – Model for Quality Assurance in Design/Development, Production, Installation, and Servicing
RFC 959	File Transfer Protocol

## 2.3 PERFORMANCE SPECIFICATIONS

SPAWAR-P-853D	Contract Specification for the AN/WSC-6(V) Super High Frequency (SHF) Shipboard Satellite Communications Terminal
SPAWAR-A-892	Performance Specification for Antenna, SHF Satellite Communications
EE 130-H1-OMP-010	AN/WSC-6 SHF 7 Foot Antenna/Pedestal Group Technical Manual, effective date 18 April 2008

## 2.4 FIELD CHANGE BULLETINS

EE130-B2-FCB-001 Rev 01	Retrofit AN/WSC-6(V)5 and AN/WSC-6A(V)5 Terminals for Software Version 4.01
EE130-BX-FCB-002 Rev 02	PEOC4I – SHF (AN/WSC-6) (FC2) Antenna Upgrade
EE130-BX-FCB-006	SHF SATCOM Antenna, OE-558/WSC and OE-571/WSC; FC-6, Modify OE-558 and OE-571 Antenna XL Motor Bearing Housing, Field Change Bulletin
EE130-BX-FCB-008	SHF Satellite Communications Set, AN/WSC-6/6A(V)5 and AN/WSC-6/6A/6B/6C(V)7, FC-8, 7-Foot Antenna/Pedestal Group, Cross Level Inspection, Adjustment and Alignment Procedure, Field Change Bulletin
EE130-BX-ECO-005	SHF SATCOM Antennas, OE558/WSC and OE571/WSC; EC5, Modify OE-558 and OE-571 with Electromagnetic Interference (EMI) Mitigation Shielding, Engineering Change Order

## 2.5 SOURCES OF DOCUMENTS

Most unclassified Defense specifications and standards may be downloaded from the following ASSIST and Navy websites:

- ASSIST (<http://assist.daps.dla.mil/>)
- Quick Search (<http://assist.daps.dla.mil/quicksearch/>)
- ASSISTdocs.com (<http://assistdocs.com>).

Documents not available from ASSIST may be ordered from the Department of Defense Single Stock Point (DoDSSP) by:

- Using the ASSIST Shopping Wizard (<http://assist.daps.dla.mil/wizard/>);
- Phoning the DoDSSP Customer Service Desk (215) 697-2197, Mon-Fri, 0730 to 1600 EST; or
- Ordering from DoDSSP, Building 4, Section D, 700 Robbins Avenue, Philadelphia, PA 19111-5094, Telephone (215) 697-2667/2179, Facsimile (215) 697-1462.

The ANSI and ISO documents may be obtained from the American National Standards Institute, Attn: Sales Department, 11 West 42nd Street, New York, NY 10036, [www.ansi.org](http://www.ansi.org). The File Transfer Protocol is available on the Internet at [www.internic.net](http://www.internic.net).

The performance specifications may be obtained from PEO C4I PMW/A 170.

### 3.0 GENERAL REQUIREMENTS

This section identifies the efforts to be accomplished by the contractor during performance of:

- a. SHF AN/WSC-6(V)5/7 APG Repairs (OMN): The contractor shall test, inspect, evaluate and repair AN/WSC-6(V)5/7 APGs in accordance with the applicable Specifications listed in paragraphs 2.1 through 2.4 of this SOW.
- b. Engineering Services (OMN): The contractor shall provide additional engineering services necessary to complete APG repairs as specified in each Delivery Order.
- c. Material (OMN): The contractor shall provide additional materials necessary to complete APG repairs as specified in each Delivery Order.

Each of these efforts includes data, quality assurance, contract management and configuration management. The contractor shall perform the tasks set forth in this SOW and shall comply with all provisions set forth in the Contract Data Requirements List (CDRLs) (DD Form 1423) and other referenced documents.

#### 3.1 DATA

If a data item requires formal inspection and acceptance, it shall be delivered in accordance with the CDRL. If a data item does not require formal inspection and acceptance, it shall be delivered in contractor's format; no CDRL item will exist for a data item not requiring formal inspection and acceptance. In either case, data items shall be delivered via electronic data interchange (EDI) using the American National Standards Institute X12 (ANSI X12) Transaction Set 996

protocols, Accredited Standards Committee version 2003, and via file transfer protocol (FTP) using the American Standard Code for Information Interchange (ASCII) file format. All data items shall be readable and with format maintained by Microsoft Office products or Adobe Acrobat.

### **3.2 QUALITY ASSURANCE SYSTEM**

The contractor shall establish, implement, document and maintain a quality assurance system that meets the certification requirements of ISO 9001, or an equivalent quality assurance system. The quality assurance system shall (a) ensure that its processes and that of its subcontractors, if any, consistently provide items that conform to contractual requirements and (b) identify opportunities for process improvements through analysis and audit of process measurement data and process controls. Unless otherwise specified in the contract or a Delivery Order, the contractor shall be responsible for the performance of inspections deemed necessary to show conformance to the specification requirements. Items shall conform to requirements set forth in this SOW and/or Delivery Orders. The absence of any inspection requirements in the contract specification or a Delivery Order shall not relieve the contractor of the responsibility of assuring that supplies and services submitted to the Government for acceptance comply with contract requirements. Sampling in quality conformance does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to acceptance of defective material.

### **3.3 CONTRACT MANAGEMENT**

The contractor shall appoint a Program Manager (PM) who shall be responsible for the management of the tasks of this contract. The PM shall be the principal point of contact for this contract. The contractor shall submit a monthly Contractor's Progress, Status and Management Report for Government approval. The report shall be provided within ten (10) days of the end of each month. The reports shall address the progress of the contract efforts, status of any problems, resolutions or identification of new problems, any trips or significant events, status of all deliverables specified in Delivery Orders, all Government Furnished Property (GFP) items received and required, schedule of events for all active Delivery Orders (including stop and start dates, meetings and reviews, and testing milestones), and other information as is required to be included by other paragraphs within this SOW.

Reference:

CDRL A001 - Contractor's Progress, Status and Management Report

#### **3.3.1 Contractor/Government Meetings**

Unless otherwise specified by the Government, all meetings and reviews shall be held at the contractor's facility or via video teleconferencing (VTC). The contractor shall submit a meeting agenda and minutes. The following meetings and reviews shall be conducted:

- a. Post Award Conference - 30 days after contract award.

- b. Program Management Reviews - As requested by the Government, but not more than twice per year, the contractor shall conduct Program Management Reviews (PMRs) for all active Delivery Orders and recently completed Delivery Orders. These reviews shall be no more than two days duration and shall occur at the contractor's facility unless specifically requested by the Government to occur elsewhere. These reviews shall address the status of all ongoing efforts. The contractor shall provide selected view graphs and spreadsheets to support program office briefing requirements for documenting program activities. The contractor shall develop agendas/minutes (CDRL A002) and briefs for each PMR. The Government reserves the right to modify the agenda and the minutes. The PMR content shall include all aspects of each active Delivery Order addressing schedule and performance, (e.g., schedule status, progress against major milestones, risk management, manpower, configuration management, logistics, quality assurance).
- c. Additional Meetings - The Government reserves the right to schedule additional reviews, working groups, and teleconferences if critical issues arise, significant events or changes have occurred, or to obtain status updates.

Reference:

CDRL A002 – Program Management Review Conference Agenda/Minutes

### **3.4 CONFIGURATION MANAGEMENT**

Configuration Management (CM) shall be an integral part of the contractor's management system. The contractor shall maintain a baseline configuration for each SHF APG variant serviced under this contract. This includes the collection, organization and control of:

- 1) Original Equipment Manufacturer (OEM) technical data packages, including released drawings, parts lists, Ship Change Documents (SCDs), test procedures and data sheets, Engineering Change Orders (ECOs), specifications and Installation Control Documents (ICDs).
- 2) Additions to the technical data package as a result of obsolescence upgrades or Engineering Change Proposals (ECPs).
- 3) Field Change (FC) and upgrade procedures.

The contractor shall conduct configuration reviews to ensure that changes are forward and backward compatible in form, fit, and function with other elements of the terminal. When a change is made within a lowest replaceable unit (LRU), the contractor shall notify the Contracting Officer's Representative (COR) within five (5) working days of the change and shall describe the performance enhancement, if any, that results or can result from the change. The notification also shall include a statement certifying that the LRU is still compatible in form, fit and function with the terminal.

## **4.0 REQUIREMENTS BY LINE ITEM**

### **4.1 AN/WSC-6(V)5/7 APG REPAIRS (OMN)**

#### **4.1.1 APG Test, Inspection and Evaluation**

The contractor shall conduct test, inspection and evaluation of APGs as defined in the Delivery Orders. Evaluations shall include the following:

- 1) Submit a Government approved test procedure or submit a test procedure for review and approval. (CDRL A003)
- 2) APG electro-mechanical performance test, including running a Government approved test procedure. In response to specific field incident data received by the Government and provided to the contractor, the contractor may be required to perform additional diagnostic testing, not to exceed 72 hours, to reproduce or isolate reported failure(s) as specified in writing by the COR.
- 3) Performance testing of major pedestal RF subassemblies including, but not limited to, Low Noise Amplifier (LNA), rotary joints, RF waveguides and RF coaxial cables, both active and passive, in accordance with Government approved specifications.
- 4) Electrical performance testing of all APG cabling, slip rings, wire harnesses, and motor assemblies in accordance with the Government approved test procedure.
- 5) Visual inspection to identify damaged or missing components and to verify incoming antenna configuration, including generation of a full Serialized Assembly Record (SAR).
- 6) Initial failure analysis to identify potential causes and trends of APG failure or performance degradation.
- 7) Verify that APG ECs and FCs identified in paragraph 2.4 have been applied correctly.

The contractor shall prepare and deliver a Failure Summary and Analysis Report for each APG (CDRL A004)

Reference:

CDRL A003 – Test Procedure

CDRL A004 - Failure Summary and Analysis Report

#### **4.1.2 APG Repair**

The contractor shall perform APG repairs, including incorporation of field change upgrades, ECOs, and obsolescence upgrades, and full performance testing to OEM and/or Government specification. These tasks include:

- 1) APG repair in accordance with Baseline Replacement Materials (APPENDIX A).
- 2) Incorporation of FCs in accordance with Government approved specifications identified in paragraph 2.4 of this SOW.
- 3) APG electro-mechanical performance test, in accordance with Government approved test procedure.
- 4) Performance testing of major pedestal RF subassemblies including, but not limited to, Low Noise Amplifier (LNA), rotary joints, RF waveguides and RF coaxial cables, both active and passive, in accordance with Government approved specifications.
- 5) Updating APG Serialized Assembly Record information and maintaining Configuration Management (CM) of APG.

If additional materials outside the scope of this baseline list are required in order to return the antenna to the specified operating condition, the contractor shall notify the Government in writing within forty-five (45) days of receipt of the antenna. The contractor's written notification to the COR shall include a list of additional materials required along with the cost and schedule impact associated with procuring and installing the additional materials.

#### **4.1.3 Acceptance Testing**

Production acceptance testing will be performed by the contractor in accordance with the Government approved test procedure. Acceptance testing will incorporate the subject-specific standards and specifications delineated in the applicable contract specification listed in SOW paragraph 2.3. The Government shall have the option to observe the production acceptance testing or review the test results included in the Final Technical Report (CDRL A005). Notice shall be provided to the Government witness no less than 10 working days prior to testing.

Reference:

CDRL A005 – Final Technical Report

#### **4.1.4 Final Technical Report**

After completion of the repair effort, the contractor shall submit a final technical report for the antenna that includes the summary of work completed, incoming failure analysis, ECO application, repair summary, serialized assembly record, final Government approved test plan, and final disposition of Government materials (i.e., whether each original piece of material removed from the antenna for replacement is scrap or salvage), in accordance with CDRL A005. The final technical report shall be submitted within 30 days of completion of repair.

Reference:

CDRL A005 – Final Technical Report

#### **4.1.5 Shipping**

The contractor shall be responsible for roundtrip transportation of APGs between SSC-PAC and SSC-LANT locations listed in APPENDIX B as specified by the Government in each Delivery Order. In support of each APG repair, the contractor shall construct new or repair existing shipping crates to MIL-STD-2073-1E Level “B” standards. The contractor shall provide sheltered storage for APGs prior to delivery to field locations up to 12 months for a maximum of 5 antennas. The contractor shall insure up to \$250,000 for each antenna during shipping. The shipping destination shall be provided by the COR after acceptance of the Final Technical Report (CDRL A005).

Reference:

CDRL A005 – Final Technical Report

#### **4.1.6 Failure Reporting Database**

The contractor shall create and maintain a failure/defect collection system (i.e., Microsoft Excel, Microsoft Access, or similar format) that will relate APG failure data by part number and APG serial number. The failure database system shall provide information on primary cause of failure and shall summarize failed parts by APG serial number and/or part number. The contractor shall provide the information collected by the failure reporting database upon request.

Reference:

CDRL A006 – Failure Reporting Database

#### **4.1.7 Logistics and Material Support**

The contractor shall specify, procure, receive, inspect and assign to inventory all materials required to support APG repairs described in SOW paragraph 4.1.2. For those materials identified during an APG repair to be outside the baseline replacement material listed in APPENDIX A, the contractor shall provide current pricing for each item at quantities that provide best economical value to the program. The Government will determine the minimal quantity necessary to satisfy program requirements. The contractor shall identify potential obsolete parts, material, chemicals and processes, and shall identify plans to prohibit obsolescence from adversely affecting supportability.

The contractor shall submit a summary of material procurements and outside services expended as part of the monthly Contractor’s Progress, Status and Management Report cited in SOW paragraph 3.3. This report shall also include a summary of GFE materials presently in inventory in support of APG repairs as well as GFE materials removed from APG repairs awaiting disposition.

Reference:

CDRL A001 – Contractor’s Progress, Status and Management Report

## **4.2 ENGINEERING SERVICES (OMN)**

### **4.2.1 APG Repair Support**

The contractor shall provide qualified systems, electrical/electronic and mechanical engineers and engineering technicians to support repaired APGs.

- 1) As directed by individual delivery orders, the contractor shall provide on-site or remote assistance via phone or email in support of APG installations or troubleshooting failures on ships or other fixed locations to verify proper performance of repaired antenna pedestal. Contractor shall submit Field Service Reports (FSR) for each field support activity performed as part of the monthly Contractor's Status, Progress and Management report cited in SOW paragraph 3.3.
- 2) As directed by individual delivery orders, the contractor shall perform engineering activities including generation of supplemental APG troubleshooting documents and procedures for use by Navy personnel in conjunction with system technical manuals.
- 3) As directed by individual delivery orders, the contractor shall provide systems engineering support necessary to analyze APG failures, identify product improvements, resolve parts obsolescence issues and document corrective action necessary to prevent or reduce the probability of APG failure recurrence. The contractor shall provide associated documentation as necessary.

The contractor shall submit a summary of the services provided as a part of the monthly Contractor's Progress, Status and Management report cited in SOW paragraph 3.3.

References:

CDRL A007 – Field Service Report

CDRL A001 – Contractor's Progress, Status and Management Report

## **5.0 CONTRACT DATA REQUIREMENTS LIST ITEMS**

The associated data packages are applicable to SHF engineering and support services as defined in this SOW. The contractor shall deliver the data and documentation required by the contract and the attached exhibits entitled Contract Data Requirements List (CDRLs). All data shall be delivered to the Government in electronic format. The contractor shall deliver the following CDRLs:

- A001 - Contractor's Progress, Status and Management Report
- A002 - Program Management Review Conference Agenda/Minutes
- A003 – Test Procedure
- A004 - Failure Summary and Analysis Report
- A005 - Final Technical Report

- A006 – Failure Reporting Database
- A007 – Field Service Report

Any changes to the CDRLs after acceptance and approval by the Government due to technical discrepancies shall be revised and submitted to the Government as needed.

## **6.0 SECURITY**

The nature of this contract does not require classified information.

**APPENDIX A – Baseline Replacement Materials**

<b>PART NO.</b>	<b>DESCRIPTION</b>	<b>Dwg Rev</b>	<b>Qty Per Antenna</b>
G538762-4	Shim, Washer	D	4
G607856-1/ New or Refurb.	Motor, Torque, 16 lb-ft	A	2
G607857-1/ New or Refurb.	Bearing, Tapered Roller, Cross-Roll	A	2
G607857-2 / New or Refurb.	Bearing, Tapered Roller, Cross-Roll	A	2
G615217-1/ New or Refurb.	Bearing, Tapered, Roller, Azimuth (train bearing)	B	2
G615217-2/ New or Refurb.	Bearing, Tapered, Roller, Azimuth	B	2
G615365-1	Alignment Plug, Train	C	1
G615499-1	Plug, Alignment Pin, Elevation Axis	D	1
G675618-1	Bearing, Angular Contact Elevation	-	2
G675619-1	Shim, Elevation Bearing, OD	A	2
G675624-1	Shim, Elevation Bearing, ID	A	2
G675634-1	Shim, Cross-Roll Bearing	C	1
G675644-1	Shim, Cone, Train	B	1
G675645-1	Shim, Cup, Train	B	1
G675648-1	Labyrinth, Upper Train	D	1
G675652-50	Connector Box		1
G675695-1/ New or Refurb.	Motor, Torque, Train	C	1
G709897-1	Shim, Cone	A	1
G733518-1	Shim, Uplook	A	1
G733519-1	Shim, Uplook	A	1
G745098-1	Plug, Alignment	B	1
G768222-1	CHO - Bond Chalk 4 oz Tube Mfg P/N 50-02-1038	-	1
G770254-1	Offset Bushing, Train Axis	-	1
G771923-1 (B-8812-D)	Bearing, Roller	-	1
G780518-52	Connector Box Cover	-	1
H291905-5	Cable Protector	Dash	1
L21511	Bearing, Cup		1
L21549	Bearing, Cone		1
L44610	Bearing, Cup		1
L44642	Bearing, Cone		1
G674917-3/ New or Refurb.	Slip Ring	G	1
G675688-1	Gear, Anti-Backlash	-	1

M20708/8-01C	Synchro Control Trans.		3
BLC4TA20S	Stow Pin, Upper Axis	Dash	2
BLC4TA40S	Stow Pin, Train	Dash	1
41887-1	MPB Bearing (Mfg #: S6316FCHHE)	C	2
5-158	O-Ring for Waveguide		1
G675616-1	Shield Bearing	C	4
G675617-1	Shield Bearing	C	4
G675637-1	Labyrinth, Cross Level Inner	D	1
G707219-1	Gasket WR112	A	1
G707226-1	Waveguide Plate	A	1
G759598-1	J5 Connector Cover	-	1
M83413/8-G25CC	Ground Strap		2
MISC	Misc MS Hardware		1
Painting	Pedestal Airbrush Painting		1
H278240-1	RAM (As Requested)		AR

**APPENDIX B – Shipping Addresses**

SSC-PAC  
N69255 Transportation Officer, Code 4121  
SPAWAR SYSTEM CENTER SAN DIEGO  
4297 Pacific Highway, Bldg 7  
San Diego, CA 92110-5000  
Attn: Dave Lindberg Ph: 619-524-3280

SSC-LANT  
N65580  
SPAWAR SYSTEM CENTER ATLANTIC  
St. Juliens Creek Annex  
Building 59 Magazine Road  
Portsmouth, VA 23702-2737  
Attn: Gregory Freeland Ph: 757-541-6809