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K0000141093-GEN
REVISION A

Statement of Work

Sensor Data Acquisition System (SDAS) Patch Distributer Cable Sub-Assemblies

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ENGINEERING DIRECTORATE

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John F. Kennedy Space Center

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Sensor Data Acquisition System (SDAS) Patch Distributer Cable Sub-Assemblies

Prepared by:

_____
Kenneth C Hosterman, NE-E3
Lead Design Engineer

Concurrence:

_____
Jody E. Jones, ESC-614
Lead Electrical Engineer

_____
Kevin W Decker, GP-G2
NASA LDE, SDAS

Approved by:

_____
William D Espinosa, NE-D2
Systems Engineer

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RECORD OF REVISIONS		
REV LTR	**DESCRIPTION**	**DATE**
	Basic Issue	January 2nd, 2013
A	Revise part numbers in Sec 2, clarify wording in Sec 1 and 6	January 28th, 2013

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1.0 Introduction
This statement of work (SOW) and associated drawings are intended to provide requirements and deliverables for the fabrication and testing of three (3) types of patch distributer cable sub-assemblies for use on the SDAS subsystem. Item descriptions and quantities are provided in Section 8.0.

2.0 Drawings
The listed KSC drawings, along with this SOW, detail the materials and requirements needed for the fabrication, assembly and testing of the SDAS patch distributer cable sub-assemblies.

120E1300053 Rev A	CABLE HARNESS SUBASSEMBLY, 5X 2(1PTSI#22), 805-004-07NF11-19SA-501/PIGTAIL
120E3400043 Rev B	CABLE SUBASSEMBLY, 10(5PTSI#22), 805-001-16NF11-19PA / 805-001-16NF11-19PA

3.0 Performance Standards
Each cable sub-assembly shall be fabricated, assembled and tested per the requirements in this SOW and the standards/specifications listed in the KSC drawings. Any alternate materials, process(es) or procedure(s) to these requirements shall be proposed and approved by the NASA prior to contract award.

4.0 Testing
This section describes the requirements for performance of continuity and insulation resistance tests on the completed cable sub-assemblies. The purpose of these tests is to assure that the sub-assemblies are terminated in accordance with the applicable engineering drawings and to detect any defects that would be detrimental to proper operation. Each cable sub-assembly shall have the following tests performed by calibrated test equipment. Test equipment calibration records and records of all testing shall be complete and included in the Acceptance Data Package described in Section 7 below. All electrical testing shall be traceable to the sub-assemblies being tested.

4.1 Continuity Test
All multi-conductor cable sub-assemblies shall be tested as follows:
a. A calibrated multi-meter or measuring device shall be used. The meter shall be set at the lowest ohm scale applicable to the readings.
b. Each conductor shall be tested and verified properly terminated per the applicable engineering drawing wiring schematic.
c. Each conductor of an assembly shall be tested for minimum resistance based on the length and type of cable.

4.2 Insulation-Resistance Tests
For all multi-conductor cable sub-assemblies, the insulation resistance shall be measured between isolated circuits, between isolated circuits and corresponding shields, between shields and shields to connector/receptacle shells
a. Measuring Instrument: The resistance measurements shall be taken with a calibrated insulation-resistance instrument that has a test potential of 500 volts direct current (VDC). The instrument shall have a full-scale reading of 2,000 mega

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ohms (MΩ) or greater, with a minimum accuracy of 5 percent at 100 MΩ. The potential shall be applied long enough for the meter to become reasonably stable and an accurate measurement to be taken.

b. Minimum Resistance: Minimum resistance of new cable sub-assemblies shall be as follows:
   1) Each shield (drain wire) to shell of connector/receptacle: 100 MΩ
   2) Each conductor to any single corresponding shield (drain wire): 100 MΩ
   3) Each conductor to every other conductor: 200 MΩ
   4) Each shield (drain wire) to every other shield: 100 MΩ

5.0 Packaging

Each cable sub-assembly will be separately bagged with caps installed in a Poly bag and heat sealed. Bags shall be labeled with cable sub-assembly part number and contract number.

6.0 Test Article

Procurement will be subject to first article testing for each the three (3) types of cable sub-assemblies for evaluation and approval prior to release of production items.

7.0 Deliverables

Acceptance Data Package (ADP):
At time of delivery of the harnesses, the contractor shall provide an ADP for the cable sub-assemblies. Contents of the ADP shall contain, at a minimum:

- Connector Lot Date Codes/Serial Numbers
- Personnel Certification Records
- Certificate of Conformance (CoC)
- Electrical Section Routing Records (KSC FORM 3-389) or approved equivalent flow control cards that document all necessary fabrication steps along with the required Technician and Quality Assurance stamps.
- Electrical test reports/results
- Test equipment calibration records
- Certification of tooling (ie, crimpers, strippers, etc)

8.0 Cable Assembly Quantities

Item 1:	Drawing:	120E1300053 Rev A CABLE HARNESS SUBASSEMBLY, 5X 2(1PTSI#22), 805-004-07NF11-19SA-501/PIGTAIL
	Length of Cable:	240 inches (tolerance -0 / +7 inches)
	Quantity:	892
Item 2:	Drawing:	120E3400043 Rev B CABLE SUBASSEMBLY, 10(5PTSI#22), 805-001-16NF11-19PA / 805-001-16NF11-19PA
	Length of Cable:	36 inches (tolerance -0 / +3 inches)
	Quantity:	164

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Item 3: Drawing:	120E3400043 Rev B CABLE SUBASSEMBLY, 10(5PTSI#22), 805-001-16NF11-19PA / 805-001-16NF11-19PA
Length of Cable:	72 inches (tolerance -0 / +3 inches)
Quantity:	164

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