

AF-LEVEL STANDARDIZED PERFORMANCE WORK STATEMENT (PWS) FOR B-1B

Avionics Testing

AT ELLSWORTH AFB, SOUTH DAKOTA

(5 AUG 2022)

1. DESCRIPTION OF SERVICES.

1.0 Contractor will design, fabricate, test and deliver a Breakout Box for all the MUX Interface cabling on the B-1 that will connect to current GSE connector on either side of Central Equipment Bay. The identification and retention of special cable assemblies as associated with the AMUX, B-DMUX, T1, T2, R1, R2 busses are problematic and the breakout box will be an ancillary unit in the CORVUS Tester Case. The breakout box will not require power and will integrate readily to the existing CORVUS. Two Breakout Boxes are envisioned (PRI/SEC) with the existing Octopus Cable from CORVUS to Breakout and a new cable assembly that interfaces the MUX portals to a single MIL connector on the breakout box. Additionally, a TEST DLT will be fabricated and tested so that the integrity of the 1553 bus can be maintained while testing the STUBs. This modified DLT will be used for specific AMUX-EMUX Stub testing and will be returned to the original DLT configuration after test.

2.0 Contractor will design, fabricate, test and deliver a Distributed CORVUS capability for Stub testing as described in 1.0. A battery-operated, alpha-numeric display Transmit module (new hardware) will be applied to the Test DLT and the existing CORVUS will be modified to receive the 1553 MIMIC signal injected onto the inactive bus. In this way, insertion loss and issues with DLT couplers will be readily detectable. In addition, a sample of the MIMIC (or active AMUX-EMUX) 1553 waveform will be displayed on the CORVUS with time and amplitude expansion similar to an oscilloscope for analysis of the waveform.

2. SPECIFIC INTENT

2.1 Intent: The intent is that the contractor will provide the software and hardware upgrades to the CORVUS tester as well as providing a new Transmit Module so it can provide maintainers with the ability to troubleshoot stubs on A-E MUX busses.

- A) Ability to easily connect to A to D MUX, EMUX, T1, T2, R1, and R2 interface bus ports via a breakout box as well as a Test DLT for injecting the MIMIC signal and monitoring 1553 bus activity while maintaining continuity of the network.
- B) A Distributed CORVUS Transmit-Receive configuration that assesses the integrity of the Stubs on the A to DMUX, EMUX 1553 bus network. Appropriate hardware modifications will be made to CORVUS so a “scope-like” analog display of the signal will be available to include trigger settings and variable gain for a full-screen display on CORVUS and a software .EXE that can be loaded on separate laptop (not included in cost proposal) will be provided with these CORVUS modifications.

3. REQUIREMENTS

3 General Requirements. The contractor shall provide all materials, transportation, labor, management, and other incidentals to meet the requirements as stated in this Description of Services.

3.1 Base Support Requirements. The base will provide a CORVUS tester, a B-1B Aircraft to demonstrate above capability for 3 days and the support personnel to escort and work with contractor.

4. Training and Support

4.1 Training. At conclusion of effort, the contractor will hold a training class for Maintenance MXG/OAS personnel to train them on using the new features of CORVUS

4.2 Support. Contractor will continue to provide electronic and telephonic support for questions on operation of all capabilities delivered