Statement of Work

for

Trimble GNSS Base Station Package

at the

846th Test Squadron

11 February 2026

1.0 PURPOSE

The 846 TS's primary test capability is the Holloman High Speed Test Track (HHSTT) where they utilize rocket powered sled trains to simulate flight like environments and scenarios with the control and recovery of a ground-based system. The HHSTT requires a Trimble Global Navigational Satellite System (GNSS) Base Station to provide precise, high-frequency positioning data for test and evaluation activities, ensuring customers receive accurate and reliable results.

2.0 SCOPE

The Contractor shall deliver one (1) complete Trimble GNSS Base Station package. The package shall consist of a GNSS Reference Receiver, a high-power UHF Data Radio, a Geodetic Antenna, and all associated equipment, software, and upgrades. All components must be new and shall meet or exceed the detailed technical specifications outlined below.

2.1 Detailed Technical Requirements:

2.1.1 GNSS Reference Receiver : Trimble Alloy

2.1.1.1 GNSS Architecture: Must feature dual-chipset technology for processing satellite signals, specifically utilizing Trimble Maxwell 7 chipsets for demonstrated performance and reliability.

2.1.1.2 Channel Count: Must provide a minimum of 672 channels to concurrently track all available GNSS constellations.

2.1.1.3 Constellation Support: Shall provide tracking for all modern GNSS signals, including: Global Positioning System (GPS) (L1C/A, L1C, L2C, L2E, L5), GLONASS (L1C/A, L1P, L2C/A, L2P, L3), Galileo (E1, E5A, E5B, E5 AltBOC, E6), BeiDou (B1, B1C, B2, B2A, B3), QZSS (L1C/A, L1S, L1C, L2C, L5, L6), and SBAS (L1C/A, L5).

2.1.1.4 Multipath Mitigation: Must incorporate Advanced Trimble EVEREST Plus multipath mitigation technology.

2.1.1.5 Positioning Accuracy (Static High-Precision Mode):

2.1.1.5.1 Horizontal: 3 mm + 0.1 ppm RMS

2.1.1.5.2 Vertical: 3.5 mm + 0.4 ppm RMS

2.1.1.6 Positioning Accuracy (Real-Time Kinematic, Single Baseline <30 km):

2.1.1.6.1 Horizontal: 8 mm + 1 ppm RMS

2.1.1.6.2 Vertical: 15 mm + 1 ppm RMS

2.1.1.7 Data and Storage:

2.1.1.7.1 Internal Storage: Must have a minimum of 24 GB of internal memory.

2.1.1.7.2 Data Rate: Must support a logging and streaming data rate of up to 100Hz.

2.1.2 UHF Data Radio: TDL450B

2.1.2.1 The data radio shall be a high-power transceiver designed for GNSS correction data, meeting these specifications:
2.1.2.2 Power Output: Must be user-configurable with a maximum transmit power of at least 35W.
2.1.2.3 Frequency Range: Must operate within the 403 MHz to 473 MHz frequency band.
2.1.2.4 Radio Protocols: Must support TrimTalk 450S, TRIMMARK 3, and SATEL protocols.
2.1.2.5 Environmental:
2.1.2.5.1 Ingress Protection: Must be certified to an IP67 rating (dustproof and protected from water immersion up to 1 meter for 30 minutes).
2.1.2.5.2 Operating Temperature: Must operate in a temperature range of -30°C to +65°C.
2.1.2.6 Construction:
2.1.2.6.1 Must feature a full metal, ruggedized construction designed to military specifications for resistance to impact, shock, and weather.

2.1.3 Geodetic Antenna: Zephyr Model 3

2.1.3.1 The antenna shall be optimized for base station applications and meet the following specifications:
2.1.3.2 Multipath Mitigation: Must incorporate a large ground plane featuring Trimble Stealth™ resistive plane technology to combat multipath errors.
2.1.3.3 Phase-Center Repeatability: Must have a phase-center with repeatability of less than 1 mm.
2.1.3.4 Signal Reception: Must provide comprehensive tracking of L1/L2/L5, G1/G2/G3, E1/E5ab/E6, and B1/B2/B3 bands.
2.1.3.5 Gain: Must provide a minimum of 50 dB gain.
2.1.3.6 Environmental:
2.1.3.6.1 Operating Temperature: Must operate in a temperature range of -55°C to +85°C.
2.1.3.6.2 Ingress Protection: Must be 100% humidity-proof and fully sealed.

2.1.4 Physical Requirements:

2.1.4.1	109100-10	Trimble Alloy GNSS Receiver Including Zephyr Geodetic 3 Antenna
2.1.4.1.1	109UPG-24GB	Trimble Alloy Option: 24GB Memory Upgrade
2.1.4.1.2	109UPG-BDS	Trimble Alloy Receiver Enable Beidou
2.1.4.1.3	109UPG-GAL	Trimble Alloy Receiver Enable Galileo
2.1.4.1.4	109UPG-RTX	Trimble Alloy Option: Enable Onboard RTX
2.1.4.1.5	109UPG-BATT	Trimble Alloy Option: Dual (Second) Battery Upgrade
2.1.4.2	176767	Trimble R10/R12 Rechargeable Battery – 7.4V,3700mAh, 27.3 Wh
2.1.4.3	TDL450B-HE	Two (2) each Trimble TDL450B Typoon Radio 35w Hot Environment with HE Fan and Cable Kit
2.1.4.4	129681-75	Two (2) each Trimble TDL450B Typhoon Radio Hard Transport Case
2.1.4.5	131893-50-70	Two (2) each Trimble TDL450B Antenna 450-470Mhz 5db gain antenna kit
2.1.4.6	74450-11	Two (2) each Trimble TDL450H Office Power Kit
2.1.4.7	58957-80M-LMR	Two (2) each Cable – LMR-400 TNC to Straight to TNC 90 Degree Antenna Cable – 80ft

3.0 MILESTONES

The contractor shall deliver one (1) Trimble GNSS Base Station Package with all additional equipment no later than 120 days ARO.

4.0 DELIVERABLES

The contractor shall deliver all hardware and documentation to 704 TSS/XPL, Attn: Sheridan Hileman at 1644 Vandergrift Road, Building 1260, Holloman Air Force Base, New Mexico 88330-7850.

5.0 GOVERNMENT ACCEPTANCE

5.1 **Upon delivery:** the Government will conduct acceptance testing within 10 business days. Acceptance will be based on:

5.1.1 Verification that all hardware and quantities listed in Section 2.1 have been delivered and are free of damage.

5.1.2 Review of manufacturer documentation and specifications to confirm that the delivered equipment meets or exceeds all technical requirements detailed in Section 2.1.

5.1.3 A successful power-on and functional check of the Trimble GNSS Receiver, data radio, and all associated components.