STATEMENT OF WORK

For

MACDILL GIANT VOICE (GV) EQUIPMENT AND INSTALLATION REPLACEMENT

MacDill AF Base

Prepared By:
6 Communication Squadron
8011 Red Hibiscus PL
MacDill AFB, FL 33621

24 Jun 2026

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1. SCOPE. Statement Of Work (SOW) defines requirements for the Contractor to Engineer, Design, Furnish, Install, and Test (EDFI&T) a new, non-proprietary tum-key giant voice (GV) system solution to replace the existing GV system and provide complete services with real-time intelligible voice messages, tone alerts, and music for the coverage of all areas at MacDill Air Force Base, FL. The replacement shall consist of 3 central control stations (CCSs), 4 client workstations (CW), 13 remote siren stations (RSSs), and all associated radio base stations (RBSs), AC power extensions/feeders, battery backups, solar panels, lightning protections, grounding, cabling, wiring, software, configuration/programming, and other necessary components to provide complete system. The Contractor shall reuse the existing GV poles for installation of the new RSS equipment. The entire existing GV system equipment -excluding the poles-shall be decommissioned and disposed of at an off- installation location. Warranty to cover OEM manufacturer warranties and warranty of workmanship are required. Operational and system maintenance training shall also be provided.

2. BACKGROUND. The existing Giant Voice (GV) Emergency Mass Notification System (EMNS) at MacDill Air Force Base was built in 2019, consisting oflegacy components Including four (4) CCSs, four (4) CWs, twelve (13) RSSs, pole-mounted speaker arrays, RF communication links, and siren control cabinets. Over time, the system has experienced progressive degradation in performance, reliability, and maintainability, resulting in intermittent operational failures and an increasing frequency of manual intervention to initiate alerts. Portions of the infrastructure has reached the end of their useful service life, and some components may no longer be supported by the original equipment manufacturer (OEM). Although the electronic and communication components require full replacement, the existing poles remain structurally serviceable and will be retained for reuse as part of the new GV system installation.

3. GENERAL INFORMATION.

3.1 Place of Performance. The place of performance shall be **MacDill AFB.**

3.2 Performance Period. The period of performance for this project shall be determined based on the proposed schedule and actual contract award date. All works shall be completed within the scheduled timeframe. Any request or justification for change shall be made to the designated Contracting Officer (CO) in writing and must be approved by the CO.

3.3 Hours of Operation. The Contractor shall perform routine work during normal duty hours of the base (normally Mon-Fri 0730-1630 EST). However, mission requirements may necessitate work outside normal hours (maintenance windows, nights, and/or weekends), especially if existing services must be interrupted. Any site work requested by the Contractor to be performed outside of normal duty hours shall be coordinated with the CO and designated base Point of Contact (POC) in advance for preapproval.

3.4 Holidays/Down Days. The Contractor shall not perform under this contract on federal holidays or site-unique down-days unless expressly authorized by the CO and coordinated with the Government POC.

4. GENERAL REQUIREMENTS. The Contractor shall provide for removal and disposal of any equipment, cabinets, coordinating with any equipment, cabinets, coordinating with the

base POC. The Contractor shall phase the installation of the new system in a manner which allows system operation during the new system installation, with exception of a CSS or RSS during replacement. The Contractor shall coordinate with the base POC, tenants, and other involved parties to ensure mission continuity and support requirements.

4.1 Site Coordination. The Contractor shall coordinate with the 6 CS/SCX or base POC a minimum of 10 business days prior to arrival on-site.

4.2 Integrated Product Team (IPT) Coordination. The IPT members shall be identified for this project. The IPT is composed of all multi-functional stakeholders in the acquisition and is responsible for the acquisition throughout the life of the requirement. The goals of the IPT are to manage this contract and to provide an avenue to collectively work together to create a strong working relationship between the using agency, contracting and the contractor and provide the highest level of contract performance and customer service. Prior to any on-site work, the Contractor shall provide the IPT a project coordination call to review all planned efforts and data collection requirements in support of project implementation. The Contractor shall also chair an IPT meeting as necessary to discuss and address project progress, problems being encountered, and other information necessary/beneficial to ensure success and timely completion of contract requirements. The Contractor shall provide, record, and distribute agenda and meeting minutes.

4.3 Project Management. The Contractor shall identify by name a Project Manager (PM), who shall be the prime contractor's employee, responsible as the single POC from award to final acceptance. The PM shall be available during work hours for TEAMS meetings and phone calls, as necessary to ensure successful performance. The Contractor shall identify the PM's range of authority to act for the Contractor relating to daily contract operation.

4.4 Contractor Supervision. The Contractor shall be responsible for supervision of all contract personnel and performance of all Contractor-related functions.

4.5 Personnel Training and Certifications. All personnel identified to support this requirement must be trained and/or certified on the systems involved in this effort. Personnel identified to support this requirement shall be able to provide training certifications upon Government request.

4.6 Safety. The Contractor shall comply with all Federal, State, and Base security and safety laws, regulations, policies, and requirements. If at any time it is determined that equipment is unsafe and/or work is being performed in an unsafe manner, all work will be immediately suspended until the Contractor has corrected the problem to the satisfaction of the Government. The Contractor shall meet with the Installation Safety Officer (ISO) immediately upon arrival on site for review of the specific safety requirements prior to installation. No Contractor personnel presenting potential threats to the health, safety, security, general wellbeing, or operational mission of the installation and its population shall be employed by the Contractor during the execution of this project. Compliance with AFI 91-202, Air Force Mishap Prevention Program is mandatory.

4.7 Accident/Incident Reporting and Investigation. The Contractor shall record and report all available facts relating to each instance of injury to either the Contractor or the Government personnel, equipment, or facilities to the CO, Government POC, and ISO unless otherwise stated in the SOW. The Contractor shall secure the scene of any accident and wreckage until released by the accident investigative authority through the base POC. If the Government elects to conduct an investigation, the Contractor shall cooperate fully and assist the Government personnel until the investigation is completed.

4.8 Security Clearance. Some of this work will take place in secure and restricted areas where all Contractor personnel must be escorted at all times. It is the Government's responsibility to provide escorts. The Contractor shall coordinate access with the base POC to the secure and restricted areas at least seven (7) business days ahead of time. All Contractor personnel shall comply with established security procedures for entering an installation and its facilities, including special security procedures for entry to restricted areas. The Contractor shall obtain necessary badges, Entry Authorization Letters (EALs), or documents required for entry to restricted areas, if applicable, to meet the requirements of this project. The Contractor personnel working under this project shall not require a security clearance but, as a minimum, shall have a favorable National Agency Check. However, if the proposed solution requires a need for access to Government system(s) requiring a higher security level, the Contractor shall ensure personnel have the proper security requirements at no additional cost to the Government.

4.9 Base Access. Reserved.

4.10 Identification/Marking. Reserved.

4.11 Environmental Management. The Contractor shall comply with all federal, state, local and Air Force laws, regulations, instructions, and policies. The federal Government is not exempt from compliance with environmental regulations. The Contractor shall maintain an awareness of changing environmental regulatory requirements to avoid environmental violations on MacDill AFB, FL.

4.12 Work Area(s). At day's end, the Contractor shall remove all debris and surplus materials from the workplace. Equipment and materials required to complete the work effort may remain on site as long as they are organized/stored in a manner that does not cause a safety hazard. The contractor is responsible for the security of contractor owned materials.

4.13 Documentation. The Contractor shall verify accuracy of all government-provided documents, layout, and/or drawings.

4.14 In-brief and Out-brief. The Contractor shall conduct an in-brief with the base POC or Government IPT members prior to installation and an out-brief after project completion. The in-brief shall cover the Contractor's installation plan, to include dates and phases. The out-brief shall cover all equipment installation, required maintenance, and warranties at a minimum.

4.15 System for Award Management (SAM). Reserved.

4.16 Labor Compliance. The Contractor shall be responsible for complying with all Federal labor laws.

4.17 Performance of Services during Crisis/Force Majeure. Reserved.

4.18 Implementation. The Contractor shall have ultimate responsibility for successful project completion. Any work deemed non-compliant shall be corrected at the Contractor's expense. This task shall include all necessary work required to connect to the existing infrastructure providing a fully functional system solution. The Contractor shall plan and manage daily operations and activities associated with project performance. The Contractor will employ effective management tools and methods to assure control of cost, schedule, and performance. The Contractor shall conduct, support, or participate in program management and technical reviews, meetings, and conferences, as required, to ensure effective and efficient execution of this project. The Contractor shall ensure protection of government property to prevent damage during project performance.

5. SPECIFIC REQUIREMENTS. The Contractor shall provide all personnel, labor, tools, transportation, supervision, skill, expertise, equipment, supplies, material, hardware, software, licensing, documentation, manuals, services, and other incidentals necessary to complete this project. Services include project management, configuration management, system engineering, system staging, site preparation/development, equipment installation, optimization, acceptance testing, warranty, training, and closeout. All equipment, supplies, hardware, and materials shall be new and not at manufacturer's end of life.

5.1 Site Survey. The Contractor shall conduct site survey with the 6 CS/SCX or base POC to obtain all information and requirements necessary for site preparation work, location proposal, installation plan, cutover plan, test plan, and final acceptance. The Contractor shall also coordinate with the base POC to ensure all preparations required of MacDill AFB are completed.

5.2 System Requirements. The Contractor shall provide a GV system capable of communicating over digital two-way conventional UHF radio links and allow interoperability and remote activation. The system shall provide real-time intelligible acoustic coverage for all required MacDill AFB areas. The Contractor shall coordinate with the base POC to identify and validate all GFEs, AC power sources, interfaces, and installation locations as well as other Government Furnished Properties (GFPs.

5.2.1 Standards. All installation, equipment cabinets/racks, cables (communications, power, grounding, etc., equipment, pathways, wire management, patch panels, etc. shall be IAW standards referenced in Appendix A, Applicable Documents and Standards and in secure areas comply with AFSSI 7702 "Emission Security Countermeasures", and NSTISSAM Tempest/2-95 "National Security Telecommunications and Information Systems Security Advisory Memorandum (NSTISSAM Red/Black Installation Guidelines."

5.2.2 Hardware and Software. The Contractor shall provide the latest versions of hardware, software, firmware, and/or operation system (OS for the GV system.

5.2.3 Equipment Installation/Replacement.

5.2.3.1 AtHoc NCAS Integration/GV System Interoperability. The GV system shall

interface, interoperate, and be integrated with the current AtHoc system via at the primary Command Post (CP) and secondary systems, to broadcast the messages over the GV system from the AtHoc terminal. The Contractor shall be responsible to provide necessary hardware and software and coordinate with the AtHoc vendor to disconnect from the existing system, re-configure and re-connect the new system to the GFE AtHoc IIM in order to produce a fully operational AtHoc-GV integrated system.

5.2.3.2 Central Control Station (CCS). All the existing CCS equipment shall be removed completely.

Central Control Units (CCU). The Contractor shall provide and install four (4) new CCUs, each for the CCS at the Primary CP, Alternate CP, and Radio Shop and at the Base Defense Operations Center (BDOC). The new CCU equipment shall include new desktop Personal Computer (PC) with latest Windows OS and 24-inch monitor (all-in-one preferred), latest alert activation software package, Human Interface Devices (HIDs), Encoder, noise canceling microphone, mouse pad, and ink-jet printer. For the new CCU at the Radio Shop and BDOC, installation shall be rack-mount in the same location vacated from removal of the existing CCU or in the available rack spaces of the cabinet in the equipment room. For the new CCU at the Primary CP and Alternate CP, installation shall be desk-mount in the CP room. The new CCUs must be clered by the 6CS to be operational in a multi-use classified processing area, i.e. no WiFi, cameras or Bluetooth. Contractor shall coordinate for exact locations of installation. All existing CCU equipment shall be removed completely.

5.2.3.2.1 Primary AC Power-CCS. The Contractor shall provide and install primary AC power for the CCU equipment including associated radio base station. The Contractor can utilize existing AC power outlets after removal of the existing CCU equipment or from existing AC power outlets. If new AC power is required, the Contractor shall provide and install the AC power circuit extension from AC power circuit at the nearest electrical utilities service panel and coordinate with the base CE for circuit approval prior to installation. The new AC power circuit extension installation shall also include circuit breakers, EMT tubing, and receptacles. All AC power installations shall comply with NECs, NFPA 70, UFC 3-520-01, and base code and standard requirements.

5.2.3.2.2 Backup Uninterrupted Power Supply (UPS). Each CCU including associated radio base station requires battery backup power to maintain operation during emergencies that could result from temporary loss of normal base electrical utilities IAW NFPA 72. The Contractor shall provide a UPS capable of supporting full load operation for a minimum of four (4 hours IAW NFPA 72 statements. All the existing UPS equipment shall be removed completely.

5.2.3.3 Remote Siren Station (RSS). The location of the existing 13 RSSs is shown in Appendix B. All the existing RSS equipment shall be removed completely, not to include the poles.

5.2.3.4 Number of RSSs. As described in paragraph 5.2.3.3 the current system consists of 13 RSS's. Vendor's may design a system which utilizes a reduced number of RSS's, however the system must provide the required overall coverage depicted at Appendix B. Vendor's may use a combination of Omni-directional or Uni-directional speakers to achieve coverage of the required area.

5.2.3.4.1.1 Wind Load. The existing poles were designed to support full weight of the new RSS equipment attachments and withstand a wind load of Category 3 hurricane (sustained wind 111 to 129 mph) and 140 mph 3 second gust. Data on weather conditions can be obtained through the base CE.

5.2.3.4.2 Lightning Protection and Grounding. The Contractor shall provide and install new lightning protection and grounding system (lightning strike termination devices, cable down conductors, grounding electrodes, shielding, bonding, surge protection devices) for all poles IAW NECs, NFPA 780, UL96A, and LPil 75 standards to prevent direct or side lightning strikes, to minimize equipment damage due to nearby lightning strikes.

Lightning protection system pole mounts shall be capable of withstanding a wind load of a Category 3 hurricane. The Contractor shall test the new lightning protection and grounding system and submit the test results to the Government POC (Deliverable 01).

5.2.3.4.3 Siren Control Unit (SCU). The Contractor shall provide and install SCUs for 13 RSSs. SCU equipment shall include enclosure, siren controller, digital message board, local operating console with microphone, Class D audio amplifier, intrusion switch, temperature compensated battery charger, power ON/OFF circuit breaker, enclosure mounting brackets, mounting hardware, interconnecting cables. SCU enclosures shall be weatherproof and waterproofNEMA-4X rated and cover vents, if any, complete with bug screens. SCU pole mounts shall be capable of withstanding a wind load of a Category 3 hurricane. All existing SCUs shall be removed.

5.2.3.4.4 Acoustic Coverage. The intelligible voice coverage requirement of MacDill AFB is shown in Appendix B, Intelligible Voice Coverage Requirement. The Contractor shall analyze, optimize, and determine best possible quantity of siren speaker arrays to provide intelligible voice messages, tone alerts, and music for the required coverage to adequately notify the base population. Sound bleed/spill over to local communities shall be kept to a minimum.

5.2.3.4.5 Siren Speaker Array. The Contractor shall provide and install new siren speaker arrays drivers and horns for 13 RSSs, including anti-nesting spikes or other measures to prevent birds from building nests in/on the siren speaker array. The speaker cable runs to the siren speaker arrays from the SCUs shall be installed inside the poles. All exterior speaker cable runs shall be completely enclosed in conduits, and all speaker cable feed-thru holes shall be completely sealed. The new siren speaker array pole mounts shall be capable of withstanding a wind load of a Category 3 hurricane. Wattages for all equipment shall be sufficient to meet the required intelligible voice coverage shown in Appendix B. The Contractor shall provide the best possible siren speaker array solutions for the required intelligible voice coverage. All the existing siren speaker arrays shall be removed completely.

5.2.3.4.6 Primary AC Power-RSS. The Contractor shall provide and install new electrical safety disconnect box, circuit breaker, AC feeder/extension, and underground conduit/PVC from AC power circuit at the existing GFE electrical utilities AC power source to provide the primary AC power for the RSS equipment including associated radio base station. The Contractor can use the same AC power circuit from removal of the AC power equipment used for the existing RSS. The Contractor shall coordinate with the base CE for all installations of AC power. Base CE must approve installation of all new AC circuits prior to installation. All AC power

installations shall comply with NECs, NFPA 70, UFC 3-520-01, and base code and standard requirements. All the existing AC power equipment shall be removed completely.

5.2.3.4.7 Secondary Solar Power. The Contractor shall provide and install new solar power panel including solar charge controller and power cable to provide the secondary power for the RSS equipment including associated radio base station. The solar power cable run to the solar power panel from the SCU shall be installed inside the galvanized steel pole. All exterior solar power cable runs shall be completely enclosed in conduits, and all solar power cable feed-thru holes shall be completely sealed. The solar power panel pole mounts shall be capable of withstanding a wind load of a Category 3 hurricane. All the existing solar power equipment shall be removed completely.

5.2.3.4.8 Battery Backup Unit. Each RSS including associated radio base station requires battery backup power to maintain operations during emergencies that could result from temporary loss of both normal base electrical utilities and solar power IAW NFPA 72. The Contractor shall provide new battery backup unit that has backup power capacity capable of supporting operation under quiescent (non-alarm load for a period of 72 hours and operation under an emergency condition for 60 minutes at maximum connected load IAW NFPA 72 statements. All new batteries shall be maintenance free and sealed. A separate SCU-attached ventilated compartment or NEMA-4X rated enclosure shall be required for the new battery backup unit to isolate the batteries from the SCU electronic circuitry. Compartment or enclosure vent shall be completely covered with a bug screen. All the existing batteries shall be removed completely.

5.2.3.4.9 Padlocks. The Contractor shall provide and install the padlocks or equivalents to secure all equipment enclosures. The padlocks or equivalent shall be rust-resistant and keyed-alike (i.e., same key fits all padlocks or equivalents. All keys/codes shall be delivered to the Government at project completion.

5.2.3.5 Radio Communications Infrastructure. The Contractor shall provide new digital two-way conventional UHF radio infrastructure for radio communications links between the CCSs and RSSs of the GV system via the existing repeater. The Contractor shall coordinate with the base POC and Radio Shop for support as needed.

5.2.3.5.1 Radio Base Station. The Contractor is responsible for design of the new GV system and the replacement of all associated radio base stations consisting of four (4) CCSs and 13 RSSs. All the existing associated radio base station equipment shall be removed.

5.2.3.5.1.1 Radio. The Contractor shall provide 13 J/F-12 or J/F-13 certified single-band UHF mobile radios for installation at the 13 RSSs, and four (4) J/F-12 or J/F-13 certified single-band UHF mobile radios for installation at the four (4) CCSs. Radios shall meet or exceed the following minimum salient characteristics:

- Operate on the Government-provided UHF frequencies (TX/RX) for digital two-way conventional operation.
- Support P25 Phase I digital conventional operation.
- Provide minimum 30W RF output power.
- Support AES-256 or DES-OFB encryption (if required in future; currently reserved).
- Provide programmable channel capacity sufficient for all required GV system operations.

- Include standard mobile radio accessories required for integration with the GV system (e.g., power cable, mounting hardware, speaker interface, control head or remote head as applicable).
- Be compatible with the existing Government repeater infrastructure.
- Be certified for DoD spectrum supportability (J/F-12 or J/F-13).

The Government does not specify or require any particular manufacturer or model. Offerors may propose any radio solution that meets or exceeds these salient characteristics. All the existing radio equipment shall be removed.

5.2.3.5.1.2 Radio Frequency (RF) Antenna. The Contractor shall determine, provide, and install new directional Yagi or omni-directional UHF band-specific RF antenna, RF cables, and antenna lightning surge arrestor for each CCS and RSS radio. The RF antennae shall be installed and aligned properly on the RSS poles and CSS building structures to provide optimal and reliable Transmit (TX and Receive (RX signaling. For the CCSs, the Contractor can install at the same antenna locations from removal of the existing antennae or propose antenna installation locations on the CCS building structures. The Contractor shall coordinate with the base POC, CE, and Radio Shop for approval of new antenna installation locations. For the RSSs, the RF cable runs to the RF antennae from the SCUs shall be installed inside the pole. The Contractor shall test and verify all RF cable paths for any continuity issue, cable loss, signal loss, and/or fault. All exterior RF cable connections shall be completely waterproofed and weatherproofed, and all RF cable feed-thru holes shall be completely sealed. The antenna pole mounts or building structure mounts shall be capable of withstanding a wind load of a Category 3 hurricane. All the existing antenna equipment shall be removed.

5.2.3.5.2 Radio Frequency. The Contractor shall coordinate with the base POC and Radio Shop to obtain the existing UHF TX and RX radio frequencies designated for digital two-way conventional UHF radio communications links.

5.2.3.5.3 "Line of Sight" Signal. The Contractor shall test two-way UHF TX and RX radio communications signals between the CCSs and RSSs of the GV system. The test shall be accomplished to ensure the GV system meets reliable end-to-end radio communications signal strengths.

5.2.3.5.4 Encryption. Reserved

5.2.3.6 Waterproof/Weatherproof/Sealing. The Contractor shall install proper service entrance cap/weatherheads, liquid tight fittings, sealants, and cable drip loops to prevent moisture, water, and insects from entering the outdoor equipment cabinets or enclosures. All exterior interconnecting cables shall be completely enclosed in conduits/PVC, and all exterior cable connectors/couplings shall be completely waterproofed. All installations shall follow common practices and industry codes for waterproofing, weatherproofing, and sealing.

5.2.3.7 Grounding. The Contractor shall ground all new GV system equipment, lightning protection, grounding system, and electrical power installs IAW the base, local, state, and federal codes, laws, NECs, NFPA 780, UL-96A, and MIL-STD-188-124B. Technical Order (TO) 31-10-24 "Installation Practices - Communication Systems Grounding, Bonding, and Shielding" must also be followed. Grounding shall not tie into existing facility grounding unless approved by the base CE.

5.2.3.8 Bonding. Shield bonding connectors, bond bars, braids, ribbons, clamps, etc., shall be provided to maintain cable shield continuity at splices and at ground connections. Bonding connectors shall be provided IAW the Rural Utilities Service (RUS) Bulletin 1753F-803 (PE-33), NECs, MIL-STD-188-124B, and MIL-HDBK 419A Vol. I and II. Shields shall be grounded and continuous throughout the cable distribution system.

5.2.3.9 Electrical AC Power. The base CE shall support providing and reserving electrical AC power sources required for the GV system equipment. The Contractor shall ensure to identify electrical AC power requirements for their proposed GV system equipment. The Contractor shall coordinate with the CE Electrical Shop on all electrical power removal, modification, and/or installation. Installations must comply with NECs, NFPA 70, UFC 3-520-01, and base code and standard requirements.

5.2.3.10 Power Source Check. The Contractor shall ensure the Government provided electrical circuit voltage and current are adequate for the GV system's electrical load. The Contractor shall test the voltage, current, wire size, distance, transformer size, fuses, breakers, batteries, solar power regulator, current limiting devices, and other variables to ensure they are correctly utilized to drive the GV system load.

5.2.3.11 Power Energizing. The Contractor shall coordinate with the base CE before energizing all new power loads.

5.2.3.12 Wiring. The Contractor shall provide and install all signaling wiring to include the digital two-way conventional UHF radio communications system to provide complete controls and communications of the GV system.

5.2.3.13 Labelling. All GV system equipment, radio equipment, enclosures, poles, powers, and cabling shall be labeled appropriately IAW the base standards and with standards referenced in Appendix A, Applicable Documents and Standards. The Contractor shall coordinate labelling scheme with the base. Labelling shall be completed via permanent method. Handwritten labelling shall not be authorized.

5.2.4 System Features and Capabilities. The GV system shall provide following features and capabilities, including but not limited to:

- Alert software shall have an interactive, user-friendly graphical user interface (GUI) to control, operate, activate, and monitor the entire system in real-time; include a base-specific customizable map displaying the facilities with geo-locations and general statuses of the RSSs shown on the map as color-coded icons; and provide easy independent adjustment of dB levels within the system for all the RSSs without having to physically visit each RSS location.
- The CCS's shall allow the users to add, remove or modify pre-recorded voice alerts and templates to adapt to ever changing operations.
- The GV system shall provide pre-recorded voice alert messages, informational messages, action to be taken, playing of taps, retreat, reveille, and active shooter announcement messages to all personnel in the event of an emergency, terrorist threats, Force Protection contingencies, and exercises.
- The CCSs shall have capability to execute all the GV activations in the event there is a computer or software failure.

- The GV system shall provide the summary report of status changes, all troubles, equipment failure, power system troubles, intrusion, unsolicited messages, tampers, amplifier status, last activation and synchronization error, and operator log on/off and report/display success, failure, not verified, normal, abnormal, and out of service indicating the system status at all times.
- Siren speakers shall deliver alert, warning, and informational messages of what to do before, during and after an emergency, exercises or disaster by the operators at the CCSs.
- CCSs shall transmit emergency announcements as live voice messages to alert and warn base personnel through remote siren speakers via microphone to any individual or group zone or all zone speakers.
- The GV system shall be capable of being activated, monitored, and controlled over the digital two-way conventional UHF radio and shall receive real-time remote status monitoring of all system activities from the CCSs.
- The GV system shall have capability of interfacing operation and remote activations from AtHocNCAS.
- The GV system shall allow operators to activate, test, and cancel the RSSs independently, in groups, or as an entire system.
- The GV system shall be equipped with a silent test or quite test diagnostic that allows it to test all major system components and identify faults without producing an audible signal.
- The RSSs shall allow multiple activation sequences to be programmed remotely from the CCS locations or locally at the RSS locations.
- The RSSs shall provide hot swappable pulse width modulated amplifiers or single board amplifiers to provide reliability, efficiency, ease of maintenance, and increase redundancy within a small modular weatherproof enclosure.
- The GV system shall be programmed to perform automatic daily/weekly, or monthly activations and/or tests; daily, weekly, or monthly quiet testing, growl testing, or full system testing; and other regularly scheduled events and routine reports.

5.2.5 System Interface. The GV system shall provide following interface features, include but not limited to:

- Application Programming Interface (API) to remotely activate audible alerts.
- Standard TCP/IP network protocols, RS 232, RS-485, and audio-in input.
- The API shall conduct all interactions using XML messages conforming to the OASIS (Organization for the Advancement of Structured Information Standard) Common Alerting Protocols (CAP) Standard.
- The API shall allow an external system, such as AtHoc NCAS via IMM to initiate specified pre-recorded audio alerts in the GV system.
- Target activation of specific sirens or speakers.
- Request reports on the status of delivery and activation of an alert already in progress; specifically, if the alert was delivered to all targeted speakers and these speakers are sounding the alert.

- Terminate an alert already in progress.
- Request reports on system health status, replying with a detailed response. The status will include, but not limited to, backup battery, cabinet intrusion, amplifier status, AC Power, RF communication, maintenance information, and failure/warning information with equipment in the system. Report success, failure, not verified, normal, abnormal, and out of service.
- The GV system shall allow the activation of target siren or speaker via dry contacts and audio-input.

5.2.6 Pre-programming. The GV system shall be pre-programmed with the following list of messages in English and, an exercise version of all the broadcast messages. This is intended as a general list, and an exact list of messages shall be provided by the base after the post walk-through.

5.2.6.1 Broadcasting Messages.

- ► Active Shooter
- ► Active Shooter End
- ► All Clear
- ► Alt. Steady
- ► Attach Warning
- ► Bugle Taps
- ► Chime
- ► Disaster Warning
- ► Flash Flood Watch
- ► Flood Warning
- ► Flood Warning End
- ► Flood Watch End
- ► FPCON
- ► Wind Advisory
- ► Hurricane Watch
- ► FPCON Terminated
- ► Heat Advisory
- ► Heat Advisory, Black Flag
- ► Lightning Warning
- ► Lightning Warning End
- ► Lightning Watch
- ► Lightning Watch End
- ► Lockdown
- ► Air Force Colors
- ► Pulse Steady
- ► Retreat
- ► Retreat/Anthem
- ► Reveille
- ► Tropical Storm Warning
- ► Storm Surge
- ► Reveille/To the Colors
- ► Severe Warning
- ► Severe Warning End
- ► Severe Watch
- ► Test Disaster Tone
- ► Test Message
- ► To the Colors
- ► Tornado Warning
- ► Tornado Warning End
- ► Tornado Watch
- ► Tornado Watch End
- ► Whoop
- ► Hurricane Warning
- ► Lighting Warning
- ► Extreme Heat Advisory

5.2.6.2 Broadcasting Tones.

- Alt Steady
- Alt Wail
- Pulse Steady
- Pulse Wail

5.2.6.3 Broadcasting Voice.

- Public Address
- Audio level (line-level) input

5.2.6.4 Control System Functions.

- Reset - used to reset all poles
- Cancel - used to cancel a message in mid-stream
- Test Message
- Silent Test

5.2.7 Zone Selectable. The GV system shall provide a siren speaker zone selective capability. All zones are linked to provide simultaneous activations and selective zone ability to activate each individual zone or group of zones or all zones. The GV system shall allow for the pre-configuration of zones, which can be selected by the operator to promptly issue an announcement to the selected area. Zone configuration shall be coordinated with the Government.

5.2.8 Override Capability. Not Applicable

5.2.9 Audible Signal. When broadcasting tone alerts for different warnings and when used as a vocal GV system for command and control instructions, the speaker system shall produce audible signals, maximum pre-recorded messages and intelligible voice messages to any personnel located in the populated areas.

5.2.10 Music and Voice. The GV system shall be capable of broadcasting standard military music selections and recorded voice in English.

5.3 Service Outages. The Contractor shall be responsible for resolving unscheduled (i.e., cutting or disabling any in-service cables or equipment) interruptions of service. The Contractor shall coordinate planned outages with the base Government POC at least two (2) calendar days in advance of the outage if the implementation necessitates disruption of service, (e.g., electrical, communications, or other utilities).

5.4 Project Residue. The Contractor shall dispose of residues from this project off base IAW the base POC instructions and federal, local, and base environmental laws and regulations. All excess Automatic Data Processing Equipment (ADPE) equipment items shall remain U.S. Government property, and it shall be delivered to the Government POC.

5.5 Restoration. The Contractor shall restore all disturbed area/base property to the "as found" condition or better after installation. Any wall penetrations shall be restored to meet NFPA 1,

NFPA 70, NFPA 72, and base standards.

5.6 Contractor-Furnished Materials. The Contractor shall furnish all materials for this project, except the equipment and/or hardware which is currently owned or leased by the government. Material and/or equipment specified by the Contractor must interface properly with existing government equipment that has already been determined to be reutilized. Unless otherwise specified, the Contractor shall provide copies of commercial-off-the-shelf (COTS) technical or equipment manuals and warranty documentation and procedures for Contractor-furnished end-item system equipment maintenance. The Contractor shall transfer warranties to the Government at project acceptance.

5.7 Quality Assurance. The Contractor shall provide a Quality Control Plan for the life of the project. The Contractor's quality assurance evaluator shall assist the Government representative in performing random spot checks and system acceptance tests. The Contractor shall be responsible for identifying system and outside plant deficiencies and/or discrepancies throughout the life of the project. An IPT report (soft copy) shall be submitted indicating progress/status and listing any deficiencies/discrepancies found and actions to correct them (Deliverable 04). The Government personnel reserve the right to perform inspections of the Contractor's work during any and all phases of the installation.

5.8 Project Schedule. The Contractor shall provide a complete milestone schedule that denotes project activities to include time-phased start and completion dates for the project and sub-projects associated with the installation of the components and system (Deliverable 03). The Contractor shall establish a preliminary project schedule/plan and submit with the technical proposal. The Contractor shall submit the milestone schedule to the Government for acceptance 14 working days prior to the in-brief.

5.9 Bi-weekly Status Reports. The Contractor shall chair a bi-weekly and as-needed IPT meeting that includes all involved parties/members identified for this project after contract award. The purpose of the meeting is to brief project progress, performance issues, and other topics necessary/beneficial to ensure success and timely completion of contract requirements. The Contractor shall also be responsible for providing and disseminating the status report, meeting agenda, and/or meeting minutes (Deliverable 04 & 05).

5.10 System Installation Plan (SIP). A SIP shall be required for this project no later than 30 days prior to project installation. The SIP shall be accepted by the Government POC prior to the start of any on-site work. The system must be installed with little or no disruption to existing services. Any disruption of service shall be coordinated with the Government.

5.11 Cutover Plan. The Contractor shall provide a cutover plan detailing the transition from the existing system to the new system full operational status (Deliverable 06). The cutover plan shall outline how the system shall be placed into service and clearly specify how the newly installed system shall connect to the existing base system. The Contractor shall minimize downtime of the existing GV system and interruption of network services to the base customers as much as possible during installation and cutover. The Contractor shall coordinate and obtain approval for all planned cutover/outages with the base POC. The cutover plan shall be provided to the Government for acceptance.

5.12 Test Plan. The Contractor shall provide a detailed test plan as to how the new replacement GV system shall be tested and ensured IAW UFC4-021-01 (Deliverable 06). The Contractor shall also submit instructions to system operators for conducting periodic system tests. The replacement system shall be tested to demonstrate to the Government that it is fully operational and meets or exceeds the specified requirements and that it is fully ready to be placed into service. These tests shall be accomplished prior to being placed into service.

5.12.1 General Testing Requirements. The Contractor shall provide test acceptance plans to the Government for review and approval prior to installation and testing (Deliverable 06). The Government will have 10 days to review and provide comments to the Contractor. The Contractor shall update changes and provide to the Government for final review and approval. All required outages shall be planned accordingly and coordinated to obtain approval. The Contractor shall schedule a final walk-through to conduct with the Government testing. The Government shall be on-site during the entire testing procedure, and the Contractor shall provide on-site support during the acceptance testing.

The Contractor shall perform all inspections and testing of the GV system and required acoustic coverage to ensure technical adequacy and accuracy of all work, including reports and other documents required in support of that work. The Contractor shall provide all test equipment and personnel required to conduct all required testing. The Contractor shall perform sound level testing, optimization, and adjustment to enhance intelligibility/clarity and prevent excessive distortion/echo and unacceptably low sound levels for the required acoustic coverage. The Contractor shall conduct a live voice test, and the Government personnel will listen and assess the intelligibility/clarity of voice announcement at the distance away from each RSS such as typical 2000ft or varying dependent on the max coverage of each RSS. The Contractor shall document all test results in a test report. During any testing phase, the Government reserves the right to perform any of the Contractor performed inspections and tests to ensure solution conform to prescribed requirements.

5.12.2 Test Report. The Contractor shall provide a test report of the results of the testing accomplished under the test plan (Deliverable 07). The test results shall be reviewed upon test completion, and the Government shall sign the system test acceptance upon complete satisfaction that the system has passed all the required test procedures. The test results shall be included with the as-built documentation.

5.13 System Turnover. The Contractor shall provide all Configuration Management information and as-built documentation to the base POC in PDF format (Deliverable 02). Red-lined drawings are unacceptable. All network topologies in the Air Force are considered both sensitive and proprietary. The as-built documentation shall include but not limited to:

- Rack location/number/elevation and bay-face layout drawings and diagrams of the chassis/shelf/cabinet identifying installed cards, modules, equipment
- Tower/pole GPS coordinates, facility locations, power source facilities, cabling/power connections, floor plans
- Acoustic propagation/coverage map, detailed GV system diagram, logical RF network block diagram, equipment wiring diagram
- Engineering specifications, Equipment listing with serial/model numbers, manufacturer

specifications/instructions, maintenance procedures

- An inventory of any newly installed equipment and software, identification of test results, site-specific "as-built" engineering drawings, and a summary of any open items.
- Completed test results.

5.14 Final Acceptance/Project Completion. The final acceptance shall conclude upon successful completion and receipt of all deliverables. The Contractor shall notify the Government upon completion of all delivery order tasks. The CO and base will be the final signatory on the final acceptance form. The Government reserves the right to refuse final acceptance until all discrepancies and problems have been resolved to the satisfaction of the Government.

5.15 Logistics Requirements.

5.15.1 Warranty. The Contractor shall provide warranty services for workmanship deficiencies for a period of one year and OEM warranties for all installed equipment. All warranty periods shall start from the date of final acceptance of the installed system. The warranty services shall also include all break-fix support, field trips, telephone support, shipping costs, and 72-hour on-site technician support. The Contractor shall provide written procedures and required information (24/7 contact number) for warranty services in the final acceptance form or as an attachment to the final acceptance form at or prior to site acceptance. This information shall include, but is not limited to, written confirmation of the warranty period and phone numbers and contact information & procedures for technical support, troubleshooting assistance, and replacement of faulty equipment. The Contractor shall notify the base POC 90 days prior to warranty expiration.

5.15.2 Training. The Contractor shall provide and conduct on-site training for the GV system before the final acceptance (Deliverable 08). The contractor shall also provide additional training after the final acceptance. The training will not exceed more than twice in a calendar year or once on a semiannual basis. The training shall be instructor-led, classroom training, in lecture, demonstration, and performance formats. The training shall include all manuals or instruction materials appropriate to the curriculum. The Contractor shall provide DVD-ROM, soft copy, and/or hard copy of the training (Deliverable 08). The Government shall retain the right to duplicate and distribute the training materials for future training purposes. The on-site training for the base personnel shall include but not limited to:

- Operator/user focusing on daily operations
- Maintenance and troubleshooting performed at Tier-I level

5.15.3 Original Equipment Manufacturer (OEM) Manuals. The Contractor shall provide at least two (2) PDF copies of latest version of the OEM manuals for all equipment installed for this project with copyright releases (Deliverable 02). The manuals shall include practices/user guides, description, installation, test, operation, maintenance, etc. The Contractor shall not be responsible for existing equipment manuals.

5.15.4 Spares. Reserve.

5.15.5 Software Patching. The Contractor support shall include all OEM software patches and vulnerability fix solutions as provided by the OEM that occur during the course of the warranty period at no additional cost to the Government. Software patches shall be installed on-site and

shall not be permitted from a remote location.

5.15.6 Packaging, Handling, Storage, and Transportation. The Contractor shall be responsible for packaging, handling, storage, transportation, staging, and deployment of any equipment and materials provided as part of this project. The Contractor shall coordinate with the base POC to identify any necessary base support, such as laydown and storage areas and provide a plan to deliver all materials to the work site. The Contractor shall be responsible for equipment inventory. The contractor shall return all Government-furnished lay-down and storage areas to their original condition upon completion of the project. The Contractor shall be responsible for off-base disposal of residues and removed equipment IAW the base POC instructions and federal, local, and base environmental laws and regulations.

5.16 Deliverables. All deliverables are subject to the Government acceptance. They shall meet professional standards and the requirements set forth in this project. All deliverables shall be produced using recommended software tools/versions as accepted by the Government. The Contractor shall submit, including but not limited to, the following deliverables:

Deliverable	Data Item Title	**Data Item Title**	**Reference**
01	Ground Test Results		Para 5.2.3.4.2
02	As-Built Documentation	DI-DRPR-80151A/T	Para. 5.12.2, 5.13
03	Project Schedule	DI-MISC-81382/T	Para. 5.8

04	Status Report/ Quality Control Plan	DI-MGMT-80368A	Para. 5.7, 5.9
05	Meeting Minutes	DI-ADMIN-81505/T	Para. 5.9
06	Cutover/Test Plan	DI-NDTI-80566A/T	Para. 5.11, 5.12, 5.12.2
07	Acceptance/Test Report	DI-QCIC-80512	Para. 5.12.2
08	Training Plan	DI-ILSS-81070/T	Para. 5.15.2

6. GOVERNMENT-FURNISHED PROPERTY/EQUIPMENT/SERVICES. The Contractor shall coordinate to identify and ensure all requirements to be provided by the Government prior to implementation. The Government shall provide responsibilities, allied support, and furnished equipment as necessary, include but not limited to:

- Provide and reserve AC outlets and/or electrical utilities AC circuit as needed.

APPENDIX A. APPLICABLE DOCUMENTS AND STANDARDS.

The Contractor shall comply with all military and commercial standards where applicable. Other commercial standards may apply to individual projects and will be stated in individual task orders. In the event of a conflict between a commercial document and a Federal or Military Standard, the Federal or Military Standard shall take precedence. It is the Contractor's responsibility to identify and obtain applicable standards proposed for the project in the SOW.

The following tables are not all inclusive lists of standards. The contractor shall obtain and comply with any other applicable manuals not identified in these tables that would be required to meet industry standards.

Table A-1. Federal Government Standards

NUMBER	TITLE	WEBSITE
OSHA	Occupational Safety and Health Administration (OSHA)	http://www.osha.gov
OSHA CFR 29 Part 1910-268 - (1988)	Telecommunications	
EPA	Environmental Protection Agency: EPA Rules, Regulations, and Legislation	http://www.epa.gov/
NIST	National Institute of Standards and Technology Documents	https://www.nist.gov
eCFR	Code of Federal Regulations	https://www.ecfr.gov/
FEMA	Federal Emergency Management Agency	https://www.fema.gov
DODD 5220.22	DOD Industrial Security Program Directive	
DOD JTA ver. 4	Department of Defense Joint Technical Architecture	

AFI 31-101	The Air Force Installation Security Plan	
AFI 11-2E-4B, Yol 3	AFGSC NAOC E-4B Operation Procedure	
AFI 10-207	AF Command Post - Operations	

Table A-2. Military Standards

NUMBER	TITLE	WEBSITE
DSP	Military Standards, Specifications, and Regulations	https://www.dsp.dla.mil/
DISA	Defense Information Systems Agency	https://disa.mil
AF Publishing	Air force Publications and Forms Center	https://www.e-publishing.af.mil/
MIL-STD-188-154A	Subsystem, Equipment, and Interface Standards for Common Long Haul and Tactical Telecommunications Control Facilities	
MIL-STD-188-124B	Grounding, Bonding and Shielding for Common Long Haul/Tactical Communications Systems	
MIL-HDBK419A, Vol. I and II	Grounding, Bonding, and Shielding for Electronic Equipments and Facilities	
MIL-HDBK-232A	Red/Black Engineering Installation Guidelines	
MIL-HDBK-4118	Power and the Environment for Sensitive DoD Electronic Equipment	
AFI 32-1065	Grounding Bonding and Shielding for Electronic Equipment and Facilities	
AFI 91-203	Air Force Consolidated Occupational Safety Instruction	
MIL-HDBK-1857	Grounding, Bonding and Shielding Design Practices	
MIL-HDBK-454B	General Guidelines for Electronics Equipment	
Local Standards	White AFB Construction Standards	

Table A-3. Commercial Standards and Manuals

NUMBE	TITLE	WEBSITE
ANSI	American National Standards Institute	http://www.ansi.org/
EIA	Electronic Industries Association Standards	http://www.eia.org/
IEEE	Institute of Electrical and Electronics Engineers Standards	http://www.ieee.org/
ISO	International Organization for Standardization	https://www.iso.org
INCITS	Inter-National Committee for Information Technology	http://www.ncits.org/
ITU	International Telecommunication Union	https://www.itu.int/
WBDG	Whole Building Design Guide	http://www.wbdg.org
NEMA	National Electrical Manufacturer Association	https://www.nema.org
NENA	National Emergency Number Association	https://www.nena.org
TIA	Telecommunications Industry Association	http://www.tiaonline.o
BICSI	Building Industry Consulting Services International	https://www.bicsi.org
BICSI TDM Manual	Building Industry Consulting Service International, Inc. (BICSI) Telecommunications Distribution Methods (TDM) Manual	
NFPA 70	National Fire Protection Association, National Electric Code	
NFPA 72	National Fire Alarm Code	
EIA/ECA-310-E	Cabinets, Panels, Racks, Sub-racks, and Associated Equipment	

TIA-526-7	Measurement of Optical Power Loss ofInstalled Single-mode Fiber Cable Plant	
TIA-526-14-B	Optical Power Loss Measurement of Installed Multimode Fiber Cable Plant	
ANSI/TIA 568.0-C	Generic Telecommunications Cabling for Customer Premises	
ANSI/TIA-568.1-D	Commercial Building Telecommunications Cabling Standard	
ANSI/TIA-568.2-D	Balanced Twisted-Pair Telecommunications Cabling and Components Standard	
ANSI/TIA-	Optical Fiber Cabling Components Standard	
ANSI/TIA 569-B	Commercial Building Standard for Telecommunications Pathways and Spaces	
TIA-570-B	Residential Telecommunications Infrastructure Standard	
TIA-598-C	Optical Fiber Cable Color Coding	
ANSI/TIA-606-B-	Administration Standard for the Telecommunications Infrastructure of Commercial Buildings	
TIA/EIA-607 (2002)	Commercial Building Grounding and Bonding Requirements for Telecommunications	
TIA-758-A	Customer-owned Outside Plant Telecommunications Infrastructure Standard	
ANSI/TIA 942	Telecommunications Infrastructure Standard for Data Centers	
ANSI/NECA/ BICSI-002	Data Center Design and Implementation Best Practices	
RUS Bulletin	Electrical Protection Fundamentals	
RUS Bulletin 1753F-201	RUS Standard for Acceptance Tests and Measurements of Telecommunications Plant	
RUS Bulletin 1753F-207	REA Specification for Terminating Cables	
UL48	Standard for Electric Signs	
UL 1638	Visible Signaling Devices for Fire Alarm and Signaling Systems, Including Accessories	
UL 1971	Standard for Signaling Devices for the Hearing Impaired	
UFC 4-021-01	Design and O&M: Mass Notification Systems	
UFC 3-520-01	Interior Electrical Systems	
UFC 3-535-01	Visual Air Navigation Facilities	
UFC 3-560-01	Operation And Maintenance: Electrical Safety	

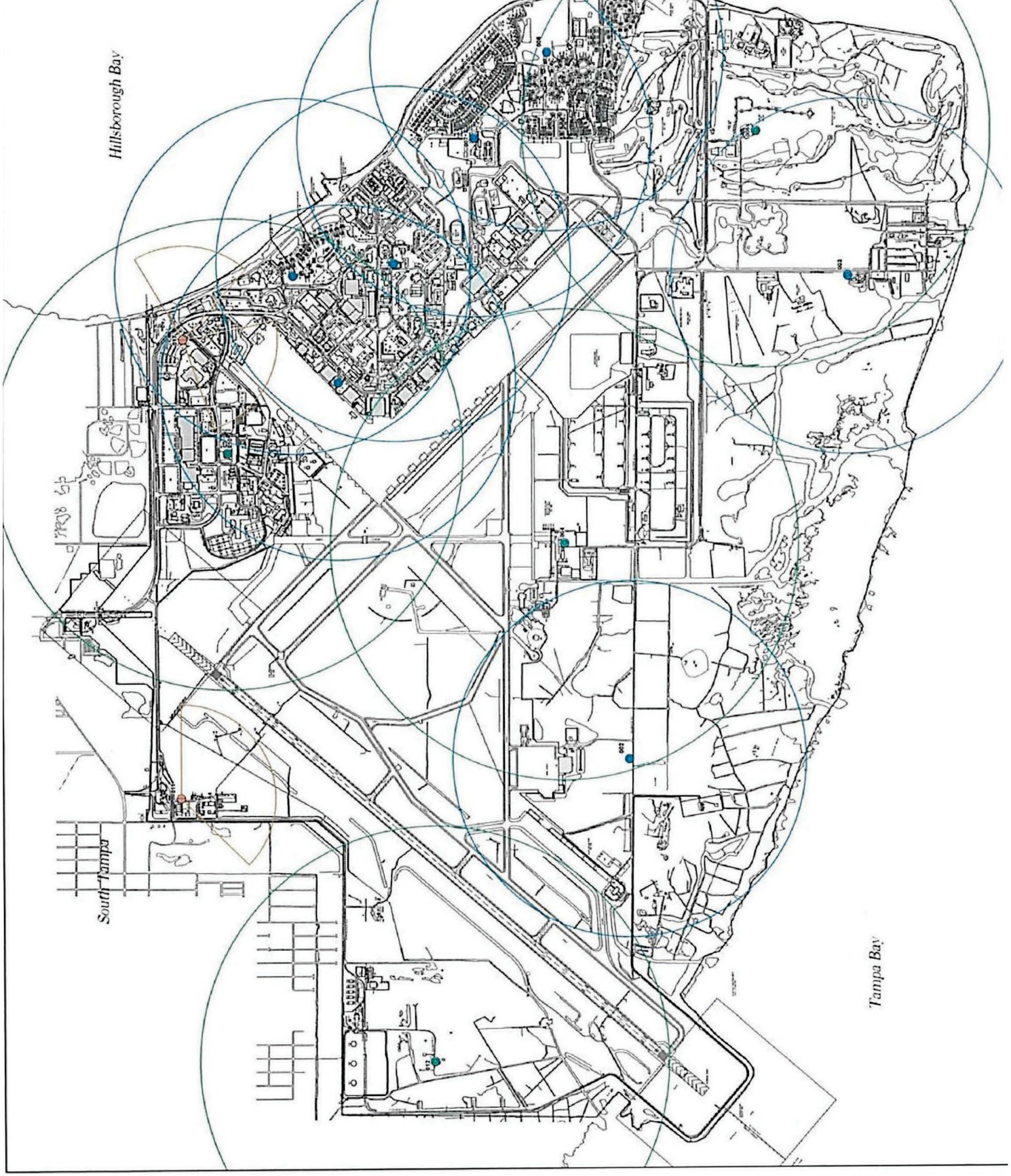

Figure C-1. MacDill AFB Intelligible Voice Coverage Requirement