MANAGING HIGH FREQUENCY RADIOS, PERSONAL WIRELESS COMMUNICATION SYSTEMS, AND THE MILITARY AFFILIATE RADIO SYSTEM

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This instruction implements Air Force Policy Directive (AFPD) 33-1, *Command, Control, Communications, and Computer (C4) Systems*; Defense Information Systems Agency (DISA) Circular 310-70-79, *MYSTIC STAR Network Management Manual and Users Guide*, and Department of Defense (DoD) Directive 4650.2, *Military Affiliate Radio System (MARS),* January 26, 1998. It identifies responsibilities to implement and support Air Force high frequency (HF) radio, Personal Wireless Communication Systems (PWCS), and MARS. Refer technical questions concerning PWCS to Headquarters Air Force Communications Agency (HQ AFCA/GCLV), 203 W. Losey Street, Room 3065, Scott AFB IL 62225-5222; questions concerning MARS and HF to HQ AFCA/GCWM; and questions concerning MYSTIC STAR to Headquarters Air Mobility Command (HQ AMC/SCP), 203 W. Losey Street, Room 3180, Scott AFB IL 62225-5223. Send recommended changes or comments to HQ AFCA/ITPP, 203 W. Losey Street, Room 1100, Scott AFB IL 62225-5222, through appropriate channels, using AF Form 847, **Recommendation for Change of Publication**, with an information copy to HQ AFCA/GCLV. See **Attachment 1** for a glossary of references and supporting information. Maintain and dispose of records created as a result of prescribed processes in accordance with Air Force Manual (AFMAN) 37-139, *Records Disposition Schedule* (will become AFMAN 33-322, Volume 4). The *Paperwork Reduction Act* (44 United States Code [U.S.C.] 3501 et seq.) and Air Force Instruction (AFI) 33-360, Volume 2, *Forms Management Program*, affect this publication.

SUMMARY OF REVISIONS

This document is substantially revised and must be completely reviewed.

Section B changes specific responsibilities for managing PWCS assets at the major command (MAJCOM), base, and unit levels, to include requirements processing, validation and handling procedures for classified and unclassified PWCS devices, inventory accountability and reporting actions and training.

Section A—Managing High Frequency Systems

1. United States Air Force High Frequency Systems . All organizations identified in this section coordinate HF requirements and solutions so that radio systems and networks actively support the users.

   1.1. Headquarters United States Air Force (HQ USAF/XOR) oversees the documentation and validation of USAF operational requirements for HF communications systems and PWCS in accordance with AFI 10-601, *Mission Needs and Operational Requirements Guidance And Procedures.*

   1.2. HQ USAF/SCM directs the development, operation, and maintenance of USAF HF systems and networks.

   1.3. HQ AMC/SCP:

      1.3.1. As High Power HF Lead Command, develops the USAF High Power HF policies and procedures.

      1.3.2. Recommends, analyzes, and approves systems, operations, and maintenance support methods for High Power systems.

      1.3.3. Identifies, reviews, and tracks all USAF High Power HF technical requirements.

      1.3.4. Facilitates global and regional networking standards.

   1.4. HQ AFCA/GCWM:

      1.4.1. Develops USAF HF architecture, standards, policies, and procedures for the Global Communications System-HF.

      1.4.2. Approves systems, operations, and maintenance support methods for the Global Communications System-HF.

2. The Global Communications System - HF . This system consists of 14 HF stations around the world providing worldwide communications to all DoD aircraft, ships, and ground agencies on a shared by priority basis.

   2.1. The system supports:

      2.1.1. Command and control, special purpose, contingency air-ground-air, and Navy ship-to-shore communications. Neither the system nor individual stations are dedicated to any service, command, or other activity.

      2.1.2. Authorized users according to established traffic precedence.

   2.2. The Global Communications System - HF Manager (HQ AFCA/GCWM):

      2.2.1. Establishes a single set of Air Force procedures for global HF system operations.

      2.2.2. Reviews and implements MAJCOM-level recommendations for changes to the Air Force Global HF System procedures.

      2.2.3. Coordinates the mission requirements of HF system users with appropriate MAJCOM plans/programs, operations, and requirement directorates.

      2.2.4. Answers requests for intercommand and interservice special communications support.

      2.2.5. Evaluates Global HF system network performance.

2.2.6. Accompanies MAJCOM HF managers on staff visits to evaluate operations, equipment use, and system integrity.

2.3. The MAJCOM HF managers within the Air Combat Command, Air Mobility Command, Air Force Materiel Command, Pacific Air Forces, United States Air Forces in Europe, Air Force Space Command, United States Navy High Command (HICOM - USN HF/SSB Communications Network), and MYSTIC STAR:

2.3.1. Oversee operations of assets under their control.

2.3.2. Match employees and equipment to job requirements.

2.3.3. Evaluate training, operations, and equipment use.

2.3.4. Coordinate publication creation and production.

3. MYSTIC STAR System . This is a worldwide communications system, operated and maintained by elements of the United States Army, United States Navy, and United States Air Force under the control of the DISA Operations Center. Its network provides worldwide communications by directly controlling radio equipment located at Global HF system stations. It consists of ultra high frequency satellite and HF networks supporting Presidential, special air, commanders-in-chief, Joint Staff, very important persons, and command airborne missions.

3.1. The MYSTIC STAR HF Network consists of:

3.1.1. A single master net control station (MNCS) located at Andrews AFB MD.

3.1.2. Interstation and intersite circuits.

3.1.3. Relay and auxiliary communications subsystems.

3.2. HQ AMC/SCP:

3.2.1. Oversees the life-cycle management of the MYSTIC STAR Network.

3.2.2. Develops system architecture, network policy, and guidelines in conjunction with DISA.

3.2.3. Oversees the activities of the MYSTIC STAR Ops-Tech Manager's Office.

3.2.4. Manages the life cycle, future planning, programming, and budgeting of MYSTIC STAR elements from a system perspective.

3.3. The MYSTIC STAR Operations Technical Manager:

3.3.1. Operates from the 789th Communications Squadron (789 CS/SCP), 1558 Alabama Ave, Suite 67, Andrews AFB MD 20762-6116.

3.3.2. Directly interfaces with the MYSTIC STAR users.

3.3.3. Evaluates system facilities.

3.3.4. Assesses network performance.

3.3.5. Compares performance trends to established standards.

3.3.6. Recommends improvements to criteria, documentation, or performance.

3.3.7. Works with personnel on all plans for operating, maintaining, managing, controlling, and configuring the network.

3.3.8. Recommends budgets for network operations.

3.3.9. Reports the operational status, performance status, or limitations of the network to HQ AMC/SCP.

3.3.10. Implements plans and special system configurations.

3.4. The Commander, 89th Communications Group:

3.4.1. Manages, operates, and evaluates the MNCS according to DISA Circular 310-70-79.

3.4.2. Gives network status updates to the MYSTIC STAR system manager through the operations technical manager.

3.4.3. Provides facility, administrative, and logistical support for the MNCS.

Section B—Managing Personal Wireless Communication Systems

4. Managing Personal Wireless Communication Systems (PWCS) .

4.1. Wireless Service. User centric wireless services are inherently non-core services, unless the wireless service is mandated "core" by MAJCOM or higher authority (e.g., the decision to migrate an entire wing/base Land Mobile Radio (LMR) system to a trunked infrastructure requires both MAJCOM and National Telecommunications and Information Administration [NTIA] approval prior to implementation). Wing/Base responsibility for providing core wireless services is normally limited to the infrastructure items required to operate the system. Funding responsibility for acquisition, operation and maintenance of individual mobile wireless devices (e.g., hand carried or vehicular) normally remains with the requiring/using organization. Prior to funding, authorization to use government frequencies must be obtained through the Spectrum Certification Process in accordance with AFMAN 33-120, *Radio Frequency (RF) Spectrum Management. **NOTE:*** Federal Communications Commission (FCC) Code of Federal Government Regulations, Title 47, Part 15, devices are not governed by this AFI.

4.2. The HQ USAF/SCMN is the Air Force focal point for developing PWCS policy.

4.3. HQ AFCA/GCLV:

4.3.1. Is the day-to-day Air Force PWCS Manager.

4.3.2. Provides the Air Force a single point of contact for HQ USAF, MAJCOMs, vendors, and other parties to improve PWCS support and formulate policy changes for HQ USAF review and approval.

4.3.3. Monitors PWCS technological advances and changes to identify the types of PWCS that best satisfies Air Force wartime and peacetime operational mission requirements. Evaluates practical improvements in PWCS support that enhance operational mission performance, offer significant savings in personnel or operating costs, and/or provide other benefits.

4.3.4. Reviews MAJCOM provided audit information, identifies patterns and trends with Air Force-wide applicability, and crossfeeds that information to all MAJCOMs.

4.3.5. Manages the Air Force PWCS inventory Tracking and Reporting software (TRS). HQ AFCA/GCLV must review and approve all proposed software upgrades and/or modifications prior to their implementation.

4.4. MAJCOMs:

4.4.1. Appoint a command-level PWCS manager. Send the name, rank, Defense Switched Network number, and e-mail address to HQ AFCA/GCLV within 15 days of their appointment.

4.4.2. MAJCOM's with bases located within the United States and Possessions (US&P) must comply with the NTIA narrowband mandates through acquisition of narrowband capable equipment and/or alternative communications services, or by obtaining the required waivers prior to the effective dates.

4.4.2.1. After 1 January 2005, all Federal-owned/leased LMR systems in the 162-174 megahertz (MHz) band, operating within the US&P, must conform to the narrowband standards listed in the NTIA *Manual of Regulations and Procedures for Federal Radio Frequency Management*. The effective date for the 138-150.8 and 406.1-420 MHz bands to conform to the NTIA narrowband standards is 1 January 2008. Do not use wideband equipment operating in these bands within the US&P after these dates without first obtaining a location-specific waiver from the NTIA.

4.4.3. MAJCOM PWCS and Spectrum Managers should coordinate their activities to ensure compliance with the LMR narrowbanding mandates of any sovereign nations hosting U.S. Forces.

4.4.4. Prepare supplements to this instruction, if needed, to accommodate MAJCOM unique operational, procedural and/or policy requirements.

4.5. MAJCOM PWCS Managers:

4.5.1. Newly appointed PWCS Managers should complete PWCS Manager Training, using the Air Education and Training Command (AETC) approved training materials, within 180 days of their appointment.

4.5.2. Use the current version of the Air Force Standard PWCS inventory TRS to manage their command's reportable PWCS assets. Paragraph **4.8.3.** describes PWCS assets reportable in the TRS.

4.5.3. Consolidate command base-level TRS data and provide a copy of the data to HQ AFCA/ GCLV not later than 1 August. Managers should review base-level inputs and provide feedback to field units on the accuracy of their data. The reporting requirements in this paragraph and paragraph **4.7.10.3.** are exempt from licensing according to AFI 33-324, *The Information Collections and Reports Management Program; Controlling Internal, Public, and Interagency Air Force Information Collections*.

4.5.4. Review MAJCOM and command base-level PWCS audit information. Identify base-level deficiency patterns and trends with command-wide applicability and crossfeed that information to field units for inclusion in their base-level crossfeed programs. Provide a copy of MAJCOM and command base-level audit reports to HQ AFCA/GCLV.

4.5.5. Evaluate base-level PWCS audit deficiency corrective actions and make sure procedural controls are in place to prevent a reoccurrence.

4.5.6. Crossfeed surplus base-level PWCS equipment lists and requests for equipment assistance to their command bases and other MAJCOMs, if needed. Unserviceable items or items that have accumulated 100 or more replacement points under the "Five Year Replacement Plan" are exempt from this requirement.

4.6. The Base Communications and Information Systems Officer (CSO):

4.6.1. Coordinates management of PWCS assets for the installation commander.

4.6.2. Appoints, in writing, the base-level primary and alternate PWCS managers.

4.6.3. Makes sure newly appointed PWCS managers complete PWCS Manager Training, using the AETC approved training materials, within 180 days of their appointment.

4.6.3.1. If PWCS manager training materials are unavailable for use within the initial 180-day appointment period, contact the MAJCOM PWCS manager to obtain guidance on available alternate training options (staff assistance visits, MAJCOM qualification training packages, computer-based training, etc.).

4.6.4. Appoints a PWCS Quality Assurance Evaluator to monitor any associated PWCS maintenance contracts.

4.6.4.1. Refers to AFI 63-124, *Performance-Based Service Contracts (PBSC)*, regarding the duties and responsibilities of the Quality Assurance Evaluator.

4.6.5. Ensures annual reconciliation of any PWCS maintenance service contract with the PWCS data inventory TRS. Accomplish reconciliation 30-60 days prior to contract/option award date, if applicable.

4.6.6. Annually reviews and validates the PWCS Five-Year Replacement Plan.

4.6.7. Provides a copy of the validated PWCS Five-Year Replacement Plan to using organizations to aid them with their budget planning decisions.

4.6.8. Evaluates PWCS audit report corrective actions and ensures implementation of procedural controls to prevent a reoccurrence. Reviews and crossfeeds audit information to the host MAJCOM.

4.7. Wing/Base PWCS Manager:

4.7.1. Sends a copy of the base PWCS manager appointment letter to the MAJCOM PWCS manager.

4.7.1.1. Newly appointed PWCS managers should complete PWCS Manager Training within 180 days of their appointment.

4.7.2. Provides technical solutions for PWCS functional requirements identified in base-level AF Form 3215, **C4 Systems Requirements Documents**, in accordance with AFI 33-103, *Requirements Development and Processing*.

4.7.2.1. Makes sure all organizational PWCS requirements are analyzed and evaluated using an appropriate PWCS Decision Matrix, such as **Attachment 2**.

4.7.2.2. Requirement Processing and Risk Certification.

4.7.2.2.1. If the using organization identifies a functional requirement to communicate sensitive unclassified or classified information, a completed operations security (OPSEC) analysis document and certification of risk acceptability (see AFI 10-1101, *Operations Security*) must accompany the original Requirements Document.

4.7.2.2.2. Duplicate OPSEC analysis and certification of risk acceptability documents

may be used when base using organizations identify substantially similar functional requirements.

4.7.2.2.3. The CSO reviews the completed package and recommends whether the requiring commander should accept the risk and fund the requirement. The CSO should not delegate this review and decision-making process to a subordinate.

4.7.2.2.4. CSOs or their designated representatives retain the original requirements document and the attached OPSEC analysis for all implemented requirements on file.

4.7.2.2.5. All cellular telephone (CT)/personal communication service (PCS)/enhanced specialized mobile radio (ESMR)/wireless personal digital assistant (PDA) requirements and any associated OPSEC analysis and certification of risk acceptability documents should be reviewed and recertified annually by the requiring organization commander, the Wing/Base OPSEC manager, and the CSO.

4.7.2.2.6. If the annual review indicates that the functional requirement remains unchanged while the level of risk has increased, but not beyond an acceptable level, prepare a revised OPSEC analysis and include it with the original document package.

4.7.2.2.7. If the annual review indicates that the functional requirement remains unchanged, but the risk is no longer acceptable without encryption and a National Security Agency (NSA)-approved encryption device cannot be obtained, the using organization should discontinue using the noncompliant device until an appropriate device can be acquired.

4.7.3. Maintains a PWCS continuity folder. See **Attachment 3** for a suggested list of items.

4.7.4. Proposes NSA-approved devices for PWCS technical solutions requiring communications security (COMSEC) or data encryption according to standards of the National Institute of Standards and Technology (NIST) and Federal Information Processing Standard (FIPS) Publication 140-1, *Security Requirements for Cryptographic Modules.* (See also AFI 33-201, (FOUO) *Communications Security [COMSEC].*)

4.7.4.1. Coordinates all technical solutions for COMSEC-equipped PWCS devices with the wing/base COMSEC account manager and the requiring/owning unit COMSEC Responsible Officer (CRO). The COMSEC account manager and CROs acquire and manage COMSEC materials needed for PWCS devices containing NSA-approved encryption modules and provide COMSEC training to users. See AFKAG-1, *(FOUO) Air Force Communications Security (COMSEC) Operations*, AFI 33-201, AFI 33-211, *Communications Security (COMSEC) User Requirements*, and AFI 33-230, *Information Protection Assessment and Assistance Program*, for guidance.

4.7.4.2. Verifies TRS reportable, COMSEC-equipped, wing/base PWCS assets are being maintained according to AFI 21-109, *Communications Security (COMSEC) Equipment Maintenance and Maintenance Training*; AFSSI 4001, *Controlled Cryptographic Items*; and FSAL/ National Telecommunications Information System Security Instruction (NTISSI) 3005, *Safeguarding and Control of Data Encryption Standard (DES) Equipment and Associated Unclassified Communications Security Aids*.

4.7.4.3. For specific guidance on COMSEC issues relating to wireless operations outside the US&P, contact the appropriate MAJCOM Information Assurance authority. If interoperability

with any host nation is required, at either the Unclassified or Sensitive but Unclassified (SBU) level, Air Force units may use wireless equipment provided by that host nation, if the appropriate MAJCOM information protection authority approves the requirement and the host nations technical solution.

4.7.5. Verifies all TRS reportable, COMSEC-equipped, PWCS devices are zeroized or the encryption module removed prior to turning them over to an authorized maintenance contractor for repair or turn in to base supply for disposal.

4.7.6. Makes sure of complete demilitarization of all TRS reportable PWCS devices before being turned in to supply for disposal. Remove unit designations, call signs, operational procedures, codes, controlled cryptographic item (CCI) devices, frequency crystals, and other information that might compromise military operations. Reset frequencies and codes to default or generic settings in programmable radios.

4.7.6.1. Place the following statement, signed by the wing/base PWCS manager, on the DD Form 1577, Unserviceable (Condemned) Tag-Materiel, "Per DoD Manual 4160.21-M-1, I certify that demilitarization has been accomplished. Material is saleable-quality scrap." Excess channel elements or other parts may be retained for future use or turned in according to AFMAN 23-110, Volume 2, Part 13, *Standard Base Supply Customer's Procedures*.

4.7.7. When the most appropriate technical solution for a base-wide, non-deployable communications mission is a new Trunked LMR (TLMR) system, the PWCS manager assists the installation Spectrum manager in preparing a TLMR conversion plan for the new TLMR requirements. The format used for this plan is in the NTIA Manual (for requirements within the US&P). TLMR requirements identified outside the US&P use the guidelines provided under the applicable host nation agreement.

4.7.7.1. In either case, coordinate the proposed technical solution with the installation spectrum manager. Process a formal application for authorization to migrate to a TLMR system through the MAJCOM Spectrum Management Office and the Air Force Frequency Management Agency (AFFMA). Either the NTIA Spectrum Management Office (within the US&P), or the host nation spectrum management authority must approve the application before acquiring any TLMR equipment.

4.7.7.2. Once a TLMR system has been installed on a base located in the US&P, submit an annual TLMR usage report through the MAJCOM Spectrum Management Office, in accordance with the guidelines provided in the NTIA Manual.

4.7.8. Coordinates PWCS technical solutions with the Installation Spectrum Manager as needed.

4.7.8.1. Coordinates all third party requests for temporary or permanent unit talk group frequency access with the installation Spectrum manager and the using unit PWCS manager.

4.7.8.2. Obtain host nation spectrum assignments/coordination prior to PWCS deployment. Allow for lead-time constraints in accordance with AFI 33-118, *Radio Frequency Spectrum Management*.

4.7.9. Refers requirements calling for the use of intrinsically safe LMR (ISLMR) equipment to the Base Fire Marshall and Base Safety office for processing through command safety channels. The command safety office determines the validity of the requirement and authorizes local acquisition.

4.7.9.1. PWCS managers may participate in the development of local ISLMR operational procedures with the base safety office when necessary.

4.7.10. Uses the current version of the TRS to manage reportable PWCS assets (include assets assigned to host, tenant, and geographically separated units). Ensure only authorized equipment-type standard designators (see **Attachment 4**, **Table A4.1.**) are used when entering equipment into the TRS. HQ AFCA/GCLV must approve any changes to the equipment-type standard designators.

4.7.10.1. Performs an annual inventory of all reportable base-level (host, tenant, and direct reporting units) PWCS equipment. *EXCEPTION*: Air Force Reserve and/or Air National Guard tenant units may report their PWCS inventory data directly to their respective command PWCS managers.

4.7.10.2. Provides using organizations with a copy of the last annual inventory report for reconciliation not later than 1 June each year, before a change in unit PWCS managers, or when requested by the unit commander.

4.7.10.3. Updates the TRS database to reflect inventory changes, then completes the TRS MAJCOM export routines. Completes export routines each calendar year. Sends the export routines to the MAJCOM PWCS manager not later than 11 July.

4.7.10.4. Retains a copy of latest using organization PWCS inventory list, signed and validated by the unit PWCS manager and supervisor/commander, for at least one year.

4.7.11. Trains unit PWCS managers. Initial training should occur as soon as possible but not later than 60 days after the unit PWCS manager has been assigned. Accomplish refresher training annually. See **Attachment 5** to conduct unit PWCS manager training.

4.7.11.1. Maintains a PWCS point of contact listing for all units with TRS reportable base-level assets. Validate listing at least once a year.

4.7.12. Briefs unit PWCS managers annually on the monitoring consent requirements outlined in AFI 33-219, *Telecommunications Monitoring and Assessment Program (TMAP)*.

4.7.13. Crossfeeds surplus PWCS equipment lists and requests for equipment assistance to unit PWCS managers and the MAJCOM PWCS manager. Unserviceable items or items that have accumulated 100 or more replacement points under the Five Year Replacement Plan are exempt from this requirement.

4.7.14. Performs limited maintenance on PWCS devices when such actions are beneficial to the Air Force and not specifically prohibited under the terms of an existing maintenance contract.

4.7.15. Conducts a review of mission requirements, cost of tools, test and support equipment, repair parts stock, facilities, training, and personnel prior to establishing an organic maintenance capability. Full organic maintenance usually far exceeds the cost of "as-required" or contractor maintenance.

4.8. Air Force Standard PWCS TRS:

4.8.1. The TRS is the only authorized Air Force inventory control software for PWCS assets.

4.8.2. Base and MAJCOM-level TRS users must comply with DoDD 5000.1, *The Defense Acquisition System*, October 23, 2000; DoD 5000.2-R, *Mandatory Procedures for Major Defense*

Acquisition Programs (MDAPs) and Major Automated Information System (MAIS) Acquisition Programs, March 1996, with changes 1, 2, 3, and 4; and AFIs 33-104, *Base-Level Planning and Implementation*; and 33-112, *Computer Systems Management.*

4.8.2.1. TRS users are not authorized to modify the software configuration. Submit suggested modifications to HQ AFCA/GCLV through the MAJCOM PWCS manager.

4.8.3. The following systems/devices are reportable in the TRS:

4.8.3.1. Land mobile radios.

4.8.3.2. CT/PCS/ESMR/Pagers/wireless PDAs with CCI modules/attachments.

4.8.3.3. Intra-Squad Radios (ISR) operating in the 380-399.9 MHz band (see **Table A2.1.**).

4.8.3.4. Air Force-owned paging system base station transmitters.

4.8.4. Do not report cellular telephones, pagers, wireless PDAs and other alternative communication devices costing less than $500.00 (e.g., Family Radio Service [FRS] radios) in the TRS, unless they are equipped with CCI modules/attachments. The using organization is responsible for management and tracking these low cost alternative assets, as necessary (see paragraph **4.12.2.1.**). PDAs will be accounted for using Information Management Processing System in accordance with AFI 33-112.

4.9. CT/PCS/ESMR Systems:

4.9.1. CT/PCS/ESMR systems may be subject to overload and user lockout during emergencies (fires, floods, earthquakes, etc.) and at peak operating times. Dual mode digital CTs will default back to analog operation whenever digital cell site signal strength is lost or when operating in analog only CT system areas.

4.9.2. CT/PCS/ESMR assets and service acquired through base-wide, regional and/or national contracts often reduce the owning units operating and maintenance costs. Assign users with high roaming requirements to CT/PCS/ESMR contracts appropriate to their roaming needs (i.e., regional, national, or worldwide). Compare options for lease/purchase and integrated instrument air time contracts to airtime only contracts prior to making final acquisition decisions. Base this evaluation on total estimated life-cycle costs including expected equipment life versus the pace of technology upgrades, scheduled and unscheduled replacement, maintenance support, etc.

4.9.3. The analog cellular version of the Secure Telephone Unit-III (STU-III) is out of production. Existing cellular STU-III assets will continue to receive encryption key support from the NSA central facility until FY05.

4.9.3.1. Recommend migrating to newer NSA-approved secure (e.g., Future Narrowband Digital Terminal) capable CT/PCS/ESMR, where available.

4.9.4. Dual-Number Capable Cellular Telephones (CT).

4.9.4.1. Local PWCS managers may issue dual-number capable CTs to personnel whose official duties require them to be immediately accessible to organizational elements such as command posts and operational centers, regardless of the individuals proximity to a wireline telephone, on a 24 hour-per-day, 7 day-per-week basis.

4.9.4.2. Issue the CT with only the primary number activated and billable to a government account. Refer to AFI 33-111 for policy and guidelines for government-owned wireless tele-

phone billing.

4.9.4.3. Activation of the secondary number capability is at the option of the CTs authorized end user.

4.9.4.4. Activation of a dual-number capability is not permitted on secure CTs.

4.9.4.5. Local PWCS managers will make sure all personnel issued dual-number capable CTs are briefed regarding their personal liability for all costs associated with the activation and use of the secondary number to establish a "personal account." These costs include, but are not limited to: activation fees; monthly recurring charges; long distance, roaming, excess minutes and other airtime fees; maintenance and insurance fees; and any charges/fees resulting from misuse of a government-owned instrument or resulting from an individual's failure to cancel the personal account, when the CT is no longer authorized for use.

4.9.4.6. Authorized end user of a government-owned, dual-number capable CT:

4.9.4.6.1. Shall sign an agreement, produced in accordance with MAJCOM Judge Advocate and Contracting office guidance, that contains appropriate "hold harmless" and "personal liability" clauses, prior to being issued a dual-number capable CT, without regard to whether the user elects to immediately activate the secondary number capability or not.

4.9.4.6.2. If a secondary number is activated, the user must make sure all bills associated with the personal account are mailed directly to the user's home address or post office box.

4.9.4.7. When a CT is no longer required for the performance of duties, the user shall make sure that the personal account is closed and the secondary number zeroized by the vendor, prior to returning the CT to the local PWCS manager for reuse.

4.10. FRS and ISR Systems:

4.10.1. The FCC permits the unregulated use of FRS radios within the territorial limits of the fifty United States (U.S.), the District of Columbia, and the Caribbean and Pacific Insular areas (U.S.). FRS radios may be operated on or over any other area of the world, except within the territorial limits of areas where radio-communications are regulated by another agency of the U.S. or within the territorial limits of any foreign government.

4.10.1.1. FRS devices were intended for use by family, friends, and associates to communicate among themselves within a small area, or while on group outings. They may also be used for military-related (administrative) communications, provided they are not used for classified, SBU, command and control, operational, fire/crash, security and/or emergency response/medical communications (see **Table A2.1.**). FRS units are not designed to make telephone calls. No FCC controlled FRS frequency channels can be assigned to any specific individual or organization. The 14 commercial FRS channels may be used only on a "take turns" basis.

4.10.1.2. ISR radios are nearly identical to FRS radios. They operate on 14 channels that located in the 380-399.9 MHz band (396.875, 397.125, 397.175, 397.375, 397.425, 397.550, 397.950, 398.050, 399.425, 399.475, 399.725, 399.925 and 399.975 MHz). Since this band is set aside for use by the DoD, within the US&P, make application through your MAJCOM spectrum management office for use of this ISR spectrum, prior to equipment acquisition. Obtain host nation approval to use these 14 frequencies, if ISR radio operation is outside the US&P. As with its FRS counterpart, they may be used for military-related (administrative)

communications, provided they are not used for classified, SBU, command and control, operational, fire/crash, security and/or emergency response/medical communications (see **Table A2.1.**).

4.11. Wireless Personal Digital Assistants (PDA).

4.11.1. PDAs (e.g., Palm Pilot®, Cassiopeia® or Blackberry™) that are designed solely for use as automated data processing equipment are subject to Air Force policy and guidance governing management, use, and security of desktop and notebook computer systems. (See AFI 33-202, *Computer Security* and AFI 33-112.)

4.11.2. Hybrid PDAs designed as multi-functional voice and data wireless communications-computer devices with CCI modules/attachments will be managed by the local PWCS manager and entered into the TRS database in accordance with the guidance in paragraph **4.8.**

4.12. Using Organizations:

4.12.1. Commander or Designated Representative:

4.12.1.1. Appoints, in writing, a primary and alternate unit PWCS manager.

4.12.1.2. Budgets for the payment of all bills relating to the acquisition, operation (including cellular "air time" charges) and maintenance of their unit PWCS equipment. AFI 33-111, *Telephone Systems Management*, outlines billing procedures associated with the acquisition and operation of CT/PCS/ESMR devices.

4.12.1.3. Annually revalidates all unit-owned, PWCS assets with the CSO to determine if existing equipment meets known unit mission requirements.

4.12.2. Using organizations are normally responsible for the costs (lease or purchase price, maintenance costs, connection fees, monthly access fees, airtime fees, etc.) associated with the acquisition, use, and maintenance of all CT/PCS/ESMR/wireless PDA devices acquired for their unit's official use. EXCEPTION: Centralized service/maintenance contracts may be established that permit budgeting/billing for service/maintenance actions through a designated base unit/agency (see AFI 33-111). Address all questions regarding International Merchant Purchase Authorization Card (IMPAC) usage for commercial services to base contracting offices.

4.12.2.1. Manages and tracks all low cost, alternative communications systems/devices not reportable in the TRS, as necessary (see paragraph **4.8.4.**).

4.12.3. Unit PWCS Manager:

4.12.3.1. Sends a copy of the unit PWCS manager appointment letter to the base PWCS manager.

4.12.3.2. Performs an inventory of TRS reportable PWCS equipment during the month of June each year (for reconciliation with the base PWCS manager's TRS inventory), before a change in unit PWCS managers, or when requested by the unit commander. Paragraph **4.8.3.** identifies reportable PWCS equipment.

4.12.3.3. Signs for the latest PWCS inventory list and routes document to commander or designated representative for validation. Sends a validated copy of the inventory list to the base PWCS manager. Retains a copy of the document for at least one year.

4.12.3.4. Pre-coordinates new/replacement PWCS requirements with the base PWCS man-

ager to ensure clearly defined unit requirements are compatible with planned and existing systems, and technically feasible. Accomplish this prior to preparing and submitting the AF Form 3215 or equivalent to the CSO.

4.12.3.5. Prepares requirements documents for all unit PWCS mission requirements, using functional terms, in accordance with AFI 33-103 and Air Force 23-series supply instructions. Multiple users within a unit with identical requirements may be covered by the same requirement document (e.g., a technical solution that establishes a unit LMR net with 10 users normally requires only one document). (See **Attachment 6** for PWCS radio deployment planning guidance.)

4.12.3.6. Makes sure excess TRS reportable equipment is turned over to the base PWCS manager for redisposition, salvage, or return to the contractor (leased equipment).

4.12.3.7. Inspects and performs operational checks on each PWCS equipment item before placing it into service (if new), removing it from service for maintenance, or returning it to service after maintenance.

4.12.3.8. Reports lost or damaged TRS reportable PWCS equipment to the base PWCS manager, equipment custodian, and to base contracting if equipment is leased. If AFMAN 23-220, *Reports of Survey for Air Force Property*, requires a report of survey or cash collection voucher, the unit PWCS manager provides an information copy to the base PWCS manager.

4.12.3.9. Makes sure spare PWCS equipment and ancillary items (10-20 percent recommended) are on hand to maintain normal day-to-day operations and unscheduled contingencies.

4.12.3.10. Manages the unit equipment maintenance process for TRS reportable PWCS.

4.12.3.11. Reports details of maintenance actions to the base PWCS manager when using unit IMPAC cards to obtain maintenance for TRS reportable assets.

4.12.3.12. Establishes written procedures for setting codes on unit-owned PWCS devices equipped with COMSEC modules.

4.12.3.13. Implements a unit-level customer education program, using training materials provided by the base PWCS manager (**Attachment 5**). Coordinates OPSEC and COMSEC training activities with base/unit OPSEC and COMSEC managers.

4.12.3.14. Briefs unit-level PWCS users on the monitoring and consent requirements outlined in AFI 33-219.

4.12.3.15. Briefs PWCS users on the proper use of PWCS equipment, to include OPSEC, transmission security and abuse as outlined in AFI 10-1101 and applicable local policies.

4.12.3.16. Makes sure all LMR assets being used to support Expeditionary Air Force and Humanitarian Relief Operations deployment and contingency missions in their units are identified to the base PWCS manager as candidates for conversion to Joint Tactical Radio System (JTRS) compliant equipment. Migration to JTRS compliant equipment will occur, as funds become available. (See **Attachment 6**.)

4.12.3.17. Manages and tracks unit-owned non-TRS reportable PWCS equipment, in accordance with guidance/instructions provided by the owning unit commander. Paragraph **4.8.4.**

describes the PWCS equipment considered not reportable under TRS.

Section C—Managing the Military Affiliate Radio System (MARS)

5. The MARS Mission . For a full statement, refer to DoDD 4650.2.

5.1. Using MARS provides:

5.1.1. Worldwide emergency communications.

5.1.2. Fixed and mobile communications that support the disaster preparedness program (AFI 32-4001, *Disaster Preparedness Planning and Operations*).

5.1.3. Point-to-point record data and voice communications that support personnel morale and welfare.

5.2. MARS consists of military and affiliate organizational elements.

5.2.1. The military element includes contingency MARS facilities.

5.2.2. The affiliate element consists of amateur radio operators and their stations. This element augments military capabilities and provides a volunteer reserve of stations and trained radio operators that support emergency communications and morale and welfare.

6. Responsibilities .

6.1. HQ USAF/SC develops MARS policy and provides overall guidance for the MARS program.

6.2. The Chief, USAF MARS (HQ AFCA/GCWM):

6.2.1. Manages the MARS program for HQ USAF.

6.2.2. Issues operating publications to MARS stations.

6.2.3. Represents HQ USAF on the DoD Joint MARS Chiefs Panel, National Communications System (NCS)-Shared Resources (SHARES) HF program, amateur radio conventions, and MARS conferences.

6.2.4. Coordinates with MARS chiefs from other services on matters requiring joint-service resolutions.

6.2.5. Coordinates with MAJCOMs:

6.2.5.1. To determine emergency and contingency communications requirements.

6.2.5.2. To answer MARS frequency requests.

6.2.6. Sends valid frequency requests to the AFFMA.

6.2.7. Develops and publishes guidelines and management procedures for MARS operations.

6.2.8. Assigns and manages MARS repeater frequencies according to AFI 33-118.

6.2.9. Establishes a management structure to administer the affiliate organization and control network operations using AF Form 3661, **MARS Personnel Action Notification**, and AF Form 3665, **Military Affiliate Radio System Certificate of Appointment**.

6.2.10. Appoints region and state MARS directors and other key affiliate officials.

6.2.11. Oversees the management of excess and surplus government property acquired for use in MARS through the MARS property accountable officer.

6.2.12. Responds to applications for MARS membership and issues AF Form 3666, **Military Affiliate Radio System Station License and Identification Card**.

6.2.13. Serves as Air Force liaison for amateur radio.

6.2.14. Controls and issues DD Form 2350, **Military Affiliate Radio System (MARS) Disaster Support Identification Card, DoD**.

6.2.15. Budgets for postage stamps for MARS regions.

6.2.16. Approves auxiliary MARS stations along with the host command.

6.2.17. Authorizes the affiliate to operate a MARS station by approving MARS application and issuing AF Form 3666.

6.2.18. Terminates affiliates who bring discredit upon themselves or MARS, or who fail to:

6.2.18.1. Abide by the publications and rules governing MARS.

6.2.18.2. Complete required MARS training.

6.2.18.3. Maintain minimum quarterly participation on established MARS radio nets as instructed by published management guidelines.

6.2.18.4. Maintain a current FCC amateur radio license.

6.2.18.5. Notify appropriate authorities of a change of address.

NOTE: Terminated affiliates must wait 2 years before requesting reinstatement in the MARS program. Affiliates that resign must wait 1 year before requesting reinstatement. (Waiting period may be waived for members resigning specifically to transfer to another service's MARS program.) Members terminated for extreme cause (for example, unbecoming conduct) must wait a minimum of 5 years before requesting reinstatement in any of the military services' MARS programs.

6.2.19. Grants termination waivers of affiliates for extenuating circumstances on a case-by-case basis.

6.2.20. Grants periods of inactive status to MARS affiliates on a case-by-case basis.

6.2.21. Establishes procedures for MARS affiliates to access the government telephone systems.

6.3. MAJCOM CSOs:

6.3.1. Appoint a command MARS director.

6.3.2. Identify MARS support requirements, as necessary.

6.3.3. Authorize appointment of installation MARS directors, as required.

6.3.4. Notify HQ AFCA/GCWM of all appointments.

6.4. Installation commanders may appoint an installation MARS director to administer the local MARS base support team program.

6.5. MARS Affiliates:

6.5.1. Comply with publications governing MARS operations.

6.5.2. Submit frequency requests through HQ AFCA/GCWM.

6.6. MARS accountable officers process DD Form 1348-1A, **Issue Release/Receipt Document**.

7. Military MARS Stations . These stations consist of unmanned base MARS stations. MAJCOMs and bases should support military MARS stations in the same manner as other Air Force communications facilities when activated. The base unit of assignment oversees equipment maintenance.

8. Auxiliary MARS Stations . Installations are authorized to establish auxiliary MARS stations for special missions such as U.S. Air Force Reserve, Air National Guard, Civil Air Patrol, and base morale, welfare, and recreation.

9. Eligibility for Affiliate Membership .

9.1. Refer to DoDD 4650.2 for eligibility requirements for affiliate membership.

9.2. Request affiliate membership application through the state MARS director.

9.2.1. Simultaneous membership in more than one military service MARS program is not permitted.

10. Training . Refer to MARS Operating Directive (MOD) for training guidelines.

11. Operating Directives . Follow MOD with allied communications publications.

12. Support to Civil Agencies .

12.1. Refer to the National Military Command System, National Emergency Communications Plan (SECRET) for MARS support guidelines for civil agencies.

12.2. Refer to AFPD 32-40, *Disaster Preparedness*, for support guidelines for civil agencies near military installations.

12.3. Refer to NCS Directive 3-3, *Shared Resources (SHARES) High Frequency (HF) Radio Program*, for MARS support to the SHARES HF Radio Program.

13. MARS Mobile Communications Stations . Installation commanders determine the requirements for a MARS mobile communications station and may establish a MARS support team of local affiliates for contingency requirements.

14. Storage and Shipment of MARS Equipment . Any active duty, military MARS member may ship or store MARS equipment at government expense. (See Joint Travel Regulations.)

15. Government Telephones . MARS affiliate officials may use government telephone systems for official business.

16. Official Mail . MARS affiliates may use official mail to conduct official MARS business according to DoD 4525.8-M/AF Sup, Official Mail Manual.

Section D—Other Administrative Requirement

17. Checklist Development . Use the recommended questions listed in **Attachment 6**, **Attachment 2**, **Attachment 7**, **Attachment 8**, and **Attachment 9**, along with AF Form 2519, All Purpose Checklist (available electronically) to develop a checklist for MAJCOM PWCS, MARS, HF, and MYSTIC STAR management, as appropriate.

18. Information Collections, Records, and Forms .

18.1. Information Collections. No information collections are created by this publication.

18.2. Records. The program records prescribed or created by this publication are subject to AFMAN 37-139, (will convert to AFMAN 33-322, Volume 4), Table 23-11, Equipment Management System, Rules 27, 31, and 41; Table 33-4, Program Management and Acquisition, Rules 2 and 3; and Table 33-14, Software and Documentation, Rules 2, 5, 10 and 13.

18.3. Forms Adopted and Prescribed:

18.3.1. Forms Adopted: DD Form 1348-1A, DD Form 1577, DD Form 2350, AF Form 847, AF Form 1297, and AF Form 2519, AF Form 3215.

18.3.2. Forms Prescribed: AF Form 3661, AF Form 3663, AF Form 3665,and AF Form 3666.

JOHN L. WOODWARD,   JR., Lt General, USAF
DCS/Communications and Information

ATTACHMENT 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

Public Law 93-579, *Privacy Act of 1974*

Public Law 100-235, *Computer Security Act of 1987*

DoDD 4650.2, *Military Affiliate Radio System (MARS)*, January 26, 1998

DoDD 5000.1, *The Defense Acquisition System*, October 23, 2000

DoD 5000.2-R, *Mandatory Procedures for Major Defense Acquisition Programs (MDAPs) and Major Automated Information Systems (MAIS) Acquisition Programs*, March 1996, with Changes 1, 2, 3, and 4

DoD 4160.21-M-1, *Defense Demilitarization Manual*, October 1991

FSAL/NTISSI 3005, *Safeguarding and Control of Data Encryption Standard (DES) Equipment and Associated Unclassified Communications Security Aids*

DISA Circular 310-70-79, *MYSTIC STAR Network Management Manual and Users Guide* (To order, write to the Director, DISA, ATTN: BLA, 701 S. Courthouse Road, Arlington VA 22204-2199)

NCS Directive 3-3, *Shared Resources (SHARES) High Frequency (HF) Radio Program*

NTIA, *Manual of Regulations and Procedures for Federal Radio Frequency Management*

FIPS Publication 140-1, *Security Requirements for Cryptographic Modules*

DoD 4525.8-M/AF Sup, *Official Mail Manual*

AFPD 32-40, *Disaster Preparedness*

AFPD 33-1, *Command, Control, Communications, and Computer (C4) Systems*

AFI 10-601, *Mission Needs and Operational Requirements Guidance And Procedures*

AFI 10-707, *Spectrum Interference Resolution Program*

AFI 10-1101, *Operations Security*

AFI 21-109, *Communications Security (COMSEC) Equipment Maintenance and Maintenance Training*

AFI 32-4001, *Disaster Preparedness Planning and Operations*

AFI 33-103, *Requirements Development and Processing*

AFI 33-104, *Base-Level Planning and Implementation*

AFI 33-111, *Telephone Systems Management*

AFI 33-112, *Computer Systems Management*

AFI 33-118, *Radio Frequency Spectrum Management*

AFI 33-201, (FOUO) *Communications Security (COMSEC)*

AFI 33-202, *Computer Security*

AFI 33-211, *Communications Security (COMSEC) User Requirements*

AFI 33-219, *Telecommunications Monitoring and Assessment Program (TMAP)*

AFI 33-230, *Information Protection Assessment and Assistance Program*

AFI 33-324, *The Information Collections and Reports Management Program; Controlling Internal, Public, and Interagency Air Force Information Collections*

AFI 33-360, Volume 2, *Forms Management Program*

AFI 63-124, *Performance-Based Service Contracts (PBSC)*

AFMAN 23-110, Volume 2, Part 13, *Standard Base Supply Customer's Procedures*

AFMAN 23-220, *Reports of Survey for Air Force Property*

AFMAN 33-120, *Radio Frequency (RF) Spectrum Management*

AFMAN 37-139, *Records Disposition Schedule* (will become AFMAN 33-322, Volume 4)

AFSSI 4001, *Controlled Cryptographic Items*

AFKAG-1, (FOUO) *Air Force Communications Security (COMSEC) Operations*

Abbreviations and Acronyms

AETC—Air Education and Training Command

AF—Air Force (as used in forms)

AFFMA—Air Force Frequency Management Agency

AFI—Air Force Instruction

AFMAN—Air Force Manual

AFPD—Air Force Policy Directive

C4—Command, Control, Communications, and Computers

CCI—Controlled Cryptographic Item

COMSEC—Communications Security

CRO—COMSEC Responsible Officer

CSO—Communications and Information Systems Officer

CT—Cellular Telephone

DD—Department of Defense (as used in forms)

DES—Data Encryption Standard

DISA—Defense Information Systems Agency

DoD—Department of Defense

ESMR—Enhanced Specialized Mobile Radio

FCC—Federal Communications Commission

FIPS—Federal Information Processing Standard

FRS—Family Radio Service

HF—High Frequency

HQ AFCA—Headquarters Air Force Communications Agency

HQ AMC—Headquarters Air Mobility Command

HQ USAF—Headquarters United States Air Force

IMPAC—International Merchant Purchase Authorization Card

ISLMR—Intrinsically Safe Land Mobile Radio

ISR—Intra-Squad Radios

JTRS—Joint Tactical Radio System

LMR—Land Mobile Radio

MAJCOM—Major Command

MARS—Military Affiliate Radio System

MHz—Megahertz

MNCS—Master Net Control Station

MOD—MARS Operating Directive

MSOTMO—MYSTIC STAR Ops-Tech Manager

NCS—National Communications System

NIST—National Institute of Standards and Technology

NSA—National Security Agency

NTIA—National Telecommunications and Information Administration

NTISSI—National Telecommunications Information Systems Security Instruction

OPSEC—Operations Security

PCS—Personal Communications Service

PDA—Personal Digital Assistant

PWCS—Personal Wireless Communications System

RF—Radio Frequency

SBU—Sensitive but Unclassified

SHARES—Shared Resources

STU-III—Secure Telephone Unit-III

TLMR—Trunked LMR

TRS—Tracking and Reporting Software

US&P—United States and Possessions

U.S.—United States

U.S.C.—United States Code

Terms

Communications and Information System —An integrated system of communications equipment (hardware and software), facilities, personnel, and procedures designed to provide communications and information to its users. This includes the processing of the information by the system. Communications and information systems include base visual information support systems.

Core Services—Support services, normally provided by the host base/command to all host base and tenant organizations. Such services may be civil engineering services, water, electricity, telephone, and/or other needed services.

Five Year Replacement Plan—A report on the telecommunications equipment items, that should be scheduled for replacement within the next five years, derived from the maintenance history data residing in the TRS database.

Non-core Services —Services of a special nature not routinely provided by the host base/command to the host base and tenant organizations. An example of a special service is a Personal Wireless Communications System (PWCS).

Personal Digital Assistant (PDA)—Hybrid handheld automated data processing equipment (e.g., Palm Pilot®, Cassiopeia® or Blackberry™) that are designed for use as multi-functional voice and/or data wireless communications-computer devices.

Personal Wireless Communications System (PWCS)—A user centric service that is accessible via devices either vehicular mobile, hand carried, or worn by individual users. Each user may have an individually identifiable electronic address.

Sensitive Information—Information, the loss, misuse, or unauthorized access to or modification of, that could adversely affect the national interest or the conduct of federal programs, or the privacy to which individuals are entitled under Public Law 93-579, Privacy Act of 1974, but that has not been specifically authorized under criteria established by an Executive Order or an Act of Congress to be kept secret in the interest of national defense or foreign policy. (Systems that are not national security systems, but contain sensitive information are to be protected according to the requirements of the Public Law 100-235, *Computer Security Act of 1987.*)

System—Any organized assembly of resources and procedures united and regulated by interaction or interdependence to accomplish a set of specific functions.

Wireless Communications—The use of one or more military and/or commercial radio frequencies to include Family Radio Service (FRS), Intra-Squad Radios (ISR), Land Mobile Radio (LMR), Enhanced Specialized Mobile Radio (ESMR), Cellular Telephone (CT), Paging, and the Personal Communications Service (PCS) bands.

ATTACHMENT 2

DETERMINING TECHNICAL SOLUTIONS

A2.1. Overview . As the Base PWCS Manager, one of your most important tasks will be to determine the technical solution that best satisfies your customer's communications requirements. This attachment provides a tool to assist your decision making process. Requiring units/organizations may also use this tool to assist in preparing requirements documents.

A2.2. Existing Services . PWCS Managers must be aware of the wireless communications services currently available in, or planned for, the in-garrison/deployed local area to determine an effective technical solution. Sources for this information include:

   A2.2.1. MAJCOM wireless communications offices (e.g., PWCS manager).

   A2.2.2. Local telephone/cellular/PCS service providers.

   A2.2.3. Electronics stores specializing in communications services/devices.

   A2.2.4. Local and regional communications company sales representatives.

   A2.2.5. Trade and professional publications.

   A2.2.6. Ads in newspapers and magazines.

   A2.2.7. Ads on local radio and television stations.

A2.3. Types of Services . Table A2.1. lists examples of the types of wireless services that may be considered when determining a technical solution.

Table A2.1. Types of Services.

Type	Functions and Capabilities
LMR	Conventional: A radio network, composed of handheld and mobile radios, base stations and repeaters, in which each user group is assigned their own operating frequencies.
	Trunked: A radio network, composed of handheld and mobile radios, control consoles, base stations and repeaters, that relies on computer controlled time sharing of a small number of frequencies to serve a large population of users.
	ISLMR: Radios designed for operation in hazardous environments, available as conventional or trunked.
Pagers	Small devices used to deliver short voice or alphanumeric messages to the user. Delivery may be restricted to a local service area, or may be global via satellite. Although messages are usually one-way, two-way services may be available in some areas.
Cellular/PCS Services	Radio devices that offer telephone-like services through a wireless infrastructure. PCS devices may also offer pager- like (short text message) functions.
ESMR	Cell phone like devices that offer the added functions of "direct" connections to other ESMR users and paging/text messaging.
Mobile Satellite Services	Cell phone like devices with the ability to connect with either the terrestrial based cell phone/PCS infrastructure, or to a satellite. Existing services also offer a paging only device.
Wireless Local Loop/Wireless Office Systems	Administrative telephone systems where copper phone lines are replaced by a wireless RF system (in some cases, copper wires are never installed). Similar to a cellular phone system with greatly reduced mobility – generally limited to a campus area or single building/office.
JTRS	A family of software programmable, multiband/multimode radios that operate from 2 MHz to 2 gigahertz. These radios offer differing levels of service depending on the operating domain (Ground, Fixed, and Airborne).
FRS Radio	One of the Citizens Band radio services intended for use by members of a family or workgroup to communicate among themselves. Unregulated use of FRS radios within the US&P may replace LMRs for certain administrative communications, but must not be used to transmit classified, SBU, command and control, operational, fire/crash, security or emergency response/medical communications. FRS radios are non-reportable under the TRS. Use of FRS radios outside the US&P is regulated by the host nation and may not be available for military use in this configuration.
ISR	ISR radios are of similar construction and operational characteristics as FRS radios. All ISR radios are TRS reportable and utilize the 380-399.9 MHz band. Spectrum authorization must be obtained through MAJCOM Spectrum Managers and the appropriate AFFMA or host nation prior to acquisition and use.

A2.4. Guidance . The following instructions provide additional guidance:

A2.4.1. AFI 33-201 describes security standards that must be met according to the information being processed by the selected device.

A2.4.2. AFI 33-103 contains information on identifying requirements and developing technical solutions.

A2.5. Determining a Technical Solution . Answer the questions in **Figure A2.1.** using the information contained in your customer's requirement document. This will help you determine the technology that may best fill their requirements. After selecting a technology, you may need to contact local vendors to better define the actual device required.

A2.6. Trunked LMR Systems. Before considering a TLMR System, you must be able to answer "Yes" to the majority of the questions listed below:

A2.6.1. Are there other federal agencies in the area (within 30 kilometers) that would be willing to share a TLMR system with you?

A2.6.2. Does your base have more than 700 nondeployable users, and/or 35 or more radio networks?

A2.6.3. Are the existing radio networks overcrowded and/or restricted in number, causing mission degradation?

A2.6.4. Are you able to obtain new frequency authorizations to meet demand for radio communications?

A2.6.5. Is your existing conventional LMR network experiencing increased levels of interference due to frequency congestion in the area?

A2.7. Final Considerations . When preparing a technical solution, you must consider the following:

A2.7.1. Can the selected device meet security requirements?

A2.7.2. Will the selected device allow the user to interoperate with the required individuals/agencies? (A communication device that doesn't talk to anyone else is useless, no matter how many bells and whistles it has.)
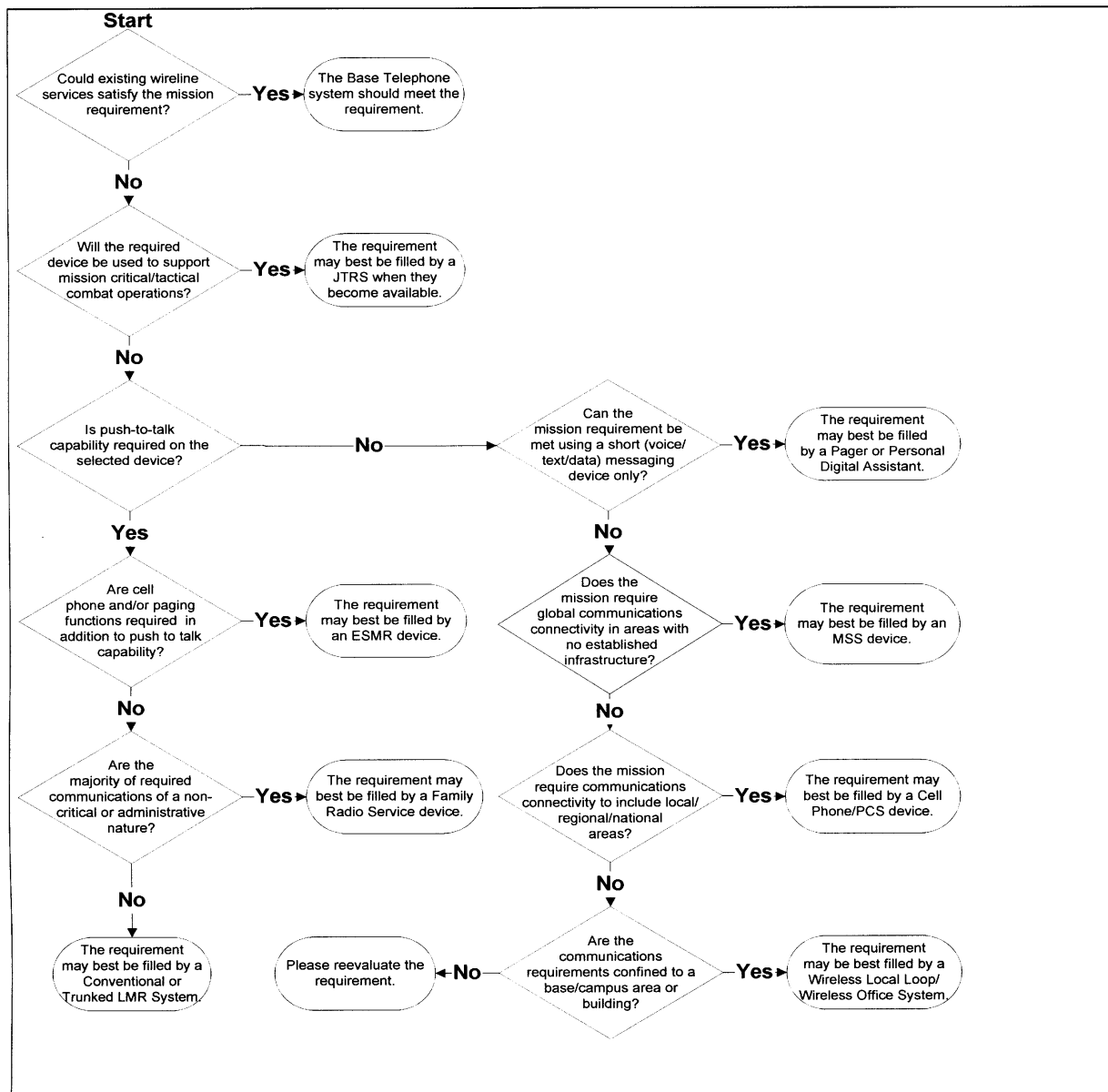
A2.7.3. Does the selected solution make sense from a business perspective? Does it save the Air Force money in the long run?

A2.7.4. Does the selected solution fit into the Base Roadmap (formerly know as the Base Blueprint) as developed by the Base Systems Telecommunications Engineering Manager?

A2.7.5. If you answer "No" to any of these questions, you should reconsider your solution.

Figure A2.1. Determining a Technical Solution.

Start

Could existing wireline services satisfy the mission requirement? —**Yes**▸ The Base Telephone system should meet the requirement.

No ▾

Will the required device be used to support mission critical/tactical combat operations? —**Yes**▸ The requirement may best be filled by a JTRS when they become available.

No ▾

Is push-to-talk capability required on the selected device? ——**No**——▸ Can the mission requirement be met using a short (voice/text/data) messaging device only? —**Yes**▸ The requirement may best be filled by a Pager or Personal Digital Assistant.

Yes ▾   **No** ▾

Are cell phone and/or paging functions required in addition to push to talk capability? —**Yes**▸ The requirement may best be filled by an ESMR device.   Does the mission require global communications connectivity in areas with no established infrastructure? —**Yes**▸ The requirement may best be filled by an MSS device.

No ▾   **No** ▾

Are the majority of required communications of a non-critical or administrative nature? —**Yes**▸ The requirement may best be filled by a Family Radio Service device.   Does the mission require communications connectivity to include local/regional/national areas? —**Yes**▸ The requirement may best be filled by a Cell Phone/PCS device.

No   **No** ▾

The requirement may best be filled by a Conventional or Trunked LMR System.   Please reevaluate the requirement. ◂**No**— Are the communications requirements confined to a base/campus area or building? —**Yes**▸ The requirement may be best filled by a Wireless Local Loop/Wireless Office System.

ATTACHMENT 3

PWCS CONTINUITY FOLDER

A3.1. PWCS managers should maintain complete and current records for continuity. The following items are recommended content for the continuity folder:

A3.1.1. A list of managers and alternates, including nets, units, office symbols, and telephone numbers for:

A3.1.1.1. MAJCOM PWCS manager.

A3.1.1.2. Contractors and contract managers.

A3.1.1.3. Base supply equipment management, research, and receiving personnel.

A3.1.1.4. Base contracting office personnel (service and supply sections).

A3.1.1.5. Installation Spectrum manager.

A3.1.1.6. Base COMSEC and OPSEC officers.

A3.1.2. A list of governing directives and related publications and the location of the publication.

A3.1.3. Processing procedures and examples of completed forms.

A3.1.4. Net restoration priorities.

A3.1.5. Procedures for demilitarizing PWCS assets.

A3.1.6. A customer education package that includes:

A3.1.6.1. A copy of the customer education brochure or publication.

A3.1.6.2. Cross-feed updates.

A3.1.7. An equipment inventory list with an explanation of your reconciliation method. Include:

A3.1.7.1. Contracts.

A3.1.7.2. A sample of a request letter you received from net managers.

A3.1.8. Procedures for processing assets for repairs when they are covered under contract and when they are not. Include:

A3.1.8.1. An example of completed AF Form 1297.

A3.1.8.2. An example of a completed job control log.

A3.1.8.3. An example of claim and repair tickets completed by PWCS managers and contractors.

A3.1.8.4. Control procedures for mobile, portable, and fixed assets.

A3.1.8.5. An example of a letter reporting loss, damages, or stopped payments.

A3.1.9. A copy of the most recent replacement plan.

A3.1.10. A copy of a base map showing equipment installations. Also include:

A3.1.10.1. Copies of individual net diagrams.

A3.1.10.2. A list of locations requiring escorted entry.

A3.1.10.3. The method you used to coordinate escorted entry.

A3.1.11. A list of the base PWCS manager's responsibilities for overseeing the central base paging system. Include:

A3.1.11.1. Operating information for the system encoder and an explanation of its purpose.

A3.1.11.2. Control procedures for pagers and examples of completed shipping forms.

A3.1.11.3. Procedures for issuing spare pagers.

A3.1.12. Maintenance and updating procedures for the TRS.

A3.1.13. Contingency PWCS procedures including instructions on using war reserve materiel.

A3.1.14. A list of:

A3.1.14.1. COMSEC equipment users.

A3.1.14.2. Procedures for obtaining keying material from COMSEC custodians.

A3.1.14.3. Procedures for coding PWCS assets.

A3.1.15. Procedures for getting engineering help.

A3.1.16. Procedures for establishing annual PWCS maintenance contracts. Include an explanation of how you:

A3.1.16.1. Budget for repairs.

A3.1.16.2. Characterize your equipment and develop a list of working parts.

A3.1.16.3. Get needed support within your time requirements.

A3.1.17. The PWCS contract surveillance plan.

A3.1.18. A list of military technicians trained in PWCS repair.

A3.1.19. Letters from customers or questionnaire responses.

ATTACHMENT 4

TRS EQUIPMENT TYPE STANDARDS

Table A4.1. TRS Equipment Type Standards.

Equipment	Equipment Type Designator
1. Adapters, Remote	RMT ADPTR
2. Adapters, Vehicle	VEH ADPTR
3. Amplifiers	AMP MOB
4. Antennae	ANTENNA
5. Base Stations, Fixed	BASE STA
6. Base Stations, Mobile	BASE MOB
7. Battery Analyzers/Conditioners/Maintenance Systems	BATT COND
8. Cellular Telephones/PCS	CELLULAR
9. Central Electronic Banks	CEB
10. Central Processors/Central Control	CENT PRCSR
11. Centralized Interconnect Terminal	(CIT)
12. Chargers, Multi	MULTI CHGR
13. Chargers, Single	SINGL CHGR
14. Citizen Band Radios (FSR, etc.)	CB
15. Combiners	COMBINER
16. Comparators	COMPARATOR
17. Console Interface Unit	CIU
18. Consolettes	CONSLT
19. Control Consoles	CONT CONS
20. Decoders	DECODER
21. DES Key Loader	DES LOADER
22. Digital Interface Units	DIU
23. Duplexers	DUPLEXER
24. Encoders	ENCODER
25. Interface Unit	DIU
26. Junction Boxes	BOX JUNCT
27. Management Computers	MGMT CMPTR
28. Modems	MODEM
29. Motorola Business Exchange telephone interconnects	MBX
30. Pager Receiver	PAGER
31. Pager Transmitter	PAGER XMTR

Equipment	Equipment Type Designator
32. Phone Patch	PHONE PTCH
33. Radios, handhelds/portables	RAD PORT
34. Radios, vehicle/mobile	RAD MOB
35. Receiver Monitors/Scanners	RCVR MON
36. Remotes	REMOTE
37. Repeaters, Fixed	RPTR
38. Repeaters, Mobile	RPTR MOB
39. Secure Interface Box	SIB
40. Telecommunications Network Server	TENSR
41. Uninterrupted Power Systems	UPS

ATTACHMENT 5

TRAINING TOPICS FOR UNIT PWCS MANAGERS

A5.1. The following general topics are mandatory for use in the net manager's training guide. Add to this list as required by local conditions.

   A5.1.1. General Information:

      A5.1.1.1. Points of Contact.

      A5.1.1.2. Applicable Publications.

      A5.1.1.3. Systems Description.

      A5.1.1.4. Net (or Talk group) Description.

      A5.1.1.5. Tracking and Reporting System.

      A5.1.1.6. Communications-Information Systems Requirements Documents.

      A5.1.1.7. Frequency Requirements.

      A5.1.1.8. Intrinsically Safe Requirements.

      A5.1.1.9. Equipment Inventories.

      A5.1.1.10. Equipment Markings.

      A5.1.1.11. Budgeting Procedures.

      A5.1.1.12. Replacement Plans.

      A5.1.1.13. Contingency Procedures.

      A5.1.1.14. Customer Feedback.

      A5.1.1.15. Audits.

      A5.1.1.16. Explanation of Terms.

   A5.1.2. Maintenance and Operating Procedures for PWCS.

      A5.1.2.1. General Operating Rules.

      A5.1.2.2. Procedures for Processing Assets for Repair/Operator Maintenance.

      A5.1.2.3. Warranty Information.

      A5.1.2.4. Pecuniary Liability in Case of Misuse or Abuse.

      A5.1.2.5. Contingency Operations.

      A5.1.2.6. Operating Restrictions in Hazardous Environments.

      A5.1.2.7. Inspection and Operation of Intrinsically Safe LMRs.

      A5.1.2.8. The DES/Fascinator.

      A5.1.2.9. Spectrum Interface Resolution Program according to AFI 10-707, *Spectrum Interference Resolution Program*.

A5.1.2.10. Command, Control, and Communications Countermeasures.

A5.1.2.11. Consent to monitoring, AFI 33-219, AFI 21-109, and AFSSI 4001.

A5.1.3. COMSEC and OPSEC.

A5.1.3.1. Using COMSEC Equipment.

A5.1.3.2. OPSEC Requirements.

A5.1.3.3. Essential Elements of Friendly Information.

ATTACHMENT 6

PLANNING FOR PWCS DEPLOYMENT

A6.1. In planning for PWCS deployment, the base CSO and PWCS managers will advise the wing/base and unit level planners to consider their PWCS requirements well in advance of any deployment. Other units must plan for deployment anywhere. Some of the factors to consider are:

A6.2. Will you need your handheld telecommunications devices? Can the host base satisfy the requirement?

A6.3. Are your in-garrison operating frequencies usable in the deployed host area? Coordinate overseas requirements through MAJCOM and Air Force theater command frequency management offices.

A6.4. How will you maintain your deployed telecommunications devices?

A6.5. Do you need spares? What is the probability of combat damage or loss in transit or handling?

A6.6. Will chargers work on host-nation or host-base power sources? (Voltages and frequencies vary by nation.)

A6.7. Will you need fixed/mobile base stations, repeaters, and antennas? Should you preposition them, or will you carry and install them yourself?

A6.8. Will you need special procedures and call signs?

A6.9. Will your deployed telecommunications system give you adequate geographical coverage?

A6.10. Do you need encryption (DES, Type 1, etc.)?

A6.11. What about interoperability with other units? (Frequencies, DES, Type 1, etc.)

A6.12. Is your deploying telecommunications device capable of operating within host base/host nation standards and technical parameters (i.e., frequency, channel spacing, power, etc.)?

A6.13. Develop a deployed continuity folder by tailoring the information in **Attachment 2** to meet your requirements. The base points of contact now become the deployed points of contact.

ATTACHMENT 7

CHECKLIST FOR MILITARY AFFILIATE RADIO SYSTEM (MARS)

A7.1. Does HQ AFCA/GCWM appoint qualified affiliates to the positions of Region and State MARS directors?

A7.2. Does HQ AFCA/GCWM control the issue of DD Forms 2350?

A7.3. Does HQ AFCA/GCWM require and maintain the quarterly participation reports on MARS members as received from the region Operations and Analysis manager?

A7.4. Does HQ AFCA/GCWM monitor frequency request for MARS use?

A7.5. Has the MAJCOM CSO appointed a MAJCOM MARS director?

A7.6. Is an installation MARS director appointed when the base support team is functional?

A7.7. Has a copy of all MAJCOM/installation MARS director appointments been provided to HQ AFCA/GCWM?

A7.8. Does the MARS accountable officer make sure DD Form 1348-1A is properly processed to release government property to qualified recipients?

ATTACHMENT 8

CHECKLIST FOR GLOBAL HIGH FREQUENCY (HF) SYSTEM

A8.1. Has the Global System Manager:

A8.1.1. Established a single set of Air Force procedures for Global HF system operations?

A8.1.2. Reviewed and implemented MAJCOM-level recommendations for changes to the Air Force Global HF System procedures?

A8.1.3. Coordinated mission requirements with system users?

A8.1.4. Answered questions for intercommand and interservice special communications support?

A8.1.5. Evaluated Global HF System network performance?

A8.1.6. Accompanied MAJCOM HF managers on staff visits to evaluate operations, equipment use, and system integrity?

A8.1.7. Overseen operations of assets under their control?

A8.1.8. Matched employees and equipment to job requirements?

A8.1.9. Evaluated training, operations, and equipment use?

A8.1.10. Coordinated publication creation and production?

A8.1.11. Tracked each publication through production and reported its status to the system manager?

ATTACHMENT 9

CHECKLIST FOR MYSTIC STAR SYSTEM

A9.1. Has the MYSTIC STAR Ops-Tech Manager (MSOTMO) assessed network performance?

A9.2. Has the MSOTMO compared performance trends to establish standards?

A9.3. Has the MSOTMO recommended improvements to criteria, documentation, or performance?

A9.4. Has the MSOTMO worked with personnel on all plans for operating, maintaining, managing, controlling, and configuring the network?

A9.5. Has the MSOTMO recommended budgets for network operations?

A9.6. Has the MSOTMO reported the operational status, performance status, or limitations of the network to HQ AMC/SCP?

A9.7. Has the MSOTMO implemented plans and special system configurations?