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Communications and Information

ENGINEERING AND INSTALLATION SERVICES

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This manual implements Air Force Policy Directive (AFPD) 33-1, *Command, Control, Communications, and Computer (C4) Systems*. It identifies the engineering and installation (EI) products and services available from the 38th Engineering Installation Wing (38 EIW), and describes how users obtain the products and services to support their communication and information systems. This manual applies to personnel working in communications and information planning and implementation functions, and other functions at major command (MAJCOM), numbered air force (NAF), and wing level who require, plan, maintain, install, modify or remove communications and information systems. Refer technical questions and comments to 38 EIW/XPP, 4069 Hilltop Road, Tinker AFB OK 73145-2713. Refer recommended changes and conflicts between this and other publications, using Air Force (AF) Form 847, **Recommendation for Change of Publication**, through channels, to Headquarters Air Force Communications Agency (HQ AFCA/XPXP), 203 W. Losey Street, Room 1060, Scott AFB IL 62225-5233. See Attachment 1 for a glossary of references and supporting information used in this manual.

Chapter 1

TYPES OF ENGINEERING AND INSTALLATION SERVICES AND PRODUCTS

1.1. General . The 38 EIW provides several types of communications and information support products and services to Air Force, Department of Defense (DoD) and non-DoD customers. In the context of this manual, the customer refers to: Air Force (that is, MAJCOM, NAF, and Wing), DoD agencies, and non-DoD agencies. This first chapter broadly defines those products and services; while subsequent chapters detail the products, services, and procedures necessary to obtain them. When possible, the 38 EIW will provide products and services via organic (active duty/Air National Guard (ANG)) means to satisfy customer requirements. If appropriate, the 38 EIW may contract for the needed support.

1.1.1. Planning Assistance, Technical Solutions, and Cost Estimates. The 38 EIW provides these services for communications and information requirements. Obtain these services through the systems telecommunications engineering manager (STEM) assigned to your base or MAJCOM. STEMs assigned at the MAJCOM level are referred to as STEM-C, and those assigned at the base level are referred to as STEM-B. ANG activities use regional STEMs (STEM-R), assigned to supporting ANG EI squadrons. The 38th Engineering Installation Group (38 EIG) provides detailed cost estimates under cost reimbursement procedures. Those customers without a STEM forward requests to 38 EIW/EST, 4064 Hilltop Road, Tinker AFB OK 73145-2713 (see **Chapter 3**).

1.1.1.1. The base communications and information systems blueprint documents each Air Force base's existing and targeted communications and information systems, plans for modernization, and provides a vehicle for implementation. This document is referred to as the blueprint through the remainder of this manual. The STEM produces the blueprint.

1.1.2. Implementation Cycle. Once each customer's requirements have been defined and a technical solution identified, the initial planning cycle has occurred. The 38 EIW can implement the technical solutions using AF assets, contractors, or a mixture of both. Access to these services is through the MAJCOM production plan or STEM-B/STEM-C assigned to your base or MAJCOM. Customers without a STEM-B/STEM-C forward requests for service to 38 EIW/EST (see **Chapter 4**).

1.1.3. Specialized Contracting Functions. The 38 EIW provides the following specialized contracting support.

1.1.3.1. Regulated Telephone Service. Local telephone companies provide support via a Communication Service Authorization (CSA) for all active duty Air Force locations, Air Force Reserve Units, Air National Guard Units, and Recruiting Squadrons. As there is further deregulation of the telephone industry, the 38 EIW will provide this phone service via competitive contracts. Access to CSAs is available by coordinating such requirements with 38 LS/LGCX, 4022 Hilltop Road, Suite 210, Tinker AFB OK 73145-2713 and 38 LS/LGCK, 4008 Hilltop Road, Tinker AFB OK 73145-2713 (see paragraph **5.3.1.**).

1.1.3.2. Special Sole Source Leasing Agreements. These agreements exist for telephone switches and cable plants at a few locations where it is in the best interest of the Air Force to continue leasing from the incumbent telephone company. Normally such sole source leasing agreements are justified as in the best interest of the Air Force because base closure is imminent or a competitive solution for a government-owned system is being developed. Coordinate requirements through 38 LS/LGCK/LGCX (see paragraphs **5.3.2.** and **5.3.3.**).

1.1.3.3. Operations and Maintenance (O&M) Contracts. Contracts for digital telephone switches and cable plants are provided at Air Force locations across the United States. Coordinate requirements through the applicable STEM-B (see paragraph **5.3.4.**).

1.1.4. Maintenance Services. Route requests for emergency maintenance, manning assistance, planned preventative maintenance actions, and requests for cable and antenna system maintenance action to the 38 EIG/DRW, 4029 Hilltop Road, Tinker AFB OK 73145-2713, according to Technical Order (TO) 00-25-108, *Depot Maintenance,* and applicable AFIs. You must route manning assistance requests through your host MAJCOM Air Force specialty code functional manager to Headquarters Air Force Materiel Command (HQ AFMC) (see paragraphs 5.3.4 and **6.1.**).

1.1.5. Structural Engineering Analysis. The 38 MSS can provide this type of support if it does not impact Program Management Directive (PMD) workload. Send requests for this service to the 38 MSS/CE, 4003 Hilltop Road, Tinker AFB OK 73145-2713 (see paragraph **6.3.**).

1.1.6. Specialized Engineering Support. These services, such as telecommunications test and analysis, electromagnetic environmental effects, and measurements are conducted by the 738 EIS at Keesler AFB MS. Send requests and funding for these services to the 738 EIS/EEE (see paragraph **6.4.**).

1.1.7. Engineering Data Services. The 38 EIW Communications and Computer Systems Electronic Data Service Center (C-CS EDSC) provides various engineering data services. Send requests for their services to 38 MSS/EG, 4012 Hilltop Road, Tinker AFB OK 73145-2713 (see **Chapter 7**).

1.1.8. Unit Type Codes (UTCs). The 38 EIW provides UTCs to the supported force's commander in contingencies and war. Access to 38 EIW UTCs are via the supported command, host MAJCOM, or lead military service communications and information war and contingency planning office. Direct contact with 38 EIG/DOX can expedite assistance via the 38 EIG Operations Center (38 EIG/DOCC), 4029 Hilltop Road, Tinker AFB OK 73145-2713 (24 hour POC) (see **Chapter 8**).

1.2. Downward Directed Requirements . These requirements result from PMDs that are Air Staff driven and funded. For example, the Combat Information Transport System is a downward directed program that is formally documented in a PMD. The 38 EIW formally accepts workload associated with PMD programs. PMD workload takes precedence over all other 38 EIW workload except for wartime, contingency, emergency and unified or command requirements.

1.3. Upward Generated Requirements . These are requirements that originate from either base or MAJCOM level. MAJCOMs must list upward generated requirements requiring EI assistance on their MAJCOM production plan and must fund for the required EI support. Exceptions to this requirement are detailed throughout the manual.

Chapter 2

METHODS OF FUNDING

2.1. Funding for 38 EIW Resources .

2.1.1. Cost Reimbursement Concept. Except for planning services provided by STEM (which are centrally funded), the 38 EIW operates on a cost reimbursement basis, according to Air Force Instruction (AFI) 65-601, Volume 1, *Budget Guidance and Procedures*, when allocating EI services.

2.1.2. Customer Funding Document. The DD Form 448, **Military Interdepartmental Purchase Request (MIPR)**, is the preferred funding document for ordering material and services between Air Force and other DoD activities. (NOTE: See DFAS-DE 7010.1-R, *General Accounting and Finance Systems at Base Level*.) Send funding for EI services to 38 EIS/DRP, 4064 Hilltop Road, Suite 216, Tinker AFB OK 73145-2713. The 38 EIS/DRP will document MIPR acceptance on a DD Form 448-2, **Acceptance of MIPR**, as a Category 1 for the amount of work that can be performed within the period of time funds are available. Receipt of this document will obligate customer funds. A single MIPR for EI services citing a service Element of Expense Investment Code will allow for purchase of the required goods and services. Use a MAJCOM MIPR for multiple communications and information requirements at various locations throughout the MAJCOM. Do not send MIPRs to 38 EIW unless requested by the 38 EIS/DRP. The 38 EIW will not accept funds unless a spend plan has been provided, stating what funds are needed, and whether the 38 EIW can execute the funds during the current fiscal year.

2.1.3. The tasking agency will provide funding for wartime and contingency requirements.

2.1.4. ANG Funding. Direct specific questions for funding ANG resources to 38 EIS/DRP. However, when any Air Force customer requests and receives ANG support directly, all funding arrangements are between the customer and the ANG unit.

2.2. The 38th Comptroller Flight will :

2.2.1. Provide consultation services to customers on 38 EIW cost reimbursement method of operation and billing procedures.

2.2.2. Manage all customer funds for organic work performed by 38 EIW.

2.2.3. Use cost reimbursement procedures to provide 38 EIW active duty and guard units travel, materiel, special equipment, etc., to support customer EI projects.

2.2.4. Prepare SF 1080, **Voucher for Transfers Between Appropriations and/or Funds**, billings on a quarterly basis, upon project completion when notified by the 38 EIS program manager, and when all expenses have been reconciled.

2.2.5. Return unexpended funds upon customer request and program manager coordination.

2.2.6. Provide the customer an advance copy of an 38 EIW invoice prior to the official SF 1080 received by their defense accounting office. The customer may take the invoice to their Defense Finance and Accounting Office to move funds from an unfilled to a filled order.

2.3. Funds Expiration .

2.3.1. The 38 EIW will return any expiring fiscal year (FY) funds to the customer before fiscal year's end, after reconciliation of 38 EIW incurred expenses. Each funding document contains an expiration date which is determined by the customer.

2.3.2. When expiring funds support travel that crosses fiscal years, customers must provide the 38 EIS/DRP a planning MIPR citing new FY funds.

2.3.3. Nonexpiring funds may be carried over to the financial plan year as appropriation rules allow in support of future projects.

2.4. Cutoff Date for Accepting Military Interdepartmental Purchase Requests . To ensure availability of EI resources and confirm that funds can be obligated, customers who desire to send additional funds must have prior approval by 38 EIS/DRP and 38 CPTF/FMR. Send requests to 38 EIS/DRP. The 38 EIW will not accept new funds after 1 August of each FY. New funds are defined as customer funds received that have no previous 38 EIW local control number and project funds management record assigned.

2.5. Direct Cite . Direct cites normally funded on AF Form 616, **Fund Cite Authorization,** message or MIPR, may be used when travel is required on a nonrecurring basis. Travel arrangements and required documentation information must be obtained from 38 EIS/DRP. Execute and document the AF Form 616 according to applicable AFIs.

2.6. Premium Transportation . The 38 EIW sends most products via ground or sea transport. When premium transportation, such as air transportation or overnight express of material, is necessary, use the existing customer provided MIPR.

2.7. Customer Funding for 38 EIW Managed Contracts . Customers will:

2.7.1. Provide the appropriate funding document (normally an AF Form 9, **Request for Purchase**, or AF Form 1218, **Request for Communications Service**) to initiate contract action or request issuance of orders or changes under existing contracts managed by the 38 EIW. These contracts include CSAs, special leasing arrangements, O&M contracts, and EI services contracts (such as C4 Services, Regional Distribution Systems, and the Construction Services Support Contract). Provide funding to 38 LS/LGCX for existing CSAs and special leases and to 38 LS/LGCO, 4008 Hilltop Road, Tinker AFB OK 73145-2713, for existing O&M contracts, to 38 LS/LGCK for new or replacement CSAs or O&M actions, and to 38 EIG/CM, 3580 D Avenue, Bldg 201 West Tinker AFB OK 73145-2713, for new EI services requirements.

2.7.1.1. Provide funding to initiate new Indefinite Delivery/Indefinite Quantity (IDIQ) type contracts that cover the minimum guaranteed by the contract.

2.7.1.2. Provide funding needed to satisfy the total value of any requested order.

2.7.2. Pay any surcharges associated with contracts used to satisfy customer's requirement.

2.7.3. Provide necessary funds for contractual changes derived from differing site conditions, environmental impediments, changes in customer requirements, etc.

2.7.4. Provide funding for temporary duty (TDY) associated with the training of customer's Quality Assurance Evaluators (QAE) or Contract Monitors (CM) for those base personnel appointed to perform as QAEs/CMs.

2.7.5. Provide funding for TDY travel and per diem for (as required) program management, engineering, and contracting personnel to the customer's site to support the requirements identification, solicitation and contract administration phases of the contracting effort. Trips to the site are anticipated for site surveys, pre-award and post-award conferences, and may be customer requested and funded when on-site assistance is needed to resolve problems during contract administration.

2.7.6. Provide funding for a yearly site visit by the 38 EIW contract administrator (for O&M contracts) to ensure requirements are correctly reflected and there are no contractual or performance-related problems.

2.8. The 38th Engineering Installation Wing. The 38 EIW (except as noted), when developing contracts for general use, will:

2.8.1. Fund contract support for all EI type services.

2.8.2. Pay any surcharges associated with contracts used to satisfy their own requirements.

2.8.3. Provide the appropriate minimum guarantee funds required when the implementation solution is an IDIQ type contract. The amount of funding required will be based on contract ceiling considerations.

2.8.4. Fund for costs associated with initial tasks of contract development efforts. These costs include, but are not limited to: defining and establishing the requirements baseline; conducting the risk analysis; preparing risk analysis and analysis of alternatives documentation; developing the contract strategy; preparing the draft and final Request For Proposal (RFP); and conducting source selections. MAJCOM participation is highly encouraged throughout the contract development effort. MAJCOM/user participation is customer funded.

2.8.5. The 38 EIW Funding Exceptions:

2.8.5.1. The customer will fund any changes such as differing site conditions or environmental impediment. The 38 EIW will not fund environmental impediments.

2.8.5.2. The customer will fund all equitable adjustment requests submitted by the contractor which are determined by the Contracting Officer to be due to the contractor.

2.9. Cutoff Dates for Receiving Customer Funding for Contract Installations . Prior to acceptance of any type of funding document, the 38 EIW production planning activity will ensure the capability and resources exist to expend customer funds. Implementing authority occurs when the 38 EIW receives an approved and funded requirement from the MAJCOM or customer. Opportunities to satisfy customer requirements using expiring funds rapidly become limited as the end of the fiscal year approaches. Depending on the requirement and contract vehicle being utilized, the cutoff dates for the 38 EIW to obligate customer funding can range from 30 July to 25 September of the fiscal year. The customer may request the return of funds at any time prior to funds obligation by 38 EIW.

2.10. Allied Support Construction Funding for Program Management Directive (PMD) Programs. The customer must submit all DD Forms 1391, **FY ____ Military Construction Project Data**, (for PMD programs, where construction funding is included with the program) for funding of design and construction to 38 MSS/CE upon siting approval and assignment of a local project number. The 38 MSS/CE validates and approves these projects for the 38 EIW commander and works with the program manager to provide the necessary funding.

Chapter 3

PLANNING

3.1. Communications and Information Systems Blueprint . This document, prepared by the STEM, provides the plan to modernize the base-level infrastructure with cost-effective, base-wide, communications and information capability supporting digital transmission of voice, data, video, imagery, and telemetry needs. It complies with the Joint Technical Architecture Air Force (JTA-AF). Each Blueprint Phase Implementation Directive (BPID) solution will quote a JTA-AF section, if applicable. The 38 EIW will develop all communications and information requirements through the blueprint. See paragraph **3.3.** for exceptions. The blueprint is revised quarterly.

3.1.1. What the Blueprint Covers. It documents the current baseline, identifies a target base configuration to support present and future requirements, and provides a time-phased transition plan including estimated costs, for a logical transition. It is broken down into sections, as follows:

3.1.1.1. Executive Summary. This section provides a high-level summary of the target infrastructure, and outlines other pertinent general information such as recommended priorities, impacts, etc.

3.1.1.2. Sections 1-4. These sections relate to the systems development strategy, provide background information, discuss the current communications and information environment, the target architecture, and outline a transition strategy.

3.1.1.3. Section 5. This section is the Blueprint Implementation Plan (BIP). The BIP is a breakdown of the plan by phases and elements that will eventually lead to the target infrastructure when implemented. Requirements are developed from the BIP by logically combining phases and elements to produce a capability. The combination of appropriate phases and elements is documented by the STEM-B in a BPID, when the requesting organization is ready to implement (see paragraph **3.2.**).

3.1.1.4. Appendices. The blueprint also contains appendices that include the base mission statements, discusses facility construction/modification efforts, upgrades, cost details, and lists acronyms.

3.1.1.5. Index. A subjective index allows easy location of the contents.

3.1.2. The Blueprint Process. The STEM-B develops and maintains the blueprint. The STEM-B works jointly with the customer (MAJCOMs and bases) and the STEM community to produce the most viable product possible. The process entails capturing new communications and information requirements, comprehensive data gathering, analysis, and continual update. Data is obtained by base surveys and through various other sources (such as coordination with base-level, Standard Systems Group and Electronic Systems Center program offices, databases, etc.). Data on existing communications and information systems is updated on the C-CS Installation Records (CSIR) according to AFI 21-404, *Developing and Maintaining Communications and Computer Systems Installation Records.*

3.1.2.1. As data is collected the STEM-B reviews and analyzes it, documents the baseline, develops the target architecture, and a formulates a transition strategy. This transition strategy is reflected in the BIP.

3.1.2.2. The systems telecommunications engineering manager-telecommunications manager (STEM-TM) manages the out-of-cycle and BPID requirements, ensuring they are rolled into the blueprint as needed. They also develop designated portions of the document.

3.1.2.3. The STEM-C works closely with the MAJCOMs to: provide technical consultant services; assist in requirements definition; and create, with the MAJCOM communications and information staff, a MAJCOM blueprint which outlines the command's vision and target architecture. The STEM-C provides general and technical guidance to the STEM-B, ensuring Air Force and MAJCOM architectures and objectives are reflected in the blueprint. The STEM-C reviews and approves all blueprints before release to the customer.

3.1.2.4. The Joint STEM (STEM-J) works with joint agencies (such as, the unified commands, Defense Information Systems Agency (DISA), and the Joint Staff). Their focus is on the Defense Information Infrastructure and Joint Agency communications and information systems planning and downward-directed programs. They work closely with the STEM-Cs to ensure continuity between Joint Agency plans and Air Force architectures.

3.1.3. The Blueprint Implementation Plan. All requirements planned within the communications and information systems blueprint are broken down into phases and elements and documented in the BIP to allow for implementation. Users can request a BPID for anything included in the BIP. The BIP is used for both base-level and MAJCOM Program Objective Memorandum funding efforts for communications and information requirements.

3.1.4. The Blueprint Approval Process. The MAJCOM Communications and Information Systems Officer (CSO) is the approval authority for subordinate base blueprints. The wing commander is the approval authority at the base for the blueprint. The STEM-B or STEM-C will hold an annual review/endorsement meeting with the appropriate base or MAJCOM personnel (to include representatives of the operations, support, logistics, intelligence and communications and information communities). Review for architectural compliance, proper classification, and functional support. STEM-Cs will work with the MAJCOMs to establish an annual review cycle.

3.1.4.1. Endorsement will fall within three categories: (1) approved; (2) approved, with exceptions—in which case the STEM-B will take care of the exceptions with the next quarterly revision; (3) disapproved. If a blueprint is disapproved, the previous edition will remain in effect until superseded.

3.1.4.2. The 38 EIW will keep the official copy on file at the C-CS EDSC, and it is the official source document for all BPIDs. If, at any time, a base or MAJCOM wishes to withdraw its support of a blueprint, a memorandum to the STEM-B or STEM-C will take it out of circulation until issues are resolved. The previous version will then fall back into effect.

3.2. The Blueprint Phase Implementation Directive . The BPID, when signed by the approving official, is the authority to expend resources to implement a portion of the blueprint.

3.2.1. The BPID is the primary method of implementing a communications and information requirement. When the customer is ready for implementation, the CSO or designated representative requests the STEM-B to produce a BPID.

3.2.1.1. The BPID breaks the estimate provided in the BIP into cost categories, defines the requirement sufficiently to enter into implementation, and provides other information such as general scope of allied support, related program information, etc.

3.2.2. Upon request, the STEM-B develops the BPID and provides it to the wing commander for approval. When the wing commander concurs with the BPID as written, he/she will approve it by letter or endorsement for implementation. **NOTE**: The wing commander may delegate this approval authority to the CSO.

3.2.2.1. When the customer is ready to implement, they send the BPID to the STEM-B or STEM-TM.

3.2.2.2. If customer desires the 38 EIW to implement, the STEM will process and forward to 38 EIS/DRP. The customer must request, through their MAJCOM, that the BPID be placed on the MAJCOM production plan.

3.2.2.3. If another method of implementation is desired (such as local contract or self-help), the customer will coordinate this with the STEM-B or STEM-TM for tracking and update of the blueprint, as required.

3.3. Out-of-Cycle Requirements . Requirements that are not included in the blueprint are considered out-of-cycle requirements. When a requirement is known, the CSO should negotiate with the requester and STEM-B to have it included in the next quarterly blueprint update. If it is of a more urgent nature, submit the requirement according to the format in AFI 33-103, *Requirements Development and Processing*, Attachment 2. In this case, the 38 EIW will provide a technical solution and cost estimate within 30 days. If a detailed technical solution and cost estimate are required, forward it to 38 EIS/DRP, to address funding issues, and place it on the MAJCOM production plan.

Chapter 4

IMPLEMENTATION

4.1. Processing Requirements for Implementation . The 38 EIS/DRP manages the processing of all approved and funded communications and information requirements on the applicable MAJCOM production plan. Each production planning manager (PPM) will contact the customer to:

4.1.1. Ensure the requirement is thoroughly understood.

4.1.2. Confirm funds availability.

4.1.3. Verify service need date.

4.1.4. Identify other factors that may impact implementation of the requirement.

4.1.5. Prepare the Project Implementation Responsibility letter that transfers implementation responsibility to the 38 EIW program manager.

4.2. Processing Engineering Assists (EA) . Engineering assist is the mechanism used to request technical assistance from 38 EIW. There are two types of EAs. One does not require the 38 EIW to produce any documentation (such as attending a meeting to provide technical advice). The other requires formal documentation from 38 EIW (such as Statement of Work or contract effort). Customer funding is required for all EAs.

4.2.1. EAs that do not require 38 EIW documentation should not be placed on the MAJCOM production plan. The PPM will task the appropriate engineering element to determine if organic resources can accomplish the EA. If organic resources are not available, the PPM will inform the customer and advise them if a contract capability exists. The PPM ensures the customer's requirement is satisfied.

4.2.2. The PPM will place EAs requiring 38 EIW documentation on the MAJCOM's production plan, when the MAJCOM approves. The PPM will task the appropriate engineering activity. If organic capabilities do not exist, the PPM will advise the customer of the alternatives and manage the EA until the requirement is satisfied.

4.3. Detailed Technical Solution . The recommended method for technical solution and costing is through the STEM-B for inclusion in the blueprint. However, the customer may request a more detailed technical solution for new communications and information requirements. The customer will pay for this product. Normally the customer requests a detailed technical solution when they intend to proceed directly into implementation (almost) regardless of the results of the technical solution. If organic capability is not available to meet the customer's suspense, then the 38 EIW will use contract resources. The customer/PPM will request the MAJCOM place the requirement on the production plan for detailed cost estimates. After the 38 EIW completes the detailed technical solution, the customer determines if the requirement proceeds to the implementation stage.

4.3.1. The engineer provides the final detailed technical solution to include all costs, except allied support, to the PPM who then requests the STEM-B verify it as blueprint compliant. Once verified, the PPM forwards the detailed costing to the customer. The engineer, while on-site, will gather enough information to write a Project Support Agreement (PSA) if the requirement proceeds to implementation. The following exceptions may require an additional site visit by the engineer: the require-

ment is over 6 months old, the requirement is a major renovation/installation of a complex communication and information system, or the customer changes the requirement.

4.4. Production Planning . Production planning is the process of matching a MAJCOM's communications and information requirements, priorities, and funding with 38 EIW resources (AFI 33-104, *Base-Level Planning and Implementation* Attachment 4). Funding may be MAJCOM, base-level or other sources. The process involves a MAJCOM production plan that prioritizes approved upward generated communications and information requirement, EAs, and detailed technical solutions. The production plan is a living document that is updated quarterly.

4.4.1. Purpose. The purpose is to allocate available 38 EIW organic resources (not performing PMD workload) against each MAJCOM's most important upward generated communications and information requirements.

4.4.2. Quarterly Production Planning. Each MAJCOM will review their production plan quarterly to add, delete, or change priority of requirements from the previous quarter.

4.4.2.1. On the first duty day of March, June, September, and December, each PPM will provide their respective MAJCOMs a list of their current communications and information projects and the milestones associated with each. The MAJCOM will use the list to start the prioritization process for the next quarter. Each MAJCOM should develop procedures on how they will manage the production planning process.

4.4.2.2. Each MAJCOM will prioritize inputs they receive from their NAFs and units. Forward a consolidated, prioritized list to 38 EIS/DRP not later than the 15th of the month prior to the start of a new quarter. The priorities assigned by the MAJCOM are firm and will not change until the next quarter.

4.4.2.3. Upon receipt of a new MAJCOM production plan, the PPM will review it to determine if any new funded requirements were added. If so, they will route them to the appropriate 38 EIW activity for action. By the first duty day of the new quarter, the PPMs will enter the new priorities into the Automated Communications Information Management System database. The PPM will forward a Production Planning Strategy letter to the MAJCOM Lead Program Manager (MLPM). The MLPM will convene a strategy meeting where the 38 EIW will identify resources to satisfy the customers communications and information requirements.

4.4.2.4. Not later than the 15th of the first month of the new quarter, the PPM will advise the MAJCOM of the availability of organic resources for each project on the MAJCOM production plan based upon the customer service need date.

4.4.3. Special Interest Items (SII). An SII is an out-of-cycle communications and information requirement that cannot wait for the normal quarterly production plan process and requires immediate EI resources. The MAJCOM SC will forward all SIIs to the 38 EIW/CC for consideration.

4.4.3.1. Upon validation of the SII by the 38 EIW/CC, the PPM will convene an implementation strategy meeting (ISM). The 38 EIW will advise the MAJCOM of the recommended method of accomplishment (organic or contract), and of SIIs that may impact previously approved communications and information requirements.

4.4.3.2. SIIs are only valid during the current quarter and MAJCOMs must add them to the MAJCOM production plan during the next quarter. MAJCOMs must assign SIIs a high priority to ensure EI resources continue to be allocated until the project is completed.

4.5. Funds Management . The PPM performs periodic follow-ups with the program managers (PM) and 38 CPTF/FMR to verify funding obligation rates. Upon MAJCOM or base request, the PPM will provide near real time status of MAJCOM MIPRs via spreadsheet or other means.

4.6. Program Manager Responsibilities . The basic responsibility of 38 EIW PMs is to assure that all aspects of engineering, allied support, material purchases, installation, and funding of a project proceed on schedule by resolving any issues or problems that arise. AFI 33-104 addresses additional PM responsibilities. Several specific responsibilities are as follows:

4.6.1. Verify prior to workload release that all customer required support is complete and material is on-site.

4.6.2. Ensure work stoppages and potential workload stoppages issues are resolved jointly by the 38 EIW and customer.

4.6.3. Secure funding for premium transportation. The 38 EIW sends most products via ground or sea transport. Premium transportation includes such things as air transportation or overnight express of material.

4.6.4. Monitor all project milestones.

4.7. Implementation Strategy Meeting. The first program management step in implementing a project is to convene an ISM. This meeting will develop the appropriate implementation strategy (either organic or contract) and establish a tentative implementation schedule based upon the customer service need date. The EI PM will provide the results of the ISM to customers by message, facsimile or e-mail. The correspondence as a minimum will contain the following:

4.7.1. Assigned project number, 38 EIW project manager information, and customer’s service need date.

4.7.2. The projected date that 38 EIW can organically complete the installation. If the completion date does not meet the customer’s service need date, the strategy will include an estimated contract cost and time to implement.

4.7.3. Site survey date.

4.7.4. PSA distribution date. If the standard PSA is not necessary, the strategy will identify whether on site concurrence or a statemement of intent is anticipated.

4.7.5. Project material availability date.

4.7.6. Required allied support completion date.

4.7.7. Team start date.

4.7.8. Team completion date.

4.7.9. Notification that when the provided organic completion date is different from the customer's service need date, the requiring command must determine and provide their selected method of implementation within 10 working days. Notify the EI PM by message, facsimile, or e-mail.

4.7.10. Notification that no further implementation actions will occur until a reply is received. If no reply is received within 10 working days, the requirement is placed in held-in-abeyance status.

4.8. Engineering Process . The engineering process begins when the project engineer receives the communications and information system requirement from the 38 EIW PM. The engineer reviews the requirement and decides which survey method is appropriate based upon the given information. Once the survey is performed and all the preliminary requirements are met, a PSA is written and endorsed. The final step in the engineering process occurs when the project material is ordered and the task instructions are written and published in order to fulfill the communications and information system requirement.

4.8.1. PSA/Cost Verification Site Survey.

4.8.1.1. Survey Methods. Project engineers gather information by two different survey methods: desk top and on-site.

4.8.1.1.1. The desk top survey is accomplished by using CSIRs, available data, and telephone coordination with the customer to obtain technical information used in preparation of projects of non-complex installations and removals.

4.8.1.1.2. The on-site survey is performed when task complexity is difficult or when there is inadequate reference data to determine precisely where and how to install equipment and document it in a PSA.

4.8.1.2. Cost Verification. On occasion, a project engineer conducting a survey discovers the original technical solution and cost estimate did not project sufficient funds to cover implementation costs. In these instances, the project engineer will notify the PM, who will, in turn, notify the customer what additional resources are required.

4.8.2. Project Support Agreement/Statement of Work.

4.8.2.1. Project Support Agreement. The PSA is a formal document prepared by the project engineer that addresses the project support required and requests approval for base support. Items included in the PSA are as follows: equipment to be installed or removed, sites or locations agreed upon, services required, supporting construction, waivers, limitations, restrictions, and operational, technical, or other constraints affecting the communications and information systems requirement. The PSA also designates the responsibilities of the host base civil engineer, the base CSO's staff, other supporting activities, and the customer.

4.8.2.1.1. Attachments included with the PSA.

4.8.2.1.1.1. Attachment 1 of the PSA contains the siting and project installation data concerning specific sites and locations for equipment placement according to PSA drawings. Electronic copies of PSA drawings are provided to 38 EIW C-CS EDSC for configuration control.

4.8.2.1.1.2. Attachment 2 of the PSA contains the civil engineering support requirements that are provided by the host base civil engineer (BCE) or contractor. These services include architectural, mechanical, electrical, and support construction requirements. Also

identify special services such as trenching, landscaping, obtaining cranes, staking buried utilities, and shop services in this attachment.

4.8.2.1.1.3. Attachment 3 of the PSA addresses the communications support requirements for leased and O&M furnished equipment, circuit requirements, secure systems, TEMPEST guidelines, and downtime requirements.

4.8.2.1.2. Allied Support and Host Base Support. Allied support and host base support are two distinct topics addressed within the PSA. The following paragraphs describe the differences.

4.8.2.1.2.1. Allied support services include minor exterior and interior construction work, space allocation, reserving heavy equipment, environmental support, and any other support necessary to satisfy a customer's requirement. Some examples include clearing landscape and installing telephone and utility poles, power panels and breaker boxes.

4.8.2.1.2.2. Host base support for the installation team includes secure and dry storage areas, living and dining facilities, special vehicle support, warehouse inventory space, emergency medical/fire rescue support, and the availability of local purchase items.

4.8.2.1.3. On-Site PSA, PSA Concurrence, and Statement of Intent.

4.8.2.1.3.1. When feasible, the project engineer will prepare an on-site PSA after survey completion, and prior to departing the TDY location. The decision to leave an on-site PSA is site specific and depends upon the particular application. Instances where the engineer cannot leave the PSA include projects engineered by the ANG or an engineering services contractor, projects with short lead times, a requirement for post survey coordination, and projects with substantial technical complexity.

4.8.2.1.3.2. On-site PSA concurrence is highly encouraged to expedite project implementation. It is accomplished at the discretion of the project engineer and base CSO.

4.8.2.1.3.3. If an engineer cannot leave an on-site PSA, he or she will write and leave a Statement of Intent (SOI). The SOI informally records the requirements presented and the tentative support agreements reached. It also serves as a preliminary coordination document showing designated space, reserved facilities, and coordinated support requirements. The customer, CSO, PM, BCE, and interested parties must review the SOI and upon concurrence, sign it Upon the project engineer's return from the site survey, they will expedite the PSA and forward it to all PSA addressees.

4.8.2.1.3.4. The PSA endorsement covers all support requirements identified in the PSA and its attachments. The PSA endorsement is a binding contract between the host base and 38 EIW. The success of the PSA endorsement hinges on the ability of the tasked organizations to support the requirements. The key to the PSA endorsement is whether tasked organizations can support the requirements, not when work identified in PSA Attachments 1 through 3 can be accomplished. Organizations with concerns regarding conditions of the PSA should consolidate their responses in the PSA endorsement.

4.8.2.2. Statement of Work (SOW)/Performance Work Statement (PWS). The SOW/PWS specifies the type and quantity of work required and the services a contractor or installation team must provide. The SOW/PWS may also require the contractor to provide end-items of equipment,

which they purchase through an equipment performance specification document. The SOW can provide task instructions for organic installations.

4.9. Military Construction Program (MCP) and Minor Construction Requirem ents. MCP is a service provided by BCE for the design and construction of new buildings and the major renovations of existing buildings to include wiring, cable support, heating and air, and electrical power. This is a service provided for the various bases in support of their communications and information systems infrastructure. The Army Corps of Engineers (ACOE) provides MCP packages for review at various stages of design review. Both the base CSO and 38 EIW are responsible for reviewing these packages for requirements. The 38 EIW C-CS EDSC coordinates this review between the ACOE, STEM-B, and project engineer. Both the CSO and 38 EIW will:

4.9.1. Ensure that all communications requirements are included.

4.9.2. Analyze the MCP and minor construction requirement for impacts on the base's communications and information infrastructure and the ability of the host base to support the construction project.

4.9.3. Ensure the appropriate communications activities attend pre-project definition conferences, project reviews, and fully participate in military construction acceptance inspections.

4.9.4. Ensure affected agencies provide and forward design comments to the ACOE.

4.10. Project Package . A project package translates a funded and approved requirement into the engineering, supply, and installation data necessary to establish or upgrade a capability. The package consists of two primary documents: Tab A and Tab B.

4.10.1. Tab A. The Tab A is generally referred to as a List of Materials (LOM).

4.10.1.1. A LOM identifies all of the equipment and hardware required for a particular project installation. The LOM contains only those items necessary to install the asset as required in the authorizing requirement's document. Examples include hardware items such as solder, nuts, bolts, screws, twine, tape, lugs, fuses, etc., required to install and test the facility. To eliminate long lead times and avoid other obstacles, order material using 38 EIW Illustrated Catalog (CAT) listed items. The 38 EIW C-CS EDSC manages the CAT.

4.10.1.2. The LOM process begins with the PSA concurrence and the engineer developing and inputting a LOM into the Automated Materiel Management and Engineering System (AMMES) system. Once the engineer requests the material, a 38 EIW materiel manager orders it. The materiel manager will then ship the LOM, at the PM's request, when all of the material is procured and aggregated.

4.10.2. Tab B. Tab B includes installation descriptions, task instructions, and associated drawings.

4.10.2.1. The project engineer will prepare all Tab Bs in sufficient detail to permit the installation and testing of the project without further clarification. Provide project drawings, sketches, maps and circuit diagrams to show complete details of the installation. Prepare all projects, whether installed by contract or organic resources, according to the SOW.

4.10.2.2. The project engineer will prepare an abbreviated project package when a complete package is not deemed necessary. They may omit PSA preparation for abbreviated projects by an agreement between the project engineer and the 38 EIW PM. The project engineer is responsible for all design considerations for the abbreviated, as well as for the complete project packages.

Moreover, all questions and comments should be resolved with the project engineer before the installation team arrives on-site.

4.10.3. On-Site Engineering. On occasion, select projects need a project engineer on-site during the installation phase. Short lead time or highly visible projects are two examples when you may require an engineer on-site. However, this engineering practice is generally used as a last alternative.

4.10.3.1. Most of the time, an abbreviated project package is written for an on-site engineering requirement. In order to give the installation team chief an overview of the requirement, the abbreviated package should contain as much detail as possible including bullet task instructions and drawings.

4.11. Materiel Process . The 38 Logistics Squadron Supply Flight provides installation material required to implement projects. The materiel process begins when the PSA is approved and the engineer finalizes the LOM.

4.11.1. The Supply Flight project manager will:

4.11.1.1. Ensure funds are available and then accept the LOM into the supply system.

4.11.1.2. If backordered material becomes unavailable, start procurement actions for local purchase items. Procure local purchase items, if backordered equipment is not available.

4.11.1.3. Work with the host base supply receiving project material to ensure all material arrives on-site. Advise the host communications and information project manager of material transmittal.

4.11.1.4. Notify the 38 EIW PM and host project manager that all material is on-site.

4.11.1.5. Resolve any problems with material before, during and after project installation.

4.11.2. Material is aggregated at the Tinker AFB warehouse which is operated by the Defense Logistics Agency. When all material is available, it is shipped as a kit to the base supporting the installation. An exception exists when a large item such as cable is not available locally. To save time, transportation funds, and to eliminate double handling; these items are procured for direct delivery to the base supporting the installation.

4.11.3. Customer Responsibilities. In accordance with AFMAN 23-110, Volume 2, *USAF Supply Manual*, Part 2, Chapter 35, Section A, the Chief of Supply will provide covered, secure, and segregated storage for project material. The project custodian is responsible for the receipt, inspection, shipment, inventory disposition, issue and transfer of project material, and also maintains files for each project received.

4.11.4. Equipment Purchases Other Than 38 EIW.

4.11.4.1. Centrally Managed Equipment: If the PM submits a logistics assessment for equipment with a national stock number (NSN), they will contact the managing air logistics center (ALC) to determine availability. In accordance with the Memorandum of Agreement with Sacramento ALC (SM-ALC), if the equipment is available, the 38 EIW can reserve it for 90 days, provided it was added to the Table of Allowance by the installing base. This action is subject to a higher priority taking precedence. If unavailable, SM-ALC will obtain lead time and cost data and provide this information to the PM. Should the customer wish to deal directly with the ALC, contact Customer Service at the ALC, and provide the NSN or stock class of the equipment to determine the

Inventory Manager and their location. Approximately 90 percent of installed equipment is managed by SM-ALC.

4.11.4.2. Program Funded Equipment: There are equipment items procured by the System Program Office (SPO) for programs such as Base Installation Security System, Military Strategic Tactical Array, etc. These are stored at a Tinker AFB facility and shipped, with the other required items, when identified by the engineer on an applicable LOM. The SPO also has non-equipment supply items that are program funded.

4.12. Excess Material After Project Installation. Upon completion of an installation project, if excess or residue material is generated, the team chief will query the appropriate Chief of Plans/Systems Flight to identify serviceable material required by the squadron. This material remains subject to 38 LS/LGSM disposition based upon upward or downward procurement.

4.12.1. If the material was funded by the MAJCOM or base, the team chief will turn over the material identified by the Chief of Plans/Systems Flight.

4.12.2. If the material is acquired as a downward-directed installation, the project managers and 38 LS/LGSL, will determine if any of the identified material is required for future program installation. If there is a need and it is cost effective, the team chief will return the material to Tinker AFB.

4.13. Reimbursement for Damaged Equipment and Material.

4.13.1. Missing, Incorrect, or Unserviceable Material. If missing, incorrect, or damaged material is identified during the preinstallation survey, the team chief advises the 38 LS/LGSL project manager and PM by message. Additional funding of project material is a customer responsibility.

4.13.1.1. Incorrect Equipment. If the 38 LS/LGSL requisitioned the equipment, they will contact the source of supply to correct the problem.

4.13.1.2. Damaged or Unserviceable Equipment. In all other instances, it is the requisitioning organization's responsibility to follow up on damaged or unserviceable equipment using the material deficiency report, depot level repairable procedures or contacting the local transportation personnel, as appropriate, for reimbursement.

4.14. C-Coded Items. C-coded items are material such as plywood, paint, tape, hazardous material, etc., which installation units have locally purchased using customer funds prior to deploying to the installation site. At the direction of the 38 EIS/PM, the customer may purchase C-coded items directly.

4.15. Installation Services. Thirty days prior to the projected completion date of allied support and material delivery, workload control will assign an installation unit. A team is selected and the project is workload released by the PM. Workload control will notify the installation unit and customer via a Lightning Force Engineering Installation Tasking Order identifying the in-place date, purpose, and length of TDY. The team installs the project and completes all paperwork required for completion then departs for home station.

4.15.1. Work-loading. Workload control (38 EIG/DRW, 4029 Hilltop Road, Tinker AFB OK 73145-2713) assigns installation responsibilities and the distribution of installation workload to all EI installation units. The 38 EIW also provides workload to the ANG for wartime proficiency training purposes; this is accomplished in conjunction with workload balancing.

4.15.2. Additional Customer Tasking of Deployed Installation Team. The EI installation unit must approve all tasking for additional workload through coordination between the Team Chief, Installation Unit Workload Control, EI PM, and 38 EIG/DRW. All additional projects must appear on the MAJCOM production plan and be ready for installation.

4.15.3. Upon project completion, the team chief will annotate two sets of Interim Installation Record (IIR) drawings. The team chief will leave one set with the communications unit (normally the CSIR manager) and forward the other set to the C-CS EDSC. IIRs are annotated copies of project drawings compiled by the team chief on completion or installation of a project at a particular location. They are commonly called "as installed" drawings and annotated to reflect the as-installed conditions that vary from the actual project drawings furnished to the team chief by the C-CS EDSC.

4.15.4. Work Stoppages. Work stoppages can occur for equipment repairs, shortages, wrong equipment, allied support not complete, safety reasons, etc. If an anticipated work stoppage is about to occur due to unforeseen circumstances, every effort will be made to resolve the situation before an actual work stoppage occurs. The team chief will work directly with base agencies to resolve problems, which can lead to potential work stoppages. In the event an actual work stoppage occurs, the local communications unit plans and implementation flight, parent workload control, and the 38 EIW program manager, will determine what action to take in the best interest of the customer and the deployed EI team. Any individual on an installation team has the authority to stop a project in progress based on safety of team personnel and equipment.

Chapter 5

ENGINEERING AND INSTALLATION SERVICES CONTRACTING SUPPORT AND SPECIALIZED CONTRACTING SUPPORT

5.1. General. The 38 EIW provides EI services contracting support for implementation of EI services whenever organic resources are not available to satisfy customer requirements. The 38 EIW also provides specialized contracting support for telecommunications services to include regulated phone services (purchased via the CSA), competitive contracts for phone service, special leasing agreements, and operations and maintenance contracts for digital telephone switches and cable distribution plants.

5.2. EI Services Contracting. The 38 EIW provides contracting, as well as related program management and engineering support, to supplement organic capabilities of the 38 EIW for both downward directed programs and upward generated requirements.

5.2.1. EI Services Contracts. The key to timely response to customer needs is through the use of available contracts maintained in the 38 EIW "Tool Box." The 38 EIW "Tool Box" includes contracts awarded and administered by the 38 EIW and other federal agency contracts identified by the 38 EIW as capable of providing products and services for satisfying a multitude of EI tasks in support of worldwide requirements. Currently there is no surcharge associated with the use of contracts awarded and administered by the 38 EIW. Contracts awarded by other federal agencies may, however, contain a surcharge for their use or require special documentation or justification, such as an Economy Act determination. When existing "Tool Box" contracts cannot satisfy customer requirements for whatever reason (e.g., contract expiration, outdated technology, cost or performance considerations), the 38 EIW may develop and award new contracts to satisfy customers' needs. In this instance, the 38 EIW will work closely with the customer throughout contract development, award, and implementation.

5.2.1.1. When the 38 EIW develops a contract specifically to satisfy a customer's requirement, the 38 EIW personnel will work closely with MAJCOM and customer representatives in the preparation of the SOW/PWS (used to define services required), Contract Line Item Numbers (CLINs) normally found in Section B of the contract, DD Form 1423, **Contract Data Requirements List** or other requirements document, etc., via establishment of Integrated Product Teams to ensure a viable contract is developed. As the lead time for development of this contracting vehicle takes up to 6 months or more, depending on the complexity of the requirement, it is imperative that customers commit the necessary resources early on to ensure stability and streamlining of the acquisition process. Integrated Product Team composition may include, but is not limited to, members from the MAJCOM, base communications unit, 38 EIG (commodity engineer and program manager), 38 EIW/ES (STEM), and 38 LS/LGC (contract specialists, contracting officer, price analyst, contract review committee member, etc.), as well as 38 EIW/JA (attorney).

5.2.1.2. In addition to soliciting, evaluating, and awarding contracts, the 38 EIW actively administers and manages site specific delivery orders and contracts implementing EI projects. During the contract administration and management of these delivery orders, the on-site customer plays an integral role in this process. To achieve optimum performance, it is imperative that the customer provide focused Quality Assurance Evaluator or Contract Monitor support.

5.3. Specialized Contracting.

5.3.1. Communications Service Authorizations (CSA).

5.3.1.1. Requirements for new or renewal CSAs are identified and requested by the MAJCOM or individual bases by submission of an AF Form 1218 to 38 LS/LGCK. The 38 LS/LGCK prepares a procurement package that includes the applicable Justification and Approval (J&A) documents, engineering analysis, requirements analysis and Analysis of Alternatives, as well as specific or blanket Delegation of Procurement Authority (DPA) if required. Changes or modifications to existing contracts are also processed by the bases via an AF Form 1218 directly to 38 LS/LGCX.

5.3.1.2. The 38 EIW provides administrative management and support on all CSA contracts to include: (1) collecting and reporting of contract expenditures against CSA documents, (2) managing J&A thresholds and proactively managing DPA thresholds or approvals to ensure limitations are not exceeded, and (3) providing statistical data on CSA contracts as required. The base customer ensures all expenditure data against a CSA is sent to the Contracting Officer located at the 38 LS/LGCX. This occurs monthly via submission of an SF 1034, **Public Voucher for Purchase and Services Other Than Personal**, issued by the Base Accounting and Finance Office. Get this information to 38 LS/LGCX within 7 days of the end of the month to ensure the contractor is paid.

5.3.2. Competitive Contracts for Telephone Service. The 38 EIW negotiates and awards competitive contracts to replace tariffed services under federal telecommunications deregulation initiatives. After receipt of the AF Form 1218, AF Form 9, or other appropriate funding/requirements document, the 38 EIW will determine the extent of competition available and negotiate and award a CSA or competitive contract as required. If the 38 LS/LGCX determines, through appropriate market research, that competition is available in the local telephone market where phone service is being requested by the base, they establish an Integrated Product Team (IPT) to discuss and initiate action to award a competitive contract. The base customer is considered an essential and integral part of this team as well as the engineer, program manager, contract specialist, contracting officer, price analyst, review committee member, attorney, etc., and it is imperative that the base customer commit the necessary resources up-front to participate in this IPT process.

5.3.3. Leasing Agreements.

5.3.3.1. Leases of Telephone Switches and Cable Distribution Plants from the Local Telephone Company. Some of these leases still exist, although no new leases are let. The 38 EIW and customer must work closely to phase out these leases as quickly as possible, in the best interest of the Air Force.

5.3.3.2. Reciprocal Leases. Reciprocal leases are leases established between the Air Force and the local telephone company for reimbursement by the telephone company for use of the Air Force's cable to provide service to unofficial customers on a base. The 38 LS/LGCX negotiates and awards reciprocal leases between Air Force bases and telephone companies at the request of the base customer and the MAJCOM representative. **NOTE: In accordance with public law, no base can allow use of Government cable without some form of reimbursement**. Customers must use the 38 EIW to establish these lease agreements to ensure the Air Force is applying these agreements equally and fairly across the Air Force. Address requests for service to 38 LS/LGCX via the AF Form 1218.

5.3.4. Operation and Maintenance Support. The 38 EIW provides contract support services for fielded base telecommunications systems (switch and distribution system) at Air Force bases and facilities in the continental United States.

5.3.4.1. The 38 EIW works closely with the base and MAJCOM to develop SOWs, data items, and contract line item structure to support each individual base's mission. As base customer and MAJCOM representative involvement plays an integral role in the Operations and Maintenance process, the 38 EIW will ask them to serve on IPTs established early in the requirements identification process. Appoint members to these teams who are available to support the entire process, i.e., from requirements identification to contract award. The 38 EIW then solicits, negotiates, and awards replacement contracts to ensure services and support are uninterrupted, comprehensive, and capable of meeting a wide variety of Air Force support requirements. Submit requests for support to the appropriate STEM-B according to AFI 33-103, Attachment 2.

5.3.4.2. Following contract award, 38 LS/LGCO provides the full range of contract administration services for O&M contracts such as processing contract changes (modifications), adding or deleting requirements to support the base customer, addressing labor violations and/or disputes, receiving and reviewing monthly QAE reports, certifying contractor's invoices for payment, etc.

Chapter 6

SPECIALIZED SERVICES

6.1. Maintenance Services. Workload Control (38 EIG/DRW) is the focal point to receive, process and manage emergency, urgent, contingency, manning assistance, mobility, etc. (unprogrammed) communications and information requirements. Workload Control also receives, processes, and manages preventive (programmed) maintenance action from the MAJCOMs.

6.1.1. Emergency Requests. The parent MAJCOM must approve all requests for emergency and urgent maintenance services. MAJCOMs submit them to Workload Control (38 EIG/DRW) in accordance with TO 00-25-108. Workload Control will coordinate all actions, task a team for deployment, and assign a Workload Identification Number to the request.

6.2. Cable and Antenna Systems. The 38 EIG/DRW manages maintenance requirements and ensures group compliance with responsibilities outlined in the Air Force Cable and Antenna Maintenance Program. Customers submit requirements to 38 EIW/DRW according to TO 00-25-108.

6.3. Structural Engineering Analysis. The user, when needed, should contact 38 MSS/CE for assessment of any equipment loading affecting a facility or equipment platform such as an antenna tower. The user can also contact 38 MSS/CE for help in identifying any needed repair work to communication platforms. The 38 MSS/CE will work directly with the user to develop a schedule that meets the user's needs without impacting the PMD workload of the 38 MSS/CE flight. Based on the mutually developed schedule and receipt of funding from the user, the 38 MSS will provide an engineer to conduct an on-site visit to assess the situation and gather data. When feasible, the engineer will provide a solution before leaving the site. However, if a detailed analysis is required, the engineer will forward the results and recommendations back to the site upon completion.

6.4. Specialized Engineering Workload. The 738 EIS Field Engineering Flight provides worldwide communications and information systems testing and engineering analysis. These services are provided to all Air Force, DoD, and other government organizations on a cost reimbursement basis with customers directly tasking the flight. Engineering consultation on communications systems is available for most Air Force initiatives with contractors and government organizations through the sections indicated.

6.4.1. Telecommunications Test and Analysis Section. This section specializes in testing command and control data systems and performing measurements, analyses, and troubleshooting on a wide variety of digital and analog communications-electronics facilities, systems, and subsystems, including those using fiber optic, copper, satellite, local area network, and other transmission media. They perform:

6.4.1.1. Digital and Analog Communications and Information Circuit Analysis. Ensure users can communicate with the distant end or send and receive information accurately. Includes the analysis of problems and determines corrective actions to ensure that users get the quality of service for which they are paying.

6.4.1.2. Fiber Optic Technology Investigation. Investigate new technology in fiber optics (connectors, splices, test equipment) and perform tests to ensure proper operation of fiber optic systems.

6.4.1.3. Local Area Networks Tests. Perform tests to ensure transmission media (metallic, fiber optic, free-space) will: support the network, send and receive packets of information, and perform to commercial and/or local performance criteria.

6.4.1.4. Cable Evaluation. Determine if cable will support a proposed system (T-carrier, high-speed data, etc.), identify sources and causes of problems, and recommend corrective action for repair if necessary.

6.4.1.5. Systems Acceptance of Communications and Information Facilities. Prepare detailed test procedures that will verify a system meets specifications and operates properly. This ensures a smooth cut-over from old to new system.

6.4.1.6. Satellite Transmission Testing. Tests are performed over the total path from user to user to verify that a system and system interfaces operate properly.

6.4.2. Electromagnetic Environmental Effects Section. This section specializes in electromagnetic compatibility, electromagnetic interference, electromagnetic radiation hazards and high altitude electromagnetic pulse. They perform:

6.4.2.1. Electromagnetic Compatibility (EMC) measurement surveys and desktop analysis studies to prevent costly retrofits due to interference, which prevent costly over-engineering and uncover potential problems before they occur. Included under EMC are studies and surveys for land mobile radio and ground to air radio optimum antenna siting, coverage and blind spot problems.

6.4.2.2. Electromagnetic Interference on-site investigations to identify interference sources which result in degradation or malfunction of operational systems under the Quick Fix Interference Reduction Capability Program. Capabilities include the engineering personnel and deployable test equipment resources to provide direction finding support for USAF units worldwide according to DoDD 3222.3/AF SUP 1, *USAF Electromagnetic Compatibility Program,* and AFI 10-707, *Spectrum Interference Resolution Program*.

6.4.2.3. Electromagnetic Radiation Hazards (EMRH) on-site measurements and desktop studies of radars and other high power emitters to determine areas that can cause detonation of ordnance, damage to equipment, or injury to personnel IAW DoDD 3222.3/AF SUP 1. EMRH measurements prevent costly litigation due to personnel overexposure. Unique assets include a mobile shielded laboratory for measurements in high intensity fields.

6.4.2.4. High Altitude Electromagnetic Pulse design, quality control and testing services that are aimed at assisting DoD agencies with establishing, maintaining, repairing and verifying nuclear electromagnetic pulse protection. Basic testing capabilities include low level continuous wave shielding effectiveness measurements, both discrete and swept frequency, low level pin drive, and threat relatable pulse current injection. Existing capabilities are targeted at fixed and mobile ground communications facilities but can be adapted to other nuclear and non-nuclear applications.

6.4.3. Measurements Section. The Measurements Section conducts microwave radio link subsystem and system acceptance testing. This includes alignment and measurement of antenna systems, propagation studies and related activities. Test plans and procedures are developed and published to support testing in these areas. The section performs measurements and data collection for electromagnetic environmental surveys, radio frequency shielding, and power quality and grounding

measurements. Transmission line and waveguide tests are performed to assure compliance with specifications, engineering criteria, and operational requirements. They perform:

6.4.3.1. System acceptance testing for microwave radio, multiplex, antenna/waveguide, and remote monitoring systems for conformance to specifications and operational requirements.

6.4.3.2. High frequency (HF) radio measurements and antenna systems testing for return loss and noise. Measuring and cataloging noise values for HF facilities assist in containment of industrial encroachment and help in establishing zoning restrictions.

6.4.3.3. AC power and grounding systems testing and evaluation. Voltage transient and distortion problems are resolved for communications and computer facilities. Lightning surveys are performed and facilities are evaluated to minimize hazards to personnel, equipment, and structures.

6.4.3.4. Shielding effectiveness testing for all types of shielded enclosures, fixed and portable. Susceptibility testing can be performed on welded steel, aluminum, and screen rooms to protect sensitive equipment from high level signals. Evaluation of testing performed by contractors is available.

6.4.3.5. Preparation of test plans and procedures for testing all phases of communications systems. The plans and procedures are structured to determine if communications equipment meets the operational requirements and system specifications.

6.4.3.6. Timing and synchronization systems testing to ensure major data communications facilities and networks can communicate successfully.

Chapter 7

ENGINEERING DATA

7.1. Engineering Data. The 38th Mission Support Squadron, Engineering Data Services Flight (38 MSS/EG), operates the C-CS EDSC according to AFPD 21-4, Engineering Data, and AFI 21-404.

7.2. Engineering Data Service Center Services. The C-CS EDSC provides various engineering data services to 38 EIW, Air Force, and DoD customers worldwide. The C-CS EDSC:

7.2.1. Acts as a focal point for all customers to obtain 38 EIW engineering data products.

7.2.2. Ensures all 38 EIW engineering data procedures comply with AFI 21-401, *Engineering Data Storage, Distribution, and Control*; AFI 21-404, and AFI 61-204, *Disseminating Scientific and Technical Information (STINFO).*

7.2.3. Administers the 38 EIW STINFO program.

7.2.4. Assigns drawing and document numbers on all engineering data.

7.2.5. Maintains an index of all 38 EIW engineering data.

7.2.6. Coordinates with appropriate offices on Freedom of Information Act requests.

7.2.7. Serves as the Data Management Officer for:

7.2.7.1. C-CS Installation Records. CSIRs consist of over 50,000 site specific digital drawings of 650 Air Force locations worldwide. These records support base level operations, maintenance and planning, STEM planning, project engineering and installation.

7.2.7.2. Project Packages:

7.2.7.2.1. Provides drafting services for the development of project drawings. The 38 MSS/EGD manages the assignment of Project Drawing numbers whether produced in drafting or directly by the Project Engineer. Project drawings are maintained in the database until installation to ensure configuration control.

7.2.7.2.2. Provides worldwide reproduction and distribution of project packages both in hardcopy and electronic formats.

7.2.7.2.3. Archives project packages for future reference and audit trail.

7.2.7.2.4. Provides engineering data services to ensure the quickest project package turn around time to the customer. This includes supporting the development of on site PSAs and project packages.

7.2.7.3. Communications and Information Systems Base Blueprints.

7.2.7.3.1. Provides worldwide reproduction and distribution of blueprints in electronic formats.

7.2.7.3.2. Archives blueprints for future reference and audit trail.

7.2.7.4. Material Information. Manages the CAT and ensures the CAT provides the most accurate and timely information on 38 EIW stock material items managed in AMMES.

7.2.7.5. Standards.

7.2.7.5.1. Has Tri-Service responsibility for all Standard Installation Practice Technical Orders.

7.2.7.5.2. Is the focal point for all Military Standards and Specifications issues. This includes responsibility for implementation of the Military Standards and Specifications Reform program.

7.2.7.5.3. Responsible for the management of the Standard Drawing program. Standard Drawings are used for the installation of common assemblies and are cross referenced to CAT items. Standard Drawings are also used by base level activities for the maintenance of previously installed systems.

7.2.8. Engineering Geodetic Services (38 MSS/EGG). The 38 MSS/EGG provides mapping, charting, and geodetic (MC&G) services and products to AFMC engineered and installed communications, flight facilities, and construction projects worldwide.

7.2.8.1. Services include boundary surveys, topographic mapping, geodetic control, route surveys, radar coverage analysis, target acquisition contouring, clutter prediction, line-of-site path profile analysis, and airfield and Air Traffic Control and Landing Systems surveys. Televised Ordnance Scoring Surveys and Global Positioning Systems data collection are also available through MC&G.

7.2.8.2. Is the repository for geodetic products and data. Obtains MC&G products for the engineering communities of the 38 EIW, and other DoD and federal agencies upon request.

7.2.9. Military Construction Program (MCP) Review. Coordinates MCP packages between the Army Corps of Engineers, STEM-B, and project engineer.

7.2.10. Technical Library. Provides technical library services for all 38 EIW activities as well as Air Force customers.

7.2.11. Special Interest Item Support. This support includes 3-D wireframe modeling, rendering, and animation services, as required.

7.2.12. Other Support. This support assists customers in the development of Integrated Facility Management, Geographic Information Systems, and Facility Information Systems as required.

Chapter 8

REQUESTING WARTIME SUPPORT FOR SUPPORTED FORCES COMMANDER

8.1. Engineering and Installation Wartime Capabilities . EI readiness (mobility) forces provide in-theater support of communications and information systems, to include air traffic control and landing systems. They are capable of providing the services as reflected in the mission capabilities portion of the appropriate Unit Type Code (UTC) contained in the Manpower Force Element Listing communications UTC Group (6KQXX). Availability (quantity) of EI UTCs is contained in the USAF War and Mobilization Plan (WMP), Volume III. Forces (UTCs) reside in active duty and gained ANG units, with access to ANG forces dependent on Congressional mobilization of reserve forces.

8.1.1. EI readiness forces provide the following capabilities: cable, antenna, radio frequency interference, satellite/wideband, meteorological and navigational, radio, secure communications, and initial communication engineering and installation teams.

8.1.2. EI readiness forces do not include the communications and information systems themselves, equipment, and/or spare parts, as this is a supported command responsibility. EI readiness forces may, on a case-by-case basis, accompany systems and equipment procured on behalf of the supported command (command funded) to expedite enhancement, expansion, installation, and/or operational repair of required communications and information services. Furthermore, extended in-theater operations will require wholesale and specialized logistics and engineering support from continental United States EI sustaining forces.

8.1.3. EI sustaining forces can support requirements at staging, enroute, and pre-deployment locations, to include a deployed force multiplier via the “Reachback Concept” for engineering expertise or specialized installation materials.

8.1.4. Host agency at the deployed locations will provide the required base operating support requirements; petroleum, oil, and lubricants; test, measurement, and diagnostic equipment; etc.

8.2. Planning for Wartime Support . Customers submit requirements for EI wartime and contingency forces via specific EI UTC capability determined by analysis of support required. Process requirements into the applicable plan (operation or contingency). Reflect concurrence or validation of the requirement as an entry into the applicable Time Phased Force and Deployment Data, an action that is performed by the supported command, host MAJCOM, or lead military service communications and information war and contingency planning office.

8.2.1. If you need assistance to determine appropriate EI UTCs to meet requirements, or to expedite emergency response in meeting approved requirements, contact the 38 EIG, Current Operations Plans.

8.2.2. Requirements flow applies to request for standard EI UTCs as listed in the Type Unit Characteristics data file or non-standard UTC that are Air Force Specialty Code specific.

8.3. Special Purpose Vehicle Support for Deployed Engineering and Installa tion Personnel. Special purpose vehicles required to expedite or facilitate responding to requirements by deployed EI UTCs are available in a deployable fleet identified as standard UTCs in the communication group as series 6KQXX4. If this specialized support is unavailable at the deployed location, you must request it in accordance with paragraph **8.2.**.

8.4. Access to Engineering and Installation Wartime Forces . Customers provide funding for requirements for communications and information assets (materials, equipment, systems) in which the supported command, host MAJCOM, or lead military service desires the supporting command or its executive agent to act in their behalf.

8.4.1. Customers must completely identify requirements for communications and information assets (materials, equipment, systems) to permit expedient processing, to determine availability, or to make suitable substitutions to meet the stated requirement.

WILLIAM J. DONAHUE, Lt General, USAF
DCS/Communications and Information

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

DoDD 3222.3/AF Sup 1, Dec 93, *USAF Electromagnetic Compatibility (EMC) Program*

AFPD 21-4, *Engineering Data*

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

AFI 10-707, *Spectrum Interference Resolution Program*

AFI 21-401, *Engineering Data Storage, Distribution, and Control*

AFI 21-404, *Developing and Maintaining Communications and Computer Systems Installation Records*

AFI 33-103, *Requirements Development and Processing*

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

AFI 61-204, *Disseminating Scientific and Technical Information*

AFI 65-601, *Volume 1, Budget Guidance and Procedures*

AFMAN 23-110, *Volume 2, USAF Supply Manual*

DFAS-DE 7010.1-R, *General Accounting and Finance Systems at Base-Level*

Technical Order 00-25-108, *Depot Support*

Abbreviations and Acronyms

ACOE—Army Corps of Engineers

AFI—Air Force Instruction

ALC—Air Logistics Center

AMMES—Automated Materiel Management and Engineering System

ANG—Air National Guard

AF—Air Force

BCE—Base Civil Engineer

BIP—Blueprint Implementation Plan

BPID—Blueprint Phase Implementation Directive

C4—Command, Control, Communications and Computers

CAT—38 EIW Illustrated Catalog

C-CS—Communications and Computer Systems

C-CS EDSC—Communications and Computer Systems Engineering Data Service Center

CM—Contract Monitor

CSA—Communications Service Authorization

CSIR—CS Installation Record

CSO—Communications and Information Systems Officer

DISA—Defense Information Systems Agency

DoD—Department of Defense

DPA—Delegation of Procurement Authority

EA—Engineering Assist

EDSC—Engineering Data Service Center

EI—Engineering and Installation

EIG—Engineering Installation Group

EIW—Engineering Installation Wing

EMC—Electromagnetic Compatibility

EMRH—Electromagnetic Radiation Hazards

FY—Fiscal Year

HF—High Frequency

HQ AFCA—Headquarters Air Force Communications Agency

IDIQ—Indefinite Delivery/Indefinite Quantity

IIR—Interim Installation Record

IPT—Integrated Product Team

J&A—Justification and Approval

JTA-AF—Joint Technical Architecture-Air Force

LOM—List of Materials

MAJCOM—Major Command

MC&G—Mapping, charting, and geodetic

MCP—Military Construction Program

MIPR—Military Interdepartmental Purchase Request

MLPM—MAJCOM Lead Program Manager

NAF—Numbered Air Force

NSN—National stock number

O&M—Operation and Maintenance

PM—Program Manager

PMD—Program Management Directive

PPM—Production Planning Manager

PSA—Project Support Agreement

PWS—Performance Work Statement

QAE—Quality Assurance Evaluator

SII—Special Interest Item

SOI—Statement of Intent

SOW—Statement of Work

SPO—System Program Office

STEM—Systems Telecommunications Engineering Manager

STEM-B—Base Level STEM

STEM-C—MAJCOM Level STEM

STEM-J—Joint STEM

STEM-R—ANG Regional STEM

STEM-TM—STEM-Telecommunications Manager

TAFIM—Technical Architecture Framework for Information Management

TDY—Temporary Duty

TO—Technical Order

UTC—Unit Type Code

Terms

Blueprint Phase Implementation Directive—Document from the STEM that reflects a portion of the communications and information systems blueprint, and authorizes and directs implementation. It may serve as the technical solution, cost estimate, and implementation directive.

Command, Control, Communications and Computer (C4) System—An integrated system of doctrine, procedures, organizational structures, personnel, equipment, facilities, and communications designed to support a commander's exercise of command and control across the range of military operations. Also called C4 systems. (Approved by JMTGM# 081-95). Also called communications and information systems in the Air Force.

Communications and Information Systems Blueprint—Document that provides the requirements engineering plan to modernize the base-level infrastructure with cost-effective, base-wide communications and information capability to support digital transmission of voice, data, video, imagery, and telemetry needs. It documents the baseline, identifies a target base configuration to support present and future requirements, and provides a time-phased plan and estimated costs for logical transition.

Communications and Information Systems Officer (CSO)—The term CSO identifies the supporting communications and information systems officer at all levels. At base-level, this is the commander of the communications unit responsible for carrying out base communications and information systems responsibilities, the Base CSO. Tenant organizations may also have CSOs. At MAJCOM, and other

activities responsible for large quantities of assets, it is the person designated by the Commander as responsible for overall management of communications and information assets budgeted and funded by the MAJCOM or activity. The CSO function, when under the base communications unit, uses the office symbol "SC" that expands to three and four digits to identify specific functional areas.

Joint Technical Architecture (JTA)—A common set of mandatory information technology standards and guidelines to be used in all new and upgraded DoD C4I acquisitions. The standards are used for sending and receiving information, understanding the information, and for processing the information. The JTA draws on the Technical Architecture Framework for Information (TAFIM), which provides general guidance and documents the processes and framework for defining the JTA and other technical architectures.

Program Manager (PM)—A general term of reference to those organizations directed by individual managers, exercising authority over the planning, direction, and control of tasks and associated functions essential for support of designated weapons of equipment systems. The authority vested in this organization may include such functions as research, development, procurement, production, materiel distribution, and logistic support, when so assigned (JP 1-02). The individual in the implementing command who has authority or responsibility for managing a program. There is only one PM for a given program, but a PM may manage more than one program.

Program Management Directive (PMD)—The official Air Force document used to direct acquisition or modification responsibilities to appropriate MAJCOMs for the development, acquisition, or modification of a specific weapon system, subsystem, or piece of equipment. It used throughout the acquisition cycle to terminate, initiate, or direct research; development; production; or modifications for which sufficient resources have been identified. States program unique requirements, goals, and objectives, especially those to be met at each acquisition milestone or program review. (AFR 11-1, will convert to AFDD 100.)

Project Support Agreement (PSA)—A document normally prepared by the communications and information engineer that describes: what equipment to install, sites agreed upon; supporting construction; services required; operational, technical, or other constraints affecting a communications and information systems requirement; and the responsibilities of the host base civil engineer, base communications and information systems staff, and other supporting activities, including the user.

Self-Help Project—A communications and information systems requirement satisfied by the local communications unit using available base resources (manpower, materiel, technical expertise, and so forth), including contractual services. The 38 EIW normally does not provide installation services to self-help projects. Coordinate significant self-help projects that may impact the base infrastructure with the STEM-B, before implementation.

Systems Telecommunications Engineering Manager—(STEM) A communications and information systems engineer who provides technical engineering planning services in support of communications and information systems and base infrastructures. The base-level STEM (STEM-B) has technical responsibility for engineering management and assists the base CSO in systems engineering and configuration control. The STEM-C provides technical assistance to the MAJCOM and coordinates with STEM-Bs on future MAJCOM mission changes, programs and efforts at the MAJCOM level. The Joint STEM (STEM-J) is assigned to a unified command, joint staff, or DISA to promote interoperability by providing an interface between those activities and the Air Force, MAJCOMs and bases. Regional STEMs (STEM-R) are assigned to ANG EI units and provide base-level support to ANG units. The

telecommunications manager (STEM-TM) assists the STEM-B and C.

Technical Architecture Framework for Information Management (TAF—IM) A DISA Center for Architecture multi-volume publication which provides guidance for the evolution of the DoD technical infrastructure. The TAFIM does not provide a specific system architecture. It provides the services, standards, design concepts, components and configurations that can be used to guide the development of technical architectures that meet specific mission requirements. The TAFIM applies to information system technical architectures as all DoD organizational levels and environments (tactical, strategic, sustaining base). The TAFIM uses Federal and National standards adopted by industry and international standards accepted worldwide by US allies.

Unit Type Code (UTC)—A five-character, alphanumeric designator that uniquely identifies each type unit of the Armed Forces. (JP 1-02).

War and Mobilization Plan (WMP)—The Air Force supporting plan to the Joint Strategic Capabilities Plan. The six volumes of the WMP extend through the Future Years Defense Program to provide continuity in short-and mid-range war and mobilization planning. It provides current planning cycle policies and planning factors for the conduct and support of wartime operations. It establishes requirements for the development of mobilization and production planning programs to support sustained, contingency operations of the programmed forces. The WMP encompasses all functions necessary to match facilities, manpower, and materiel with planned wartime activity. (AFR 11-1, will convert to AFDD 100.)

Addresses

38 EIG/DOCC

4029 Hilltop Road

Tinker AFB OK 73145-2713

DSN 884-9343

Commercial (405) 734-9343

38 EIG/DRW

4029 Hilltop Rd

Tinker AFB OK 73145-2713

38 EIS/DRP

4064 Hilltop Road, Suite 216

Tinker AFB OK 73145-2713

38 EIW/EST

4064 Hilltop Road

Tinker AFB OK 73145-2713

38 EIW/XPP
4069 Hilltop Road
Tinker AFB OK 73145-2713

38 EIG/CM
3580 D. Avenue, Bldg 201 West
Tinker AFB OK 73145-2713

38 LS/LGCK
4008 Hilltop Rd
Tinker AFB OK 73145-2713

38 LS/LGCO
4008 Hilltop Rd
Tinker AFB OK 73145-2713

38 LS/LGCX
4022 Hilltop Road, Suite 210
Tinker AFB OK 73145-2713

38 MSS/CE
4003 Hilltop Road
Tinker AFB OK 73145-2713

38 MSS/EG
4012 Hilltop Road
Tinker AFB OK 73145-2713

738 EIS Field Engineering Flight (738 EIS/EEE)
738 EIS Telecommunications Section (738 EIS/EEET)
738 EIS E3 Section (738 EIS/EEEX)

738 EIS RF Systems Section (738 EIS/EEEF)

801 Vandenberg Avenue, Suite 201

Keesler AFB MS 39534-2633

World Wide Web (WWW): http://www.keesler.af.mil/738eis/