

19 OCTOBER 2007



Installation and Facilities

**INSTALLATION GEOSPATIAL
INFORMATION AND SERVICES
(INSTALLATION GI&S)**

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RELEASABILITY: There are no releasability restrictions on this publication.

OPR: HQ AF/A7CIS

Certified by: HQ USAF/A7C
(Maj Gen Delwyn Eulberg)
Pages: 23

This instruction implements Air Force Policy Directive (AFPD) 32-10, *Installations and Facilities*, 27 Mar 95, AFPD 10-5, *Basing*, 26 Nov 1993, Air Force Instruction (AFI) 10-1401, *Modernization Planning Documentation*, 22 May 95, AFI 32-7062, *Air Force Base Comprehensive Planning*, 1 Oct 97, Air Force Doctrine Document (AFDD) 2-4.4, *Bases, Infrastructure, and Facilities*, 19 Nov 99, AFI 33-124, *Enterprise Information Technology Architectures*, 1 May 00, AFI 33-104, *Base-Level Planning and Implementation*, 10 May 01, AFI 10-404, *Base Support and Expeditionary Site Planning*, 1 April 04. This publication applies to Air Force Reserve Command Units. This publication applies to Air National Guard. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the AF Information Management Tool (IMT) 847, *Recommendation for Change of Publication*; route AF IMT 847 from the field through the appropriate functional's chain of command. Send major command (MAJCOM) proposed supplements and any other related directives to Headquarters Air Force, Air Force Civil Engineer, Strategic Initiatives Branch (HQ USAF/A7CIS), 1235 South Clark Street, Crystal Gateway 1, Suite 1000, Arlington VA 22202-3276, for approval.

This is the initial publication of AFI 32-10112.

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Chapter 1

AUTHORITY AND SCOPE

1.1. Purpose. Convey guidance and procedures allowing commanders and Air Force professionals to maintain a flow of timely geospatial information with due regard for national security, accuracy, and privacy. Describe Geospatial Information and Services (GI&S) support for the installation and facilities mission, hereafter referred to as the GeoBase Program or GeoBase. Explain the organization and execution of the GeoBase Program for all levels of command. GI&S is the key platform for cross functional integration, and to that end this AFI provides guidance for those organizations seeking to integrate with the GeoBase Service. Provide guidance and procedures for all Air Force military and civilian personnel that perform or utilize GeoBase functions, products or systems, including those in the Air National Guard and U.S. Air Force Reserve. This instruction is not intended to overlap or supersede GI&S guidance found in AFI 14-205, *Geospatial Information and Services*, 4 May 2004. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with AFMAN 37-123, Management of Records and disposed of in accordance with the Air Force Records Disposition Schedule (RDS) located at <https://afrims.amc.af.mil/>. The use of the name or mark of any specific manufacturer, commercial product, commodity, or service in this publication does not imply endorsement by the Air Force.

1.2. Implementing Authority. Regulatory authority for this instruction is derived from Executive Order 12906, *Coordinating Geographic Data Acquisition and Access: The National Spatial Data Infrastructure*, 13 April 1994; Executive Order 13011, *Federal Information Technology*, 16 July 1996; Office of Management and Budget (OMB) Circular A-16, *Coordination of Geographic Information and Related Spatial Data Activities*, 19 Aug 2002; Department of Defense Directive (DoDD) 5105.60, *National Imagery and Mapping Agency*, 11 Oct 1996; DoDD 5030.59, *National Imagery and Mapping Agency (NIMA) Limited Distribution Imagery or Geospatial Information and Data*, 13 May 2003; Department of Defense Instruction (DoDI) 5000.2, *Operation of the Defense Acquisition System*, 12 May 2003; DoDD 8320.2, *Data Sharing in a Net-Centric Department of Defense*, 2 December 2004; DoDI 5000.56, *Programming Unique Mapping Charting, and Geodesy (MC&G) Requirements for Developing Systems*, 11 September 1991; Joint Publication (JP) 2-03, *Joint Tactics, Techniques, and Procedures for Geospatial Information and Services to Support Joint Operations*, 31 March 1999; JP 3-34, *Engineer Doctrine for Joint Operations*, 5 July 2000.

1.3. Scope. Responsibility for the GeoBase Program resides at all levels of the USAF. This instruction is applicable under the purview of Air Force guidelines. If conflicts arise between the content of this publication and those of Department of Defense (DoD) Directives, the DoD Directives take precedence unless the Secretary of Defense or the Chairman of the Joint Chiefs of Staff has provided more current and specific guidance.

Chapter 2

GEOBASE PROGRAM

2.1. Program Overview. The GeoBase Program is implemented at each USAF installation and echelon through a corresponding Geo Integration Office (GIO). GeoBase ensures the provision of and access to common, accurate and current geospatial information for all Air Force installations, ranges and property. Geospatial services are the combination of Information Technology (IT) infrastructure, services, and architectures that enable access to geospatial information. Geospatial information, or geodata, constitutes georeferenced imagery and vector data that represent real-world features and conditions. USAF installation geospatial information shall consist of the Common Installation Picture (CIP) and mission specific geospatial data: Mission Data Layers (MDL), Mission Data Sets (MDS) and Regional Installation Pictures (RIP). The combination of geospatial information and services to support installation and facilities' missions forms the "GeoBase Service" and facilitates the geo-integration of information cross-functionally. The GeoBase Service allows cross-functional users to enable their information geospatially by linking their Automated Information Systems (AIS) data to geographic locations, also known as geo-enabling. The GeoBase Service is the system component of the GeoBase Program. The combination of the GIO and the GeoBase Service provides commanders, planners, and personnel across the combat support spectrum a near real time operational picture of the installation and facilities required for mission success.

2.1.1. Installations represent the underlying platform for the Air Force mission. Just as mission success in the battlespace relies on information superiority and agile combat support, installation missions also require disciplined creation, management and sharing of critical georeferenced information through modern geospatial processes. The USAF GeoBase Mission satisfies this critical need across the installation mission spectrum.

2.1.2. The GeoBase Program includes the people, processes, and resources used in the collection, analysis, dissemination and display of georeferenced information to support installation missions.

2.1.3. GeoBase functions as a program in addition to the GeoBase Service. It focuses on information resource management rather than IT acquisition. IT components are necessary to attain, serve, and exploit capabilities, however the aim of GeoBase is to exploit existing communications network assets and IT resources where possible to avoid redundancies. GeoBase capabilities are served via existing communication networks such as the Global Combat Support System Air Force (GCSS-AF) and are exploited in a net-centric fashion, thereby enhancing mission systems and processes by visualizing installations and facilities across the Air Force enterprise.

2.2. GeoBase Vision. Enable decision makers with an enterprise capability for installation mapping the visualization of fused, analyzed, and multi-functional data. Succinctly put "One Air Force, One Map."

2.3. GeoBase Mission. Provide enterprise installation visualization services for the USAF to be shared throughout the DoD. The mission for the program is to attain and sustain a capability enabling a shared, efficient use of trusted, integrated, and georeferenced information delivering global situational awareness.

2.4. GeoBase Service.

2.4.1. Provides geodata through a network of hardware and software over established USAF IT and communications infrastructure for simultaneous access and exploitation by any number of Headquarters (HQ) and base organizations with a requirement to visualize installations and facilities.

2.4.2. Provides a single point of access for installation geospatial information for visualization, mapping, analysis and integration into business processes of installation and facilities.

2.4.3. May be linked with functional AIS and other IT solutions providing the ability to view functional information assets via the base map.

2.5. GeoBase Program Components. GeoBase is comprised of four unique decision support environments known as Strategic GeoBase, Garrison GeoBase, GeoReach, and Expeditionary GeoBase.

2.5.1. **Strategic GeoBase.** Strategic GeoBase is comprised of all geospatial data produced in the USAF and aggregated at the HQ USAF (HAF) level. It offers the enhanced means to visualize Air Force installation data through links with other HAF level databases combined with detailed imagery at the HAF. The view can then be expanded by adding data from, or pushing installation data stored at HAF level to, the Secretary of the Air Force, the Office of the Secretary of Defense, other DoD services, US Northern Command, the Defense Threat Reduction Agency, and other Federal agencies such as the Federal Emergency Management Agency.

2.5.2. **Garrison GeoBase.** Garrison GeoBase provides the foundation for the Strategic GeoBase Program. Garrison GeoBase enhances the many overlapping mapping efforts across major and minor installations with a single, coherent approach to geospatial information stewardship, providing the structure for Base Operational Support. Garrison GeoBase provides the training environment for warfighters executing the Expeditionary GeoBase operations at Forward Operating Locations (FOL).

2.5.3. **GeoReach.** GeoReach is the process to enable selection and analysis of FOL by serving geospatial libraries of potential forward 'sites' across the Air Force network. It provides planners and Airmen with situational awareness enabling improved FOL selection, Time-Phased Force and Deployment Data planning, and accelerated bed-down, in support of the Air Force Global Mobility Concept of Operations (CONOPS) and the Expeditionary Site Survey Process.

2.5.4. **Expeditionary GeoBase.** Expeditionary GeoBase is enabled via GeoReach, and it is sustained using processes developed at home stations via the Garrison GeoBase Program. It is a forward deployed version of Garrison GeoBase capabilities, affording provisional commanders and airmen enhanced situational awareness of the expeditionary base.

2.6. GeoBase Data. Installation geospatial data is thematically organized within the GeoBase Service into layers such as buildings, roads, and airfield surfaces known as MDL. MDL are further organized into the CIP, MDS, and RIP as described in [Chapter 4](#).

2.7. GeoBase Program Resource Management. Resource requirements for GeoBase are programmed for using the established Program Objective Memorandum (POM) process at MAJCOMs and HAF. GeoBase Resources are currently programmed in PE31025F and tracked in RC/CC XXff43. Beginning with the FY10 POM, GeoBase resources at the MAJCOMs could be programmed using their respective Facilities Operation program element (**79F).

Chapter 3

ROLES AND RESPONSIBILITIES

3.1. Geo Integration Office (GIO). A GIO is the single point of contact for GeoBase at any given USAF level. The standards and procedures for the GeoBase Program are established at the HAF GIO and implemented via MAJCOM and Base GIOs. The GIO serves as the focal point for GI&S to support the installation and facilities missions. The GIO is responsible for ensuring that installation and facilities stakeholders have access to timely, relevant, available and authoritative geospatial information.

3.1.1. GIO at all levels shall:

3.1.1.1. Implement, manage and provide support for the GeoBase Program. Provide cross-functional integration support at each USAF installation and echelon. Maintain consistent geospatial data visualization, analysis, and integration capabilities in association with HAF GIO approved data strategies and associated standards.

3.1.1.2. Support data and application stewards across mission domains to assure quality and safeguarding of data. Promote awareness and establish GeoBase capabilities in accordance with DoDD 8320.2, *Data Sharing in a Net-Centric Department of Defense*, 2 December 2004.

3.1.1.3. Sustain the GeoBase Program in accordance with Federal, DoD, Air Force Enterprise Architecture (EA), and Portfolio Management (PfM) strategies in accordance with policy and guidance.

3.1.1.4. Serve as the geospatial Subject Matter Expert (SME) for installations and facilities at any given USAF level.

3.1.1.5. Maintain a current, less than two years old, strategic plan and associated documentation as an effective method for determining how best to envision, characterize, and acquire the resources necessary to successfully implement GeoBase. The plan will address future requirements and be consistent with higher headquarters strategic plans; establish sustainment strategies and coordinate GeoBase planning and resource decisions across their respective organizations.

3.1.1.6. Designate at least one primary government (civilian or military) official as the GeoBase Program Manager to coordinate GeoBase activities and requirements with their respective stakeholders.

3.1.1.7. Facilitate the identification of and access to those geospatial data that are maintained through the GeoBase Service.

3.2. USAF Responsibilities.

3.2.1. HQ AF/A4/7 as lead for Installations, Logistics, and Mission Support shall establish the HQ Air Force Geo Integration Office (HAF GIO) to guide the Air Force wide implementation of the GeoBase Program.

3.3. Headquarters Air Force Geo Integration Office (HAF GIO) Responsibilities:

3.3.1. Coordinate all aspects of GeoBase for USAF installations and facilities.

- 3.3.2. Provide leadership, advocacy, and promulgate policy for EA, PFM, data (standards, metadata, and cartography) and program oversight.
- 3.3.3. Act as the primary liaison with DoD and other government agencies relative to Installation GI&S capabilities, standards and specifications.
- 3.3.4. Represent Installation GI&S data, application requirements, and program responsibilities to DoD and other Federal agencies.
- 3.3.5. Serve as the proponent for GeoBase programs, training, systems, and requirements.
- 3.3.6. Establish a governance process for GeoBase as described in [Chapter 5](#).
- 3.3.7. Establish the process and method for coordination and distribution of Air Force installation geospatial data to other DoD, Federal, and non-governmental agencies. Provide standardized, documented and validated Installation GI&S data via established USAF communication networks. Provide access to select CIP, MDL, and MDS supporting Federal, DoD, and USAF requirements.
- 3.3.8. Establish mechanisms for the coordination of Air Force GeoBase requirements with other Air Force staff elements, MAJCOM, Direct Reporting Unit (DRU) and Field Operating Agencies (FOA).
- 3.3.9. Establish processes that will analyze current and proposed Air Force GeoBase applications, functions, and requirements to determine possible overlaps, data or cost sharing opportunities and avoid redundancies.
- 3.3.10. Develop effective and efficient Air Force GeoBase architectures for the organization.
- 3.3.11. Serve as the proponent for the HAF, MAJCOM and DRU/FOA Program Objective Memorandum (POM) submissions. HAF GIO is the Program Element Monitor (PEM) for the GeoBase PE in accordance with Program Element Code 31025F. GeoBase is a decentralized funding program, MAJCOMs, DRUs, and FOAs must develop POM submissions for their program development and sustainment. HAF GIO, as Air Staff level PEM will advocate for program support to the Air Force Corporate Structure (AFCS) through the Installation Support Panel. HAF GIO articulates total GeoBase program requirements to the AFCS in the Planning, Programming, Budgeting and Execution process, and validates MAJCOM budget and execution year unfunded requirements.
- 3.3.12. Certify the CIP minimum content requirements on an annual basis based upon recommendations from the governing body described in [Chapter 5](#). Work with HQ level functional managers to document MDS requirements and work with them to provide resources for creation and sustainment.
- 3.3.13. Maintain and publish minimum update requirements in the CIP Quality Assurance Plan (QAP) titled USAF GeoBase Common Installation Picture Data Quality Assurance Plan. All USAF CIPs shall conform to the requirements established within the QAP.
- 3.3.14. Identify the technology, procedures, and processes that will allow seamless data integration of installation to DoD level within the Air Force IT domain.

3.4. Major Command (MAJCOM) Responsibilities.

- 3.4.1. The MAJCOM Commander shall establish a GIO to guide exploitation of GeoBase capabilities across their respective MAJCOM as well as to promulgate and oversee policy for the GeoBase Program.
- 3.4.2. MAJCOM GIO shall:

- 3.4.2.1. Identify and prioritize functional installation mapping, visualization, analysis, and integration into business requirements in coordination with installation and FOA GIOs and their A Staff Directorate.
- 3.4.2.2. Assist in establishing Air Force wide enterprise solutions for functional mission IT systems. Establish processes to exploit GeoBase installation visualization, analysis, and integration capabilities, in accordance with Air Force policy, architectural guidance, and in coordination with relevant FOA elements and System Program Office (SPO)s.
- 3.4.2.3. Coordinate relevant MDS and MDL acquisition and sustainment across installations.
- 3.4.2.4. Develop policy and perform program management of the GeoBase Program at the headquarters and installation level and oversee subordinate installation GIOs.
- 3.4.2.5. Guide the acquisition and sustainment of the GeoBase Service across the MAJCOM and its installations, in accordance with HAF GIO policy and guidance.
- 3.4.2.6. Provide representatives to the existing governance structure as described in [Chapter 5](#).
- 3.4.2.7. Program for the necessary resources to sustain the MAJCOM/Installation GeoBase Program. Coordinate POM submissions with the HAF GeoBase PEM.
- 3.4.2.8. Centrally manage, track, inventory, and coordinate the geospatial software used to support the GeoBase program in their functional community. Ensure optimal use of software licenses and report software use numbers as requested to include deployable Unit Type Code required geospatial equipment.
- 3.4.2.9. Create and update all required EA products including Technical, Operational, and System Views to support the GeoBase program and report on products as requested by the HAF (see paragraph [6.2](#)).
- 3.4.2.10. Define the requirements of the RIP including any additional minimum requirements, and define minimum RIP documentation criteria (see paragraph [4.5](#)).
- 3.4.2.11. Initiate a geospatial working group to coordinate MAJCOM geospatial activities and requirements. Participation in a MAJCOM geospatial working group shall be a requirement of any organization leveraging the GeoBase Service.
- 3.4.2.12. Provide education and outreach support on the use of the GeoBase Service. Refer interested users or potential users to appropriate forums and geospatial education and training sources within the established training or GeoBase community.

3.5. Participating Direct Reporting Unit (DRU) and Field Operating Agencies (FOA) Responsibilities.

- 3.5.1. The participating DRU or FOA Commander shall establish a GIO to guide the exploitation of GeoBase capabilities across their respective business areas, promulgate appropriate policy for the GeoBase Program in their functional community, and implement a GeoBase training/education strategy.
- 3.5.2. DRU/FOA GIO shall:
 - 3.5.2.1. Identify and prioritize functional installation visualization, analysis, requirements and integration opportunities in coordination with GIOs and functional executive process owners.

- 3.5.2.2. Assist in establishing Air Force wide enterprise solutions for functional IT systems and processes to exploit GeoBase Service, in accordance with Air Force policy and architectural guidance and in coordination with relevant FOA elements and SPOs.
- 3.5.2.3. Develop policy and manage the GeoBase Program throughout the DRU/FOA organization. The DRU/FOA GIO shall execute the GeoBase Program at their Headquarters and within their functional community.
- 3.5.2.4. Guide the acquisition and sustainment of the GeoBase Service in their community, in accordance with policy and guidance.
- 3.5.2.5. Provide a representative to the governance structure described in **Chapter 5**.
- 3.5.2.6. Where applicable, be responsible for programming the necessary resources to sustain DRU/FOA GeoBase Program implementation. Coordinate POM submission with the HAF GeoBase PEM. Develop, commensurate with available resources, the budget for their program.
- 3.5.2.7. Centrally manage, track, inventory, and coordinate the geospatial software used to support the GeoBase program. Ensure optimal use of software licenses and report software use numbers as requested.
- 3.5.2.8. Create and update all required EA documents; Technical, Operational, and System Views to support the GeoBase program and report on EA as requested by HAF.
- 3.5.2.9. Develop and implement a training/education strategy to support GeoBase development and implementation. Exploit available training and guide the development of training products to support the GeoBase program. Coordinate development and implementation of training strategies and products across the GeoBase Enterprise to minimize duplication and with HAF oversight.

3.6. Installation Responsibilities.

3.6.1. The Installation Commander shall:

- 3.6.1.1. Establish a GIO at USAF Main Operating Bases.
- 3.6.1.2. Guide the determination of the installation's RIP, which is defined as: the collection of geospatial data depicting features outside of the installation boundary to support multiple mission requirements excluding intelligence gathering, targeting, or combat operations (see paragraph **4.5**).
- 3.6.1.3. Ensure that their installation's GeoBase Program is appropriately supported, staffed and utilized to optimize investments in support of their installations' mission requirements.
- 3.6.1.4. Oversee execution of the GeoBase Program at their respective installations.

3.6.2. The Installation GIO shall:

- 3.6.2.1. Be responsible for executing the GeoBase Program at the installation, and any Geographically Separate Unit, in accordance with guidance provided in this Instruction and any applicable Federal, DoD, USAF, or MAJCOM policies
- 3.6.2.2. Administer, promote, support, and integrate the GeoBase Service as the recognized Air Force geospatial solution within their respective installation. The installation GIO shall be the primary point of contact to coordinate base-level GeoBase activities and to coordinate requirements with the MAJCOM.

3.6.2.3. Initiate a geospatial working group to coordinate installation geospatial activities and requirements. Participation in an installation geospatial working group shall be a requirement of any organization leveraging the GeoBase Service.

3.6.2.4. Be responsible for executing the GeoBase Program at the installation in accordance with guidance provided by HAF and MAJCOM GIOs. Implement GeoBase in accordance with applicable data, metadata, IT, EA, and PfM standards. If no Engineering Assistant is present, ensure that the CIP and GeoBase Service are maintained, and provide guidance to installation level customers regarding the GeoBase Service.

3.6.2.5. Provide education and outreach support on use of the GeoBase Service. Refer interested users or potential users to appropriate forums and geospatial education and training sources within the established GeoBase community. The installation GIO will provide the appropriate form of technical or procedural support to ensure successful use of the GeoBase Service.

3.6.2.6. Define content, refresh rate, and geographic extent of RIP in concert with stakeholders. The installation GIO will also identify and maintain a list of local applicable spatial data sources, establish access procedures, provide RIP access to MAJCOM/DRU, and maintain RIP documentation (see paragraph 4.5.).

3.6.2.7. Be the authoritative source and have primary responsibility for all CIP layers. Work with Engineer Assistants (3E5X1) to develop CIP data layers and functional data stewards as applicable for appropriate data. The installation GIO will make accessible functional data via the GeoBase Service. Functional communities are responsible for identification of their information requirements and develop strategies for their collection and sustainment DoDD 8320.2, *Data Sharing in a Net-Centric Department of Defense*, 2 December 2004.

3.6.2.8. Shall ensure that the CIP is captured, maintained, stored and made accessible in accordance with USAF information and data policies.

3.6.3. The Base Civil Engineer shall:

3.6.3.1. Provide functional guidance to the Installation GIO.

3.6.3.2. Be responsible for the QA/QC procedure of the CIP, Civil Engraving (CE) MDS, CE MDL, and metadata according to guidance provided by HAF GIO. Ensure that data published via the GeoBase Service is consistent with standards in place for geospatial data, metadata, and attribution.

3.6.4. Engineering Assistant, 3E5X1, or equivalent in Garrison shall:

3.6.4.1. Develop and maintain the CIP and metadata through field mapping, Global Positioning System (GPS) surveying, topographic surveying, conversion of digital construction as-built drawings, digitizing or any industry accepted data development technique.

3.6.4.2. Coordinate with MAJCOM GIOs, Installation GIOs, MAJCOM, FOA 3E5X1 career field functional manager on policy and guidance as well as standard operating procedures to enhance the data and data maintenance workflow process from field surveys to the GeoBase Service.

3.6.4.3. Assist the Installation GIO in providing education and outreach support on the use of the GeoBase Service across the installation.

3.6.4.4. Maintain training skills according to the Career Field Education and Training Plan or similar guidance for civilian and contracted positions.

3.6.5. Engineering Assistant, 3E5X1, when Deployed shall:

3.6.5.1. Establish CIP and MDL capabilities in FOL, to include the ability to request necessary equipment, implement USAF GeoBase concepts, goals, and business processes. Regularly publish FOL geodata back to Combatant Command for inclusion into GeoBase data repositories.

3.6.5.2. Develop and maintain the CIP and appropriate MDLs through field mapping, GPS surveying, topographic surveying, conversion of construction as-built drawings, digitizing or any industry accepted data development technique. Coordinate data management and requirements with the respective Combatant Command GIO.

3.6.5.3. Provide geospatial data visualization, analysis, and integration into business requirements in support of the deployed mission through map production and dissemination.

3.6.5.4. Be knowledgeable in the operation of CE geospatial applications.

Chapter 4

DATA REQUIREMENTS

4.1. General Requirements.

4.1.1. All data provided through the GeoBase Service shall comply with the following requirements:

4.1.1.1. To the maximum extent possible all data shall be organized by DoD IT Standards Registry standards for data, metadata, and services.

4.1.1.2. All data shall have associated metadata in accordance with OMB Circular A-16, reflect metadata standards in International Standards Organization 19115, and be in compliance with the Defense Installation Spatial Data Infrastructure Group for Metadata.

4.1.1.3. All data shall be managed in accordance with DoDD 8320.2, *Data Sharing in a Net-Centric Department of Defense*, 2 December 2004, AFPD 33-3, *Information Management*, 28 March 2006.

4.1.1.4. All geodata will be protected and classified in accordance with AFI 31-401 *Information Security Program Management*, 1 November 2005 Attachment 2 and DoDD 5030.59 *National Imagery and Mapping Agency (NIMA) Limited Distribution Imagery or Geospatial Information and Data*, 13 May 2003.

4.1.1.5. All data made available via the GeoBase Service will comply with USAF Information Security (INFOSEC) policies in accordance with, The Freedom of Information Act (FOIA) and AFI 31-401, *Information Security Program Management*, 1 November 2005.

4.2. Common Installation Picture.

4.2.1. The CIP is the standard USAF geospatial data set that depicts facilities and physical features on an installation. The CIP is comprised of georeferenced vector layers in a digital format with related attribute information and a georeferenced imagery layer.

4.2.1.1. CIP vector layers shall include those features that generally depict installation facilities and physical features including, but not limited to: structures, paved surfaces, improved surfaces, hydrography, and boundaries.

4.2.1.2. Imagery shall represent ground conditions of the installation and shall be refreshed at a minimum of every five years (USAF GeoBase Imagery Data Architecture, Sept 2003).

4.2.1.3. The CIP shall be made readily available to all USAF mission areas as well as external stakeholders within US Federal, state, local, and tribal governments for official use only. The HAF GIO will interpret policy, gather requirements, and provide avenues for GIOs to facilitate sharing of the CIP with external (non-USAF) organizations, including providing INFOSEC guidance and data to requesting organizations in coordination with their installations.

4.2.1.4. The geospatial data and metadata content specifications, data submission procedures, and validation methodology for the CIP implemented under the GeoBase Program are documented within the QAP.

4.3. Mission Data Layers.

4.3.1. MDL geo-enable mission data. The data layer development and resourcing is the responsibility of the functional, host, or tenet community. MDL are vector and raster layers that support specific missions in the Warfighting and Business Mission Areas.

4.3.2. MDL shall be consistent with the functional organization's data architecture, specifically those data architectures that support AIS.

4.3.3. MDL shall be stored and made available through existing USAF systems and networks as required based on access permissions and existing policy.

4.3.4. MDL that support the installation and facilities mission shall be stored and disseminated through the GeoBase Service, based on official agreements between the data owner and GIO.

4.3.5. MDL will be classified in association with guidance from the Original Classification Authority as described in AFI 31-401, *Information Security Program Management*, 1 November 2005.

4.4. Mission Data Sets.

4.4.1. MDS geo-enable mission systems or processes. MDS are comprised of individual MDLs, CIP or RIP layers.

4.4.2. The MDS development and resourcing is the responsibility of the functional community. The relevant and applicable GIO will assist functionals in identification of, and providing access to, the functional geospatial data that are maintained as part of the GeoBase Service.

4.4.3. Non-geospatial components of an MDS shall be identified, captured, maintained and made available by the appropriate information owners and data producers.

4.4.4. The combination of geospatial and non-geospatial data that geo-enable a system or process shall be documented using USAF standard data modeling processes and languages e.g., Unified Markup Language.

4.4.5. Formal Memorandums of Understanding and or Memorandums of Agreement shall define the roles and responsibilities of organizations and agencies contributing information to MDS and Geo-Base Service.

4.5. Regional Installation Picture.

4.5.1. The RIP is the collection of geospatial information, including imagery, that depicts features outside the boundary to support mission requirements excluding targeting and combat operations.

4.5.1.1. The content and extent of the RIP is determined by the information needs of all stakeholders on an installation, at a MAJCOM, or at HQ.

4.5.1.2. The RIP does not include Geospatial Information and Services described in AFI 14-205, *Geospatial Information & Services (GI&S)*, 4 May 2005.

4.5.1.3. RIP data requirements, organization roles, and responsibilities shall be formally documented and agreed to by all participating installation organizations under the direction of the Installation Commander (see paragraph 3.6.1.2.).

4.5.2. RIP geospatial layers shall be obtained from authoritative sources in accordance with OMB Circular A-16. This includes non-DoD sources such as Federal, state, and local and tribal agencies.

4.5.3. The GIO will support the RIP through the following activities:

4.5.3.1. Provide access to the RIP through the GeoBase Service.

4.5.3.2. Advise installation communities on Federal, DoD, and USAF geospatial policies, practices and procedures.

Chapter 5

GOVERNANCE

5.1. Installation GI&S Governing Body.

5.1.1. Representatives of this body shall be the only interface to higher level information governing bodies as outlined in AFPD 33-3, *Information Management*, 28 March 2006.

5.1.2. Shall be the authoritative forum for GeoBase within the Air Force. Membership shall include relevant stakeholders that produce or consume geospatial information from the GeoBase Program.

5.1.3. Shall provide a forum for building consensus for Air Force GeoBase program direction, and standards for GeoBase.

5.1.4. Shall have an approved charter signed by AF/A4/7 Installations Logistics and Mission Support.

5.1.5. Shall meet a specified number of times per year as outlined in the governance charter.

5.2. Governing Body Responsibilities.

5.2.1. The Chair shall be the Chief of the HAF/GIO. The Chair Shall:

5.2.1.1. Oversee activities toward achieving GeoBase goals and objectives.

5.2.1.2. Ensure that governing body is aligned with Federal, DoD, and AF policies and guidance.

5.2.1.3. Provide administrative and managerial support regarding governing body meetings.

5.3. Governing Body Members Shall:

5.3.1. Participate in activities necessary to execute program direction and activities that affect GeoBase standards.

5.3.2. Execute action items assigned by the governing body.

5.3.3. Keep the governing body apprised of relevant issues and matters regarding GeoBase.

5.3.4. Provide SMEs to working groups established and approved by the governing body.

5.3.5. Include relevant stakeholders that participate in GeoBase and produce or consume the GeoBase Service for installations and facilities. They will be identified in the governing charter as voting or non-voting.

Chapter 6

GEOBASE ENTERPRISE ARCHITECTURE

6.1. Overview. The GeoBase Service will be supported and maintained by EA guidelines (Business Transformation Agency, *Business Enterprise Architecture*, 15 March 2007, DoDD 8320.2 *Data sharing in a Net-centric Department of Defense*, 2 December 2002, and DoDD 8100.1 *Global Information Grid (GIG) Overarching Policy*). EA guidelines establish the road map to guide development of the GeoBase Service. Efficient use of the EA will facilitate Air Force missions through the use of modeled business processes paired with the efficient use of IT.

6.2. Enterprise Architecture. The GeoBase EA is documented using the DoD Architecture Framework (DoDAF) thereby ensuring GeoBase architectures are compatible and interoperable with other USAF and DoD information architectures. All GIOs will maintain compliance with DoDAF in accordance with the current DoDAF publication. The use of a GeoBase EA framework ensures uniformity and standardization when migrating and integrating information systems from legacy systems that are in place now toward a more standardized architecture. Frameworks include concepts that drive the types of architectural products being created. The products, both graphical and textual, capture information on system configuration and design. These products will enable more efficient system management.

6.2.1. **Table 6.1.** shows the core architectural products. All GIOs must develop and publish the architectural products in **Table 6.1.** and are encouraged to develop and publish the products shown in **Table 6.2.**

Table 6.1. Core Architecture Products

Product Name	Architectural Product
All View (AV)-1:	Overview and Summary Information
AV-2	Integrated Dictionary Information
Operational View (OV)-2	Operational Node Connectivity Description
OV-3	Operational Information Exchange Matrix
OV-5	Operational Activity Model
Systems View (SV)-1	System Interface description
Technical Standards View (TV)-1	Technical Architecture Profile

Table 6.2. Optional Architecture Products

Product Name	Architectural Product
OV-1	High Level Operational Concept Description
OV-4	Organizational Relationships Chart
OV-6	Operational Activity Sequence and Timing
OV-7	Logical Data Model
SV-2	System Communications Description
SV-3	Systems-Systems Matrix
SV-4	Systems Functionality Description
SV-5	Operational Activity to Systems Functions Traceability Matrix
SV-6	Systems Data Exchange Matrix
SV-7	Systems Performance Parameters Matrix
SV-8	Systems Evolution Description
SV-9	Systems Technology Forecast
SV-10	Systems Functionality Sequence and Timing Descriptions
SV-11	Physical Security
TV-2	Technical Standards Forecase

6.3. EA Governance Representation. HAF GIO manages, controls, and monitors its PfM and EA activities through the Air Force Enterprise Information Technology Data Repository. GeoBase representatives will participate in EA and PfM governing councils.

6.4. Net-Centric. All GIOs will maintain compliance with DoDD 8320.2, *Data Sharing in a Net-Centric Department of Defense*, 2 December 2004, and make data available in a Net-Centric environment. Within the limits of Information Assurance policy and appropriate data stewardship, CIP, MDL, MDS, and RIP data will be provided via the Air Force network to the maximum extent practicable. Employ centralized storage for their transactional data stores to improve data integrity authority, access, and system performance. Data migrations performed to effect these consolidations will include routines to validate the data before moving it into the new data store. The HAF GIO in cooperation with all GIOs must ensure that this data will be timely, accurate, trusted, secure, and that the data is universally available anywhere in the Air Force network. Once data is available in a Net-Centric environment it should be integrated, where possible, with other authoritative systems.

6.5. Vendor Neutral. The GeoBase Service includes geospatial data and associated metadata and is served in a protected fashion using open, vendor-neutral standards as defined in the GeoBase Enterprise Architecture.

6.6. Web Content. GeoBase Strategic Services will be hosted on the GCSS-AF network. These services will be Air Force enterprise wide and will be net-centric and EA compliant.

6.7. Expeditionary Site Mapping (ESM). The CIP layers for FOLs are hosted as described in the most recent ESM CONOPS.

6.8. Classified CIP. The Combat Air Force responsible for serving FOL CIPs on the Secret Internet Protocol Router Network as per the ESM CONOPS may also serve CIPs using similar means for access by external (non-USAF) organizations in a classified fashion as required.

6.9. Architecture Asset. The HAF GIO maintains the GeoBase architecture with assistance from the Air Force Chief Information Officer. The EA developed at all levels of the Air Force is a corporate asset that will be managed as a formal program.

Chapter 7

DATA SECURITY

7.1. Security Guidelines. Data can only be classified by the Operational Control Authority (OCA) AFI 31-401, *Information Security Program Management*, November 2005. The OCA for the GeoBase program is the Air Force Civil Engineer A7C. At date of publication none of the standard CE data sets have been classified. Additionally data can only be “For Official Use Only” if it meets the exemptions of FOIA as outlined in AFI 31-401, *Information Security Program Management*, November 2005.

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Attachment 1**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

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USAF, *GeoBase Enterprise Architecture Version, 1.0* January 2003.

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Abbreviations and Acronyms

A4/7—USAF Deputy Chief of Staff, Logistics, Installations and Mission Support

A7C—USAF Deputy Chief of Staff, Logistics, Installations, and Mission Support– The Civil Engineer

A7CI—USAF Deputy Chief of Staff, Logistics, Installations, and Mission Support– Planning Division

AFCS—Air Force Corporate Structure

AFDD—Air Force Doctrine Document

AFI—Air Force Instruction

AFPD—Air Force Policy Directive

AIS—Automated Information Systems

CE—Civil Engineering

CIP—Common Installation Picture

CONOPS—Concept of Operations

DoD—Department of Defense

DoDAF—Department of Defense Architecture Framework

DoDD—Department of Defense Directive

DoDI—Department of Defense Instruction

DRU—Direct Reporting Unit

EA—Enterprise Architecture

ESM—Expeditionary Site Mapping

FOIA—Freedom of Information Act

FOA—Field Operating Agency

FOL—Forward Operating Location
GCSS-AF—Global Combat Support Service Air Force
GIO—Geo Integration Office
GI&S—Geographic Information and Services
GPS—Global Positioning System
HAF—Headquarters Air Force
HAF GIO—Headquarter Air Force Geo Integration Office
HQ—Headquarters
IGI&S—Installations Geospatial Information and Services
IMT—Information Management Tool
INFOSEC—Information Security
IT—Information Technology
JP—Joint Publication
MAJCOM—Major Command
MC&G—Mapping Charting and Geodesy
MDL—Mission Data Layers
MDS—Mission Data Set
NIMA—National Imagery and Mapping Agency
OCA—Operational Control Authority
OMB—Office of Management and Budget
OPR—Office of Primary Responsibility
PE—Program Element
PEM—Program Element Monitor
PfM—Portfolio Management
POM—Program Objective Memorandum
QAP—Quality Assurance Plan
QA/QC—Quality Assurance/Quality Control
RDS—Records Disposition Schedule
RIP—Regional Installation Picture
SME—Subject Matter Expert
SPO—System Program Office