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SECRETARY OF THE AIR FORCE**

**DEPARTMENT OF THE AIR FORCE  
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***Civil Engineering***

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

**COMPLIANCE WITH THIS PUBLICATION IS MANDATORY**

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This instruction implements Air Force Policy Directive (AFPD) 32-10, *Installations and Facilities* by identifying the requirements to implement and maintain a Department of Air Force (DAF) Installation Geospatial Information and Services (IGI&S) program. This publication applies to the entire DAF, including all uniformed members of the Regular Air Force (RegAF), United States Space Force, Air Force Reserve and Air National Guard, except where noted otherwise, all DAF civilian employees, and those with a contractual obligation to abide by the terms of DAF issuances. It applies to DAF installations and facilities that have Real Property Asset Management responsibilities as defined in Department of the Air Force Policy Directive (DAFPD) 32-90, *Real Property Management*, and Program stakeholders utilizing IGI&S data and capabilities. This publication may be supplemented at any level, route all supplements to the office of primary responsibility listed above for coordination prior to certification and approval. Refer recommended changes and questions about this publication to the OPR listed above using the DAF Form 847, *Recommendation for Change of Publication*; route DAF Forms 847 from the field through the appropriate chain of command. The authorities to waive wing/delta/unit level requirements in this publication are identified with a Tier ("T-0, T-1, T-2, T-3") number following the compliance statement. Submit requests for waivers through the chain of command to the appropriate tier waiver approval authority or alternately to the Publication OPR for non-tiered compliance items. Ensure that all records generated as a result of processes prescribed in this publication adhere to Air Force Instruction (AFI) 33-322, *Records Management and Information Governance Program*, and are disposed in accordance with the Air Force Records Disposition Schedule, which is located in the Air Force Records Information Management System. This publication is technical in nature

and is intended to be used by individuals familiar with the use of geospatial information. **Chapter 3** provides a summary the fundamental principles of the DAF IGI&S (GeoBase) Program and its capabilities to inform those unfamiliar with the use and capabilities of geospatial information. 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 DAF.

## ***SUMMARY OF CHANGES***

This document has been minimally revised and reviewed for mostly formatting and administrative changes. The scope of the GeoBase Program largely remains the same, as do the roles, responsibilities, and activities of program stakeholders. Additionally, the standards, processes, and terminology defined in the prior version have remained consistent in this version.

### **1. Overview.**

1.1. **Program Overview.** GeoBase is the name of the DAF Installation Geospatial Information and Services (IGI&S) Program. GeoBase is the DAF Program of Record for enterprise IGI&S integration, led by the Directorate of Civil Engineers, recognized by the Office of the Secretary of Defense (OSD) and the Assistant Secretary of Defense for Energy, Installations and Environment Installation Geospatial Information and Service Governance Group (IGG). The GeoBase Program enhances DAF operational and business missions with spatial (geospatial), tabular, and temporal information integration. GeoBase enables the management of DAF Installations' natural and built infrastructure to support military readiness with regard to facility construction, contingency planning, sustainment, and modernization including the operation and sustainment of military test and training ranges. GeoBase provides location-based context and awareness, assisting leaders to make the best possible mission decisions.

1.2. **Authority.** This publication is in accordance with the authority in DoDI 8130.01, *Installation Geospatial Information and Services*, this instruction establishes guidance, assigns responsibilities, and provides governance procedures for IGI&S in support of AFPD 32-70 *Environmental Considerations in Air Force Programs and Activities*; AFPD 90-8, *Environment, Safety, & Occupational Health Management and Risk Management*; DAFFD 32-90, *Real Property Management*; and AFPD 33-3, *Information Management*. This publication is consistent with Joint Publication 3-34, *Joint Engineer Operations*. This instruction interfaces with guidance found in 32 series Department of the Air Force Instruction (DAFI) or Air Force Instruction (AFI) documents, DoDI 4165.14, *Real Property Inventory and Forecasting*, and DoDI 8320.02, *Sharing Data, Information, and Information Technology (IT) Services in the Department of Defense (DoD)*. This publication provides procedures and guidance for identifying functional area requirements, as well as the provision and use of IGI&S.

### **2. Roles and Responsibilities.**

2.1. **DAF Enterprise.** The responsibility for successful IGI&S implementation is a cross-functional enterprise concern residing at all levels of the DAF. Overarching categories of responsibility are defined below.

2.1.1. Requirement Owner (see Terms Section for definition of role) will:

- 2.1.1.1. Use existing resources and self-service capabilities before articulating new requirements for resources or capabilities.
  - 2.1.1.2. Coordinate with the appropriate governance structure and business process at their level of command when articulating requirements.
  - 2.1.1.3. Secure funding to fulfill requirements beyond the GeoBase Programs core sustainment.
  - 2.1.1.4. Coordinate with the requirement management process through the complete lifecycle, including requirement identification, definition, coordination, decision, and execution.
- 2.1.2. Data Schema Owner (see Terms Section for definition of role) will:
- 2.1.2.1. Coordinate with Air Force Civil Engineer Center (AFCEC) to ensure compliance with criteria required for integration between functional business information systems and IGI&S information systems.
  - 2.1.2.2. Ensure the creation and maintenance of supplementary data content specifications and any associated forms.
  - 2.1.2.3. Identify and define local and enterprise needs for geo-enabled information.
  - 2.1.2.4. Manage inclusion of new assigned geospatial data layers and ensure the validity and relevance of assigned geospatial data layer(s) in the Geospatial Data Model (GDM).
  - 2.1.2.5. Determine data requirements verification, data creation and collection methodologies, and data quality assurance and quality control procedures.
  - 2.1.2.6. Provide representation to appropriate geospatial-data-related governance processes concerning data policies, standards, procedures, and coordination with other data schema owners.
  - 2.1.2.7. Coordinate with AFCEC to determine geospatial data access and releasability policies and procedures in accordance with any appropriate DAFIs or AFIs or similar guidance relevant to their functional area.
  - 2.1.2.8. Identify enterprise, regional, or local data stewards and coordinate with AFCEC and other relevant functional area representatives.
  - 2.1.2.9. As part of the GeoBase Program, support Risk Management Framework (RMF) implementation and requirements.
- 2.1.3. Data Steward (see Terms Section for definition of role) will:
- 2.1.3.1. Execute data quality assurance and quality control procedures on newly acquired or updated geospatial data as determined by the data schema owner.
  - 2.1.3.2. Identify and help resolve data issues with the designated data acquisition organization and/or contracting officer.
  - 2.1.3.3. Maintain data accuracy and compliance as determined by the data schema owner.

2.1.3.4. Coordinate with the appropriate AFCEC office to identify and help resolve data issues, data currency, data quality, analysis requirements, and process improvements as necessary.

2.1.3.5. Ensure contracts that collect geospatial information are written in accordance with the associated geospatial data layer's data content specifications.

2.1.3.6. Coordinate with the appropriate data schema owner to create a data content specification when one does not exist for a required geospatial data layer undergoing a data collection effort.

2.1.3.7. Ensures data acquisition contract deliverables comply with relevant data standards and completeness requirements established by the appropriate data schema owner and contracting officer.

2.1.3.8. As part of the GeoBase Program, support RMF implementation and requirements.

**2.2. Deputy Chief of Staff for Intelligence, Surveillance, Reconnaissance and Cyber Effects Operations (AF/A2/6).** The AF/A2 is the AF Geospatial-Intelligence functional manager and is responsible for developing Geospatial-Intelligence policy as referenced in AFPD 32-10, *Installations and Facilities*. The AF/A2 serves as the DAF central point of contact for Geospatial-Intelligence and coordinates all Geospatial-Intelligence issues with the National Geospatial Intelligence-Agency, the other Services, Joint Staff, and the intelligence community. The Air Force Geospatial-Intelligence Office (AF/A2OC) is the primary DAF interface with the National Geospatial Intelligence-Agency, Joint Staff, the Combatant Commands, Under Secretary of Defense for Intelligence and the other Services on Geospatial-Intelligence matters.

**2.3. Secretary of the Air Force Chief Information Officer (SAF/CN).** The SAF/CN is responsible for integrating DAF information and systems, including assets managed by the GeoBase Program, in accordance with Headquarters Air Force Mission Directive (HAFMD) 1-26, *Chief, Information Dominance and Chief Information Officer*. The SAF/CN is responsible for appropriate integration and utilization of geospatial information, services, and capabilities within the context of overarching DAF priorities for IT.

**2.4. Deputy Chief of Staff/Logistics, Engineering and Force Protection (AF/A4).** The AF/A4 is the overall lead for the DAF Logistics, Engineering, and Force Protection and source of authority for the GeoBase Program, in accordance with HAFMD 1-38, *Deputy Chief of Staff, Logistics, Engineering and Force Protection*. The AF/A4 delegates the duties of the GeoBase Program within the Directorate of Civil Engineers (AF/A4C).

**2.5. The Director of Civil Engineers (AF/A4C).** AF/A4C is responsible for providing oversight of the DAF GeoBase Program and will develop and communicate policy and guidance and provide advocacy for overarching DAF priorities ensuring alignment with headquarters strategy, policies, and directives. The AF/A4C GeoBase Program Manager will:

2.5.1. Coordinate IGI&S policies for DAF natural and built infrastructure and environment.

2.5.2. Provide IGI&S strategy, policy, program advocacy and oversight.

2.5.3. Act as the primary voting representative on the IGG).

- 2.5.3.1. Represent DAF within the DoD and the interagency, as appropriate, on matters relating to Installation and specifications.
- 2.5.3.2. Delegate alternate voting representatives as appropriate.
- 2.5.4. Coordinate with the appropriate data schema owner or respective organization when necessary as they pertain to voting on IGG, DoD, and other federal government agencies relating to IGI&S capabilities, standards, and specifications.
- 2.5.5. Coordinate with the appropriate IT Governance Executive Group or DAF Data and Artificial Intelligence Board representative as established in AFI 17-110, *Information Technology Portfolio Management and Capital Planning and Investment Control* and/or AFI 17-140, *Architecting*.
- 2.5.6. Serve as the proponent to DAF and DoD leadership and governance for IGI&S Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, Facilities, and Policy (DOTMLPF-P), and requirements.
- 2.5.7. Represent IGI&S within the DAF Geospatial Intelligence Enterprise.
- 2.5.8. Coordinate Air Force Information Security Information Protection guidance for DAF IGI&S data.
- 2.5.9. Participate in the IGG and IGI&S community of interest as described in DoDI 8130.01.
- 2.5.10. Manage an IGI&S Stakeholder List which includes all data schema owners and is maintained with input from AFCEC.

**2.6. National Guard Bureau, Air National Guard Readiness Center Civil Engineers and Air Force Reserve Command Logistics Support will:**

- 2.6.1. Respond to, advocate for, and resource use of geospatial information, services, and capabilities within their span of control.
- 2.6.2. Support component GeoBase Program IT platforms.
- 2.6.3. Coordinate program implementation with the AFCEC.
- 2.6.4. Identify and prioritize component installations geospatial information requirements.
- 2.6.5. Establish processes to exploit IGI&S gathering and dissemination capabilities, in accordance with Enterprise Architecture guidance and in consultation with the AFCEC.
- 2.6.6. Coordinate mission relevant geospatial data services and sustainment across installations in accordance with IGI&S policy and guidance.
- 2.6.7. Account for component GeoBase Program IT investments through the DAF Information Technology Investment Portfolio Suite (ITIPS).
- 2.6.8. Satisfy component software and equipment Information Assurance requirements of the geospatial information business system using the enterprise Mission Assurance Support Service system.
- 2.6.9. Provide representatives to appropriate DoD and DAF IGI&S-related governance structure (boards, working groups, committees, etc.).

2.6.10. Acquire, oversee and sustain component GeoBase Program IT capabilities.

2.6.11. Coordinate mission relevant geospatial activities on memorandum of agreements (MOA) and other contractual agreements when non-DAF governmental entities are involved.

2.6.12. Participate in establishing DAF enterprise-wide geospatial solutions for mission requirements.

2.6.13. Provide IGI&S education and outreach support and identify appropriate forums and training sources.

**2.7. Major Command (MAJCOM), Field Command (FLDCOM) and Direct Reporting Unit Civil Engineers will:**

2.7.1. Validate, prioritize and advocate for direct mission related IGI&S capabilities needed to satisfy unique command mission requirements to Air Force Installation and Mission Support Center (AFIMSC) Detachments.

2.7.2. Lead, coordinate, or oversee mission specific exploitations of IGI&S and/or capabilities across their command.

2.7.3. Participate in activities supporting the development of DAF geospatial solutions for mission requirements.

2.7.4. Provide representatives to appropriate DAF IGI&S governance structure.

2.7.5. Coordinate expeditionary geospatial requirements with the functional managers of enduring and deployed IGI&S support personnel including Engineering (3E5X1) Air Force Specialty Code (AFSC).

**2.8. Headquarters Air Force Installation and Mission Support Center (AFIMSC) Commander will :**

2.8.1. Provide the adequate resources needed to implement the DAF GeoBase Program and DAF responsibilities associated with the OSD, Defense Installation Spatial Data Infrastructure (DISDI) Program.

2.8.2. Work with MAJCOMs, or FLDCOMs, when the MAJCOM or FLDCOM is Lead Command for a system (aircraft, munitions, weapons, support equipment, etc.) in acquisition or sustainment, to identify system specific installation-level geospatial data requirements and advocate for the necessary funding in the MAJCOMs' or FLDCOMs' corporate budgeting process for the program office to meet requirements.

2.8.3. Coordinate with other DAF Centers (e.g., Air Force Sustainment Center, Air Force Lifecycle Management Center, etc.) regarding IGI&S requirements, data, and capabilities.

2.8.4. Coordinate with DAF Installation and Mission Support Agency PSU (e.g., AFCEC, Air Force Security Forces Center, Air Force Installation Contracting Center, etc.) regarding IGI&S resourcing requirements.

**2.9. Air Force Civil Engineer Center (AFCEC) Director.** A PSU under the AFIMSC and is responsible for the operational management of the GeoBase Program. AFCEC will:

- 2.9.1. Establish a Geospatial Information Officer (GIO), within AFCEC, as GeoBase Program Manager.
- 2.9.2. Coordinate geospatial data standards and IGI&S enterprise Information Technology Capability Requirements across all appropriate functional communities.
- 2.9.3. Coordinate GeoBase capabilities identified by the Civil Engineer Enterprise Governance that require a materiel solution with the appropriate IT policy and governance structure.
- 2.9.4. Ensure GeoBase IT investment management, sustainment, and cybersecurity requirements are implemented in accordance with DoD and DAF policy and guidance.
- 2.9.5. Coordinate with functional owners to evaluate existing geospatial applications to meet new requirements, prior to recommending new materiel solutions.
- 2.9.6. Coordinate with functional owners to ensure the effective evaluation, selection, prioritization, and funding of competing GeoBase IT investments and oversee their implementation.
- 2.9.7. Coordinate with functional owners to manage requirements, capability changes, and funding execution for enterprise GeoBase IT capability sustainment and modifications.
- 2.9.8. Draft, revise, and/or sustain GeoBase Program and related documents (e.g., playbooks,) and provide geospatial related input in other functional documents as necessary.
- 2.9.9. Manage the DAF adaptation of Spatial Data Standards for Facilities, Infrastructure, and Environment (SDSFIE) parts Vector (V), Metadata (M), Quality (Q), and Raster (R), in order to ensure compliance with DAF format standards and appropriate DISDI standards and maintain the DAF online adaptation of SDSFIE.
- 2.9.10. The AFCEC Geospatial Installation Office (AFCEC/GIO) is delegated by the A4C GeoBase Program Manager as an alternate DAF voting representative on the IGG, DoD, and other federal agencies working groups and/or committees relating to IGI&S standards and specifications. The GIO shall coordinate all votes with the primary representative at AF/A4C.
- 2.9.11. Coordinates with the appropriate data schema owner or respective organization when necessary, pertaining to voting on IGG, DoD, and other federal government agencies.
- 2.9.12. Coordinate with AF/A4C on the OSD and DISDI initiatives. Mandates and provides direction to the Installations, data schema owners, and others as necessary.
- 2.9.13. Coordinate with AF/A4C on GeoBase related MOA and other contractual agreements when non-DAF governmental entities are involved. Coordinate within the appropriate governance structure where applicable.
- 2.9.14. Ensure GeoBase IT capabilities are made visible, accessible, understandable, linked, trustworthy, interoperable, and secure throughout their lifecycle for all authorized users and GeoBase related data is shared to the DAF Data Fabric.

2.9.15. Maintain a current (less than two years old) GeoBase management plan to address future requirements; be consistent with higher headquarters strategic plans; establish sustainment strategies; and coordinate GeoBase planning and resource decisions across the organization.

2.9.16. Serve as the proponent for GeoBase programs, training, and requirements by identifying, developing and providing GeoBase specific related training as required. Responsible for reporting and maintaining training records.

2.9.17. Oversees GeoBase Program working groups. The GeoBase Working Group shall be used to validate and prioritize GeoBase Program requirements.

2.9.18. Coordinate input to development of DAF IGI&S DOTMLPF-P.

2.9.19. Support DAF IGI&S by conducting geospatial operations, providing analysis, and providing reach back support as mission operations require.

2.9.20. Coordinate and determine GeoBase hardware and software requirements and advocate for funding.

2.9.21. Ensure that a process to validate all users are in compliance with security access controls to enterprise GeoBase capabilities on the Non-secure Internet Protocol Router and Secure Internet Protocol Router Network is established and maintained.

2.9.22. Appoint a System Authorization Access Request points of contact(s) for users of all enterprise GeoBase capabilities.

2.9.23. Coordinate with the Civil Engineer (CE) enlisted Career Field Manager in order to manage training and establish knowledge levels for engineering specialists providing GeoBase support in accordance with the requirements of the Engineering (3E5X1) AFSC.

2.9.24. Develop and provide GeoBase specific related training as required.

2.9.25. Support data stewards to correct geospatial data deficiencies and conform to the DAF adaptation of SDSFIE requirements and data formats.

2.9.26. Select the geospatial data layers that comprise the DAF GeoBase common installation picture (CIP) and manage the standard cartographic representation of the DAF CIP.

2.9.27. Oversees the updates of the DAF adaptation of the DISDI SDSFIE data standard and approves the version of the DAF adaptation of the DISDI SDSFIE data standard to be adopted and implemented for DAF GeoBase data.

2.10. **AFLCMC/HIBD Program Management Office.** The Air Force Life Cycle Management Center Theater Battle Control (AFLCMC/HIBD) is the Program Management Office responsible for the enterprise IGI&S system and has the overall responsibility for CE system(s) acquisition, development, and sustainment. The enterprise IGI&S Acquisition/System, Sustainment Program Manager is located within the Business and Enterprise Systems Directorate (AFPEO BES).

2.11. **Field Operating Agency (FOA) and Primary Subordinate Unit (PSU) Civil Engineer.** FOAs and PSUs that generate, integrate, analyze, or otherwise interact with and affect IGI&S are considered stakeholders in the GeoBase Program. FOAs and PSUs will:



2.11.1. Facilitate operational IGI&S within their span of control.

2.11.2. Participate in the GeoBase Program governance structure, communicating requirements, collaborating on solutions, and sharing IGI&S data and capabilities.

2.11.3. Provide Subject Matter Experts for development of functional data standards.

2.12. **Installation.** Responsibilities for installation commanders and installation engineering leadership are defined below.

2.12.1. The Installation Commander will:

2.12.1.1. Ensure there is an active GeoBase Program for the installation in accordance with DoDI 8130.0.

2.12.1.2. Establish and champion an IGI&S GIO at all DAF main operating bases and appropriate forward operating locations. The installation commander can only establish the officer at the installations for which they have authority and responsibility.

2.12.1.3. Ensure all installation producers and users of IGI&S use local geospatial capabilities where appropriate and coordinate requirements with the local IGI&S GIO.

2.12.1.4. Be responsible for validation of the data composition and physical boundaries of the Regional Installation Picture (RIP).

2.12.2. Installation engineering leadership will:

2.12.2.1. Ensure all CE data stewards and requirement owners participate in local IGI&S subordinate working group and coordinate requirements with the IGI&S GIO where appropriate.

2.12.2.2. Ensure their installation's GeoBase Program is appropriately supported, staffed and utilized to optimize investments in support of their installation mission requirements.

2.12.2.3. Ensure installation geospatial data are consistent with standards and follow quality assurance/quality control processes according to guidance provided by data stewards and requirement owners.

2.12.2.4. Be responsible for the development, maintenance, and quality assurance for geospatial data contained within the DISDI CIP, as defined in DoDI 8130.01, *Defense Installation Spatial Data Infrastructure*.

2.12.2.5. Be responsible for the development, maintenance, and quality assurance of geospatial data contained within the DAF CIP in accordance with AFCEC guidance.

2.12.2.6. Employ DAF GeoBase Standard Services and Capabilities as mandated systems of record, i.e., for linear segmentation infrastructure data and analysis, per AFI 32-1001, *Civil Engineer Operations*; and as Financial Improvement and Audit Remediation inputs for linear structures comparisons and assessments with real property inventories in accordance with DAFI 32-9005, *Real Property Accountability and Reporting and Installation Guides*.

- 2.12.2.7. Ensure DAF installation GeoBase data conforms to the latest version of the DAF adaptation of the DISDI SDSFIE data standard approved by AFCEC located at <https://www.sdsfieonline.org>.
- 2.12.3. Engineering Flight (CEN) will: identify a lead GIO for the GeoBase Program to work in coordination with data stewards.
- 2.12.4. Installation GIO will:
- 2.12.4.1. Act as the primary point of contact for installation-level IGI&S activities.
  - 2.12.4.2. Coordinate geospatial requirements with the MAJCOM, FLDCOM, or AFCEC GIO.
  - 2.12.4.3. Be responsible for the maintenance, quality assurance, and data integrity of the DISDI CIP and DAF CIP in accordance with applicable guidance from AFCEC.
  - 2.12.4.4. Assist with development, maintenance, and quality assurance of geospatial data in accordance with the applicable guidance per relevant data schema owners and requirement owners. In the event no guidance exists, the Engineering Flight coordinates with AFCEC to identify deficiencies in guidance.
  - 2.12.4.5. Coordinate with Installation GIOs, FOAs, PSUs, and Installation Engineering (3E5X1) leadership, on policy, guidance, and standard operating procedures.
  - 2.12.4.6. Enhance the workflow processes of data acquisition from field surveys and provide for data discoverability through IGI&S capabilities.
  - 2.12.4.7. Maintain training skills according to the relevant Career Field Education and Training Plan or similar guidance for civilians.
  - 2.12.4.8. Provide education and outreach support on the use of IGI&S.
  - 2.12.4.9. Refer interested users or potential users to appropriate forums, geospatial education, and training sources within the established IGI&S community.
  - 2.12.4.10. Execute and coordinate geospatial activities using qualified personnel, to include members of engineering (3E5X1) AFSC.
  - 2.12.4.11. Provide installation geospatial data visualization, analysis, and business requirement integration services.
  - 2.12.4.12. Operate a sub working group under the Facilities Board Working Group (AFI 32-10142, Facilities Board) to coordinate installation geospatial activities and requirements.
  - 2.12.4.13. Manage, protect, and make discoverable all installation geospatial data integrated through the GeoBase Program, including the DISDI CIP, DAF CIP, RIP, and relevant data layers.
  - 2.12.4.14. Absent a DAF enterprise geospatial system, manage any local GeoBase related systems in accordance with applicable DAF IT portfolio management and cybersecurity standards.

- 2.12.4.15. Provide guidance and support to data owners regarding IGI&S data maintenance, services, products, and capabilities.
- 2.12.4.16. Provide appropriate technical or procedural support to ensure successful use of geospatial technologies.
- 2.12.4.17. Ensure compliance with latest DAF IGI&S Data Model as established by AFCEC.

### 3. The Department of the Air Force GeoBase Program.

3.1. **GeoBase Responsibilities.** To ensure a successful and modernized DAF GeoBase Program, the CE enterprise will:

- 3.1.1. Conform to the Defense Business Enterprise Architecture (AFI 17-140, *Architecting*) (T-1).
- 3.1.2. Align with DAF Future Operating Concept core mission requirements as depicted in the A4 Basing and Logistics Enterprise Strategy (T-1).
- 3.1.3. Employ an asset management process guiding long-term organizational GeoBase resource investments (T-1).
- 3.1.4. Ensure GeoBase related systems comply with applicable risk management assessment and authorization requirements to include registration of IT systems (AFI 17-101, *Risk Management Framework (RMF) for DAF IT*, and AFI 17-110, *Information Technology Portfolio Management and Investment Control*) (T-1).
- 3.1.5. Utilize infrastructure and services of common DAF IT resources and DAF GeoBase Program software portfolio to the maximum extent practical (T-1).
- 3.1.6. Ensure past, existing, and future DAF GeoBase Program investments are inventoried, managed, assessed, and exploited in a shared governance forum to avoid redundancies (T-1).
- 3.1.7. Coordinate with functional owners to validate the suitability of existing sources of geospatial information prior to investing in new geospatial data collection efforts (T-2).
- 3.1.8. Employ available data, metadata, and quality assurance standards to maximize interoperability and minimize application development costs (T-2).
- 3.1.9. Coordinate with geospatial data schema owners regarding the facilitation of sharing DAF GeoBase Program resources with other federal, state, municipal, or international agencies to the maximum extent allowable (T-1).
- 3.1.10. Establish and train a skilled workforce to develop, implement, and sustain long-term use of GeoBase related systems to support the mission (T-2).
- 3.1.11. Support expeditionary geospatial activities through GeoReach and Expeditionary GeoBase processes to include but not limited to site selection, site survey, site planning, and deployed installation management processes (T-1).
  - 3.1.11.1. GeoReach is the process to enable analysis and selection of potential forward or expeditionary locations by providing geospatial information and services. It provides planners and Airmen with geospatial information and services enabling improved site

selection, deployment, and accelerated bed-down for emergency or expeditionary operations.

3.1.11.2. Expeditionary GeoBase is the deployed execution of GeoBase capabilities, affording deployed commanders and Airmen enhanced situational awareness of the expeditionary installation or site. It is enabled through processes developed, trained, and executed at home station via the DAF GeoBase Program.

**3.2. DAF GeoBase Program Supported Uses.** GeoBase provides geospatial asset visibility of built and natural infrastructure in support of the DAF mission. The following list contains examples of, but is not limited to, functional areas with geospatial requirements which can be supported by the GeoBase Program.

3.2.1. Airfield Obstructions. Provide location-based (horizontal) context and management of new and existing vertical airfield features to support airfield safety **(T-1)**.

3.2.2. Asset Management. With respect to property improvements, track building's relevant details such as year and type of construction, condition and maintenance, and capital improvements. Manage accountability, conditions and locations from a portfolio perspective **(T-1)**.

3.2.3. Comprehensive Planning. Support master planning through the analysis of opportunities and constraints and the integration of DAF mission requirements. This includes development of installation development plans, basing and force bed downs **(T-1)**.

3.2.4. Cultural Resources. Provide support for planning integration, tribal and community relations, and risk reduction with regards to federal, state and local regulations **(T-0)**.

3.2.5. Emergency Management. Provide geospatial support to the installation Emergency Management Working Group (EMWG) and the Installation Office of EM for natural, technological, and human-caused incidents/attacks. Provide geospatial planning, response, and recovery support to the Emergency Operations Center following incidents/attacks at both main operating bases and forward operating locations as described in DoDI 6055.17, *DoD Emergency Management (EM) Program* and DAFI 10-2501, *Emergency Management Program (T-0)*.

3.2.6. Mission Sustainment. Provide standard and specialized geospatial views and analysis of the built and natural environment in the Installation Complex that reflect current/potential future incompatibilities between DAF missions and the outside communities **(T-1)**.

3.2.7. Environmental Compliance. Provide geospatial views of air quality, hazardous materials, hazardous waste, integrated solid waste, storage tanks, water quality, and spill layers **(T-0)**.

3.2.8. Environmental Restoration and Munitions Response. Display layers that include installation restoration and military munitions cleanup sites and program activities **(T-1)**.

3.2.9. Explosive Safety. Support the generation of quantity distance arcs and identify possible explosive hazards and enhance safety during mission activities **(T-1)**.

3.2.10. Facility Operations. Provide analysis of built infrastructure including construction operations, grounds maintenance (e.g., snow removal), and other facility operations to support efficient and comprehensive facility management **(T-1)**.

3.2.11. Infrastructure Assessments. Provide Infrastructure Assessments to illustrate critical assets, i.e., Airfield & Transportation, Utilities and Electrical Network geo-enabled sustainment management systems for data collection and maintenance, condition analysis, Integrated Priority List scoring, and probability of failure determinations **(T-1)**.

3.2.12. Natural Resources. Assist with identification, planning integration, protection of human health and the environment, and to avoid the risk of violations of federal, state, and local laws (e.g., Sikes Act, Endangered Species Act, Migratory Bird Treaty Act, and Marine Mammal Protection Act), and stipulated fines and penalties **(T-0)**.

3.2.13. Real Property. Generate geospatial views and analysis of DAF real property assets in support of the acquisition, management, and disposal of a real property asset to maintain an accurate real property inventory **(T-1)**.

3.2.14. Space Optimization. Allows for management of utilization and occupancy of facility (building) space for effective space optimization **(T-2)**.

3.2.15. Transportation Network. Provide geospatial information and representation of installation transportation infrastructure to assist with the safe and uninterrupted movement of vehicles (e.g., aircraft, trains, and cars) and pedestrians providing mission support. With respect to property improvements, track building's relevant details such as year and type of construction, condition and maintenance, and capital improvements **(T-1)**.

3.2.16. Utilities. Provide inventory, management and analysis of built infrastructure (specifically linear assets) to ensure proper geospatial location, operation, and maintenance to avoid service losses and degradation of mission support **(T-1)**.

3.2.17. Climate Resiliency. Utilize climate resiliency data to support master planning activities at the installation level. This includes data related to sea-level change, permafrost, subsidence, and ecosystem shifts **(T-1)**.

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

DoDI 4165.14, *Real Property Inventory and Forecasting*, 17 January 2014

DoDI 6055.17, *DoD Emergency Management (EM) Program*, 12 June 2019

DoDI 8130.01, *Installation Geospatial Information and Services (IGI&S)*, 25 October 2017

DoDI 8320.02, *Sharing Data, Information, and Information Technology Services in the Department of Defense*, 5 August 2013

JP 3-34, *Joint Engineer Operations*, 06 January 2016

HAFMD 1-26, *Chief, Information Dominance and Chief Information Officer*, 5 February 2015

HAFMD 1-38, *Deputy Chief of Staff, Logistics, Engineering and Force Protection*, 20 June 2021

AFPD 32-10, *Installations and Facilities*, 19 July 2020

AFPD 32-70, *Environmental Considerations in Air Force Programs and Activities*, 29 July 2018

AFPD 33-3, *Information Management*, 21 June 2016

AFPD 90-8, *Environment, Safety, & Occupational Health Management and Risk Management*, 22 December 2019

DAFPD 32-90, *Real Property Management*, 20 April 2021

AFI 17-101, *Risk Management Framework (RMF) for AF Information Technology (IT)*, 5 February 2020

AFI 17-110, *Information Technology Portfolio Management and Capital Planning and Investment Control*, 22 May 2018

AFI 17-140, *Architecting*, 28 June 2018

AFI 32-1001, *Operations Management*, 3 October 2019

DAFI 32-9005, *Real Property Accountability*, 4 February 2020

AFMAN 14-405, *Multiple Source, Discipline, and Domain Intelligence, Surveillance, and Reconnaissance*, 11 May 2020

AFMAN 33-322, *Records Management and Information Governance Program*, 23 March 2020

***Prescribed Forms***

None

***Adopted Forms***

None

***Abbreviations and Acronyms***

**AF**—Air Force

**AFCEC**—Air Force Civil Engineer Center

**AFI**—Air Force Instruction

**AFIMSC**—Air Force Installation and Mission Support Center

**AFPD**—Air Force Policy Directive

**AFSC**—Air Force Specialty Code

**CE**—Civil Engineer

**CIP**—Common Installation Picture

**DAF**—Department of the Air Force

**DAFI**—Department of Air Force Instruction

**DAFPD**—Department of Air Force Policy Directive

**DISDI**—Defense Installation Spatial Data Infrastructure

**DoD**—Department of Defense

**DoDI**—Department of Defense Instruction

**DOTMLPF-P**—Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, Facilities, and Policy

**FLDCOM**—Field Command

**FOA**—Field Operating Agency

**GDM**—Geospatial Data Model

**GIO**—Geospatial Information Officer

**IGG**—Installation Geospatial Information and Services Governance Group

**IGI&S**—Installation Geospatial Information and Services

**IT**—Information Technology

**ITIPS**—Information Technology Investment Portfolio Suite

**MAJCOM**—Major Command

**MOA**—Memorandum of Agreement

**OSD**—Office of the Secretary of Defense

**PSU**—Primary Subordinate Unit

**RIP**—Regional Installation Picture

**RMF**—Risk Management Framework

**SAF**—Secretary of the Air Force

**SDSFIE**—Spatial Data Standards for Facilities, Infrastructure, and Environment

**T**—Tier

### *Office Symbols*

**AF/A2/6**—Deputy Chief of Staff for Intelligence, Surveillance, Reconnaissance and Cyber Effects Operations

**AF/A2OC**—Air Force Geospatial-Intelligence Office

**AF/A4**—Deputy Chief of Staff/Logistics, Engineering and Force Protection

**AF/A4C**—Director of Civil Engineers

**AF/A4CS**—Director of Civil Engineers Systems and Data Division

**AFCEC/GIO**—Air Force Civil Engineer Center Geospatial Installation Office

**AFLCMC/HIBD**—Air Force Life Cycle Management Center Theater Battle Control

**AF PEO/BES**—Air Force Program Executive Officer for Business and Enterprise Systems

**SAF/CN**—Secretary of the Air Force Office of the Chief Information Officer

### *Terms*

**Common installation picture (CIP), Air Force**—The Common Installation Picture is the standard Air Force geospatial data set that depicts facilities and physical features on an Installation. The Common Installation Picture is comprised of vector layers and imagery (no greater than 5 years old) that provides a foundational view of Air Force Installations for fundamental orientation.

**Common installation picture (CIP)**—The distinct, minimum set of geospatial feature and imagery necessary to provide a foundational map depicting Department of Defense installations and sites as defined in Department of Defense Instruction 4165.14, Real Property Inventory and Forecasting. The purpose of the Common Installation Picture is to provide a readily available, standardized map background to serve as the basis for planning and execution of Energy, Installations and Environment responsibilities and functions.

**Data Content Specification**—Sometimes called a data layer standard or specification data layer standard, is a detailed description of a dataset or data layer together with additional information that will enable it to be created, supplied to, and used by other organizations. It is a technical document that provides essential information for data collection and metadata population. It describes the ideal dataset or “how a dataset should be.”

**Data Layer**—A specific geospatial feature, such as wetlands, land use, or building, which is a point, line or polygon object with a spatial location in the real-world landscape that can be used for visualization and analysis.

**Data Schema Owner**—A Data Schema Owner is the OPR responsible for development and maintenance of the data model of a specific data layer or set of data layers. Data Schema Owners reside at the Primary Subordinate Unit (PSU), Field Operating Agency or equivalent level. The representative(s) from the OPR is a recognized functional Subject Matter Expert that has the background, expertise, and experience to make decisions for the respective geospatial data layer(s). GeoBase requires that all geospatial data layers have a documented Data Schema Owner.

**Data Steward**—A data steward is the OPR responsible for data acquisition, correctness, completeness, and maintenance for an assigned geospatial data element. Data stewards can be functional representatives from all echelons of the DAF hierarchy. The data steward serves as the



GeoBase's primary point of contact for issues concerning specific geospatial data but not for geospatial schema issues.

**GeoBase**—Commissioned July 2001, supports the AF CE mission by providing accurate, current, and timely satellite and aerial imagery and map data representing real-world features and conditions for DAF installations, ranges and property. GeoBase strives to support AF missions by providing IGI&S. Committed and trained personnel as well as advanced information technology infrastructure enable these services.

**Geospatial Data Model (GDM)**—The list geospatial data layers that includes data layer logical definitions, physical data structure of geospatial layers when stored within a geospatially enabled database management system, and business justifications that have been determined to meet the needs of IGI&S Data Schema Owners. These geospatial data layers may be created and maintained by AF Functionals or externally managed geospatial data layers from other identified Authoritative Data Sources at the federal, state, or local levels. The Geospatial Data Model is predominately based upon the current AF adaptation of Defense Installation Spatial Data Infrastructure's - Vector.

**Geospatial Information & Services**—The collection, information extraction, storage, dissemination, and exploitation of geodetic, geomagnetic, imagery (both commercial and national source), gravimetric, aeronautical, topographic, hydrographic, littoral, cultural, and toponymical data accurately referenced to a precise location on the Earth's surface. Geospatial services include tools that enable users to access and manipulate data, and also include instruction, training, laboratory support, and guidance for the use of geospatial data. (Joint Publication 2-03)

**Regional Installation Picture (RIP)**—The collection of geospatial information, including imagery that depicts features outside the Installation boundary to support mission requirements excluding targeting and combat operations. The content of the Regional Installation Picture is defined, at a minimum, by the geospatial information contained in the Installation Complex (as defined in AFI 90-2001 "Mission Sustainment"). The geographic extent of the Regional Installation Picture is, at a minimum, comprised of the maximum extent of the combination of the outer horizontal surface (as defined by United Facilities Criteria 3-260-01 "Airfield and Heliport Design"), the Installation Complex (as defined in AFI 90-2001 "Mission Sustainment"), and a 3-mile buffer from the Installation boundary. Either the content or geographic extent of the Regional Installation Picture can be supplemented or extended by the Installation Commander as necessary.

**Requirement Owner**—A requirement owner includes any stakeholder requesting geospatial information or services that may or may not already be satisfied by an existing IGI&S capability or solution. A requirement owner may or may not be directly affiliated with AF Civil Engineering. Requirement can be identified as a geospatial capability/tool and/or data element.

**Spatial Data Standards for Facilities, Infrastructure, and Environment (SDSFIE)**—Spatial Data Standards for Facilities, Infrastructure, and Environment is a community standard, and recognized as the enterprise standard for geospatial data across the entire Department of Defense business mission area. It is a "family of standards" consisting of seven standards, one of which is the Spatial Data Standards for Facilities, Infrastructure, and Environment Vector standard. Spatial Data Standards for Facilities, Infrastructure, and Environment is managed by the IGG.

**Stakeholder**—functional owner that relies on the GeoBase Program for geospatial data storage or access, analysis capabilities, or service delivery to meet their mission requirements.