

**BY ORDER OF THE COMMANDER
EGLIN AIR FORCE BASE**

**EGLIN AIR FORCE BASE INSTRUCTION
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Civil Engineer

GEOGRAPHIC INFORMATION SYSTEMS

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This instruction implements Air Force Policy Directive (AFPD) 32-10, *Installations and Facilities* as well as AFI 32-10112, *Installation Geospatial Information and Services*. This instruction establishes responsibilities and procedures for developing, distributing, and maintaining Geographic Information Systems (GIS) at Eglin Air Force Base. The intended audience is the technician that is involved in creating or editing geospatial data that should be incorporated into the Eglin Enterprise Spatial Database (EESD). All associate units of the Eglin Air Force Base and reservation are affected by the policy and guidance in this instruction. This instruction is not intended to function as a strategic plan. The plan for geospatial technology development at Eglin Air Force Base is defined in the Eglin GeoBase Strategic Plan. Send recommended changes or comments for this publication to the Office of Primary Responsibility (OPR) using the Air Force (AF) Form 847, *Recommendation for Change of Publication*. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with AFMAN 33-363, *Management of Records*, and disposed of in accordance with the Air Force Records Disposition Schedule (RDS) located at <https://www.myaf.mil/gcss-af61a/afrims/afrims>

SUMMARY OF CHANGES

In response to the merger of the 46th Test Wing and the 96th Air Base Wing into the new 96th Test Wing, references to the new Wing have been updated. The responsibilities of Engineering Assistants in section 2.6 were relabeled as those of the Civil Engineer GIS Staff since they

currently perform Engineering Assistant (EA) duties and Eglin no longer has any Engineering Assistant billets. In the Data Request policy of section 9, data stewards were given greater latitude so they could handle routine or minor data requests and merely report to the GIO, rather than requiring GIO approval for all requests.

1. General.

1.1. Developing, and maintaining a high quality Geographic Information System (GIS) is an essential part of the Eglin Air Force Base business objectives. The Eglin GeoIntegration Office (GIO) is chartered to develop and publish geospatial policy and guidance; share information regarding GIS technology; train entry-level users; maintain the Eglin Enterprise Spatial Database, the Common Installation Picture, and Viewer application; and provide limited mapping support.

1.2. The Eglin GIO will develop and maintain its GIS according to DOD requirements developed and implemented by the Spatial Data Standards for Facilities, Infrastructure and the Environment (SDSFIE) and the Federal Geographic Data Committee (FGDC). The SDSFIE will serve as the model for Eglin's data dictionary. Where specific conventions cannot be followed, the intent and philosophy of the Standards will be used to craft the required features, tables, or domains.

1.3. Eglin and associate organizations will seek sufficient resources to allow for the orderly and progressive deployment of GIS technology. This deployment will be in proportion to the demand placed on the system by those endeavoring to meet Eglin's mission requirements with improved resource management and planning.

2. Responsibilities.

2.1. Installation Commander (96 TW/CC) will

2.1.1. Establish and maintain the Eglin GeoIntegration Office.

2.1.2. Guide the determination of Eglin's Regional Installation Picture, 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.

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

2.1.4. Oversee execution of the Eglin GeoBase Program and geospatial data management of associated tenants.

2.2. 96th Test Wing Vice Commander (Mission) (96 TW/CV) will

2.2.1. Ensure Eglin's GeoRange Program is appropriately supported, staffed and utilized to optimize investments in support of the Test Wing's mission requirements. The GeoRange system enhances processes and creates efficiencies for the process owners and participants of the Eglin Range Complex by attaining, maintaining, and sustaining one comprehensive, integrated geospatial information enterprise. It is the range-focused geospatial system that complements GeoBase's cantonment focus.

2.2.2. Ensure the appropriate range features are collected and maintained to support the requirements of AFI 13-212, *Range Planning and Operations*, EAFBI 13-212 and DoD guidance relevant to the Eglin Major Range Test Facility Base.

2.3. The Base Civil Engineer (96 CEG/CC) will

2.3.1. Provide functional guidance to the Installation GIO.

2.3.2. Be responsible for the Quality Assurance (QA/QC) procedure of the Common Installation Picture, Civil Engineer (CE) Mission Data Set, CE Mission Data Layers, and metadata according to guidance provided by Headquarters Air Force GeoIntegration Office (HAF-GIO). Ensure that data published via the GeoBase Service is consistent with standards in place for geospatial data, metadata, and attribution.

2.4. GeoIntegration Office will

2.4.1. Execute the GeoBase Program at the installation in accordance with guidance provided by the Headquarters Air Force GeoIntegration Office, MAJCOM GIO, and Installation Commander.

2.4.2. Implement GeoBase in accordance with applicable data, metadata, Information Technology, Enterprise Architecture, and Portfolio Management standards.

2.4.3. Guide the operational development and implementation of GIS technology and applications throughout the Eglin Complex.

2.4.4. Be the authoritative source and have primary responsibility for all Common Installation Picture (CIP) layers. Work with data stewards to develop CIP data layers as applicable for appropriate data. Support data stewards across mission domains to assure quality and safeguarding of data.

2.4.5. Ensure the CIP is captured, maintained, stored and made accessible via the GeoBase Service, in accordance with DODD 8320.2, *Data Sharing in a Net-Centric Department of Defense*, as well as other USAF information management policies.

2.4.6. Host an installation GIO working group to coordinate installation geospatial activities and requirements. The working group will consist of system developers and end users from each Eglin organization actively engaged in managing spatial resources. Participation in the installation geospatial working group shall be a requirement of any organization leveraging the GeoBase Service.

2.4.7. Convert essential historic geographic information into a common format compatible with existing Eglin Air Force Base hardware and software configurations and the Spatial Data Standard for Facilities, Infrastructure, and Environment.

2.4.8. Ensure appropriate databases with spatial content resulting from any initiative, whether organic or contracted, are compatible with the Eglin Enterprise Spatial Database and are added in a timely manner. Details of this process, as outlined in the Eglin GIS User's Guide, are shared with responsible parties and outreach efforts to those parties are directed by the GIO.

2.4.9. Distribute geographic information products to the Eglin user community and beyond in a variety of formats consistent with end-user requirements, knowledge, and training level through a data release process in accordance with the Eglin GIS User's

Guide. The GIO has the authority to release the CIP to requesting agencies. However, for data releases of non-CIP features, the data steward for the feature being released has the final approval authority. Likewise, the GIO will obtain release approval from the appropriate data steward prior to releasing non-CIP features to non-DOD agencies.

2.4.10. Manage specific geographic information elements (spatial and attribute) through the designated OPR. The OPR is the organization wherein the responsible data steward is employed. The OPR is ultimately responsible for ensuring a member carries out the duties of data steward.

2.4.11. Evaluate leading edge technologies in support of procurement actions to empower users with the most profitable tools available,

2.4.12. Maintain the Eglin GeoBase Strategic Plan that defines the broad goals and objectives for GIS development and utility across the greater Eglin complex.

2.4.13. Maintain the Eglin GIS web site that provides links to the GeoBase Strategic Plan, the Eglin GIS Web Map Viewer, and the Eglin Enterprise Spatial Database data catalog.

2.4.14. Administer, promote, support, and integrate the GeoBase Service as the recognized Air Force geospatial solution within the installation. The installation GIO shall be the primary point of contact to coordinate base-level GeoBase activities and to coordinate requirements with the MAJCOM.

2.4.15. 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. Provide the appropriate form of technical or procedural support to ensure successful use of the GeoBase Service.

2.4.16. Define content, refresh rate, and geographic extent of Regional Installation Picture (RIP) in concert with the 96th Test Wing and key stakeholders. Identify and maintain a list of local applicable spatial data sources, establish access procedures, provide RIP access to MAJCOM/DRU, and maintain RIP documentation.

2.5. Data Stewards will

2.5.1. Be designated by organizations whose missions require the maintenance of geospatial data. Any resource or constraint that has a location is a candidate for better management through geospatial technology. The subject organizations are responsible for equipping and training their data steward(s). Each designated individual will be selected through the appropriate organization's leadership. The steward will serve in this function for no less than one year.

2.5.2. Review and evaluate the assigned features (and associated data sets) and determine their relative accuracy and adequacy for distribution to the Eglin installation community. Assigned features will follow the geospatial standards as defined in the GIS User's Guide.

2.5.3. Submit specific feature and associated database attributes into the EESD and GIS Metadata Database, respectively. Perform and/or coordinate all corrections and updates to the feature and associated databases. Transfer all updated features (and databases) to the centralized repository following the procedures described in the Eglin GIS User's Guide.

2.5.4. Follow the GIS User's Guide for guidance in the capture, manipulation, storage and presentation of all geospatial data.

2.5.5. Represent the interests of their respective organization at the GIO Working Group meetings.

2.5.6. Be responsible for authorizing the release of their subject data sets to entities outside the Eglin community. They are also responsible for authorizing the publication of their data sets to the Eglin Enterprise Spatial Database and the Eglin GIS Web Map Viewer. Details are defined in the Eglin GIS User's Guide.

2.6. Civil Engineer GIS staff will

2.6.1. Develop and maintain infrastructure geospatial data and associated 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.

2.6.2. Coordinate with MAJCOM GIO, Installation GIO, and 3E5X1 career field functional manager on CE 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.

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

3. Operating Instructions. File Formats, Data Storage Warehouses, and Projections are covered in the Eglin GIS User's Guide. All data sets will be compatible with the Spatial Data Standards for Facilities, Infrastructure and Environment as updated and modified by the GIO. Any proposed deviations from these data structures must be presented to the GIO for review and approval.

4. Metadata Database. The Eglin Enterprise Spatial Database (EESD) is the location for all shared Eglin geospatial data. All shared data stored in the EESD will have associated metadata records in the EESD metadata database. The GIO has responsibility for oversight of the metadata database. Each GIS Data Steward is responsible for maintaining accurate metadata database records for their respective data tables. The following metadata topics are guided by the Federal Geographic Data Committee (FGDC) metadata standards (<http://www.fgdc.gov>). Details pertaining to specific metadata requirements are addressed in the Eglin GIS User's Guide. At a minimum, EESD metadata will contain the following categories of information:

- 4.1. Identification Information.
- 4.2. Data Quality Information.
- 4.3. Spatial Data Organization Information.
- 4.4. Spatial Reference Information.
- 4.5. Entity and Attribute Information.
- 4.6. Distribution Information.
- 4.7. Metadata Reference Information.

4.8. Citation Information.

4.9. Time Period Information (Format should be: yyyy/mm/dd).

4.10. Contact Information.

4.11. Contact Organization.

5. Data Deliverable Standards. The various formats in which spatial data must be delivered are subject to change over time. Therefore, refer to the Eglin GIS User's Guide for the latest conventions in use.

6. Global Positioning System Data Collection Standards. The precision with which the geospatial data is collected is of great importance for the maintenance of data integrity. As technology improves collection procedures, the guidance for such procedures may also change. Therefore, for the latest information regarding GPS-enabled data collection and post-processing, refer to the Eglin GIS User's Guide.

7. Remotely Sensed (RS) Operating Instructions. The detailed guidance for processing and integrating remotely sensed imagery is covered at length in the Eglin GIS User's Guide.

8. Guidance.

8.1. Eglin GeoBase Strategic Plan. The purpose of the plan is to provide the vision for the future of geospatial technology at Eglin and define the proposed development and maintenance of the utility. It is reviewed and updated annually by the Eglin GeoIntegration Office. A copy of the Strategic Plan is available through web-enabled document management tools.

8.2. HAF-GIO Policy and Instructions. At the Headquarters Air Force GeoIntegration Office's portal site, there is a complete collection of HQ level guidance available for download. The documents address the following topics: Administration, Architecture, Applications, Community of Interest Governance, Communications, Education and Training, and Policy and Guidance. Note: Policy sources must be validated periodically to ensure currency.

9. Data Request and Release Policy. All geospatial data requests will be coordinated through the Eglin GIO. The GIO will evaluate the request and facilitate its staffing in accordance with the release policy. At a minimum, the data steward will notify the GIO of data releases that they are able to fulfill independently. The release policy is further explained in the Eglin GIS User's Guide.

DAVID A. HARRIS, Brig Gen, USAF
Commander

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

AFPD 32-10, *Installations and Facilities*, Mar 2010

AFI 32-10112, *Installation Geospatial Information and Services*, Oct 2007

AFMAN 33-363, *Management of Records*, Mar 2008

AFI 13-212, *Range Planning and Operations*, Nov 2007

EAFBI 13-212, *Range Planning and Operations*, Mar 11

Adopted Forms

AF Form 847, *Recommendation for Change of Publication*, Sep 2009

Terms

CIP— Common Installation Picture - 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.

EESD— Eglin Enterprise Spatial Database. The location for all shared spatial data at the Eglin Complex.

Feature— A representation of an existing or planned entity through a graphic depiction (polygon, point, or line) and further defined by non-graphic attributes in the database. A feature is one record in the feature class table.

FGDC— Federal Geographic Data Committee. The United States Federal Geographic Data Committee. Composed of representatives of several federal agencies and GIS vendors, the FGDC has the lead role in defining spatial metadata standards, which it describes in the Content Standards for Spatial Metadata. [http://www.geocities.com/CapeCanaveral/1224/terms/esri_gloss.html]

GIS— Geographic Information System. A computer system that stores and links non-graphic attributes or geographically referenced data with graphic map features to allow a wide range of information processing and display operations as well as map production, analysis, and modeling. [Geographic Information Systems Antenucci, et.al., 1991]

OPR— Office of Primary Responsibility

RIP— Regional Installation Picture - the collection of geospatial data depicting features outside of the installation boundary to support multiple mission requirements excluding intelligence gathering, targeting, or combat operations. The general geographic scope encompasses military airspace over northwest Florida, southern Alabama, and southern Georgia; as well as the entire eastern Gulf of Mexico.

SDSFIE— Spatial Data Standards for Facilities, Infrastructure and the Environment. The SDSFIE have focused on the development of graphic and non-graphic standards for GIS implementations at Air Force, Army, Navy, and Marine Corps installations, US Army Corps of

Engineers Civil Works activities, and other Government organizations. The SDSFIE provide a standardized grouping of geographically referenced (i.e., geospatial) features (i.e., real-world features or objects depicted graphically on a map at their real-world location (i.e., coordinates). Each geospatial feature has an "attached" attribute table containing pertinent data about the geospatial feature. [tsc.wes.army.mil/products/TSSDS-TSFMS/tssds/html/]

Vector— an abstraction of the real world where positional data is represented in the form of coordinates. In vector data, the basic units of spatial information are points, lines and polygons. Each of these units is composed simply as a series of one or more coordinate points. For example, a line is a collection of related points, and a polygon is a collection of related lines. Vector images are defined mathematically as a series of points joined by lines. Vector-based drawings are resolution independent. This means that they appear at the maximum resolution of the output device, such as a printer or monitor. Each object is self-contained, with properties such as color, shape, outline, size, and position on the screen. [coris.noaa.gov/glossary/glossary_1_z.html]