

United States Department of Agriculture



Geospatial Enterprise Operations

Business Services Catalog

Version Tracking

The GEO Business Services Catalog is an online publication of the services GEO provides to it's customers. The online version is the authoritative source of information on GEO's offerings and is a living document that changes as services are added, changed or retired.

This version is a cumulative document for the purpose of downloading and is updated with addendum notices as necessary. The online version of this catalog is maintained regularly and is the authoritative source.

Version	Date	Author	Notes
v 1	9/1/2021	Gary Mustian	Initial Publication
v 2	9/26/2022	Gary Mustian	Up to date Publication
v 3	9/28/2024	John Stadelman	Up to date Publication

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About Information Solutions Division (ISD)

The **Information Solutions Division** (ISD) provides national leadership and technical direction while serving as the principal advisor on information technologies to the Farm Production and Conservation (FPAC) mission area, its leadership, and other key officials. Organizationally, ISD resides in the FPAC Business Center (FBC) as an enterprise level shared service to the Farm Service Agency (FSA), Natural Resource Conservation Service (NRCS), and Risk Management Agency (RMA). ISD is led by the FPAC Assistant Chief Information Officer (ACIO) who is responsible for establishing, implementing, maintaining, and managing all Information Technology (IT) policies, practices, guidelines, frameworks, programs, procedures and standards as required by statute, regulation, and United States Department of Agriculture (USDA) Departmental policy.

About Geospatial Enterprise Operations (GEO)

Geospatial Enterprise Operations, (GEO) under the FBC Assistant Chief Information Officer (ACIO), serves as an enterprise leader in the FPAC mission area geospatial environment, (geography, Geographic Information Systems (GIS), Global Positioning System (GPS), Remote Sensing, and Geo Science) while additionally contributing to creating and main taining the USDA's geospatial policy, governance, and enterprise strategic design in concert with FPAC strategy. GEO partners with FPAC, USDA, and other external customers to deliver some of the nation's most foundational geospatial information.

GEO has three sections addressing multiple geospatial capabilities and customer needs including geospatial strategy, planning, operations, and delivery. These geospatial capabilities are delivered through the following organizational sections:

- Geospatial Data Management and Provisioning Section;
- Data Inspection, Enhancement and Delivery Section;
- Geospatial Technology, Coordination, and Project Execution Section.

This approach allows GEO to unpack the vast diversity of geospatial technologies and expertise and develop solutions that meet, and often exceeds, business needs.

- **Geospatial information technologies** Geospatial data files are very large when compared to tabular data. These factors necessitate an information technology-oriented staff that are experts in various types of geospatial data sets. Proper data management is key when developing a strategy to facilitate the right geospatial data being available to the consumer while adhering to prudent financial management practices.
- **Geospatial "reach-back" expertise** Field staff are often confronted with disaster situations where additional support is needed. GEO employs a cadre of Cartographers, GIS specialists, Imagery Analysts, and other geospatial professionals who deliver solutions for challenges that provide support field staff with time sensitive real-world events that require geospatial tools and applications that are deployed quickly and efficiently.

GEO also has expertise in historical data, trend analysis, and remote sensing technologies such as land cover identification. Additional projects include enabling historical information for inclusion in the digital library and conducting trend analysis to tell the story of identified areas of America's vast land inventories.

- Innovative solutions Geospatial technology brings out the power of location through analytics, geospatial modeling, data-intensive geospatial information science, and spatial related application development. Comprehensively addressing opportunities and challenges, roadmaps for research and development, trends, and impacts of GIS in the era of big data. Ensuring a high-performance, resilient platform allowing government and enterprise sectors to leverage a an abundance of geospatial technology and data types, including 3D data and imagery to optimize business processes and develop new products and services.
- Centralized management practices GEO employs program and project management specialists to consolidate geospatial work. Imagery, elevation, and records digitization are more effectively executed when subject matter experts (SME) provide solutions that serve more enterprise consumers. The USDA experiences more financial and usage efficiencies as GEO finds solutions to more projects throughout the agency.

Geospatial Enterprise Operations serves the FPAC Mission Area with best-in-class, innovative, customerfocused geospatial information and solutions that are accessible, current, and authoritative.

NOTE: This document describes GEO's current service offerings; however, it should be understood that this is a "living document" and continues to receive updates to services and products.

Contact GEO

For more information on the Products and Services offered by GEO, contact the Customer Fulfillment Center (CFC) Email: <u>GEO.CFC@usda.gov</u>

To comment on the Service Catalog please contact the Customer Experience office at <u>GEO.CXO@usda.</u> <u>gov</u>

Internal to USDA

GEO Customer SharePoint Site: <u>https://usdagcc.sharepoint.com/sites/FBC-GEOB</u>

External to USDA

https://www.fpacbc.usda.gov/geospatial-services

Geospatial Data Management and Provisioning

Services Description

Geospatial Data Management and Provisioning analyzes, designs, and develops enterprise level solutions to geospatial data ingestion, storage, and Geographical Information Systems (GIS) in collaboration and alignment with FPAC ISD Branches and standards. It is here that GEO manages FPAC's vast historical digital imagery library, containing approximately 13 petabytes of digitized film images dating back to the 1950's.



Geospatial Data Management and Provisioning supports geospatial

components of enterprise application development in conjunction with ISD Information Solutions Service Delivery and Operations Branch (ISSDOB). Customized application development provided to internal FPAC customers and partners. Advises Mission Area subject matter experts (SMEs) and ISD Branches as appropriate on application development investment decisions in cases where there is a geospatial component.

Available Services

Geospatial Data Management and Provisioning guides and provides expertise to other GEO Branch sections and FPAC Mission Area SMEs to assess out-of-the-box data models, scripts, and tools to develop, deploy, and support enterprise level workflow.

- Define policy
- Assess processes
- GEO Data Strategy
- Coordinate and assess RACI CEC/DISC
- Commercial of the Shelf (COTS) applications consolidation
- Cloud Strategy and participation
- Software Development Life Cycle (SDLC) Oversight of implementation
- Consolidation of Data Services
- Assessment of Infrastructure
- Asset consolidation
- Ensure Authority to Operate (ATO) of all systems
- Change Management
- GIT Hub repository
- Oversight of Service Level Agreements (SLAs)

Geospatial Software Support and Hardware Procurement

Services Description

Often times, the use of geospatial data in mission area workflows requires specialized software or hardware configurations. Geospatial Software Support and Hardware Procurement ensures GIS applications, tools, and products are integrated and available in mission area program support and delivery processes.



Available Services

Supports escalated geospatial software decisions to include:

- Tier 3 application support for escalated tickets, and technical support to the states for GIS applications in collaboration with the ISD Information Solutions Service Delivery and Operations Branch, as appropriate.
- Use of imagery, elevation, global positioning system (GPS), and other data across FPAC and other organizations.
- Geospatial software needs of the FPAC agencies.
- Leads GIS and geospatial data hardware requirements, evaluation, testing, and procurement assistance, in collaboration with ISD Information Solutions Service Delivery and Operations Branch as appropriate, to include but not limited to leadership management, and support of geospatial data specific storage devices.
- Liaises between the geospatial community and ISD on hardware and software requirements, systems diagnostics, and troubleshooting.
- Evaluates and advises on geospatial software purchases.
- Ensures new software and application updates are certified for use in the FPAC environment.
- Ensures annual maintenance and licensing agreements are current.
- Provides technical integration and deployment of enabled GPS software, GPS supporting software, and other data collection software to end user devices.
- Provides infrastructure in collaboration with the ISD Information Solutions Service Delivery and Operations Branch as appropriate.
- Remains abreast of state-of-the-art concepts related, but not limited to, GIS, remote sensing, digital image processing, graphics and crop models, and trends in application, hardware, and software development.
- Works in concert with USDA and its subordinate Agencies on GIS software evaluations, version updates, and deployment strategies.

GIS Application Development

Services Description

The mission of GIS Application Development (GAD) is to provide the USDA with technical leadership and expertise in GIS applications, tools, and products. Our vision is to enable business application solutions to take advantage of location data by leading the FPAC mission area in delivering enterprise geospatial solutions through an Application Program Interface (API).



Business Functions

- Modernize program delivery systems to meet business needs and leverage IT strategic goals.
- Modernize information technology systems, reducing processing times for program benefits.
- Oversee the creation of authoritative national GIS layers such as the Common Land Unit.
- Evaluate potential new technologies for improving data development and program delivery.
- Work with GIS application sponsors to capture and refine policies and procedures.
- Provide support and assistance for software used in spatial analysis for business needs.
- Develop customized applications to support geospatial customer solutions



Source: Getty Images.

Geospatial Governance

Services Description

Geospatial Governance provides technical standards for geospatial data in alignment with the Federal Geographic Data Committee (FGDC) and the International Organization for Standardization (ISO) to include, but not limited to, imagery, high resolution elevation data, and other geospatial data for use by geospatial information consumers.



Governance Support

- · Account management of Geospatial systems and services.
- Maintain web presence.
- Maintain Business Process Documentation.
- Needs assessment and solutions engineering.
- Requirements.
- Establish repository and versioning.
- ATO Draft GEO-IT policy and guidance.

Website change requests such as these below, are performed to educate geospatial customers to the vast amount of data available for wide and varied use in everyday applications. Geospatial Information and data captures are integrated into ever increasing business operations and require appropriate standardization.



Geo Database Management

Services Description

Geo Database Management supports program leaders in acquiring, managing, and maintaining FPAC imagery, elevation, and geospatial databases. The team performs research, design, plan for and develop, review, maintain, and make recommendations concerning database program changes. There is a continued effort to move into a cloud based technology and this work is quickly evolving as we develop new input forms and reports with an emphasis on modernizing the existing geospatial databases and services.



The Database Management can support new business requirements on behalf of agencies in the the following areas:

- Impact assessment
- Recommend GIS database design and products based on customer requirements.
- Performing analysis of alternatives (AoA).
- Management of all Databases.
- Development and support of GIS based Business intelligence dashboards, focused on providing timely information relevant to data acquisition and management.



Geospatial Data Management Services

Services Description

Geospatial Data Management Services develops, manages, and supports authoritative FPAC geospatial data and the distribution networks of such data to mission area, federal, and public customers supported by the ISSDOB as appropriate.

Geo-Data Delivery Solutions

Available Services and Systems: Customer Service

- Provide customer support to both internal and public consumers of geospatial products and offerings, currently being served via the Geospatial Data Gateway.
- ALLER MARGEMENT DATABASE ASSESSMENT DATABASE ASSESSMENT DATABASE DATABAS
- LiDAR Server, the current enterprise solution for distributing LiDAR point cloud data. Allows users to navigate by project and create a downloadable product clipped to their exact area of interest.
- Manage a portfolio of vector and raster derivatives currently served through the Geospatial Data Gateway and Box.

Data Creation

- Create and maintain authoritative cartographic products.
- Create and maintain standardized map symbology.
- Create and maintain standardized mapping templates and layouts.

Data Processing

• Generate a series of 8 raster derivative products including elevation models, LiDAR, and contours distributed through web services.



The image was created by using ArcGIS Pro and "value add" Light Detection and Ranging (LiDAR) points and hillshade for use in a conservation plan.

Geospatial Data Provisioning

Services Description

The Geospatial Data Provisioning team recommends and provides approved data management capabilities and managed access to authoritative geospatial data and resources. This critical function facilitates the continuous availability of actionable information into consuming business applications and user systems. Methods of provisioning data include multiple services designed to support the delivery of all geospatial data/programs at the request or direction of the supported agencies. This includes protected, permission-based data sets and services that are determined to be either confidential or contain privacy information.



- Develops, manages, and supports authoritative FPAC geospatial data and the distribution networks of such data to mission area, federal, and public customers supported by the ISDDOB as appropriate.
- Manages external and internal-facing geospatial data portals and cartographic products (for example: Enterprise Data Center (EDC) ArcGIS Online (AGOL).
- Windows Based environment for the distribution of aerial imagery via web services and applications.

Available Systems

Geospatial Shared Services System

• Provides geospatial web services and components that can seamlessly integrate into enterprise business systems.



Data Inspection, Enhancement, and Delivery

Services Description

Data Inspection, Enhancement, and Delivery (DIED) Section provides quality assurance, product, and solution delivery services for FPAC GEO. Our Inspection team works to ensure the integrity and quality of geospatial data products acquired and processed through FPAC GEO. We offer a state-of-the-art film scanning laboratory for historical imagery and photographic support services for customized printing. The Technology, Science, and Analytics teams provide innovative geospatial solutions based on custom models, algorithms, and configurations of new and existing software to



solve mission critical needs around the FPAC partner agencies and USDA. Unique to FPAC GEO the DIED Customer Fulfillment team provides the public face of FPAC GEO for support and delivery of imagery products.

Available Products and Services

- Imagery
- Common Land Unit (CLU)
- Certification
- Geospatial Data Research
- Aerial Coverage Determination
- Customized Photographic Reproductions
- Electronic and Media Delivery
- Georeferencing
- Index Scans
- Digital Image Customization
- Film Digitization
- Historic Film Image Scans
- Georeferenced Photo Indices

- Create Historical Photo Center Points
- GPS Support
- Analytic Services
- LCAT (Land Change Analysis Tool) Data
- Historical Imagery Orthorectification
- Geospatial Scripting, Application, and Model Development
- Support ArcGIS Online (AGOL)
- National Agriculture Imagery Program (NAIP) Contract Spec
- Imagery Inspection Services
- Geospatial Help Desk
- Customized Environmental Systems Research Institute (ESRI) Web Applications



Customer Services

Services Description

The Customer Services team is the public facing front door to FPAC's geospatial products and services. Geospatial information held by FPAC is used by a wide consumer base for government, commercial, and private citizen activities. Due to a delegated authority from the Secretary of Agriculture, GEO serves as the collection point for imagery projects across the USDA and has developed a significant library of information that is used outside the agriculture community. This information serves as a tool assisting government organizations in planning, litigation, and disaster assessment while also establishing a base map image for everyday citizenry.



The team manages the public facing Customer Fulfillment desk that supports customers by assisting with research in determining the geospatial content specific to their need. Available content may include spatial (a certain place) and/or temporal (a certain time period) requirement. The team's daily activities include receiving research requests, creating customer orders, processing reimbursable collections, working with production staff, and managing product delivery. The team collaborates with the Production, Geospatial, and IT Services teams to deliver customer needs.

Available Products

Imagery – GEO offers copies of desired imagery in many formats, sizes, and delivery mechanism. Hard copy photos as well as digital representations are available.

CLU – Common Land Unit is a county farm and tract boundary used to measure acreage and determine crop yield among other uses. This dynamic geospatial process is frequently updated to ensure dataset is current. Section 1619 (7 USC § 1619) of the 2008 Farm Bill restricts sharing of CLU data.

Certification – A letter stating official regulation and original film holdings location indicating aerial identification and date with state and county covered. Used for court cases and physically attached to aerial photographic reproductions. Also available is a standard Letter of Origin that can be provided without certification and includes the same information.



Available Services

Geospatial Data Research – Is an innovativesystematic approach to verify and study GEO's geospatial holdings to increase the level of knowledge, awareness, and understanding the nature and availability of products and services available to support the FPAC mission and supports the following ordering activities:

- Aerial Coverage Determination
- Customized Photographic Reproductions
- Electronic and Media Delivery
- Georeferencing

Geospatial Data Gateway

- Provides a one-stop-shop for environmental and natural resource data, at any time, from anywhere, to anyone, public or internal
- Direct data downloads available to end users through the Box web application.
- Application is dataset specific: https:// gdg.sc.egov.usda.gov/
- Geospatial Data Gateway https:// gdg.sc.egov.usda.gov/ GDGHome_DirectDownLoad.aspx

Web Mapping Services

- Provide National Agriculture Imagery Program (NAIP) layers that can be consumed by geospatial desktop applications.
- Provide LiDAR raster derivatives that can be consumed by geospatial desktop applications.
- Host and support agency specific vector layers to meet a variety of needs.

LiDAR Server

- Provides direct download of value-added LiDAR Point Cloud data
- Application: https://lidar.sc.egov.usda.gov/





Production Services FPAC Mission Area and Beyond

Production Services operates and maintains GEO's historical film scanning operation which includes 14 photogrammetric grade film scanners. This world-class capability puts GEO on the forefront of film digitizing efforts within the Federal Government. The Production Services Team is currently embarked on scanning over 9 million USDA historic film images kept at its Salt Lake City library location and is expected to be complete within the next decade. While scanning the USDA's film library is a huge undertaking, this effort does not interfere with providing film scanning services to a wide variety of customers needing historical film scans for projects requiring geospatial data



analysis in agriculture, environmental, litigation, and academia just to name a few.

Available Services

Digital Image Customization – Photographic print and image layout customization services are avaialable, and include image merging, resizing, color correcting, and a variety of customization options limited only by software application and customer requirements. Deliverables typically range in size from 10" x 10" to 30" x 40" display products.

Film Digitization – Film scanning service supports the digitization of film image records for government and general public customers. The original film scale determines the ground sampling distance of the scanned image. Our scanning resolution range is 7 to 50 microns in tiled Tagged Image Format (TIF) File and produces a submeter image resolution typically ranging from 0.25m to 0.71m with file sizes from 0.35 GB to 1.1 GB. The high-resolution images provide the ability to zoom in and enlarge to meet most user's needs. Years of availability range from 1951 to 2012 depending on the various programs. Some years may have already been digitized.

Historic Film Image Scans – 12.5-micron high resolution film image scans of historical aerial photography collected from 1951 to 2012. Includes:





- Records Information and Management is responsible for establishing and implementing policies, systems, and procedures to capture, create, access, distribute, use, store, secure, retrieve, and ensure disposition of GEO's Historical Imagery records and information
- Custodianship of the USDA Film Library containing ~65,000 cans of aerial film, representing nearly 10 million images for American agriculture land dating back to 1950's.

- Agriculture Stabilization Conservation Service (ASCS/FSA), 1955 1994, Film scale of 1:20,000 from 1951 -1970, Film scale 1:40,000 from 1970 1994
- US Forest Service (FS), 1951 2012 film scale ranging from 1:3,000 to 1:40,000
- Soil Conservation Service (SCS/NRCS), 1955 2006, Film scale of 1:20,000 from 1951 1970, Film scale 1:40,000 from 1971 2006
- National High Altitude Program (NHAP) 1980 1987 film scale 1:60,000
- National Agriculture Photography Program (NAPP) 1987 2006 film scale 1:40,000
- National Agriculture Imagery Program (NAIP) 2003 2009, film scale range of 1:40,000 to 1:60,000

Index Scans – Image scans of historical program photo indices from 1955 – 1994. line index scans for all programs from 1980's to film collection end are available. An index provides a visual representation of the flight lines or photo overlapped frames for coverage and imagery identification. Standard digital format indices are available and extensively used to support geospatial data research.







Geospatial Technology and Training

Services Description

Geospatial Technology and Training provides geospatial centric training and assistance to FPAC agencies, specifically FSA field units. This includes support for GPS technology evaluation and employment, imagery application into workflows, and enabling historical geospatial information for inclusion in modern day analysis through georeferencing of historical imagery and photo indexing.



Available Services

Georeferenced Photo Indices – The team creates georeferenced historical film indices in support of generating center points.

Create Historical Photo Center Points – The team creates photo center points that are generated from the georeferenced historical film indices. These points are then used in research tools and catalogs.

GPS Support – The team provides support for GPS units. This includes device refresh, software updating, and general support.

Georeferencing – The team performs spatial correction of non-referenced imagery.

Analytic Services – The geospatial services team provides imagery analytics to support FPAC needs. This includes raster analysis, image classification, and image processing.

Training - Informal training support provided upon request for various geospatial tools and services.

Examples of Geospatial Technology and Training





GEO Business Services Catalog

Geospatial Research and Science

Services Description

The Geospatial Research and Science teams are the heart of applying geoscience capabilities to address mission area challenges. By providing subject matter expertise in the areas of scripting, remote sensing analysis, image classification, and general geospatial support, customers can better understand land developments and changes. GEO can assist mission areas with change analysis, disaster impacts, and better understanding of "where" something has or has not happened.



Available Products

LCAT (Land Change Analysis Tool) Data – The land change analysis tool outputs maps and raster data that illustrate land cover types using NAIP imagery. The output data has a 60cm pixel size. Currently, LCAT is covering several states in the southeastern US for different years of NAIP.

Historical Imagery Orthorectification – FPAC's vast imagery library needs to be enabled for use before it becomes useful to the broad consumer. Orthorectification corrects an aerial photograph or satellite image geometrically such that the scale is uniform following a given map projection. This process facilitates the images use in modern applications and systems, making the USDA Film Library a substantial source of information for all. GEO's completed orthoimagery catolog will cover the years 1955 to 1994 and will have different ground sample distances. The resolution will vary from 25cm to 2 meter depending on the nominal scale of the imagery.

Available Services

Geospatial Scripting, Application, and Model Development – The team develops web applications within the ESRI environment, scripts, and models to assist and enhance geospatial projects. Development includes, inspections tools, change detection and land classification models.

Support ArcGIS Online (AGOL) – The team provides complete administration and support for AGOL. This includes creating and maintaining accounts, creating maps, and general support.

LCAT Service – The land change analysis tool outputs maps and data services for GEO and USDA customers. The LCAT data is generated through point classification.

Historical Imagery Orthorectification Service – The team provides orthorectification services to customers of non-georeferenced imagery.

National Agriculture Imagery Program (NAIP) Contract Spec – The geospatial services team supports NAIP through subject matter expertise. This includes researching sensor systems, evaluating imagery samples, and supporting the contract officer regarding the NAIP contract. The team also develops and updates the NAIP technical specifications as needed.

Imagery Services

Services Description

Quality assurance is critical to establishing the correctness of the foundation information sets that are acquired by and used within FPAC. The Imagery Services team provides inspection services for geospatial data to ensure compliance with product requirements and specifications. These services span both the digital and native film holdings.



Available Services

Imagery Inspection Services – Evaluates all Geospatial data against customer requirements, major defects include:

- cloud cover
- offsets
- distorted imagery
- horizontal accuracy
- image clarity
- image distortion
- pixel resolution

Validate projects from completion through reconciliation and reports findings to Program Manager and Acquisition Team.

Examples of Imagery Services





Imagery Analytics

Services Description

Imagery Analytics provides customized dashboards to support business analysis using multiple data streams to support decision making. The solution may vary based on the customer requirement. Based on complexity more than one automated solution may be recommended using both enterprise level software and services.



Available Services

Geospatial Help Desk – Assists internal customers with GIS related desktop, mobile, and online applications, as well as geospatial web services and accounts. The team identifies needs, troubleshoots problems, publishes solution papers, and hosts teleconferences for user groups. The team also serves as the government representative to ESRI for technical support and projects.

Customized ESRI Web Applications – Create customized GIS analytical web map apps and dashboards to leverage AGOL, ArcGIS Enterprise, ESRI Event Server to be able to perform situational analytics in near real time, creating GIS power tools for decision makers.



USDA-GEO Emergency Operations Dashboard.

Geospatial Technology Coordination and Project Execution

Services Description

Geospatial Technology Coordination and Project Execution provides leadership and support at the national and state level for the use of geospatial technologies including Global Positioning Systems (GPS) and Global Navigation Satellite Systems (GNSS), Geographic Information Systems (GIS), Light Detection and Ranging (LiDAR) elevation, Small Unmanned Aircraft Systems (sUAS), Mobile Workflows, and to the FPAC Mission Area.

• Represents the FPAC Mission Area geospatial activities and requirements to Federal Coordination Offices and other Federal Agencies and to industry.



- Provides program management support for GPS/GNSS, sUAS, LiDAR, and Mobile Workflows.
- Works with FPAC agencies to provide training and support for the use of geospatial technologies, information systems, and data.

Available Services

- Program Management
- Business Management
- Geospatial Training
- Technology Assessment



Texas A&M Master Degree student Michael Page operating a UAS and collecting imagery for NRCS project in Tolar, Texas. GEO is examining using UAS technology for detection of invasive grass species in pastures.

Program Management

Service Description

Program Management capability assures timely completion and shipment of all work by or before the required delivery schedule. Program and Project Management for Geospatial related needs are available. These resources are assigned to projects based on availability and expected project duration. Evaluates the capability and performance of government contractors for detailed description of planned approach, procedures, management techniques, capacities, and specialized equipment and processes to be used in performance of the work.



Programs Supported

- In response to the duties delegated through 7 CFR 2.41, GEO is responsible for the consolidated program management of imagery programs within USDA, as well as support and administration of the LiDAR Programs for FPAC agencies.
- National Agriculture Imagery Program (NAIP). A Multi-Agency program that collects imagery during peak agricultural growing seasons in all 50 states and unincorporated territories.
- Integration of technical program specifications, budgetary formulation, and contractual processes supporting geospatial programs.
- Support of conservation or entitlement rights through programs such as Small Area Projects, an easement and forest-based collection program that acquires high-resolution, orthorectified imagery for analysis of land.



Business Management

Services Description

GEO has a vast business portfolio; creating data, managing workflows, providing analytics, and a host of scientific processes and services. To support this, the Business Management team assists with specialized services that better enable GEO activities through partnership agreements, stakeholder funding, and internal business and financial tracking.

 Providing Contracting Officer Representative (COR) support to Program Managers, SMEs, and Technical Points of Contact (TPOC) for geospatial data acquisitions and services contracts.



- Providing project management support in the organization of resources and scheduling the implementation of programs within GEO
- Provides FPAC program and technical leadership to interagency initiatives and technical advisory committees, including, but not limited to, NAIP, National Digital Ortho imagery Program (NDOP), 3D Elevation Program (3DEP), USDA Remote Sensing Coordinating Committee, USDA Enterprise Geospatial Management Office (EGMO), and the Federal Geographic Data Committee (FGDC)
- Coordinates with government and non-government agencies for the acquisition of needed spatial and topological data sets



Source: Getty Images.

Geospatial Training

Services Description

Geospatial Training is responsible for coordinating geoscience training delivery to FPAC Agencies to support programs and natural resources management.

- Provides enterprise training opportunities in the form of instructor-led courses.
- Works with corporate partners to customize training to meet FPAC business processes.
- Keeps aware of emerging technologies to meet future training needs.



• Provides internship opportunities for students to develop geospatial skills at academic institutions across the nation.



A 'Introduction to ArcGIS Pro for GIS Professionals' course taught in Greensboro, North Carolina.



Technology Assessment

Services Description

The Technology Assessment Team provides program and lifecycle management support for the use of Positioning, Navigation, and Timing (PNT), sUAS, LiDAR, and Mobile Workflows.

- Leads technology discovery, works with other federal agencies via interagency committees.
- Leads, or participates with federal geospatial technology coordination groups (3DEP, NDOP).
- Conducts discovery work through academic institutions related to geoscience.
- Serves as subject matter experts in the fields of geospatial science, imagery, elevation, position, navigation and timing, and remote sensing.
- Evaluates the latest artificial intelligence and Deep Learning algorithms for image interpretation and collaborating with USDA OCIO CEC on the exploration of classification.
- Explores container technologies for highly parallelized processing of Artificial Intelligence Machine Learning (AI/ML) algorithms against large geospatial datasets.
- Collaborates with Animal and Plant Health Inspection Service (APHIS) and the University of Maryland to monitor wildlife habitat at airports to reduce harmful bird strike incidents.



The above Image was created in ArcPro using LiDAR data from CT acquired in 2016. It shows an oblique view of a Laser (LAS) point cloud dataset from a suburban area.



Glossary

Acronyms	Description	
3DEP	3D Elevation Program	
ACIO	Assistant Chief Information Officer	
AGOL	ArcGIS Online	
APHIS	Animal and Plant Health Inspection Service	
ASCS	Agriculture Stabilization Conservation Service	
ATO	Authority to Operate	
CLU	Common Land Unit	
COTS	Commercial of the Shelf	
DIED	Data Inspection, Enhancement, and Delivery	
EDC	Enterprise Data Center	
EGMO	Enterprise Geospatial	
	Management Office	
ESRI	Environmental Systems	
	Research Institute	
FBC	FPAC Business Center	
FGDC	Federal Geographic Data Committee	
FPAC	Farm Production and Conservation	
FS	Forest Service	
FSA	Farm Service	
	Agency	
GEO	Geospatial Enterprise Operations	
GIS	Geographic Information System	
GNSS	S Global Navigation Satellite Systems	
GPS	Global Positioning System	

Acronyms	Description	
ISD	Information Solutions Division	
ISO	International Organization for Standardization	
ISSDOB	Information Solutions Service Delivery and Operations Branch	
IT	Information Technology	
LAS	Laser	
LCAT	Land Change Analysis Tool	
Lidar	Light Detection and Ranging	
NAIP	National Agriculture Imagery Program	
NAPP	National Agriculture Photography Program	
NDOP	National Digital Orthoimagery Program	
NHAP	National High Altitude Program	
NRCS	Natural Resource Conservation Service	
PNT	Positioning, Navigation, and Timing	
RMA	Risk Management Agency	
SCS	Soil Conservation Service	
SDLC	Software Development Life Cycle	
SLA	Service Level Agreement	
SME	Subject Matter Expert	
SQL	Structured Query Language	
TIF	Tagged Image File format	
USDA	United States Department of Agriculture	
sUAS	Small Unmanned Aircraft Systems	

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