# Intelligence Support for Military Operations Using the ArcGIS® Platform

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# Intelligence Support for Military Operations Using the ArcGIS Platform

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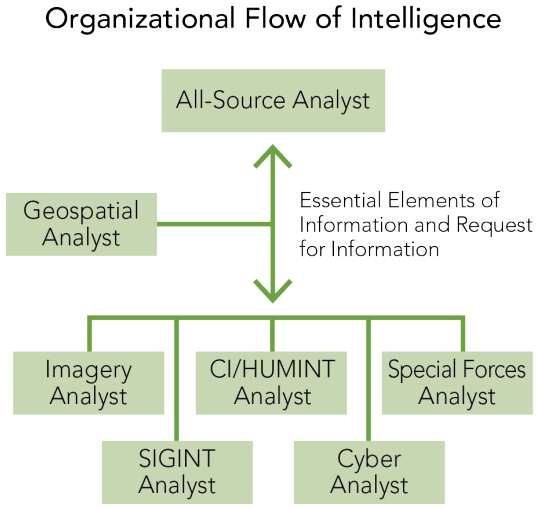
# Intelligence Support for Military Operations Using the ArcGIS Platform

## Introduction

Intelligence analysts of many disciplines support military operations by providing critical intelligence, finished intelligence products, and crucial information to commanders. Commanders rely on timely, accurate information and intelligence about an adversary's dispositions, strategy, tactics, intent, objectives, strengths, weaknesses, values, capabilities, and critical vulnerabilities to fully understand the operational environment. Commanders make informed decisions using this information. The process by which intelligence analysts perform their duties comprises a wide variety of interrelated activities—planning and direction, tasking and collection, processing and exploitation, analysis and production, dissemination and integration, and evaluation and feedback.

The ArcGIS® platform is used to perform many of these duties across most intelligence disciplines. The primary disciplines taking advantage of the platform are the intelligence analysts (all-source), geospatial analysts (GA), imagery analysts (IA), counterintelligence/human intelligence (CI/HUMINT) analysts, special forces intelligence analysts, signals intelligence (SIGINT) analysts, and a growing discipline—the cyberspace analysts.




*The intelligence community is composed of highly trained civilian and military analysts across many disciplines.*

These disciplines share the need to work with geospatial information as the foundational component for intelligence preparation of the battlefield (IPB). Examples of geospatial information include maps, elevation data, satellite and airborne imagery, and situation reports (SITREPs) with temporal and spatial components.

Intelligence organizations utilize the Esri® ArcGIS platform. Different Esri components used throughout these organizations are made available through a wide array of programs across many services and agencies.

Common components of the ArcGIS platform used include the following:

- ArcGIS for Desktop—There are lots of ways to make a map. But if people use your maps to make decisions that save money, time, or even lives, then you need to put science to work for you. Use ArcGIS for Desktop to build maps with up-to-date data, combined with deep analysis, and share them where they'll have the most impact for decision makers.

- Esri Defense Mapping—Traditional map production is a mainstay of national agencies and militaries. You can track and manage end-to-end data extraction and cartographic production activities using the Esri Defense Mapping enterprise production management tools and workflows and easily scale the implementation to meet your organization's changing needs.

- Portal for ArcGIS—Portal for ArcGIS helps you organize and share information throughout your organization with those who need it via maps and apps. It provides a framework to easily manage and secure geospatial assets within your organization, enabling better decision making.

- ArcGIS for Server—ArcGIS for Server improves the way your analysts work by bringing the power of geospatial technology into the hands of everyone in your organization, enabling better decision making.

- ArcGIS Runtime software development kits (SDKs)—ArcGIS Runtime developers can leverage a variety of SDKs to embed mapping and geospatial applications into existing apps or custom build new ones. ArcGIS Runtime, available from the ArcGIS for Developers site, makes it easy to create compelling custom applications that integrate geospatial data and geographic information system (GIS) capabilities.

- ArcGIS Training for Organizations—Partner with us to find the right courses for your analysts and intelligence staff, prepare teams for geospatial projects, and plan long-term workforce development to support your strategic goals.

- Esri Defense Services—Esri Professional Services brings together GIS experts and experienced defense consultants to help you implement solutions.

The purpose of this paper is to explain how the ArcGIS platform can be used by intelligence analysts—from multiple disciplines and across all services and agencies—to generate actionable intelligence for planning; situational awareness and ultimately, more informed decision making.

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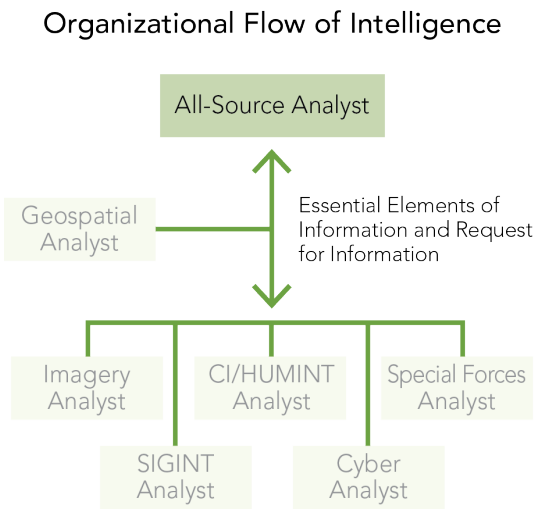
## Intelligence Analyst (All-Source)




Intelligence analysts, also known as all-source analysts, advise and assist in devising and implementing aspects of the intelligence cycle including planning, all-source analysis, production, and dissemination of operational and tactical intelligence. They perform, supervise, and coordinate weather, terrain, threat, cultural, infrastructure, economic, geopolitical, and targeting analysis.

Intelligence analysts utilize intelligence and data from across multiple disciplines. They use the ArcGIS platform to consolidate, fuse, analyze, and distribute strategic and tactical intelligence products and reports. Intelligence analysts manage the intelligence cycle to provide combatant commanders with a clear understanding of the enemy situation and recommend the best course of action.

Intelligence analysts

- Receive and process incoming reports and messages. They determine the significance and reliability from multiple information sources, assist in integrating collected information with current intelligence holdings, manage information, and prepare and maintain the situation map for the area of operations.
- Analyze and evaluate information to determine changes in enemy situation and capabilities and prepare the order of battle (OB) based on the threat characteristics of enemy units. As a result of their analysis, they identify intelligence and information gaps to formulate intelligence collection requirements.
- Provide information about enemy forces and potential battle areas and create the necessary IPB products.
- Are a key factor in timely collaboration across intelligence disciplines and the creation of multiple intelligence (multi-INT) products for commanders.

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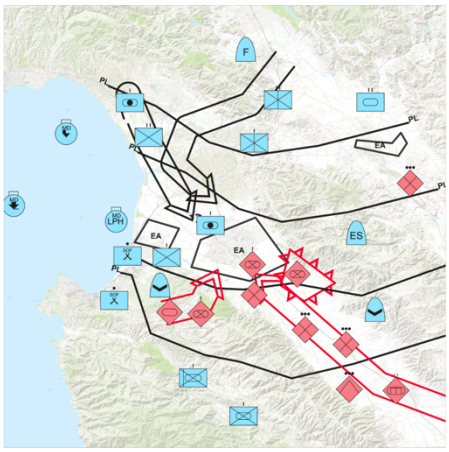
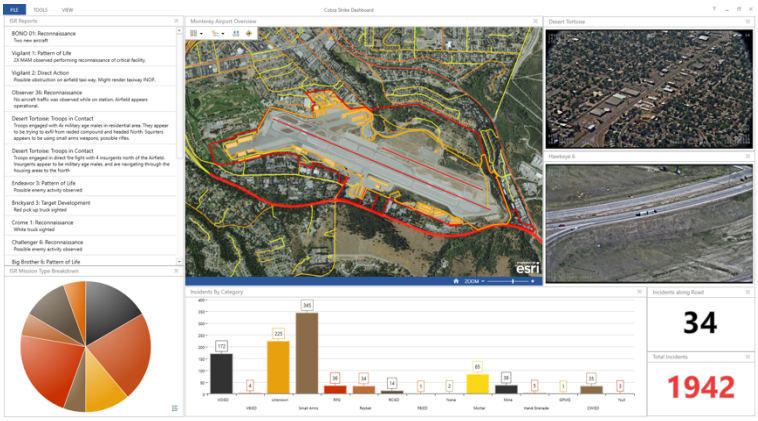
## *Example Products*

Intelligence analysts use many components of the ArcGIS platform to fulfill their intelligence workflows. They fuse multiple sources of information into a single map product, create web maps and geospatial PDFs, embed maps in PowerPoint presentations, and share dynamic geospatial information. These products and services are used by other analysts and commanders to make timely and more informed decisions.



**Engagement Overlay/Order of Battle**
Intelligence analysts use ArcGIS for Desktop to create military overlays using intelligence from incoming reports, messages, and other dynamic information sources to provide a comprehensive understanding of the changing enemy and friendly force disposition for mission command.

**Portal for ArcGIS and the Esri Story Map Template**
Intelligence analysts create and share information products that present a geospatially based, time-enabled narrative, fused with relevant intelligence information, and allow the narrative to move from location to location based on the current operation requirements and briefing needs.


**Intelligence Reporting Dashboard**
Intelligence analysts consolidate, fuse, and distribute strategic and tactical intelligence. They share this information through Portal for ArcGIS and the intelligence, surveillance, and reconnaissance (ISR) dashboard so that mission commanders and other stakeholders have a comprehensive understanding of the operational environment to support the military decision-making process.

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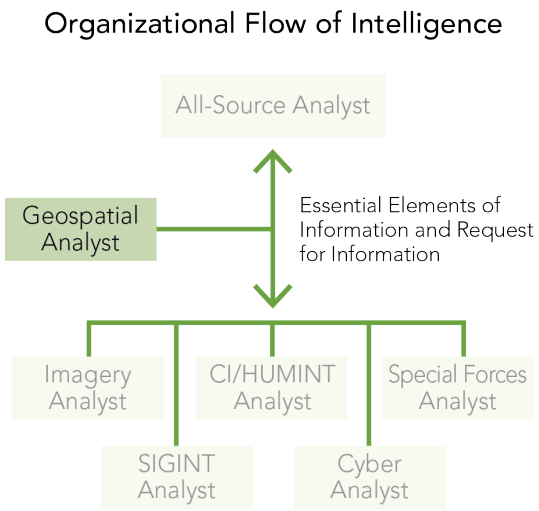
## Geospatial Analyst




Geospatial analysts contribute to a clear understanding of the physical environment by providing geospatial information and services to commanders and staff. These analysts generate geospatial products and provide services to enable informed running estimates and decision making. It is the art and science of applying geospatial information to provide an understanding of the physical environment and its effect on military operations.

Geospatial analysts use the ArcGIS platform to create reports and analyze and fuse geospatial information. They disseminate products such as geospatial information, basemaps, imagery, and elevation data to help commanders and other analysts establish an understanding of the physical environment of the area of operations. They are data stewards who manage and provide geospatial information to intelligence and leadership staff. Additionally, geospatial analysts use geographic data to support military and civilian operations for humanitarian assistance and disaster relief (HADR) and homeland defense.

Geospatial analysts

- Acquire, extract, fuse, and generate relevant and accurate high-resolution geospatial information to provide to decision makers, other analysts, and mission command systems.
- Analyze data, aided by computer algorithms and terrain reasoning tools, to help predict and provide actionable information for decision making.
- Validate, manage, warehouse, and disseminate geospatial foundation data such as lines of communication and hydrographic data. This data is used to create and update the common operational picture (COP). Geospatial analysts maintain and update the COP to support joint and service-oriented warfighting functions.

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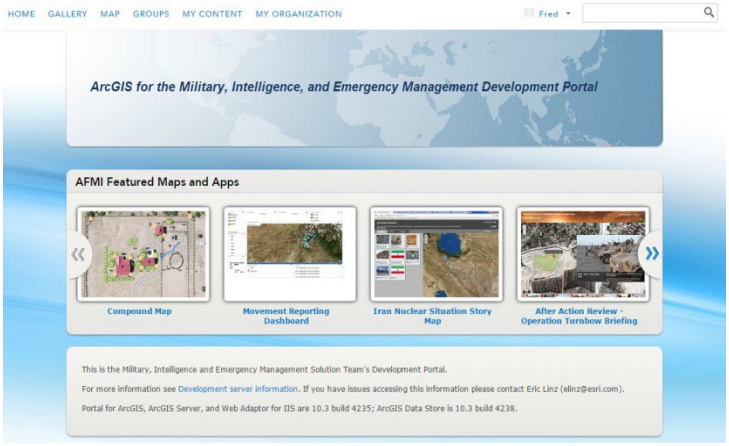
## *Example Products*

Geospatial analysts compile and manage geospatial data and services to support visualization and analysis across many mission-specific systems. This includes mapping data such as roads, elevation, and topography. They also produce specialized products, such as cross-country mobility (CCM) overlays, which provide analysis of the terrain, vegetation, and other features and their on-vehicle movement over the ground.

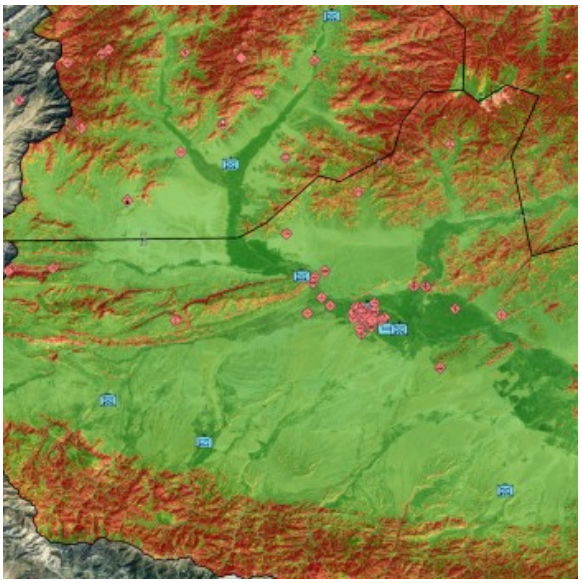


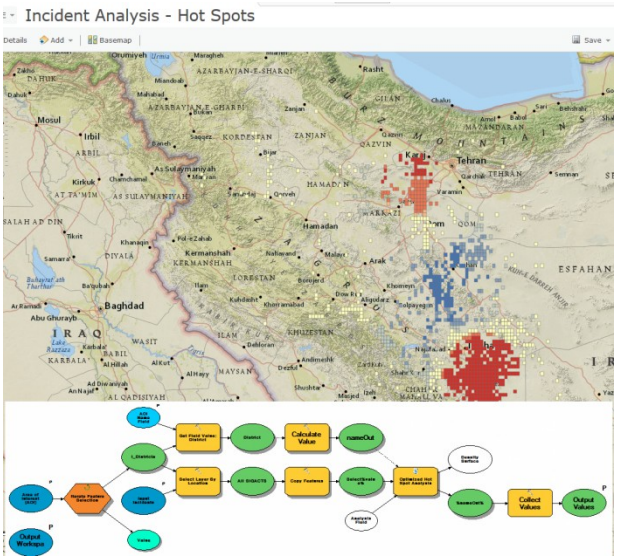

**Manage and Disseminate Geospatial Foundation Data**

Geospatial analysts leverage ArcGIS for Server and Portal for ArcGIS to manage geospatial content, as well as share a common set of foundational data, basemaps, tools, and web services, enabling sharing and collaboration of maps and data across the military's geospatial enterprise.

**Specialized Products—Cross-Country Mobility**

The geospatial analyst uses ArcGIS to create tailored products based on operational requirements in support of mission commanders. These products, such as cross-country mobility, require an advanced level of geospatial knowledge, foundation data, and complex analysis to provide a comprehensive understanding of the effects of the terrain on the operational plans and activities.






**Sharing Analysis—Incident Analysis**

Geospatial analysts use capabilities within ArcGIS, such as ModelBuilder™, to capture advanced geospatial workflows, increasing efficiencies and productivity. ArcGIS enables the sharing of analysis tools and analytics via ArcGIS for Desktop templates or geoprocessing services with other intelligence community users.

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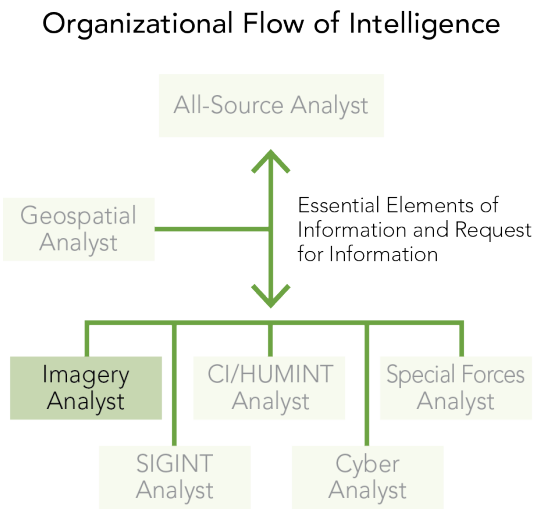
## Imagery Analyst




Intelligence analysis is the exploitation and analysis of imagery and geospatial information to describe, assess, and visually depict physical features and geographically referenced activities on the earth. Geospatial intelligence (GEOINT) consists of imagery, imagery intelligence (IMINT), and geospatial information. GEOINT provides the geographic context to precisely locate, analyze, and monitor activities and provide the basis for developing shared awareness of the operational environment.

Imagery analysts use the ArcGIS platform to provide critical information about enemy forces, potential battle areas, and combat operations support. They use unclassified and classified satellite and aerial imagery, geospatial data, full-motion video (FMV), and other intelligence information such as terrestrial photography. Additionally, imagery analysts work with other disciplines to perform forensic ground moving target indicator (GMTI) analysis, signals intelligence, and geospatial analysis to produce intelligence products that help leaders make better informed decisions.

Imagery Analysts

- Analyze and exploit imagery, FMV, and persistent surveillance, as well as GMTI, to track movements in areas of operation.
- Identify conventional and unconventional military installations, facilities, weapon systems, order of battle, military equipment and defenses, and lines of communication (LOC).
- Perform change detection and advanced pattern and trend analysis.
- Provide digitized intelligence data and situational awareness through the assembly of daily and weekly intelligence documents, briefings, and datasets.

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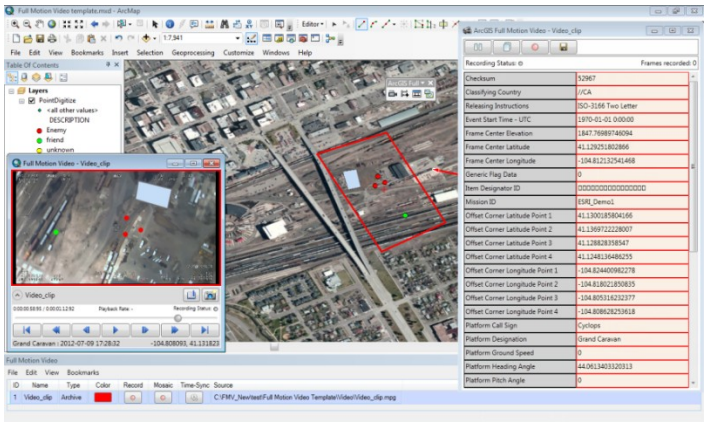
## *Example Products*

Imagery analysts use the ArcGIS platform to analyze and exploit imagery. They derive intelligence from imagery and video sources and use the platform to warehouse and share products with other analysts and commanders. By leveraging tools within ArcGIS, such as the Image Analysis window, analysts are able to perform advanced processing and analysis.

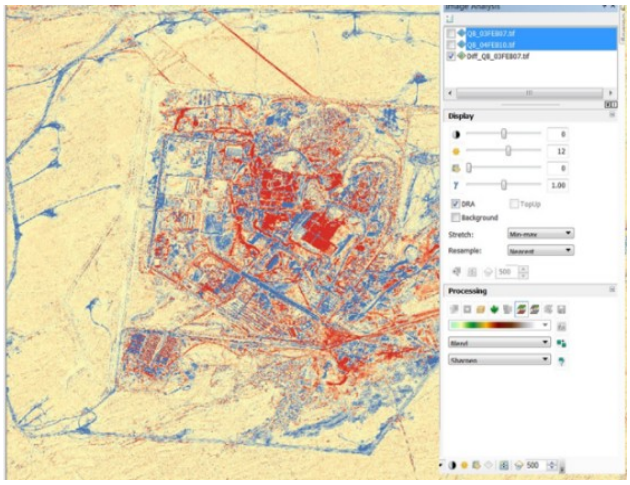


**ArcGIS Full Motion Video Add-In**

With the ever-increasing amount of sensors capturing critical intelligence in the operational environment, imagery analysts leverage ArcGIS to enable FMV as another layer within their operational picture. This provides analysts with the ability to exploit video sources directly alongside other types of information to better understand the live enemy situation and establish day-to-day patterns of life.

**Helicopter Landing Zone Map Template**

Imagery analysts develop helicopter landing zone (HLZ) products for the tactical insertion and extraction of forces into and out of an operational environment. Using ArcGIS for Desktop, analysts can designate primary and secondary HLZs, highlight any terrain features that affect flight and ground force operations, including vertical obstructions, slope, and entry and exit points, and provide ingress and egress routes from the target to the HLZs. These products are shared as geospatial PDFs and through ArcGIS Maps for Office as embedded web maps in PowerPoint for mission briefings and rehearsals.



**Comprehensive Imagery System**

The ArcGIS platform is a comprehensive imagery analysis system. Using ArcGIS for Desktop, imagery analysts visualize all forms of imagery, both national and commercial; perform a wide range of processes on the imagery; and extract information to make informed decisions, such as change detection, orthorectification, mensuration, sensor correction, and temporal analysis.

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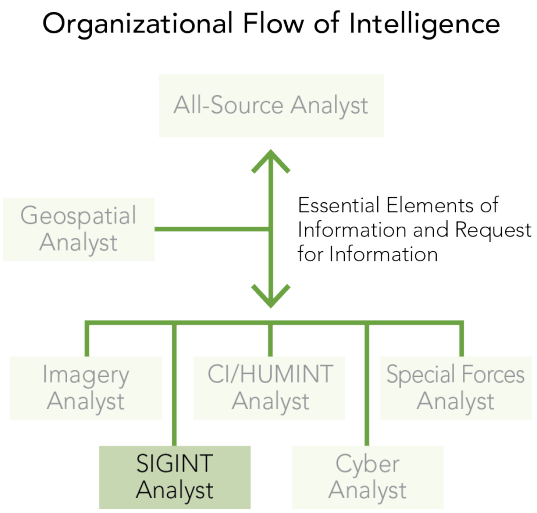
## Signals Intelligence Analyst




SIGINT is derived from intercepting and monitoring the communications of hostile forces. SIGINT is a highly reliable form of intelligence that provides timely information related to enemy capabilities, plans, and location. ArcGIS is utilized extensively to support SIGINT collection and analysis and for enhancing situational awareness in a tactical environment.

Analysts use SIGINT and electronic warfare (EW) systems and the ArcGIS platform to analyze communications and noncommunications emissions, such as radar and message traffic. Analysts then create reports to be used by other analysts to create combat, strategic, and tactical intelligence reports. SIGINT includes basic analysis of signals, electronic preparation of the battlefield (EPB), basic signals collection management, and reporting.

SIGINT analysts

- Collect and visualize multiple sensors.
- Integrate sensors to track and monitor collection assets in near real time.
- Leverage the location information incorporated or derived from signal collection to correlate and map the activities and movements associated with a threat actor.
- Manage timelines and reliability of SIGINT data supporting tactical units with target acquisition and tracking while conducting operations in the field.

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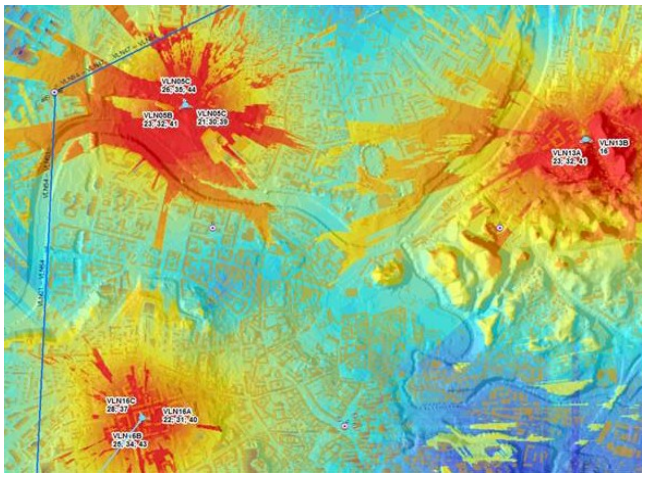
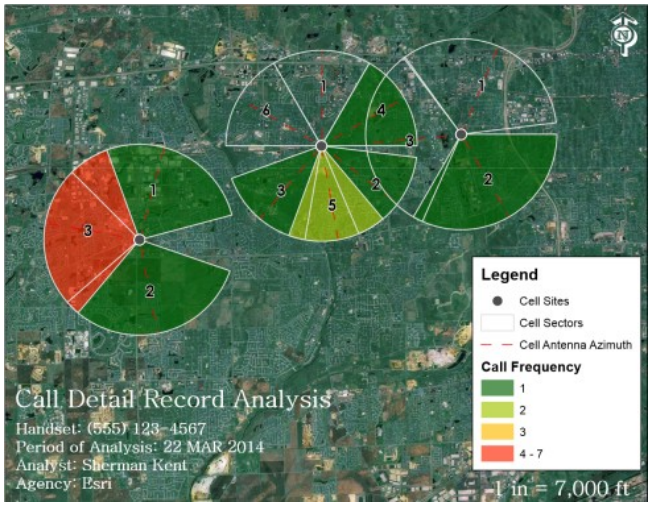
## *Example Products*

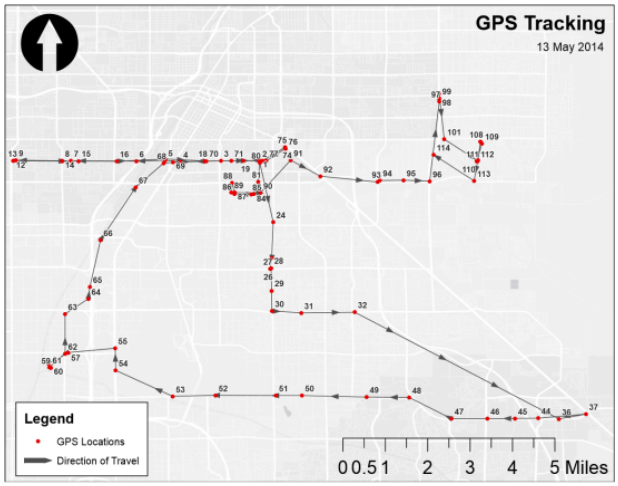
SIGINT analysts use ArcGIS for Desktop to fulfill their intelligence workflows. Analysts fuse multiple sources of signals information into a single map graphic, create web maps and geospatial PDFs, embed maps in PowerPoint presentations, and share EPB data with analysts and commanders.



**Communications Coverage Area**
SIGINT analysts use ArcGIS to collect and visualize locations and coverage areas and perform analysis of communication networks within their operational area. This enables analysts to gain a better understanding of the effectiveness of communications based on equipment capabilities, terrain features, weather conditions, and other environmental considerations.

**Call Detail Analysis**
ArcGIS enables the collection and visualization of multiple sensors into the intelligence architecture and framework. SIGINT analysts can derive and visualize the location of cell phone calls on a map by utilizing the elements of signal transmission. By leveraging the location information incorporated or derived from signal collection, they can determine the activities and movements associated with a threat actor.




**GPS Tracking to Develop Pattern of Life**
Sensor integration allows SIGINT analysts to track and monitor collection assets in near real time. Pattern of life analysis developed by utilizing location information from one or more sources is used to identify trends in movements and behaviors. The threat network can be identified by mapping communications activity and aggregating intelligence on known threats against data from organic sensor collection.

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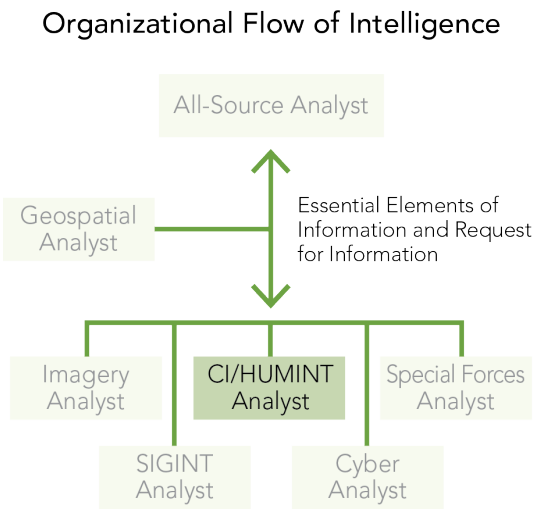
## Counterintelligence/ Human Intelligence Analyst




Counterintelligence/Human Intelligence is a category of intelligence derived from information collected and provided by human sources. CI/HUMINT is the collection of information from people, associated documents, and media sources to identify elements, intentions, composition, strength, disposition, tactics, equipment, personnel, and capabilities. It uses human sources as a tool and a variety of collection methods, both passively and actively, to gather information to satisfy the commanders' intelligence requirements and cross-cue other intelligence disciplines. The primary difference between CI activities and HUMINT activities is the intent of the actors. CI analysts primarily operate to prevent hostile activities against friendly forces before these can occur. HUMINT analysts support commanders in offensive operations against enemy forces. Both sets of analysts utilize the same tools to perform their duties.

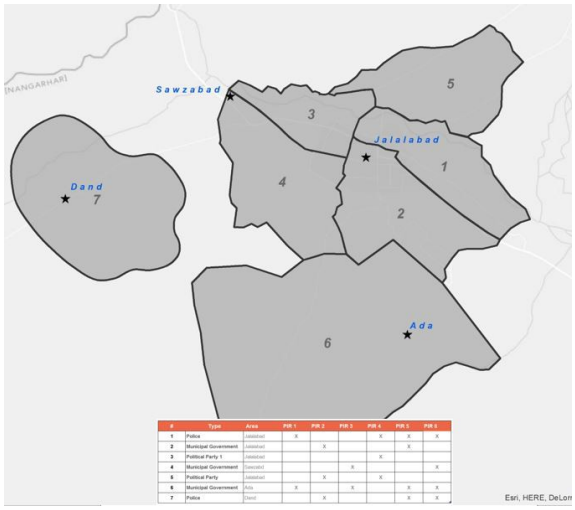
The ArcGIS platform provides the CI/HUMINT analyst with the ability to collect, create, and discover human intelligence-related data. This enables the analyst to search for biometric data, view relationships and other important information, and update case files on individuals. The HUMINT analyst can geospatially explore and discover other case files through the use of the geospatial enterprise.

CI/HUMINT analysts

- Debrief and interrogate HUMINT sources, assist with screening of HUMINT sources and documents, and translate written foreign material and captured enemy documents into English.
- Interpret and translate intelligence matters and materials to ensure the accurate exchange of statements, ideas, and intent.
- Exploit documents, media, and material and prepare intelligence reports.

## *Example Products*

CI/HUMINT collectors support operational planning and provide direction to HUMINT collection operations. Collectors determine if information from a single human source is internally consistent based on factors such as placement and access of source, prior information from the source, and existing holdings. HUMINT collectors use the ArcGIS platform to develop overlays and exploit databases and matrices, as required, to support IPB. These overlays may represent a wide variety of intelligence issues, including battlefield infrastructure (for example, electrical power grid); population density; ethnic, religious, or tribal affiliation; and no-strike and collateral damage.




**Source Coverage Overlay**
Cultural overlays based on demographic data and source coverage overlays created by analysts help map source coverage to the current HUMINT requirements and aid analysts in identifying gaps in collection. A collection matrix covering both geographic area and the placement and access of the source can be created to provide a quick reference when answering intelligence requirements. Demographic overlays help to identify ethnic groups, track events, and patterns of behavior based on varying cultural factors.


**Mobile Applications for Collection**
HUMINT collectors leverage mobile applications, like the Esri Squad Leader and Collector for ArcGIS apps, to enhance situational awareness and enable the collection of information whether connected or disconnected within the operational environment. These apps allow collectors to create reports of real-time observations about activities. Geospatially enabled photos and reports are synchronized with the ArcGIS platform to provide inputs into the planning process.


**HUMINT Collector Observation Story Map**
HUMINT collectors create an incident map, also known as a coordinates register, as a type of pattern analysis tool. Leveraging Portal for ArcGIS and the Esri Story Map templates, the map highlights events that have occurred within the area of operation and provides notes, images, and other contextually important information.

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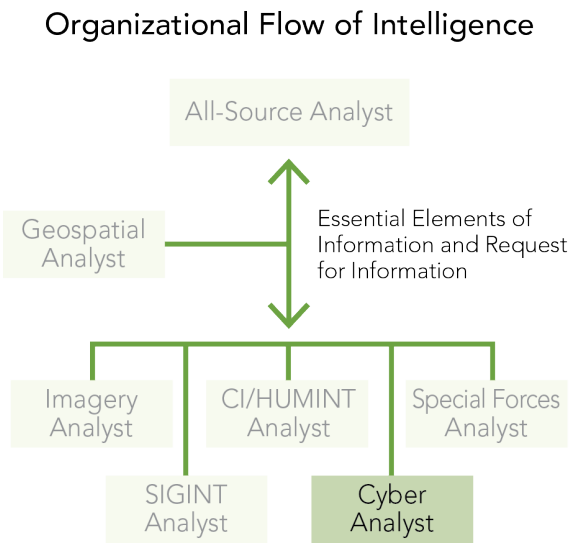
## Cyber Analyst




Cyber analysts support intelligence analysis by answering cyber analytic questions related to the telecommunications environment and the communications patterns of targets. They prepare written and oral assessments of foreign intelligence that provide unique insight into a target's cyber intention and capabilities, which are unavailable from other intelligence disciplines. Cyber analysts perform a wide range of tasks including identifying communication patterns; determining intrusion tactics, techniques, and procedures; performing analysis of target networks; and monitoring friendly networks and communication patterns for changes and anomalies.

Cyber analysts use the ArcGIS platform to fuse location data, cyber activity data, and other information to better anticipate, detect, respond to, and recover from cyber incidents. They create comprehensive risk assessment and attack characterization and mission-impact assessment products. This allows commanders to integrate cyber information into their overall situational awareness, providing a more complete picture of the adversary. This integration can impact decision making and response activities in all warfighting domains. Their contribution is absolutely essential to the army's ability to protect national interests.

Cyber analysts

- Collect, develop, and maintain information on both friendly and adversary communication systems to manage and process data from various sources.
- Perform initial cryptologic digital analysis to establish target identification and operational patterns and to fuse information such as incident data, pattern analysis, and predictive analysis.
- Share cyber information by preparing technical products and time-sensitive reports in support of cryptologic network warfare operations and the common operational picture.

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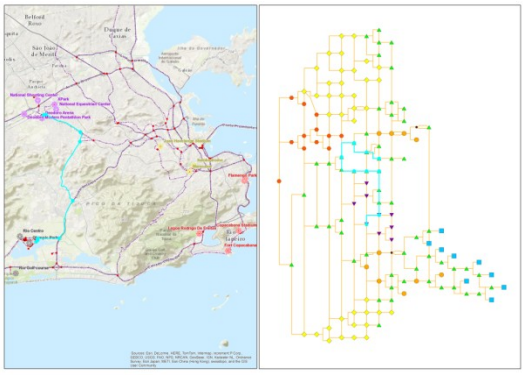
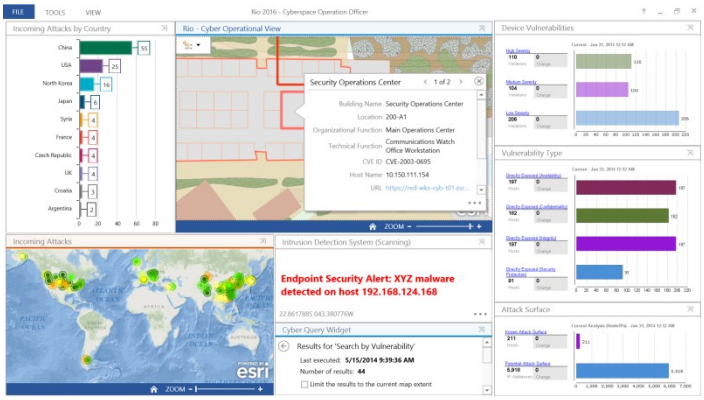
## *Example Products*

The ArcGIS platform can be used to fuse location data, cyber activity data, and other information to better anticipate, detect, respond to, and recover from cyber incidents while providing shared situational awareness (SSA) of cyberspace and associated activities. The platform includes tools, workflows, and applications that can be implemented with an organization's existing cybersecurity data and technologies to improve data management, analysis and fusion, visualization for situational awareness, and information sharing.



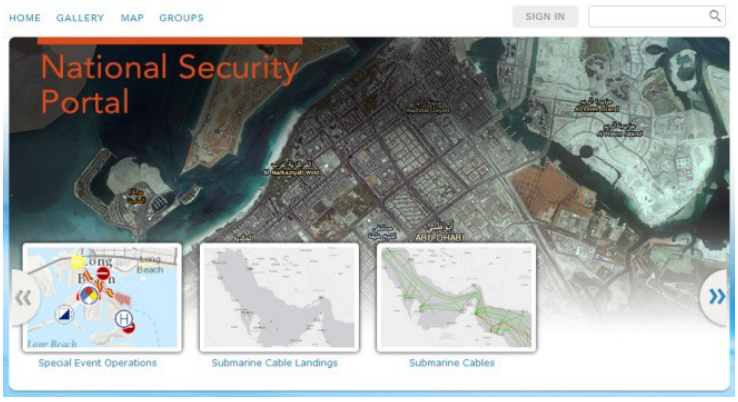
**Cyber Network Map**

Cryptologic network warfare specialists leverage ArcGIS for Desktop with the ArcGIS Schematics and ArcGIS Network Analyst extensions to identify the flow of data through the logical network. That logical flow can then be propagated to a geographic representation, showing the physical flow through the network. By incorporating geography, other variables such as weather can be considered when assessing communication network performance.




**Cyberspace Operations Dashboard**

Cryptologic network warfare specialists utilize operations dashboards to create job-specific visualizations for monitoring near real-time feeds. These feeds can come from an intrusion detection system (IDS) and will allow the user to view the data in an operationally relevant context. Location and function of a compromised device are critical when assessing mission impact and characterizing an attack. Presenting cyber data in an operational context allows rapid response in a manner appropriate for the situation.




**Sharing and Collaboration through Portal for ArcGIS**

Cryptologic network warfare specialists can use Portal for ArcGIS to manage, analyze, and share geographic and cyber data among the very large, geographically dispersed teams typically involved in a cyber operation. Portal for ArcGIS assists with the creation of operational maps and applications, providing the tools and information to quickly build, configure, and deploy web-based and mobile applications customized for specific missions. Since cyber operations are multidisciplinary, Portal for ArcGIS allows these applications to be disseminated to many devices, providing support to various cyber and noncyber workflows.

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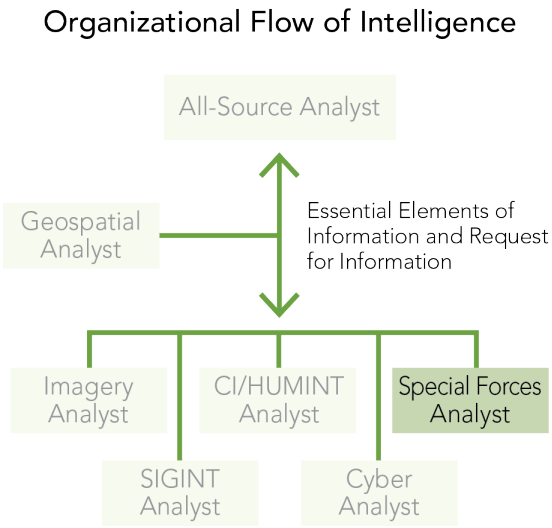
## Special Forces Intelligence Analyst




In certain circumstances, intelligence analysts of any discipline may find themselves supporting special forces organizations. Often times, they are the sole intelligence analyst and are required to perform multi-INT tasks from all disciplines. Analysts plan, organize, train, advise, assist, and supervise indigenous and allied personnel on the collection and processing of intelligence information. They also perform intelligence and operational duties for tasks organized in preparation (isolation) for special missions and during operations.

The ArcGIS platform, as a multi-INT platform, provides the special forces intelligence analyst with the required software to meet mission requirements and any other intelligence task in any type of environment. Through the use of ArcGIS, the multi-INT mission of the Special Forces intelligence analyst is fully supported.

Special forces intelligence analysts

- Conduct IPB and utilize analytical skills to translate information into relevant intelligence products.
- Use advanced special operations techniques for interagency operations, unconventional warfare, planning, and operations.
- Participate in the Special Operations Forces (SOF) targeting processes and understand information management operations and intelligence architecture up to and through the joint theater level.
- Establish and manage intelligence and counterintelligence plans and operations.
- Access ground-, aerial-, and space-based intelligence collection apparatuses and employ attended and unattended multispectral and multiphysics sensors.

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## *Example Products*

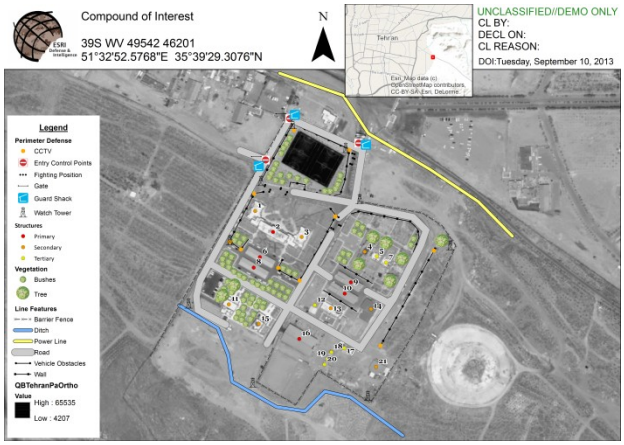
Special forces intelligence analysts conduct comprehensive IPB and utilize analytical skills to translate information into relevant intelligence products. They perform many of the various intelligence functions using ArcGIS to support asymmetric operations.


**Beach Landing Map Template**

Special forces intelligence analysts use the beach landing map template, typically used by an IA, to support mission planning activities for operations involving amphibious landings. The template allows the identification of operationally significant land and water features that could both positively and negatively affect operations. The ArcGIS platform provides the necessary foundation data, symbology, and schema required to develop this information product.


**Urban Mission Rehearsal**

Special forces intelligence analysts leverage ArcGIS and 3D visualization to add realism to mission planning and rehearsal activities for urban missions as part of mounted or dismounted tactical operations. ArcGIS supports the identification of rally points and routes, key terrain, avenues of approach, and terrain features, among other analysis steps.




**Compound Map**

Special forces intelligence analysts use ArcGIS templates to develop imagery-derived products, such as compound maps, to provide detailed information products in support of operational activities, including raid packages, hostage extraction plans, or embassy evacuation plans.

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## *How to Get Started*

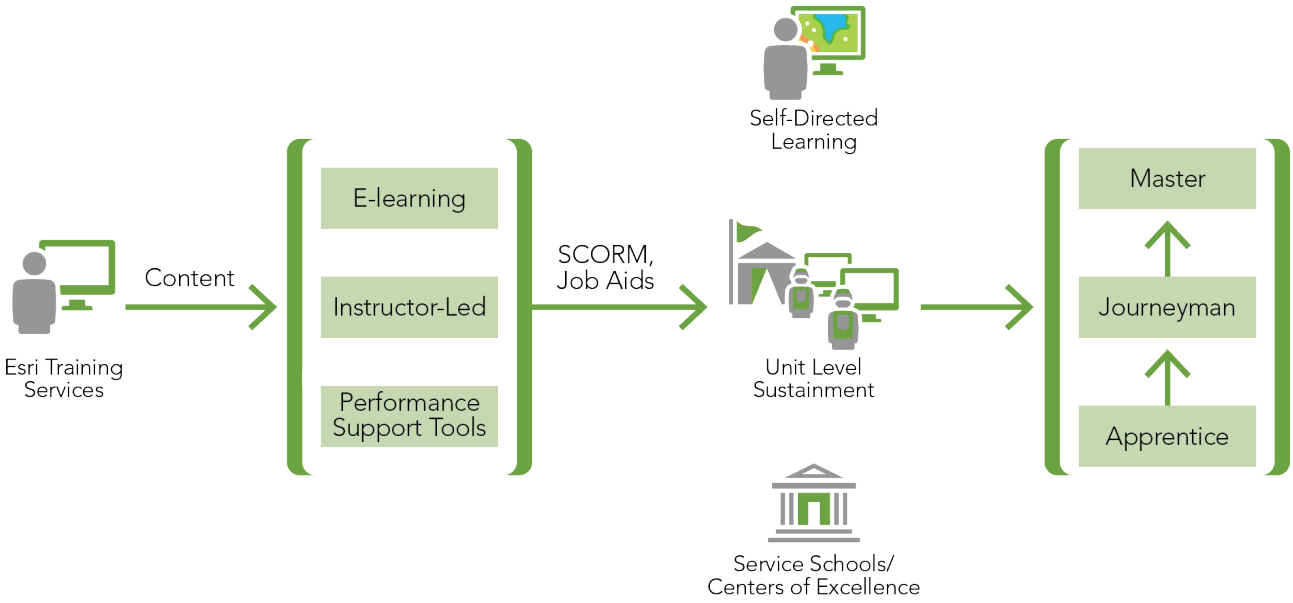
Esri's defense team includes domain subject matter experts who are prepared to work with military intelligence analysts, program managers, and senior leaders regarding how Esri geospatial technology can transform workflows, analysis, and information management. This provides analysts with more time to perform analytics rather than be confronted with data preparation and management duties. To learn more about the ArcGIS platform, which includes the ArcGIS for Defense solution, visit solutions.arcgis.com/#Defense.

# Appendix: Training Support

## Esri Training for Intelligence Analysts

Esri designs, develops, and delivers comprehensive training to advance organizations, units, and individuals from entry- to master-level proficiency of ArcGIS. Training options cover core concepts and best practices for visualizing, analyzing, and managing geospatial content. Course content is designed to be relevant, impactful, and immediately transferable to individual on-the-job performance.

Flexible delivery options, including public and private instructor-led classes and on-demand e-learning, ensure that access to geospatial training resources is available when and where they will be most effective. The Esri Technical Certification Program provides organizations with the ability to validate individual proficiency with desktop, developer, and enterprise Esri technologies.




*Esri training moves progressively from entry-level understanding to master level.*

Esri training supports these military occupation specialties:

- Intelligence analysts (all-source)
- Geospatial analysts
- CI/HUMINT analysts
- Imagery analyst
- Signals Intelligence analysts
- Cyber analysts
- Special forces intelligence analysts

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Esri ArcGIS courses teach geospatial concepts and workflows that apply to

- IPB
- Intelligence analysis
- GEOINT
- Sensor mapping
- Terrain analysis

Esri has created a suite of course recommendations based on skill level and typical geospatial workflows to enable intelligence personnel to develop their skills and knowledge necessary to accomplish mission tasks. A progressive, phased approach allows training to be synchronized with an organization's readiness cycle.

| Position | Skill Level | | | | | | |
|---|---|---|---|---|---|---|---|
| | Basic | Basic/Intermediate | | | Intermediate/Advanced | | |
| | Geospatial Concepts for Intelligence Operations | Portal for ArcGIS: User | Workflows (for Defense and Intelligence) | Designing Maps with ArcGIS | Editing Data with ArcGIS for Desktop | Using ArcGIS for Geospatial Intelligence | Image Analysis with ArcGIS | Introduction to Geoprocessing Scripts Using Python |
| All-Source Analyst | X | X | X | X | X | | |
| Imagery Analyst | | X | | X | X | X | X |
| Geospatial Analyst | | X | | | X | X | X |
| SIGINT Analyst | X | X | X | X | X | | X |
| CI/HUMINT Analyst | X | X | X | X | | | |
| Cyber Analyst | X | X | X | | X | | X |
| SF Int Analyst | X | X | X | X | X | X | X |

These are recommended courses for personnel whose duties include analysis, planning, and situational awareness.

Esri's leadership in geospatial training content and delivery aligns ArcGIS platform use with organization mission essential tasks. Hundreds of courses developed by Esri education specialists and subject matter experts provide a full solution capable of providing entry, refresher, sustainment, and just-in-time training on best practices to operationalize geospatial capabilities.

For detailed information about specific training options to support your organization, visit esri.com/geospatial-skills or contact GIStraining@esri.com.

Esri inspires and enables people to positively impact their future through a deeper, geographic understanding of the changing world around them.

Governments, industry leaders, academics, and nongovernmental organizations trust us to connect them with the analytic knowledge they need to make the critical decisions that shape the planet. For more than 40 years, Esri has cultivated collaborative relationships with partners who share our commitment to solving earth's most pressing challenges with geographic expertise and rational resolve. Today, we believe that geography is at the heart of a more resilient and sustainable future. Creating responsible products and solutions drives our passion for improving quality of life everywhere.

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