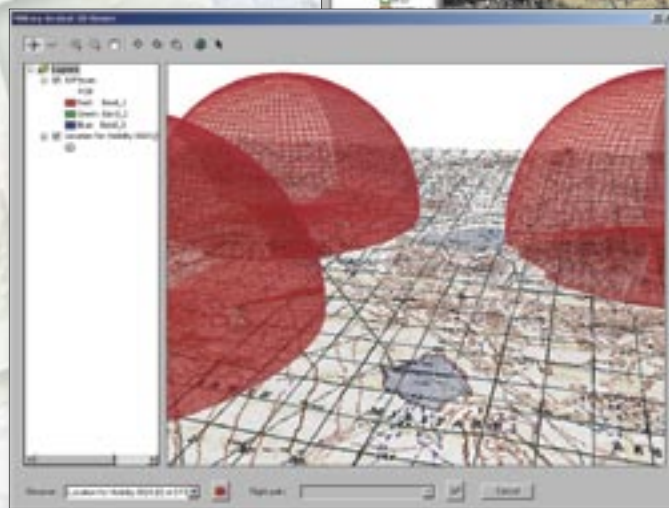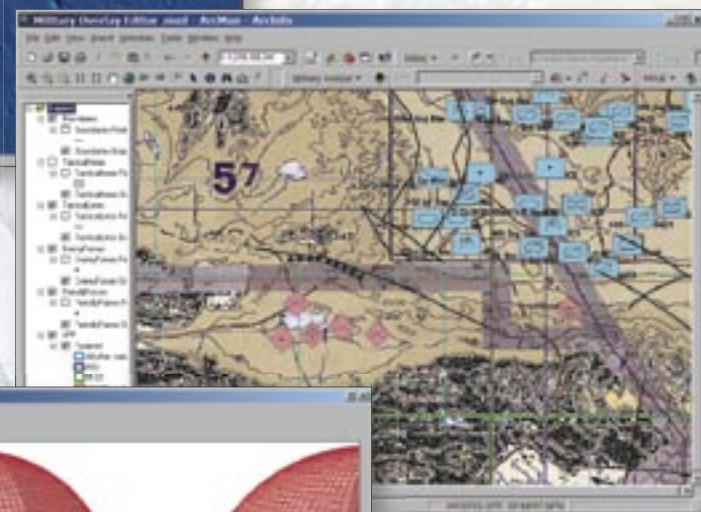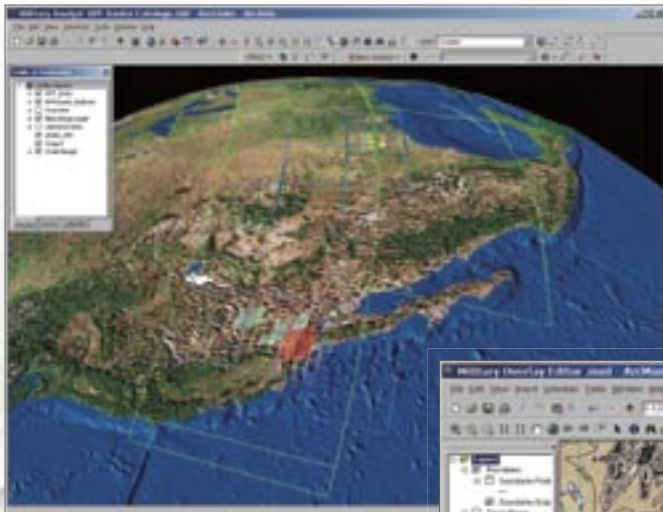# ArcGIS® Military Analyst

GIS Tools for the Defense and Intelligence Communities

Arc ESRI **GIS**™

ArcGIS Military Analyst
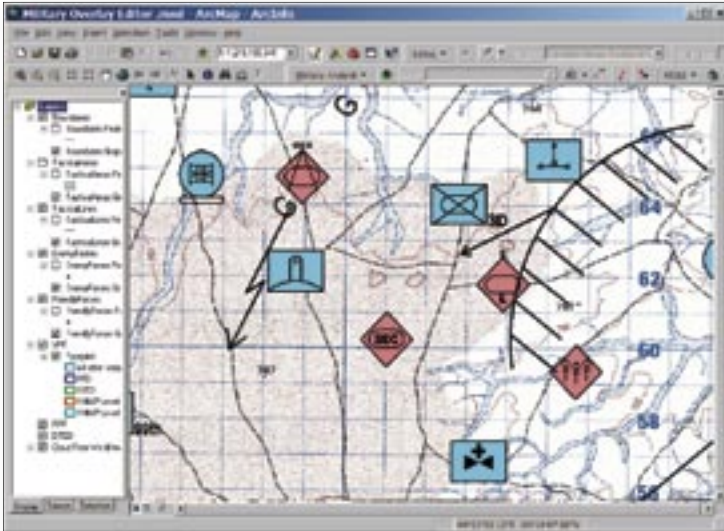
GIS Tools for the Defense and Intelligence Communities

ArcGIS Military Analyst facilitates a collaborative environment for military planning and problem solving.

As an extension to ArcGIS Desktop (ArcView®, ArcEditor™, and ArcInfo®), Military Analyst can take advantage of the editing, visualization, and geospatial analysis frameworks of ArcGIS. Military Analyst functionality is available as objects that can be accessed through ArcGIS. Using these objects, custom applications can be created using ArcGIS Engine and ArcObjects®.

ArcGIS Military Analyst offers full customization using COM interfaces, on-the-fly projection of raster and vector data, and a suite of tools that includes

- Raster and Vector Map Tools
- Data Management Tools
- Coordinate and Conversion Tools
- Terrain Analysis Tools
- Geodesy Tools
- MOLE for representing MIL-STD 2525B symbology

ESRI® ArcGIS® Military Analyst extension incorporates a suite of tools tailored to meet the specific needs of the defense user and significantly enhances the effectiveness of core ArcGIS for the military planner and geospatial intelligence analyst.

ArcGIS Military Analyst maximizes the use of National Geospatial-Intelligence Agency (NGA) geospatial data products by directly reading and rendering NGA's vector and raster products. With support for a wide variety of data sources, ArcGIS Military Analyst is able to generate line of sight (LOS) and usability assessments, perform Military Grid Reference System (MGRS) conversions, and conduct Digital Terrain Elevation Data (DTED) analysis. ArcGIS Military Analyst also includes the Military Overlay Editor (MOLE™), which supports MIL-STD 2525B and custom war fighting symbologies.

ArcGIS Military Analyst meets the demands of a collaborative defense environment for systems to be network-centric, reusable, and inherently scalable. ArcGIS Military Analyst provides the framework for network-centric command, control, and intelligence (C2I) systems.

ArcGIS Military Analyst provides analytical and display tools for supporting defense and intelligence planning.
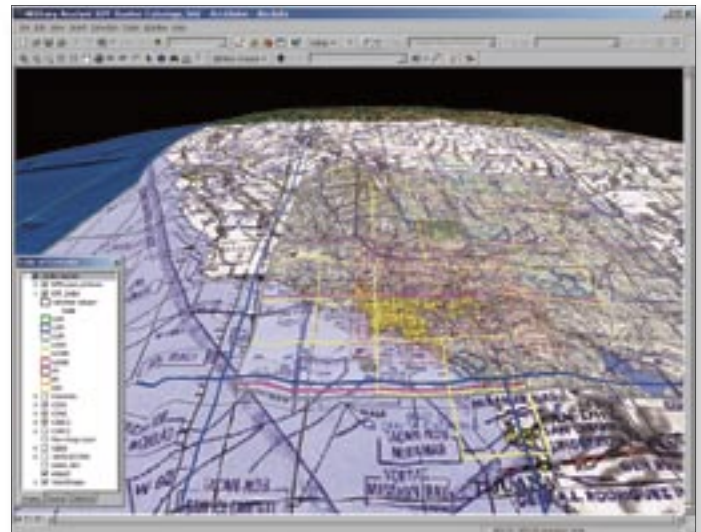
ArcGIS Military Analyst is used by

- Military planners and commanders
- Intelligence analysts
- Defense mapping agencies
- Terrain analysts
- Facility, environmental, and infrastructure managers
- System integrators

ArcGIS Military Analyst is a key component of the following application areas:

- Command and Control
- Battlefield Management
- Intelligence Gathering
- Mission Planning
- Incident Planning and Response
- Search and Rescue
- Defense and Intelligence Geospatial Analysis

ArcGIS and the Military Analyst extension are critical and integral parts of the information technology infrastructure for modern defense and intelligence applications. ArcGIS Military Analyst includes a variety of tools that are organized into two categories: display and analysis.

Raster and Vector Map Tools support the visualization of various military data types and defense data standards.
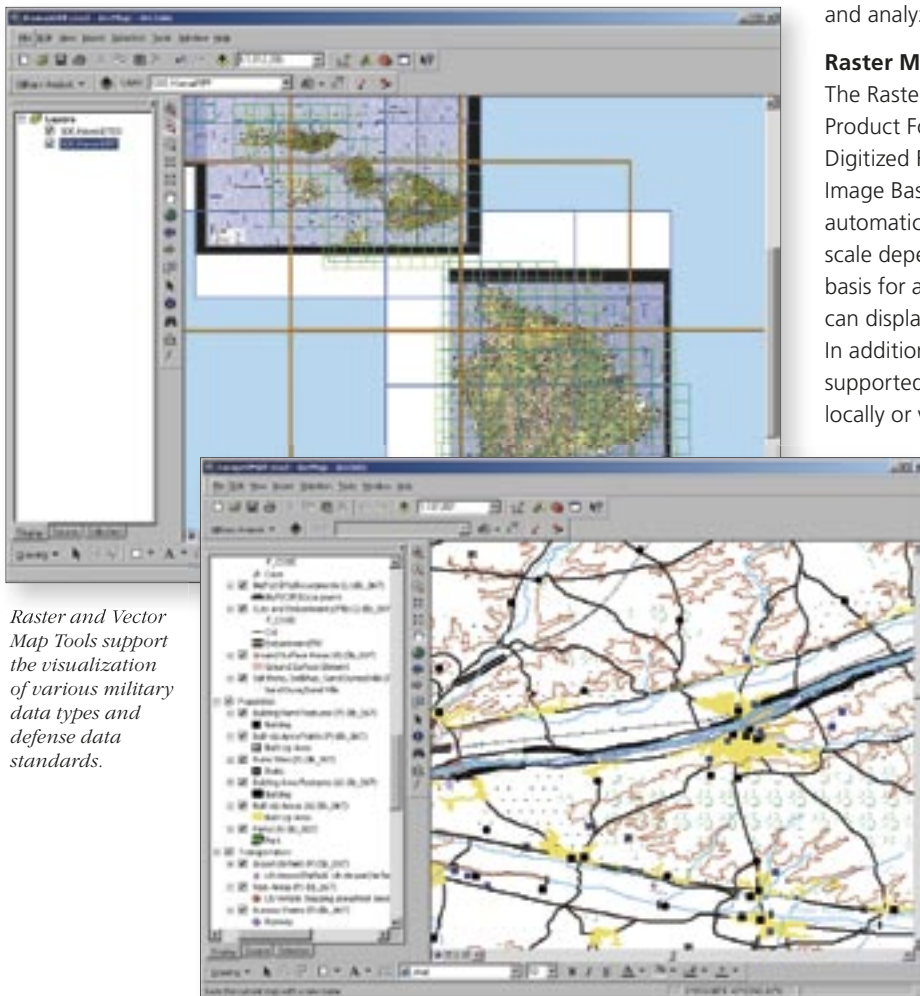
Display Tools

Tools for display allow military planners to visualize a multitude of data types and defense data standards. Robust visualization and display capabilities distinguish ArcGIS Military Analyst from other military applications, making it a single source for visualization, planning, and analyzing defense and intelligence data.
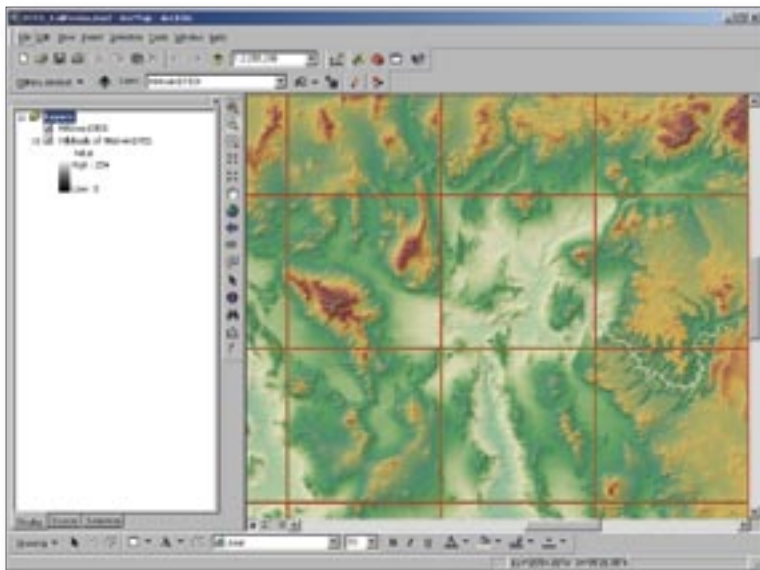
Raster Map Tool

The Raster Map Tool is used for rendering Raster Product Format (RPF) products (Compressed ARC Digitized Raster Graphics [CADRG] and Controlled Image Base [CIB]). The Raster Map Tool allows for the automatic selection and display of RPF data to include scale dependency set by the tool to provide a rich basis for a project. With ArcGIS Military Analyst, users can display multiple raster data sets simultaneously. In addition, this extension supports all raster types supported by ArcGIS and access to raster data stored locally or via ArcSDE® enterprise servers.

Vector Map Tool

The Vector Map Tool is used for rendering Vector Product Format (VPF) products (Vector Map [VMap] and Digital Nautical Charts [DNC]) including support for NGA symbology (GeoSym™ standard). With the Vector Map Tool, VPF data, such as DNC, VMap 1 and 2, and UVMap, can be automatically selected and displayed. This can be performed within the NGA GeoSym framework for a standardized display.

The DTED Tool creates, manages, and merges DTED tiles for interpretation and display within ArcGIS.

DTED Tool

The DTED Tool is a display and merge tool. Using the DTED Tool, the applicable DTED tiles can be automatically managed, selected, and merged into a single grid. A hillshade may be applied for ease of interpretation and display. The resultant elevation matrixes can be used in subsequent analytical applications. The DTED Tool can also create custom object layers with user-controlled display properties. The DTED Tool requires the ArcGIS Spatial Analyst extension.

Footprint Generation

Footprints are automatically generated for the Raster Map, Vector Map, and DTED Tools for better management and understanding of overlapping data sets. Users can create and store footprints for managing large collections of NGA data. Footprints improve data management by allowing the viewing of overlapping footprints for each set of data.
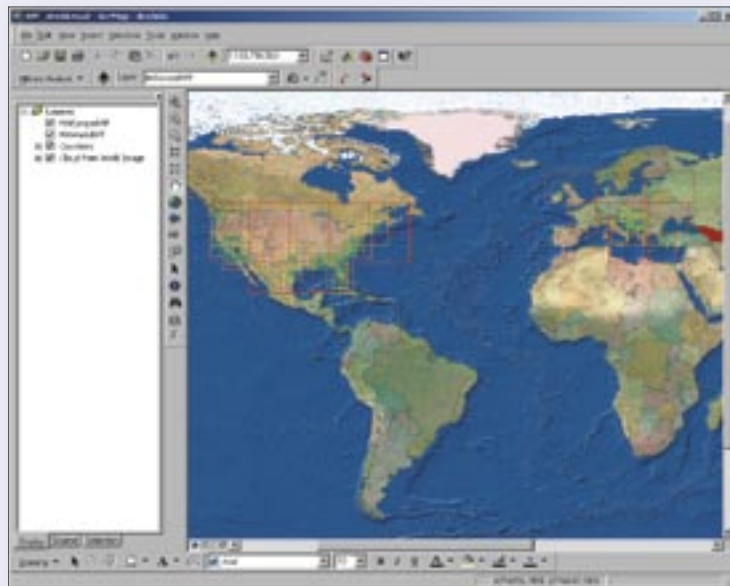
ArcGIS Military Analyst supports the use of footprints for managing overlapping data sets.

Analysis Tools

ArcGIS Military Analyst includes a suite of analysis tools specifically designed for a wide range of defense and military problem solving. These tools range from terrain analysis to geodesy. They are organized for quick use/reuse in toolbars and drop-down menus.
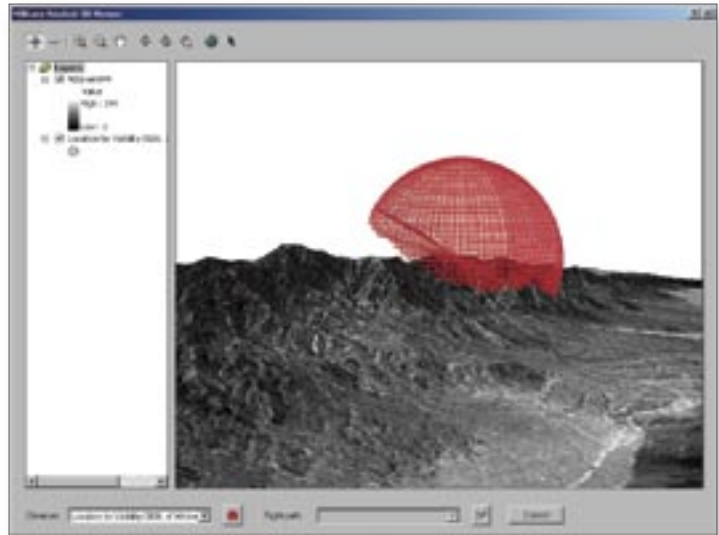
Coordinate Tool

The Coordinate Tool supports coordinate display and conversion for data in MGRS, decimal degrees, and degrees/minutes/seconds. Analysts can also use the Coordinate Tool to find and zoom to specific coordinate locations. The Coordinate Tool works with ArcGIS Desktop and extension applications such as ArcMap™ and ArcGlobe™.
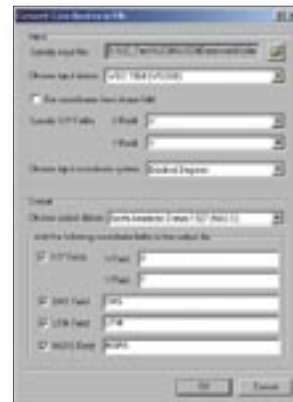
Conversion Tool

The Conversion Tool enables batch coordinate conversion, streamlining data preparation, and loading work flow. Batch conversions can use feature classes, shapefiles, or DBF tables.
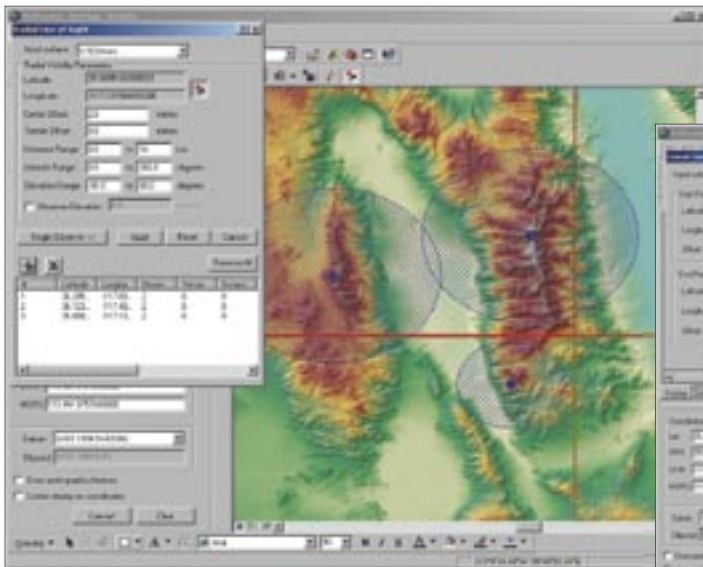
Terrain Tools

Used for visibility analysis (LOS and viewshed) and threat analysis, the Terrain Tools make mission planning functions and analysis possible. Use these tools to calculate the highest point, lowest point, hillshade, and radial or linear line of sight. The Terrain Tools require the ArcGIS Spatial Analyst and ArcGIS 3D Analyst™ extensions.
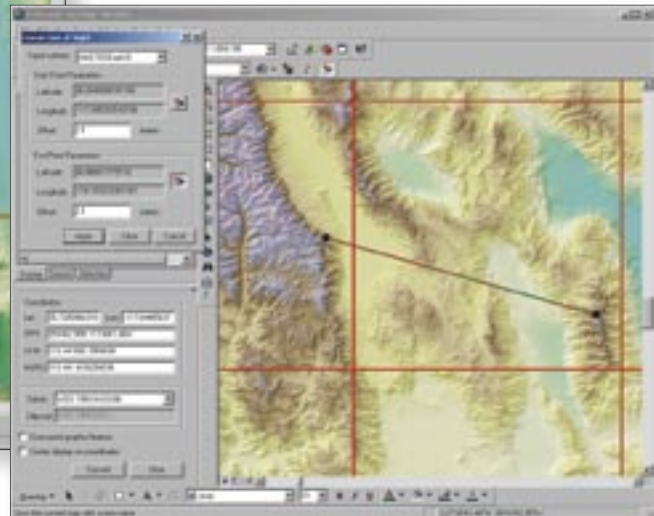

2D and 3D visualization provides greater insight from spatial data.

The Conversion tool allows for batch coordinate conversion jobs in feature classes or data files.

The Terrain Tool enables 2D and 3D visualization of topography for mission planning and analysis.
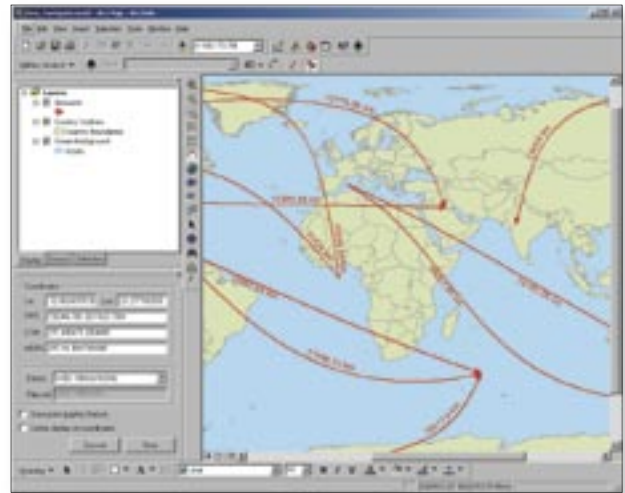
Geodesy Tools

The Geodesy Tool allows users to interactively create great circles and rhumb lines. With the Geodesy Calculator users can specify two coordinates and generate a great circle route, a rhumb line or a geodesic route. The Geodesy Calculator also calculates bearing, azimuth, distance, and the end coordinate. The Range Ring Tool allows users to create geodetically correct concentric ellipses at user specified intervals anywhere on the globe

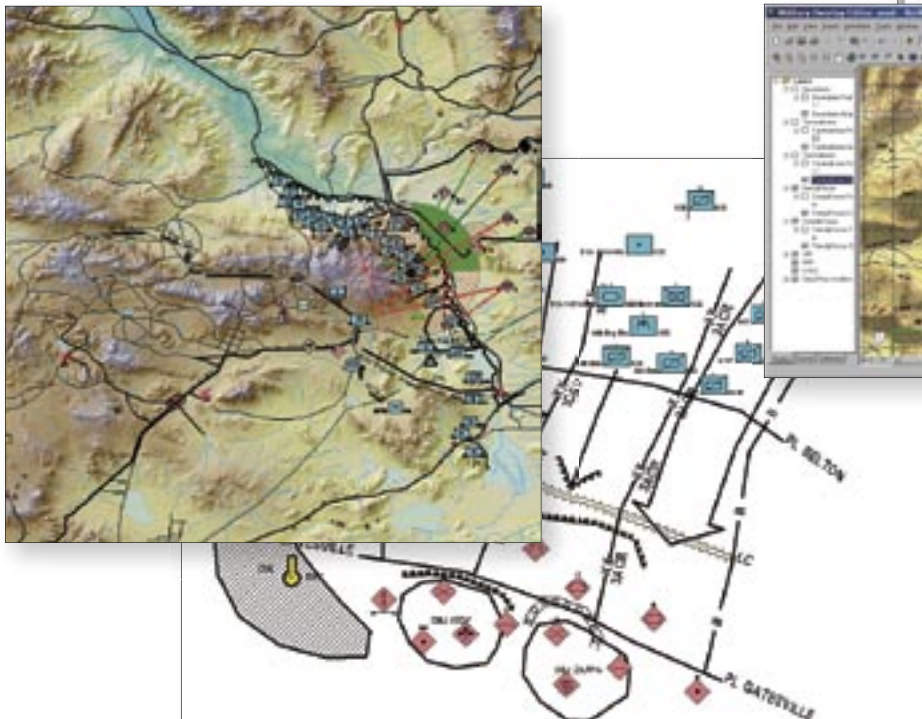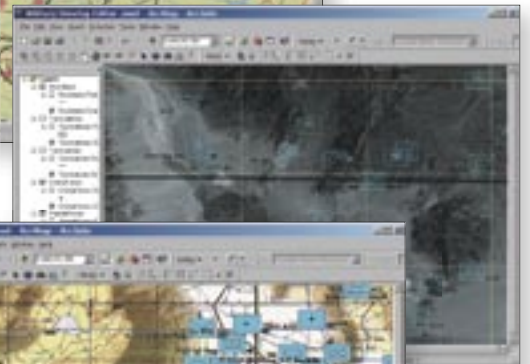## Military and Defense Symbology (MIL-STD 2525B)

MOLE

Through MOLE, ArcGIS Military Analyst provides support for war fighting symbology (point, line, and polygon) in accordance with MIL-STD 2525B; automatic leadering, stacking, and decluttering of symbols; and user customizable symbols. Order of battle databases can be imported/located and displayed in accordance with MIL-STD 2525B and corresponding symbols and attributes created and edited in MOLE. Linking to unattended ground sensors and real-time track information with the ArcGIS Tracking Analyst extension make true intelligence fusion and situational awareness a reality.

MOLE enables other applications, such as ArcIMS® and ArcGIS Server, to take advantage of military symbology in creating custom applications. MOLE is supported on Windows® NT® 4.0, 2000, XP (Home Edition and Professional), and Sun™ Solaris™.

The Geodesy Tools provide analytical tools for calculating great circle routes, rhumb lines, lines of bearing, and range rings used in geospatial analysis for military planning.

MOLE provides MIL-STD 2525B symbology for defense and intelligence mapping and visualization.

Developer Tools

ArcGIS Military Analyst tools can also be accessed through Microsoft® VBA, which is included with ArcGIS. ArcGIS Military Analyst, customized with any COM compliant language, allows a user to build new applications that deliver highly sophisticated military solutions, especially when combined with the optional ArcGIS Spatial Analyst and 3D Analyst extensions. The ArcGIS Military Analyst extension's API is compatible with applications created in ArcGIS Engine and ArcGIS Server running Windows, Solaris, and Linux™.

Supported Platforms

ArcGIS Military Analyst is available for Windows 2000 and XP (Home Edition and Professional). ArcGIS Military Analyst requires ArcInfo, ArcEditor, or ArcView. Users interested in the full capabilities provided by the ArcGIS Military Analyst tools also need the ArcGIS Spatial Analyst and 3D Analyst extensions.

Availability

ArcGIS Military Analyst is available at no cost to ArcGIS users with current software maintenance agreements. Qualified users who want ArcGIS Military Analyst should contact their customer service organization. Within the United States, call ESRI customer service at 1-888-377-4575 or call your ESRI regional office (to locate your regional office, visit www.esri.com/usa). Outside the United States, contact your local ESRI distributor.
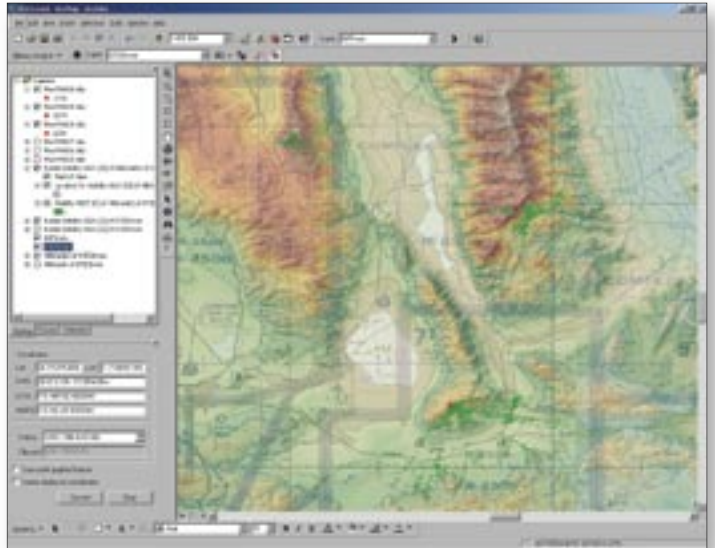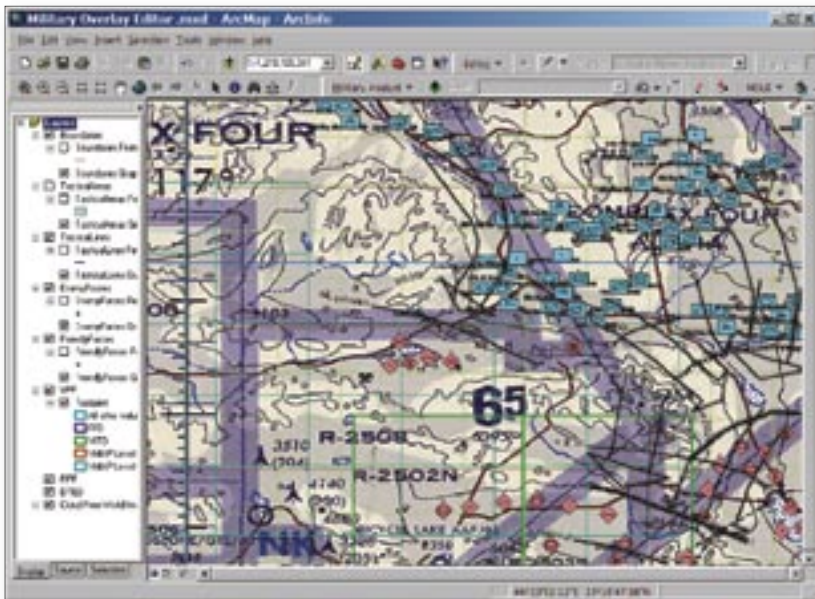

ArcGIS Military Analyst is a comprehensive geospatial analysis solution designed for the warfighter.

More Information

For more information about ArcGIS Military Analyst, please visit **www.esri.com/militaryanalyst**.

For more information about ESRI solutions for defense, please visit **www.esri.com/defense**.

ArcGIS Military Analyst provides tools and features to support modern defense and intelligence applications.

For more than 35 years ESRI has been helping people manage and analyze geographic information. ESRI offers a framework for implementing GIS technology in any organization with a seamless link from personal GIS on the desktop to enterprisewide GIS client/server and data management systems. ESRI GIS solutions are flexible and can be customized to meet the needs of our users. ESRI is a full-service GIS company, ready to help you begin, grow, and build success with GIS.

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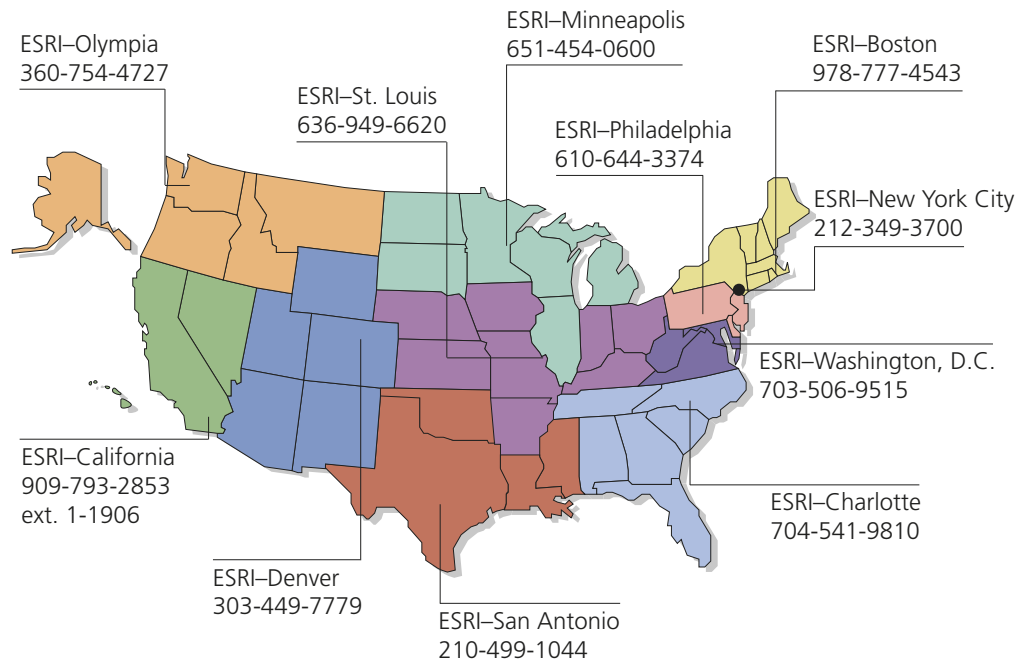
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