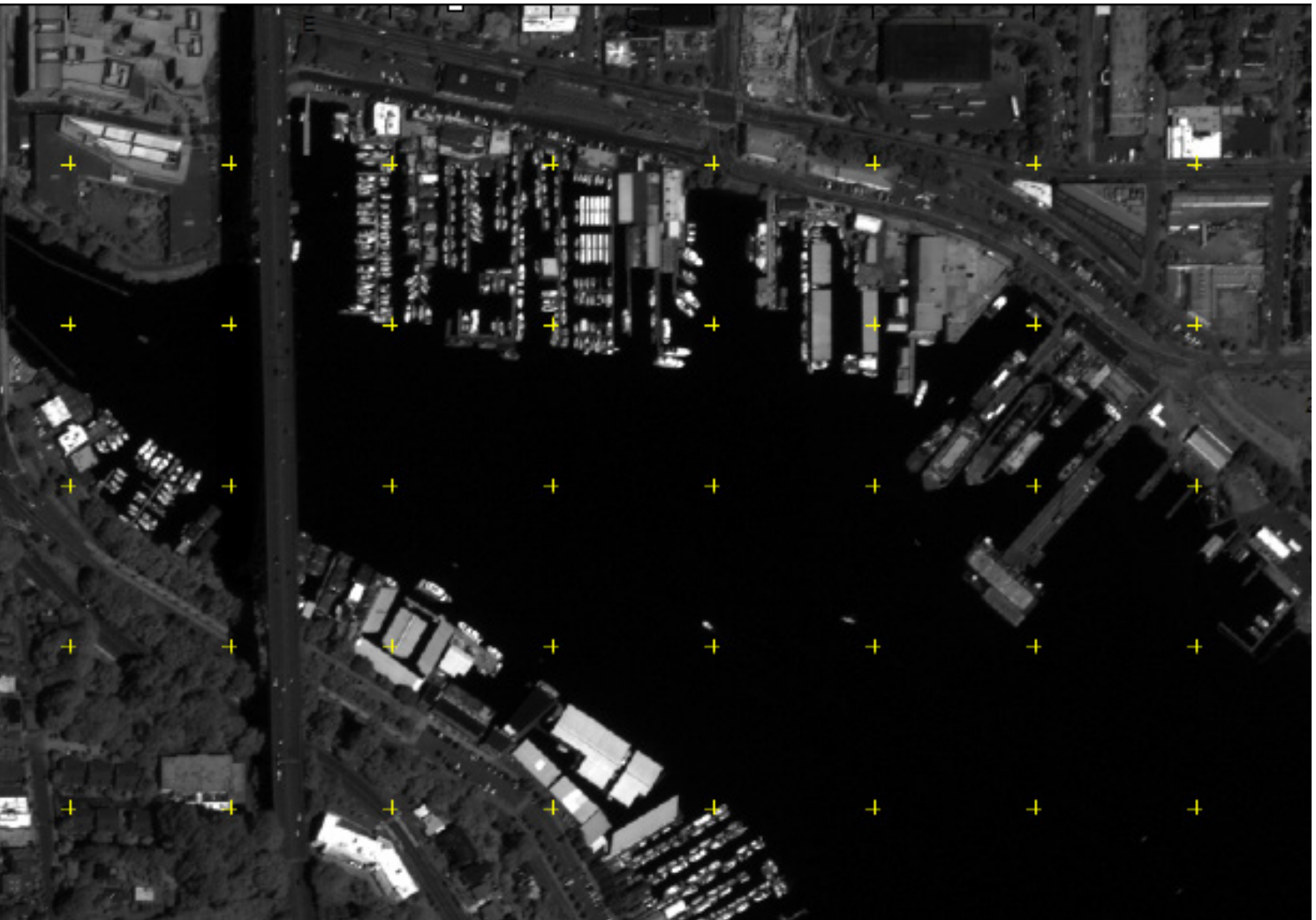


ELT/5500[®]

COMPREHENSIVE ANALYSIS FOR THE GEOSPATIAL PROFESSIONAL

ELT/5500, the flagship of the ELT/Series software suite, fuses traditional image exploitation functionality, geospatial analysis and 3D-visualization in a single easy-to-use geospatial-intelligence application. Designed specifically to support the demanding requirements of geospatial analysts and the varied missions of geospatial professionals, ELT/5500 enables analysts to produce timely, relevant and accurate Geospatial Intelligence products.

Although advanced in capability, ELT/5500 is very intuitive and easy-to-learn. The contemporary ribbon-based toolset offers a streamlined contextual presentation to maximize efficiency. ELT/5500 includes a comprehensive set of tools to support specific workflows all while offering full flexibility on how to create, manage, and analyze data.



ELT/5500[®]

INTUITIVE & CUSTOMIZABLE USER INTERFACE

TOOL WINDOWS

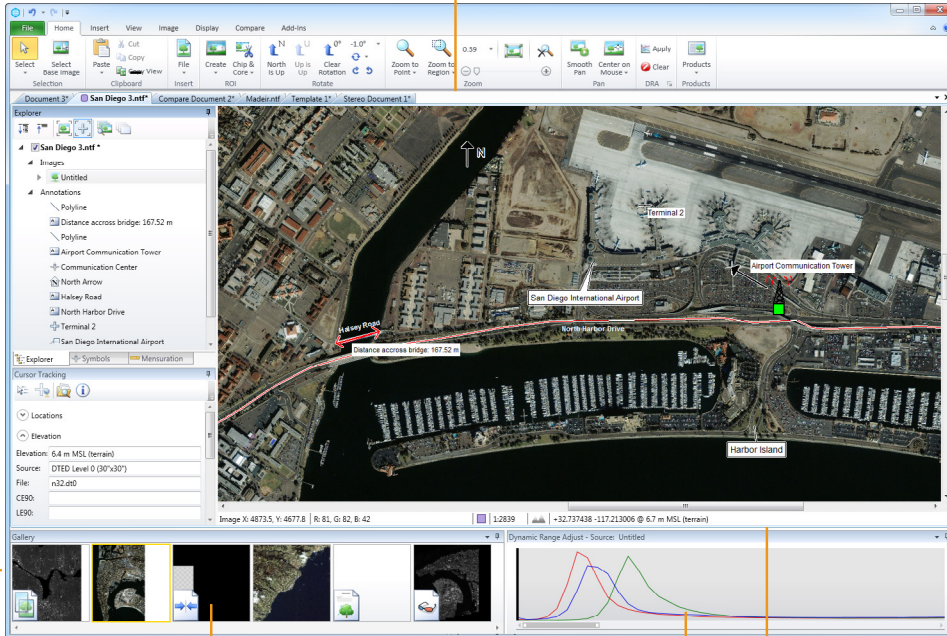
The Explorer, Mensuration, Cursor Tracking, and other tool windows offer extensive exploitation and analysis tools.

MULTI-DOCUMENT TABS

Tabs maximize workspace so analysts can alternate between multiple workflows without clutter.

CONTEXTUAL RIBBON TABS

Tools are readily accessible and easy to find.



PAN OVERVIEW WINDOW

The Pan Overview Window displays the entire image in a floatable resizable window. Ideal for broad area searches, analysts can control review direction and location using a variety of tools such as pan, roam, paths, and constraints.

GALLERY

The Gallery displays a thumbnail image for each open document. Users can quickly differentiate between document types by the icon overlay. ELT/5500 offers geo mosaic, comparisons, stereo views, and other document types to address several workflows.

DRA

The DRA tool window makes it easy to view image histograms and fine tune DRA settings. Adjust all or individual bands to improve display using the slider or shortcut menu.

STATUS BAR

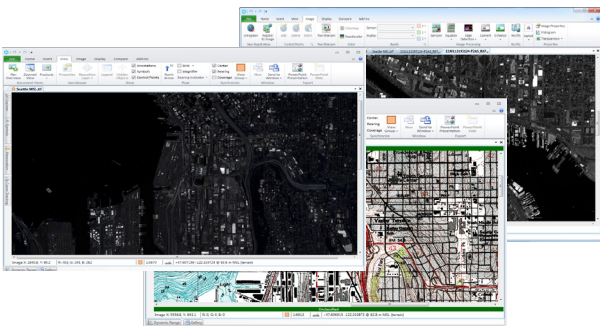
View information about the active document such as display scale, view groups, terrain elevation, and terrain correction status. Geo location, RGB, and XY for coordinate position are reported for the cursor position. Multiple coordinate systems are supported. A SAR specific status bar is also available.

ELT/5500 supports different document types for viewing, managing, and manipulating data, such as comparison, stereo, and geo mosaics to accommodate common workflow requirements. All documents and associated objects are organized and managed by the Explorer tool window. This window provides a central location for performing tasks. In addition to the Explorer, the Mensuration, Cursor Tracking, and Symbols tool windows offer commonly used tools. Other tool windows include the Gallery and DRA. The Gallery, located at the bottom of the interface by default, offers a thumbnail view for each open document. Users can determine different document types by the icon assignment and alternate between documents by clicking the thumbnail. Document specific tasks can also be executed using the shortcut menu. The DRA tool window lets users view and Adjust DRA settings. All tool window display options are fully customizable and can be docked, tabbed, shown side-by-side, and more to offer full control over the interface.

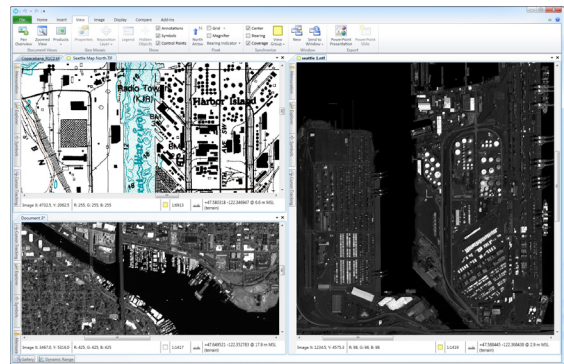
FLEXIBLE WINDOW AND DOCUMENT CONFIGURATION

Many times analysts need to review multiple images from the same geographic region. This can be difficult if only one document can be viewed at a time. Using ELT, analysts can choose how to organize windows and documents to maximize efficiency. Users view imagery in multiple document tabs, separate images into panes within a single window, or break images out to a new window to take advantage of multiple monitor configurations.

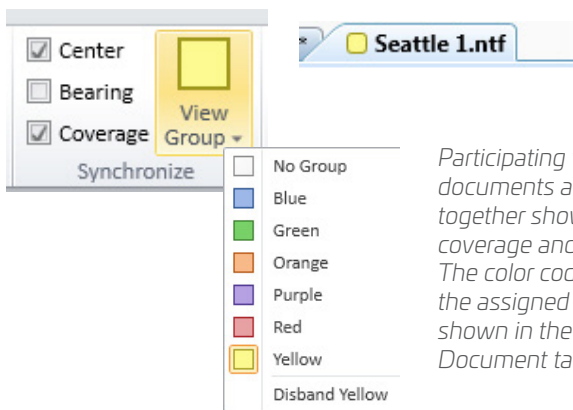
The multiple window capability lets analysts quickly view one or more co-located images simultaneously. New windows can be created by dragging the document away from the current window or by opening a new window. Each window contains the same ribbon tabs to make it easy perform analysis on each document separately. In addition, each window can be linked together using View Groups. This feature is ideal if analysts need to search for a particular location using pan and roam tools. When the view changes in one window, the images participating in the view group update simultaneously. View groups are organized by color and each participating window shows the assigned group color in the status bar. Documents are easy to manage and can be added or removed from a view group.



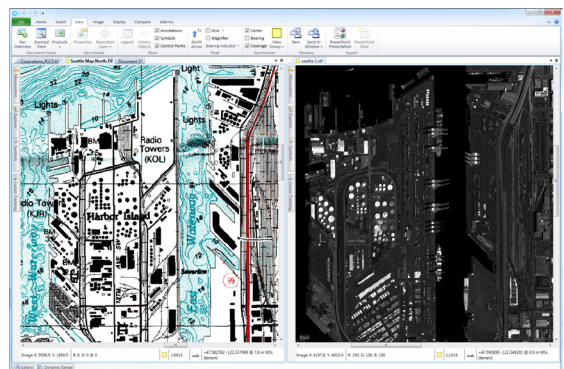
Documents can be moved to new separate windows.



Multiple documents can be viewed simultaneously in a single window showing different (top) or same geographic locations (bottom).



Participating view group documents are synced together showing the same coverage and orientation. The color coded icon for the assigned group is shown in the Status bar and Document tab(s).



SAVE VIEWS FOR LATER USE

It can take time to carefully arrange the document view using rotation, zoom, and other display level tools. Using Sessions, the display can be saved so analysts can easily pick up where they left off in their workflow.

ADD-INS & API

Application features and capabilities can be extended and tailored using the ELT/Series .NET Add-Ins framework. A robust COM-based API offers extensive customization and integration capabilities via multiple scripting and programming languages, with 100+ interfaces and 1500+ properties available to meet specific workflow demands. Samples are provided for common programming and scripting languages.

INNOVATION AND PERFORMANCE

Trusted by analysts for maintaining the highest image quality standards and ensuring that pixels are in the right place, ELT/5500 is specifically designed to handle large imagery with ease. The ELT/Series multi-threaded processing chain technology improves image processing time, increasing user productivity. In addition, the Geospatial Solutions software development teams have worked extensively with monitor and graphics card manufacturers to optimize hardware and software performance levels. These enhancements are most evident in ELT/5500 ultra-smooth and jitter-free roaming performance. ELT/5500 is a native 64-bit application and supports Windows 7 and Windows 10.

KEY FUNCTIONALITY

BROAD AREA SEARCH TOOLS

ELT/5500 offers a robust set of image manipulation tools designed specifically to facilitate broad area searches, potentially covering geographic areas of thousands of square miles. The ultra-smooth and jitter-free Pan/Roam function enables analysts to pan across large high-resolution imagery with ease. The Dynamic Quality Roam (DQR) option in ELT/5500 enables analysts to specify the number of JPEG 2000 quality layers to be decompressed for display in the main window during roaming. By decreasing the number of layers displayed, the DQR mode enables analysts to increase roam performance with no noticeable effect on image quality.

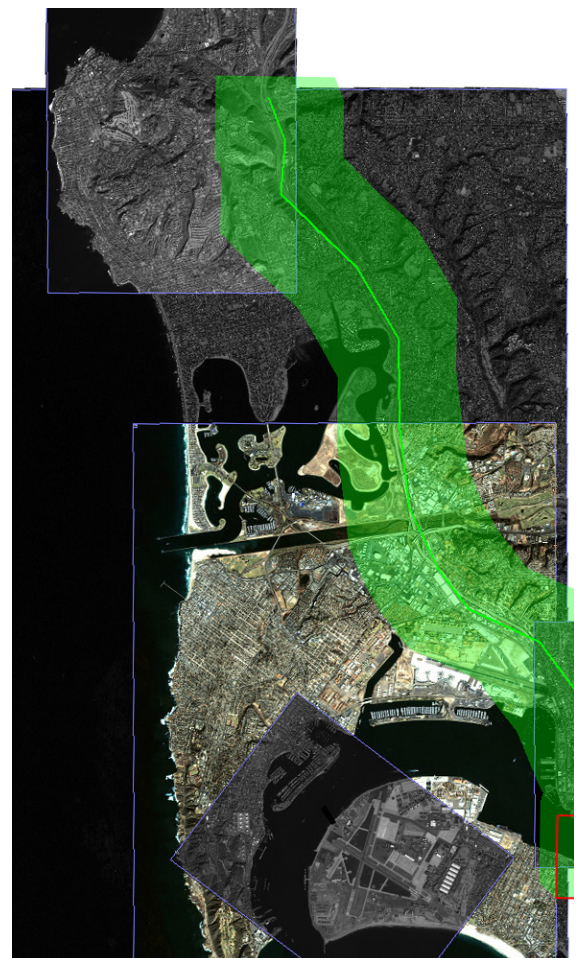
When performing a search, analysts can leverage pan constraints, exclusions, and paths to control search location and direction. For example, paths can be used to view along a road, while an exclusion can be used to skip water. Paths, constraints, and exclusions can be saved and shared with other analysts.

GEO MOSAIC DOCUMENTS

ELT/5500 offers a geo-registered workspace (Virtual Mosaic) into which geo-coded images, raster maps, and vector data files can be imported and auto-located. Analysts can visualize a variety of image files and data sources by changing the stack order in a document.

ACCURATE POSITIONING

ELT/5500 continues Geospatial Systems' tradition of being the leader in geospatial accuracy. It utilizes map projections, geodetic models and elevation data to provide accurate geospatial positioning, terrain correction and orthorectification. The status bar includes a terrain correction icon indicating the status of the active data.

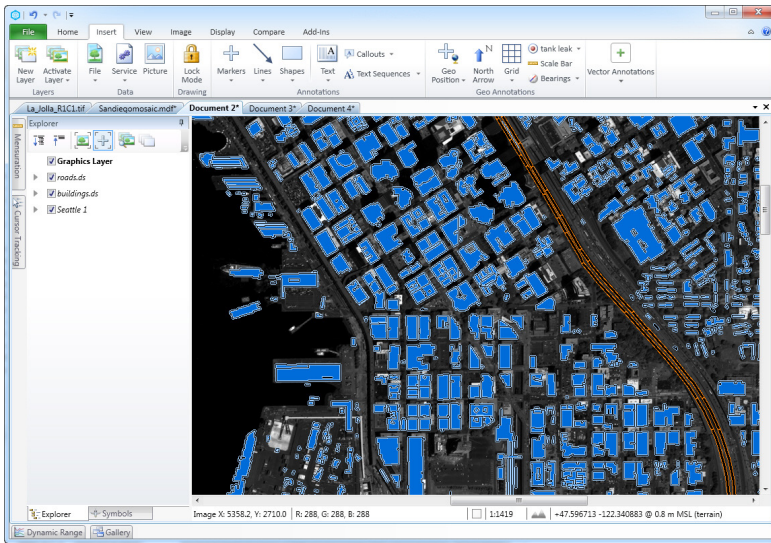


A green semi-transparent path, called a snail trail, can be turned on to identify areas searched. Snail trails can be saved and properties, such as color and opacity are customizable. The file can be shared with other analysts to show reviewed areas.

GIS AND VECTOR SUPPORT

ELT/5500 provides support for a number of vector databases and file formats used in GIS and mapping systems such as: Shape, Vector Product Format (VPF), Microsoft Access (MDB) and Comma Separated Values (CSV). These databases contain both vectors and associated metadata called Feature Classes. An entire feature class can be imported into ELT/5500 or filtered by attribute. Feature graphic properties are customizable, and symbols can be mapped to a particular type. For example, if importing communication towers, analysts can assign a tower symbol. Analysts can also visualize data using themes.

ELT/5500 also supports querying Web Map Tile Service (WMTS) and Web Map Service (WMS), ECWP and JPEP enabled servers using HTTP protocols to acquire geospatial data.



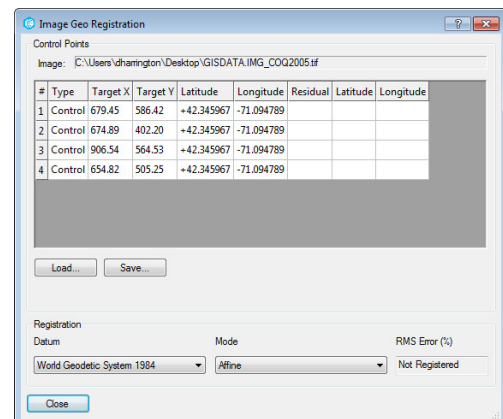
Analysts can visualize roads, buildings, and other features directly in ELT/5500 so they can work within their more familiar application. Features can be selectively loaded to only show the objects needed. For example, a building feature class can be clipped to only include buildings that overlap the image. Analysts can also control features to display by attributes.

Feature properties such as color, line, and fill are all customizable on import of the data source.

Features can be assigned symbols and show metadata labels. Themes can also be assigned to make it easier to identify features by type.

GEO REGISTRATION

ELT/5500 includes geo-registration tools to add or improve georeferencing. A single image can be geo-registered by plotting known coordinates or by selecting tie points between a target and geo-referenced image. Once geo-registered, positioning operations such as mosaicking and mensurating are enabled.



RADAR/SAR SUPPORT

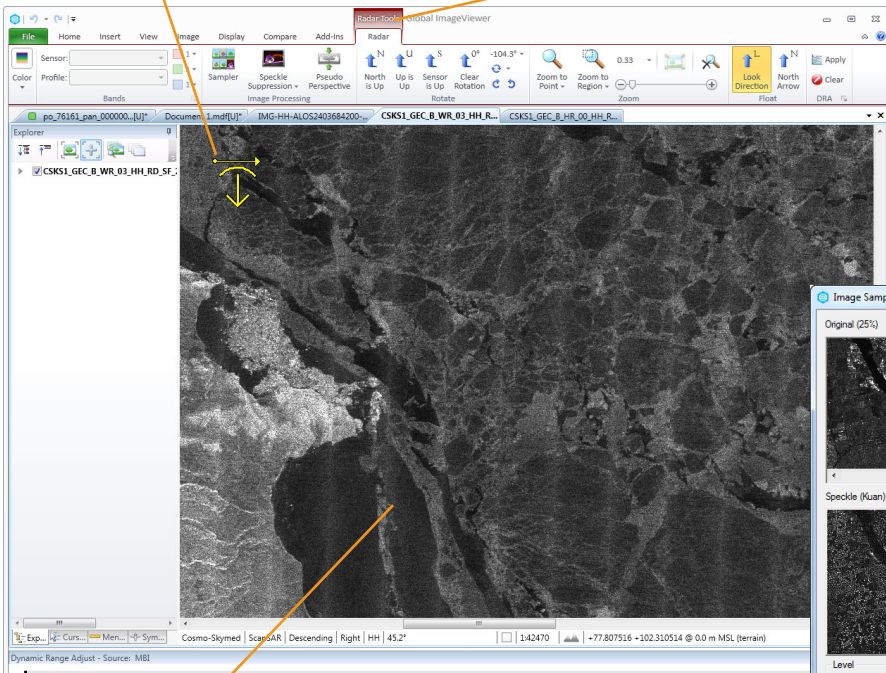
Analysis of traditional Electro-Optical (EO) imagery can sometimes be challenging. Cloud cover, nightfall, tree canopies, and other natural barriers can often obscure imagery, preventing proper exploitation. ELT/5500's Synthetic Aperture Radar (SAR) capabilities provide analysts the means to overcome these limitations. Complex SAR data is visualized and optionally enhanced using speckle suppression algorithms, enhanced Dynamic Range Adjustment (DRA) and pseudo perspective-based transformations. SAR specific orientation tools are provided to simplify and enhance exploitation. Key contextual information such as Look Direction, Incidence Angle, and Polarization is clearly presented in dynamic floating overlays and status bar metadata. All major SAR sensors are supported.

LOOK DIRECTION INDICATOR

A Look Direction indicator gives a visual representation of sensor look and platform direction based on the SAR image rotation view.

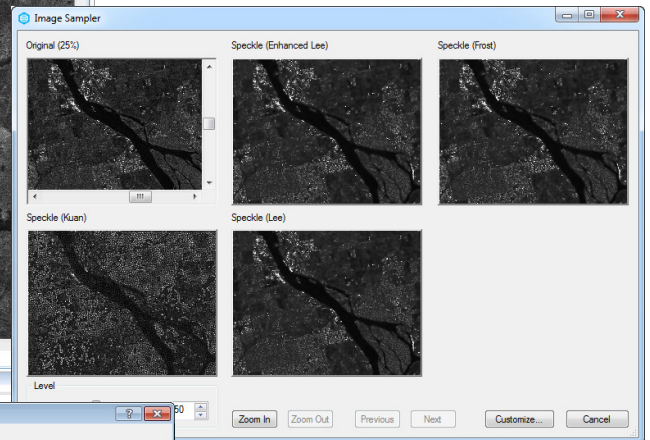
RADAR TAB

The contextual RADAR tab includes orientation, zoom, DRA, and speckle suppression tools. The Pseudo Perspective tool is also available to reduce perspective distortions.



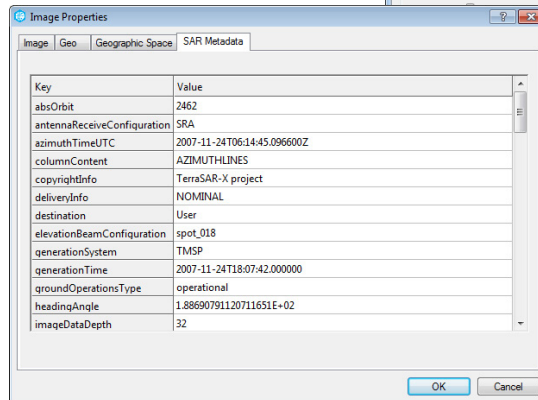
RADAR IMAGE SAMPLER

Unprocessed images typically exhibit a salt-and-pepper pattern. ELT/5500 includes several algorithms for reducing this noise. The Radar Image Sampler lets user preview speckle suppression options before applying to the image.



STATUS BAR

The Status bar shows information about the active SAR image such as radar platform, sensor model, and polarization modes.

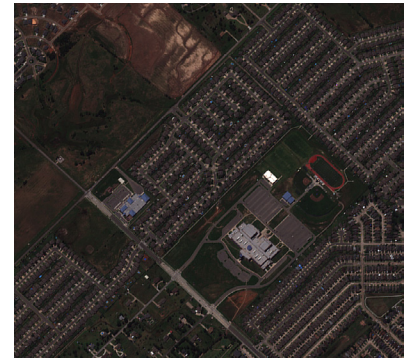
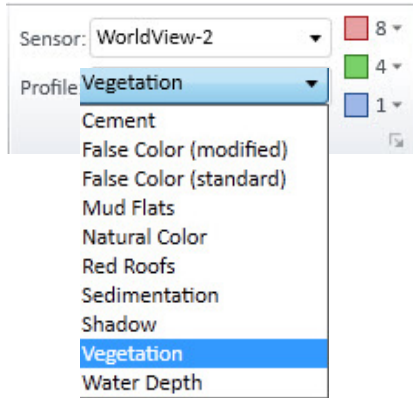


SAR METADATA

The Image Properties dialog includes a SAR metadata tab listing all extracted SAR metadata.

BAND PROFILE CHOOSER

Earth features such as waterbodies, vegetation, and man-made objects have different reflective responses when captured by sensors. Analysts can now apply different sensor types such as WorldView-2, SPOT, and RADARSAT-2 to visualize various spectral band combinations. For example, Vegetation, False Color, or Natural Color profiles can be applied to visualize features. Common sensors and associated profile settings are provided saving time from having to manually enter values. If a particular sensor and profile is not available, analysts can create their own custom profiles.



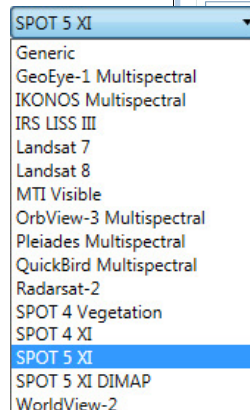
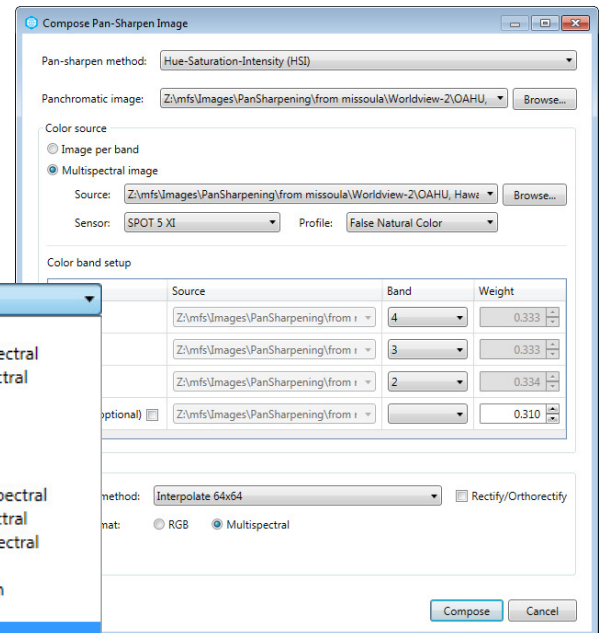
World-View-2 with vegetation applied

PAN SHARPEN

Using pan sharpening tools, analysts can easily combine a high resolution single-band panchromatic image with a multispectral RGB image to create a single higher resolution multispectral image. ELT offers Brovey, Hue-Saturation-Intensity (HSI), Hyperspherical Color Sharpening (HCS), and Simple Mean methods. Analysts can take it a step further by applying a Profile to the resulting pan sharpened image. ELT includes all common profiles and associated attributes so analysts don't have to research settings and manually manipulate bands..

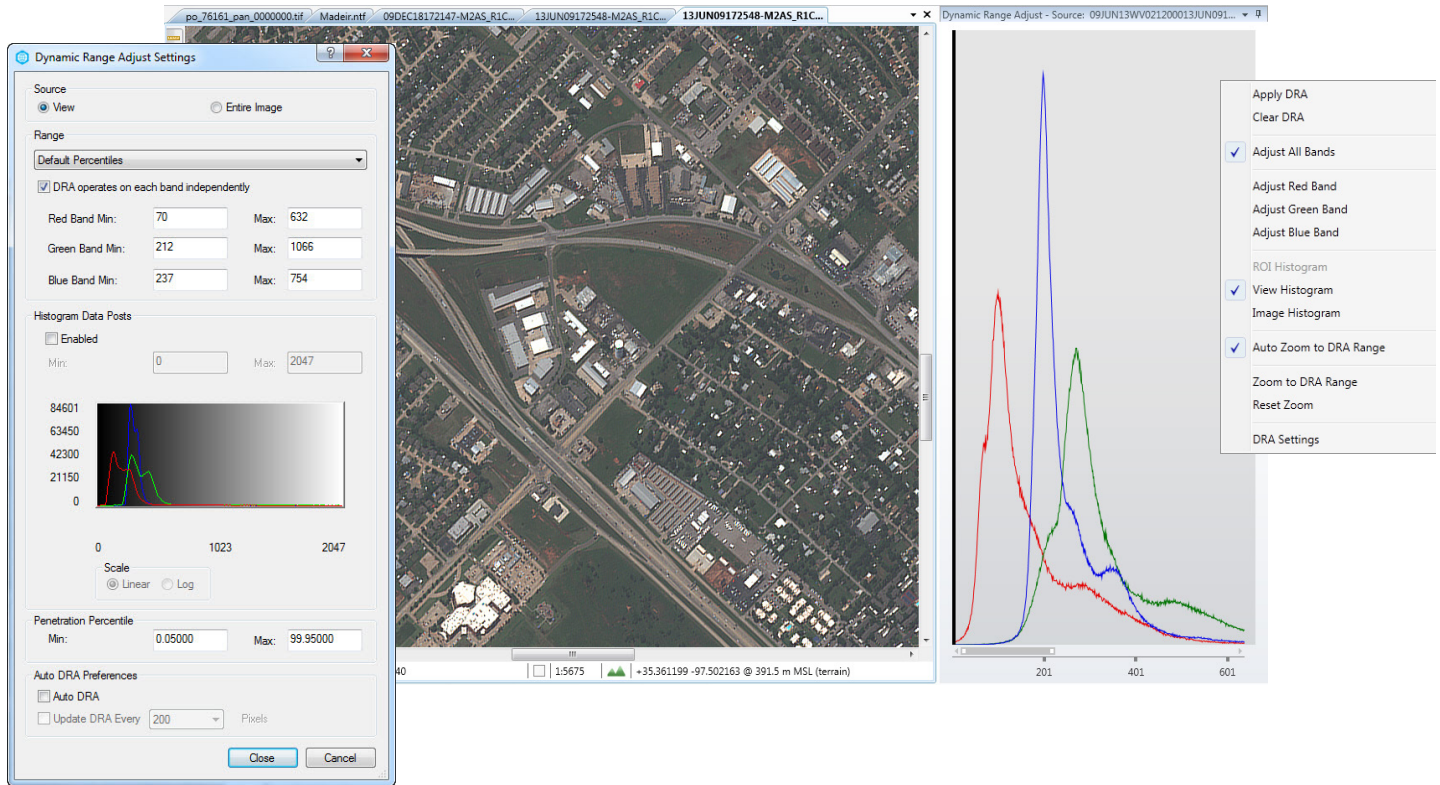


High resolution panchromatic image (left) and lower resolution MSI image (right) are combined to create a single higher resolution image (below).



ENHANCED DYNAMIC RANGE

Analysts can quickly fine-tune Dynamic Range Adjustment (DRA) using ELT/5500's dedicated DRA Tool Window. Panchromatic, Red, Green and Blue band histograms are graphically represented and can be adjusted individually or all at once to improve display. Preferred DRA calculations such as Default Percentiles, Lowest/Highest Values, and the number of Standard Deviations (1-6) can be set as defaults in preferences to streamline workflows. The DRA function also enables the values below/above the min/max to be excluded from the histogram when calculating the DRA. This feature is especially effective for images with heavy cloud cover, dark bodies of water, and other similar low-contrast conditions.



INTERFACE TO GOOGLE EARTH

ELT/5500 works seamlessly with the popular Google Earth™ viewer so analysts can learn more about a location. Satellite imagery, maps, places of interests and other available information dynamically appears in Google Earth for the collocated view or entire document cover in ELT/5500. Image chips, vectors and associated metadata can all be exported to Google Earth, and are accessible under Google Earth's temporary places. Lock tools are available to automatically synchronize views to ELT/5500 or Google Earth.

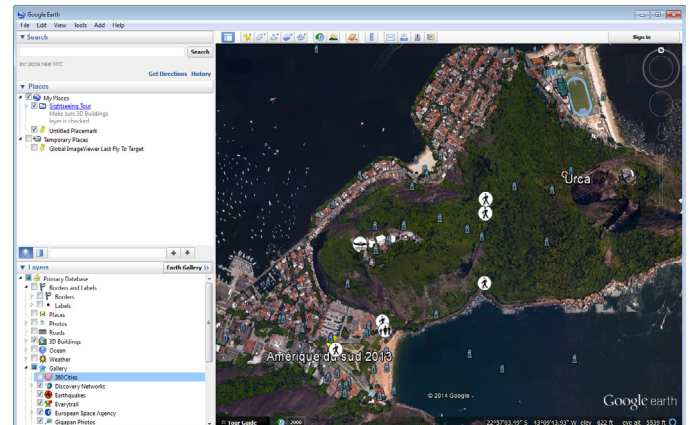
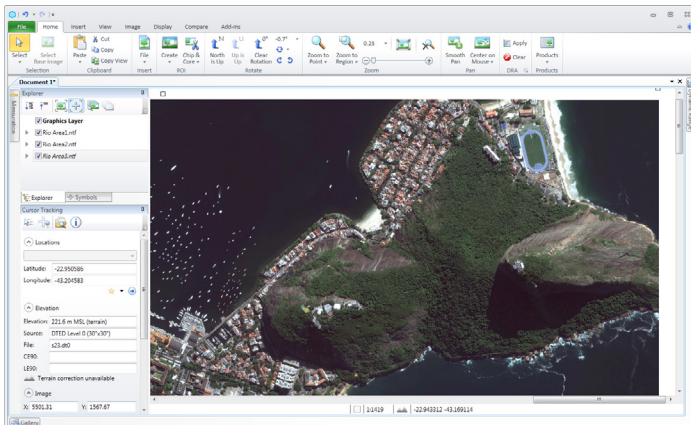
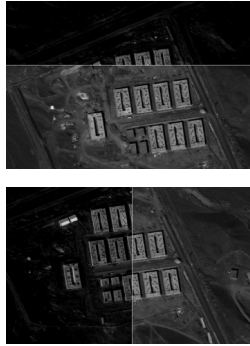


IMAGE COMPARISON

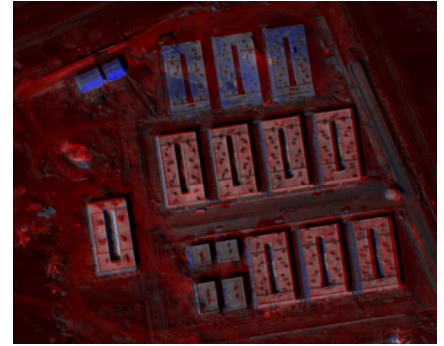
Analysts can quickly compare, study, and highlight changes using comparison tools. Ideal for detecting changes due to environmental or man-made conditions, ELT/5500 includes split image comparison, blending, wiping, colorized difference, color Q and flicker. An enhanced stereo mode also enables viewing stereo pair images, producing true 3D when utilizing stereo shutter glass hardware.



View images simultaneously using 4-way compare.



Images can be selected for wipe, blend, and other operations.



Feature changes can be detected using Colorized Difference. New buildings are blue, while existing buildings are red.

MENSURATION TOOLS

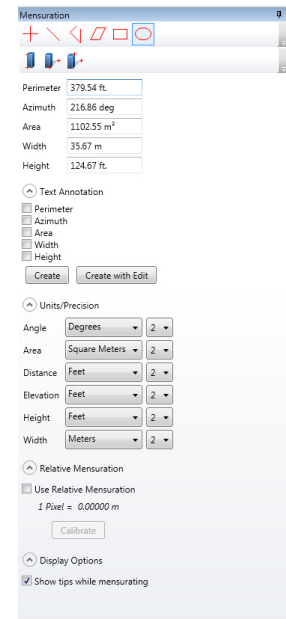
The convenient Mensuration Tool Window includes tools to measure accurate distances, perimeters, areas and changes in elevation, as well as automatically generates the appropriate text annotations. There is also a tool to measure a feature's height (e.g., column, building, and tower) based upon the shadow it casts. If the image data is not geo spatially referenced, the software enables relative measurements by calibrating against a known object to determine size.



Height (185 feet) determined using Shadow Height tool.



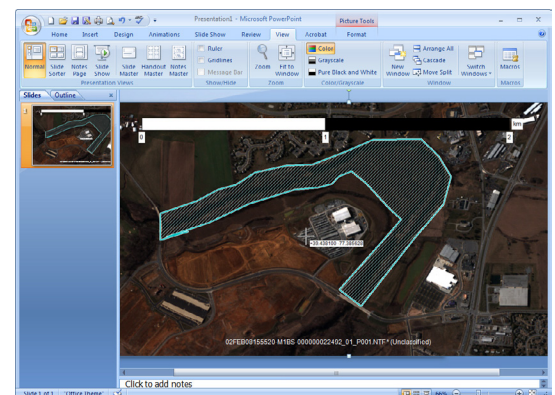
Height determined by marking top and bottom points.



GENERATE PRODUCTS

ELT/5500 offers advanced product creation support, which is valuable when generating documents for dissemination. Templates can include annotations, graphics, logos, scale bars, north arrows, pixel and measured grid, text labels and text strings derived from document/ image metadata.

Analysts can quickly export templates and main window contents to PowerPoint making it easy to share important information about a location of interest. A new presentation can be created directly from ELT/5500, and new slides can be added.



■ ELT/5500 PRO: FOR NATIONAL SYSTEMS USERS

ELT/5500 PRO extends the power of ELT/5500 to include the advanced features required by U.S. imagery analysts. With guidance from the U.S. Intelligence Community, ELT/5500 PRO was specifically developed to provide access to all required National Systems including:

- > National Technical Means (NTM) Support
- > Support for all TFRD file formats
- > CGS) high precision targeting package
- > Interface to Mensuration Services Program (MSP) high precision mensuration package
- > Future Imagery Architecture (FIA) Formats
- > Formatted Report Wizard
- > National System for Geospatial-Intelligence (NSG) Formats
- > Softcopy Image Processing Standard (SIPS) TACQ Enhancement XML Support

FEATURES

■ IMAGE DISPLAY TOOLS

- > Crop, Scale, Rotate & Flip
- > Display Level Processing
 - Brightness Adjustment
 - Contrast Adjustment
 - Dynamic Range Adjustment
 - Gamma Correction
 - Haze Reduction
 - Pseudo Color
 - Sharpness
 - Tonal Transfer Curves (TTC)
- > Reduced Resolution Data Set Generation
 - Multi-Level RRDS Support
 - On-Demand RRDS Generation
 - Thumbnail Generation
 - Optional Antialiasing
- > Stereo Pair Viewing
 - Shutter Mode Hardware Stereo Support
 - Anaglyph Stereo Support
 - 3D Cursor
 - Parallax Adjustment

■ MULTI-BAND IMAGE SUPPORT

- > Band Chooser
- > Sensor-Specific Band Profiles
- > RGB Image Creation
- > Multispectral Image Creation
- > Pan Sharpening
 - HCS, HSI, Brovey, Simple Mean
 - NIR Support
 - Rectification/Orthorectification
- > Image Compose Coefficients

■ IMAGE EXPLOITATION FEATURES

- > Image Processing Sampler
 - Stretch Contrast, Piecewise Contrast, Binary Threshold, Adjust Color Balance, Color Invert, Density Slice, Gamma Correction, Linear Smoothing
 - Mean, Median, and Pseudo Median
 - Edge Detections: Cross, Diamond, Gradient, Horizontal/Vertical, Laplacian, Left/Right Diagonal, Prewitt, Robert, and Sobel Equalizations: CLAHE, Contrast, Exponential, Gaussian, and Rayleigh
- > Uniform Color Mode Conversion
- > Gray Level Clipping
- > Histogram Generation
- > Region of Interest (ROI) Generation
 - ROI Image Processing
 - ROI Chipping
 - ROI Coring

■ IMAGE MANIPULATION FEATURES

- > Ultra Smooth Pan and Roam
 - Dynamic Quality Roam (DQR)
 - Dynamic Reduction Roam (DRR)
- > Pan Window
 - Auto Pan
 - Auto/Custom Path Support
 - Pan Constraints and Exclusions
 - Print from Pan Window
- > Snail Trail
 - Save/Load/Import
- > Smooth Zoom
- > Smooth Rotation
- > Zoom Window and Chipping
- > Floating Zoom Window and Chipping
- > Zoom to Mouse Point
- > Mouse Region Zoom

IMAGE COMPARISON

- > Blend
- > Colorized Difference and Color Queue
- > Flicker
- > Vertical/Horizontal Wipe
- > Two-Way, Left/Right, Top/Bottom
- > Reposition Layer

ANNOTATION FEATURES

- > Advanced Text and Graphic Support
 - Text, Markers, Polylines, Polygons, Callouts
 - Grids
 - Text Sequencing
 - Metadata Lookup Labels
 - Burn-In/Flatten Options
- > Floating Annotations
 - Grid
 - Magnifier
- > Symbol Library Support
 - Scalable
 - Counter/Report Features
 - Locator and Indicator Display Capability

GEO CAPABILITIES

- > Georegistration
 - Lat/Long, DMS, MGRS, and UTM Coordinates
 - Image to Image
- > Geo Jump and Geo Position Marker
- > Geo Projections (Ellipsoid and Datums)
- > Ground Control Point Editing (GCP's)
- > Image Rectification
- > Orthorectification
- > Mensuration Support
 - Location, Distance, Area, Elevation
 - Shadow-based Object Height
 - Relative Calibration and Mensuration
- > Cursor Tracking
- > North Arrow and Bearing Indicator
- > Radial Distance Profiles
- > Scale Bars
- > North is Up, Up is Up, Image is Up, Mil is Up
- > Points of Interest (POI's)
- > Search Notes

RADAR/SAR SUPPORT

- > Magnitude visualization
- > Floating Look/Platform Direction Indicator
- > Speckle Noise Suppression
 - Lee, Enhanced Lee, Frost, Kuan
 - Speckle Noise Suppression Sampler
- > Status Bar Metadata Reporting
- > Metadata Viewer
- > Pseudo Perspective
- > Shadows Down and UP is UP View Orientation Tools
- > Height mensuration from Layover
- > Data Formats: ALOS-2, COSMO-SkyMed, KOMPSAT – 5, RADARSAT – 2, SENTINEL – 1, SICD, TanDEM-X, TerraSAR-X

GIS SUPPORT

- > Geo Document Support
 - Map Projected Mosaics
 - Orthorectified Mosaics
 - Feathering
- > Reposition Layer
- > Feature Data Class Support
 - Spatial Filter
 - Metadata Query/Search
 - Themes
- > Display-by-Scale
- > I-Button Metadata Display

IMAGE COMPARISON

- > Ribbon Toolbar Interface
- > Tab-based Multiple Document Support
- > Multiple Window/Monitor Support
- > User Interface Theming
- > High Resolution Icons/Graphics
- > Rich Tooltips
- > Contextual Awareness
- > Enhanced Mouse Control Options
- > Gallery of Open Documents (Thumbnails)
- > International Language Support

3D VISUALIZATION (SPOTLITE EXTENSION)

- > One-Click 3D Terrain Display
- > Fly-Through or Drive Through Simulation
- > Line of Sight Tools
- > Annotation Support
- > 3D Mensuration (SpotLite Pro)
- > Point Cloud Visualization (SpotLite Pro)
- > Stand-Up 3D Building (SpotLite Pro)
- > Customizable Wall/Roof Textures (SpotLite Pro)
- > 3D Symbol Library (SpotLite Pro)
- > Float and Extrude Geometries (SpotLite Pro)
- > Radial Distance Profile Spheres (SpotLite Pro)
- > Export/Chip to 3D PDF (SpotLite Pro)

DATA CATALOGING (GEOCATALOG EXTENSION)

- > Federated Access to Stored Geospatial Data
- > Searchable Database Library
- > Modifiable Database Schema
- > Single Query Searches
- > Query by Region, Time, File Type, etc.
- > Gallery Display and Full Image Preview

OTHER FEATURES

- > Add-Ins Support
- > COM-based API
 - 100+ Interfaces, 2000+ Methods/Properties
 - C#/C++/VBScript Samples
- > Google Earth™ Interface
- > ECWP Support
- > JPIP Support
- > Enhanced Template Support
- > Publish To Microsoft PowerPoint®
- > Web Map Service (WMS) Support
- > Web Map Tile Service (WMTS) Support
- > Access® Database Support
- > Customizable XML Reports
- > Sessions

40+ SUPPORTED FORMATS

**Read Only*

- > ADF
- > ADRG*
- > AGP*
- > ALOS-2
- > BIIF 1.2
- > BMP
- > Buckeye*
- > CADRG*
- > CIB*
- > COSMO-Skymed*
- > DEM*
- > DIMAP-V2*
- > DOQ*
- > DTED*
- > ECW*
- > ECWP*
- > ENVI*
- > ERDAS*
- > GeoSPOT*
- > GIF
- > JPEG
- > JPEG 2000
- > JPIP*
- > KMARG*
- > KOMPSAT-3, 3A & 5*
- > LandSat7*
- > MrSid*
- > NITF 1.0*
- > NITF 2.0 & 2.1*
- > NSIF 1.0 & 1.1
- > PNG*
- > QuickBird Til*
- > RADARSAT-2*
- > RAW
- > ELT Template
- > RemoteView Template
- > SDTS*
- > Sentinel 1-2*
- > SICD*
- > Sun Raster
- > TanDEM-X*
- > TerraSAR-X*
- > TIFF/GeoTiff/BigTIFF
- > VPF*
- > Vector Query
- > WMS*
- > WMTS*

SUMMARY

ELT/5500 is a flexible solution comprised of a powerful core product supporting software extensions. Using this modular approach, ELT/5500 enables users to cost-effectively and seamlessly scale capabilities to meet their dynamic needs. Geospatial Solution's approach minimizes both procurement costs and training needs as functional requirements evolve.

EXPORT WARNING

This document does not contain export-controlled technical data and is approved for international release. However, the products depicted are controlled under the U.S. International Traffic in Arms Regulations, and require approval of the U.S. Department of State prior to export.

CONTACT US

+1.800.655.2616
Hunt Valley, MD

es.textron.com



SCAN FOR
PRODUCT DETAILS

