




**L3HARRIS™**  
FAST. FORWARD.

## **ENVI® ANALYTICS**

Answers you can trust



An aerial photograph of a city, likely a coastal town, with a semi-transparent map overlay. The map uses a color-coded system: red for buildings and structures, green for vegetation, blue for water bodies, and yellow for roads and other infrastructure. The map is overlaid on a dark, almost black background, which makes the colors stand out. The city is situated on a peninsula or near a large body of water, with a prominent road or canal running through it. The map overlay is semi-transparent, allowing the underlying aerial image to be seen through it.

Since its launch in 1994, ENVI has enabled users to leverage remotely sensed data to better understand our complex world. Over the years, L3Harris has continued to develop cutting-edge image analysis capabilities, and ENVI has emerged as the industry standard in image science. With the ever-increasing availability of geospatial data, businesses and organizations trust ENVI when it comes to making critical decisions. Users rely on ENVI because it is scientifically proven, easy to use and offers the best image processing and analysis tools to solve difficult problems with confidence.



## ENVI: THE LEADER IN IMAGE SCIENCE

Whether it's gaining a competitive advantage or protecting resources or lives, your decisions are only as sound as the information they're based on. ENVI's patented, science-based algorithms are accurate and reliable for extracting meaningful information from all types of geospatial imagery and data such as hyperspectral, multispectral, thermal, LiDAR and SAR. ENVI works with any size dataset on the desktop or in the cloud, and has automated tools to quickly and easily prepare imagery from any modality for viewing and further analysis.

ENVI includes a comprehensive suite of data analysis tools used to quickly and easily extract information from imagery. These tools are exposed as discrete processing tasks as well as workflows that guide you through the processing steps to ensure accurate preparation, and include calibration, pre-processing, atmospheric correction, pan sharpening, orthorectification and co-registration. From there, ENVI analytics can be used to detect changes and anomalies, measure and extract features, model topographic characteristics and much more.

These tools have been proven by the world's most experienced image scientists. Yet, ENVI's intuitive, customizable interface means it can be used by anyone to get those same expert-level results, regardless of prior experience with remotely sensed data and imagery.

**“We have found that analyzing remotely sensed imagery using ENVI provides us with the best prospects for success.”**

**-Dr. Wasit Wulamu,  
Saint Louis University**

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# FROM DATA AND IMAGERY TO INSIGHTS AND ANSWERS

## READ AND ANALYZE DIFFERENT DATA FORMATS

ENVI supports over 70 data formats including scientific formats such as HDF and CDF and image types like GeoTIFF, and additionally provides JITC-compliant NITF support. And, ENVI delivers enterprise capabilities that provide you quick and easy access to imagery from OGC and JPIP compliant servers within your organization or over the internet.

## FUSE MULTIPLE DATA MODALITIES

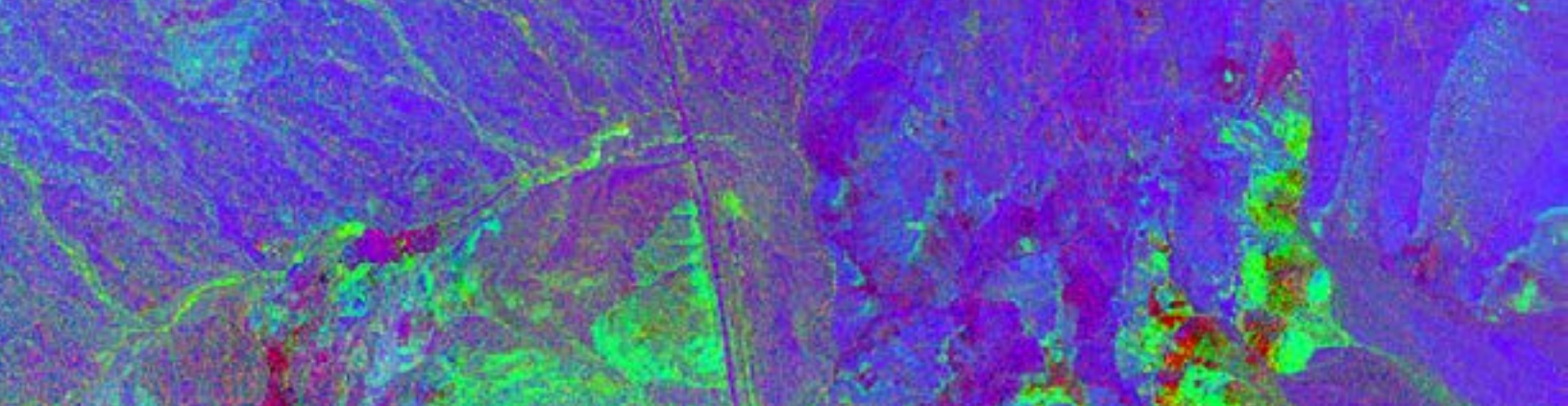
Use ENVI to fuse radar, LiDAR, SAR, optical, hyperspectral, multispectral, stereo, thermal and/or acoustic data to exploit the strengths of each sensor and create rich geospatial products for informed decision making.

## EXPLOIT INFORMATION FROM DIFFERENT SENSOR TYPES

ENVI supports imagery gathered from the newest and most popular satellite and airborne sensors including panchromatic, multispectral, hyperspectral, radar, thermal, HDF5, full motion video, Net CDF-4 and LiDAR. These sensors include ASTER, AVIRIS, AVHRR, Landsat 8, NPP VIIRS, Pleiades, QuickBird, RADARSAT, SkySat-1, SPOT, TMS, USGS DEM data, WorldView-3 and more.

## EASILY PROCESS LARGE DATA SETS

ENVI works with any size data set and has automated tools to quickly and easily prepare big and small imagery for viewing or further analysis.



## THE LEADER IN ADVANCED ANALYSIS TOOLS

### SPECTRAL ANALYSIS

ENVI is the definitive leader in spectral image processing with tools that rely on established, scientific mapping methods to perform spectral analysis – using pixel responses at different wavelengths to obtain information about the materials within each pixel. These tools detect targets, calculate vegetation and forest health, map materials of interest and much more.

### DATA ANALYSIS

ENVI's comprehensive suite of data analysis tools use proven algorithms to quickly, easily and accurately discern information about an image, such as generate image statistics, measure features and model topographic characteristics.

### ADVANCED IMAGE ANALYSIS TOOLS

With ENVI software, highly specialized tasks from rigorous orthorectification and feature extraction, to atmospheric correction and DEM extraction, can all be accomplished using one software package, saving you time and money.

## AUTOMATED WORKFLOWS TO GET ANSWERS – FAST

### ANOMALY DETECTION

Search an image for statistical and spectral distinctions from the background landscape

### CHANGE DETECTION

Look for areas of change by comparing two images from different dates using band ratio or feature index techniques

### CLASSIFICATION

Classify terrain automatically or with user-defined specifications

### THEMATIC CHANGE

Perform change detection between two classification results

### FEATURE EXTRACTION

Find objects of interest using parameters based on spatial, spectral, and textural characteristics

### RPC ORTHORECTIFICATION

Correct imagery to account for terrain and sensor distortion

### IMAGE REGISTRATION

Improve the georeferencing of an image by tying it to an accurate base map

### VIEWSHED ANALYSIS

Perform a line of site analysis

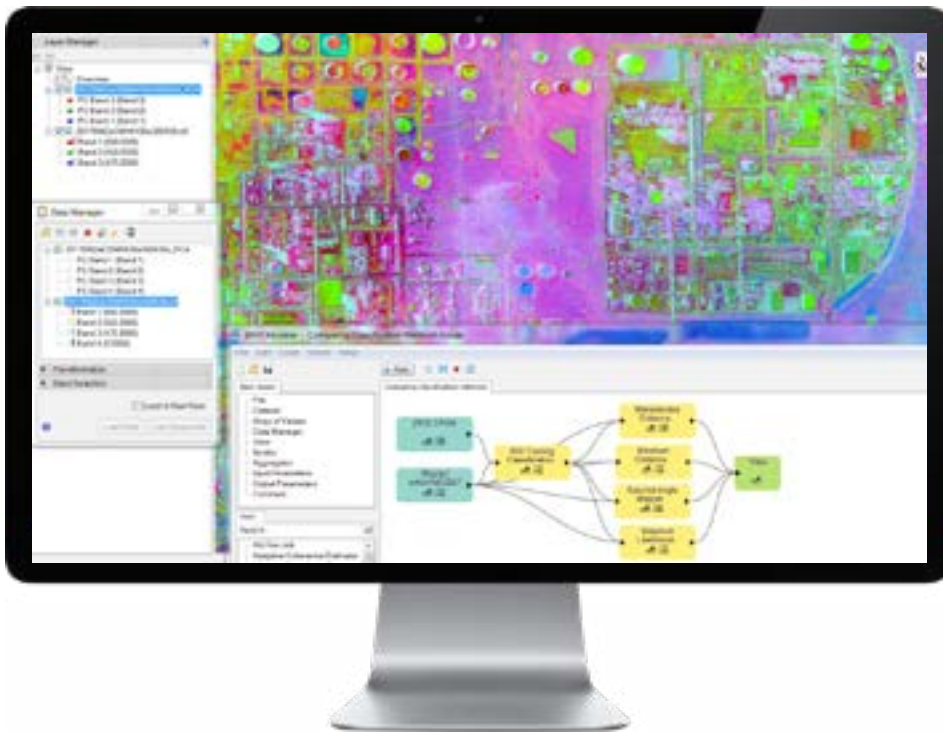
### MULTISPECTRAL

A set of automated workflows designed to take advantage of multispectral imagery

### HYPERSPECTRAL

A set of automated workflows designed to take advantage of hyperspectral imagery

# CUSTOMIZE ENVI TO MEET YOUR UNIQUE NEEDS



ENVI is written in IDL®, a powerful development language that provides the ability to extend or customize ENVI features and functionality to fit image analysis requirements and specific project needs. Through customization, it is possible to add image analysis capabilities to existing tools and models, combine multiple tools that include image analysis functionality, and create new custom image analysis tools based on desired outcomes. ENVI also provides the option to string together discrete pieces of analytic functionality and create custom workflows that can be enabled within a cloud environment.

Using ENVI Modeler, it is now easy to perform batch processing or effortlessly create custom image processing workflows without having to write a single line of code.

## ACCESS ENVI WHERE AND WHEN YOU NEED IT

### PROVEN FOR DESKTOP

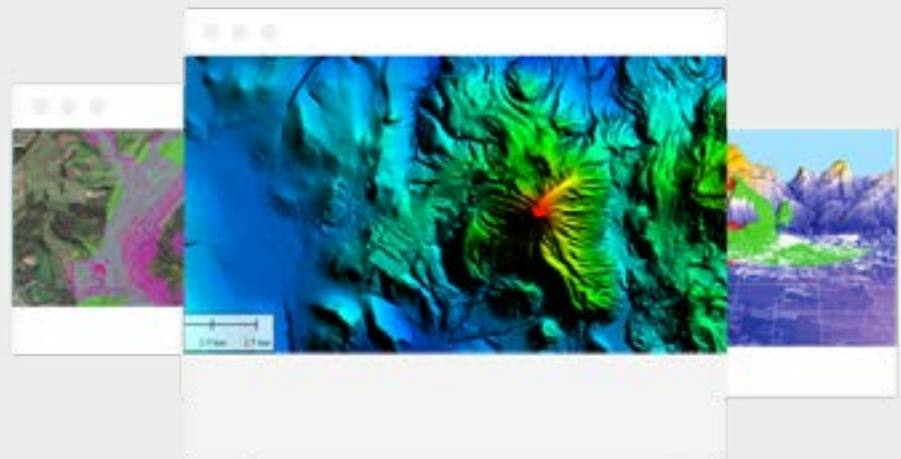
ENVI provides a complete suite of processing and analysis tools and workflows.

### ENVI FOR THE ENTERPRISE

Deploying ENVI image and data analytic capabilities within an enterprise environment takes advantage of existing investments in server and enterprise technology and enables the use of lightweight browser-based clients and applications to access ENVI analytics.

### ENVI IN THE CLOUD

Using a convenient subscription model, ENVI in the Cloud offers the full desktop experience of ENVI and IDL through a web browser.



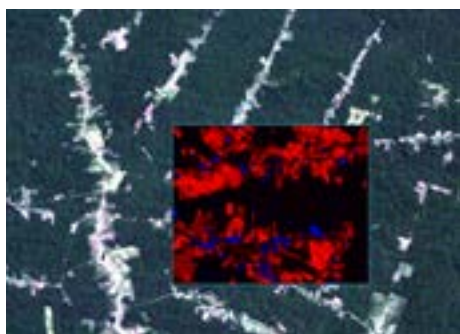
# INTEGRATION WITH GEOSPATIAL WORKFLOWS

ENVI seamlessly integrates with existing tools, offering you the ability to customize its features and functionality to fit your image analysis and geospatial workflow, update a GIS with valuable information from imagery and collaborate and share results with others.

ENVI's analytics can be accessed in the ArcGIS interface, making it easy to implement advanced processing techniques on the desktop or in the enterprise. Additionally, there are automated workflows exposed out of the box in ArcGIS that deliver expert-level results regardless of image analysis experience. Users also have access to fully integrated preconfigured templates for ArcMap or ArcGIS Pro that are ready to run out of the box, along with the ability to share results via ArcGIS Online.

## BENEFITS:

- > One solution that works with all your data types
- > A complete suite of processing and analysis tools and workflows
- > Customizable to meet your project needs



THIS IMAGE PREVIWS ENVI CHANGE DETECTION RESULTS. USING TWO LANDSAT IMAGES TAKEN AT DIFFERENT TIMES, ENVI AUTOMATICALLY IDENTIFIED DEFORESTED AREAS (IN RED). THE BLUE AREAS INDICATE NEW GROWTH OR PLANTING.



WHEN THE WORKFLOW IS COMPLETE, THE RESULTS ARE OUTPUT AS A VECTOR FILE, WHICH CAN BE USED IN BOTH ENVI AND ARCGIS FOR FURTHER ANALYSIS AND TO CREATE AN OUTPUT MAP.

With ENVI, it is easy to share maps, reports, presentations and other geospatial products in virtually any environment. Information extracted from imagery with ENVI can be saved directly to a local file, a geodatabase or to another server environment as image files, shape file, or Microsoft® PowerPoint® files.



The background of the entire page is a high-resolution aerial multispectral satellite image. The colors are non-natural, representing different spectral bands. There are prominent areas of red and orange, likely indicating vegetation or specific soil types, interspersed with large areas of blue and purple. The terrain appears to be a mix of open fields and some structured areas, possibly agricultural or industrial. A dark, semi-transparent rectangular box is positioned in the lower right quadrant of the image, containing white text.

## **ANALYTICS. INSIGHTS. ANSWERS YOU CAN TRUST.**

Using imagery as a source of scientific information was once reserved for those with extensive knowledge of remote sensing and image analysis methods. ENVI changed this paradigm by offering image processing and analysis tools that let you easily extract quantitative information from imagery without having to learn advanced image analysis techniques.

ENVI handles multiple data types such as multispectral, hyperspectral, and LiDAR, and can ingest data acquired by various sources such as satellites, small-sats, aerial or Unmanned Aerial Systems (UAS). And, you can rest assured that your results are reliable and accurate since the processing algorithms in ENVI have been tried, tested and scientifically proven over the years.



# FAST. FORWARD.

## STAY CONNECTED:

[www.L3HarrisGeospatial.com/ENVI](http://www.L3HarrisGeospatial.com/ENVI)

## CONTACT US:

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## TECHNICAL SUPPORT:

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— the perfect way to learn about  
the latest product developments  
right from your desk.

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## ENVI ANALYTICS

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