**L3HARRIS™**
FAST. FORWARD.

# ENVI® ANALYTICS ACROSS THE ARCGIS® PLATFORM

Since the launch of ENVI in 1991, the product's evolution has been exclusively focused on leveraging remotely sensed data to better understand the complex world around us. Today, L3Harris is firmly established as the industry leader in image science. With the ever-increasing availability of geospatial data, businesses and organizations turn to ENVI to make critical decisions.

GIS users rely on ENVI to extract timely, reliable, and accurate information from geospatial imagery because it is scientifically proven, easy to use and tightly integrated with Esri's ArcGIS platform. L3Harris and Esri have worked together for many years to provide solutions that enable GIS users to seamlessly access and analyze imagery to solve critical problems with confidence.
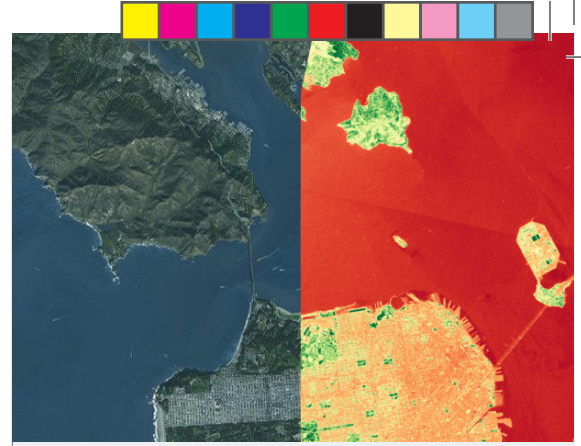
Highlights:

> Create maps and other geospatial products for more informed decisions

> Access prebuilt ENVI image analysis tools within the ArcToolbox™

> Easily add analysis capabilities to your GIS models and applications

> Deliver information to your workforce – online, and on demand
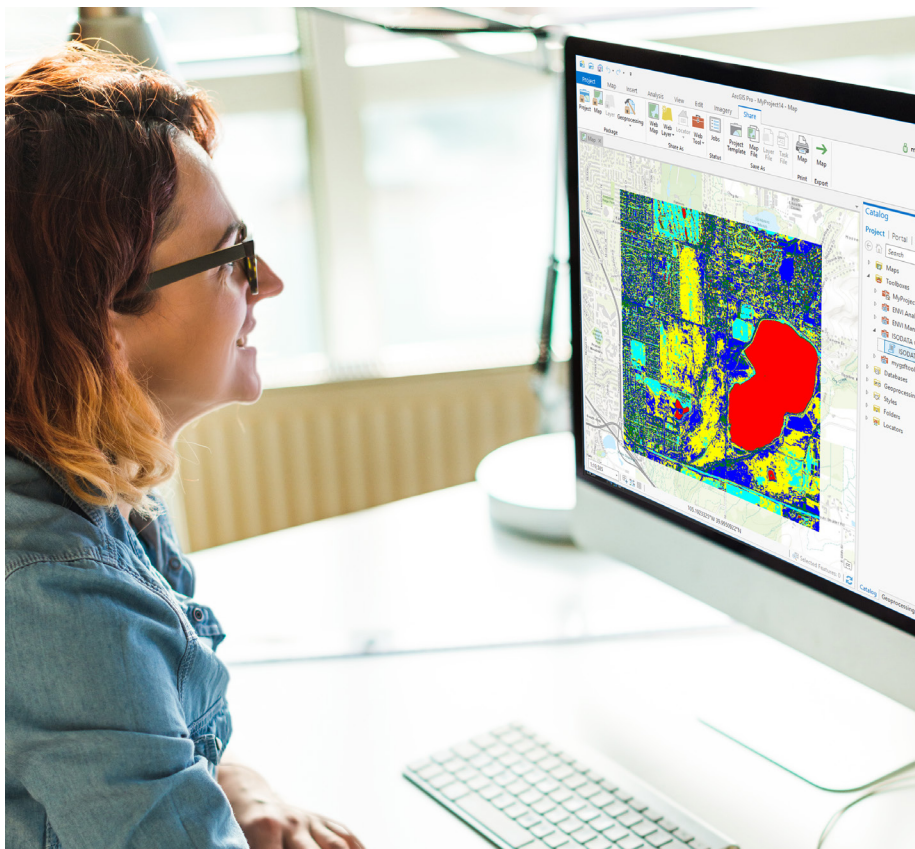

www.L3HarrisGeospatial.com

ENVI ANALYTICS – ANSWERS YOU CAN TRUST

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. L3Harris has been the leader in image science for decades, using patented, science-based algorithms in ENVI that 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 to 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 over and over in real-world scenarios by the world's most experienced image scientists, and now they are available to the entire Esri community through an exciting suite of new integration capabilities.
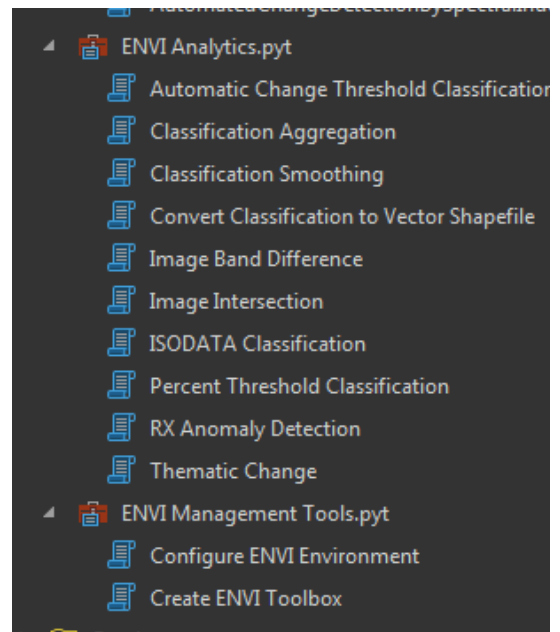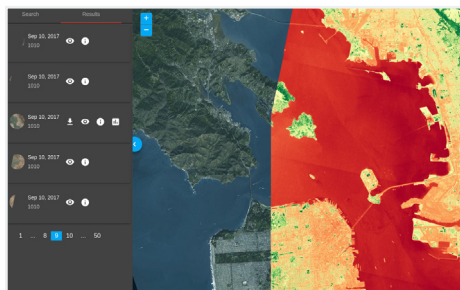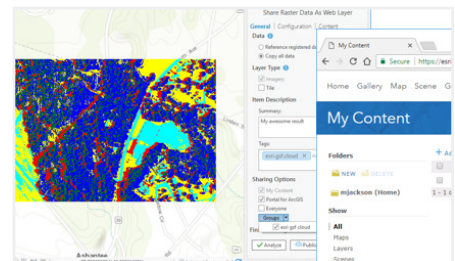

ENVI ANALYTICS ARE EASILY ACCESSED ACROSS THE ARCGIS PLATFORM
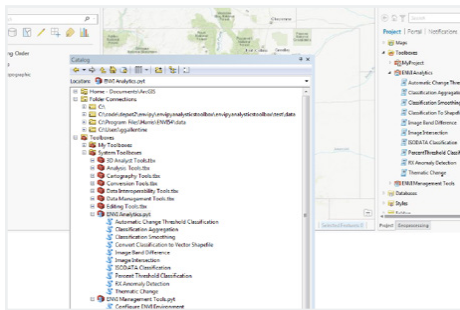
ARCGIS PRO:

ArcGIS users can easily integrate ENVI analytics as Geoprocessing Tools (GPTools) within ArcMap and ArcGIS Pro.

ARCGIS ENTERPRISE:

ENVI analytics can be published as Geoprocessing Services (GPServices) to ArcGIS Server.

ArcGIS Online:

Web user interfaces can be developed using the JavaScript API for ArcGIS to run ENVI analytics.

ENVI ANALYTICS IN THE ARCGIS PLATFORM

ENVI image analysis software is a standalone solution and it can also work within the ArcGIS environment of your choice. With the integration of ENVI's task-based analytics into ArcGIS, it is easy to implement all of the advanced ENVI processing techniques on the desktop or in the enterprise. Additionally, there are automated workflows exposed out of the box in ArcGIS making it easy to deliver expert-level results regardless of image analysis experience.

L3Harris has exposed ENVI tasks through a python client library, ENVIpy, which enables users to publish ENVI workflows as GPTools within any Esri environment. 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.

ENVI Modeler helps you perform batch processing and effortlessly create custom image processing workflows without writing a single line of code. These workflows can be published directly to ArcGIS Pro or Portal and then used across the enterprise.

For example, with imagery of the same location captured before and after an event (as shown below), it is possible to run a change detection between the two images using any one of ENVI's numerous spectral indices. This scenario demonstrates the power of ENVI Modeler to quickly develop an automated custom workflow which can be run in any Esri environment.
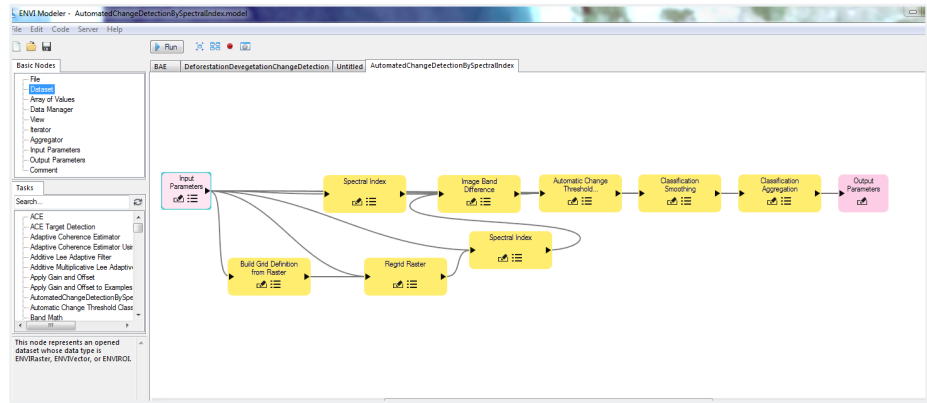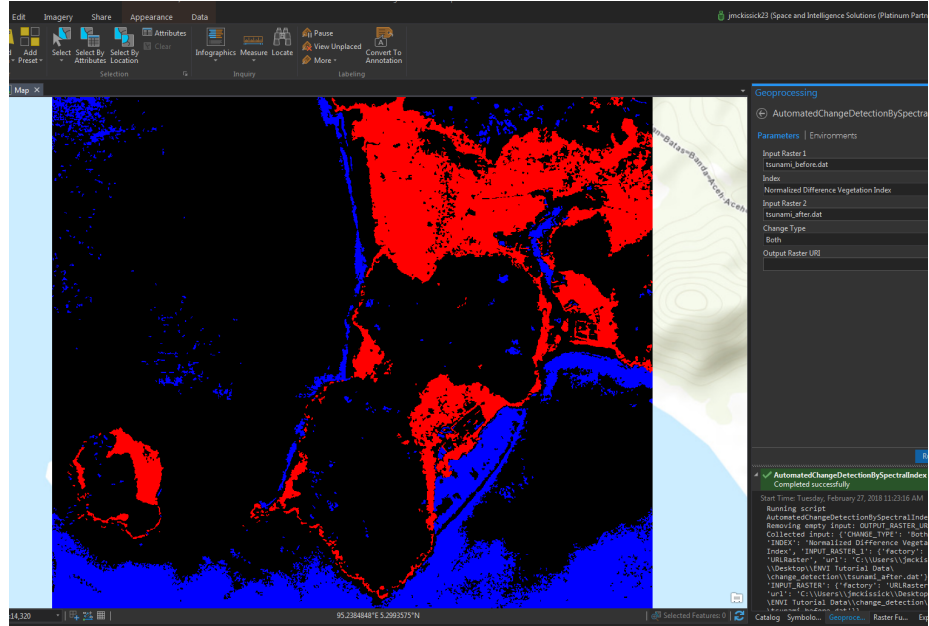

ABOVE:

This ENVI Modeler workflow shows a deforestation change detection between two images.

ABOVE:

These images, courtesy of DigitalGlobe, show an area before and after a tsunami.

ABOVE:

ENVI Modeler output: areas in black are "unchanged", blue areas indicate "new built up land" and red shows "dead/displaced land/vegetation".

Extend the ArcGIS platform with ENVI analytics

By extending ArcGIS Pro, ArcGIS Enterprise, or ArcGIS Online with ENVI analytics you can derive quantitative, actionable results from remotely sensed data, share them across your organization, and use the information to make better decisions, regardless of your experience. ENVI analytics – answers you can trust.

Accurately identify and quantify vegetation and landscape changes over time with ENVI analytics
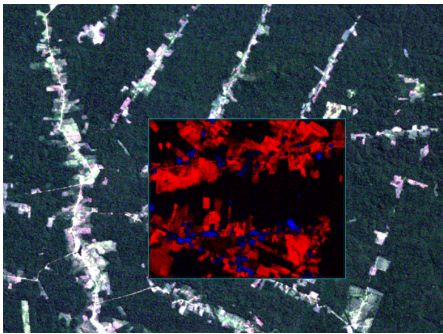
ENVI CHANGE DETECTION WORKFLOW:

Using two Landsat images taken at different times, ENVI automatically identified deforested ares in red. The blue areas indicate new growth/planting.
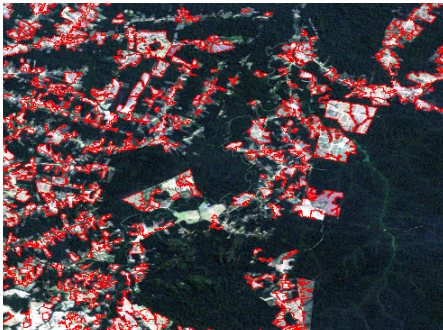
COMPLETED WORKFLOW:

The detected changed areas of deforestation are output as a vector file, which can be used in both ENVI and ArcGIS for further analysis and to create an output map.

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