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**ESRI India**

# Arc India News

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Interview

**Mr Jack Dangermond**

Technology Update

**ArcGIS 10**



## GeoDesign Engineering

# ENVI EX: A high performance Image Analysis Solution for Geospatial Analysts and GIS professionals

**E** NVI EX, a new, high performance image processing and analysis software solution designed for image analysts and geographic information systems (GIS) professionals. Developed in response to the growing convergence of mapping and image analysis applications, ENVI EX combines powerful image analysis tools and seamless integration with ESRI®'s leading GIS platform, ArcGIS®, to streamline image analysis workflows and allow users to easily extract important information from imagery. ENVI EX also distills complex image analysis tasks into easy-to-use workflows, while maintaining the scientific accuracy the ENVI product line is known for, making image analysis faster and easier for analysts of all skill levels.

## Seamless Integration with ArcGIS Delivers Improved Workflows

The seamless integration between ENVI EX and ArcGIS allows GIS users to easily exchange data and files from ArcGIS to ENVI EX with simple drag-and-drop methods that preserve the style, symbology, vectors, and layer information from one product to another. The displays of both products can be linked to allow the movement across the screen of one application to occur simultaneously in the other product. This integration allows users of both products to share data and files back and forth between the products to add imagery analysis results to the ArcGIS workflow and vector layers and information to image analysis in ENVI EX.

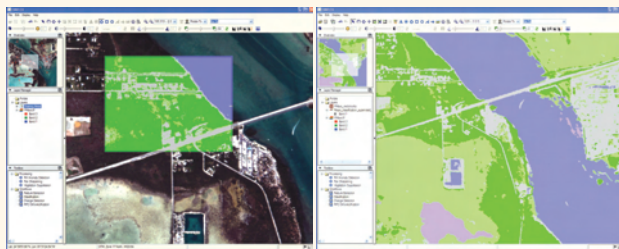
## Proven Image Processing and Analysis Engine and Tools

ENVI EX's intuitive interface provides users with easy-to-use tools for displaying, visualizing and manipulating imagery. Based on the popular ENVI dynamic display, ENVI EX lets you load large image files quickly and manipulate the images to focus on an area of interest. ENVI EX supports today's popular file formats for aerial and satellite imagery and data including multispectral, panchromatic, hyperspectral, infrared and more. The product's tools allow users to prepare imagery with pan sharpening, vegetation suppression and anomaly detection prior to further analysis. A special preview window also gives users the ability to preview analysis results for an area and adjust parameters before processing an entire image saving analysts hours of waiting to see analysis results.

## New, Automated Workflows Make Image Analysis Easy

The new, automated workflows in ENVI EX guide users step by step through analyzing satellite and airborne imagery from a wide range of sources. These workflows help solve problems that are common in GIS applications across a variety of industries by providing guided processes for:

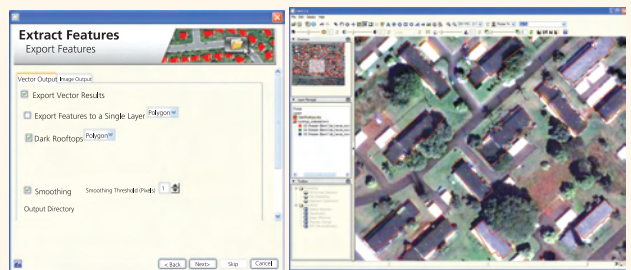
- Automatically extracting features of interest from a large geographic area,
- Detecting changes in a region over time,
- Classifying land cover,



- Tying an image to its geographic coordinates for accuracy in mapping and
- Finding anomalous features in an area.

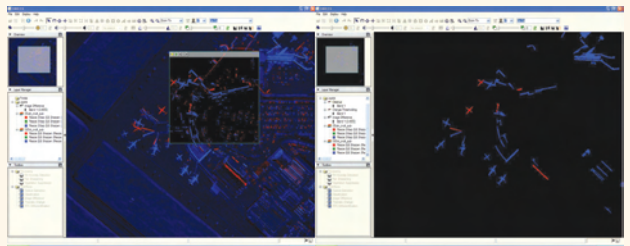
## Classification

The Classification Workflow provides supervised and unsupervised methods for grouping pixels in an image into categories in order to identify and extract material or land cover.



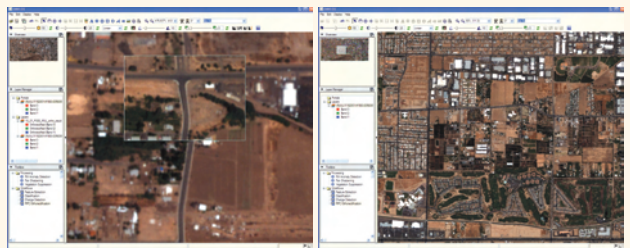
## Feature Extraction

The Feature Extraction Workflow provides an advanced approach to feature extraction that saves time and effort, while providing the accurate results you need. Feature Extraction results can be export as vectors, along with all of their computed attribute information, to use in your own analyses, such as an input into an ArcGIS Geoprocessing Model.



## Change Detection

The Change Detection Workflow compares images taken at different times or with different sensors and allows you to visualize change over time in an area of interest. The Change Detection results can be seen in the ENVI EX Portal window, overlaid on one of the original images.



## Orthorectification

The Orthorectification Workflow accurately registers imagery to a digital elevation map and geometrically corrects it to remove distortions that happen during image capture.

Using ENVI EX's automated workflows, analysts can get information quickly and easily from imagery regardless of imagery experience. Instructions and previews guide users through the process of changing parameters to optimize image analysis results. And, because the workflows are based

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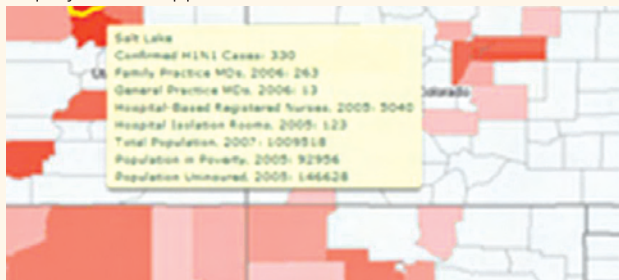
### ArcGIS Online Standard Task Services include

- World Geocoding—Address geocoding, reverse geocoding, limited batch geocoding, and place finding
- World Routing—Point-to-point and optimized routing

### ArcGIS Web Mapping APIs

Leverage ArcGIS Web Mapping APIs to build and deploy applications that include GIS functionality and Web services from ArcGIS Online and ArcGIS Server. Use ArcGIS APIs for Flex, JavaScript or Microsoft Silverlight to build rich, lightweight Internet applications that you can embed in Web pages or launch as stand-alone Web applications. Use Flex and Adobe Air or Windows Presentation Foundation (WPF) to build desktop applications.

Developers can access ArcGIS Web Mapping APIs at no cost. Deployment of applications is free under these scenarios.



*USA Swine Flu and Healthcare Resources (built with ArcGIS Web Mapping API for Flex).*

Get started quickly with ArcGIS Web Mapping APIs:

- ArcGIS API for Flex
- ArcGIS API for JavaScript
- ArcGIS API for Microsoft Silverlight/WPF

You have access to Getting Started Web help, API references, code galleries, sample map viewers, and configurable application templates.



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on the proven algorithms and methods that ENVI is known for, they deliver accurate results users can count on.

### Automatic Feature Extraction Speeds Analysis with Large Images

The new ENVI EX also includes all the capabilities of ITT's popular ENVI Feature Extraction Module. This object-based feature extraction workflow allows users to easily and accurately extract features of interest across an entire image

With ArcGIS Web Mapping APIs, you can access free, standard ArcGIS Online Map and Task Services, as well as premium, subscription-based services. ArcGIS Online Map Services include imagery, street, topographic, and other high-quality basemaps. ArcGIS Online Task Services include geocoding, routing, and demographic data analysis and reporting.

### What's New in ArcGIS Online

ArcGIS Online gives users quick and easy access to a set of foundation services for GIS projects and provides a platform to discover and share geographic information.

### Bing Maps now Seamlessly Integrated with ArcGIS

A new agreement between ESRI and Microsoft gives ArcGIS 9.3.1 users seamless access to Bing Maps. ArcGIS Desktop, ArcGIS Server, and ArcGIS Explorer users will be able to directly connect to Bing Maps to enhance their GIS projects.

### ArcGIS Desktop

- Free, limited annual allotment for users who are current on maintenance
- Annual subscription with unlimited transactions available for purchase

### ArcGIS Explorer

- Access to Bing Maps and ability to share transactions as part of an existing ArcGIS Desktop license installed on the same machine

### ArcGIS Server

- Built-in 90-day evaluation of Bing Maps, after which an annual, transaction-based subscription can be purchased

### New API

Business Analyst Online API

- Build custom Web applications that include
  - Drive-time, ring analysis, and reporting services
  - Demographic data reports
  - World Imagery, World Street Map, and World Geocoding services

### Discover and Share Geographic Information

With the new ArcGIS Online Sharing Web application, currently in public beta, users will be able to

- Search for maps published by ESRI, users, and other authoritative data providers.
- Upload maps and register online map services.
- Organize and control access to shared maps.
- Save Web maps as items for others to discover and use.
- Share layers that reference feature or raster data as a single layer package that comprises both the layer file and data.

or a batch of images. The automated feature extraction workflow of ENVI EX delivers four years of feature extraction development including an advanced, patent-pending algorithm; the ability to preview results before processing an entire image; accuracy assessments; and the ability to save parameters and generate a summary of statistics. New feature extraction enhancements released with ENVI EX include improved performance for larger images and new vector editing tools for rectangulating and smoothing vectors that identify features of interest.