



# IMAGINE EXPANSION PACK

Extend the Power of ERDAS IMAGINE®







# IMAGINE EXPANSION PACK

IMAGINE Expansion Pack is a collection of functionality to extend the utility of ERDAS IMAGINE. It includes 3D visualization and analysis, expanded support for NITF, stereo feature collection, automated image to image registration, advanced change detection, radar orthorectification, and DEM extraction from radar imagery.

## 3D VISUALIZATION

With simple drag-and-drop file selection, you can quickly and easily create realistic 3D environments. Go far beyond simple 3D renderings and basic fly-throughs by draping maps, aerial photography, satellite imagery, or analytical results onto an elevation layer derived from LiDAR, interferometry or photogrammetry. Continue to enhance the scene with annotation, GIS layers, symbols, billboards, intervisibility domes and 3D models. Add to the realism with sky, moving volume-based clouds, water layers, mist, and a sun flare with almanac-based location. Finally, create 1st and 3rd person animations with 3D flight paths with fine control of all aspects of the motion. Present your data in stereo, linked to your 2D view or in a movie with your logo, or simply navigate your scene in real-time with a joystick, mouse or digital dashboard.

Example applications for this tool include the following:

- Visualize how the surrounding views and community may be affected by a new landfill placement
- Determine the visual impact of logging on a tourist area
- Plan an incursion or extraction into a hostile environment
- Understand where you can see and be seen by modeling line of sight, generating threat domes from known direct firing positions, model the cover and concealment, extraction points, and more
- Use 3D visualization to help managers and lay people better understand a new wilderness park, the path of a new highway or pipeline, or where to place cameras to get the most coverage

## AUTOMATED IMAGE-TO-IMAGE REGISTRATION AND EDGE MATCHING

The ability to quickly and precisely register two images is critical in any pan-sharpening or change detection workflow.



The IMAGINE Expansion Pack provides a powerful 3D viewer with quick and easy realism effects, like sun glint, reflections, and weather conditions as well as intervisibility, animations, and more.

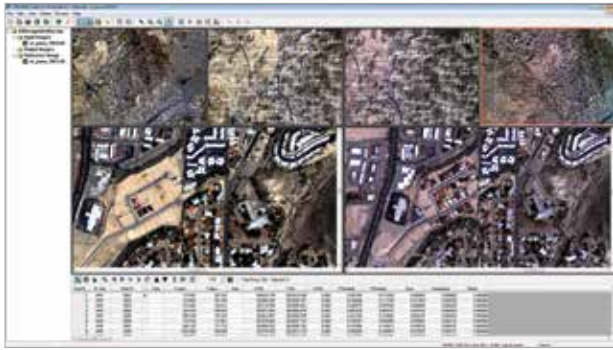
The IMAGINE Expansion Pack provides the ability to generate highly accurate geometric models from two or more images—even images of dissimilar type, such as data from different sensors or with different spatial resolutions. This tool can be used to improve the registration between already georeferenced data sets, or to correlate new raw imagery to an existing georeferenced base image. Automatically generate thousands of tie points to establish the relationship between output images and the initial reference image.

The Edge Matching workflow solves the problem of road alignment along the border of 2 images by applying a localized model to the overlapping region of image pairs. Using a process similar to image-to-image registration, it generates tie points in the region of overlap to pull misaligned features into alignment.

Choose between using the Workstation mode or have the friendly Wizards walk you through project setup. Check the residuals, automatically select and remove bad points, and then check the alignment with swipe and blend tools.



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The IMAGINE Expansion pack provides a tool for co-registering imagery for tasks such as change detection and pan sharpening.

## ADVANCED CHANGE DETECTION

Once your data is properly aligned, you can perform change detection with confidence. Synoptic views of the earth's surface at a variety of spatial and temporal scales provide dramatic evidence of the dynamic processes of interest to a wide variety of users. Detecting and analyzing the meaningful differences between multi date imagery is a complicated task that requires a broad assortment of image processing tools, and it can be overwhelming for even the most advanced users. The IMAGINE Expansion pack enhances the change detection capabilities in ERDAS IMAGINE by providing tools needed to simplify even the most complex change detection processes, allowing users to move rapidly from image to information to results.

Using project-based workflows, users can do the necessary preprocessing, change detection, change filtering and interpretation. Flexible and interactive tools enable the user to target specific kinds of changes that are of interest to them while ignoring seasonal differences, shadows, and even slight misalignments.

The IMAGINE Expansion Pack builds on the change detection workflows available in ERDAS IMAGINE and the co-registration step above by providing an adaptable suite of processing procedures to detect change in multi-date imagery. A specialized wizard and viewer specially designed for change detection allow the user to produce output in a variety of formats appropriate for integration into GIS and other databases.

Change detection plays an important role in the "feature lifecycle" because it enables you to quickly identify the location of new features. Critical information on storm damage can quickly be created and provided to first

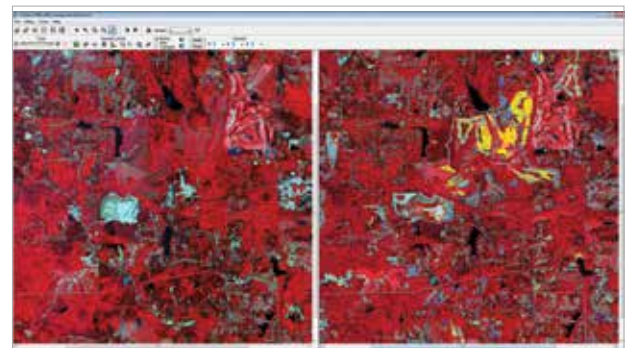
responders and defense analysts can easily focus their attention on activity.

The wizard helps the user determine the best combination of algorithms and filters to differentiate interesting change from background change while the interactive change viewer provides the user with fine-grained control of the results and all of the tools to analyze these significant changes.

## EXTENDED NITF SUPPORT

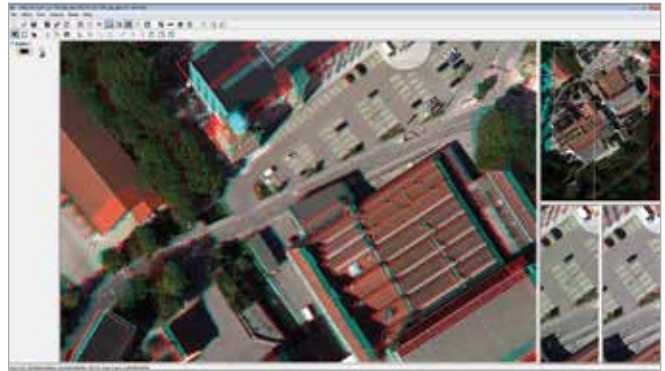
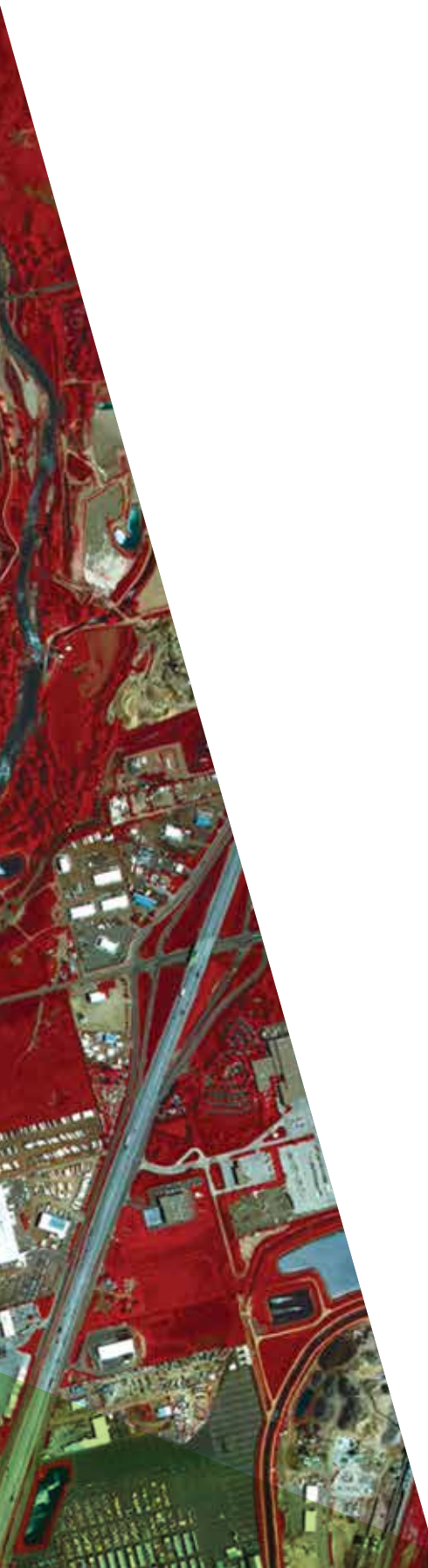
The National Imagery Transmission Format (NITF) is a data format that is the standard for digital imagery and imagery-related products for the United States intelligence community, International Standards Organization (ISO), American National Standards Institute (ISO/ANSI), and North Atlantic Treaty Organization (NATO). While ERDAS IMAGINE natively supports the use of NITF data, with the IMAGINE Expansion Pack you can import and export NITF version 2.1 imagery and map compositions (JITC level 7 and NATO's MIL STD 2500B/STANAG 4545 certified). As files in the NITF format may contain multiple images, annotation, and Shapefiles, the IMAGINE Expansion Pack allows you to import the entire file into a map composition to manipulate independent components, and then export to a NITF.

In addition, you can use the chipping feature to distribute a portion of an image containing the area of interest, rather than the entire image. When importing a NITF file into a map composition, you can update the components of the file independent of the image. When you export the file, it contains the original image with the updated annotation. We support image files up to 10 GB and file sizes up to 1 TB.



Find new developments using dedicated change detection tools.





Stereo data capture and visualization

## STEREO FEATURE COLLECTION IN ERDAS IMAGINE

Do you need to update your GIS database with 3D features or to simply visualize stereo imagery? The IMAGINE Expansion pack provides a practical tool for stereo feature collection and interpretation. Transform your 2D GIS into real-world perspectives by collecting 3D features directly from imagery. Textures can be automatically extracted from imagery and applied to the models. In addition, the Texel Mapper allows you to map real or stock facades onto buildings.

## ORTHORECTIFY AND EXTRACT TERRAIN FROM RADAR DATA

The IMAGINE Expansion Pack also includes tools to orthorectify and extract terrain from RADAR data. Users can perform precision georeferencing and orthorectification of SAR images using SAR sensor models, satellite orbit models, and digital elevation models (DEMs). The analyst has the option to ortho-calibrate the image, leaving it in original pixel space, or to resample and create a new ortho-corrected image. The resulting ortho-corrected images are highly accurate and free from the significant distortions inherent in radar imagery.

After ortho-calibration or ortho-resampling, the radar images can be used to map ground features. The ERDAS IMAGINE viewer uses sensor information to display radar images as “up is up” (shadow is down) for rapid image interpretation.

In addition users can extract terrain height information from stereo pairs of RADARSAT-1 and moderate resolution RADARSAT-2 to generate accurate DEMs. These DEM's can be exploited in a variety of workflows ranging from orthorectification to watershed analysis.



#### ABOUT HEXAGON GEOSPATIAL

Hexagon Geospatial helps you make sense of the dynamically changing world. Known globally as a maker of leading-edge technology, we enable our customers to easily transform their data into actionable information, shortening the lifecycle from the moment of change to action. Hexagon Geospatial provides the software products and platforms to a large variety of customers through direct sales, channel partners, and Hexagon businesses, including the underlying geospatial technology to drive Intergraph® Security, Government & Infrastructure (SG&I) industry solutions. Hexagon Geospatial is a division of Intergraph® Corporation. For more information, visit [www.hexagongeospatial.com](http://www.hexagongeospatial.com).

#### ABOUT IMAGEM

Simplified information helps us focus and solve complex issues. At Imagem we help improve communications and accelerate business by simplifying big data around us into personalised information. We provide intelligent, innovative and dynamic solutions that help people make smarter decisions. Our hybrid solutions on location-based information, spatial analytics and business intelligence help policy makers, managers and end users be more responsive to the ever changing world. Imagem is premium partner of Hexagon Geospatial, and distributor for the Netherlands, Belgium and Luxembourg. For more information visit [imagemnl.com](http://imagemnl.com).