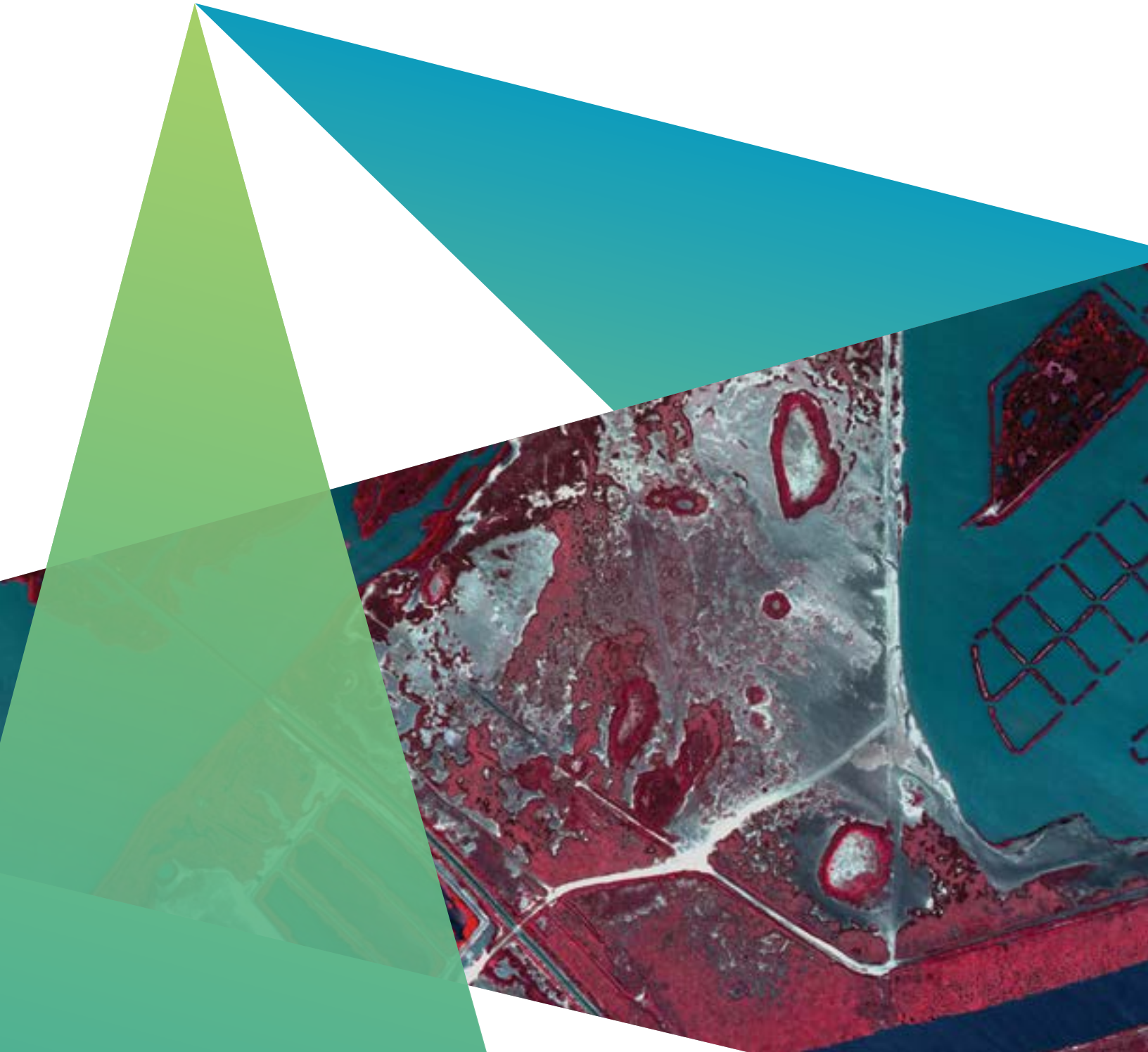
HEXAGON

Brochure

IMAGINE Expansion Pack

Extend the Power of ERDAS IMAGINE®



Support for 3D, NITF, DEM, Stereo, and Registration, All in One Package

IMAGINE Expansion Pack, a collection of functionalities to extend the utility of ERDAS IMAGINE, 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 realtime with a joystick, mouse, or digital dashboard.

Example applications 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

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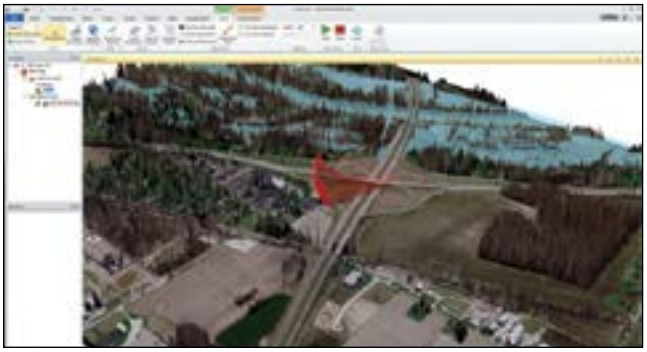


Quick and easy realism effects, like sun glint, reflections, and weather conditions as well as intervisibility, animations are a sampling of the powerful 3D viewer capabilities.

Automated Image-to-Image Registration and Edge Matching

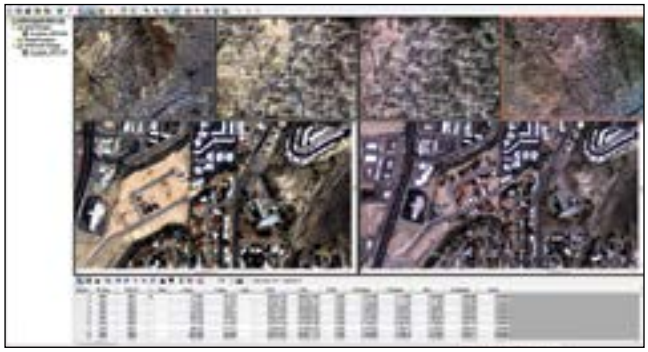
The ability to quickly and precisely register two images is critical in any pan-sharpening or change detection workflow.

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.

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 two 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.



Co-register 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 perform 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. Using a specialized wizard and viewer specially designed for change detection, you can produce output in a variety of formats appropriate for integration into GIS and other databases.

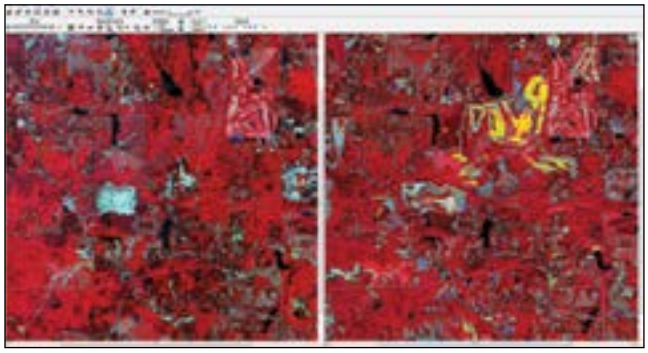
Change detection plays an important role in the "feature lifecycle" because it enables you to quickly identify the location of new features. Critical information on storm damage can quickly be created and provided to first responders and defense analysts can easily focus their attention on activity.

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.

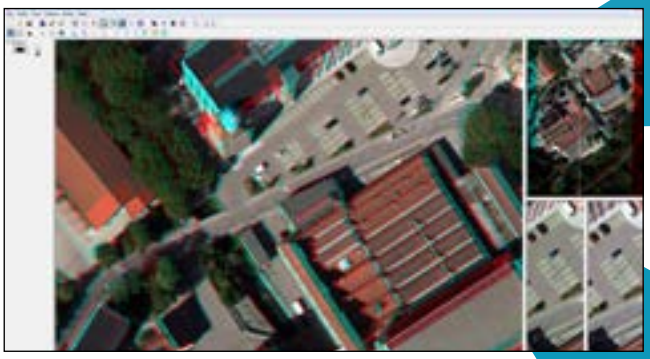
Extended NITF Support

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, with the IMAGINE Expansion Pack, you can 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 segments 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 façades onto buildings.

These capabilities can also be purchased as an independent module called Stereo Analyst for ERDAS IMAGINE.

Extract Terrain from Stereo Radar Data

The IMAGINE Expansion Pack also includes tools to extract terrain from radar data. Precision SAR sensor models, and satellite orbit models enable users to extract terrain height information from stereo pairs of RADARSAT-1 and RADARSAT-2 to generate accurate DEMs. These DEMs can be exploited in a variety of workflows ranging from orthorectification to watershed analysis.

Need more SAR capabilities, such as Interferometric DEM extraction and Coherence Change Detection? Check out the IMAGINE SAR Interferometry and IMAGINE SAR Feature modules, available separately.

HEXAGON

Hexagon is a global leader in digital reality solutions, combining sensor, software and autonomous technologies. We are putting data to work to boost efficiency, productivity, quality and safety across industrial, manufacturing, infrastructure, public sector, and mobility applications. Our technologies are shaping production and people-related ecosystems to become increasingly connected and autonomous – ensuring a scalable, sustainable future.

Hexagon's Safety, Infrastructure & Geospatial division improves the resilience and sustainability of the world's critical services and infrastructure. Our solutions turn complex data about people, places and assets into meaningful information and capabilities for better, faster decision-making in public safety, utilities, defense, transportation and government.

Hexagon (Nasdaq Stockholm: HEXA B) has approximately 21,000 employees in 50 countries and net sales of approximately 3.8bn EUR. Learn more at **hexagon.com** and follow us **@HexagonAB**.