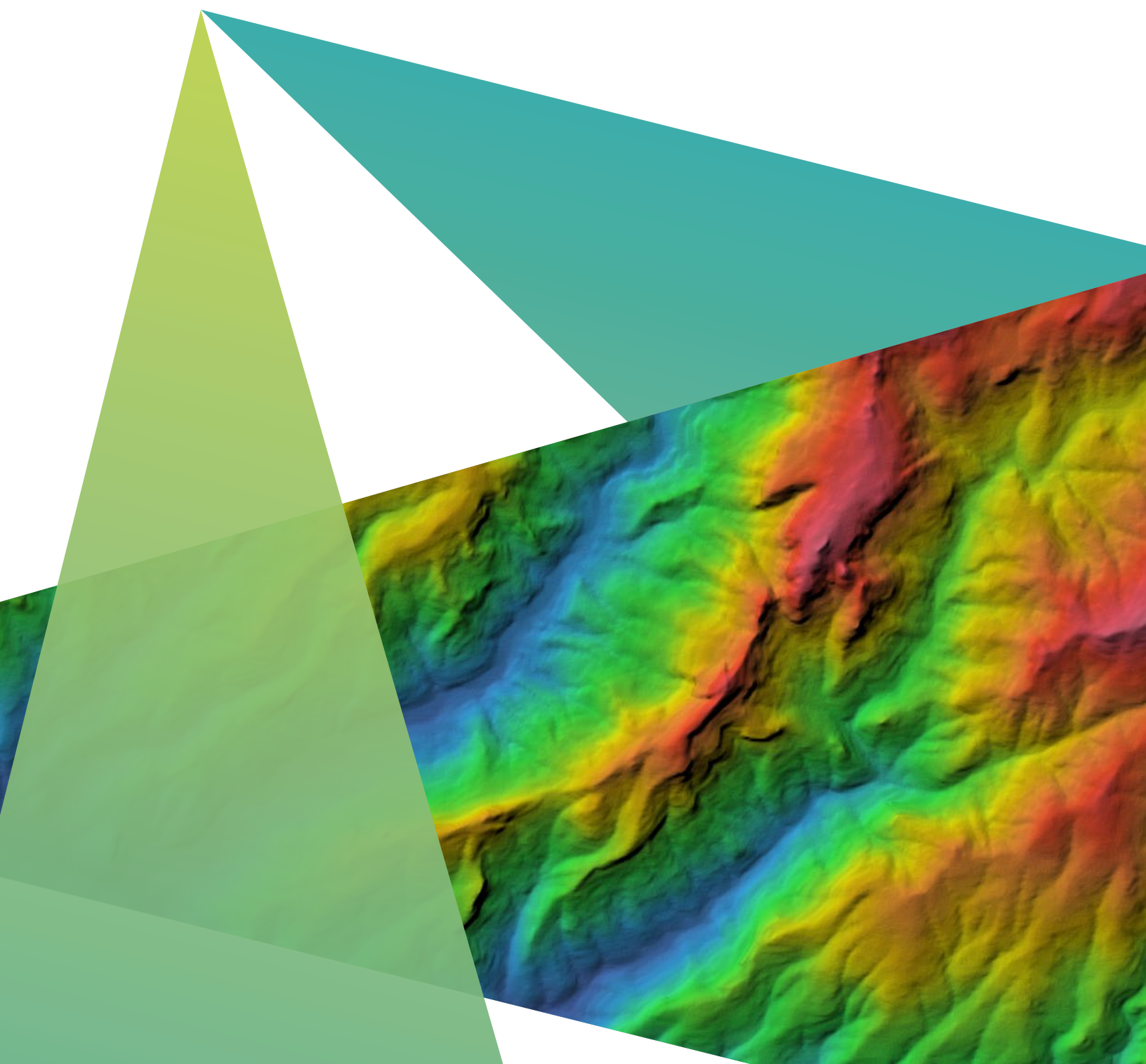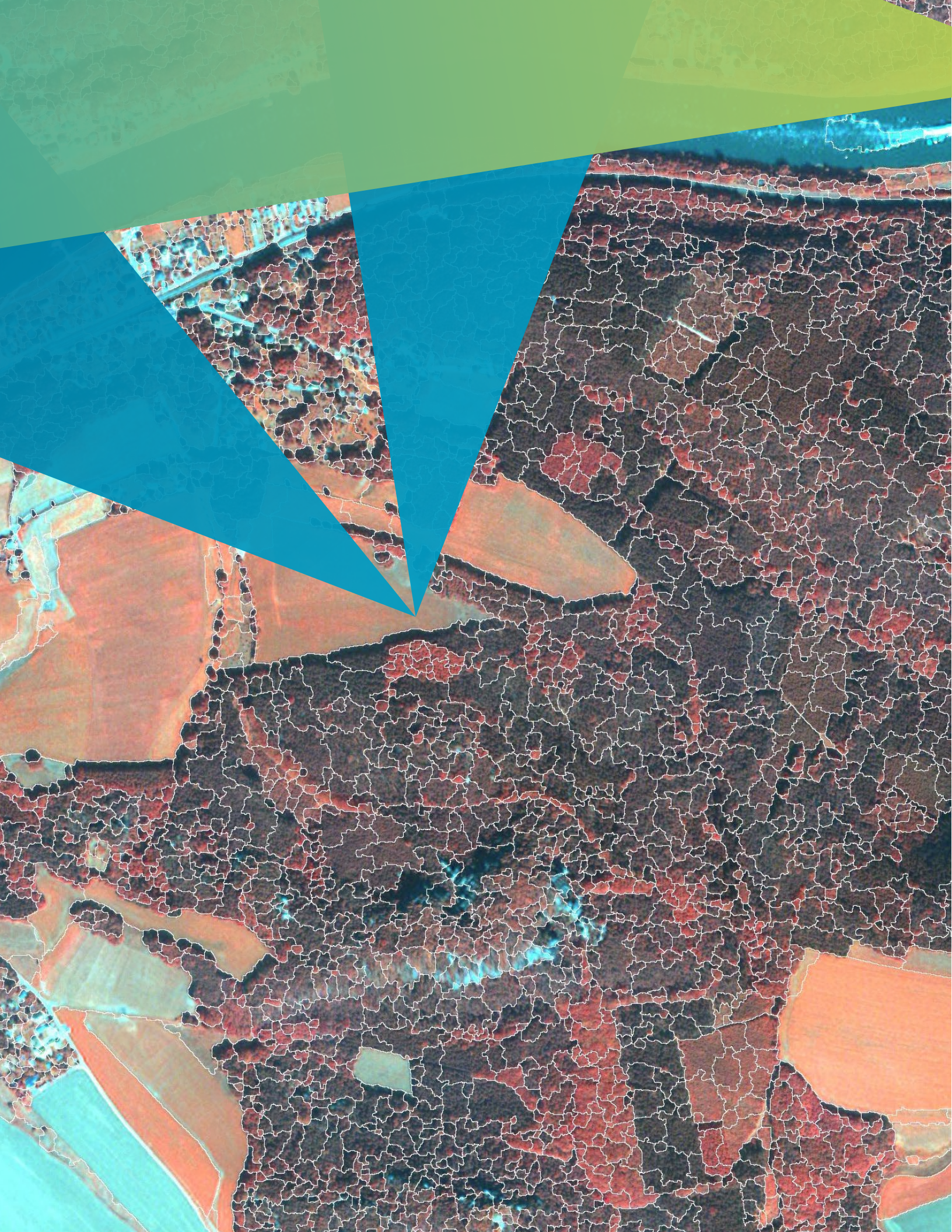# HEXAGON

ERDAS IMAGINE

The world's most widely used remote sensing software package

ERDAS IMAGINE

Geographic imaging professionals need to process vast amounts of geospatial data every day, often relying on software designed for other purposes and add-on applications that create almost as many problems as they solve. Is it possible to save both time and money, leverage existing data investments and improve your image analysis capabilities with just one software application? Yes, it is.
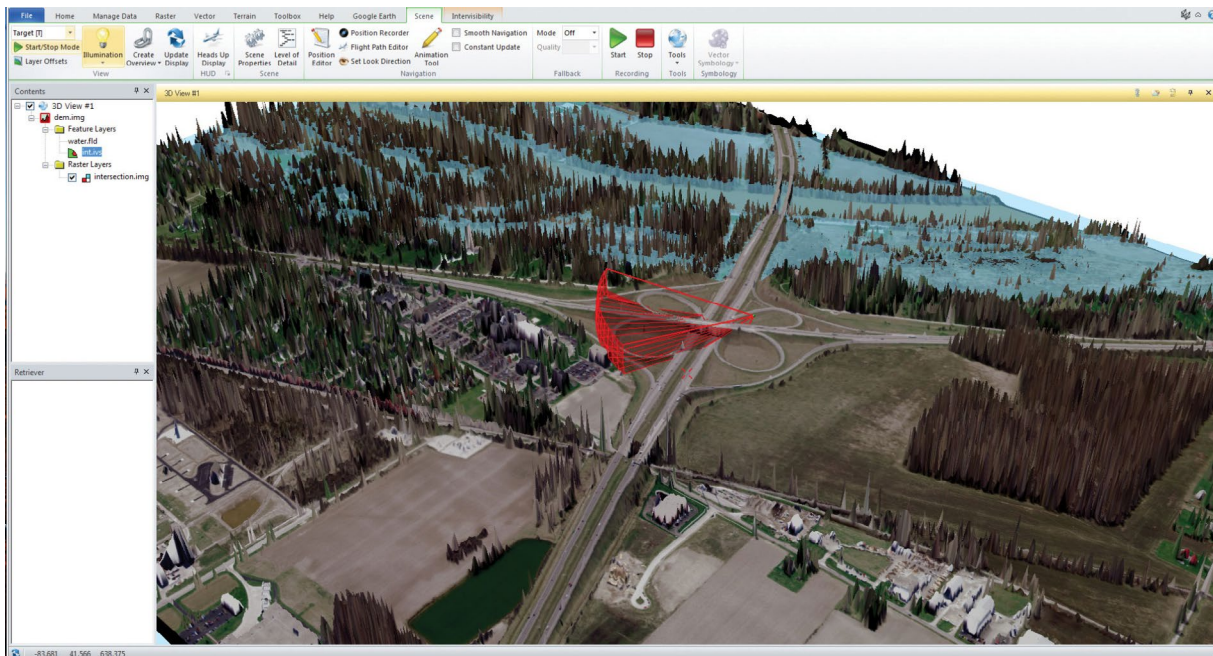
ERDAS IMAGINE provides 3D visualization of digital surface models, point clouds, raster and vector feature data.

ERDAS IMAGINE provides true value, consolidating remote sensing, photogrammetry, LiDAR analysis, basic vector analysis, radar processing and artificial intelligence (AI) into a single product. It offers many solutions in one, incorporating the following standards, enterprise capabilities and products:

- Image analysis, remote sensing and GIS
- Support for optical panchromatic, multispectral and hyperspectral imagery, radar and LiDAR data
- User-friendly, customizable ribbon interface
- 64-bit, multicore and distributed processing
- Spatial modeling with raster, vector and point cloud operators, as well as real-time results preview
- High-performance terrain preparation and mosaicking
- Variety of change detection tools
- Image classification and feature extraction using machine learning (ML) and deep learning (DL) tools
- Ability to convert more than 200 image formats into all major file formats, including GeoTIFF, NITF, CADRG, JPEG, JPEG 2000, GeoPackage, ECW and MrSID
- Comprehensive OGC web services, including Web Processing Service (WPS), Web Coverage Service (WCS), Web Mapping Service (WMS) and Catalog Services for the Web (CS-W)
- Easily move data between the different Hexagon remote sensing and GIS products
- Share spatial models between ERDAS IMAGINE and GeoMedia

Make the most of your geospatial data

Imagery and LiDAR are the primary sources of data for mapping and managing features or resources. Whether you are studying changes in urban growth, sensitive environments, mapping resources or assessing damage from natural disasters, a geospatial data archive enables you to reference and measure the amount of change that has taken place in a geographic area. Accurate and up-to-date data leads to quicker, more informed decisions.

ERDAS IMAGINE unites users from different departments within your organization, saving training time and increasing productivity. Your co-workers, business partners and clients can now work on a project and produce consistent results through a single intuitive interface. You can also customize ERDAS IMAGINE to simplify your workflows.

Versatile

For organizations with extensive collections of geospatial data, ERDAS IMAGINE supports enterprise-enabled geospatial image processing that utilizes a centralized relational database to store geospatial information. This provides enormous benefits to an institution, making data visible and accessible to end users through data management solutions such as ERDAS APOLLO. Existing and future investments in image and feature geospatial information are exploitable by the greatest number of decision-makers.

As users upgrade their hardware and operating systems, ERDAS IMAGINE takes advantage of these new technologies through threading, parallel processing and minimizing the number of times the pixel is touched on the hard disk. Batch tools in IMAGINE Advantage and IMAGINE Professional enable multicore and distributed processing jobs, allowing large projects to fully leverage system and network resources.

ERDAS IMAGINE provides more classification solutions than any other product on the market, including K-Means, ISODATA, object-based image segmentation and ML and DL AI algorithms such as semantic segmentation.

Seamless

How do you maximize your investment in geospatial data? ERDAS IMAGINE simplifies classification, orthorectification, mosaicking, reprojection and image interpretation while maintaining the integrity of the geospatial data you need for updating your GIS in multiple formats.

The intuitive ERDAS IMAGINE interface streamlines your workflow and saves time. Powerful algorithms and data processing functions work behind the scenes so you can concentrate on your analyses. The quick display and ability to work with multiple datasets in geographically linked viewers in ERDAS IMAGINE dramatically reduces the time you would otherwise spend trying to manually relate information from various sources.

A dedicated ribbon layout for ML and DL workflows also reduces the complexity of AI approaches to feature extraction from imagery. Collect training samples, enable the algorithms to learn from those samples and then extract information from new imagery, all in one interface.

Complete

ERDAS IMAGINE is easy-to-use, raster-based software designed specifically to extract information from images. Perfect for beginners and experts alike, easy-to-learn ERDAS IMAGINE enables you to process imagery like a seasoned professional, regardless of your experience in geographic imaging.

ERDAS IMAGINE is the most powerful package for derived information (data production), supporting multiple workflows, including:

- Data conversion
- Orthorectification
- Color balancing, mosaicking and compression
- Land-cover mapping and terrain categorization
- LiDAR editing and classification
- Map and report generation and printing through the map composer or Microsoft PowerPoint or Word
- Feature capture and update
- Spatial modeling and analysis
- Terrain creation, editing and analysis

One connected solution

ERDAS IMAGINE connects the entire geospatial Power Portfolio of products to comprise a seamless, complete solution to geo-enable your enterprise.

Flexible offering

Available in three product tiers, ERDAS IMAGINE is capable of handling any geospatial task. Simple enough for the most novice user to get started, yet powerful enough for those requiring robust accuracy, ERDAS IMAGINE is suited for any application or project your organization demands. All three tiers offer remarkably fast viewing and processing performance, even when handling massive datasets from any sensor in any format, dynamically.

| Product and interaction |
| --- |
| Share spatial models seamlessly between GeoMedia and ERDAS IMAGINE environments to maximize dissemination and adoption of domain expertise. |
| Enhance imagery in ERDAS IMAGINE before bringing it into GeoMedia. |
| Open or create your photogrammetry project directly in ERDAS IMAGINE with the IMAGINE Photogrammetry suite. |
| Raster backdrops using the ultra-fast ECW compression format may be directly consumed in ERDAS IMAGINE and IMAGINE Photogrammetry. |
| Import ImageStation projects into ERDAS IMAGINE or directly consume them in GeoMedia for ortho creation and mosaicking. |
| Enhance imagery in ERDAS IMAGINE before publishing to GeoMedia WebMap. |
| Unlock additional grid-based Operators in Spatial Modeler using your GeoMedia Advantage or Professional license. |
| Spatial models created in ERDAS IMAGINE can be published to ERDAS APOLLO and delivered over the internet as server-side geoprocesses (WPS) in M.App X. |
| Raster backdrops can be streamed, using the ultra-fast ECWP streaming protocol, by ERDAS APOLLO. |
| Raster backdrops authored in ERDAS IMAGINE can be directly consumed in GeoMedia Smart Client and Geospatial Portal. |

Flexible offering

Available in four product tiers, ERDAS IMAGINE is capable of handling any geospatial task.

| Functionality	IMAGNE Essentials	IMAGNE Advantage	IMAGNE Professional	IMAGINE Photogrammetry
Image, vector and LiDAR mapping and visualization tools that allow different types of geospatial data to be combined and quickly organized for projects.	●	●	●	●
Precise mapping with sensor model support and geospatial data processing functions such as mosaicking, radar analysis, change detection and image analysis.		●	●	●
Hyperspectral image analysis, advanced multispectral image and point cloud classification, artificial intelligence (AI) capabilities as well as advanced graphical spatial data modeling, which is a unique capability for analyzing spatial data.			●	
Block-based triangulation can be used to transform raw imagery into accurate and reliable ortho images, terrain models or point clouds with dozens of rigorous and RPC geometry models.				●
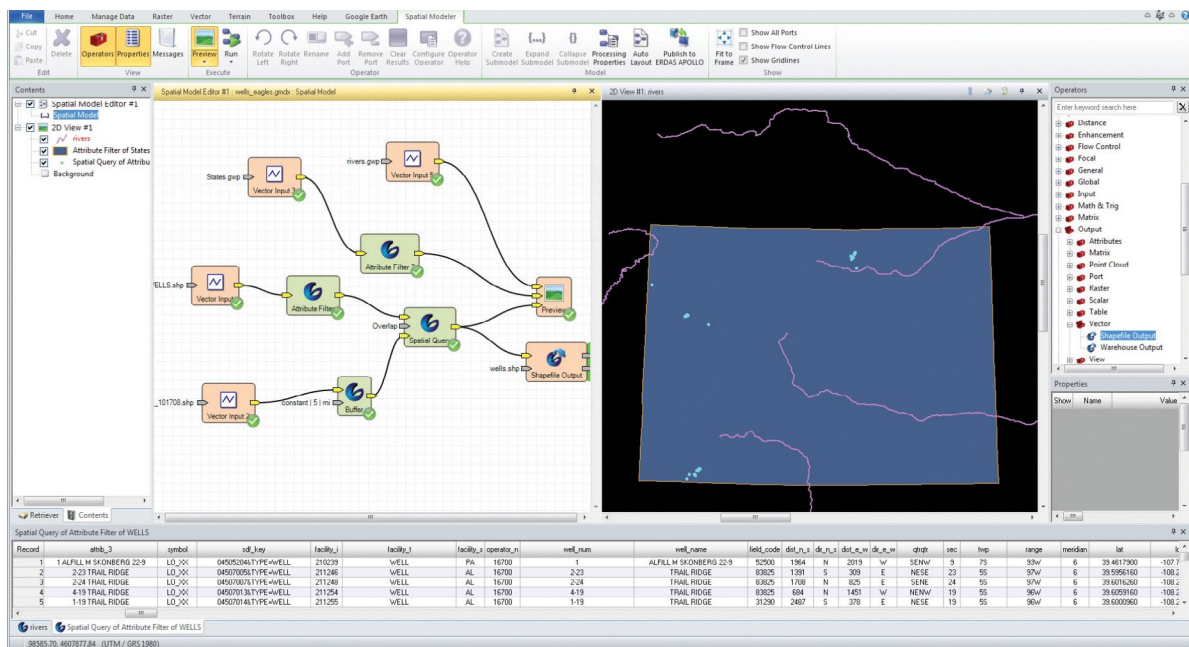
Spatial Modeler uses GeoMedia vector operators to perform analysis.

Selected functionality options

Functionality	Essentials	Advantage	Professional	Photogrammetry
Geographically connect files across viewers	●	●	●	●
SIPS Image Chain display	●	●	●	●
Compress into MrSID, ECW and JPEG 2000 formats	●	●	●	●
Use more than 200 different image and GIS data formats	●	●	●	●
Rapidly display and roam through imagery, vectors and LiDAR	●	●	●	●
Create and edit shapefiles	●	●	●	●
Create and print maps in more than 1000 different projected coordinate systems	●	●	●	●
Display and analyze Esri File Geodatabases	●	●	●	●
2D, 3D and profile viewing of point clouds	●	●	●	●
Virtual mosaic of imagery	●	●	●	●
Polynomial-rectify images	●	●	●	●
Batch processing	●	●	●	●
Parallel batch processing		●	●	●
Orthorectify images		●	●	●
Advanced image mosaicking into a single image or image tiles		●	●	●
RGB-encode, edit, filter, merge and split point cloud data		●	●	●
Terrain management (merge, split, thin, filter, interpolate, generate contour…)		●	●	●
Perform spatial, radiometric and spectral enhancement		●	●	●
Analyze radar images		●	●	●
Perform advanced multispectral image classification and point cloud classification			●	
Perform graphical spatial modeling			●	
Extract information from hyperspectral imagery			●	
ML and DL algorithms			●	
Photogrammetric project setup and management				●
Support various sensors (camera, RPC, rigorous)				●
Perform interior orientation				●
Stereo viewing capability				●
Automatic tie point generation				●
Measure ground and image points in mono, split or stereo viewing mode				●
Triangulation / refinement of EO positions				●

ERDAS IMAGINE add-ons

Add-on	Can be added on to			
	IMAGINE Essentials	IMAGINE Advantage	IMAGINE Professional	IMAGINE Photogrammetry
MrSID Desktop and Workstation Compress large amounts of imagery to the MrSID wavelet format.	●	●	●	●
IMAGINE Stereo Analyst Simple stereo viewing and 3D feature extraction.	●	●	●	●
IMAGINE Terrain Editor An extensive toolset to edit your terrain data draped directly over a stereo image pair.	●	●	●	●
ATCOR Workflow For IMAGINE Removes haze as well as atmospheric and topographic effects and generates true surface characteristics. The results are brilliant images and appropriate input data for multitemporal analysis.	●	●	●	●
ERDAS Engine Expand your processing power by distributing demanding, resource-intensive processes to more cores and workstations.	●	●	●	●
IMAGINE Expansion Pack Advanced tools for realistic 3D visualization, NITF support, radar DEM extraction, stereo feature collection, wizard-based change detection, and automated image to image registration.		●	●	●
IMAGINE SAR Interferometry Advanced radar interferometry that includes coherence change detection, time series change analysis, displacement mapping, and DEM extraction.		●	●	●
IMAGINE SAR Feature Extraction Extracts features and information from your radar images.		●	●	●
IMAGINE Objective Intuitive object based classification to identify and extract feature data from imagery.		●	●	●
ERDAS IMAGINE LiveLink for Google Earth Engine Adds access to the Google Earth Engine data and processing within the Spatial Modeler environment.			●	
Spatial Modeler SDK Spatial Modeler SDK is a C++ toolkit for building custom extensions for the Spatial Modeler environment. Either IMAGINE Professional or GeoMedia Professional is required.			●	
ORIMA Adds engineering-grade aerial triangulation capability for ADS and frame sensor imagery.				●
IMAGINE DSM Extractor Computer cluster-enabled automatic surface modeling from stereo imagery.				●
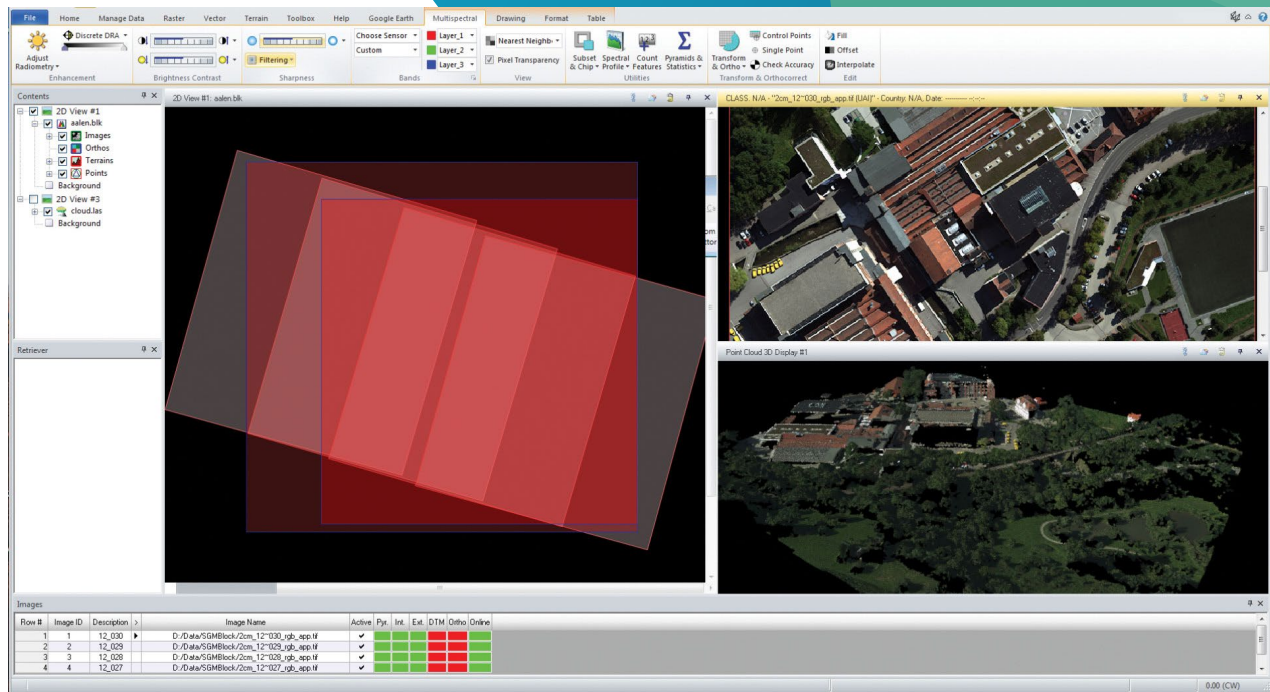
Access photogrammetry functionality directly in the ERDAS IMAGINE ribbon.

Discover the potential of your imagery

With a wide array of tools enabling data analysis from virtually any source and present in formats ranging from printed maps to 3D models, ERDAS IMAGINE offers you one comprehensive solution for all of your geographic imaging and image processing needs. It simplifies and streamlines your production workflow, saving you time, money and resources without sacrificing accuracy.

ERDAS IMAGINE fully enables the display, editing and analysis of point clouds derived from LiDAR or generated from point correlation of stereo pairs. It also allows direct reading of LAS-formatted points clouds, enabling 2D/3D profile viewing, symbolization, measurement, editing and classification.

Spatial Modeler provides flexibility to capture domain expertise and turn it into reusable algorithms that can be accessed from an increasing number of products. Spatial Model Editor is not just provided in ERDAS IMAGINE, but is also available in GeoMedia. Spatial models can be used to define geoprocessing services for use within M.App Enterprise and M.App X.

Increase your accuracy using the flexible and comprehensive toolset of the standard in imaging software — ERDAS IMAGINE, from the inventors of commercial remote-sensing software. An array of add-ons is also available to expand the core functionality of ERDAS IMAGINE, so you can tailor it to your organization's individual geospatial and business needs.

These advanced products include IMAGINE Photogrammetry, IMAGINE Expansion Pack, IMAGINE DSM Extractor, IMAGINE Terrain Editor and many others.

For more information about these add-ons, visit www.hexagon.com/products/erdas-imagine

HEXAGON

Hexagon is the 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. Learn more at hexagon.com and follow us @HexagonAB.