BROCHURE

Octave Imagine

The world's most widely used remote sensing software package

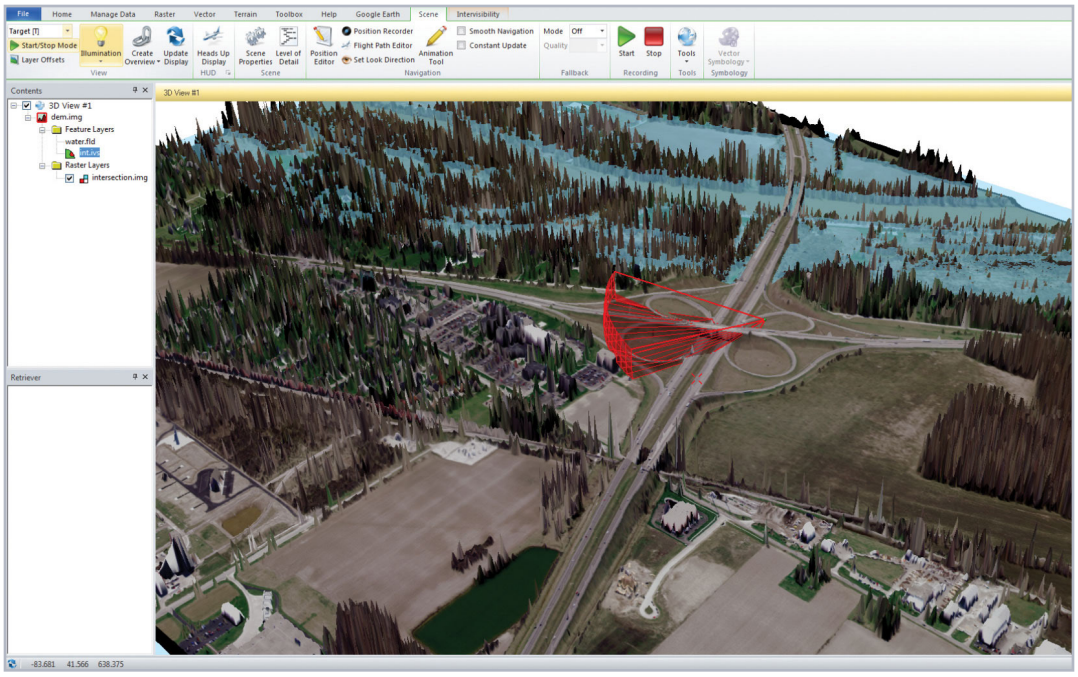
Octave Imagine

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.

Octave Imagine (formerly 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 Octave remote sensing and GIS products
- Share spatial models between Imagine and Octave GeoMedia (formerly GeoMedia)



Octave Imagine provides 3D visualization of digital surface models, point clouds, raster and vector feature data.

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.

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 Imagine to simplify your workflows.

Versatile

For organizations with extensive collections of geospatial data, 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 Octave Alto Data Management (formerly 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, 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 Octave Imagine Advantage (formerly IMAGINE Advantage) and Octave Imagine Professional (formerly IMAGINE Professional) enable multicore and distributed processing jobs, allowing large projects to fully leverage system and network resources.

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? 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 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 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

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

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

Imagine connects Octave's industry-leading suite of GIS, remote sensing, photogrammetry and geospatial data management solutions to comprise a seamless, complete solution to geo-enable your enterprise.

Flexible offering

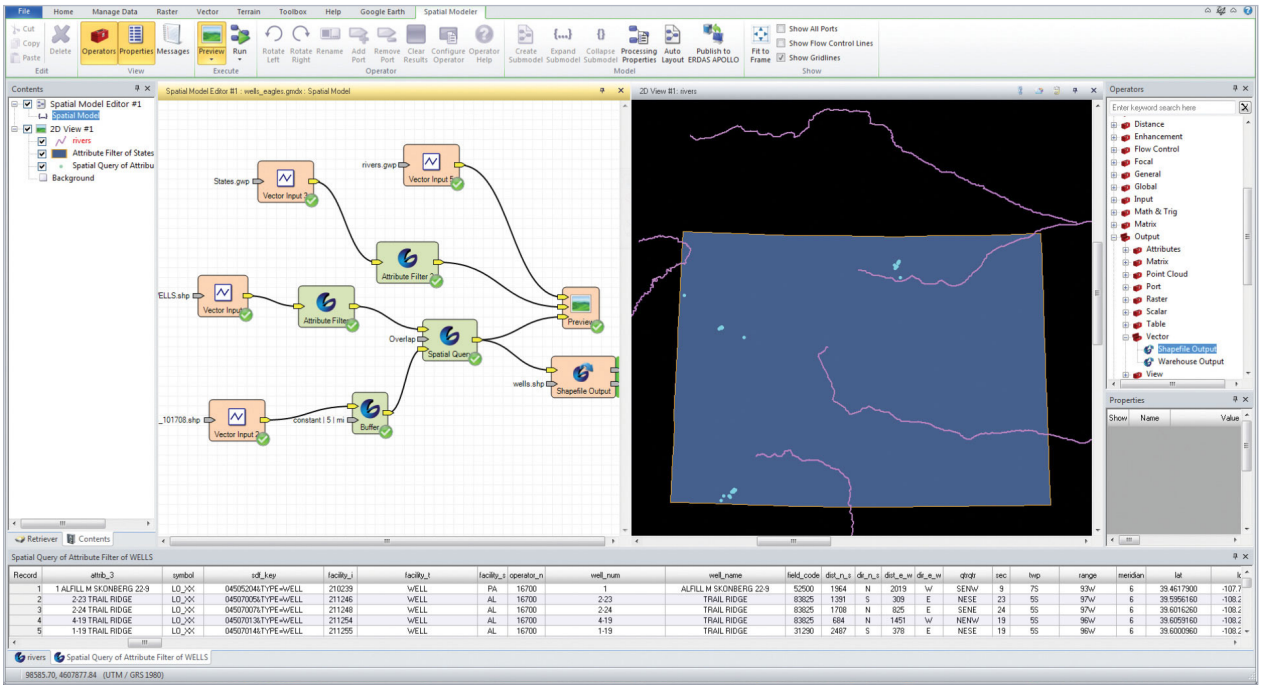
Available in four product tiers, Imagine is capable of handling any geospatial task. Simple enough for the most novice user to get started, yet powerful enough for those requiring robust accuracy, Imagine is suited for any application or project your organization demands. All four tiers offer remarkably 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 Imagine environments to maximize dissemination and adoption of domain expertise.
Enhance imagery in Imagine before bringing it into GeoMedia.
Open or create your photogrammetry project directly in Imagine with the Imagine Photogrammetry suite.
Raster backdrops using the ultra-fast ECW compression format may be directly consumed in Imagine and Imagine Photogrammetry.
Import ImageStation projects into Imagine or directly consume them in GeoMedia for ortho creation and mosaicking.
Enhance imagery in 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 Imagine can be published to Alto Data Management and delivered over the internet as server-side geoprocesses (WPS)
Raster backdrops can be streamed, using the ultra-fast ECWP streaming protocol, by Alto Data Management.
Raster backdrops authored in Imagine can be directly consumed in Octave GeoMedia Smart Client (formerly GeoMedia Smart Client) and Octave GeoMedia Geospatial Portal (formerly GeoMedia Geospatial Portal).

Flexible offering

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

Functionality	Imagine Essentials	Imagine Advantage	Imagine 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 and AI capabilities, as well as advanced graphical spatial data modeling, which is a unique capability for analyzing spatial data			•	
Block-based triangulation to transform raw imagery into accurate and reliable ortho images, terrain models or point clouds with dozens of rigorous and RPC geometry models				•



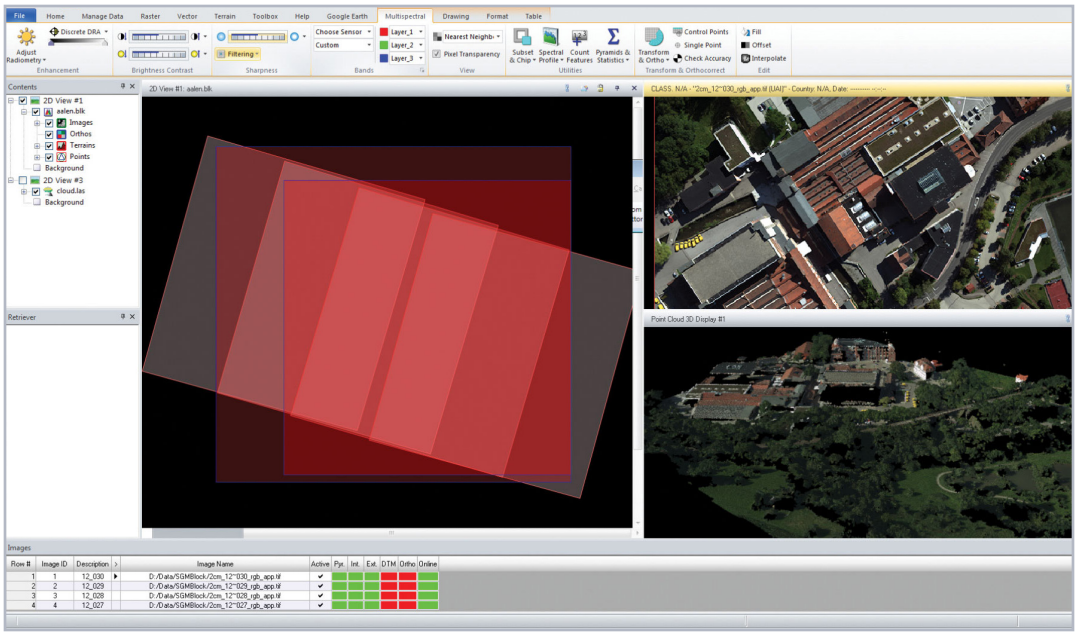
Spatial Modeler uses GeoMedia vector operators to perform analysis.

Selected functionality options

Functionality	Imagine Essentials	Imagine Advantage	Imagine Professional	Imagine 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 and other standard vector formats	•	•	•	•
Create and print maps in more than 1,000 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, etc.)		•	•	•
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				•

Imagine Add-ons

Add-on	Can be added on to			
	Imagine Essentials	Imagine Advantage	Imagine Professional	Imagine Photogrammetry
MrSID Desktop and Workstation Compresses 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, resulting in brilliant images and appropriate input data for multitemporal analysis	•	•	•	•
Imagine Engine Expands 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		•	•	•
Imagine Google Earth Extension Consumption Packs Adds access to the Google Earth Engine data and processing within the Spatial Modeler environment			•	
Spatial Modeler SDK C++ toolkit for building custom extensions for the Spatial Modeler environment			•	
Imagine DSM Extractor Computer cluster-enabled automatic surface modeling from stereo imagery				•



Access photogrammetry functionality directly in the 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, 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.

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 Imagine, but is also available in GeoMedia. Spatial models can be used to define geoprocessing services for use within Octave Alto Enterprise (formerly M.App Enterprise).

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

These advanced products include Octave Imagine Photogrammetry (formerly IMAGINE Photogrammetry), Octave Imagine Expansion Pack (formerly IMAGINE Expansion Pack), Octave Imagine DSM Extractor (formerly IMAGINE DSM Extractor), Octave Imagine Terrain Editor (formerly IMAGINE Terrain Editor) and many others.

About Octave

Octave is a leader in enterprise software, turning data into decisive action and intelligence into your edge. Our software solves for and simplifies complexity, from the design and build to operations and protection of people, property and assets – for any scope, at any scale. For decades, we've partnered with customers to sharpen performance, elevate efficiency and amplify results. From factory floors to entire cities, our solutions are tuned to scale up what's possible from day one onward.

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