PRODUCT BROCHURE

HEXAGON
GEOSPATIAL

IMAGINE PHOTOGRAMMETRY

A Complete Suite of Photogrammetric Production Tools

A NEW STANDARD IN PHOTOGRAMMETRY

How do you consolidate multiple photogrammetry projects into a single, fast, manageable workflow? Is it possible to reach new levels of production throughput without compromising the detail and accuracy your customers expect or the functionality you have grown accustomed to? How do you handle photogrammetric projects with a variety of different data types and formats?

Today, photogrammetry and production mapping experts are under pressure to produce more in less time, while maintaining a rigorous degree of accuracy. Hexagon Geospatial understands, and builds the tools to help you accomplish your goals on time, in scope, and to the desired accuracy.

IMAGINE Photogrammetry, a seamlessly integrated collection of software tools, enables you to transform raw imagery into reliable data layers required for all digital mapping, raster processing, GIS raster analysis, and 3D visualization needs.

IMAGINE Photogrammetry is offered within the PRODUCER SUITE of the Power Portfolio. The Producer Suite empowers you to collect, process, analyze and understand raw geospatial data, and ultimately deliver usable information. This includes Hexagon Geospatial's desktop-based GIS, remote sensing, and photogrammetry offerings.

A fully functional photogrammetry system packaged in a user-friendly environment, IMAGINE Photogrammetry provides results for everyone, from photogrammetry novices through advanced users. IMAGINE Photogrammetry does not cut corners on either features or accuracy. State-of-the-art photogrammetry technology, such as full analytical triangulation, digital terrain model generation, orthophoto production, mosaicking, and 3D feature extraction, has been included in the easy-to-use environment. By automating precision measurement and including flexible operations such as terrain editing and feature extraction, IMAGINE Photogrammetry increases productivity while ensuring high accuracy. IMAGINE Photogrammetry is the most flexible photogrammetry solution on the market, handling a variety of workflows including:

- Triangulation and orthomosaic production
- Broad area mapping
- Transportation planning
- Engineering and facilities mapping
- Defense applications
- Close-range applications

Tight integration with ERDAS IMAGINE® means that this is the ideal photogrammetric package for projects involving varied types of data and further processing and analysis of airborne and satellite imagery. The added power of IMAGINE Advantage® is included with every IMAGINE Photogrammetry license, enabling you to go beyond the standard photogrammetric outputs and deliver value-added products to your customers.

INCREASE YOUR PRODUCTIVITY

IMAGINE Photogrammetry maximizes efficiency without compromising quality and accuracy. Designed specifically for ease of use, it frees users from the steep learning curve often associated with photogrammetric software.

The clean, intuitive interface makes it easy to learn and easy to use. The workflow-driven toolbar guides the process, giving you everything you need to execute a photogrammetric project from beginning to end. Data interoperability is never an issue with the extensive variety of input and output formats that are dynamically supported, including data from other leading photogrammetric software.

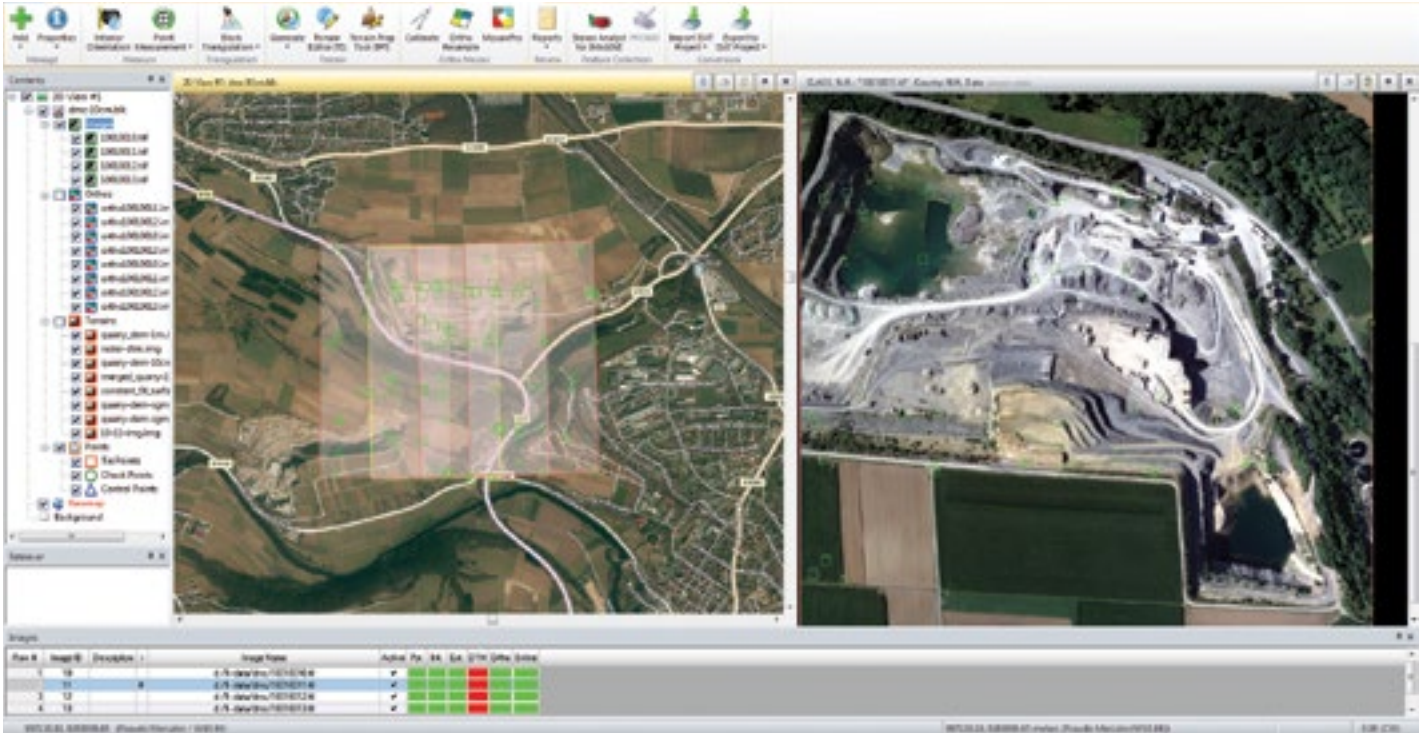
IMAGINE Photogrammetry helps you save time in other ways, too. A process-driven workflow that efficiently transforms imagery into reliable geospatial content is the key to increased productivity. From classic frame photography, large-format digital and pushbroom sensors, to practically any satellite sensor, IMAGINE Photogrammetry supports numerous workflows.

These workflows may be tailored to fit various requirements to generate a variety of products. Features such as automatic interior orientation, automatic tie point measurement, automatic terrain extraction, and intelligent multiple-port image loading let you focus on using your expertise to fine-tune the data by taking many of the repetitive tasks off your hands.

SUPERIOR TECHNOLOGY AT AN AFFORDABLE PRICE

Superior technology does not have to come with a higher price tag. As a pure photogrammetric solution, IMAGINE Photogrammetry is already affordable. But we also include IMAGINE Advantage in the package, providing the largest array of functionality for the price in the industry. Integrating IMAGINE Photogrammetry with the capabilities of ERDAS IMAGINE enables multiple workflows, including:

> Stereo Analyst for ERDAS IMAGINE is a Windows-based solution for the collection, interpretation, and visualization of 3D geographic information from imagery."



The user-friendly ribbon interface organizes your tools in an intuitive photogrammetry workflow suitable for power users and novices alike.

- Create, split, merge, thin, and filter variety of input terrain data formats including LAS, ASCII, and TINs with the Terrain Prep Tool
- Color balancing, mosaic, and compression
- Landcover mapping and terrain categorization
- Map composition, printing, and report generation
- Data conversion
- Feature capture and update
- Image processing and unsupervised classification
- Add-on modules for spatial modeling, hyperspectral processing, and supervised classification, radar processing, automatic feature extraction, automatic registration, 3D world construction, GeoPDF generation, and more

The modular design of IMAGINE Photogrammetry makes it scalable to accommodate a variety of photogrammetric processes. Add-on modules, productivity bundles, and customization let you tailor your system to your needs. With IMAGINE Photogrammetry, even technical assistance and training services are affordable. We know you depend on your system to be in top working order, so the experienced, knowledgeable professionals at Hexagon Geospatial stand ready to assist you with everything from instructor led training (as well as eTraining) and customized solutions to technical and on-site installation assistance.

STREAMLINED AND ACCURATE

We know how important accuracy is in the photogrammetry industry. Because of this, IMAGINE Photogrammetry uses state-of-the-art photogrammetric and image processing technology to fine-tune your data and report results.

IMAGINE Photogrammetry includes the ability to edit terrain and collect points in stereo, which saves time and increases accuracy. With the ability to have multiple stereo views open in a variety of viewing options—Stereo, Split Panel, Mono, and Tri-View—and the ability to operate in either fixed cursor or fixed image mode, IMAGINE Photogrammetry is flexible enough to let you be your most productive.

IMAGINE Photogrammetry is loaded with time-saving features like Drag-and-Drop images into the stereo views. Read a terrain model or use image matching to automatically place the cursor at the correct Z location, speeding up the collection process. Fast graphics rendering with on-the-fly resampling for subpixel cursor positioning and measurement mean that you can work quickly and accurately.

EXPAND YOUR CAPABILITIES WITH ADD-ON MODULES

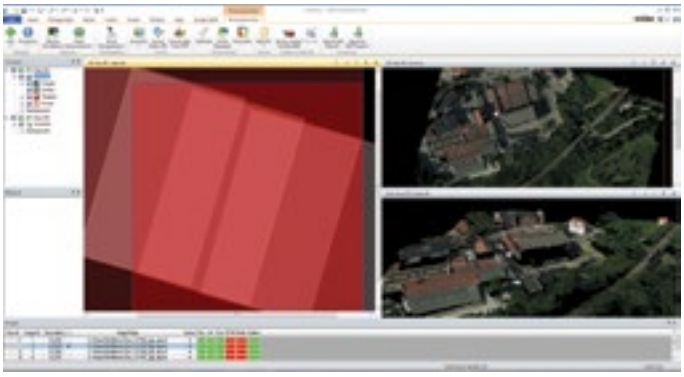
Intergraph offers an array of add-ons that expand the core functionality of IMAGINE Photogrammetry, making your photogrammetry investment more versatile and productive.

IMAGINE AUTO DTM

The IMAGINE Auto DTM add-on module has capabilities for fast, accurate automatic terrain extraction from multiple images using sophisticated techniques with built-in accuracy reporting. This can operate in three modes: Sparse Matching, Dense Matching, and Semi-Global Matching. Increase throughput efficiency by running in multicore processing mode on a single computer system using ERDAS IMAGINE's batch tool or with distributed processing across a network of computer systems using Condor.

Sparse matching,the fastest of the terrain extraction modes, allows you to automatically extract terrain from projects made up of aerial frame, Leica ADS, digital, video and non-metric cameras, as well as satellite sensors with stereo capability (SPOT, IKONOS, QuickBird, WorldView, GeoEye, etc.). Customizable DTM extraction strategy parameters allow you to match the strategy to the terrain you are creating, maximizing the accuracy of your DTM. Embedded quality assurance, quality control, and accuracy reporting tools enable you to quickly and easily assess the DTM for fine tuning of the parameters or pinpoint locations for terrain editing later. Create a wide variety of DTM formats, including ERDAS raster formats, LTF TINs, 3D shapefiles, TerraModel TINs, or ASCII files.

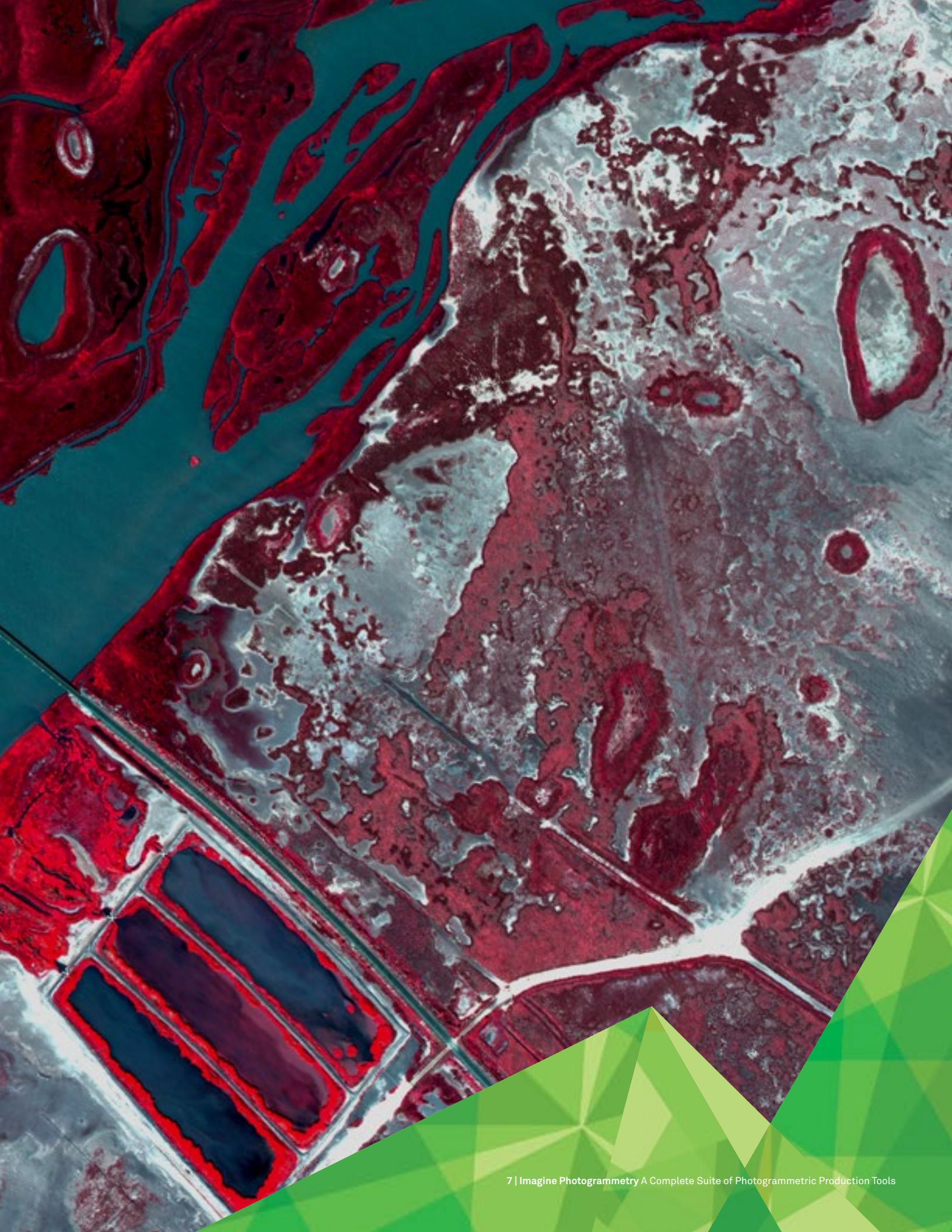
The pixel-by-pixel, multi-ray Dense Matching in IMAGINE Auto DTM can create highly accurate RGB-encoded point clouds directly from stereo imagery.

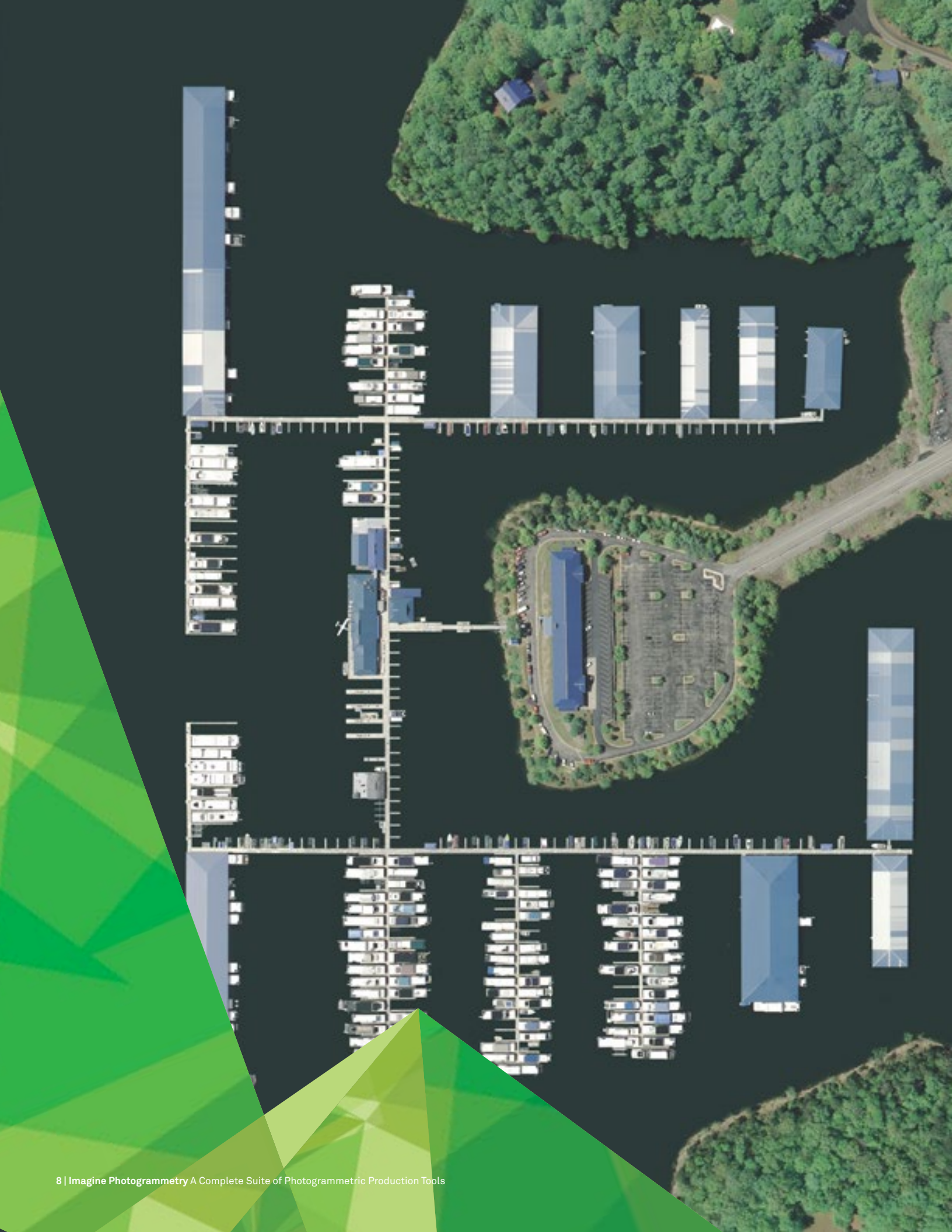


The very dense, very accurate RGB- or False-color-IR-encoded point clouds created with IMAGINE Auto DTM Semi-Global Matching have image-like quality and buildings with sharp, high-definition edges.

The Dense Matching option is the only enhanced terrain generation solution that offers dense pixel by pixel correlation for high-density output terrain products, complete with integrated point classification for filtering and bare earth generation. You have full control over project visualization and image rendering, including project graphics such as image footprints, areas of interest (AOIs), seed data boundaries, and processing element graphics. These dense, pixel-by-pixel surfaces have a high level of accuracy through the use of multi-ray matching to increase correlated terrain point reliability. Because they are so dense, you can utilize the thinning options to allow for a regularly spaced terrain output, or thin out redundant points on planar surfaces. Reduce processing time by simultaneously creating multiple output formats, including RGB-encoded LAS, TIN, and grid files. Create merged surfaces, use a bounding box to define an output subset, or use the advanced terrain splitting options to further customize your outputs. Every run provides an XML accuracy report containing processing statistics and quality-based graphics to validate the output quality.

With 2014, we are excited to offer Semi-Global Matching (SGM) to create very dense RGB encoded point cloud outputs. This method uses pixel correlation on stereo imagery from digital cameras like the Leica RCD30 and Z\I DMC along with UAV sensors. Using this Semi-Global Matching algorithm not only creates an accurate dense point cloud with high-definition hard edges on rooftops, but it also RGB or FCIR encodes the point cloud output combining for an image-like quality dataset. This automated extraction engine is quicker than the Dense Matching method, but only creates point clouds which can then be post-processed into raster or vector surfaces. The SGM method features a straight-forward, user-friendly interface to facilitate image pair selection, customize the processing strategy, and define your output options. dolore magna aliquam erat volutpat.





IMAGINE TERRAIN EDITOR (TE)

Once you have extracted the terrain, the IMAGINE Terrain Editor gives you the tools to make editing the output fast, easy, and accurate. Displaying the terrain graphics as dynamic contours, TINs, breaklines, and points superimposed on stereo imagery provides an excellent baseline for editing. Visualize the ground control points from your block file to provide even more quality control. Improve the accuracy of your terrain by importing shapefiles which define breaklines and geomorphic paths. Add, delete, or modify individual terrain points, or save time by utilizing the linear and polygon selection tools to modify large numbers of points at once. Rapidly smooth, thin, bias, set to constant, fit to surface, and interpolate selected areas in your data. To accelerate your editing, TE also supports customizable motion devices such as TopoMouse™ for precise interactive cursor control and point collection.

Stereo Analyst® for ERDAS IMAGINE

Stereo Analyst for ERDAS IMAGINE is a Windows-based solution for the collection, interpretation, and visualization of 3D geographic information from imagery. Stereo Analyst for ERDAS IMAGINE also serves as a feature capture environment when added to IMAGINE Photogrammetry. It provides support for collecting both planimetric and volumetric features with textures, in 3D. It also serves as an excellent QA/QC tool for your stereo imagery.

ORIMA

ORIMA, a modern, easy-to-use, high-end triangulation software processes large datasets of image coordinates, ground control points, and GPS/IMU coordinates. 0RIMA lets you perform production-focused aerial triangulation for analog, digital frame, and Leica Geosystems ADS40 and ADS80 imagery with outstanding intuitive graphical diagnostic tools, support for GPS/IMU corrections, self-calibration and boresighting.

DEFENSE PRODUCTIVITY MODULE (DPM) THE DEFENSE

Productivity Module extends the already large suite of sensors and formats provided in IMAGINE Photogrammetry with support for NTM data in TFRD and NITF formats, including AMSD metadata and provides additional defense-oriented capabilities.

INTEROPERABLE PHOTOGRAMMETRIC MODULES

PRO600 puts flexible, easy-to-learn Bentley Microstation-based tools in your hands for large-scale digital mapping using stereo imagery, including signs, symbols, colors, line thickness, user-defined line types and forms. PRO600 also includes terrain-oriented tools for projects that require both feature and terrain data. Based on the stereo viewing technology from the IMAGINE Photogrammetry platform, you can expect this seamless, accurate stereo environment embedded in PRO600.

Stereo Analyst® for ArcGIS®: IMAGINE Photogrammetry can be used to produce oriented imagery and terrain data for use in Stereo Analyst for ArcGIS®. You can collect features and attribute an X, Y, and Z position for each vertex. The software can also update existing feature datasets with 2D to 3D feature conversion tools. Tightly integrated with ArcGIS®, Stereo Analyst for ArcGIS enables stereo collection inside your GIS environment to which you are already accustomed.

ImageEqualizer® corrects variations and flaws in imagery due to hot spots, vignetting, atmospheric effects, and film processing in scanned aerial photography or unbalanced satellite images. Speed up your process with interactive previews of the balancing and dodging on single or multiple images.

POWER PORTFOLIO	PRODUCT & INTERACTION
PRODUCER SUITE	Open or create your Photogrammetry project directly in ERDAS IMAGINE with the IMAGINE Photogrammetry suite.
	Enhance Imagery in ERDAS IMAGINE before or after processing your images in IMAGINE Photogrammetry.
	Import 3rd party projects into IMAGINE Photogrammetry
	Extract DTM and Point Clouds using the IMAGINE Auto DTM Add-on modules.
	Perform any final edits using IMAGINE Terrain Editor in a stereo viewing environment.
	Extend the capabilities of your project into a Microstation environment using PRO600
PROVIDER SUITE	Orthorectified imagery created in IMAGINE Photogrammetry may be published to ERDAS APOLLO for managing and cataloging.
	Raster backdrops can be streamed, using the ultra-fast ECWP streaming protocol, by ERDAS APOLLO.

No need to digitize around domes when you use the pre-defined templates inside Feature Assist. Collect a cone feature in two clicks.

ABOUT POWER PORTFOLIO

The Power Portfolio from Hexagon Geospatial combines the best photogrammetry, remote sensing, GIS and cartography technologies available. Flowing seamlessly from the desktop to server-based solutions, these technologies specialize in data organization, automated geoprocessing, spatial data infrastructure, workflow optimization, web editing, and web mapping.

The Producer Suite enables you to intelligently author, analyze, process, and map multiple sources of data.

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. For more information, visit hexagongeospatial.com or contact us at marketing@hexagongeospatial.com.

Geospatial is part of Hexagon, a leading global provider of information technologies that drive productivity and quality across geospatial and industrial enterprise applications. Hexagon's solutions integrate sensors, software, domain knowledge and customer workflows into intelligent information ecosystems that deliver actionable information. They are used in a broad range of vital industries. Hexagon (Nasdaq Stockholm: HEXA B) has more than 16,000 employees in 46 countries and net sales of approximately 3.4bn USD. Learn more at hexagon.com and follow us @HexagonAB.

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