

Stereo Analyst[®] for ERDAS IMAGINE[®]

Stereo feature collection for the GIS professional







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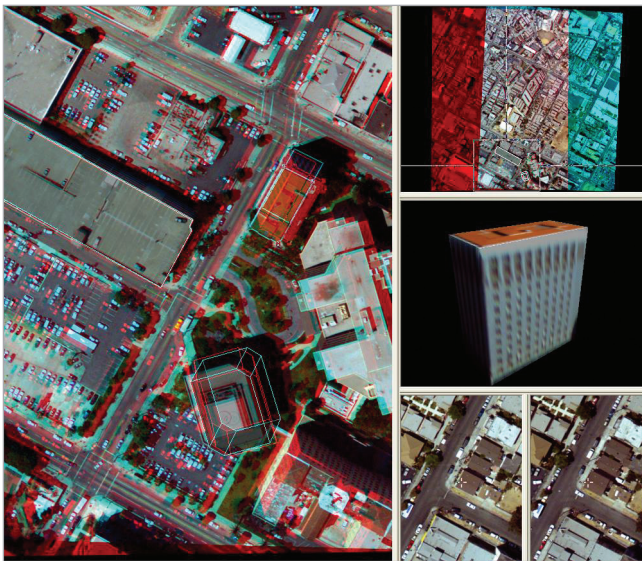
Has your GIS gone flat?

Hexagon takes three-dimensional geographic imaging to a new level with Stereo Analyst for ERDAS IMAGINE, a revolution in the collection, interpretation and visualisation of 3D geographic information. Stereo Analyst for ERDAS IMAGINE transforms your 2D GIS into real-world dimensions by collecting 3D geographic information directly from imagery.

When you collect data using stereo visualisation techniques, you ensure the creation and maintenance of accurate information in your GIS. If the data contained within your GIS is inaccurate or outdated, the analyses you perform on the data will not reflect true, real-world applications and scenarios. As a result, the decisions you base on this unreliable data may be incorrect.

Over the years, various approaches have been used to collect the vector data used as the fundamental building blocks of a GIS. These approaches have been widely accepted within the GIS community as the primary techniques used to prepare, collect and maintain GIS data. GIS professionals throughout the world, however, are beginning to face the following issues:

- The original sources of information used to collect GIS data are becoming obsolete and outdated, and there is no easy way to update this data.
- The accuracy of the source data used to collect GIS data is questionable, and it mostly provides only 2D results.
- The amount of time and money required to prepare and collect GIS data from existing sources of information is exorbitant.
- The cost of outsourcing core digital mapping and regular GIS data updates to specialty shops is expensive and time-intensive.



3D feature extraction and texturing in Stereo Analyst for ERDAS IMAGINE

Collect your GIS data in 3D

With Stereo Analyst for ERDAS IMAGINE, collecting your GIS data in 3D has never been easier. Stereo Analyst for ERDAS IMAGINE's sophisticated 3D data collection techniques enable you to:

- Accurately collect both 2D and 3D GIS data from a variety of image sources, without having to create a digital terrain model
- Minimise the time and cost associated with preparing, collecting and editing GIS data
- Transform existing 2D GIS vectors into 3D GIS data
- Automatically attribute spatial information to your GIS
- Immediately use 3D shapefiles in ERDAS IMAGINE and Esri products
- Verify the accuracy of GIS vector layers and digital stereo models

Who can benefit from Stereo Analyst for ERDAS IMAGINE?

Anyone who requires a map-accurate, real-world GIS can benefit from Stereo Analyst for ERDAS IMAGINE. This brochure highlights five specific industries where the GIS data collected in Stereo Analyst for ERDAS IMAGINE

Digital stereo models are a prime asset for monitoring the quality, quantity and geographic distribution of water.

can be used for spatial modeling, GIS analysis and 3D visualisation and simulation applications. How can Stereo Analyst for ERDAS IMAGINE save you time and money in your next project?

Forestry services

Timber companies, forestry consultants, etc. can use Stereo Analyst for ERDAS IMAGINE to:

- Determine the amount of marketable timber in a geographic area
- Determine the amount of timber lost due to fire, natural disaster and harvesting
- Investigate foreseeable harvesting problems in unsuitable topographic areas
- Plan and perform site selection analysis of forest access roads

For forest inventory applications, an interpreter delimits different tree stands from one another based on height, density, species composition and various modifiers, such as slope, type of topography, soil characteristics, etc. A digital stereo model enables users to identify and measure a forest stand as a 3D polygon, and to directly collect tree or stand height and tree crown diameter, as well as stand density and area. Appropriate feature codes can be directly placed and geo-referenced to the established polygons, then directly indexed to a GIS for analysis and modeling.

Water resource management professionals

Digital stereo models are a prime asset for monitoring the quality, quantity and geographic distribution of water. The 3D information collected from digital stereo models is used to provide descriptive and quantitative watershed information for a GIS. Topography controls the rate and direction in which water flows. As a result, various watershed characteristics can be derived from digital stereo models, including terrain type and extent, surficial geology, river or stream valley characteristics,

river channel extent, river bed topography, etc. Individual river channel reaches can be delineated in 3D, providing an accurate representation of a river. Using historical photography, 3D measurements of a river channel and bank can be repeated for each time period to estimate rates of bank erosion/deposition, identify channel change, describe channel evolution/disturbance, etc.

Local, state and federal governments

In order to formulate policies regarding social, economic and cultural activities, timely, accurate and cost-effective sources of GIS data are required.

High-resolution imagery provides the primary data source for obtaining up-to-date geographic information for local government applications. Existing GIS vector layers are commonly superimposed onto digital stereo models for immediate update and maintenance. Using digital stereo models, urban and rural land use/land cover information can be interpreted and collected as 3D vectors with feature attribution (i.e., vegetation types, land use and infrastructure information, etc.). 2D GIS vectors can be transformed to 3D vectors and then updated using recently acquired, high-resolution digital stereo models.

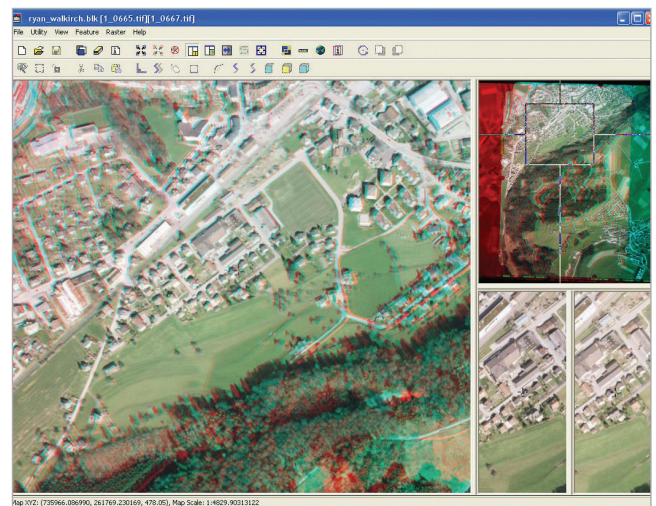
Stereo photogrammetry

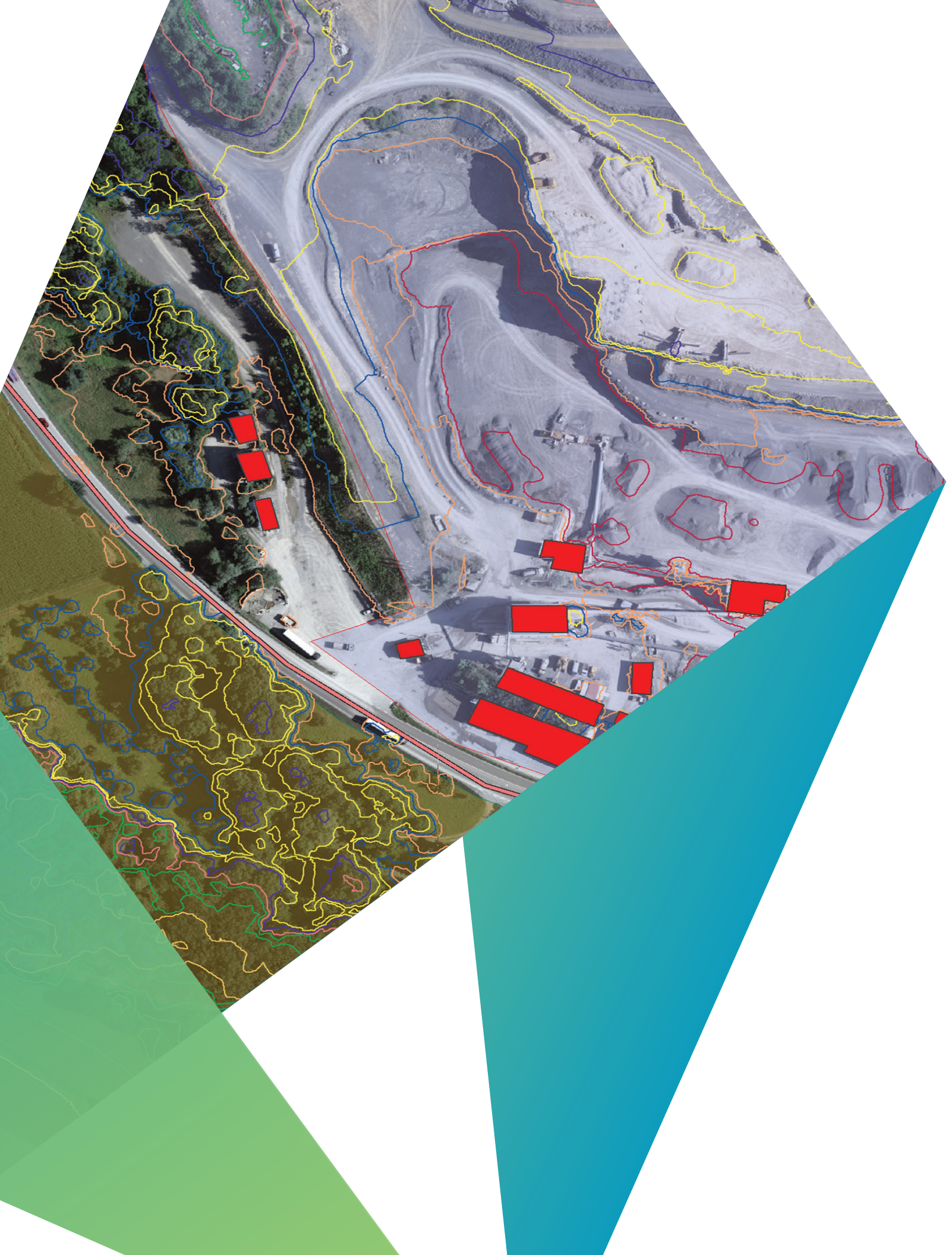
The following information can be collected as 3D GIS vectors and attributes for housing quality studies: house size and type, lot size, building density, street width and condition, driveway presence/absence, vegetation quality, proximity to other land use types, etc. Using accurate, high-resolution digital stereo models, Stereo

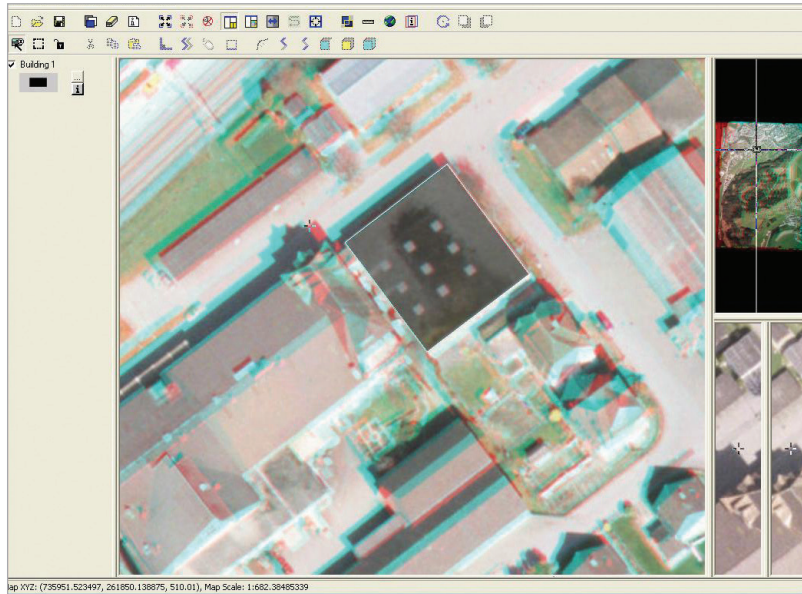
Analyst for ERDAS IMAGINE allows for the collection of building height, housing height and area information required for population estimation.

Site selection, zoning and land suitability studies can be conducted. Digital stereo models allow for the accurate interpretation and collection of soil type, slope, soil moisture and texture, surface roughness, etc. As a result, the suitability of a given development (i.e., highways, building foundations) can be determined.

For urban change detection studies, digital stereo models from various time periods are used to record and collect accurate 3D GIS vectors representing land use, land cover and infrastructure information.







Feature extraction in Stereo Analyst for ERDAS IMAGINE

Geospatial mapping agencies

Geospatial data providers and mapping agencies require accurate, cost-effective tools for validating the accuracy in aerial triangulation, digital stereo models and GIS data layers. Stereo Analyst for ERDAS IMAGINE can be used for quality assurance and quality control of photogrammetric data by verifying the accuracy of digital stereo models (derived from the results of aerial triangulation) and GIS vectors using check points in the 3D Position tool.

Existing vector datasets can be imported and updated/edited using recently acquired high-resolution imagery, and ground control point extension can be conducted for topographic mapping and planimetric planning of geographic features.

Save time and improve accuracy with Stereo Analyst for ERDAS IMAGINE

Stereo Analyst for ERDAS IMAGINE is today's choice for collecting accurate and timely 3D GIS data from your imagery. Whether you have spent time tediously collecting information for your GIS in the past, or you have outsourced the work to a photogrammetry service bureau, you can now complete your data collection and updates in-house — quickly and easily.

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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 Geospatial division creates solutions that deliver a 5D smart digital reality with insight into what was, what is, what could be, what should be, and ultimately, what will be.

Learn more about Hexagon (Nasdaq Stockholm: HEXA B) at [hexagon.com](https://www.hexagon.com) and follow us @HexagonAB.