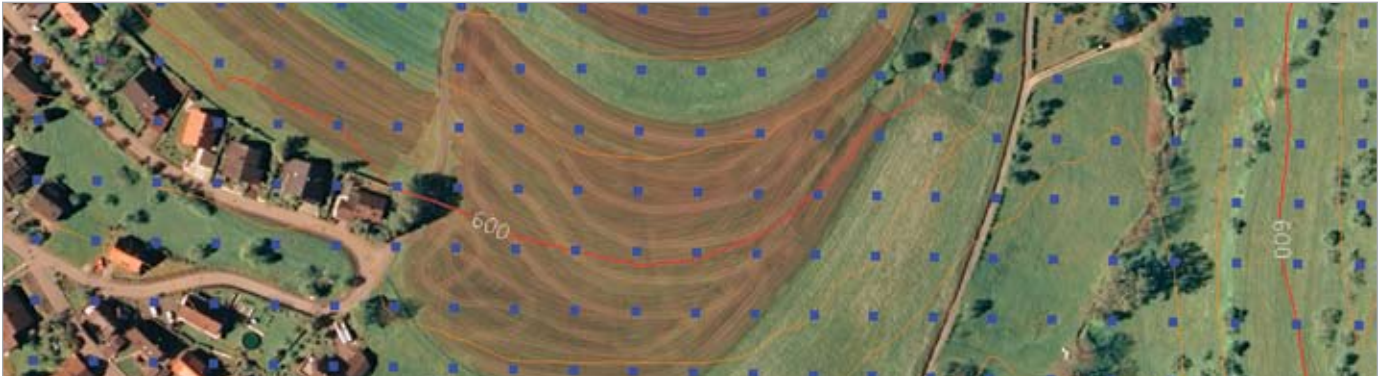


## ImageStation® Automatic Elevations



ImageStation® Automatic Elevations (ISAE) automatically extracts digital terrain model (DTM) elevation points from digital aerial and satellite stereo images. The software's hierarchical image data structures and image processing methods provide a high degree of automation and accuracy. ISAE yields extremely reliable DTM points in an efficient manner due to high redundancy. The software also reduces collection time by defining collection areas and skipping excluded areas. ISAE offers a robust set of features that helps increase your overall productivity. ISAE operates on any workstation running Microsoft® Windows 2000 and XP, turning your PC into a low-cost DTM workstation.

### WHY DEPEND ON ISAE AS AN INTEGRAL PART OF YOUR PRODUCTION WORKFLOW?

ISAE produces higher quality DTMs by combining robust digital image matching algorithms, automatic blunder detection, and a robust least squares using finite element interpolation. The software can extract DTMs from digital stereo images that could be the result of scanning aerial photography or the result of images directly acquired in digital form by a digital aerial or satellite sensor.

ISAE is fully integrated with ImagePipe, Intergraph's image processing and display foundation software. Using ISAE and ImagePipe, you can collect DTMs from raw non-epipolar stereo pairs as well as epipolar-resampled imagery from aerial photography or satellite sensors, such as IKONOS, SPOT, and QuickBird. Using ISAE, you can collect DTMs from images that range between 8 bits and 16 bits in radiometric resolution. ISAE is completely multi-threaded; it is the only product of its class that is a true Symmetric Multi-Processor (SMP) application, meaning it runs on all available CPUs in the hosting computer workstation.

### ISAE KEY FEATURES

- Automatically generates high-quality elevation models
- Generates DTM points in the north direction
- Handles aerial, satellite, and ADS40 data
- Generates DTM points from color or black-and-white imagery
- Captures satellite DTMs using rational functions
- Performs epipolar resampling of stereo imagery on the fly
- Performs batch processing
- Supports film-based and digital cameras, such as Intergraph's Z/I Imaging® DMC® (Digital Mapping Camera)
- Accesses and stores data in Intergraph's TerraShare® product
- Posts the generated elevation data to a MicroStation design file automatically
- Writes elevation data into a DTM format
- Provides the raw elevation data (stored in an ASCII) that is generated before interpolation is used to generate a grid
- Provides enhanced matching algorithm
- Optionally suppresses grid points near breaklines and obscure areas
- Offers separate class definitions and symbologies for points of different statistical qualities
- Uses existing DTM points to improve automatic DTM generation
- Uses a surface reconstruction module to capture DTM points in poor texture areas
- Explodes borderlines to avoid edge effects
- Supports adaptive parameter tuning and variation of grid spacing based on terrain's relief characteristics
- Checks accuracy and bias of automatically generated points against an ASCII file of control/check point coordinates (Delta Z)
- Provides block-wise DTM generation capability

## INTEGRATED SOLUTIONS

ISAE is a member of the ImageStation digital photogrammetric software product family. ISAE integrates with other ImageStation modules such as ImageStation DTM Collection (ISDC). ISDC provides interactive stereo collection of geomorphic features for the execution of ISAE. ISDC is also used for the stereo editing of the DTM points extracted by ISAE. ISAE honors information, such as breaklines, collection boundaries, and obscured collection areas. These geomorphic and boundary vectors are collected in ISDC and stored in a MicroStation design file.

ISDC and ISAE can be used with ImageStation Feature Collection (ISFC) and other products such as Intergraph's MGE Terrain Analyst (MTA) to create contours or perform a variety of modeling, earthwork, and engineering functions, and the GeoMedia® Terrain product for digital landbase creation and revisions.

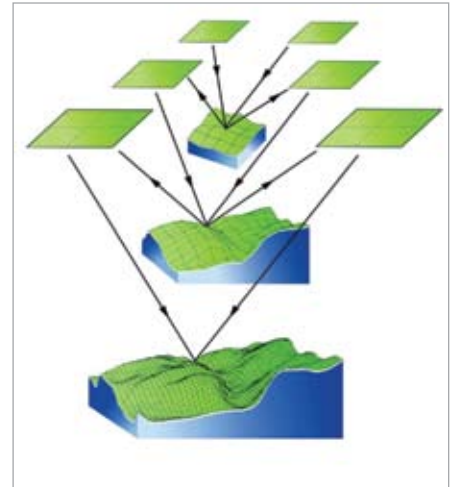
## PREMIER SERVICES

Intergraph is dedicated to providing world-class consulting, training, and support services. We can help you make the most of your earth imaging products. We understand your photogrammetric, aerial photography, and image distribution projects because every day our trainers are out in the field helping customers like you. We are driven to partner with customers to provide the products, training, and support needed for success.

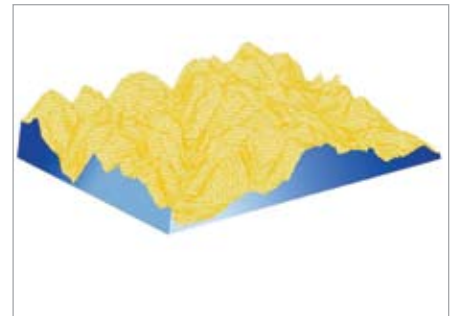
## ISAE SPECIFICATIONS – SOFTWARE PREREQUISITES

- MicroStation J or V8.5
- ImageStation DTM Collection (optional)
- Intel-compatible machine running Windows 2000 SP4 or Windows XP SP2
- Minimum CPU platform Pentium 3, 512MB memory

For more information, visit [www.intergraph.com](http://www.intergraph.com).



ISAE yields extremely reliable DTM points because of high redundancy resulting from the efficient combination of image pyramids, interest operators, and advanced digital image processing.



ISAE generates highly accurate DTMs from stereo pairs that need little or no editing due to its advanced algorithms processing.

## ABOUT INTERGRAPH

Intergraph Corporation is the leading global provider of spatial information management (SIM) software. Security organizations, businesses and governments in more than 60 countries rely on the company's spatial technology and services to make better and faster operational decisions. Intergraph's customers organize vast amounts of complex data into understandable visual representations, creating intelligent maps, managing assets, building and operating better plants and ships, and protecting critical infrastructure and millions of people around the world.



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