ImageStation DTMQue (ISDQ)

Elevation data usage is increasing dramatically, driven in part by the growing demand to capture data in three dimensions. In addition, data volumes are also growing dramatically. This is the result of an increase in the base resolution of new optical and non-optical sensors as they become available and are deployed. Subsequently, there is a corresponding boost in elevation data collection, editing and surface generation.

Hexagon's ImageStation DTMQue is designed to help you create such elevation surfaces as efficiently as possible and assess the quality of the elevation data. The overall objective of ISDQ is to supplement the interactive collection and editing capabilities of ImageStation DTM Collection (ISDC) and ImageStation DTM for GeoMedia (ISDG) with the batch tools and environment to greatly increase your productivity in surface generation and the importing and exporting of digital terrain models (DTMs) with different formats and coordinate systems. You can also verify the quality of such elevation data with statistical and accuracy assessment information.

ISDQ is a native 64-bit application for enhanced memory capacity and performance. It provides a set of command-line tools for DTM batch processing that you can assemble to suit your workflow. ISDQ includes tools for converting data from several elevation formats into ImageStation's triangulated irregular network (TIN)-based DTM surface file format, coordinate transformations, tiling, merging, and triangulation. ISDQ also includes a simple 3D viewer.

Wrapped around ISDQ's various command-line utilities is a graphical user interface you can use to create, edit and save workflows that can process a single source file or a directory full of source files. The workflow execution allows for

concurrent processing to increase throughput. The workflow is saved as a template and executed as a batch file. You can reuse it as often as needed on different datasets. ISDQ comes with a graphical editor for creating and running different workflows.

In addition to the powerful workflow editor interface, ISDQ provides a simplified command panel interface for running several predefined commonly-used workflows.

These predefined workflows are implemented as spatial models that execute the underlying ISDQ command line utilities. The actual ISDQ spatial models are delivered to the ISDQ product folder and can be viewed using a text editor or the Spatial Modeler Editor delivered with GeoMedia and ERDAS IMAGINE. Advanced users with a GeoMedia Professional or IMAGINE Professional license can also edit and create spatial models.
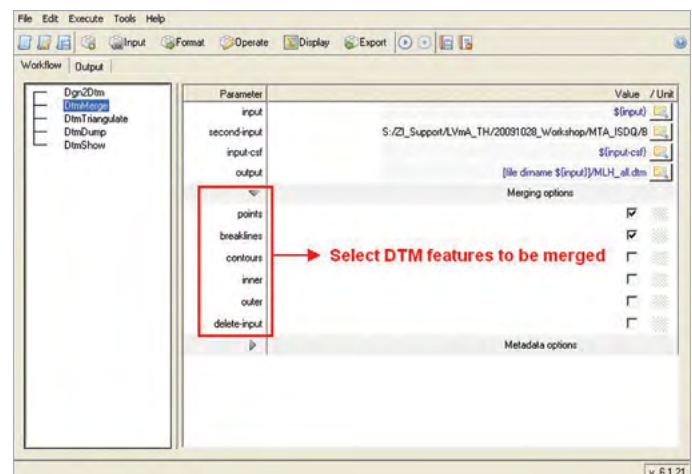
Merge elevation data with ISDQ workflow.
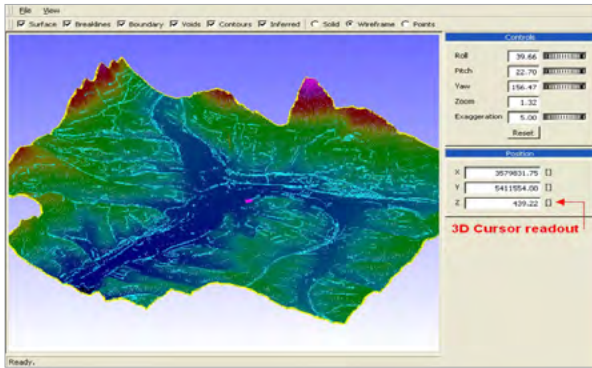
With ISDQ, you can display DTM data, including geomorphic features, as solid surfaces, triangles or point clouds.
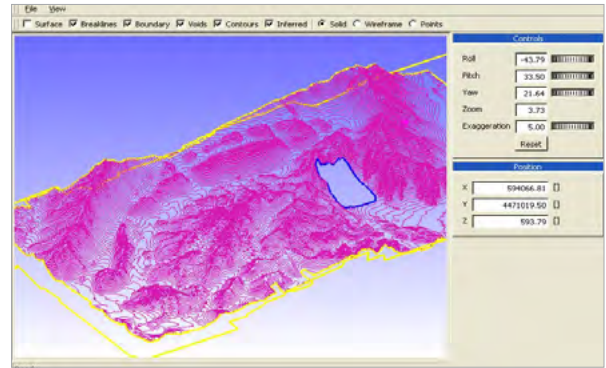
ISDQ provides information about coverage and gaps.

Workflow examples

- Convert MicroStation DGN to DTM

- Convert ASCII points to DTM

- Transform DTM surface from one coordinate system to another

- Combine regular point data with geomorphic features and generate a triangulated surface

- Perform edge matching between two adjacent surfaces

- Create shaded reliefs or colour-coded elevation tints for a surface

- Export DTM data as ASCII file, GeoTIFF, DTED or DEM

DTM format conversion tools

- Import elevation data from ADF, ASCII, DGN, ArcGRD, SCOP Winput, DEM/DDF, DTED, SRTM (Hgt), GeoTIFF, LandXML, LAS/ LAZ, BIL, FLT, ERDAS IMG, as well as Intergraph GRD, XYZ, DTM, TTN, QUE, and ImageStation Photogrammetry Manager (ISPM)

- Export to ASCII, DTED, DEM/DDF, LandXML, GeoTIFF, as well as Intergraph GRD, DTM and QUE

DTM manipulation tools

- Clip – Extracts parts of an existing DTM file

- Merge – Merges two DTM files

- Thin – Reduces the size of an existing DTM file

- Tile – Splits a DTM file into smaller elevation data sets

- Transform – Changes the coordinate system of a DTM file

- Triangulate – Triangulates a DTM file, including breaklines

- Dump – Prints a report for a DTM file

- Show – Displays DTM files in a 3D viewer

Quality control and accuracy assessment tools

- Verify the accuracy of a terrain model by comparing known elevation values (reference) to points on the terrain surface.

- Compute Min, Max, Bias, Standard Deviation and RMS values.

- Show gaps between coverages. Void areas will display with user-definable properties (line colour, style, fill, etc.). ISDQ computes the shape of the gaps and lists them in a report.

- Display DTM coverage (boundary) to help identify void areas.

- Show density of DTMs. Provides statistics about the density (resolution) of the data (density will be computed as points per km² or mile²).

- Show DTM properties (source, type, grid spacing, coordinate system and RMS, if available).

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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.

Hexagon (Nasdaq Stockholm: HEXA B) has approximately 21,000 employees in 50 countries and net sales of approximately 3.8bn EUR. Learn more at **hexagon.com** and follow us @HexagonAB.