

## Smart Digitizer

### SMART DIGITIZER

The Smart Digitizer extracts feature lines and polygons from a wide variety of image sources, including high- and low-resolution satellite imagery, aerial photos, scanned maps, thematic classifications, bitmaps, hyperspectral images, and radar data.

The Smart Digitizer uses a combination of manual and automatic processes to produce a fast and accurate tool for semi-automated digitizing. You can start a new vector layer or import and update pre-existing vector layers. Use the companion vector-editing programs to correct, smooth, or thin digitized vectors.

The Smart Digitizer reduces the number of points needed to digitize the outline of a feature and uses a line-fitting algorithm to produce better approximation of image features. The Smart Digitizer supports any GDB-vector format.

### MODULE PREREQUISITES

Smart Digitizer is an add-on to Geomatica Core.

### MATHEMATICAL MODEL

The Smart Digitizer:

- Uses a pattern-recognition process
- Travels along a straight line between the last digitized point (seed) and the cursor
- Displays best-fit points as a temporary preview polyline
- Uses a moving cursor that changes the followed search path
- Accepts the current cursor position as a seed point if the polyline follows the contour of the feature you are digitizing
- Defines a cross-sectional pattern of the feature you want to digitize for centerlines
- Searches perpendicularly for the 'best-fit' match to a cross-sectional pattern for each point along a centerline

### PARAMETERS

Using the Smart Digitizer, there are very few parameters to define; however, these are used to tailor Smart Digitizer to your specific needs. Parameters include:

- Shape Type (Line or Polygon):
  - Available shape types to be digitized
- Feature Type (Centerline and Boundary/Edge):
  - Use Boundary/Edge to digitize polygons or thin-line features
  - Use Centerline to digitize thick-line features
- Pattern (Only defined when centerline feature is selected):
  - Describes variations in pixel values across the centerline feature
  - Works from video memory so enhancement changes affects digitizing parameters

### VECTOR PROCESSING

Geomatica also provides a set of tools and algorithms for the analysis of vector layers. Please refer to the Geomatica technical specification sheet for details.

#### For more information, contact

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