

GXL Mosaic

The Satellite Ortho Suite includes rigorous and rational function models developed to compensate for distortions and produce orthorectified satellite images for high resolution and low resolution sensors. Distortions caused by the platform (position, velocity, and orientation), the sensor (orientation, integration time, and field of view) the Earth (geoid, ellipsoid, and relief), and the cartographic projection (ellipsoid and cartographic) are all taken into account using these models. The models reflect the physical reality of the complete viewing geometry and correct all distortions generated during the image formation.

MODULE PREREQUISITES

GXL Mosaic is an add-on to the base system. It requires a GXL system as a prerequisite.

AUTOMATIC MOSAICKING

GXL Mosaic preparation includes automatic detection and removal of image brightness variations, radiometric color balancing between images and automatic cut-line determination to minimize visibility of seams in the mosaic.

- Allow for the following normalization:
 - Hot Spot removal
 - Across Image 1st Order
 - Across Image 2nd Order
 - Across Image 3rd Order
 - Adaptive filter
- Automatically collect cutlines using:
 - Minimum difference method
 - Minimum relative difference method
 - Edge features method
 - Entire image method
 - Minimum squared difference method
 - Auto constraint option
- Provide automatic color balancing using:
 - Entire image method
 - Overlap area method
- Offer a mosaic preview for checking color balancing and cutline seams
- Color balancing techniques:
 - Look-up table: color balances each input image based on pre-defined look-up tables that have been saved back to the image files
 - Neighbourhood: Determines a set of coefficients that modify each image pixel based on the pixel values of the intersecting (neighbouring) pixels
 - Histogram: performs color balancing based on matching the input image histograms to the target mosaic image, sequentially
 - Reference: color balancing is based on matching source image histograms with the specified reference image's histograms.

- Control reference image selection for increasing control over color balancing and cutline generation
- Offers Color Balancing masks for data exclusion
- Offers Cutline Avoidance masks to restrict specific areas from cutline calculations
- Generate a preview of the entire project area

GXL Mosaic generation includes automatic generation of mosaic tiles in the desired output format and projection.

- File Options
 - Desired output Channels
 - Assign background value
 - Output file types (.pix, .tif)
- Output tile options:
 - Single Tile
 - From Vector File
 - Dimensions
 - Area of Interest
 - Blend Width
 - Resample methods
 - Source Map
- Permanent colour enhancement:
 - Localized Adaptive enhancement

FUNCTIONS

With a license for GXL Mosaic, the following functions are activated:

- AUTOCUT – automatic cut-line generation
- AUTOMOS – automatic mosaicking
- MOSDEF – mosaic definition preparation
- MOSPREP – mosaic scene list preparation
- MOSPREVIEW – low-resolution mosaic preview
- MOSRUN – mosaic creation
- PYRAMID – generate overview levels

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