Highlights

NEW SGM DEM Extraction methodology

GXL 2017 adds a new semi-global matching (SGM) method for DEM extraction. The SGM method produces finer details in high-resolution imagery and is well suited to sub-meter resolution aerial and satellite data. In addition, SGM reduces the number of extraction blunders, thereby reducing QA and editing time.

NEW DEM Extraction ADS workflow

GXL 2017 can now take advantage of stereo and tri-stereo ADS imagery for extracting digital elevation models. Using the new SGM method, the sampling is improved twofold and a single GXL processing node can extract 1500 km² of ADS surface models per day at 1.25 m resolution.

QA Tool Improvements

The GXL 2017 release includes a number of updates within the QA Tool, all designed for productivity and easier project management.

Project Overview

- Improved point display, image thumbnails and reference image backdrops make it easier to see how your project fits together.

Residual reports and editing

- New control over the information reports, along with residual point classification tools improve quality control for bundle adjustment and complement faster model calculations.

Point refinement

- New options for blunder detection and point thinning have been added.

Other improvements

- GCP import
- Kappa editing
- Project set-up

Job and Interface Updates

New DEM Convert job

- Automatic DSM to DTM filtering is now included as an independent job. This filtering option is still available in the existing DEM Extraction jobs.

New DEM Extraction ADS job

- Semi-global matching method to extract elevation models from ADS imagery

New Orthorectification ADS job

- Generate orthos from ADS imagery using extracted or imported DEM.

Automatic Accuracy Assessment job update

- Added a DEM assessment mode. This mode measures pixel values between two DEMs and calculates the absolute difference. The final report includes average change and standard deviation.

Tie Point Collection & Refinement job update

- New capabilities have been added to automatic tie-point collection, which now collects more multi-ray points that are better distributed across the images. A new point thinning option has also been added.

Other new jobs

- Band Coregistration: Coregister bands in a multispectral image.
- Combo DEM Extraction: Generates a DSM from selected combinations of overlapping stereo satellite image pairs. Includes options for DSM to DTM and merging.
- DEM Adjust (with 3D GCPs/TPs): Adjust a DEM using GCP/TP elevations.
- DEM from Raw Scenes: Read input folder and creates a DSM.
- Image Clarity: Assess image clarity among a group of images or between bands in an image.
- Image Coregistration: Coregister images against reference images.
- Image Warp: Warp multiple images.
- Level 4 Image Production: Create Level 4 images from raw scenes.
- Orbit Segment Creator: Generate satellite orbit-segments for multiple scenes.
- Pansharpening Production: Create pansharpened images from raw scenes.
- Water Colorization: Colorize the water in multiple images.

Job and administration interfaces

- Better spacing makes it easier to read and distinguish groups of related parameters.
- Parameters are highlighted based on selected options.
- Improved layout makes system management more intuitive.

Sensor Support

Sentinel-2: Twin satellites that carry 13-band optical instrument payloads

- Four 10 m resolution bands
- Six 20 m resolution bands
- Three 60 m resolution bands

Worldview-4: Added support

- 0.31 m panchromatic resolution
- 1.24 m multispectral resolution (4-band)

Resourcesat-2: With three onboard optical sensors

- LISS4: One mono-spectral mode and one 3-band multi-spectral mode
  - Fixed resolution of 5.8 m
  - 70 km mono / 23 km MS swath
- LISS3: Four bands
  - 23.5 m resolution
  - 140 km swath
- AWIFS: Four bands
  - 56 m resolution
  - 740 km swath

Kompsat 3A: Similar to Kompsat-3 configuration, but with higher resolution

- 2.2 m resolution multispectral sensors
- 0.55 m resolution panchromatic sensor

CBERS-4: Satellite with four camera systems

- MUXCam: A multispectral (MS) camera at 20 m resolution
- PanMUX: Imager with 5 m panchromatic and 10 m multispectral data
- IRS: A medium-resolution infrared scanner with a 40 m infrared and 80 m thermal imaging
- WFI: A wide-field imaging camera with 64 m multispectral resolution

Deimos: Added support for two sensors

- Deimos-1: 22 m multispectral sensor
- Deimos-2: 1 m panchromatic and 4 m multispectral sensor

Jilin-1: Added support

- 0.72m resolution panchromatic imagery
- 2.88m resolution multispectral bands

ZY3-2: Added support

- Four-band MS camera at 5.8 m resolution and 51 km swath
- Three panchromatic imagers for tri-stereo collection
  - Nadir: 2.1 m resolution and 51 km swath
  - Forward/Backward: 2.6 m resolution and 52 km swath

Gaofen-3: Added support for quad-pol SAR sensor

- SLC-mono at 4 m resolution