

# Leica XPro

## Data Processing at the Speed of Flight



### Leica XPro provides the ground processing workflow for digital line sensors

There is a perception that digital frame cameras produce imagery in much the same way as traditional analog frame cameras. Therefore, it was sometimes thought that the transition from analog photogrammetric processing to digital frame camera workflow would be easy and smooth, while the adaptation to line sensor workflow would involve significant relearning. Recent reports from customers using both frame and line sensor workflow are proof that these perceptions are wrong!

Large-format frame sensor configurations use multiple sensor heads. To produce a final frame requires several additional processing steps which include compensation of system specific parameters, co-registration of the multiple head patched data and the introduction of so-called "virtual frames".

In comparison, the Leica XPro line sensor workflow is straightforward to implement and easy to use for those familiar with the traditional analog frame processing. Most importantly, it produces the best results.

#### Key customer benefits:

##### Manage data quality

- Quality control tools can indicate a successful data capture mission at the earliest stage of processing
- Uniform workflow from download to orthophoto generation

##### Add accuracy

- Direct georeferencing from Leica IPAS Inertial Position & Attitude System is used and further improved by aerial triangulation
- Aerial triangulation step of Leica XPro is simplified to a "black box" level

##### Deliver at the speed of flight

- For stereoviewable images or high resolution orthophotos – Leica XPro is designed to deliver with extreme speed
- Products are ready for further handling by a wide range of digital photogrammetry software packages

- when it has to be **right**

**Leica**  
Geosystems

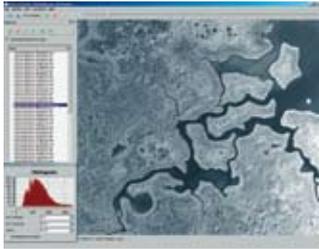
# Leica XPro

## Data Processing at the Speed of Flight

Ground processing with Leica XPro covers line sensor workflow from data download to image generation.

### Leica XPro features:

#### Data download and quality control



- Downloader module gives a captured mass memory data overview and performs high-speed data extraction or data replication
- The viewer enables quickly checking

downloaded images against undesired occurrences such as cloud coverage

- The viewer is equipped with the image luminance histogram

#### Product generation

Leica XPro delivers stereo-viewable images and orthophotos with the following features:

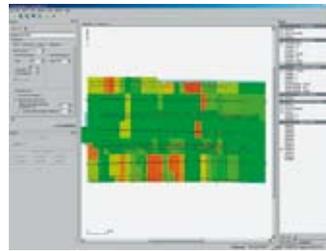
- Radiometric Image Chain implemented throughout
- the Leica XPro workflow leads to perfect image radiometry – atmospheric haze and bidirectional reflection effects (BRDF) are taken care of
- Full support of 4-band image products
- Ready to run on distributed processing environment

How is it that a single 1.8 km swath flight line of AD580 provides all the details?



Leica XPro – designed to deliver

#### Image georeferencing and aerial triangulation



Images get the georeferencing from the GNSS-IMU solution provided by Leica IPAS Pro. For applications targeting higher ground point accuracy, Leica XPro offers further enhanced exterior orientation with the aerial triangulation module:

- Significant performance improvements allow data handling from several flight mission days in the same bundle adjustment calculation
- Aerial triangulation is simplified to a “black box” level. Where necessary, newly designed area-based analysis tools and automatic interaction using point matching with targeting image point measurements will improve the triangulation accuracy
- On-the-fly image rectification implemented in Leica XPro facilitates measurement of ground control points
- Aerial triangulation from Leica XPro is based on the well-known and proven ORIMA adjustment

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