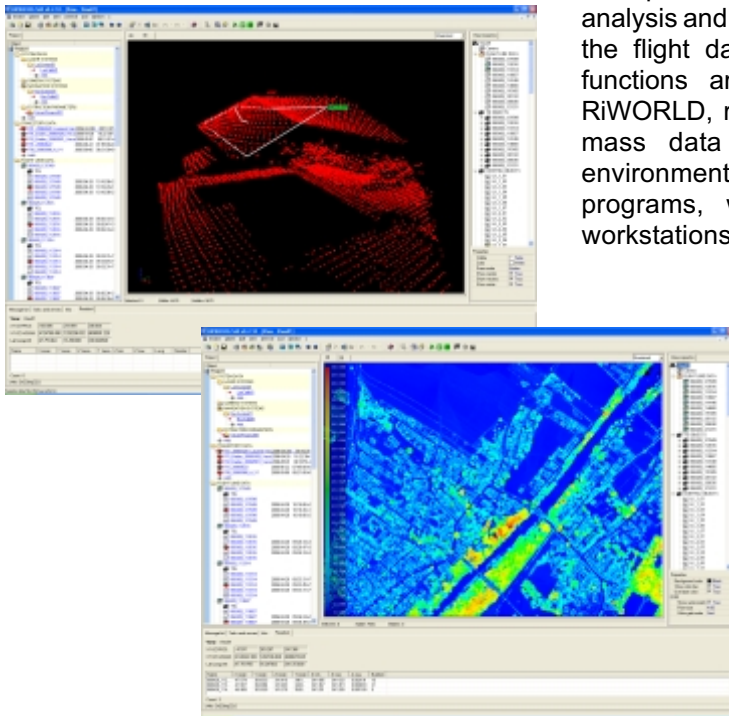


# RiPROCESS

## PROJECT-ORIENTED TOOL FOR MANAGING, PROCESSING, AND VISUALIZING ALS DATA

RiPROCESS is designed for managing, processing, analyzing, and visualizing data acquired with airborne laser scanning systems (ALS systems) based on *RIEGL* Airborne Laser Scanners.

RiPROCESS is project-oriented and enables the user to manage all data acquired and processed within a single project. Data managed include project data, ALS system information data such as mounting information and calibration data, original laser data such as the digitized echo signals from the *RIEGL* LMS-Q560 laser scanner, position and orientation data from the IMU/GPS, intermediate data files, search tree files for fast data access, and georeferenced point cloud data with additional descriptors for every point.



Data processing tasks include, e.g., the full waveform analysis and georeferencing laser data by merging with the flight data derived from IMU/GPS data. These functions are provided by RiANALYZE 560 and RiWORLD, respectively. RiPROCESS is intended for mass data production in a multiple-workstation environment. RiPROCESS makes use of these programs, which may be installed on different workstations and are accessed via RiSERVER.

RiPROCESS distributes the computational load by means of individual tasks to the available server-enabled processing tools optimizing data throughput.

For analyzing data and data quality laser data can be visualized in 2D and 3D in various ways, e.g., in data density, in color-encoded height, height differences within raster cells and many more. Even huge amount of data can be accessed fast for being displayed in 3D. Quality of scan data matching can be assessed in different ways, by visual inspection or by statistical analysis.

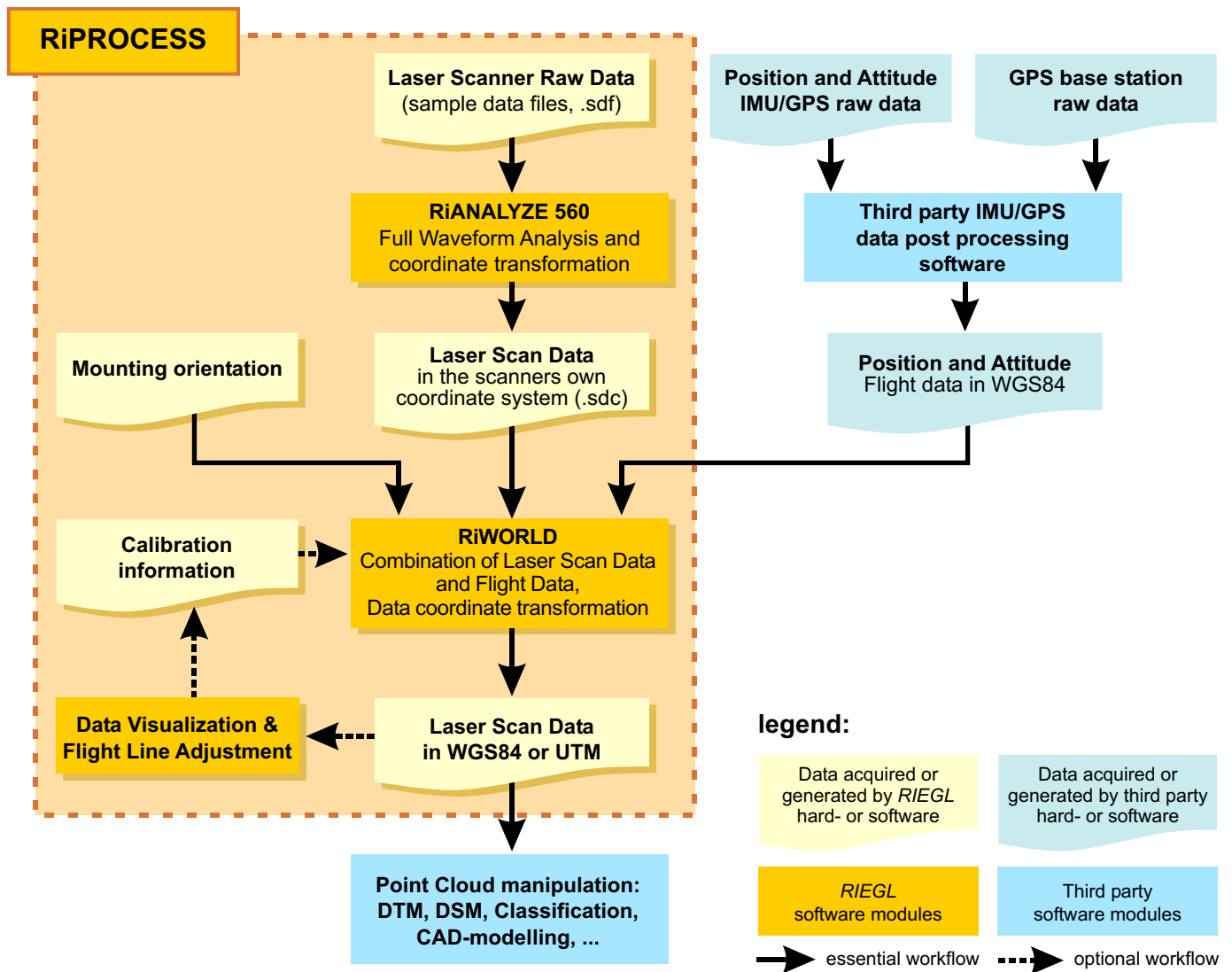
In order to improve data quality RiPROCESS offers an integrated scan data adjustment feature based on matching data acquired on planar objects, e.g., roofs of buildings. Data acquired on planar objects are detected automatically within the scan data and are displayed for inspection in 2D and 3D. Parameters optimized within the scan data adjustment include system calibration information, and up to 6 offsets (angular and translational) for each single scan stripe. Also terrestrially surveyed planar control objects can be used additionally to improve absolute georeferencing of the ALS data set.

RiPROCESS allows data export in the widely-used LAS format to execute common tasks such as classification, triangulation and decimation by third-party software packages. An interface to RiSCAN PRO, the companion software to *RIEGL*'s terrestrial 3D scanners, allows utilizing further visualization and processing tools.

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LASER MEASUREMENT SYSTEMS



### Key Features:

- Project-oriented managing tool for processing RIEGL airborne laser scanner data from raw data to point-cloud-based data in WGS84 or projection (e.g. UTM) utilizing RiANALYZE 560 and RiWORLD in remote control mode
- Fast access to data for visual inspection in a large variety of visualization formats, ranging from color-coded raster data to digitized echo data for every laser measurement
- System calibration and scan data adjustment based on matching data acquired on flat objects
- Statistical analysis of matching quality of scan data; comparison of laser data to surveyed reference objects
- Interface to further post-processing tools via LAS, Terrasolid, and ASCII data exchange
- Running in multiple-workstation environment enhancing data post-processing throughput by parallel computing

Information contained herein is believed to be accurate and reliable. However, no responsibility is assumed by RIEGL for its use. Technical data are subject to change without notice. Data sheet, RiPROCESS, 14/09/2007



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