

RiPROCESS

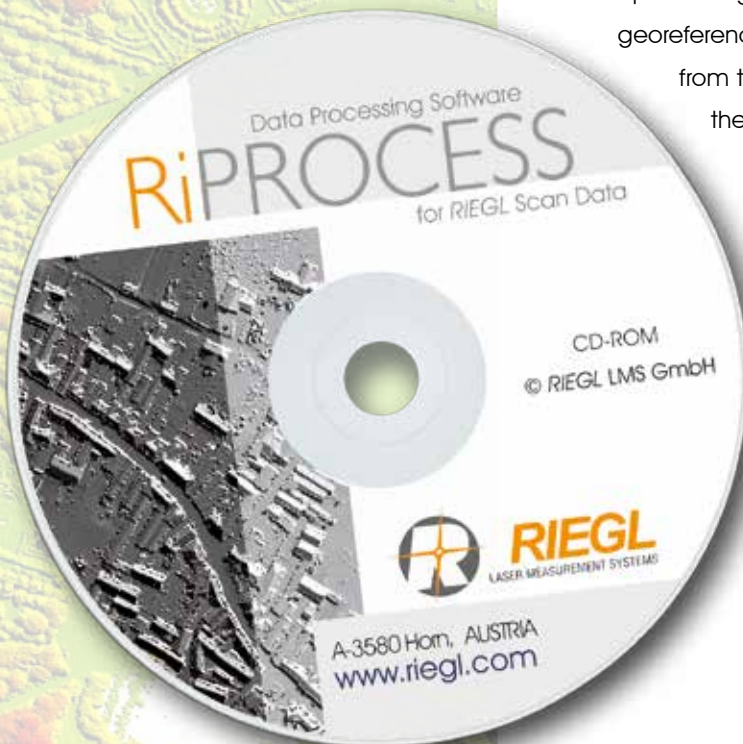
for *RIEGL* Scan Data

- *project-oriented software for managing and processing RIEGL ALS, ULS and MLS data*
- *operation in a multiple-workstation environment, parallel task processing*
- *fast access to data for inspection in different visualization formats*
- *system calibration and scandata adjustment*
- *statistical analysis of referencing, matching quality*
- *interfacing to third party software packages*

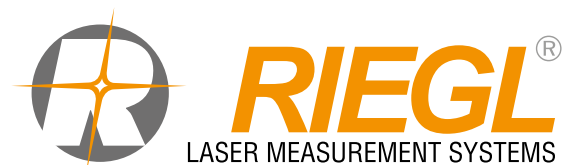
RiPROCESS is designed for managing, processing, analyzing, and visualizing data acquired with airborne laser scanning systems (ALS systems), unmanned laser scanning systems (ULS systems) and mobile laser scanning systems (MLS systems) based on *RIEGL*® Laser Scanners. Data export in geodetic systems is supported by the GeoSysManager.

RiPROCESS is project-oriented and enables the user to manage all data acquired and processed within a single project. This data includes project data, scanning system information such as mounting information and calibration, laser raw data, e.g., the digitized echo signals from the *RIEGL* Laser Scanners, camera data, position and orientation data from the INS/GNSS system, and georeferenced point cloud with additional attributes for every measured point.

Data processing tasks include, e.g., full waveform analysis and georeferencing laser data by merging it with the trajectory derived from the INS/GNSS system. These functions are provided by the *RIEGL* Software RiANALYZE and RiWORLD, respectively. RiPROCESS is intended for mass data production in a multiple-workstation environment. RiPROCESS makes use of these programs, which can be installed on different workstations and are accessed via RISERVER.



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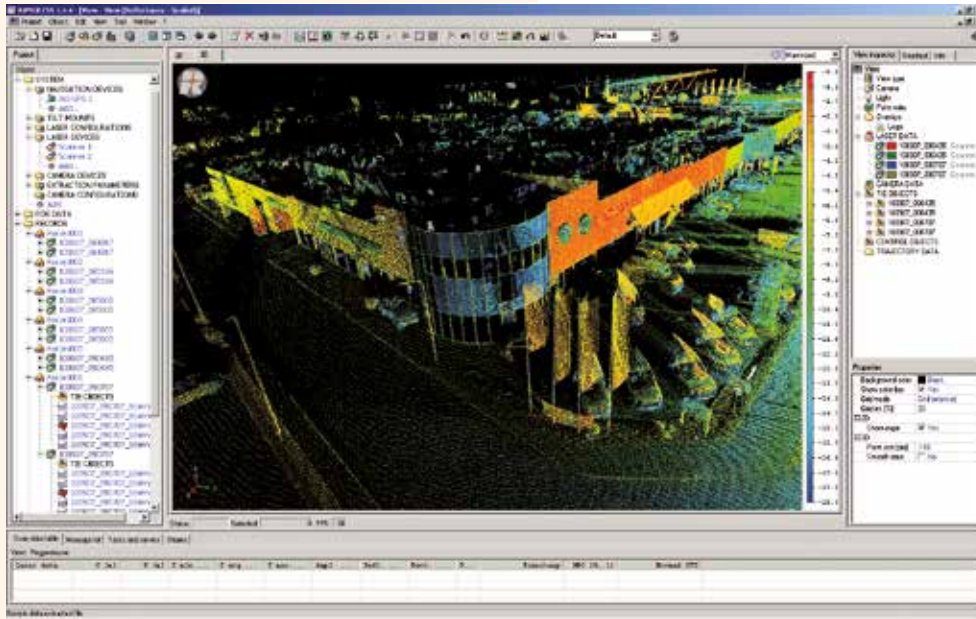


Fig. 1 Mobile laser scan data, color-coded reflectance

data can quickly be accessed for display in 3D. Quality of scan data matching can be assessed in different ways, by visual inspection or by statistical analysis.

RiPROCESS distributes the computational load to the available server-enabled processing tools in the form of individual tasks thus optimizing data throughput.

For data quality analysis laser scans can be visualized in 2D and 3D in various ways, e.g., in true color, in color-encoded height, height differences, in point density, and many more. Even huge amounts of

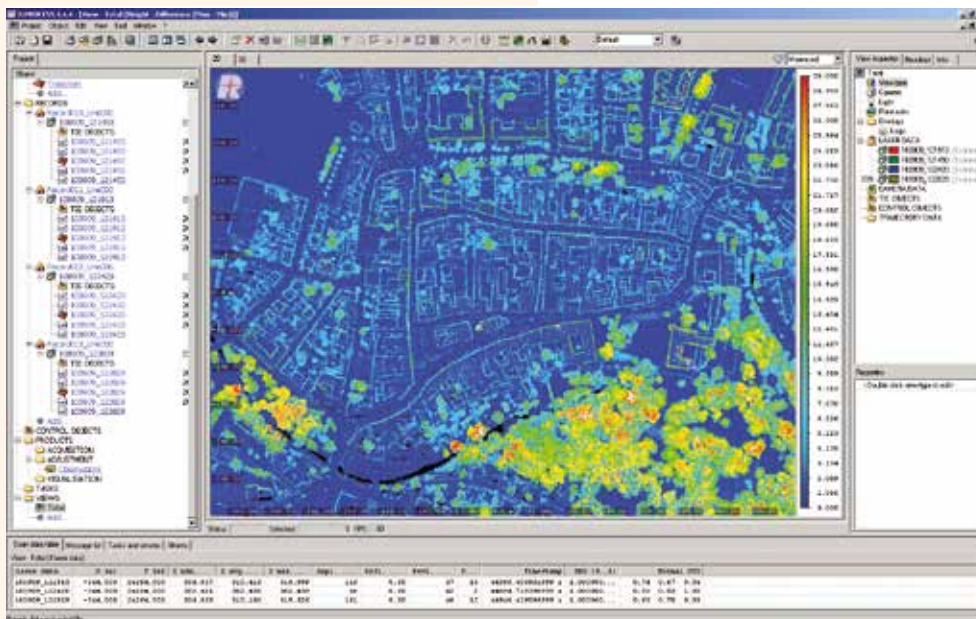
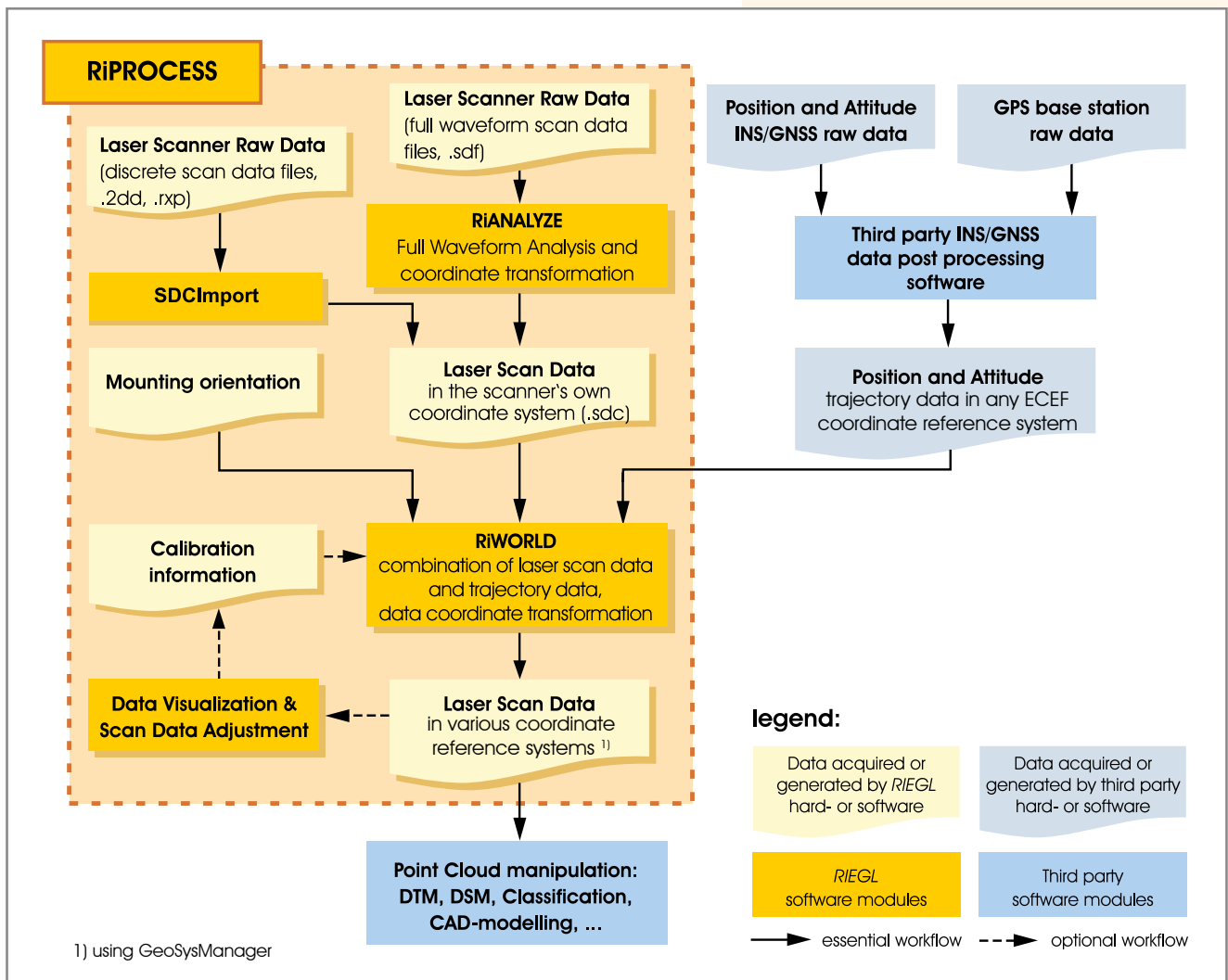


Fig. 2 Airborne laser scan data, color-coded height

translational) for each single scan. Terrestrially surveyed control points or planar control objects can also be used to additionally improve absolute georeferencing of the data set.

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 is automatically detected within the scan data and 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

RiPROCESS allows data export in the widely-used LAS format (amongst others) to execute common tasks such as classification, triangulation and decimation by third-party software packages. The included GeoSysManager offers a powerful tool for exporting the geo-referenced point cloud in Cartesian ECEF, geographic and local grid coordinates. An interface to RiSCAN PRO, the accompanying software for RIEGL's terrestrial 3D scanners, allows utilizing further visualization and pointcloud manipulation tools.



RiPROCESS Key Features

- **Project-oriented managing software for processing of RIEGL airborne and mobile laser scanner data from raw data to point-cloud-based data in Cartesian ECEF or map projection (e.g. UTM) utilizing RiANALYZE 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 (depending on used laser scanner)**
- **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**
- **Operation in a multiple-workstation environment enhancing data post-processing throughput by parallel computing**
- **Serves as platform for RiPRECISION MLS/UAV for point cloud adjustment of mobile and UAV scan data (optional)**
- **Operates different hydrographic processing tools (optional) for RIEGL's topo-hydrographic laser scanners**

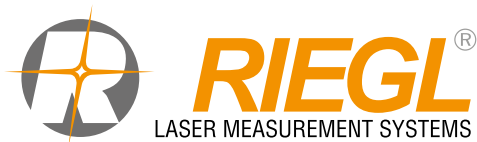
RiPROCESS System Requirements

Operating systems:	Windows 10 Pro, Windows 8 Professional, Windows 7 Professional
Memory requirements:	8 GB RAM minimum, 32 GB or more recommended
Disk space requirements:	approx. 500 MB of free disk space for the program and plugins (not including project data) at least 8 TB recommended for your own projects optional: Dedicated RAID controller (e.g. RAID 0 mode) and fast hard disks or solid state drives to speed up file access
Interfaces:	Network interface (Ethernet, LAN)
Graphics requirements:	Screen resolution at least 1024 by 768 pixels OpenGL accelerated graphics card (OpenGL 2.0 or higher required) nVIDIA GeForce series recommended (GeForce-9 or higher)
Peripherals:	3 button mouse, optical wheel mouse recommended standard keyboard

RiPROCESS Download Information

RiPROCESS is available for download in the members' area of www.riegl.com

In order to download RiPROCESS, it is necessary to be registered. After registration and activation, you will be able to download the current version. Subsequently, you will be kept updated in case of later software version releases.



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