RiWAVELib

for *RIEGL* Full Waveform Laser Scanners

- *Easy access to waveform data acquired by RIEGL instruments*
- *Common interface for SDF and WFM file format*
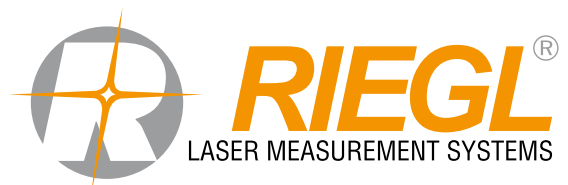- *Index-based search for time stamps within the data stream*

RiWaveLib provides straightforward and well-documented access to the digitized echo signals recorded by selected *RIEGL* laser scanners during data acquisition. The digitized echo signals, also known as waveform data, are the basis for the so-called full waveform analysis which deduces ranging information and additional data from the waveforms. Additionally, the library enables access to the time stamp and measurement direction for each measurement and thus enables the user to calculate point cloud data based on their own algorithms for the full waveform analysis.
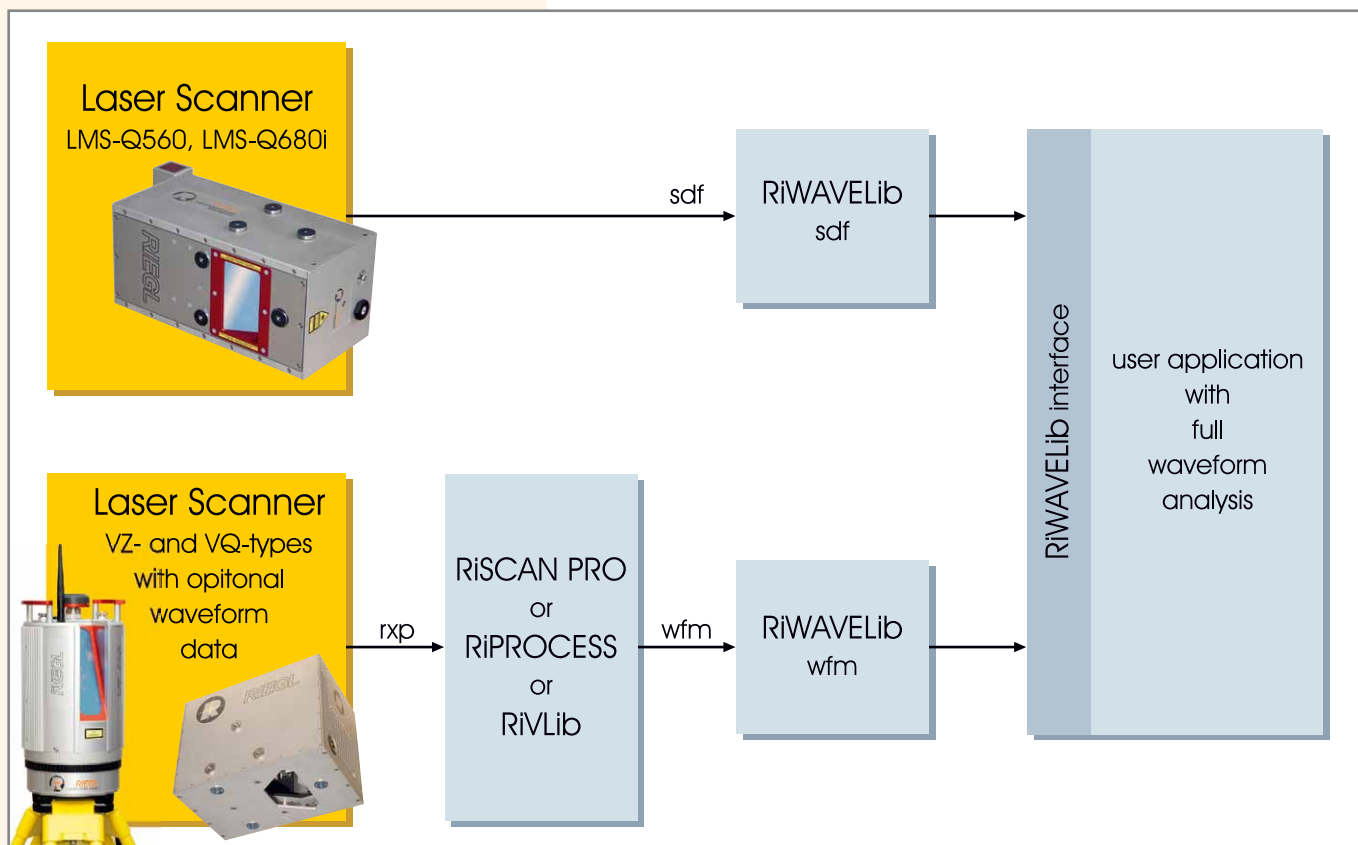
RiWaveLib provides access to both waveform data formats used by *RIEGL*, the SDF file format used by *RIEGL* LMS-Q560 and *RIEGL* LMS-Q680(i), and the WFM file format as used by the *RIEGL* VZ- and VQ-type Laser Scanners with waveform data option. The application programmer gets access to the waveform data for both file formats using a common interface.

- *Library's interface uses standard C conventions*
- *Can be used from various programming languages like C, C++, Pascal and Python*
- *Both Linux and Windows® are supported*

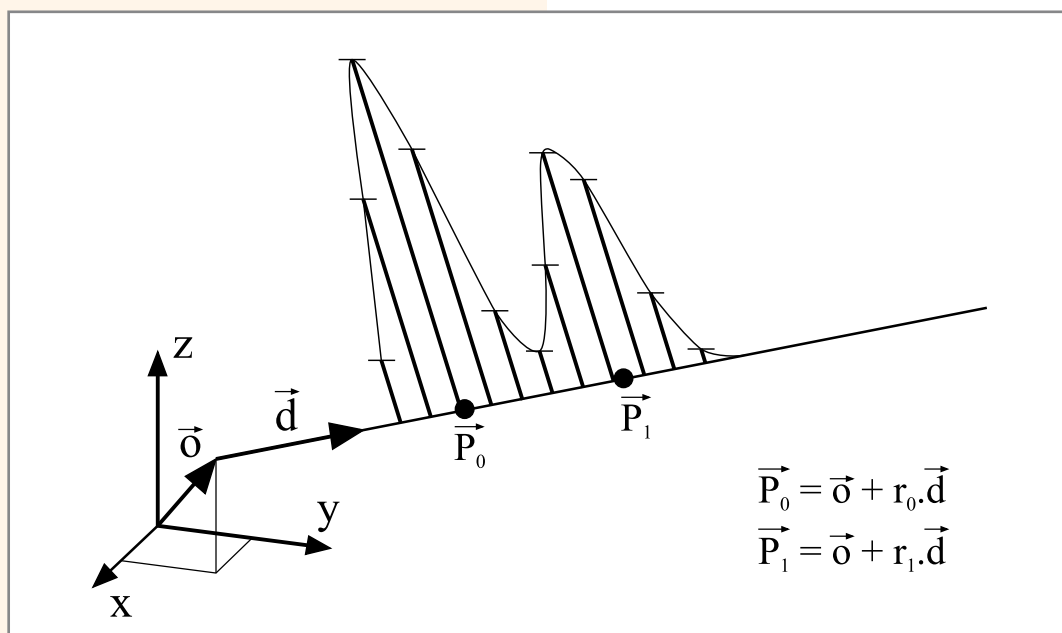Waveform Extraction Library

RiWAVELib

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CD-ROM
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Ri Software

RiWAVELib data flow diagram

Laser Scanner
LMS-Q560, LMS-Q680i

sdf

RiWAVELib
sdf

RiWAVELib interface

user application
with
full
waveform
analysis

Laser Scanner
VZ- and VQ-types
with opitonal
waveform
data

rxp

RiSCAN PRO
or
RiPROCESS
or
RiVLib

wfm

RiWAVELib
wfm

$$\vec{P_0} = \vec{o} + r_0.\vec{d}$$
$$\vec{P_1} = \vec{o} + r_1.\vec{d}$$

Visualisation of sample data attached to laser beam axis: x, y and z represent the scanner's coordinate system, o denotes the origin of the laser range measurement, and d is the normalized direction vector of the laser beam axis, both for the actual scan angle.

www.riegl.com

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.

Preliminary data sheet, RiWAVELib, 28/03/2012