RIEGL RiCOPTER *+* VUX-SYS: Power line project

Capturing data of a power line section was realized by *RIEGL*'s **VUX-SYS** (**VUX-1UAV** with INS-GNSS System) integrated in *RIEGL*'s **RiCOPTER** UAV platform:

Details, facts and results of the **combined data acquisition of scan data and calibrated images** listed in this summary give an insight in
- used hard- and software configurations
- workflow of data acquisition
- workflow of post-processing

Fig 1. *RIEGL* RiCOPTER with VUX-SYS

General

Date of data acquisition	June, 2015

Hardware Configuration

System configuration	*RIEGL* VUX-SYS (*RIEGL* VUX-1UAV with INS-GNSS system) integrated in *RIEGL*'s RiCOPTER UAV platform
Camera configuration	Sony Alpha 6000 (rigid mounting to the VUX−1) 24 –Megapixel; dimension: 6000 x 4000 Lens: 16 mm; Aperture: F/4; Exposure: 1/1000; ISO: 250

Data acquisition

Demo data	Power line section recorded in 3 flight strips (1.350 m, acquired data: scan data + calibrated color images + position and orientation data)
Raw data volume	scan data 2.43 GB, images 2.27 GB.
Software used	RiACQUIRE-Embedded (running on *RIEGL* VUX-1UAV)
Speed of acquisition	approx. 5 m/s (18 km/h)
Laser Pulse Repetition	380 kHz
Flight Altitude	90 m AGL
Time of data acquisition	one flight with *RIEGL* RiCOPTER, about 20 minutes air time.

Data processing – Georeferenced Point Cloud + Calibrated Images

Section processed	670 x 50 m, 3 records
Software used	POSPac MMS 7.1 RiPROCESS version 1.6.5 (incl. GeoSysManager)
Processed data volume	scan data 7.96 GB (RIEGL point cloud format) images 2.27 GB (same as RAW data)
Time for data processing	approx. 1/2 h one person for trajectory post-processing and project post-processing set up. approx. 1/2 h automatic georeferencing and automatic relative adjustment procedures in RiPROCESS.
Points in total	approx. 88 Mio. Points (all records are used)
Point density on ground	approx. 750 points / m^2 (of combined data in nadir direction)

Photos from the acquisition area + Post-process data (Deliverables)
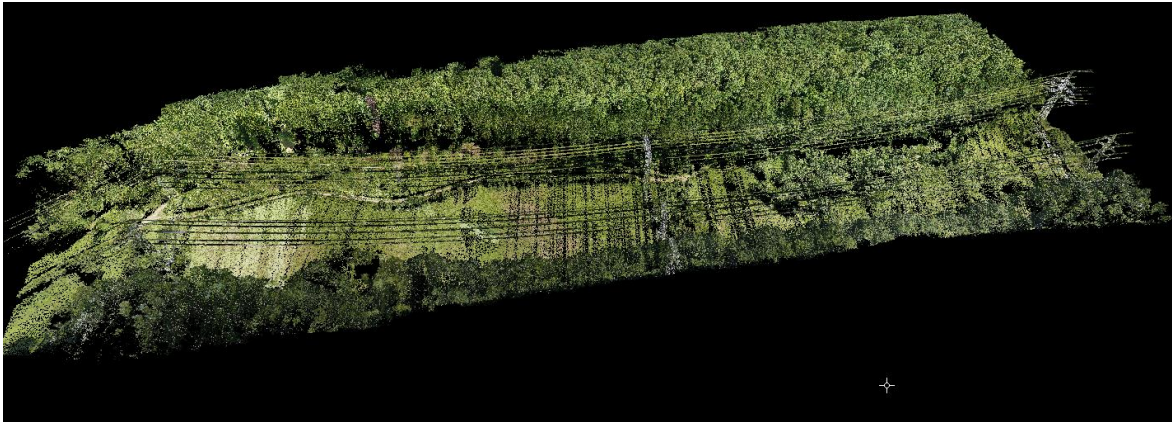

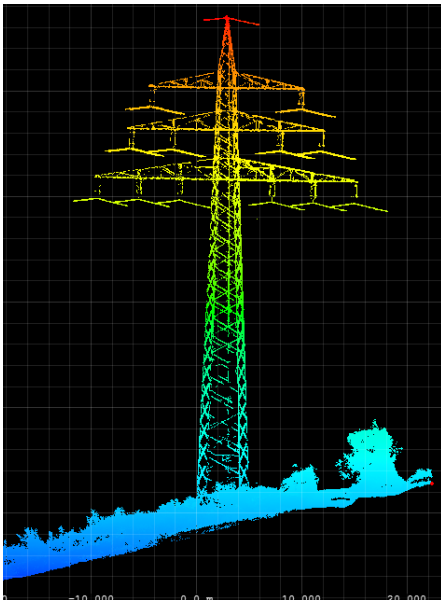*Fig 2. Point Cloud (encoded by color information)*

Fig 3. Point Cloud
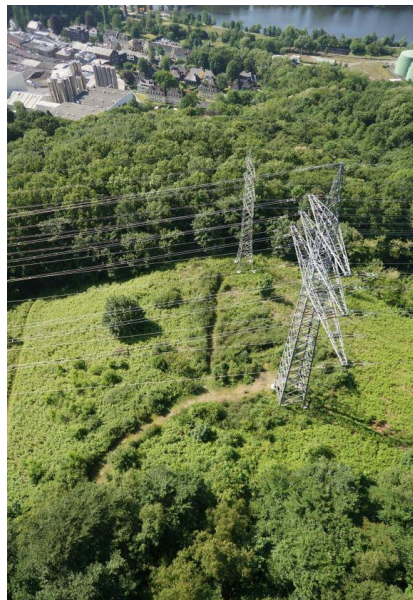*(encoded by Height scaled)*

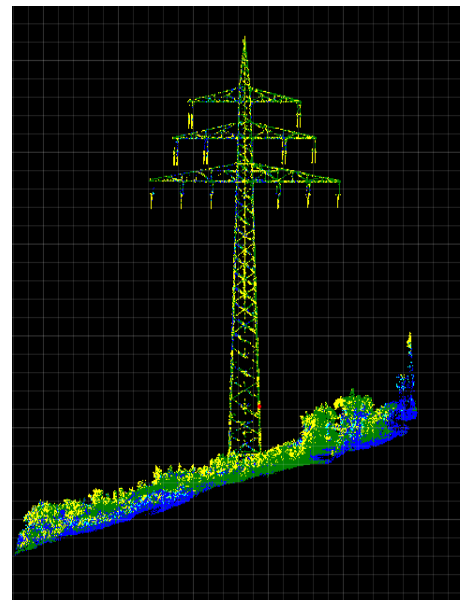*Fig 4. Photo from acquisition area*
(Sony Alpha 6000)

Fig 5. Point Cloud
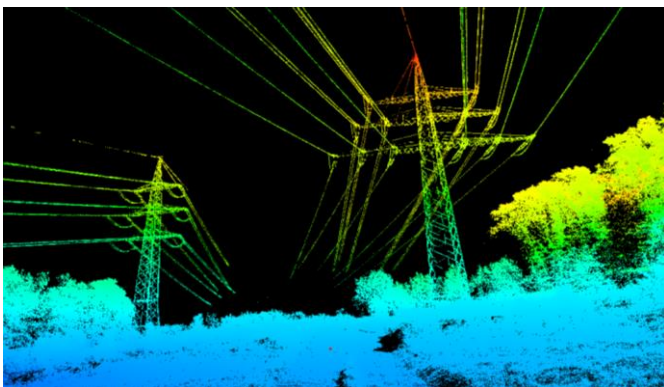*(encoded by Multi Targets)*

Fig 6.Point Cloud (encoded by Height scaled)

Fig 7. Photo from acquisition area
(RiCOPTER marked as red arrow)

Download information (RIEGL RICOPTER + VUX-SYS: Power line project)

	File size	File size ZIP
RiPROCESS Project	5.56 GB	3.69 GB
• **scan data**	3.77 GB	
• **images**	1.79 GB	
ASCII	193 MB	184KB
LAS		
• **cartesian coordinates**	2.64 GB	839 MB
• **geographic coordinates**	2.64 GB	804 MB
Images:		
• **distorted**	3.09 GB	2.94 GB
• **undistorted**	3.67 GB	3.67 GB

FTP Access information

For more information related with RIEGL RICOPTER + VUX-SYS: Power line project follow the next link:

Please use following information to access RIEGL-FTP-Server3:
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The address is: ftp://ftp3.riegl.com
Your username is: vux-1
This is your Password: 8a77ba

Please use your favorite FTP software to connect. e.g. FileZilla
Generally your web browser can handle: ftp://vux-1:8a77ba@ftp3.riegl.com

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Please refer to the folder:
"*01_RIEGL_VUX-1_VP-1_Sample_Dataset/01_RIEGL_RICOPTER_VUX-SYS_Power_line_project*"
For the RiPROCESS project and exported data (LAS, ASCII and Images).