RIEGL VZ-600i – 3D-Laserscanning im Minutentakt – ideal für die präzise Vermessung von Baustellen

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RIEGL VZ®-600i

RIEGL VZ-600i terrestrial laser scanner

High Productivity

- "One-Touch"-button operation
- *RIEGL* VZ-i Project Map App for scan project monitoring
- concurrent scan and image data acquisition
- Real-Time On-Board automatic registration
- "One-Touch"-Processing Wizard for automatic production of end deliverables

Ultimate Performance

- pulse repetition rate up to 2.2 MHz
- scan speed up to 420 lines/sec
- 30 sec scan time (6 mm resolution @ 10 m distance)
- high speed data download of up to 500 MB/sec

Extreme Versatility

- for various applications
- indoor and outdoor 3D mapping
- short and long ranges
- lightweight (approx. 6 kg / 13 lbs)
- dual processor architecture for developing user-specific Python apps

Additional Mobility

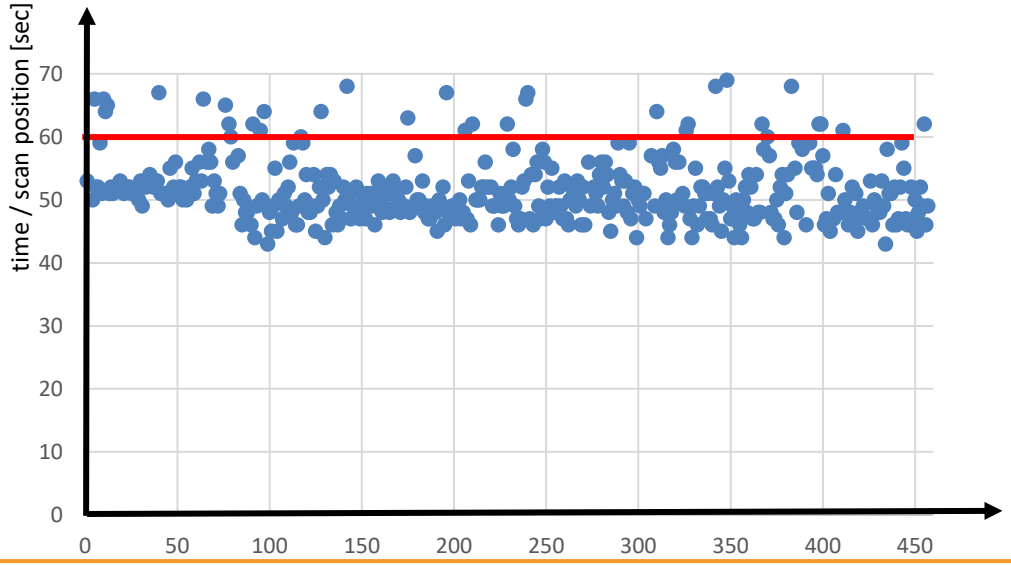
- prepared for robotic operation integration (ROS driver available)
- option for kinematic laser scanning
- can be used with the *RIEGL* VMR Robotic Rail Scanning System
- flexible mounting platforms

RIEGL VZ®-600i

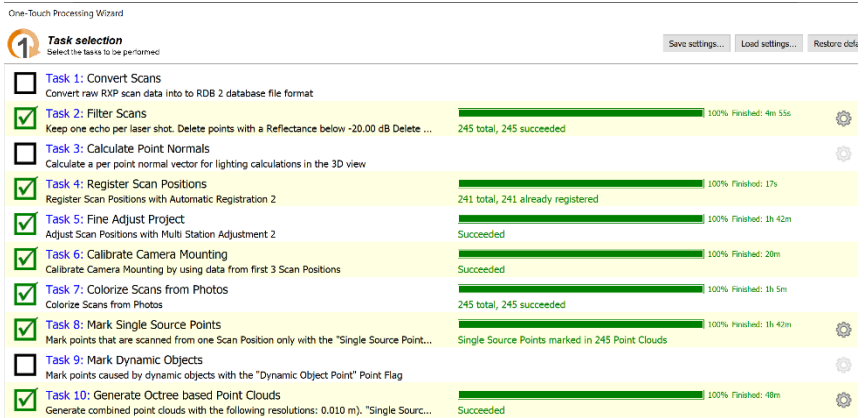
Strength of a RIEGL VZ-600i

=HIGH PRODUCTIVITY

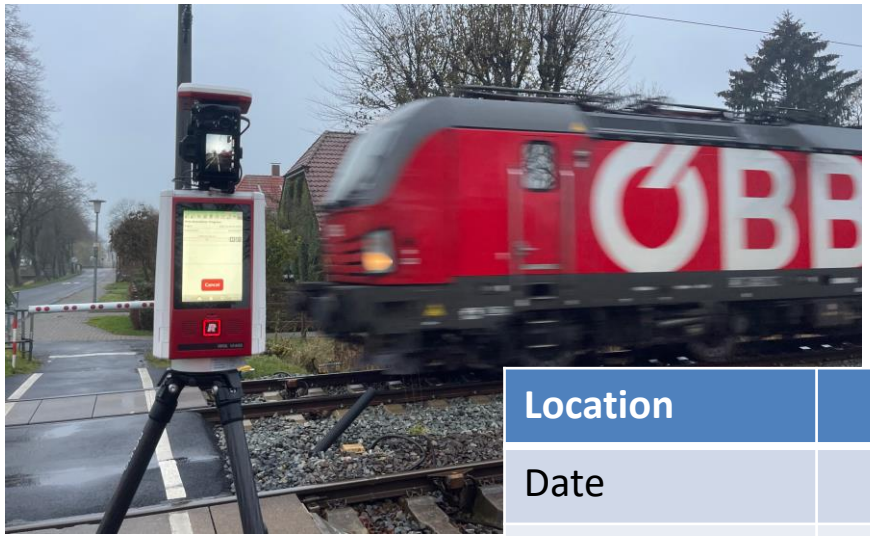
Speed of the hardware → **Speed of the software**



One-touch processing wizard



Infrastructure & transportation

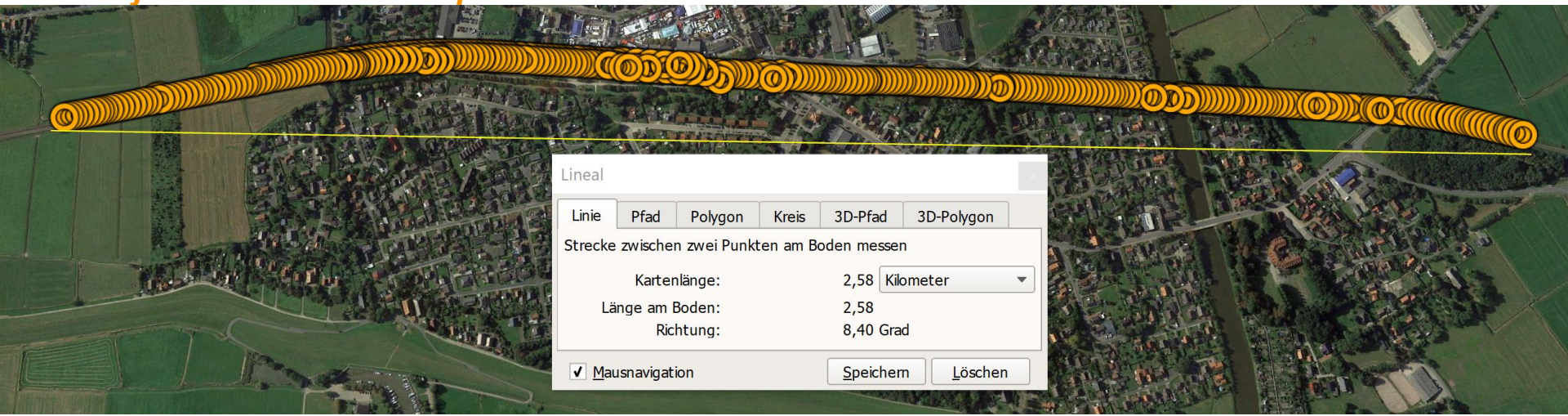


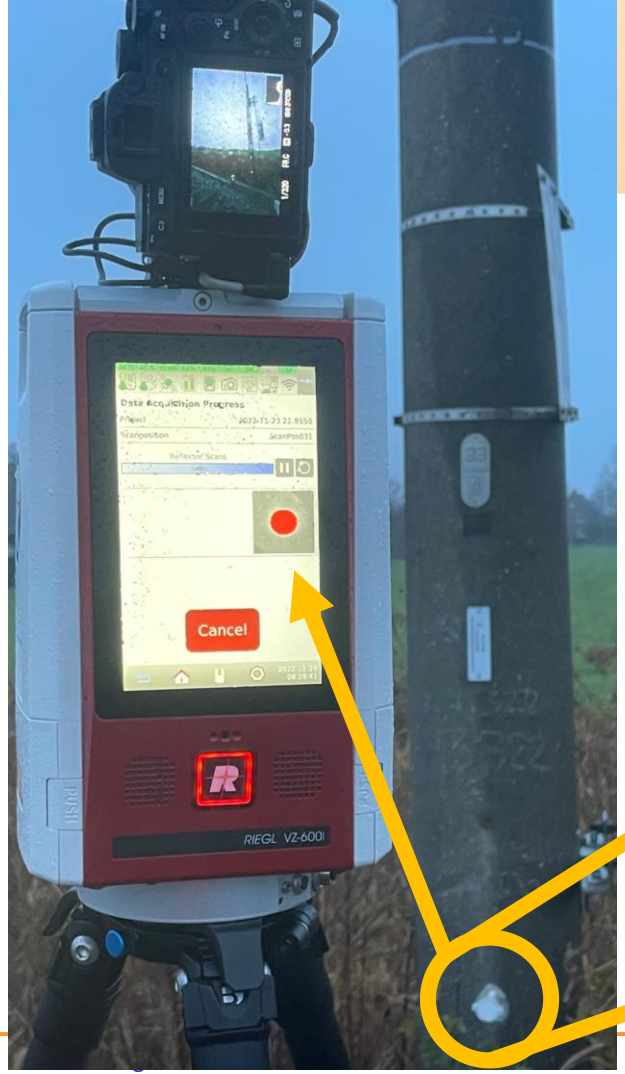
Location	Germany
Date	29. Nov. 2022 (rain, 3°C)
Time	07:57 – 15:33 (7:36)
Scan positions	380

Rodenkirchen

Protection Class	**IP64, dust- and splash-proof**

Infrastructure & transportation





mast bolt

biaxial reflector foil

Infrastructure & transportation

Report for Multi-Station Adjustment

Project name: **2022_11_ _Bahn_RSP**
Global Coordinate Reference System (GLCS): ETRS89 / Geocentric (EPSG::4936)
Report GLCS: DB_REF / 3GK zone 3 E-N (EPSG::5683)
Project origin:
Easting [m]: 3463781.7404
Northing [m]: 5917884.3601
Height [m]: 1.2973

4.4.1 Control Points in CRS#2

Control points in CRS#2 ... DB_REF / 3GK zone 3 E-N (EPSG::5683)

46 observations have been utilized on 37 control points in CRS. MSA results in the following statistics on the residuals:

	dX [m]	dY [m]	dZ [m]	dist. [m]
Minimum deviation	-0.0197	-0.0101	-0.0330	0.0013
Maximum deviation	0.0267	0.0115	0.0386	0.0387
Mean deviation	0.0002	0.0004	0.0004	0.0130
Standard deviation	0.0091	0.0043	0.0126	---
Median abs. dev. (std)	0.0085	0.0038	0.0072	---

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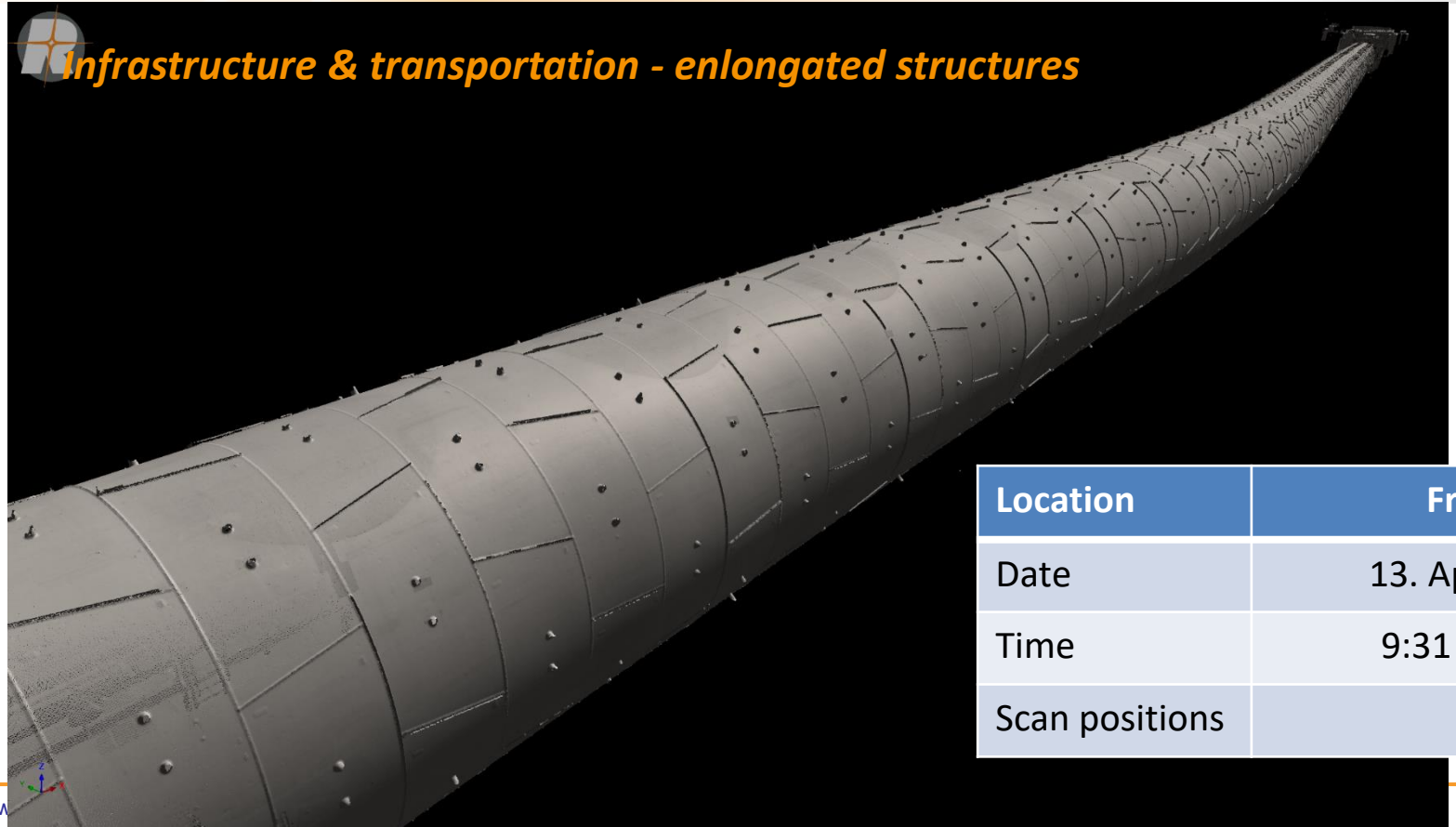
Infrastructure & transportation

Infrastructure & transportation – removing non-stationary objects automatically

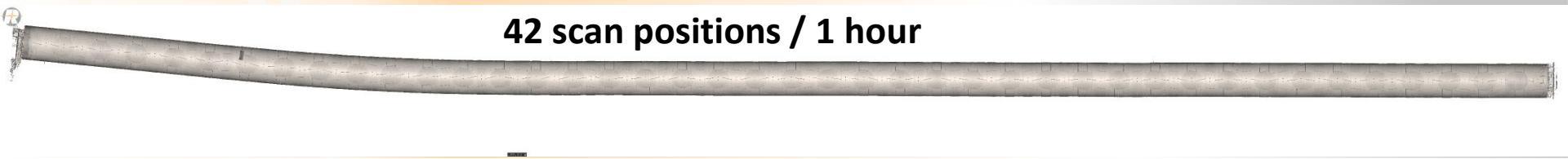
Infrastructure & transportation - enlongated structures

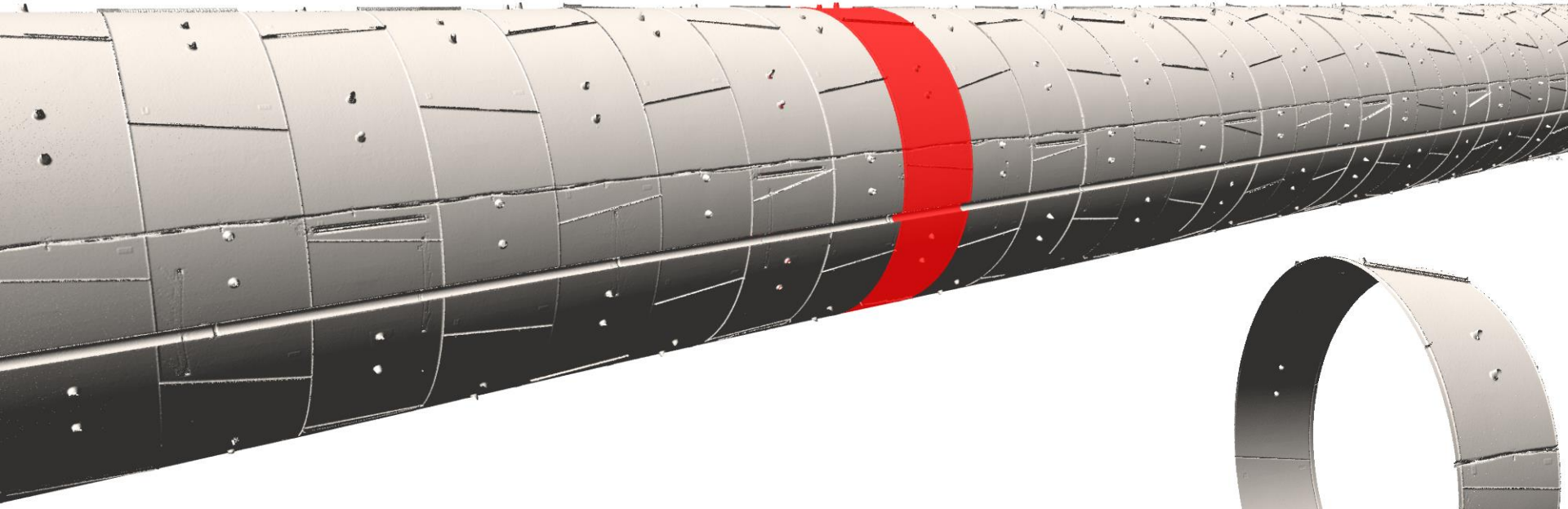
Infrastructure & transportation - enlongated structures



Location	France
Date	13. April 2023
Time	9:31 – 10:32
Scan positions	42

42 scan positions / 1 hour





laser scan of a metro tunnel

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Kontrollpunkte

	dX [m]	dY [m]	dZ [m]	dist. [m]
Mean deviation	0.0001	0.0003	0.0001	0.0062
Standard deviation	0.0036	0.0031	0.0050	---
Median abs. dev. (std)	0.0050	0.0023	0.0042	---

Infrastructure & transportation - enlongated structures

4.4.1 Control Points in CRS#1

Control points in CRS#1 ... RGF93 v2 / CC49 (EPSG::9829)

41 observations have been utilized on 13 control points in CRS. MSA results in the following statistics on the residuals:

	dX [m]	dY [m]	dZ [m]	dist. [m]
Mean deviation	0.0001	0.0003	0.0001	0.0062
Standard deviation	0.0036	0.0031	0.0050	---
Median abs. dev. (std)	0.0050	0.0023	0.0042	---

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Urban planning & smart cities

Location	*York / UK*
Date	15. March 2023
Time	14:22 – 16:33
Scan positions	149

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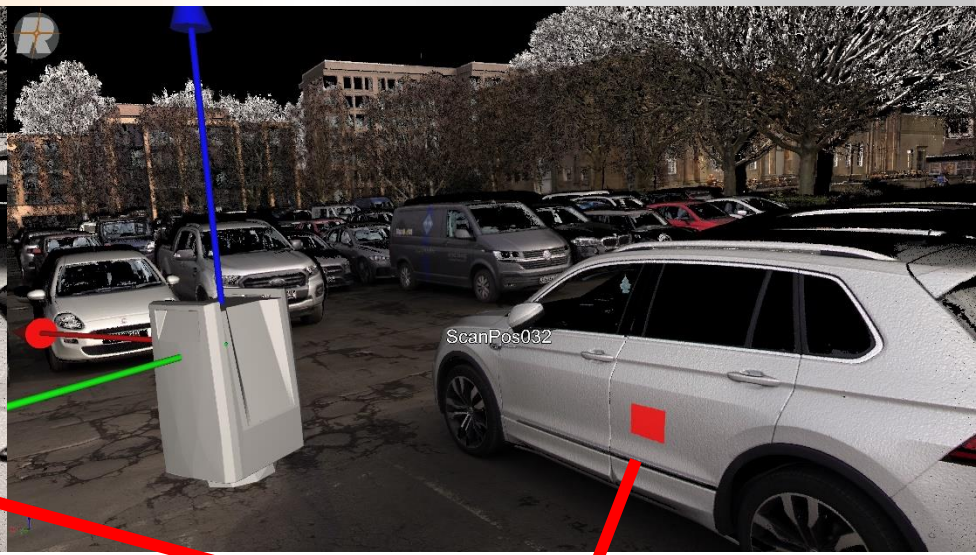
Urban planning & smart cities


BARCLAYS



Calculation results...

Statistics | Charts | Point Attribute Statistics

Units: [m] [deg] [dB] [dB] Amplitude

NUMBER OF POINTS

Total: 13552 Valid: 13552 Rate: 100.00%

STATISTICS

	Min	Max	Max - Min	StdDev	Mean
Range:	2.59818	2.76763	0.16945	0.03495	2.67941
Amplitude:	29.75000	31.08000	1.33000	0.18515	30.41184
Reflectance:	-4.77000	-3.35000	1.42000	0.20185	-4.05577
Deviation:	0.00000	7.00000	7.00000	1.30431	1.50782
Red:	0.50980	0.60784	0.09804	0.01704	0.55579
Green:	0.50588	0.60392	0.09804	0.01719	0.55176
Blue:	0.52941	0.62745	0.09804	0.01838	0.57300

Copy

PLANE

	Min	Max	Max - Min	StdDev	Mean
Range:	-0.00307	0.00784	0.01091	0.00088	0.00000

	X	Y	Z
Plane position:	-0.16006	-2.48679	-0.98182
Plane normal vector:	0.49116	0.87017	-0.03960
Inclination angle:	34.638		

OK Cancel Help

PLANE

	Min	Max	Max - Min	**StdDev**	Mean
Range:	-0.00307	0.00784	0.01091	0.00088	0.00000

approx. 1mm standard deviation (noise)

no averaging

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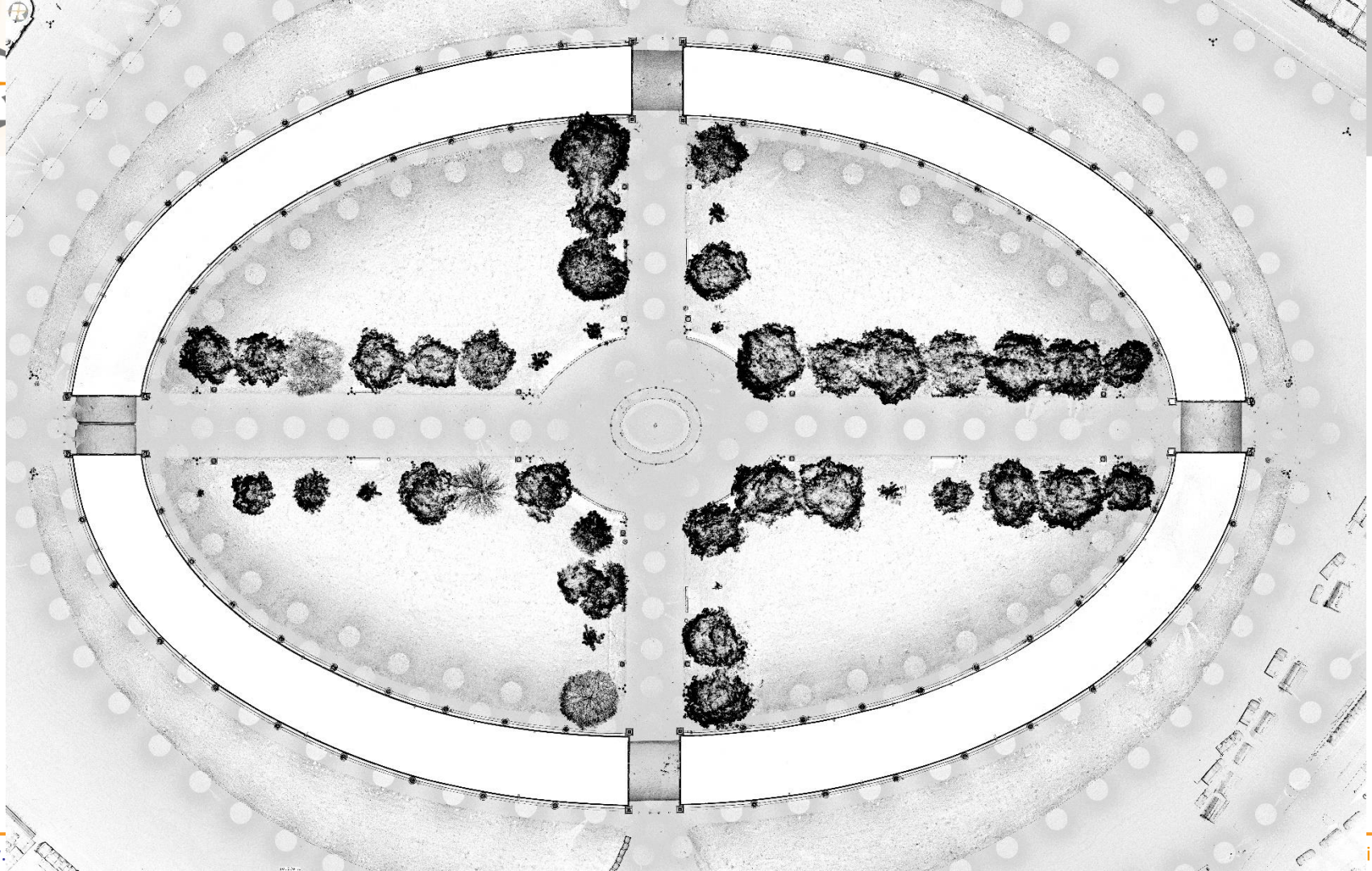
Surveying & mapping

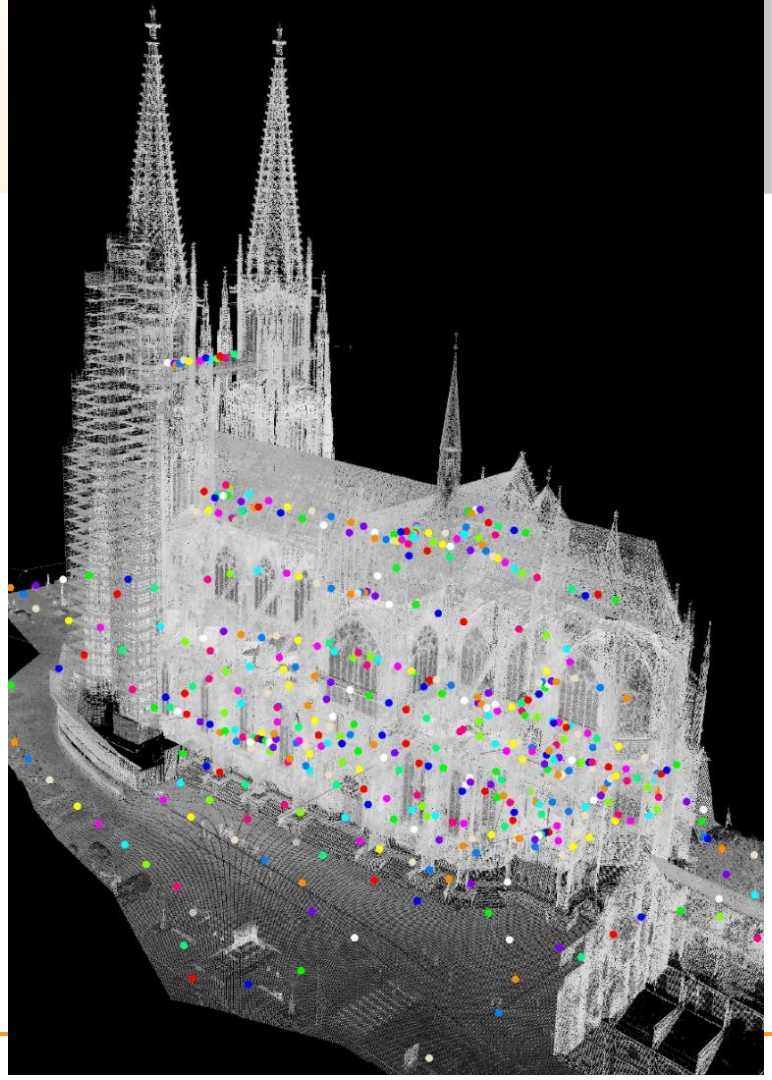
Surveying & mapping

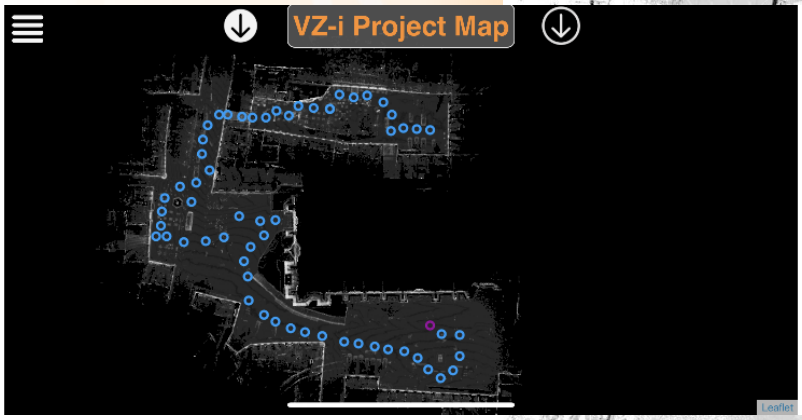
Location	Italy
Date	23. May 2023
Time	10:32 – 16:53 (6:21)
Scan positions	375

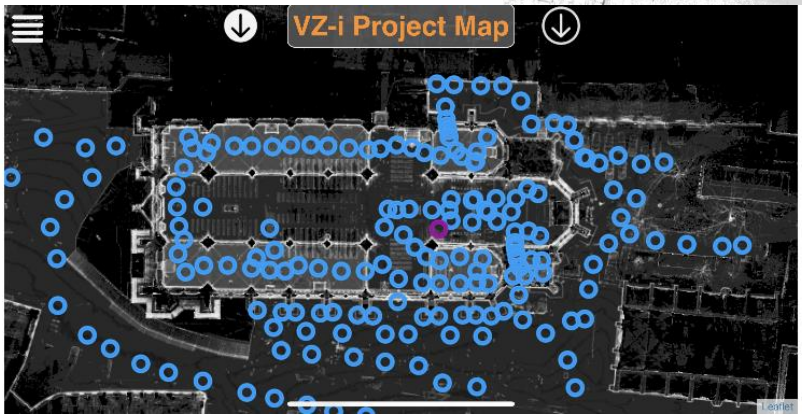


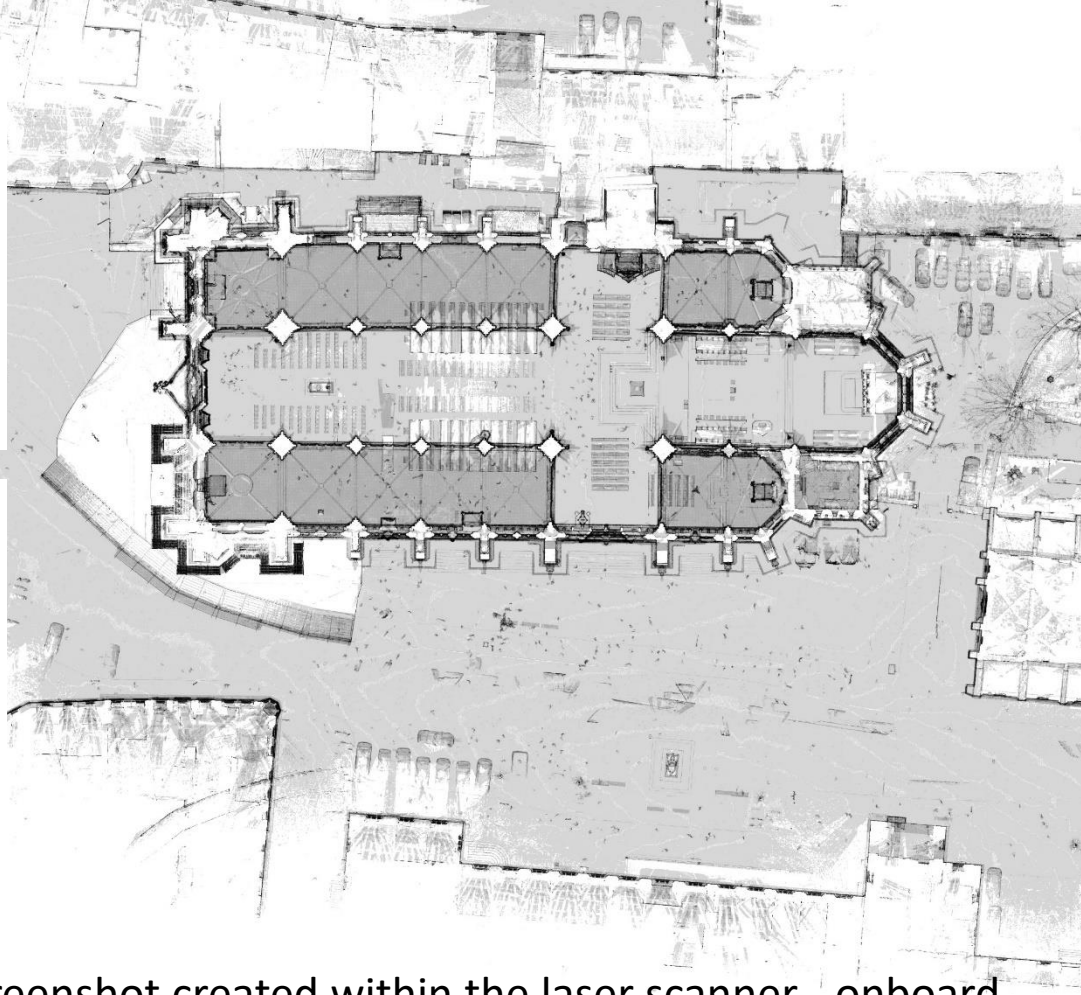
Architecture

Location	Germany
Date	20-21. March 2023
Time	Monday 11:11 – 17:12 Tuesday 8:15 – 18:01
Scan positions	501









Screenshot created within the laser scanner - onboard

Task selection
Select the tasks to be performed

Regensburger Dom / St. Peter (1. Messtag)

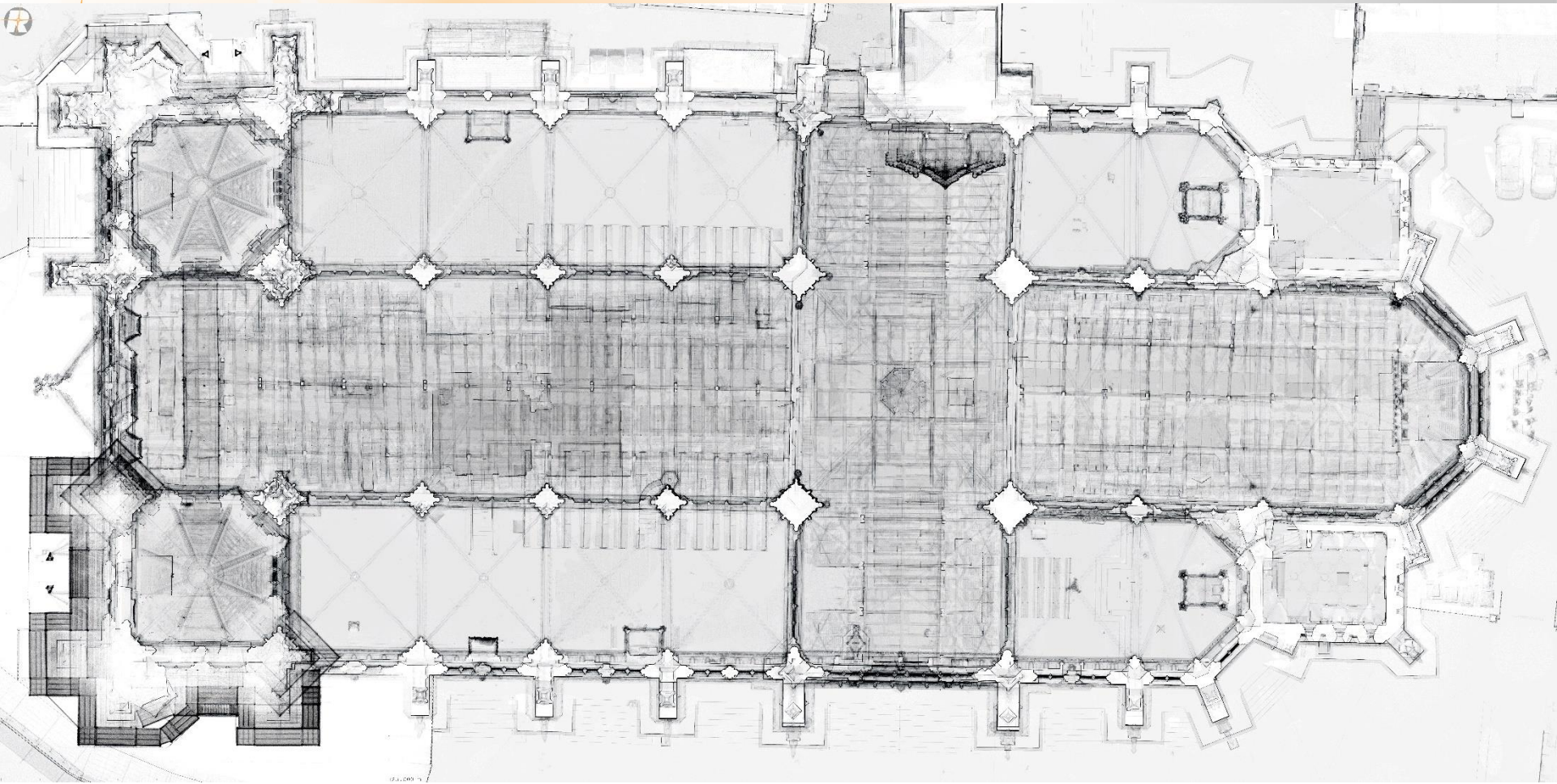
Save settings... | Load settings... | Restore defa

☐	**Task 1: Convert Scans** Convert raw RXP scan data into to RDB 2 database file format		
☑	**Task 2: Filter Scans** Keep one echo per laser shot. Delete points with a Reflectance below -20.00 dB Delete ...	100% Finished: 4m 55s 245 total, 245 succeeded	⚙
☐	**Task 3: Calculate Point Normals** Calculate a per point normal vector for lighting calculations in the 3D view		⚙
☑	**Task 4: Register Scan Positions** Register Scan Positions with Automatic Registration 2	100% Finished: 17s 241 total, 241 already registered	
☑	**Task 5: Fine Adjust Project** Adjust Scan Positions with Multi Station Adjustment 2	100% Finished: 1h 42m Succeeded	
☑	**Task 6: Calibrate Camera Mounting** Calibrate Camera Mounting by using data from first 3 Scan Positions	100% Finished: 20m Succeeded	
☑	**Task 7: Colorize Scans from Photos** Colorize Scans from Photos	100% Finished: 1h 5m 245 total, 245 succeeded	
☑	**Task 8: Mark Single Source Points** Mark points that are scanned from one Scan Position only with the "Single Source Point...	100% Finished: 1h 42m Single Source Points marked in 245 Point Clouds	⚙
☐	**Task 9: Mark Dynamic Objects** Mark points caused by dynamic objects with the "Dynamic Object Point" Point Flag		⚙
☑	**Task 10: Generate Octree based Point Clouds** Generate combined point clouds with the following resolutions: 0.010 m). "Single Sourc...	100% Finished: 48m Succeeded	⚙

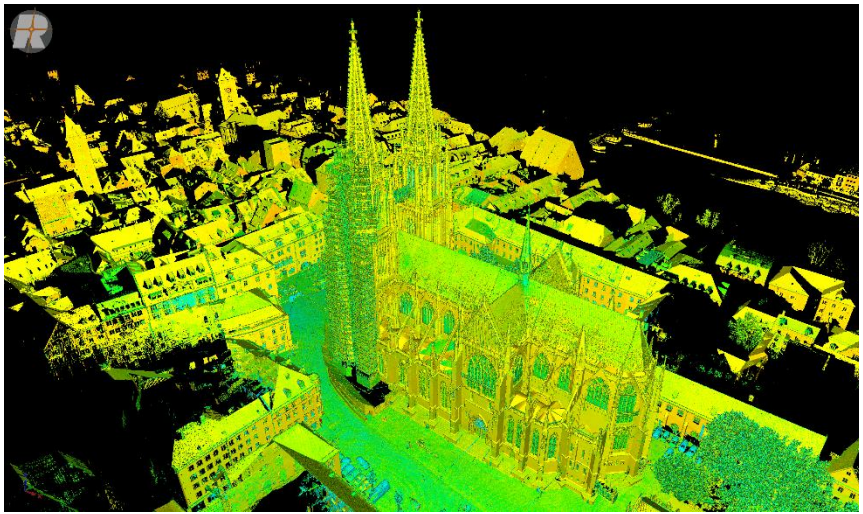

Architecture

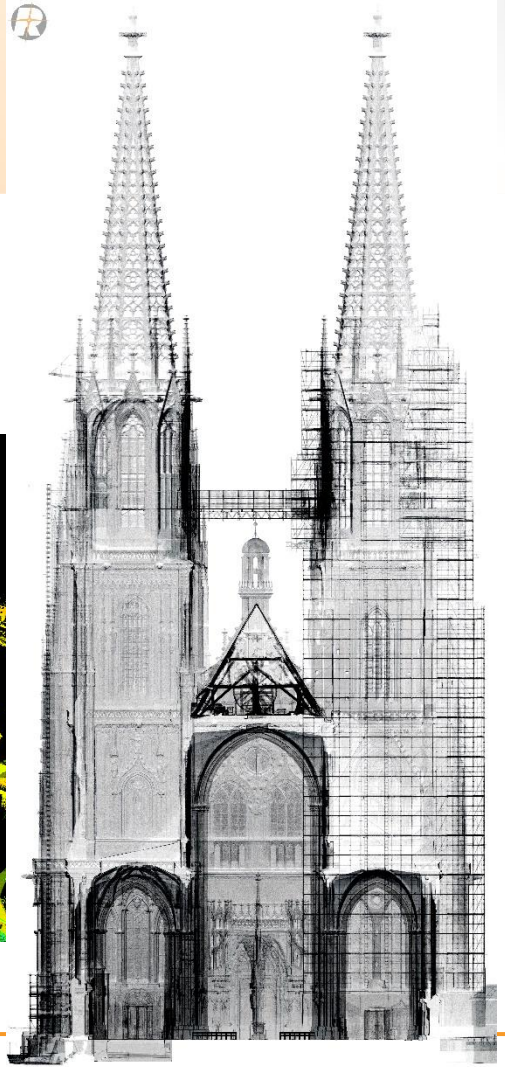

Architecture

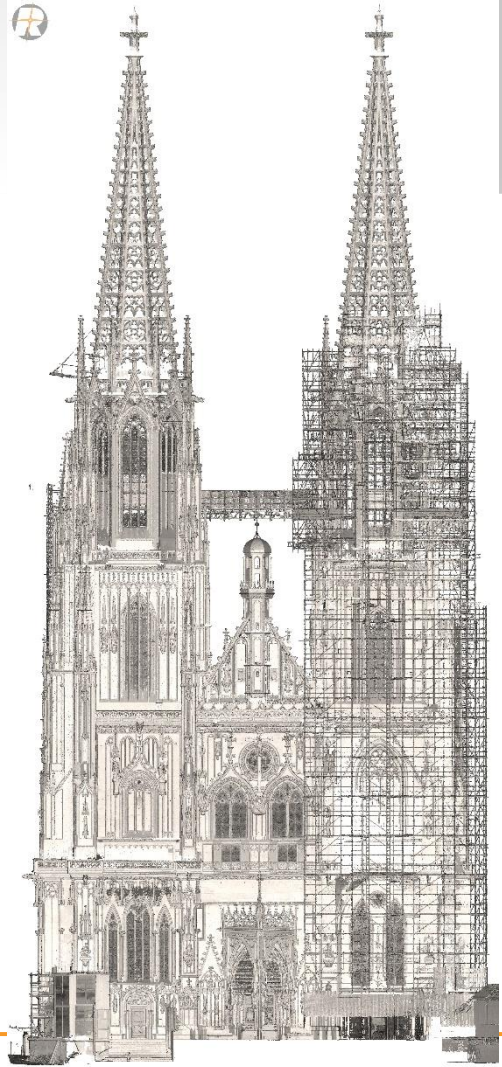

Architecture



Regensburger Dom / St. Peter

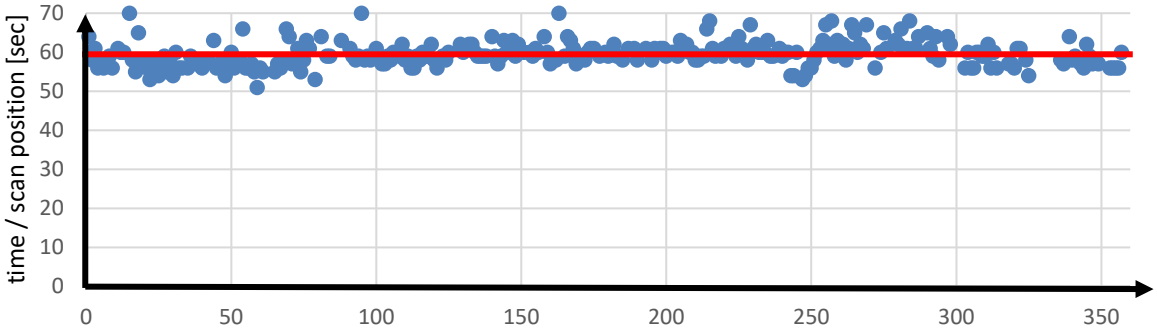


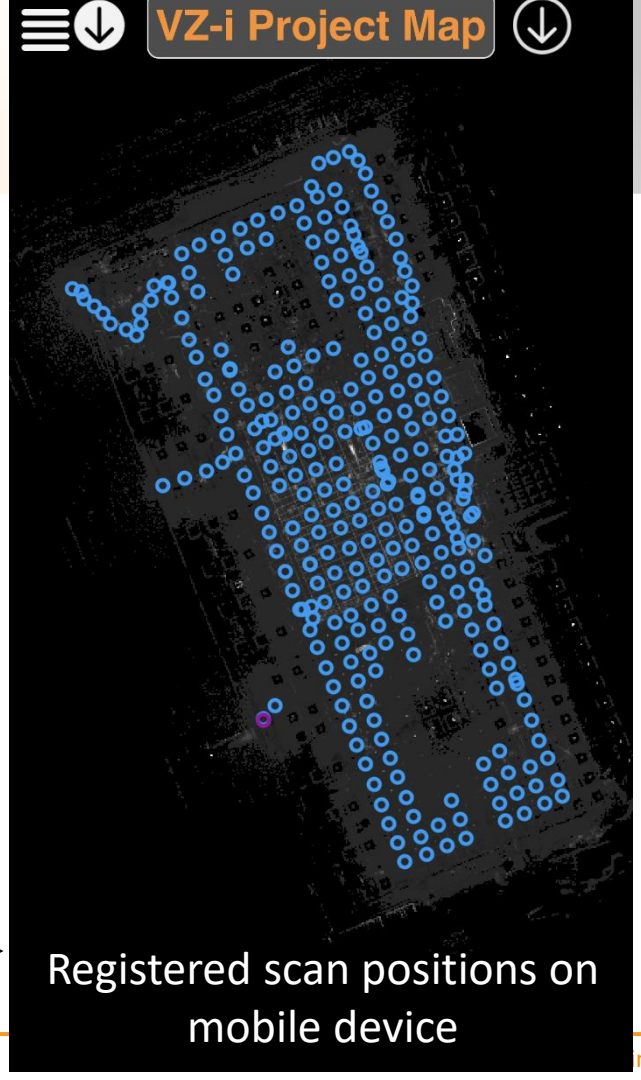




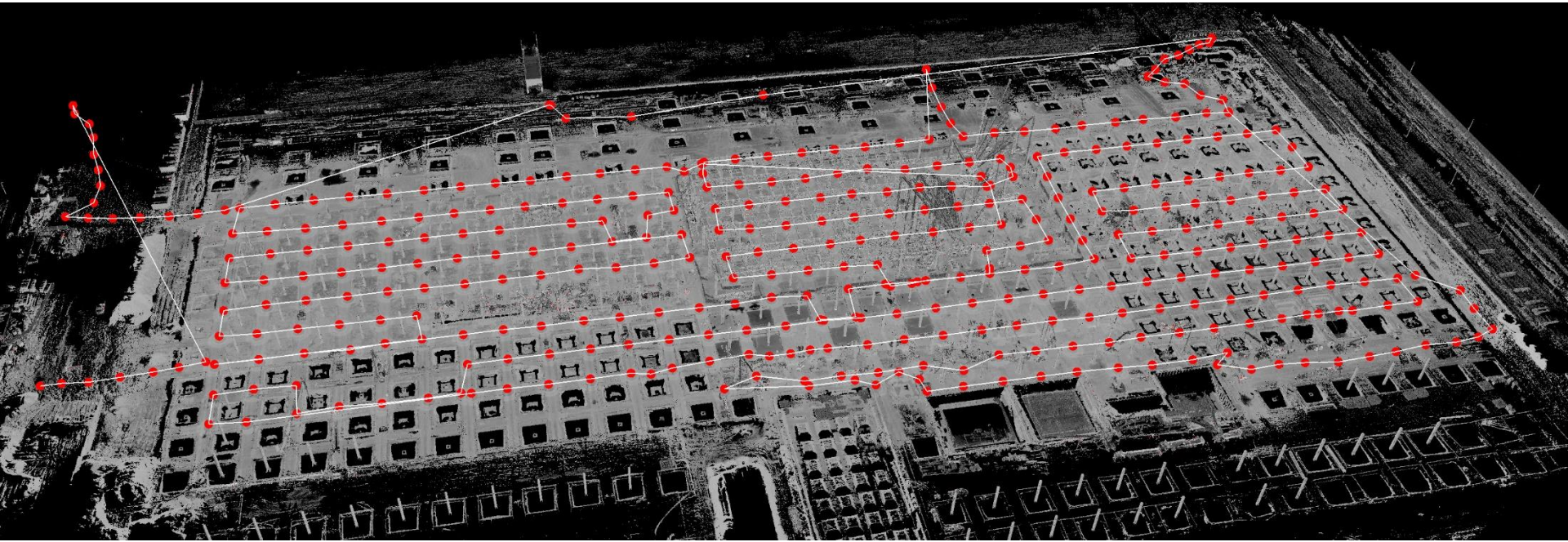

Construction / BIM

Location	Hungary
Date	19. April 2023
Time	8:18 – 16:23 (8:05)
Scan positions	379

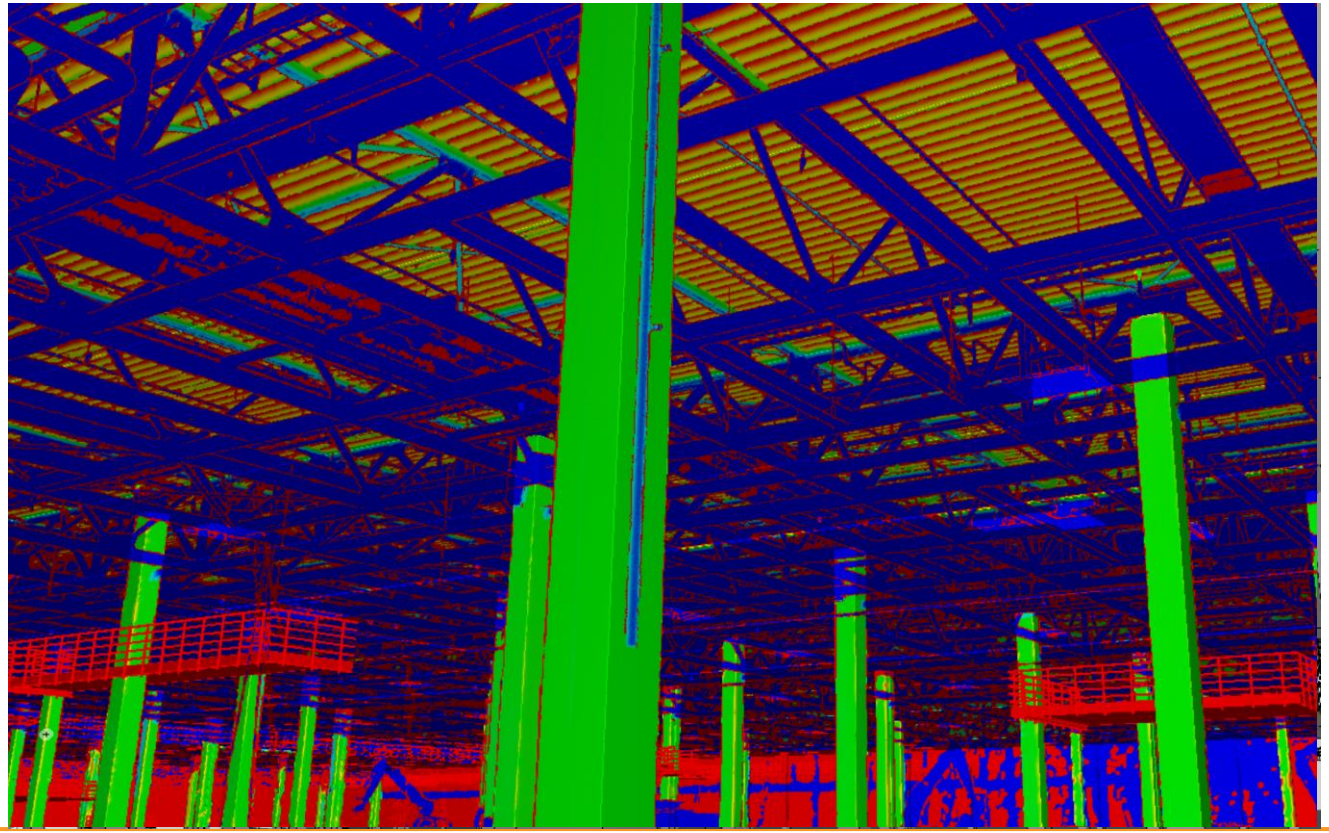




Registered scan positions on mobile device



379 scan positions (6027 meters walk)



Laser scans

IFC model

Laser scan / IFC model

Thank you
for your kind attention!

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