Baywei

Sea possibilities

Bathymetry in an Old Shipyard: Mapping the history for future development

June 2021, Szczecin (Poland)

A Green Island in Szczecin with and old shipyard

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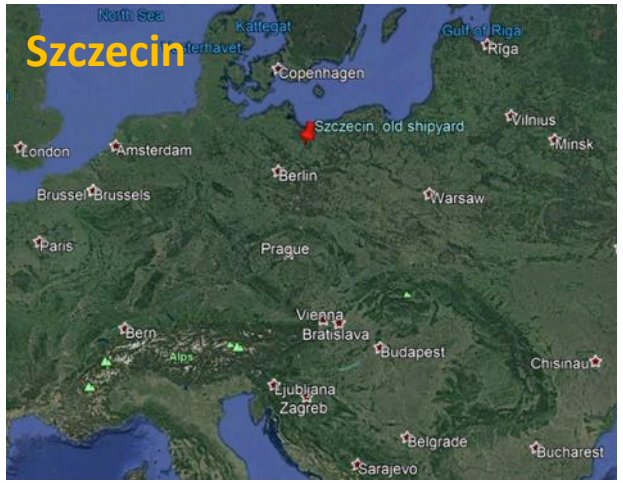

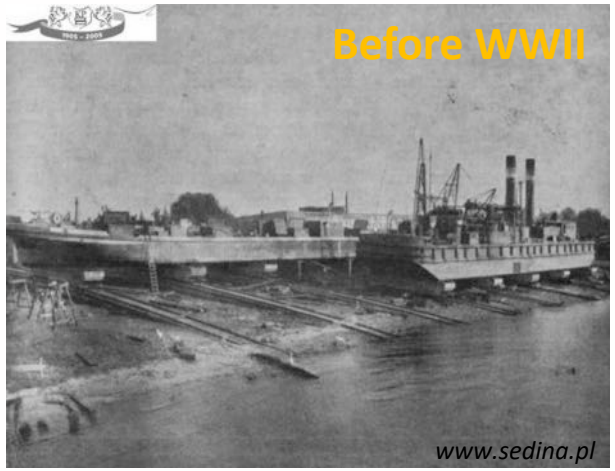

The shipyard was founded by the Germans on 28th of January 1903, and built 154 ships prior to World War I.

During WWII it built mostly Submarines (U-boots) for the German Navy, or Kriegsmarine.

Later it was used as a Polish shipyard, - but been abandoned after the political transformations in 1989.

Some of the structures are still the old German systems, - for example the original slipway, - what is still operating.

https://pl.wikipedia.org/wiki/Stettiner_Oderwerke

Baywei M5 – a compact multibeam echosounder

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Swath coverage	Up to 130 degrees
Number of RX beams	256
TX beam width along-track	1.45°
RX beam width	1° ±0.1
Range	>200m
Beam distribution	Equi-Distant and equi-angular beam distribution
Roll stabilisation	Yes
Pressure rating	100m
GNSS/INS	INS in Sonar
Position	HOR: ±(8mm +1ppm X Distance from RTK Station) VER: ±(15mm +1ppm X Distance from RTK Station) (Assumes 1m GNSS Separation)
Heading Accuracy	0.08° (RTK) with 2m Antenna Separation
Pitch/Roll Accuracy	0.03° Independent of Antenna Separation
Heave Accuracy	2cm or 2% (TRUEHEAVE™). 5cm or 5% (Real Time)
Ping Rate	50 Hz
Outputs	Bathymetry, Side Scan
Compatible with	Qinsy, Hypack, EIVA and others
Weight	Air: 3.5 kg Water: 1.1 kg

Quick mobilization on a 12 m long vessel

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Inertial Measurement Unit built inside sonar head

All data integrated with navigation system

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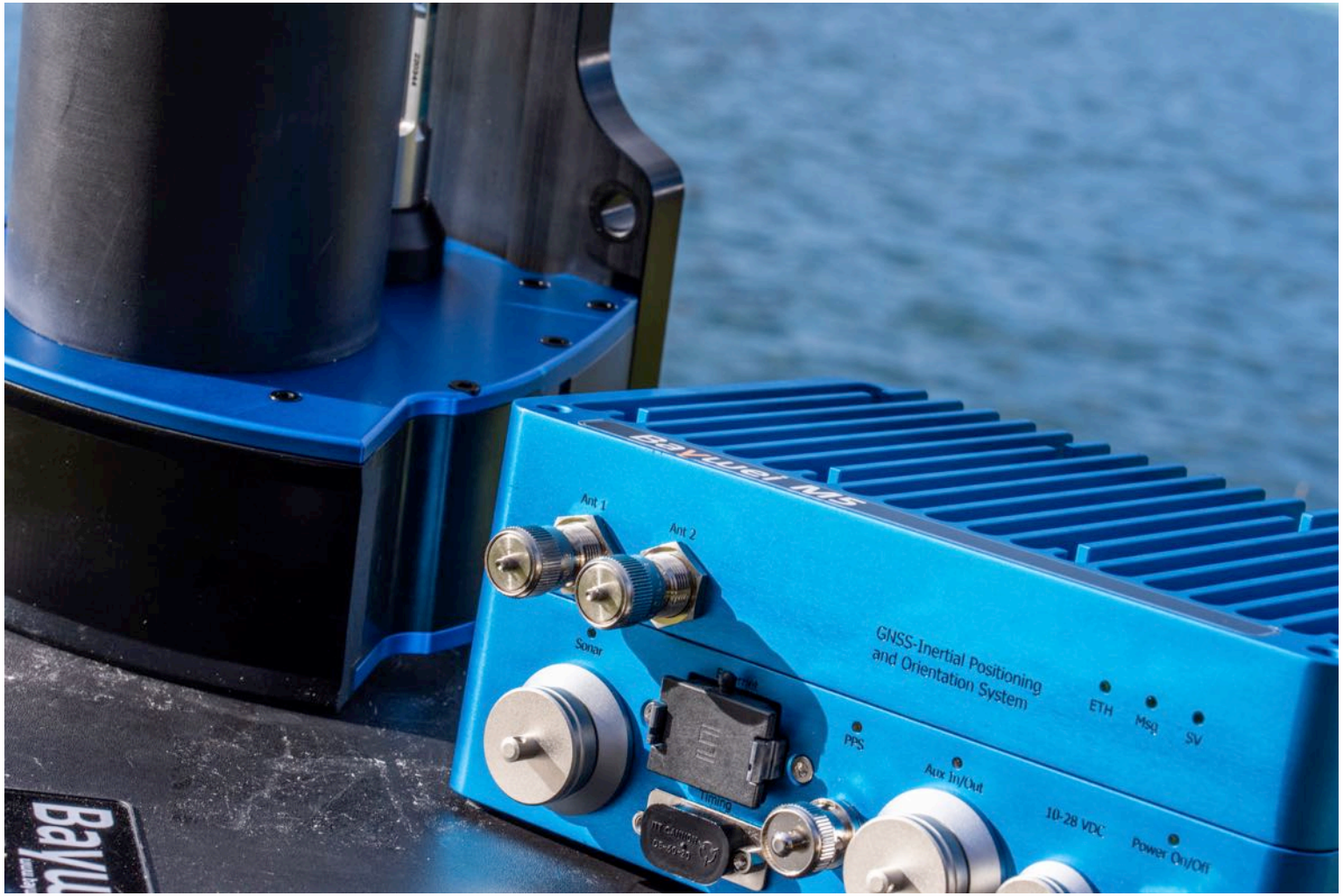

Data collection using a dedicated Baywei software

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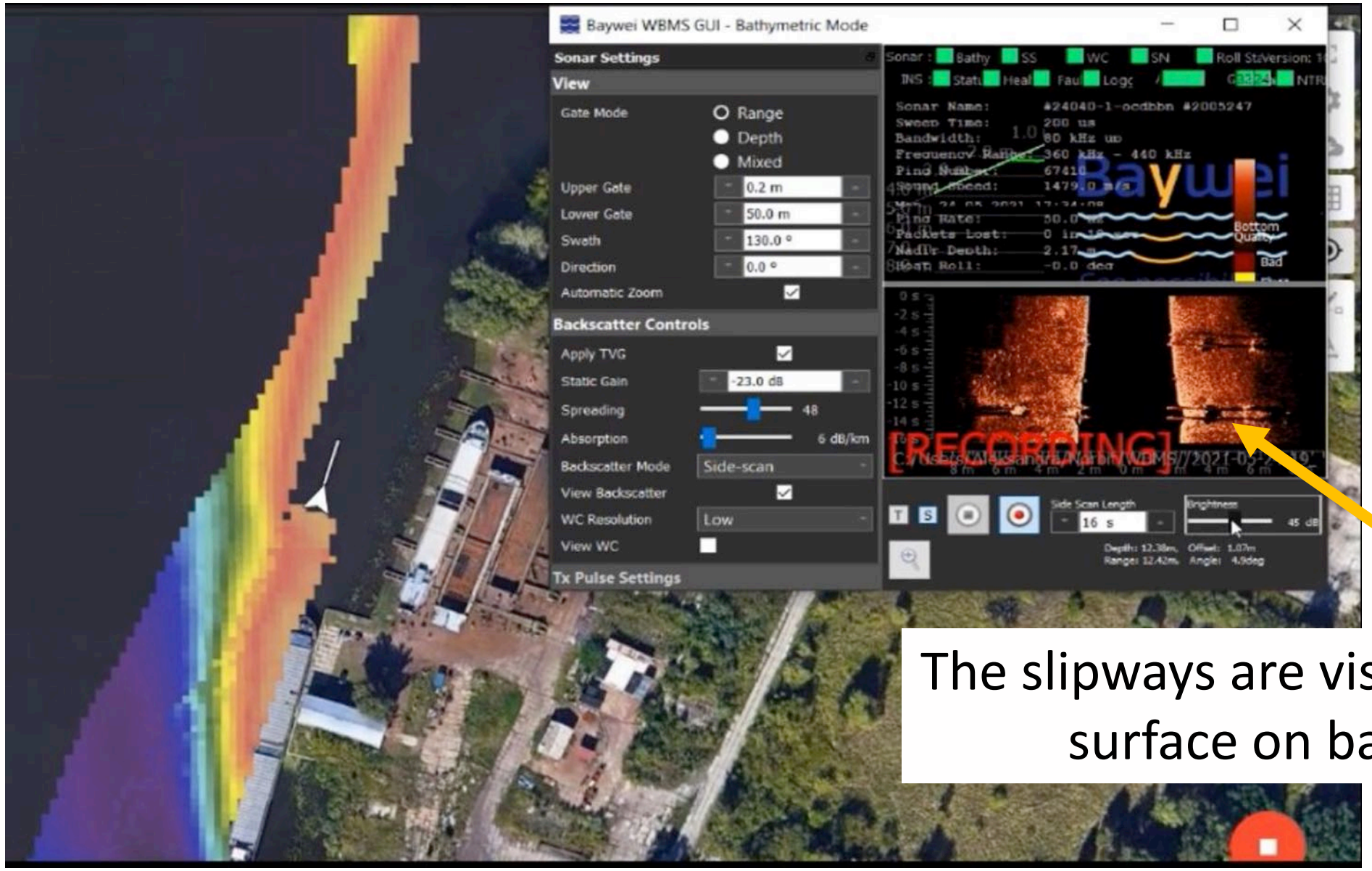

The slipways are visible under the surface on backscatter data

Data collection in Qinsy

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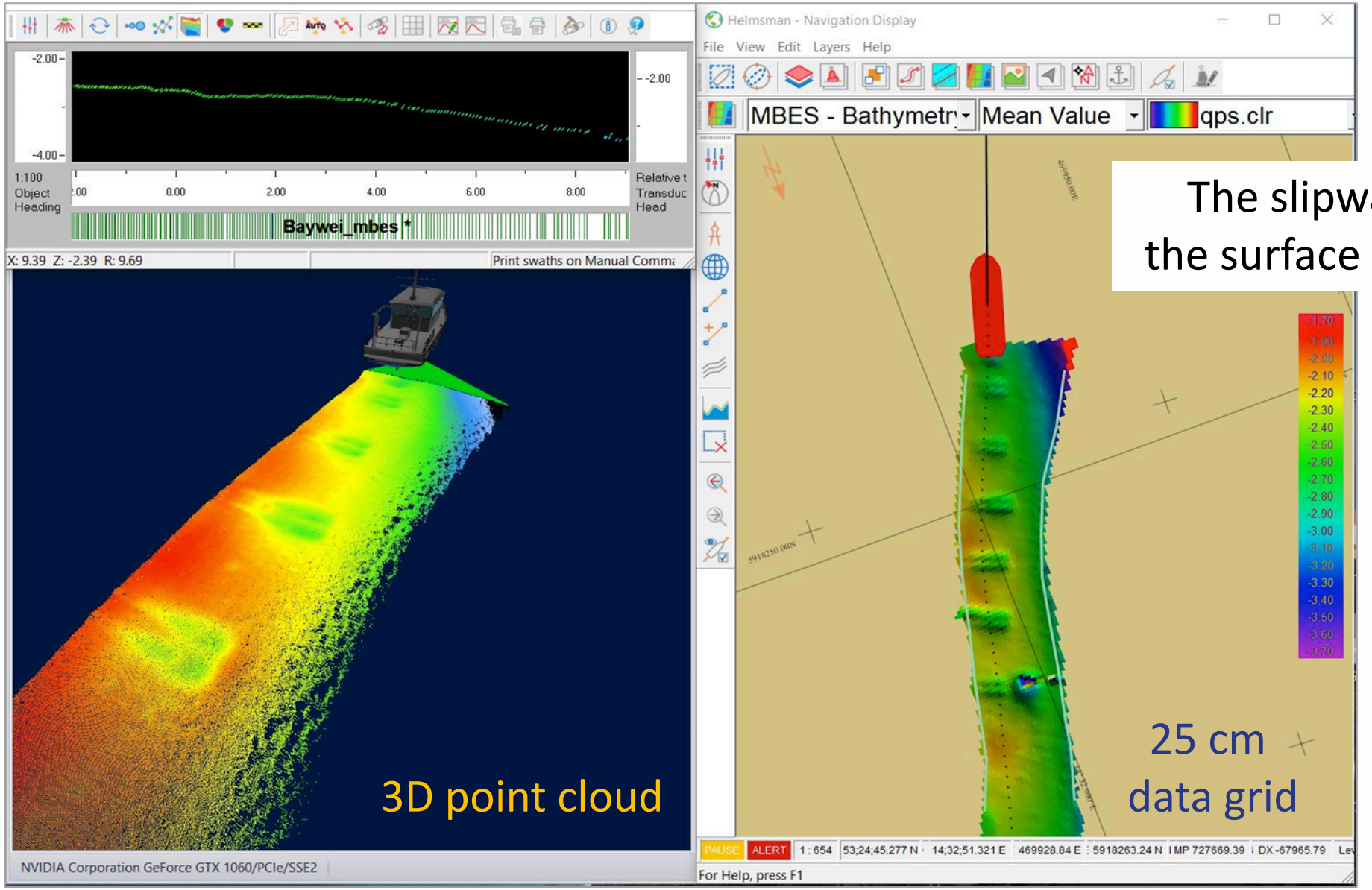
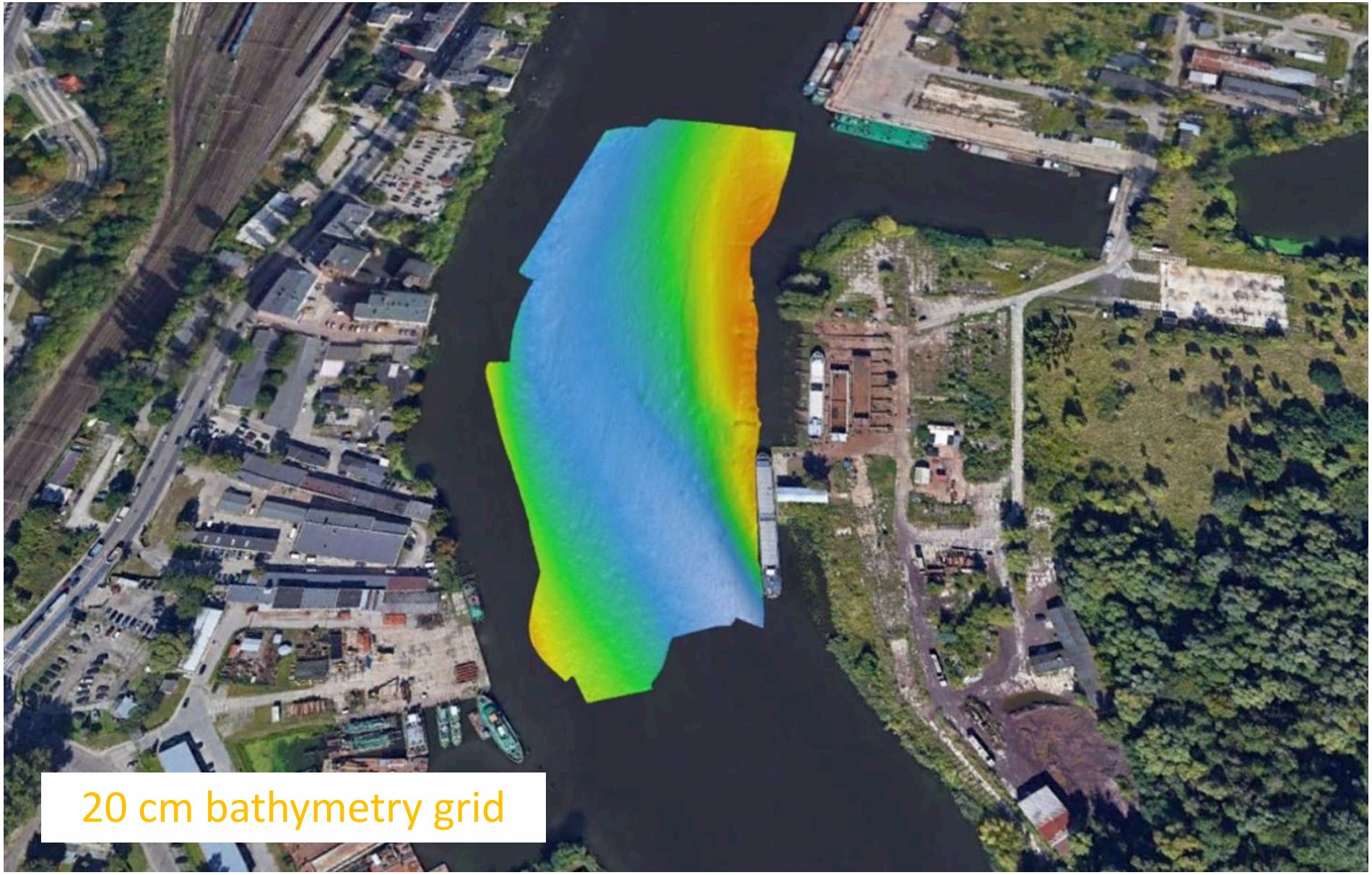


The slipways are visible under the surface on bathymetric data

Results



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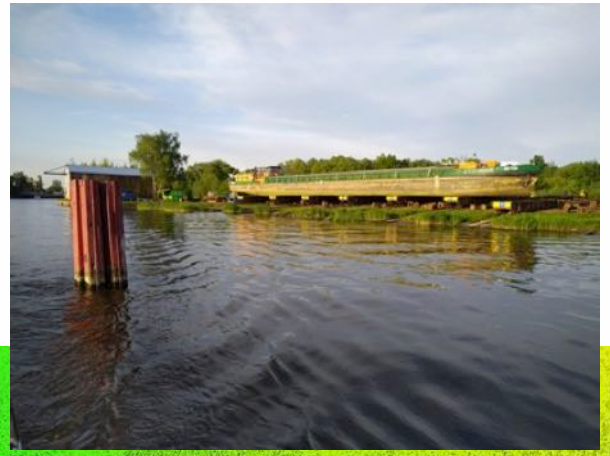
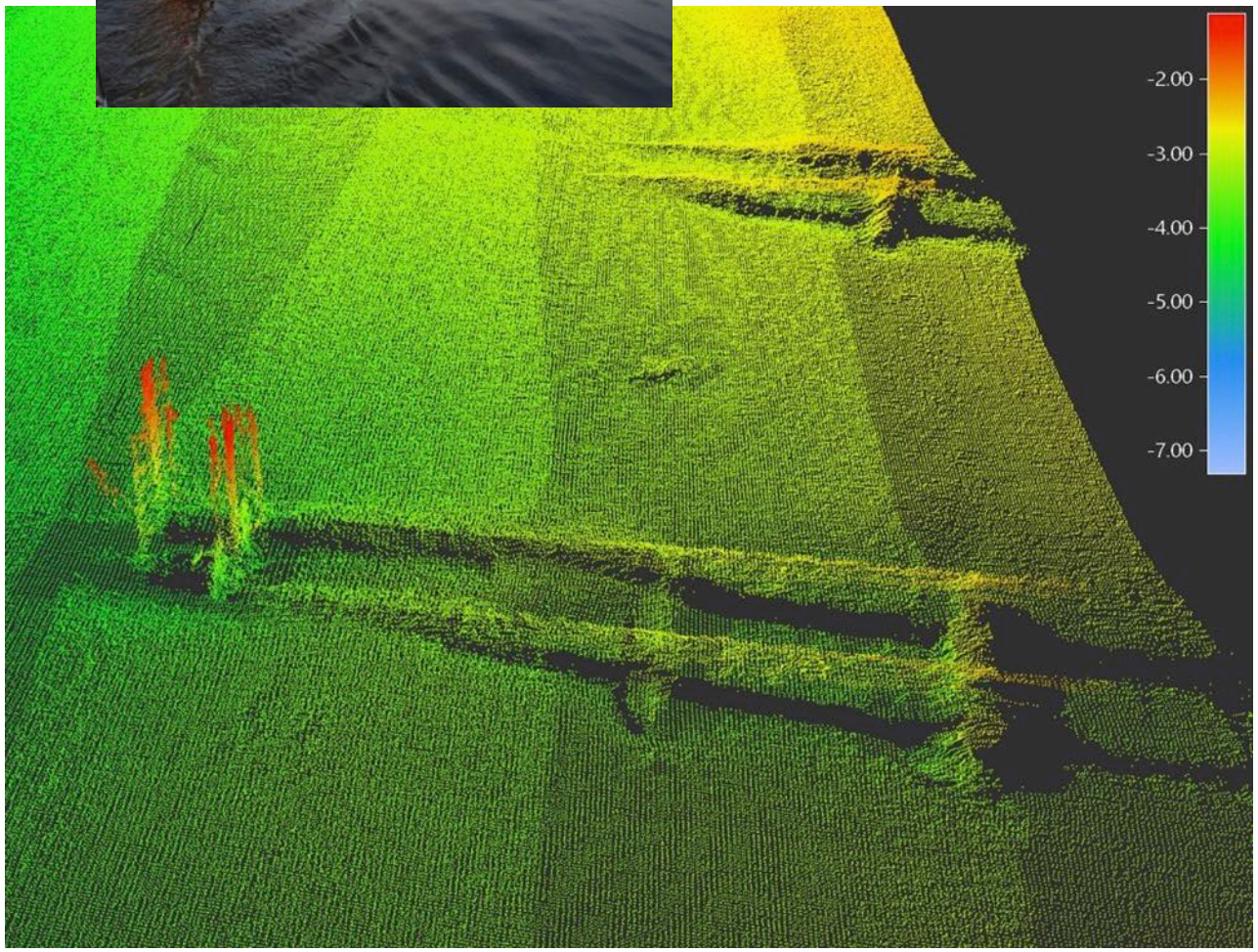
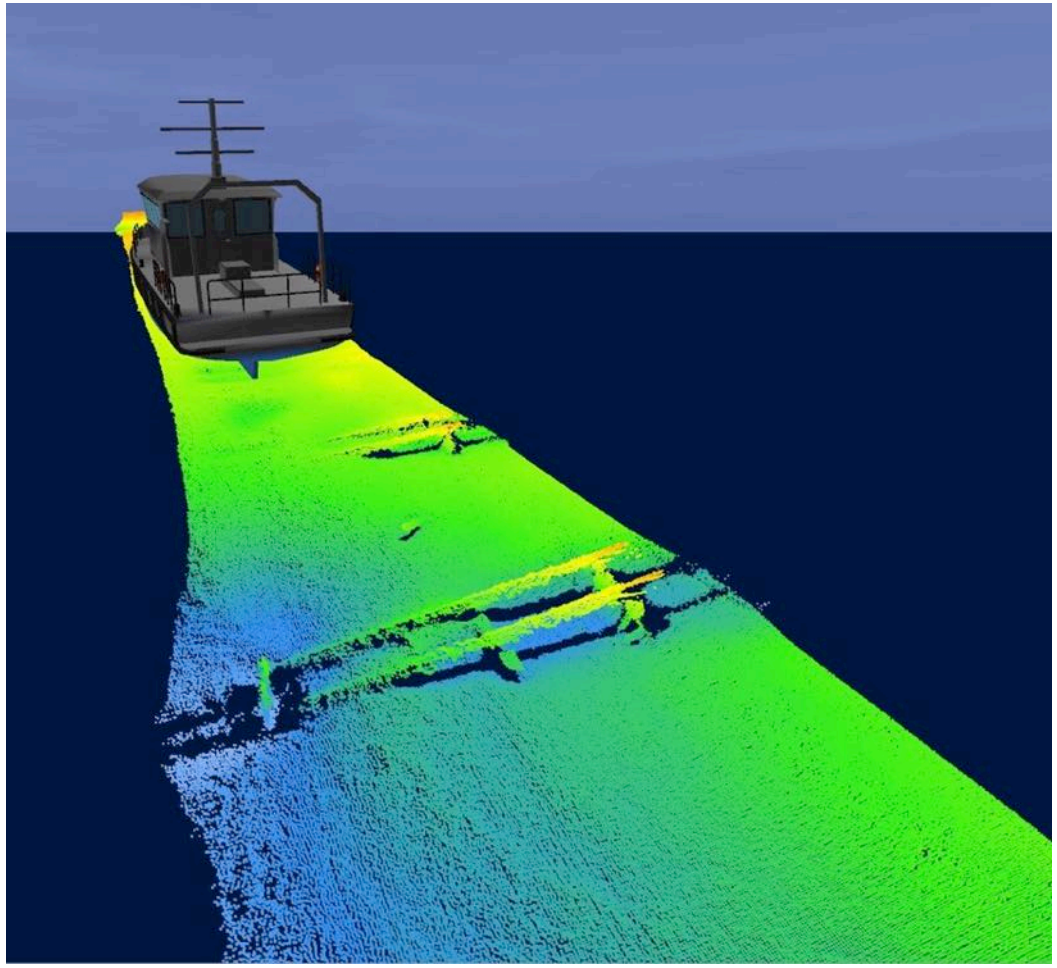
Results







Conclusions

- Future building project needed both underwater, subsurface and surface surveying. In the underwater mapping a Baywei M5 MBES was utilized.
- The compact size (see picture), small weight and the integrated IMU in the sonar-head made the installation fast and easy on this small survey vessel.
- In this project, we were able to proof, even a sonar with modest specification and economic price able to supply accurate and valuable data and map for future construction.