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Survey note:
River Thames, Wallingford, UK

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With thanks to HR Wallingford Ltd.

1 SYSTEM USED

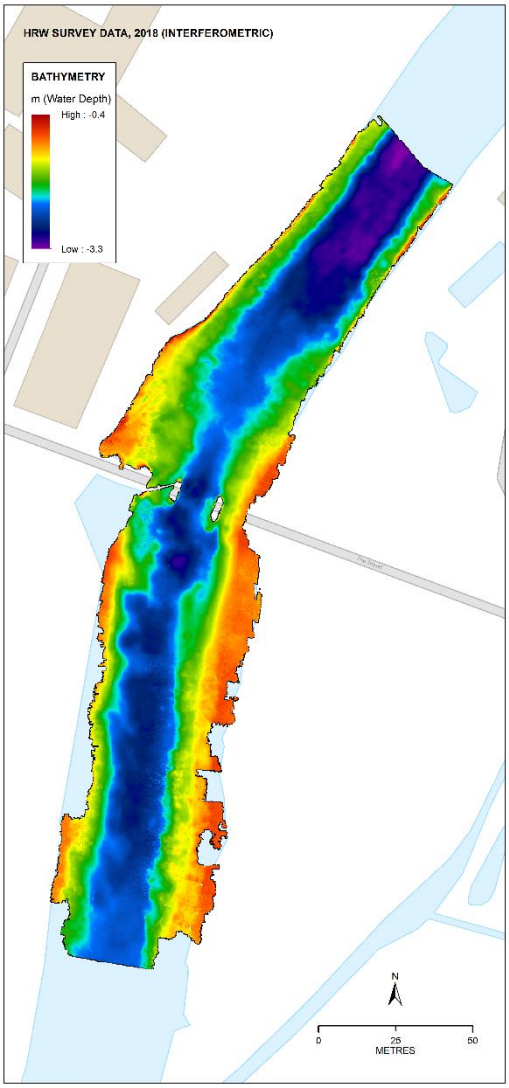
Sonar:	Bathyswath-2-STD (468kHz)
Motion sensing and positioning:	SBG Systems Ekinox-D, Hemisphere S321 RTK base station, via Satel UHF radio modem
Vessel:	HR Wallingford ARC-Boat USV

2 SURVEY DESCRIPTION

This was a test on the River Thames at Wallingford, UK, with Bathyswath on an ARC-Boat unmanned surface vehicle (USV), in collaboration with HR Wallingford Ltd. A Bathyswath-2 Deck Unit was fitted to the top of the ARC-Boat together with a watertight electronics box containing an Ekinox-D INS and dual-antenna GNSS system, and a Raspberry Pi micro-computer to control the sonar, record data for processing, and send data to the shore over a radio link for monitoring.

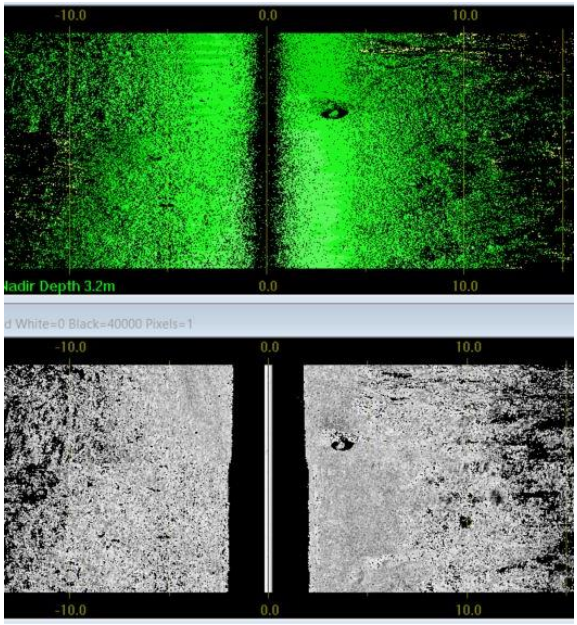
Data processing and imaging was performed with Bathyswath software suite.

Running up the centre of the river, the entire river from bank to bank (about 40 metres, 2.6 metres deep) was scanned in a single pass, although more lines may be necessary for good survey quality.



Depth map of the River Thames around Wallingford Bridge
Courtesy of HR Wallingford Ltd

HR Wallingford reported that "*The system has shown itself to be versatile, being capable of being used for "wide area, lower data density" surveys (where data coverage and survey efficiency are the primary drivers, not high resolution datasets around structures), as well as "high resolution, detailed" surveys (for monitoring scour around structures, for example). It is well suited to being deployed on the ARC-Boat from both mechanical and electronic installation perspectives. The nature of the sonar also lends itself well to surveys in shallow water, given the achievable swath widths.*"



Bathymetry and sidescan images of circular object on the bottom
These is probably a discarded car tyre