DRONESYSTEMS

Funded by the European Union

Riverbed Geometry Survey

Complete river cross sections: LiDAR above the water, radar or echosounder below it

WHAT IT IS

One cross section from bank to bank as a single profile. The dry part comes from UAV LiDAR; the submerged part from one of two UAV bathymetry payloads chosen for the river: a water-penetrating radar flown just above the surface, or an echosounder towed in the water on a cable. The two are merged into one continuous cross section in your reference system.

WHICH PAYLOAD FOR YOUR RIVER

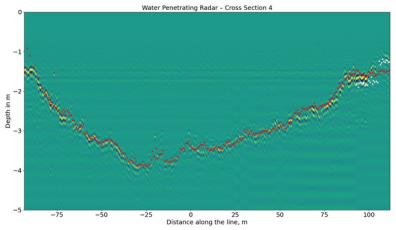
	Water-penetrating radar	Echosounder
Sensor	Radar Systems Zond AERO LF on SkyHub	Echologger ECT 400s on SkyHub
Works when	Water conductivity up to about 300–400 µS/cm; depth depends on bed type	Any conductivity; slow-flowing rivers (towed sensor)
Limits	Conductive water; rough surface	Fast flow; submerged vegetation (multi-frequency helps)
Flight	Within 0.5 m of the water, max 2 m/s, two passes, true terrain following	2 m above the water on the cable, max 1 m/s, one pass, true terrain following
Accuracy	10 cm or better	10 cm or better
Rate (VLOS)	0.75–2 sections per hour	0.75–2 sections per hour
Raw output	Radargram (SEG-Y) + position log	Sonar profile + position log

WHAT YOU GET

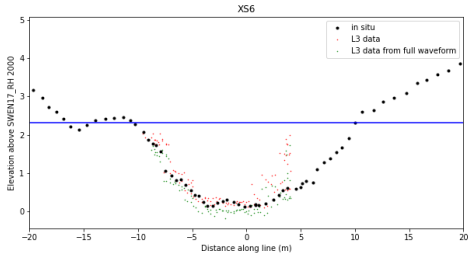
- Merged cross sections at the requested chainages (CSV), bathymetry points, and the LiDAR DTM of the banks (see the LiDAR datasheet).
- Radargrams or sonar profiles on request; everything in your horizontal and vertical datum.

HOW IT IS FLOWN

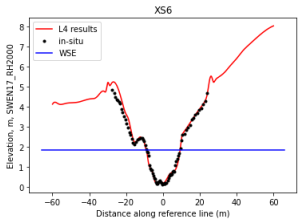
- Flown VLOS in the 'open' category from a take-off site near each section; flight time per section is a few minutes, access and endpoint adjustment take the rest. The low-altitude bathymetry flights are not offered BVLOS yet.



Radar: radargram of Torne River section 4; red dots ADCP, white dots RTK.



Echosounder: Rønne Å section 6 against RTK checks (black).



Delivered: merged LiDAR + bathymetry cross section (Rønne Å XS6).

KEY FACTS

Payloads	Zond AERO LF radar or ECT 400s echosounder; Zenmuse L2 LiDAR
Accuracy	10 cm or better above and below water
Platform	DJI M300 RTK with true terrain following, VLOS
Output	Merged cross-section CSV, bathymetry points, DTM

WHAT A QUOTE COVERS

- Planning and preparation (section placement, access, permits)
- Survey days, crew of two
- Transport and accommodation
- Data processing: bathymetry, LiDAR, merged sections

Prices depend on reach length, number of cross sections, access and VLOS/BVLOS. Quote on request.

CONTACT

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