

A **NORBIT** Company



► Performance

- Range: 0.5–200 m below transducer
- Seabed penetration: up to 30 m (depending on seabed type and noise)
- Range resolution: up to 10 cm (depending on pulse settings)
- Depth accuracy: 2.5 cm + 0.08% water depth
- Motion compensation: Heave and Roll ($\pm 10^\circ$, optional); external sensor data required

► Transmitter

- Principle: parametric (nonlinear) acoustics
- Frequencies: 100 kHz (HF) / 6–15 kHz (LF); user selectable, total LF band: 3–22 kHz
- HF Source Level: c. 230 dB rms / 236 dB peak
- Beam width: c. 4° ($\pm 2^\circ$) roll $\times$ 8° ($\pm 4^\circ$) pitch for all frequencies
- Pulse type: CW, Ricker
- Pulse width: 0.15–0.5 ms (user selectable)
- Pulse rate: up to 25 Hz, multi-ping mode

► Data Acquisition

- Digital, 2 channels (LF and HF, "SES3" format)
- Sample rate c. 100 kHz @ 24 bit; resolution <1 cm
- LF sub-bottom data: raw (full-waveform)
- HF data: processed (envelope)

► General & Applications

- First / latest product generation: 2026
- Small boats and vehicles, in- and near shore
- Integration into USV and ASV of all scales
- Remotely controlled and autonomous operation

► System Components

- Transducer with integrated transceiver electronics (depth rating 60 m; survival 100 m): W 265 mm $\times$ D 152 mm $\times$ H 100 mm / weight c. 8 kg in air (c. 4 kg in water); without fairings
- SBP Interface Unit (SIU, topside breakout box) W 170 mm $\times$ D 120 mm $\times$ H 55 mm / weight c. 1 kg
- AC power adapter (100–240 V AC)
- cable with connectors at both ends (length 1–25 m, standard length 8 m)
- Pair of removable fairings for pole-mounting (weight c. 1.5 kg in air / 0.5 kg in water)
- Mounting kit with silencers
- System control PC / laptop (not included): MS Windows® based

► Power Supply

- 24 V (15–30 V) DC; at SIU 24 V (10–36 V) DC
- Power consumption: SIU c. 5 W, SBP standby 5 W / typ. 20 W / max. 35 W
- Power-on inrush current: max. 5 A

► Software

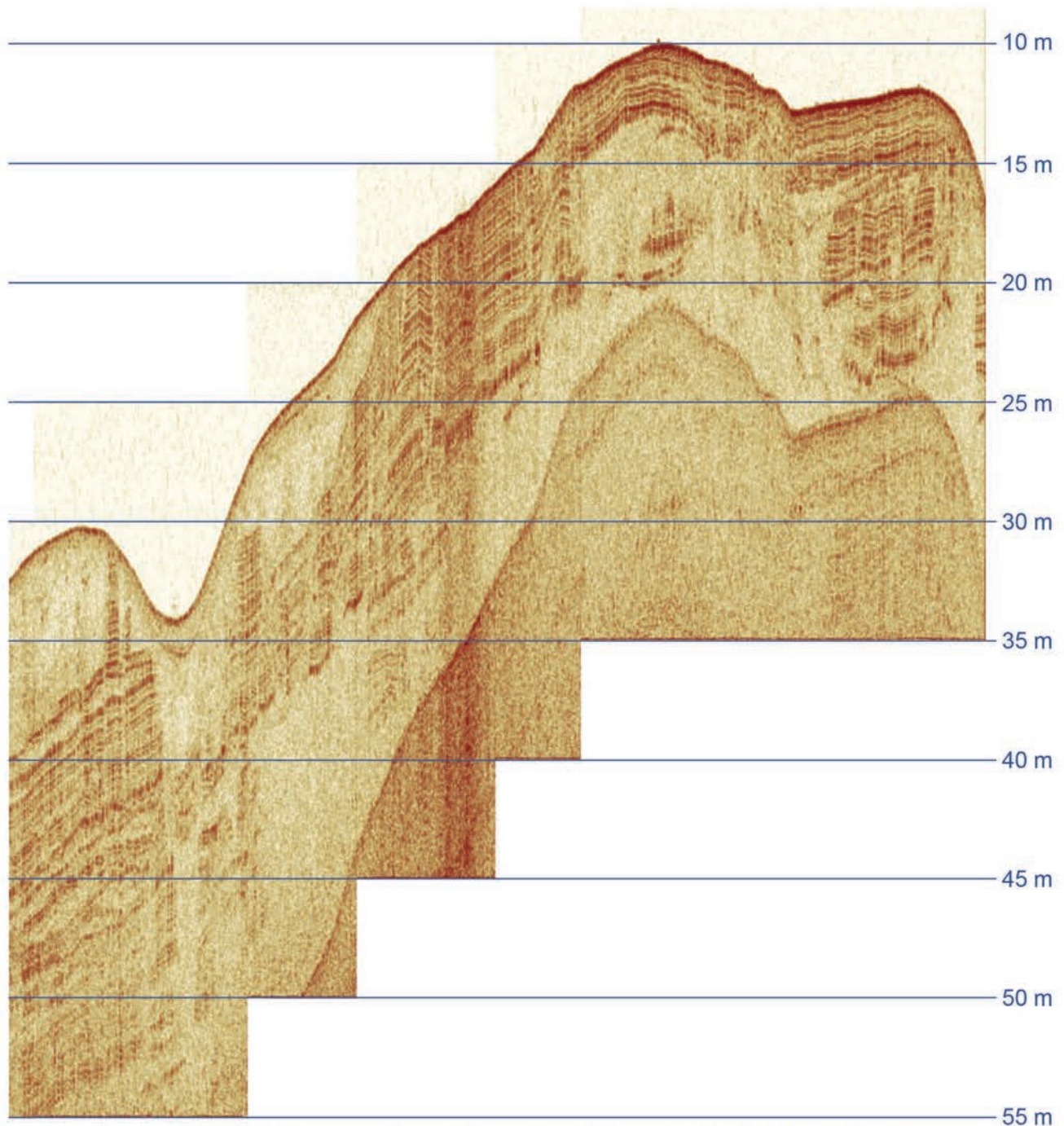
- SESWIN data acquisition software with extended remote-control (RCE)
- SES-Convert SEG-Y/XTF data export
- SES-NetView remote display
- ISE post-processing software (optional)



Innomar essential

Parametric Sub-Bottom Profiler

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Innomar "essential" SBP data example from Trondheim / Norway (pulse 12 kHz / 160 μ s)