

Gaps M5

Pre-calibrated USBL system

Gaps M5 is a Medium frequency Ultra-Short Baseline (USBL) positioning system for accurate location, positioning and tracking of subsea assets, from ultra-shallow water to medium water depths.

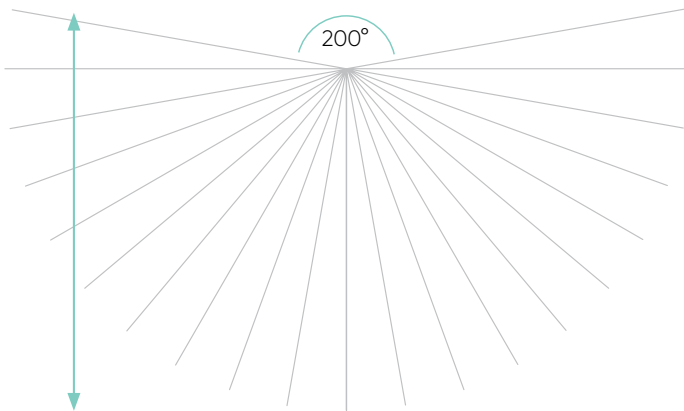
It combines an USBL integrated with a heading and attitude sensor based on Exail FOG technology. Available in free of export version* and extended range version (Gaps M5-XR), Gaps M5 is a lighter and more compact version of Gaps.



Compatible with all Dynamic Positioning Systems

True horizontal tracking

From the surface...



... to medium water depths (995m)

USBL/LBL & Acoustic Communication

FEATURES

- 200° aperture: above horizontal tracking.
- Not subject to export restrictions*.
- Robust True North finding sensor.
- DP compatible LBL/USBL.
- Third-party transponder compatible.
- Acoustic communication (telemetry).
- 3D display software included (Delph Roadmap).

*According to the European export control regulation. Only valid for the Gaps M5 version.

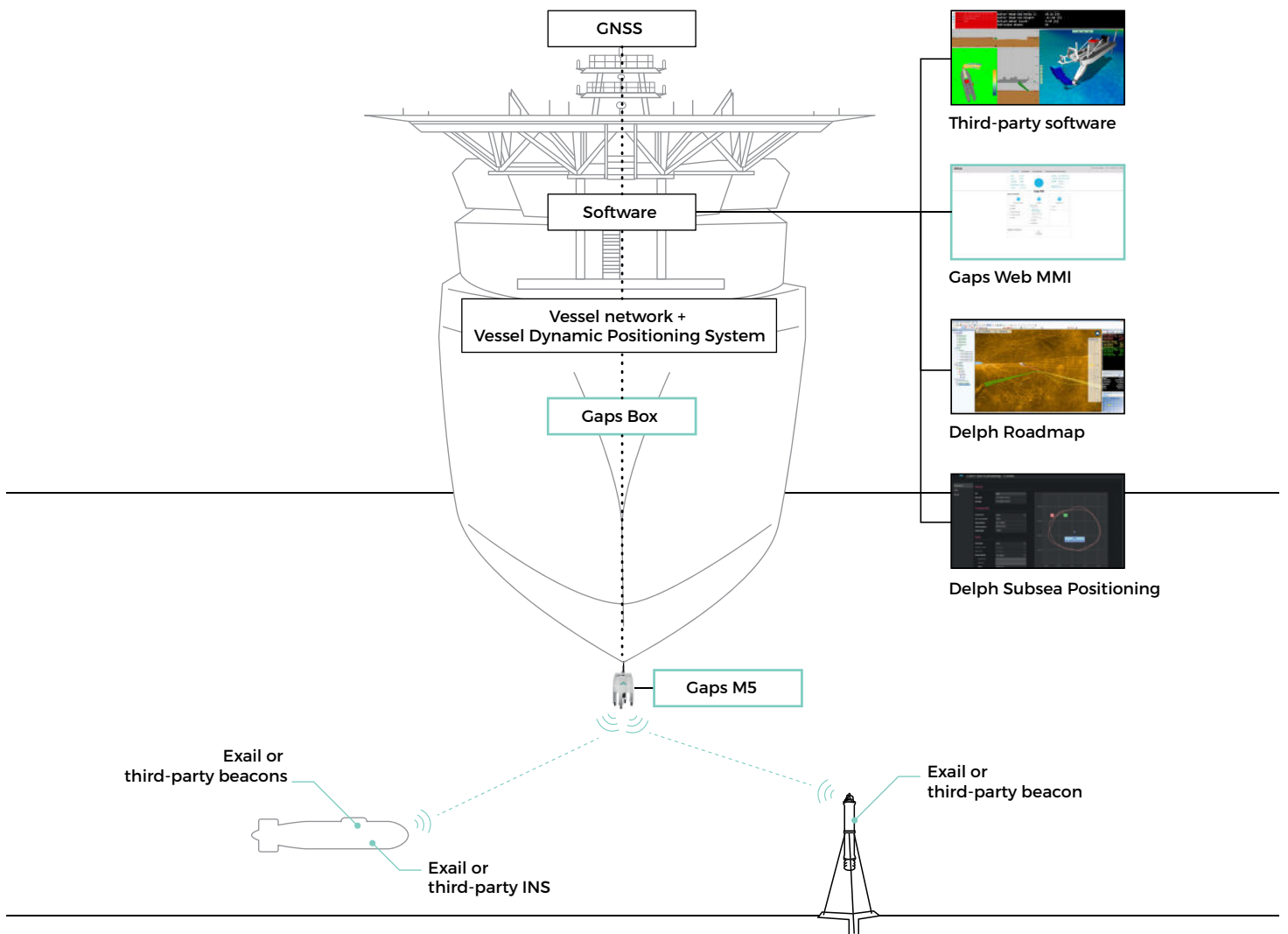
BENEFITS

- Calibration free.
- Shallow water and horizontal tracking.
- Accurate absolute positioning.
- Easy to install, operate and repair for cost-efficiency.

APPLICATIONS





- AUV tracking
- ROV tracking
- Tow fish tracking
- Diver tracking
- Dynamic positioning
- LBL Box-in
- Offshore construction

GAPS ECOSYSTEM



COMPATIBLE TRANSPONDERS

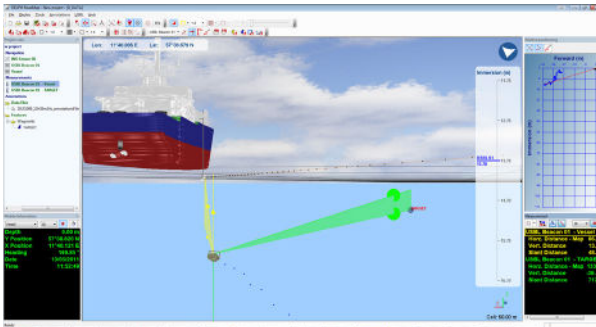
Gaps M5 is compatible with all Exail MF beacons including:

Name	Description	Acoustic communication	Applications
MT9x2 series 	Internal rechargeable battery, OEM, 1000, 3000m depth rated		ROV, Tow fish and diver positioning
MT8x2 series 	Internal Lithium battery 3000m and 6000m depth rated		ROV, Tow fish and diver positioning
MTBx2 series 	Mini transponder for AUV OEM and 300m depth rated	●	AUV positioning
Canopus 	LBL and Sparse LBL Intelligent transponder 4000 and 6000m depth rated	●	AUV positioning, LBL calibration, Dynamic Positioning (DP)

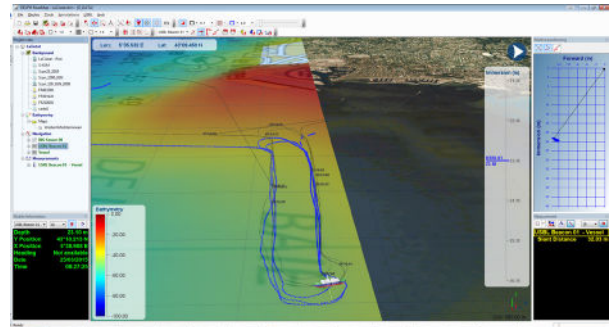
For third-party transponders compatibility: contact Exail.

DELPH ROADMAP

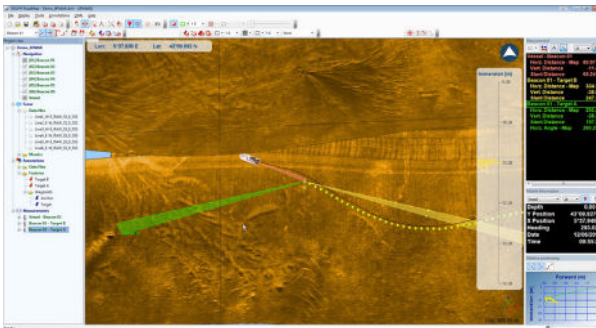
3D visualization software for real-time and offline display. Compatible with Exail INS, acoustic systems and NMEA positioning devices.



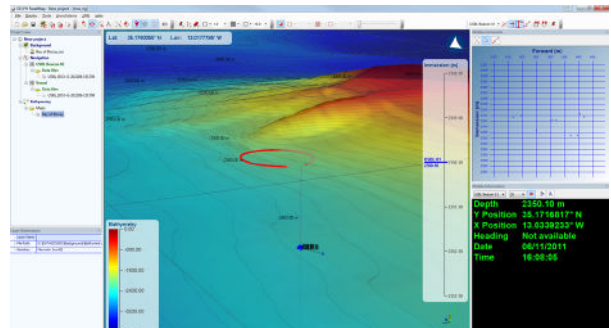
RT measurement between USBL and towed equipment



Tow-fish tracking



ROV tracking



USBL calibration

GAPS M5 TECHNICAL DESCRIPTION

Transceiver performance

Operating range*	995m with Gaps M5 4,000m with extended range version Gaps M5-XR
Acoustic coverage	200°
Acoustic precision	0.1 % of the slant range CEP50
Positioning accuracy**	0.2 % of slant range CEP50
Range accuracy	20 mm
Operational frequency	MF (20-30 kHz)

Positioning

Type	Fiber-optic Gyrocompass
Heading	0.15 deg secant latitude (RMS)
Pitch & roll	0.1°
Settling time	5 minutes
Acoustic communication data rate	500 bps

Electrical

Power supply	230 VAC (50/60Hz) / 24-36 VDC
Consumption	22 W
Synchro IN	1 PPS ; 1 Trigger
Synchro OUT	2 TTL Pulses
Communication	4 Serial (RS232/422/485) 1 Ethernet (RJ45)

Environmental

Storage temperature	-40 to +70°C
Operating temperature	-5 to +35°C
Max. antenna deployment depth	25 m

Physical characteristics

Dimensions (Length x Diameter)	520.8 x 296 mm
Material	Carbon fiber painted
Weight in air / water	14 kg / -5 kg
Gaps cable length	20m (50m and 95m optional)

Interface unit (Gaps box)

Dimensions	233x330x94
Weight	4.6 kg
EMC	89/336/EEC – EN 60945

*: operating range depends on the conditions of measurement (NIS, SNR)

** : In vertical conditions. Including GPS error of 0.1m. Sound velocity profile compensated. Transponder transmit level = 191 ref μ Pa@1m. Slant range of 900m. SNR>10dB

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