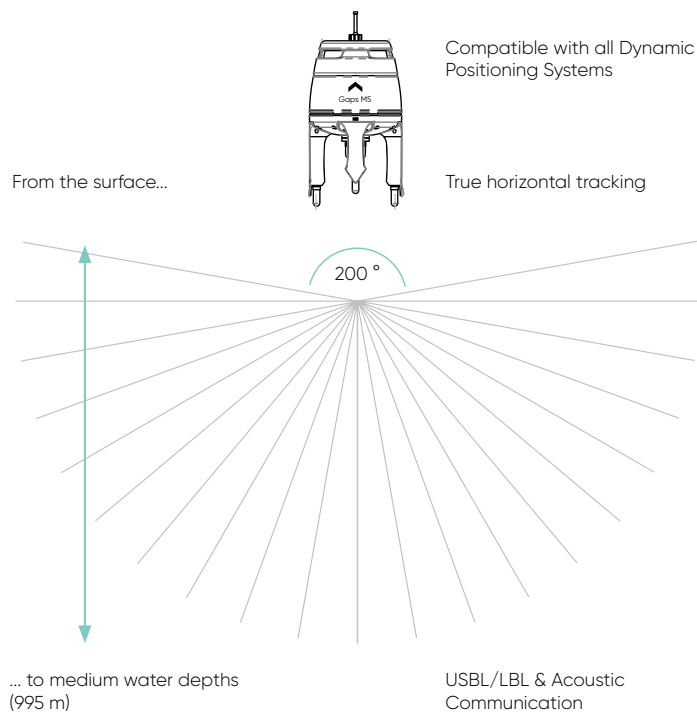


# Gaps M5 (G5)

## 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.



## 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.

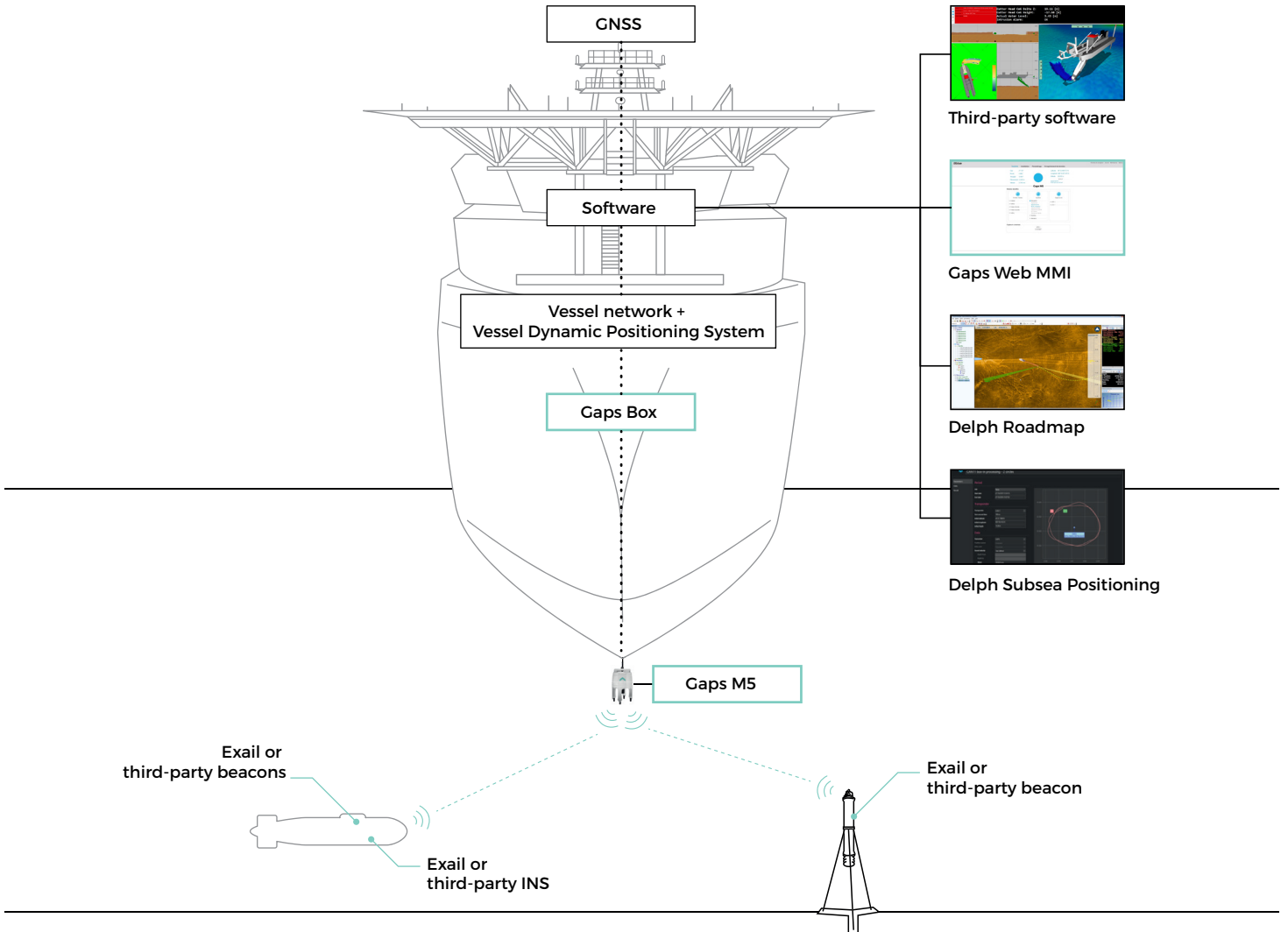
## BENEFITS

- 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

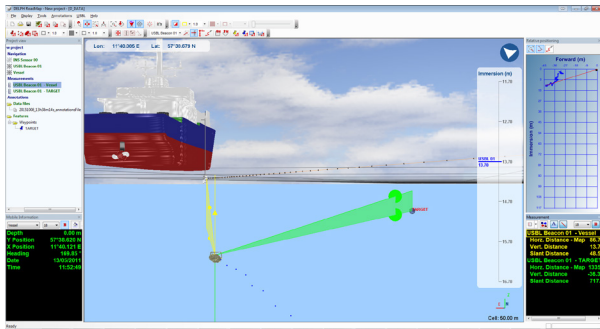
Gaps M5 is compatible with all Exail MF beacons including:

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

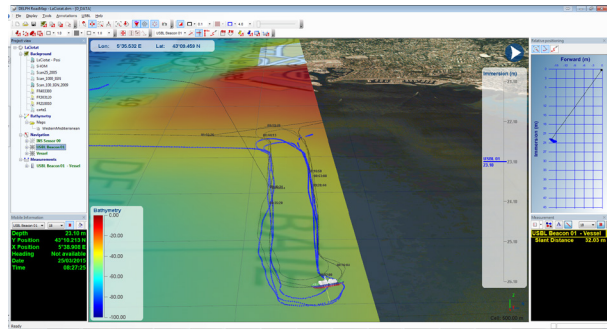
For third-party transponders compatibility: contact Exail.

## DELPH ROADMAP

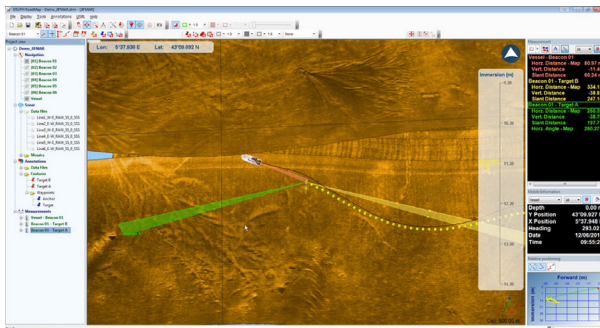
3D visualization software for real-time and offline display. Compatible with Exail INS, acoustic systems and NMEA positioning devices.



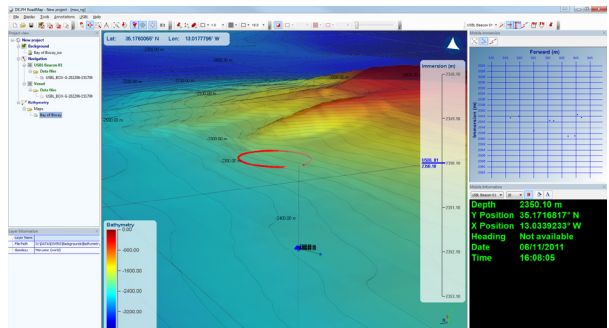
RT measurement between USBL and towed equipment



Tow-fish tracking



ROV tracking



USBL calibration

# GAPS M5 TECHNICAL DESCRIPTION

## Transceiver performance

Operating range*	995 m / 4,000 m
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 (50/60 Hz) / 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	20 m (50 m and 95 m optional)

## Interface unit (Gaps box)

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

\*: Operating range is subject to environmental conditions (noise, ray bending...). Positioning up to 7,000 m using exail Oceano LF transponders only with XR version.

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