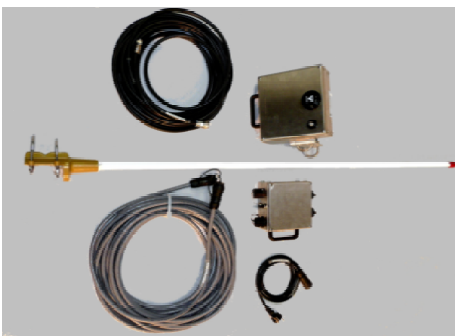
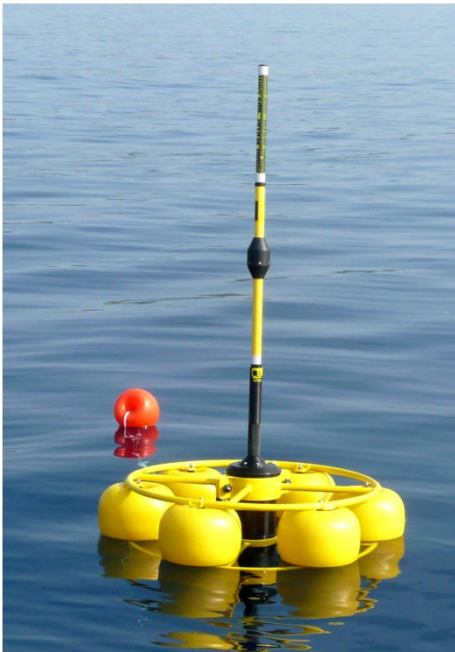


## GIB-PLUS

**Underwater GPS tracking system: easy to use & very wide tracking area**



By combining 4 buoys and a deck unit which can be installed either on a small boat or on large vessel, ACSA has designed a system that is very easy to deploy and perfectly fitted for underwater positioning in shallow as in deep water, even with rough sea conditions.

### Key features & benefits

- Real-time 3D tracking in longitude & latitude in D-GPS mode with a metric accuracy & depth
- Very wide tracking area: up to 2Nm x 2Nm
- Real-time multi-mobiles capabilities (up to 5)
- Fast installation and deployment (< 1h)
- No calibration
- High repetition rate and real-time Quality Control
- Fully configurable
- Data storage for post processing (replay & recalculation)
- Tracking area extendable by using additional buoys
- Long autonomy (many days)

### Applications

Oil & Gas : divers, ROV, towed sonar, AUV tracking & supervision

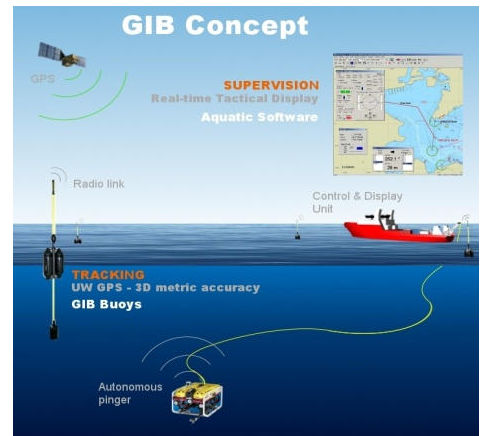
Defense: mobile acoustic / magnetic range, submarine and black boxes Search and Recovery, rescue means guidance

### General Principles

Moor 4 buoys around the tracking area. Buoys detect acoustic signals coming from the pingers and date their time of arrival. Then buoys send these times and their GPS position by local radio link to a Control & Display Unit (cf picture on left) installed onboard the support ship. The Control & Display Unit processes and displays underwater tracks & buoys' positions.

## System hardware

- 4 Buoys
- 4 hydrophones with 10 m cables (30m optional)
- 1 Deck Unit composed of:
  - ✓ 1 Junction Box (Jbox)
  - ✓ 1 Aerial box
  - ✓ 1 PC with AQUATIC software
- 1 to 5 pingers (9 kHz – 40 kHz range)



## Performances

Positioning accuracy:	<b>1 m @ 1 <math>\sigma</math></b>
Radio range:	<b>5 km</b> with antenna at 3 meters high above sea level
Acoustic range:	<b>Typical: 5 km @ 11 kHz</b> - 3 km @ 32 kHz
Coverage area:	<b>2 NMiles x 2 NMiles</b> x 600 m depth
Number of vehicles	up to 5 simultaneously

## Buoys Technical Data

Radio modem	380 - 450 MHz – 1 W
Battery life:	40 hours – Charging time 5 hours max
Size	2.5 m height – diameter: 1 m (1.3 m height when folded)
Weight	29 kg
Number of acoustic channels	5 max.
GPS unit	Compatible with WAAS/EGNOS
Sea state	$\leq 4$

## Pingers Technical Data

Frequency:	8,9 – 11 - 11,8 - 12,5 - 12,6 - 13,4 - 14,2 – 32 kHz
Battery life:	Rechargeable – Autonomy = 24 hours minimum (1 s period, 190 dB ref 1 $\mu$ Pa @ 1m, w/o depth ping)
Size:	50 cm long – 14 cm diameter
Weight	5 / 7 kg in air – 0.5 / 2 kg in water
Depth rating:	300 m / 3 000 m
Acoustic level	172 -178 -184 - 190 dB ref 1 $\mu$ Pa @ 1 m

## Options

Long autonomy	Up to 80 hours (in operation)
Additional buoys	Up to 6 additional buoys



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