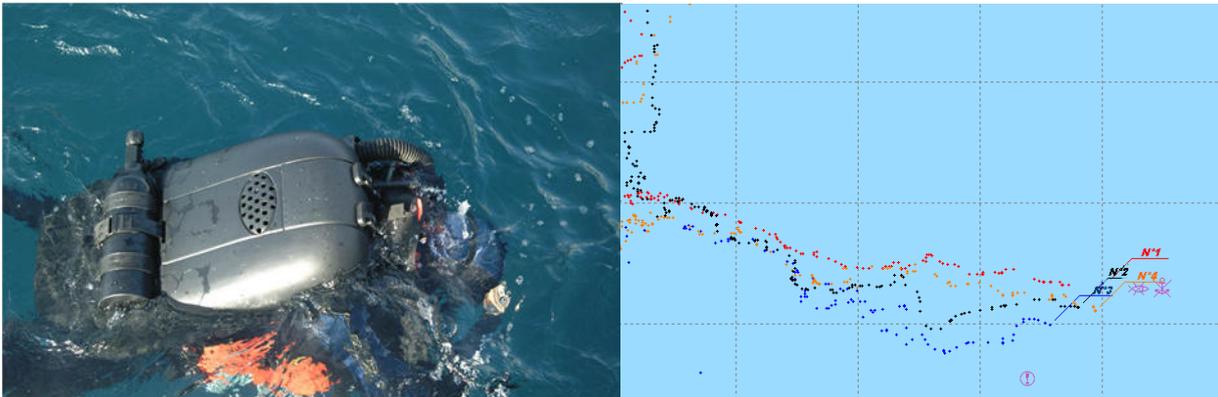


GIB System – Naval divers’ monitoring system

ACSA’s divers’ supervision system to improve training performances and safety



Diving school on-site demonstration

Supervision of divers’ training from a Rigid Inflatable Boat is not an easy task.

“From night to light” with ACSA’s divers’ supervision system. In 2011, ACSA was invited by a top naval diving school to demonstrate the GIB Divers’ Monitoring System. The objective was to provide the Commander of this unit with a comprehensive overview of the ACSA’s supervision tool.

ACSA

ACSA, an ALCEN Group company, is a high tech company specialized in underwater GPS navigation systems and subsea robotics, based on a 30 years of experience. Its GIB systems are the first and only positioning systems to offer real-time underwater D-GPS tracking capabilities. Performing extremely well in harbor environment, very shallow or deep waters, GIB systems are used worldwide for military or civil applications such as SAR, MCM, UUVs, torpedoes evaluation, oceanographic... Unlike traditional USBL, ACSA’s innovative technique is based on measuring the time of arrival of pinger signals on a set of 4 buoys.

GIB divers’ monitoring system’s key features

Main characteristics are:

- **Tracking of up to 10 divers simultaneously**, even in a harbor environment,
- **An emergency function**: call-out to be activated by the distressed diver,
- **Distressed diver’s position displayed in real-time with a metric accuracy** on the marine chart,
- Display of the **Heading and Distance from supervision boat to distressed diver**,
- A portable solution, very easy to deploy, from a small rubber boat,
- No calibration required,
- GIB system accuracy is not related to diver-supervision boat distance,
- User friendly AQUATIC software (real-time processing and display).

Performances of the GIB divers' monitoring system

- Monitor simultaneously multiple divers displaying divers' and the supervision boat GPS positions with a metric accuracy, using absolute coordinates (Longitude & Latitude) and depth data in real time on the marine chart of MMI.
- The capability to shortly and accurately rejoin a distressed diver's position with a metric accuracy makes the dives safer and allows to raise the bar to improve the training.
- **Increased data collection combined with off-line replay give instructors the best tool to bring divers to a better performance level.**

Multi-divers discrimination ability

For this training, each diver is equipped with an ACSA pinger and labelled on the AQUATIC software with a name and specific colors.

Divers N°1 and N°2 swim together for about 150 meters. Their tracks are clearly separated (red & bleu tracks) and very stable. Diver N°3 (orange track) joins the group of 2 initial divers. The 3 tracks are, once again, separated & very stable.

Finally, diver N°4 joins the group to swim together. Do note the closeness between all the 4 divers.

The divers' monitoring system shows extreme stability and accuracy of tracking, even in severe underwater propagation conditions (harbor environment: water depth ~4 m, sand beaches, etc...).

The system displays tracking data on top a pre-loaded map and has appropriate illumination to enable good visibility in sunny or cloudy conditions and a night vision mode. It also saves tracking history of each diver for a later off-line replay. Depth data can also be checked in real-time or reviewed in playback.

Distressed diver rejoining

In option, the system can provide an emergency function to be activated by the distressed diver to call for assistance. As shown on the picture, the "GoTo" function is primordial when the supervision boat has to quickly rejoin the location of a diver in distress. This "GOTO" window allows the supervisor to guide the pilot of the supervision boat in real-time by displaying Heading and Distance from supervision boat (green DU) to distressed diver (N°1).

GIB references

French Navy CEPHISMER, French MoD GESMA, DCNs, Thales, Royal Malaysian Navy, German Navy BWB / WTD-71, Canadian DRDC, ISE, Oceaneering, US Navy NAVSEA, MIT AUVs Lab, JHU, UK MoD Savage & Marine operations ...

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