

The Hydrographic Society Benelux

News

The Hydrographic Society of Benelux held a workshop at Ixsea Oceano bv in Haarlem, The Netherlands on 11 June 2003. Seventy people from the dredging and offshore industries, survey, military fields and students attended the workshop. The evening meeting provided an opportunity for HSB members to discover more about Ixsea Oceano, its technologies and product range for the survey and offshore industries. The highlight of the evening was when Ixsea Oceano introduced its new product, GAPS (Global Acoustic Positioning System), the first system merging acoustic and inertial sensors.

Ixsea Oceano manufactures high performance Inertial Navigation, Surface and Underwater Positioning Systems and Magnetometers for the offshore, military and oceanographic markets. Its products are based on technologies developed with in-house expertise in the Acoustic, Fibre Optic Gyro and Magnetic fields. Applications include navigation, accurate survey and positioning, mooring recovery, sub-sea and marine offshore construction.

The FOG product line is already well known in the industry; the gyrocompass and motion sensor and inertial navigation system are widely used for navigation and positioning.

Yves Paturel, Inertial Products Manager at Ixsea Oceano S.A.S., presented the techniques used in inertial sensors and inertial systems: Fibre Optic Gyro technology and the different functions performed from the sensor measurements. For optimal performance it is necessary to aid inertial systems with other sensors such as GPS, Doppler Velocity Log, etc. Yves Paturel also presented the methods of merging the data from these sensors to provide a high accuracy system and its advantages. He finished with the potential applications for hydrography.

After a buffet supper (French, of course!) the evening continued on the subject of 'Merging of Acoustic and Inertial Positioning Systems' with a presentation by Frédéric Bellier - Technical Support Engineer.

The fusion of acoustic and inertial technologies brings a new dimension to underwater positioning. GAPS USBL, with integrated INS, is the latest development from Ixsea Oceano and, according to the company, is a cost-effective solution for high accuracy positioning of ROV and towfish. Compact and portable (the antenna weighs just 35 kg and fits standard gate valves), the system is the first USBL which does not need any calibration during installation. It has been designed for ease of installation and uses advanced in-house developed chirp signal processing and Kalman filtering for increased performance: 0.2 per cent accuracy down to 3,000m depth, the 3D antenna covers from vertical to 10 degrees above the horizontal.

The workshop ended with a presentation on Magnetic tools for Marine applications by Xavier Lalanne, Magnetic Products Manager. The session started with a few reminders about the Earth's magnetic field and its behaviour and an explanation of the origin, intensity and shape of magnetic anomalies induced by ferromagnetic geological structures or man-made objects. It was followed by a presentation of the different magnetic sensors used at sea and performance: Cesium vapor, Overhauser and Abragham effect magnetometers for scalar measurement and fluxgate magnetometer for vector measurement.

Finally, there was a review of modern survey practices coupled with new post-processing techniques that give access to 3-D location, precise mapping and characterisation of objects buried in the sediment.

These presentations will soon be available at the HSB website.

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