

LEADING POSITIONING SOLUTIONS

IXSEA OCEANO SAS

On 12 August 2002 IXSEA and OCEANO Technologies successfully completed their merger previously announced in March 2002, revolutionising the landscape of the positioning industry. With 100 staff and over 25 years joint knowledge in gyroscopes and underwater acoustic technologies, the new company IXSEA OCEANO aims at providing leading positioning solutions.

The growing activity of the Marine Community in exploration, survey and oceanographic research in ever deeper waters has increased the need for very accurate and reliable positioning, with real-time continuous data. The first answer to this need was acoustic positioning (LBL, USBL). Recent needs for AUV positioning saw the emergence of inertial systems, but no one is providing a truly global system. IXSEA and OCEANO Technologies master complementary technologies: inertial and underwater acoustics. The new company resulting from the merger, IXSEA OCEANO, is the only company who masters all of the technological chain and which is able to provide a global system and service for underwater positioning.

More than 25 Years Experience

The history of IXSEA and OCEANO Technologies begins in the 1970s with different names but very similar paths. Both companies were formed in France by a small group of enthusiastic engineers (PhDs). IXSEA is an emanation of PHOTONETICS Navigation Division, created in 1978 and specialising in fibre optics. The team designed and developed a Fibre-Optic Gyroscope (FOG) and demonstrated the best performance ever in this technology for space and military projects. With the strength of this experience and with key patents in their portfolio, they went on to develop the OCTANS for the marine market. OCTANS, a certified IMO certified fibre-optic gyrocompass with integrated motion sensor, rapidly became a new standard for navigation. IXSEA SAS was formed in the millennium year to fully develop this activity. In 2001, IXSEA released the smallest inertial navigation system in the world, the PHINS.

The story of OCEANO Technologies brings us back to the creation of the company, OCEANO Instruments in 1977. Pioneers in underwater acoustics, the company rapidly became a leader whose products were known for quality, reliability and operational efficiency even at the deepest depths. The company was later known as MORS Environment, then changing to OCEANO Technologies in 2000. A remarkable recent development is the POSIDONIA ultra-short baseline positioning system, believed to be the most accurate USBL ever, even in depths of 6,000 metres.

A Company Structure Sized for Worldwide Activity

IXSEA OCEANO's development, production activities and management, are located in France near Paris, and in Brittany, on the Atlantic coast.

Research and development department occupies more than one third of the staff, with many specialist engineers (PhDs) working on tomorrow's products. IXSEA OCEANO covers vertically product manufacture, from the component to the complete system. Two other crucial departments are quality management and testing. The company has developed its quality policy over the years. IXSEA OCEANO is IMO certified and is now completing the process of ISO certification. Testing is part of this policy. It is undertaken throughout the development of new products and as part of the production process itself, including the different steps of production. Testing equipment includes three-axes turntables, thermal chambers and pools.

IXSEA OCEANO's dedicated customer support department has been reinforced for better field operation support. The service is available 24 hours of the day, all year long by telephone or email access. The sales department is backed up by a worldwide network of 30 appointed representatives. Subsidiaries located in the South of France, the United Kingdom and The Netherlands, are also major local sales and on-field support contacts. Two more sales and support subsidiaries are about to open in the United States and in Asia. IXSEA OCEANO manufactures products based on inertial and underwater acoustic technologies. Primarily, the company specialises in positioning products and systems for surface and underwater applications.

OCTANS

The OCTANS fibre-optic gyrocompass with integrated motion sensor was developed for marine applications. Accurate, rugged, IMO certified but also with the smallest sizes on the market, this plug-and-play equipment rapidly asserted itself as a new attitude control-and-navigation standard. OCTANS applications include hydrographic survey, offshore and maritime works, ROV and AUV control. The R&D department is currently writing software to enable customers to set their own protocol.

PHINS

The PHINS inertial navigation system was recently released, with even more accurate gyros than the OCTANS. It provides true-heading, attitude, speed and position. PHINS includes a high-level inertial heart based on fibre-optic gyroscopes coupled to an embedded digital signal processor running a Kalman filter which is specially preset depending on applications. PHINS is also the smallest INS of the world. Running one single GPS antenna (it can use any GPS already installed onboard) and interfacing common industry velocity Doppler logs, acoustic positioning systems and depth sensors, PHINS is ideal for marine surface applications, to drive multibeam echo sounders with high performances, even when GPS drops out, and for subsea AUV control and guidance.

POSIDONIA and Acoustic Positioning

The POSIDONIA 6000 ultra-short baseline underwater acoustic system for deep water combines unique chirp techniques. With 0.3 per

cent accuracy, down to 6,000m depth and 8,000m range, the system allows long laybacks and makes long-range USBL a real asset for towfish tracking or AUV positioning. Time saving is always important and the calibration phase is easy. To meet the demand for ever more cost efficient solutions, a 3,000m version of the system, at lower cost, is now available with similar performances. A fully numerical rangemeter for LBL and SBL positioning completes the underwater acoustic positioning range.

Acoustic Releases and Transponders

The company is also known as a leader for acoustic releases and transponders. These products range from coastal to full ocean depth and from light to heavy duty load releases. Applications cover mooring line recovery and remote installation of heavy structures on the seabed. Recently, the well established 6xx series was replaced by the 8xx series with additional features and longer battery life with the implementation of very low consumption 3.3V technology. The RT8xx is now the standard beacon for USBL applications. The MT8xx mini-transponder is ideal for AUV positioning with its small size, and can be operated by any IXSEA OCEANO positioning system. The remote control unit TT801, fully numerical, with M-FSK coding, enables even more secured coding and better receiver range performance but also user-configuration management.

A new design, more compact and rugged, of the heavy-duty acoustic releases has also been developed to fit better with customer applications.

Today, IXSEA OCEANO is building higher class gyros, a hundred times more accurate than OCTANS, to position PLEIAD, the new European satellites in partnership with Astrium. Developing high-tech high performance, high accuracy products for the spatial industry, IXSEA OCEANO works on tomorrow's best for the marine industry.

<https://www.hydro-international.com/content/article/ixsea-oceano-sas>
