

EVOLOGICS

Reliability and Supervised Autonomy



Founded in the year 2000 in Berlin, Germany, EvoLogics is a private company currently focused on underwater acoustic communication and positioning solutions, development of new sonar technologies, and integration of sensor systems in autonomous platforms.

The mission of the company is to develop innovative technologies for aerospace, maritime and offshore industries through

interdisciplinary co-operation between engineering and life sciences. To further this mission, EvoLogics works both independently and in partnership with other research institutions and companies. These include the Technical University in Berlin, University of Bremen and the Institute for Baltic Research, as well as other institutions and companies such as Sea & Sun Technologies GmbH and Enitech.

Leap forward

In the beginning, the research and development activities included a broad range of areas, from fluid dynamics to mechanical structures with built-in intelligence. Nowadays, EvoLogics is very active in the area of underwater communication, positioning and

navigation.

Derived from original studies on the physics of communication among dolphins, EvoLogics' patented S2C (Sweep-Spread Carrier) technology represents a leap forward for reliable hydroacoustics.

Sweeps

The main challenge for underwater communication is the multipath propagation of the signals. This in turn results in an overlap of signals on the receiver side. The trick is to be able to reliably and quickly separate the incoming signals from each other. In contrast to other approaches such as frequency hopping, EvoLogics employs a continuous frequency change or 'sweeps', carrying more information while still being able to separate the signals quickly from one another. Developing reliable hydroacoustic communications and positioning is a necessary step for future products.

Supervised Autonomy

Current areas of development include mobile platforms for sensors in order to be able to collect data autonomously and efficiently. Reliable hydroacoustics enable underwater navigation in the same way that GPS has enabled our cars to display maps that guide us to our destination. At the same time, having the option to communicate with the vehicle opens up the possibility for supervised autonomy: a combination of the on-board systems that can react and navigate based on the data with the option to track the mission from a distance and intervene if necessary. These technologies can be deployed in a combination of vehicles at the same time, both on the surface, as a relay between the underwater vehicles and satellite communications, and underwater for ROVs and AUVs alike. Multiple AUVs and gliders can co-ordinate a mission to survey a larger area simultaneously, for example.

Customers for EvoLogics products can be found around the globe. From the beginning, universities and research institutions have been very keen to try out new developments. As the technology has matured, the client base has expanded to encompass survey companies and the offshore industry.

EvoLogics currently has 27 employees who are mostly focused on R&D for new products and on support. Sales for S2C technology have been growing steadily at between 20-30% per year over the last 6 years, and sales in 2013 impressively doubled compared to the previous year.

Positive Outlook

With new product introductions planned for 2014, new applications being developed and a growing demand for solutions that work in deep

water for environmental monitoring, tsunami warning systems or to extract resources from the sea, the outlook for the years ahead is positive. One of the product launches planned for this year, together with JT Electric in the Faroe Islands, is the TrawlCamera Live: an underwater camera for trawl operations to monitor the fish catch in real time.

We are reaching new markets through new partners and representatives abroad. The team will continue to grow in order to translate more of the company's ideas into products and systems, and to keep pace with the increase in demand.

sales@evologics.de