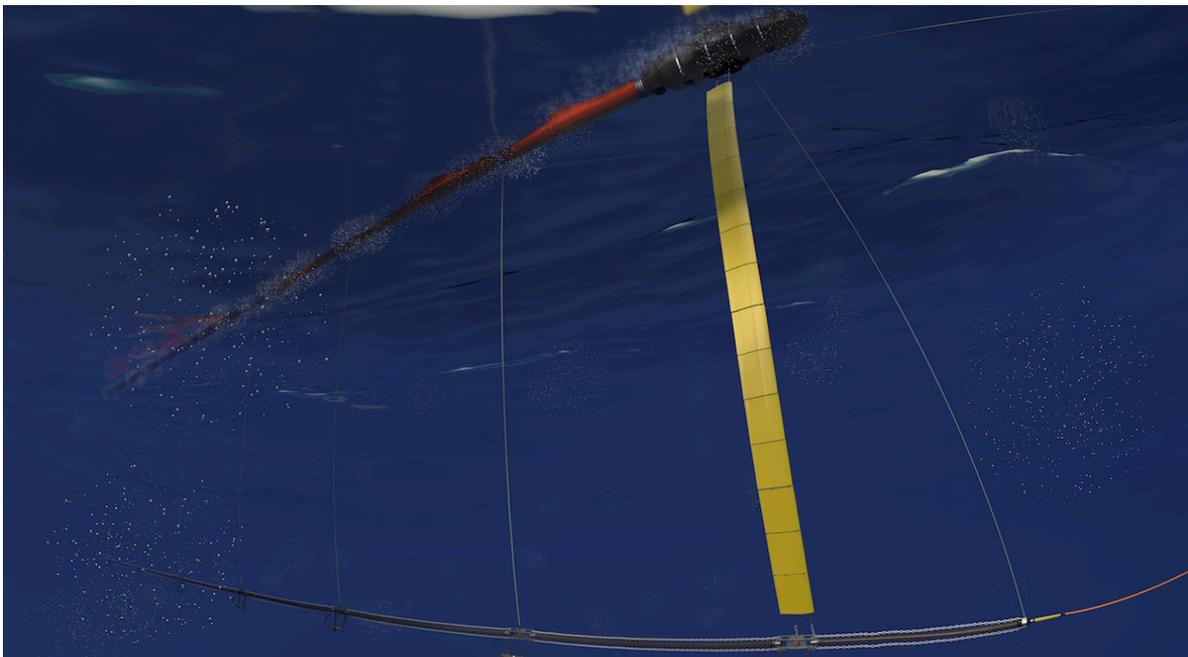


INNOVATIVE FOIL-BASED MARINE DIVERTER

SailWing, available now, provides control of gun strings to maintain even separation and improved source geometry. The foil-based marine diverter does not require traditional wide-tow rigging and enables faster turns resulting in reduced survey time. Reduced deviation on source positioning lowers risk when making close passes to obstructions. SailWing eliminates the need for traditional vanes and spreader ropes. Elimination of conventional diverters on long spur lines lowers risk when making close passes near obstructions. The SailWing has very low drag compared to traditional vanes and therefore saves fuel on every job. Since each string is individually controlled by SailWing, deployment and retrievals are safer and more efficient. By controlling each gun string independently, individual gun strings can be retrieved and deployed for maintenance without having to retrieve other strings, which lowers source repair time.

KEY BENEFITS

- Source spread stabilization
- Significant reduction in towing burden provides fuel savings
- Reduced HSE risks
- Simplicity of array deployment and retrieval operations
- Reduced deployment and retrieval times
- Reduced in-water and back deck equipment



SAILWINGS ARE PROVIDED AS A COMPLETE TURNKEY SYSTEM, INCLUDING THE FOLLOWING COMPONENTS:

SailWing Product Architecture

→ SailWing consists of a series of foils over ropes strung between the head float and the first gun station or bell housing. The foil sizes and number of foils are easily configurable to accommodate a wide variety of survey requirements. An actuator is mounted in the head float and is controlled from the vessel. The actuator receives power and communication through the gun umbilical.

The Actuator

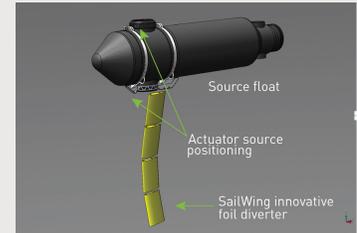
→ The electric-hydraulic actuator adjusts lift provided by the SailWing. It is controlled by an onboard control computer and receives power and commands from the ship via the umbilical. The commands are interpreted by an embedded processor in the actuator which precisely adjusts the angle of attack of the foils.

SailWing Software

→ The onboard control computer on the vessel receives navigation inputs from either Orca® or Gator™. Based upon user configuration, it automatically sends commands to maintain stable array geometry without the need for spreader ropes. Source configuration can easily be modified on the fly. The software also allows for manual operations for easy optimization of deployment and retrieval.

SailWing Back-deck Box

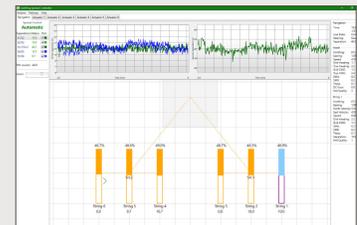
→ If required, a back-deck control box provides push-button manual operation.



Float & SailWing system



Actuator



User interface

About ION

ION has been a technology leader for 50 years with a strong history of innovation. Leveraging innovative technologies, ION creates value through data capture, analysis and optimization to enhance companies' critical decision-making abilities and returns. Our offerings are focused on improving E&P decision-making, enhancing reservoir management and optimizing offshore operations.