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A Novel Way to Acquire Data in a Safe, Reliable and Cost-Effective Manner by the Use of Autonomous Marine Vehicles

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ABSTRACT

This abstract covers advances made with the use of autonomous marine vehicles (AMVs) to acquire data in a safe and reliable manner managing risk:
- Collect and validate Metocean data
- Monitor loop and eddy currents
- Surface oil slick detection and in-situ measurements
- Early tests in seismic acquisition and processing;

Hence derive and implement solution driven conclusions from lessons learned for future offshore missions.

To achieve these objectives AMV's equipped with sensors to conduct the above services were deployed. The METOC vehicles equipped with Teledyne RDI Workhorse acoustic Doppler current profilers (ADCPs) were launched to patrol an area where they monitored and delineated eddy current features at near-surface depths.

The Hydrocarbon vehicles monitored areas identified by the client with natural seep related hydrocarbon surface expressions. Both vehicles were used for detection, in-situ measurement of, and delineation of plumes, they were also equipped with optical sensors which provided real-time imaging for the duration of the mission.

The above mission demonstrated a new and novel way of using technology that is safe, environmentally friendly and cost-effective. Traditional data acquisition methods are expensive, limited in range and mission duration, and must be regularly maintained. Implementing remote monitoring and survey technologies at lower data acquisition costs and with greater operational efficiencies, the AMV provides a significant competitive advantage to acquire data in a safe and reliable manner.

This abstract will develop into discussing these case studies in detail with references to projects conducted word-wide but primary focus on this particular region. Value proposition and lessons learned will be discussed. To date, 25 missions have been conducted for 12 different clients, half of them repeat clients.