Tutorial Title: **Streamlined Offshore Survey Processing**

Continuing Education Units and Professional Development Hours

Instructor(s): **Andy Hoggarth ~ CARIS**
Graham Nickerson ~ Highland Geo Solutions
Darrin Verge ~ Romor
Palle Herskind ~ EIVA

Overview:

This tutorial will focus on the latest integrated data processing workflows for offshore survey by highlighting how marine engineering and hydrographic software is being used to collect, process, analyze and manage seafloor data in an enterprise GIS environment.

This technical workshop will be a combination of presentations and demonstrations and will cover topics such as, subsea positioning, bathymetric cleaning, multibeam calibration, water column imaging, pipeline inspection, survey data management, as well as discussions around the new Seabed Survey Data Model (SSDM) specification from the International Association of Oil and Gas Producers (OGP).

The course will include:

The session will firstly explain the online data acquisition process, describing the typical sensors used in a pipeline inspection survey. Data collection will be simulated in the lecture theatre and the resulting sensor data processed. A new concept of direct file support will be introduced avoiding the duplication and transformation of data, which will provide major efficiencies in the field and minimize the introduction of errors by avoiding re-keying of critical parameters.
The topic of subsea navigation processing will be discussed with emphasis on Kalman filtering Remotely Operated Vehicle (ROV) navigation data. Bathymetric cleaning algorithms like CUBE and SCALGO will be demonstrated. The latest water column imaging tools will be used to highlight how escaping gas and oil can be detected. The inspection task is a key concept in determining whether the pipe is buried or in free span and where along its route there may be damage or remedial action required; this will be a key aspect.

Also the transfer of data between bathymetric processing software and pipeline inspection software will be showcased further emphasising the streamlined nature of the workflow. The tutorial will conclude by loading the resulting datasets into an enterprise GIS environment in preparation for product creation, data transfer and further analyze and management, including web distribution.

Biographies:

Andy Hoggarth ~ After achieving his B.Sc. in Mapping Science in 1997 in Bedfordshire, England, Andy joined Racal Survey as data processor specializing in Multibeam survey. In 2003 Andy joined CARIS and moved to Fredericton, Canada with his family where he now leads the company's global sales and marketing efforts.

Graham Nickerson has been involved in ocean mapping since 1991. Academic and professional career highlights are attending the University of New Brunswick as part of the Ocean Mapping Group and helping to build several popular industry software tools, including the redesign of Caris Easy View. Graham started Highland Geo Solutions in 2006 and has recently collaborated with ROMOR to support EIVA software in the Canadian market

Darrin Verge With a background in Electronic Engineering Technology, Darrin has led ROMOR as the president and CEO for 30 years. Darrin has worked in land surveying, land seismic data collection, and other field duties over his professional career. While operating ROMOR, Darrin has accumulated experience in leadership, sales management, business development, and international sales and marketing.