

Application Note



KONGSBERG

EM 2040 and TOPAS PS 120 demonstrations at Oceanology International 2014, London

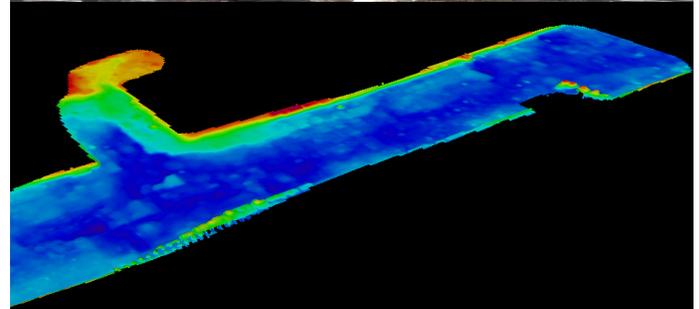
March 2014

During Oceanology International 2014 in London, Kongsberg Maritime conducted product demonstrations onboard a dedicated charter vessel which was situated at the dockside near the conference center throughout the event.

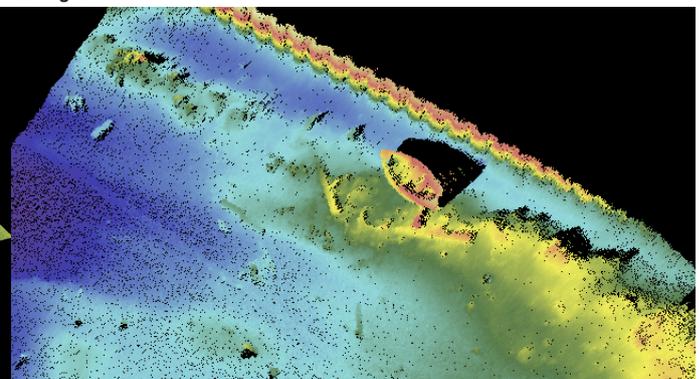
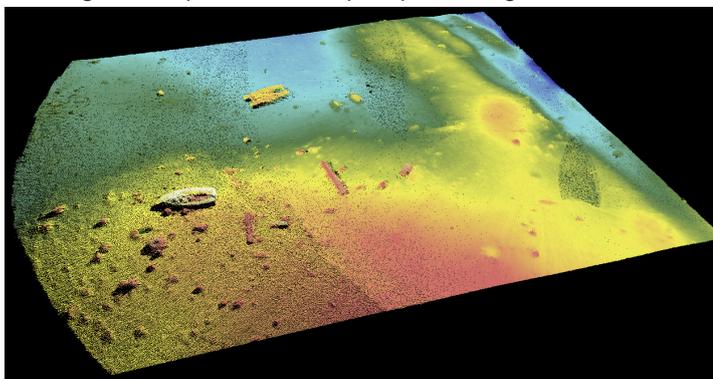
The survey vessel 'Sea Beam' featured the EM 2040 high resolution inspection multibeam echosounder, SIS Seafloor Information System acquisition software and the Seatex Seapath 330+ Positioning, Heading and Attitude Sensor as well as the TOPAS sub bottom profiler.

The **EM 2040** is Kongsberg's most advanced shallow water multibeam echosounder. Like all Kongsberg multibeam echosounders motion, position and sound velocity measurements are used by the EM 2040 to compensate for these dynamic environmental and platform effects as the data is acquired. In addition Kongsberg employs advanced bottom tracking and data cleaning algorithms during acquisition.

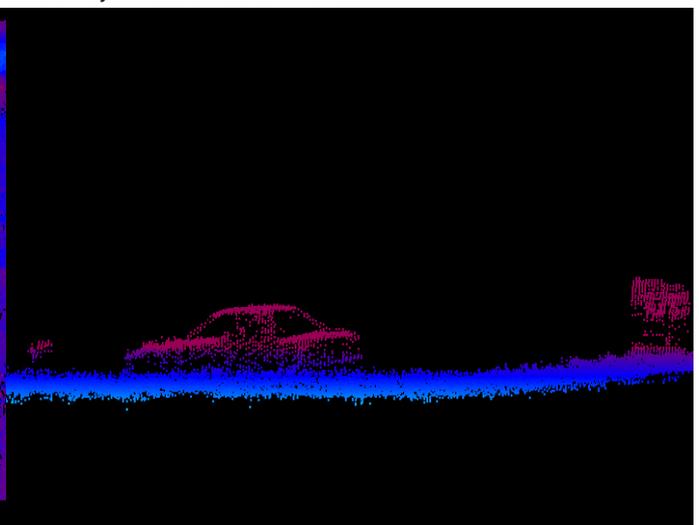
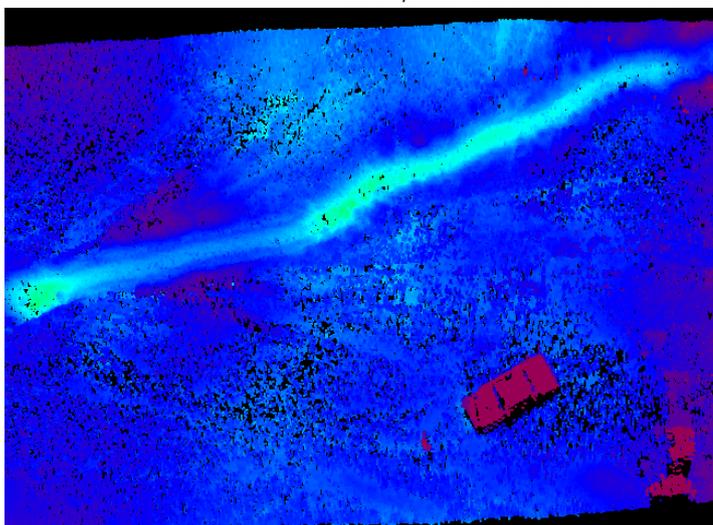
The multibeam datasets collected during OI 2014 (shown below) were of an impressive quality and did not require data cleaning once imported into the post-processing software.



Survey Vessel 'Seabeam' and survey area at Royal Victoria Docks during OI 2014 in London



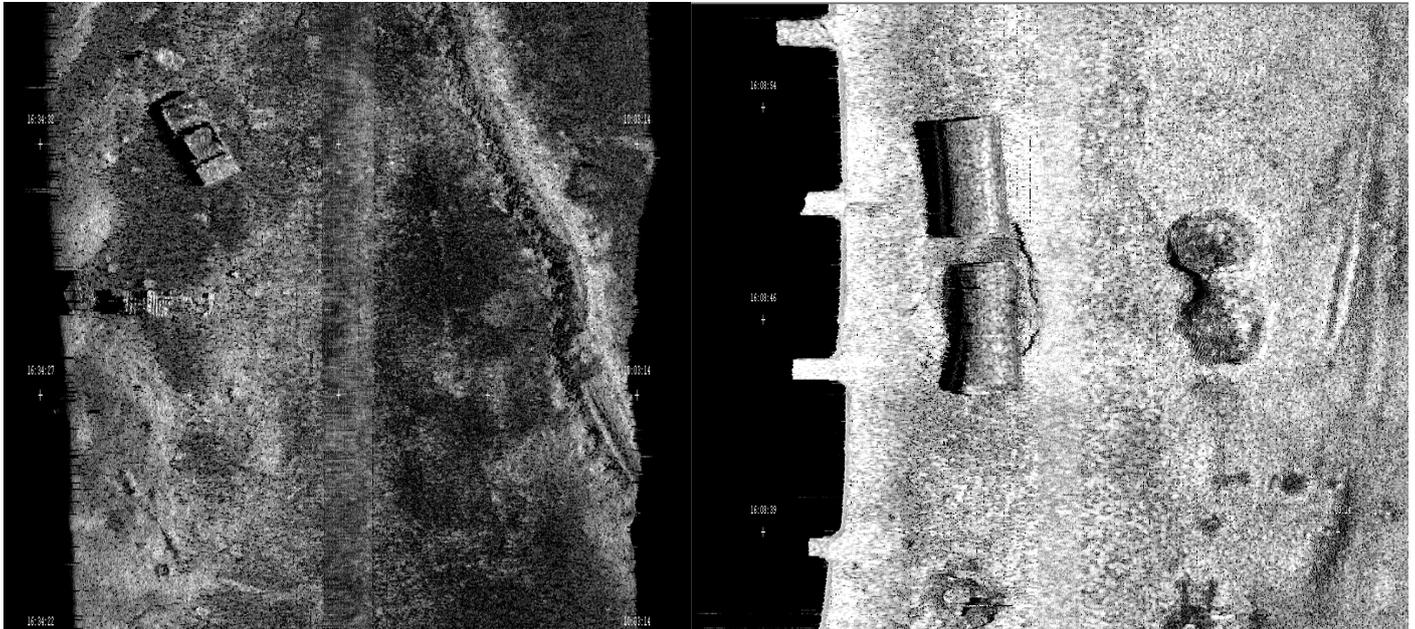
Three shipwrecks at different locations inside the Royal Victoria Docks in London



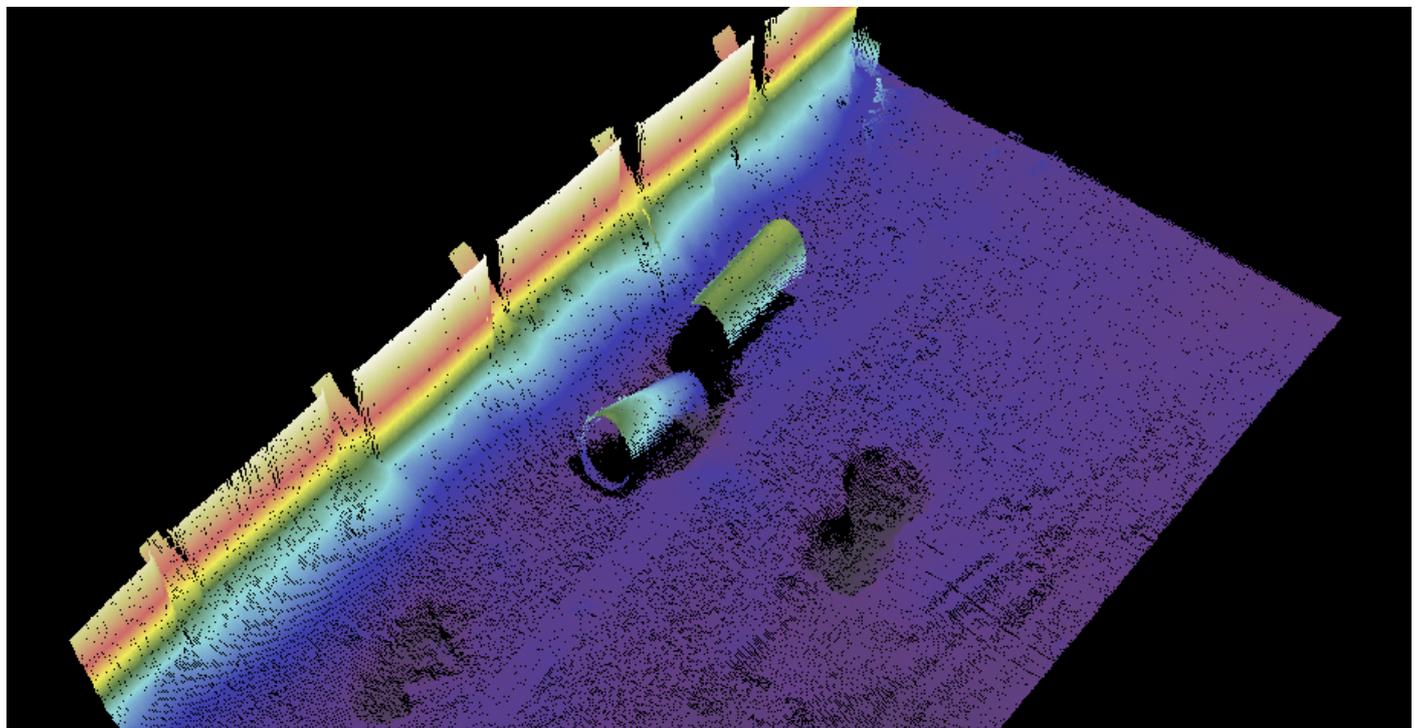
A submerged car inside the docks area, impressive data quality, no data cleaning required

The demonstrations were conducted by experienced engineers from Kongsberg Maritime, who worked through the entire period of the conference showing the capabilities of the integrated systems on board the survey vessel.

The images below show the backscatter results from several important objects that were located on the seafloor. It is important to mention that these backscatter images are screen captures taken directly from the acquisition software SIS (Seafloor Information System) and have not been enhanced with any post-processing image correction algorithms.

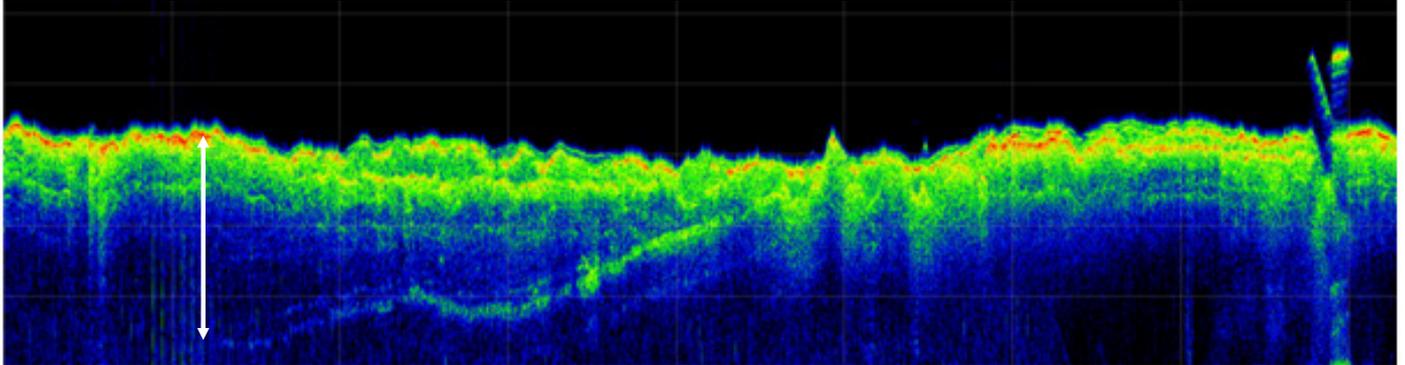


Throughout the demonstrations we received positive feedback from the many attendees who were all very impressed with the high performance in real time of our emblematic shallow water multibeam echosounder. The images of the datasets speak for themselves. The EM 2040 multibeam echosounder turned ordinary surveying experience into extraordinary.



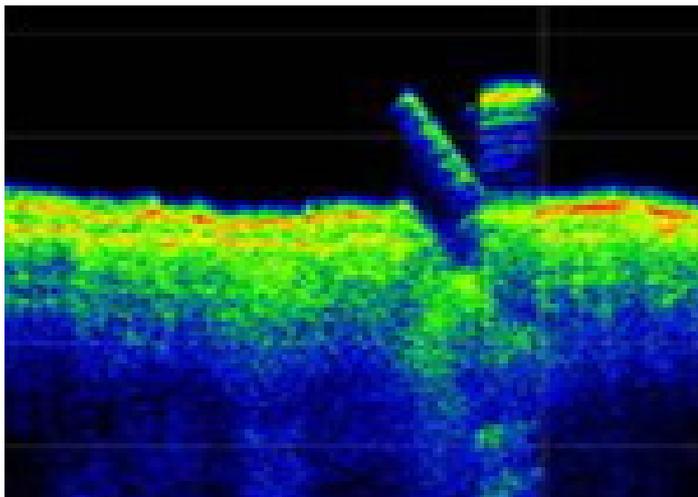
The **TOPAS PS 120 Parametric Sub-bottom Profiler (PSBP)** is the first portable PSBP in the TOPAS series. The system is designed for very high spatial resolution sub-bottom profiling in water depths from 2 meters to more than 400 meters

For the KONGSBERG demonstrations at Oceanology International 2014 the TOPAS PS 120 Parametric Sub-bottom Profiler was installed over-the-side of the survey vessel and connected to the Seapath 330+ Position, Heading and Attitude sensor.

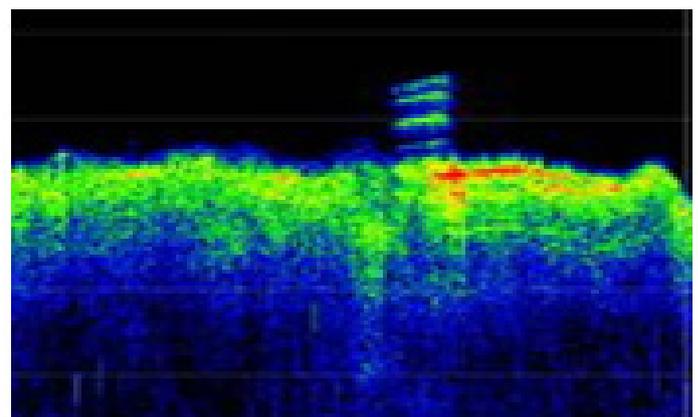


The image above shows a typical TOPAS PS 120 line from the demo area in the Royal Victoria Docks in London.

The bottom is partly covered with a very soft sediment layer on top of a harder, irregular structure with varying reflectivity. In the middle section a sediment interface going down to more than 8 meters is visible (white arrow).



Details of the pipe sections



Another TOPAS line slightly offset from the previous line showing only one section