

Locate and Monitor Underwater Infrastructure with MUD[®] (Mapped Underworld Dimension)

Background

Oil and utility companies lay pipes and cables across ocean and river floors. Even though operators keep original design and construction information, overtime the position and burial depth of a pipeline can be changed due to storms and other naturally-occurring forces.

Today there is a pressing need to accurately map the location of submerged pipelines prior to undertaking repairs, laying down new pipes or assessing potentially hazard conditions.

However, many pipelines can not be easily located. The amount of overburden and burial depth typically make it impossible to find pipelines and cables with conventional detectors and instruments.

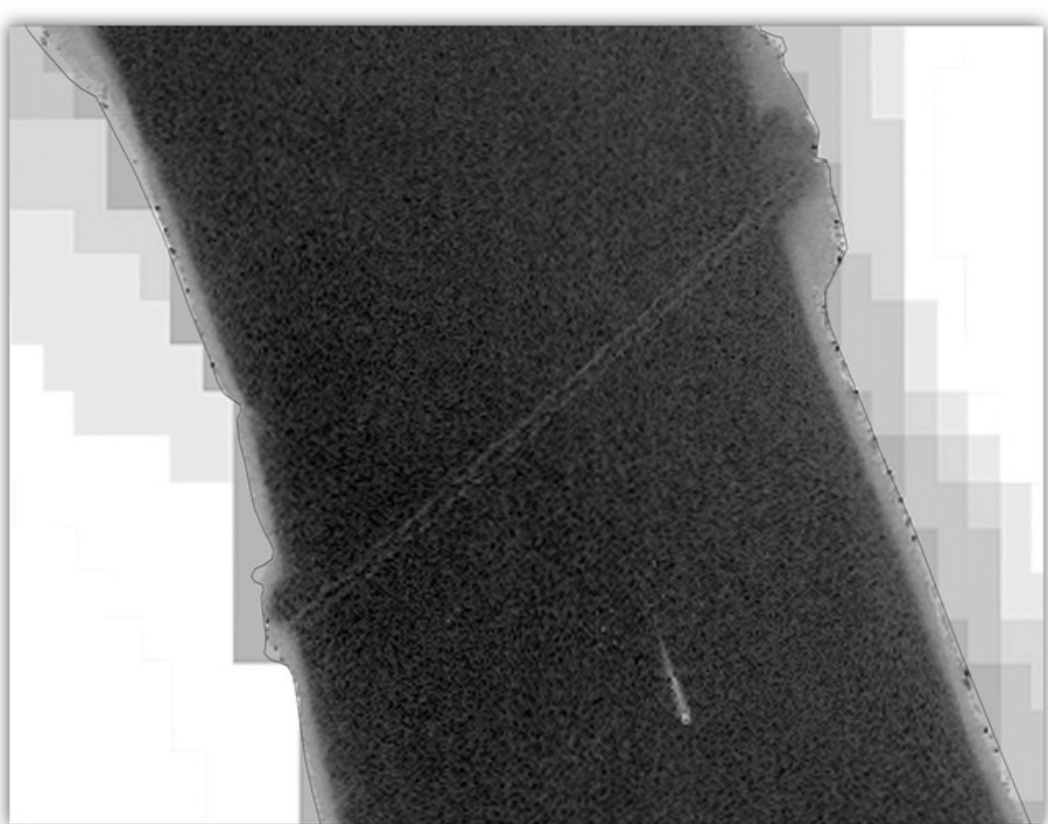
MUD[®] penetrates water and underlying surfaces to locate and model infrastructure such as pipelines, laying along the river floor. In addition, MUD[®] can monitor, characterize and quantify subsurface changes to the riverbed, in 3D, from space.

After a serious weather event, a pipeline company needed to relocate its submerged twinned pipeline and to identify changes to the riverbed supporting the pipeline.

Synthetic Aperture Radar (SAR) data, optical data and archived company geoscience were fused and MUD®'s algorithms successfully located the twinned pipeline submerged under 10 meters of water and buried beneath 3 meters of cover.

The image also showed the radar reflection of a fast-moving boat. The MUD® system covers large expanses of the underwater environment, advantageous to operators who need a wide view of subsurface objects and conditions.

MUD®'s detailed underwater models provide an efficient and cost-effective way to locate underwater structures such as bridges, pipelines and dams.



MUD® successfully modelled the river bottom. Through a four month change detection program, significant, measurable change was detected on the river bottom at and adjacent to the pipeline, which crossed between two river banks.

This subsurface intelligence formed a base model used to proactively monitor for indicators of siltation,

slope failure and other pipeline and environment events that could threaten the pipeline's integrity.

The MUD® system is designed to act as a decision support tool with which decision makers can view, distribute and publish complex spatial information.

