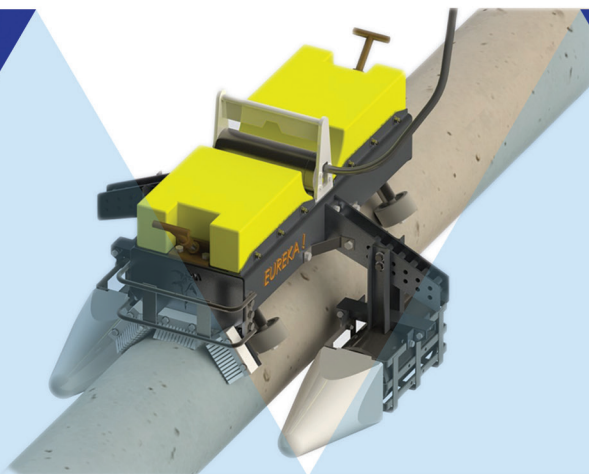


# Delta SubSea

## Radiation-Based Density Measurement Tool



Hydrate plugging is one of the major flow assurance challenge, and as oil and gas production moves into harsh and challenging environments, there is a growing challenge to prevent hydrate plug formation.

The applicability and efficiency of remediation methods depend on locating an accumulation or plug, and new techniques for accurate localization and remediation are greatly required.

Delta Subsea in partnership with VEGA Americas developed a ROV operated radiation-based density measurement tool. Tool is based on a non-contact process; sensor components are unaffected by process pressure, temperature, or corrosive properties. The radiation passed through the pipe does not affect the measured material.

The system is able to detect minimal differences of density on media flowing in the pipeline. The density difference from gas, oil, wax, asphaltene, hydrates, sand allows the system to localize with precision the location of any, total or partial blockage, in the pipe.

The Tool provides flow assurance specialists with a reliable method of diagnosing flow abnormalities due to partial or total plugs within pipelines without interruption to pipeline operations.

### **Benefits**

- ▲ System not intrusive for the pipeline: it evaluates the contents of pipelines, also unpiggable and coated
- ▲ No production interruption
- ▲ No risk of a stuck pig
- ▲ No coating removal, with significant cost saving and elimination of the risk for the pipes being damaged or corroded during coating removal/re-application
- ▲ Fast measurements: up to 20 ft/min
- ▲ Immediate visualization of the results
- ▲ No needs for dredging (with the basic tools with measurements taken at 3 and 9 O'Clock)
- ▲ It can visualize wall deterioration due to corrosion or erosion as well
- ▲ Easily deployable and operable by ROV

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