

SmartPipe

– tomorrow's solution for integrated pipeline monitoring

Trends in the oil and gas industry move towards realization of E-field concepts, and focus on integrated process management approaches. As pipelines represent a vital part of the offshore oil & gas infrastructure, solutions to fit them into the above mentioned framework

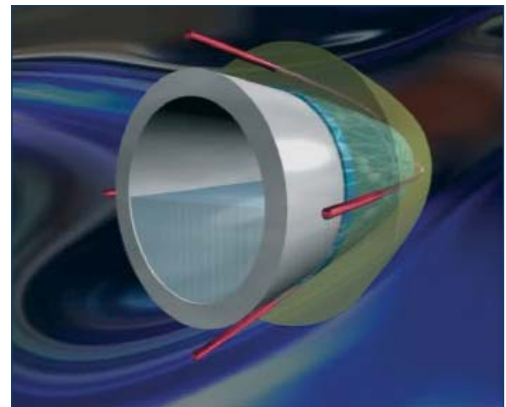
should be sought. In addition the pipeline industry faces new challenges when moving into deeper water and environmentally sensitive regions. This warrants new solutions for pipeline monitoring, and is what the SmartPipe idea is all about!

The SmartPipe Project

Combining different fields of R&D to conceptual solutions

A three-year development project with a total budget of 5 million Euro (\$6 million) supported by the Research Council of Norway started in 2006. The principal objective in the project is to develop the SmartPipe concept for online monitoring of the technical condition of pipelines. A vital part in this is to couple materials degradation models and analysis tools with sensor input data, for immediate conversion to consequences with regards to safety level and remaining life-time estimations. Key elements in the Project are:

- Development of a distributed sensor network
- Development of a communication infrastructure
- Finding solutions for power supply to sensors and communication
- Packaging solutions for integration in pipeline manufacturing
- Improvement of material degradation models
- Development of efficient numerical tools for "real-time" integrity assessment



The instrumented pipeline



Use of efficient numerical tools for integrity assessments

The SmartPipe Project

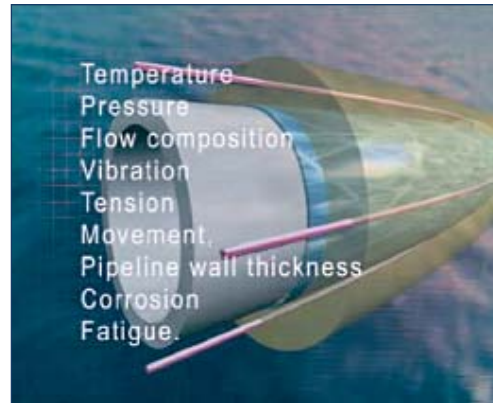
The SmartPipe initiative was taken by SINTEF Research Institute, in close cooperation with the Norwegian University of Science and Technology (NTNU). The two organizations hold very high competence in a broad field of technologies, making them suitable to take on the challenge of realizing the SmartPipe concept.

A close cooperation with the industry is vital for the project to succeed. A consortium of four oil companies is financing the project. Four Norwegian technology companies are contributing to the development of the SmartPipe concept. The quartet consists of SICOM, working with underwater communication systems, Force Technology which is specialist in pipeline integrity management, Roxar which develops corrosion sensors, and Bredero Shaw/Thermotite at Orkanger which specialises in coating and thermal insulation of subsea pipelines.

Interested parties are very much welcome to join the SmartPipe Project. Please find contact details below.

You can also visit the SmartPipe Project on:

www.smartpipe.com



Example of parameters to be measured in SmartPipe



Reporting and visualization of results



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