

# Case 1: Subsea oil trunkline

- Old pipeline subsea pipeline with corrosion issue
- Corrosion inhibition programme in place
- No method to monitor effectiveness of corrosion inhibitor programme other than running ILI tools
- Objective: Verify that corrosion rate is less than 0.1mm/year



## Conventional Solution, running ILI tools

- + 100% coverage of pipeline
- - limited resolution
- - Requires repeated pigruns to measure corrosion rate
- - Only rough estimates of corrosion rate due to limited resolution
- - affects pipeline operation
- - Frequent pigruns required if this method is to be used for monitoring (at high cost)
- - Can only be used for piggable pipelines

## Alternative Solution, Ultramonit Retrofit

- - Spot check only
- + Very high resolution
- + Very precise and fast estimates of corrosion rate due to the high resolution
- + Does not affect pipeline operation
- + Can be used for all pipelines
- + Can provide monitoring data in real time

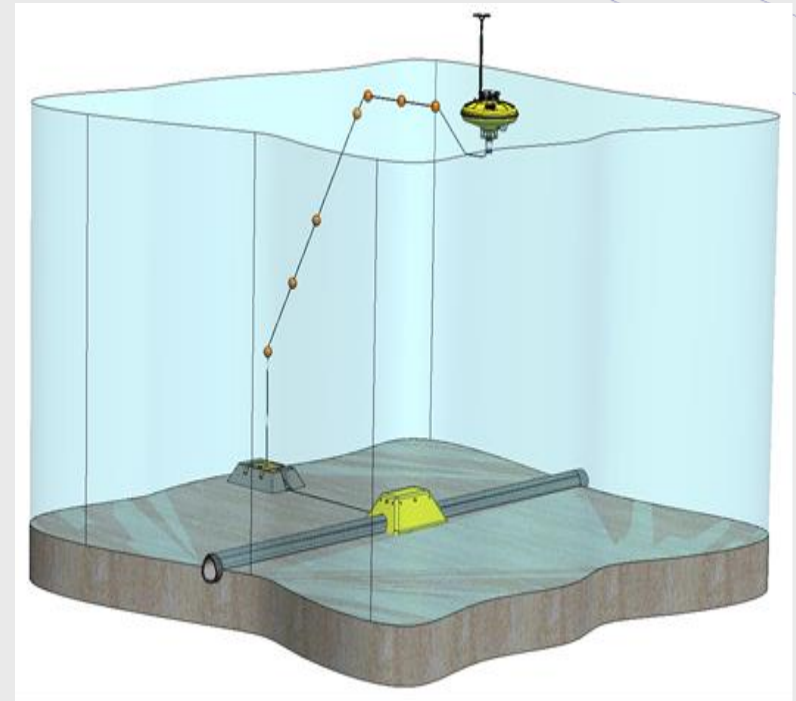
# Installation case 1, Subsea oil trunkline

- Pipeline with chemical inhibition program
- Monitor performance of inhibitor
- Real time communication
- 6 O'clock corrosion of most concern

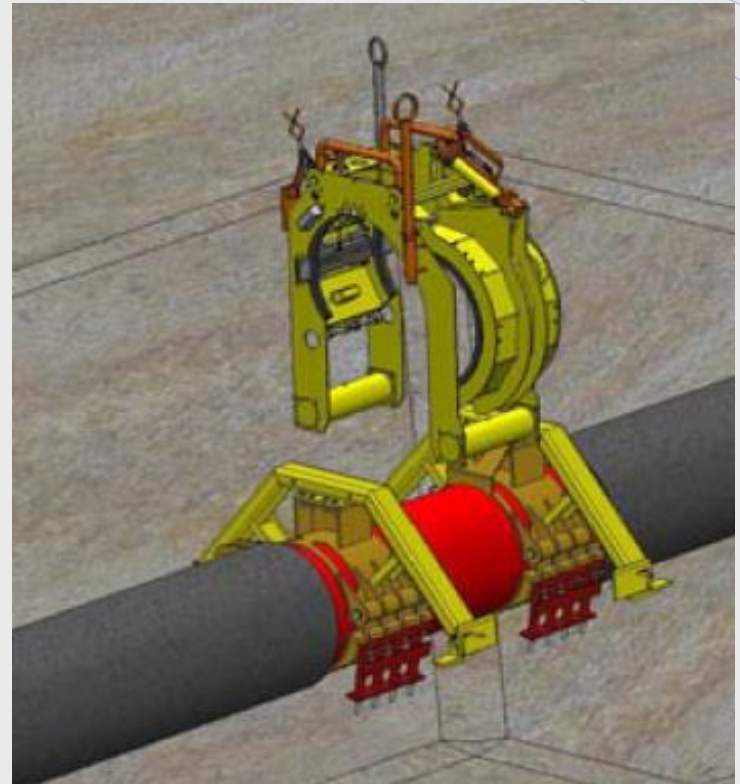
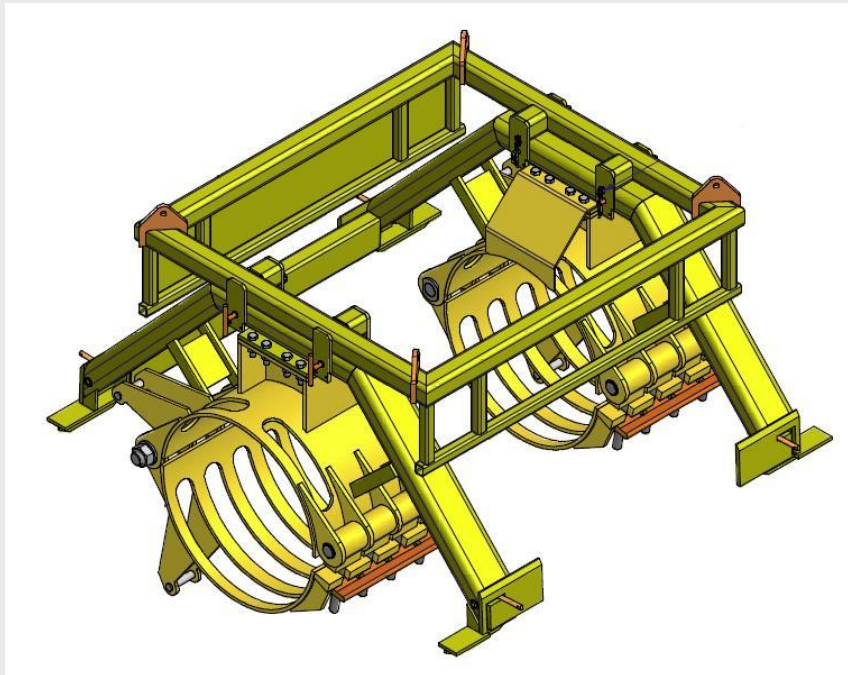


## Technical concept:

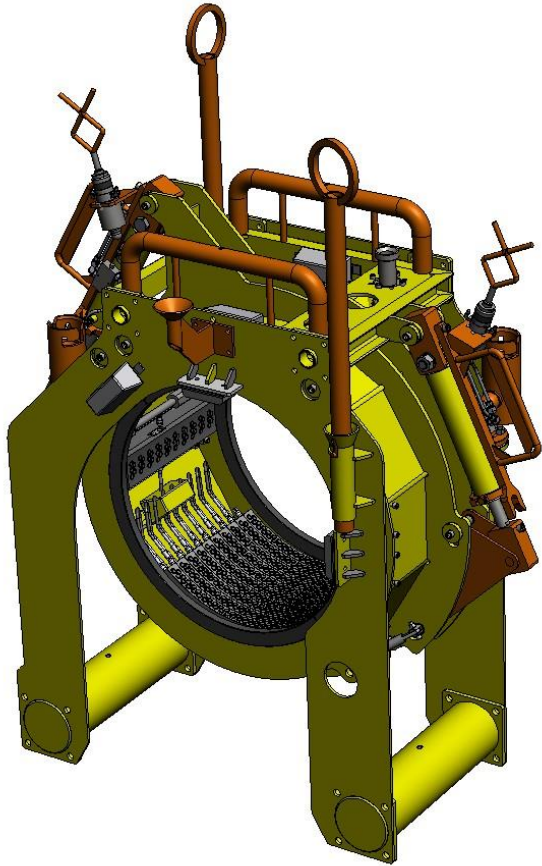
- Subsea clamp with trawl protection
- Anchor structure with subsea backup datalogger
- Databuoy with solarpanels, batteries, datalogger and radio link
- Radio communication to nearest platform
- Monitoring data transmitted to a server placed in a datacenter



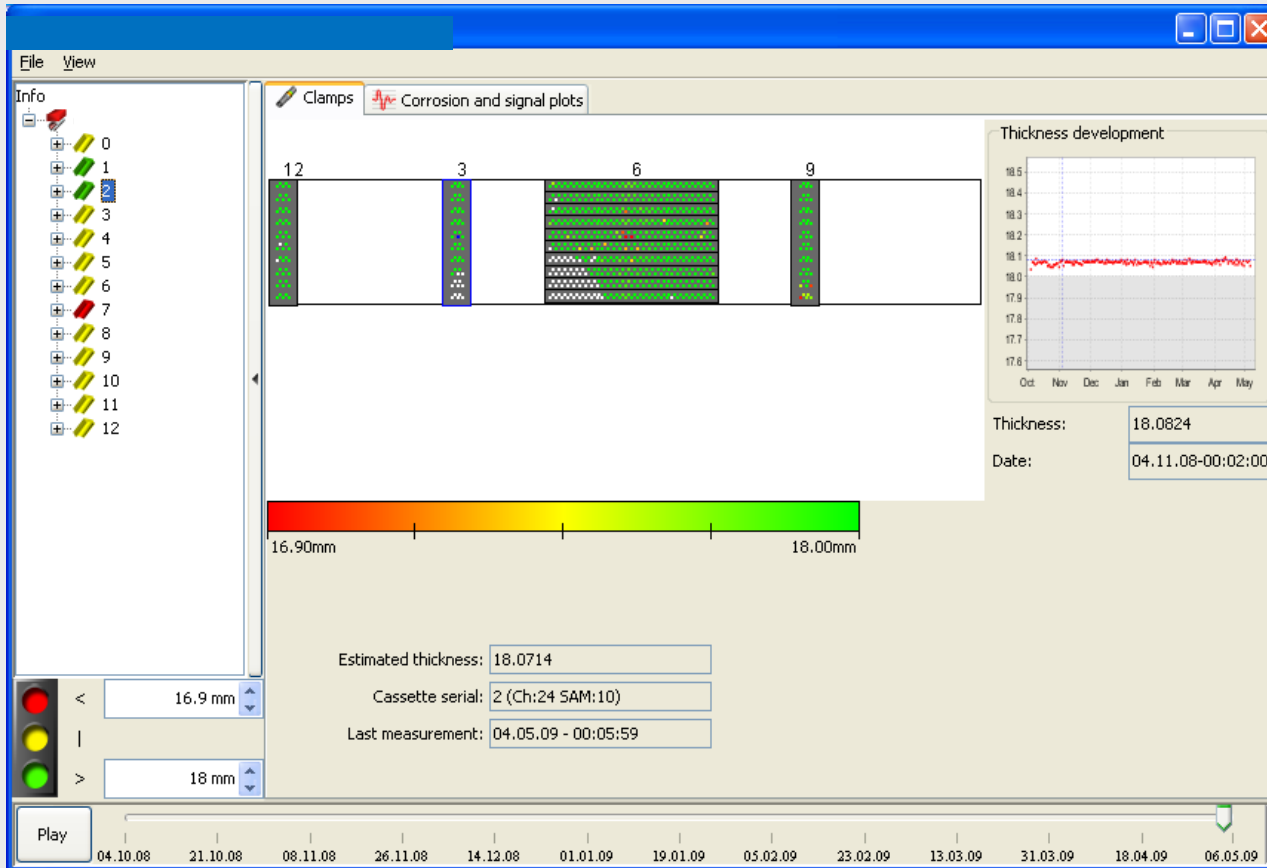
# The subsea tool



# The tool

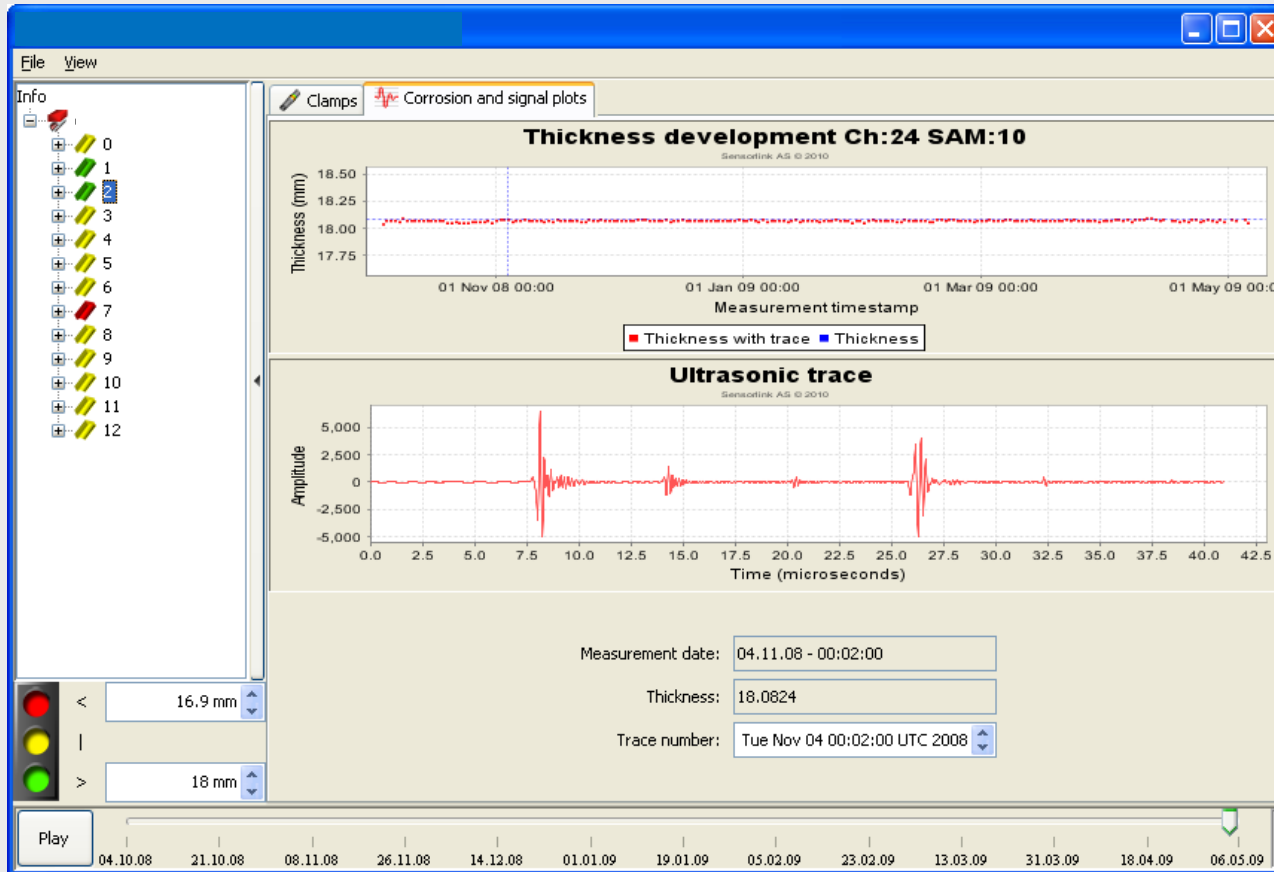


# View of data:





# View of data:



## Field experience from 213+212 days of monitoring:

- 740 of 746 transducers on the clamp were working after installation
- The measured wall thickness from all transducers was within 0.9 mm of the nominal value when the pipe was new.
- No corrosion observed during monitoring period
- No sign of degradation in the measurements with time