

PPSA SEMINAR 2013



**New tool provides clearer pictures of  
flexible risers**

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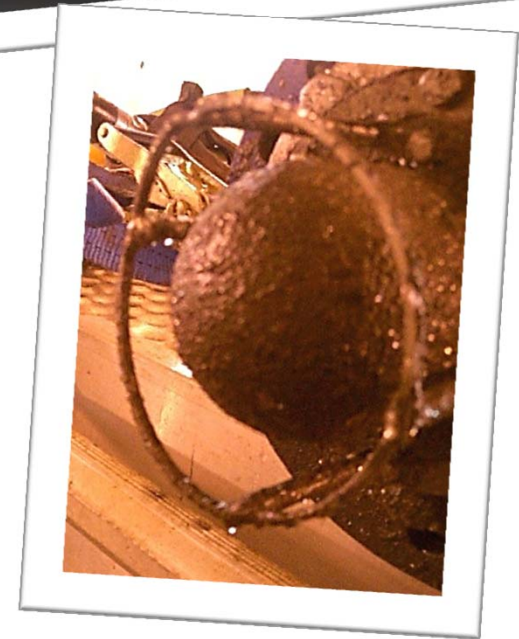
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## The «street view» equivalent of a flexible riser

- [Inspection tool - FlexCam.mp4](#)

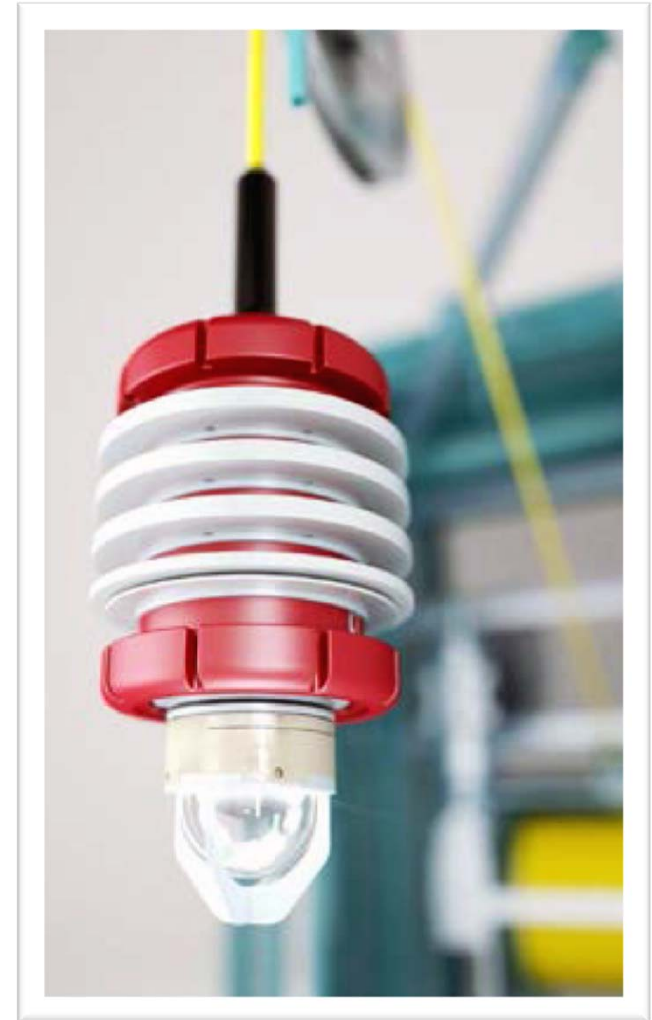
## Background/Challenge

- Challenged to develop a quicker, more flexible and more cost effective visual inspection tool
- Previously used technology improvement potentials
  - Pressure limitations
  - Analogue technology
  - Pan-tilt-zoom
  - Recording technology
  - Contamination
  - Operation



## Design

- Single bi-di pig design
- Bypass ports with flushing dome
- High Res. Wide Angle 360<sup>0</sup>/185<sup>0</sup>
- Digital unwrapping and filtering
- External processing
- Online live web broadcast
- DNV / ATEX / Zone 1 approved
- Up to 3 km reach



# Inspection views

The interface is titled "VISIONIO" and features a navigation bar with the following tabs: Status, Initialize Tool, Winch, Camera, Finished, Chat, and Logout.

**Left Panel:**

- CAMERA ZOOM:** A slider set to 1.25x.
- CAMERA VIEWFIELD:** A circular grid representing the camera's field of view.
- CAMERA MOVE:** Four green directional arrows (up, down, left, right) and a green "RESET" button.
- RECORD:** A red button.
- Storage:** 99% free space (13h 55m left).

**Center Panel:**

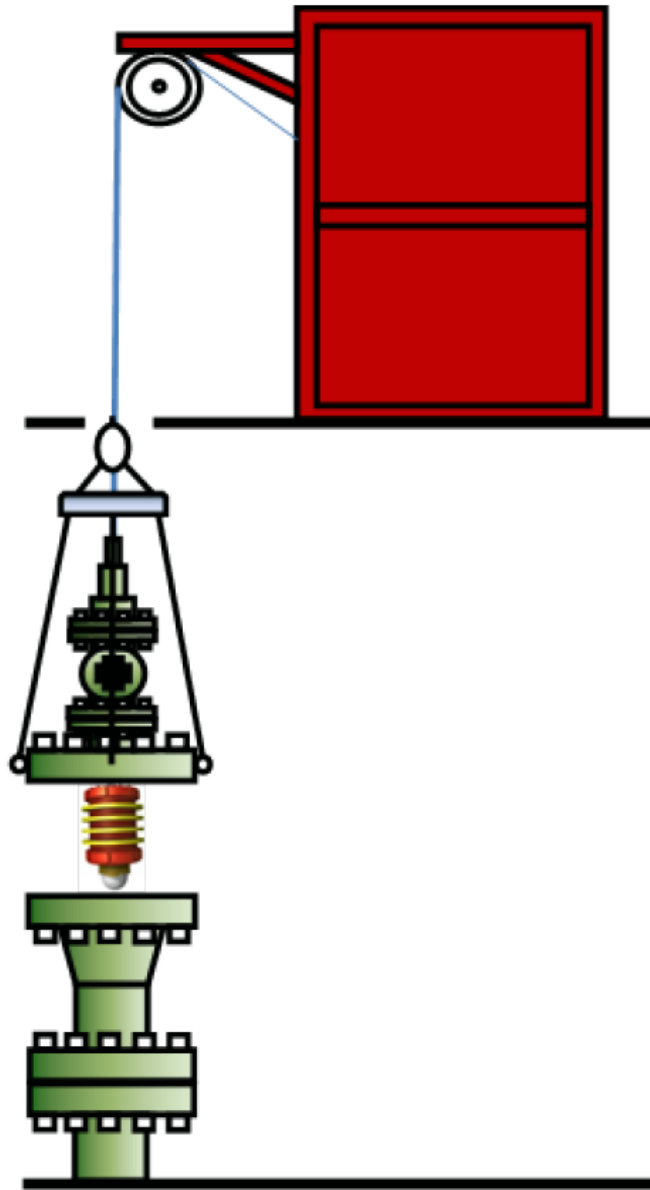
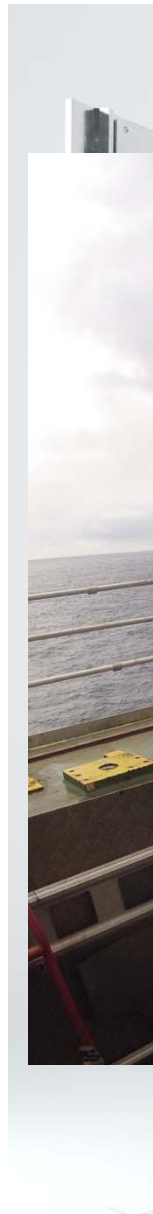
- Live Feed:** A large window showing a curved pipe with a camera probe.
- Real-time Data:** Depth: 0.22 m, Speed: 0 m/min, Tension: 0 Kg, 16:51:35 19.11.2013.
- Indicator Lights:** Three sets of three lights labeled "Tension", "Status", and "Alarms".

**Right Panel:**

- LED LIGHT:** A slider set to 100.0%.
- BRIGHTNESS:** A slider set to 50.0%.
- CONTRAST ENHANCE:** A slider set to 0.0%.
- SHARPNESS ENHANCE:** A slider set to 0.0%.
- WINCH STEPSIZE:** A slider set to 0.05 m.
- WINCH MOVE:** A red "STOP" button and two red arrows (up and down).
- WINCH TENSION:** A color-coded bar (green to red) with a slider set to 10.0%.

## Components

- «All in one» container
- Control panel
- Winch and cable
- Deployment frame
- Isolation valve with stuffing box
- Pig launcher and interface flange

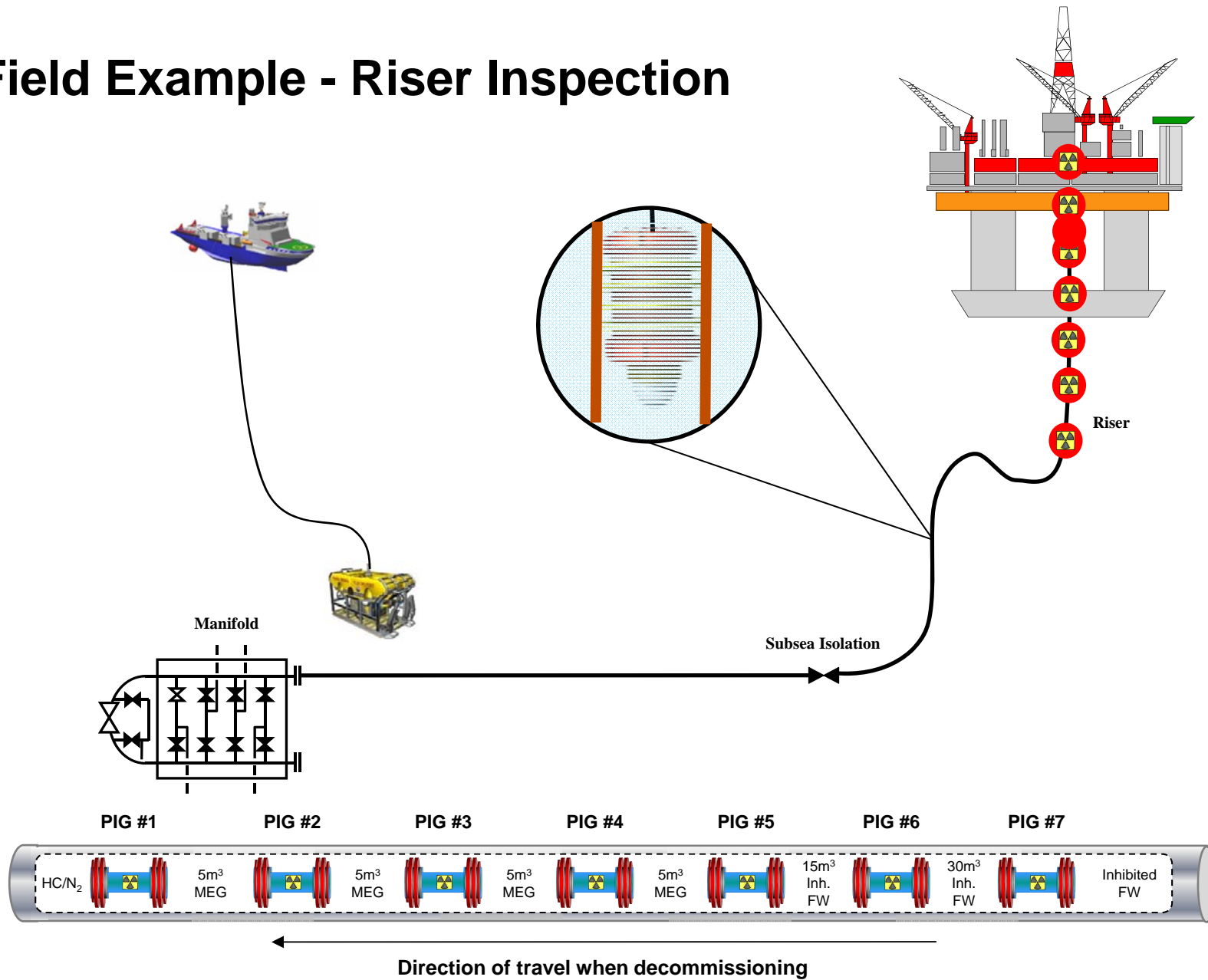




# In house training and competence



# Field Example - Riser Inspection



## Conclusion

- Deployed while compressing gas saved 11 days of production downtime
- Significantly reduced complex subsea operations
- Clear pictures with “street view” possibilities

Customer:

*“These are the clearest pictures I have seen of a riser end termination”*