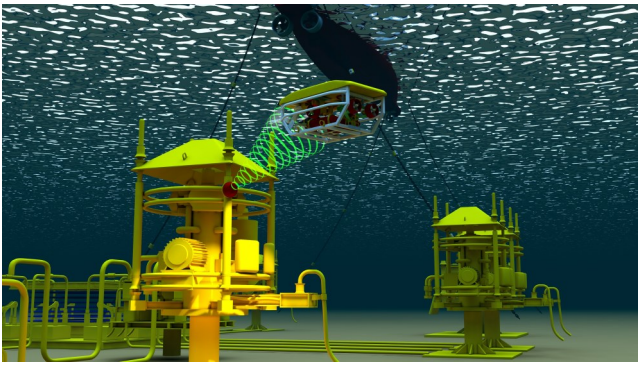
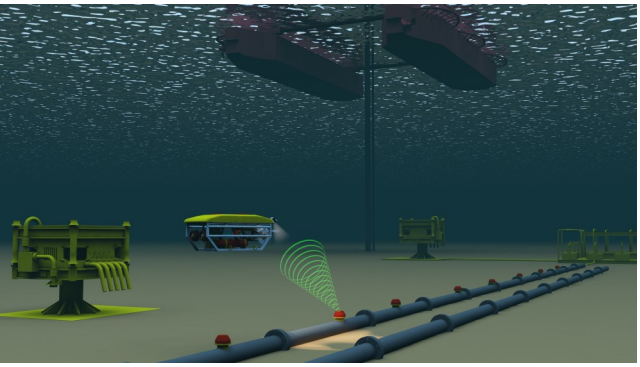
Baker Hughes CASE STUDY: *Seatooth® PPC*

Wireless datalogging for pipeline pre-commissioning





WFS, a world leading supplier of subsea wireless instrumentation and control solutions, successfully delivered wireless communication systems to Baker Hughes for a pipeline pre-commissioning project.

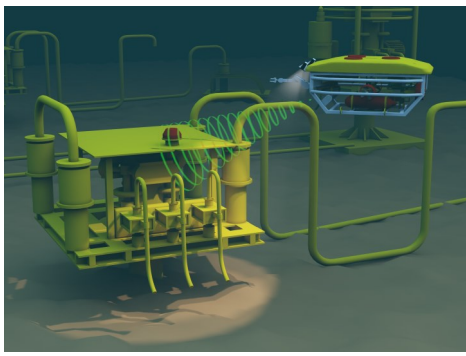
WFS supplied a **Seatooth® PPC** system for wireless datalogging during pipeline pre-commissioning on a project in the Liwan 3-1 gas field South China Sea at water depth of 1000m. The transmitter included a **Seatooth® PPC** connected to a hydrotest skid and the receiver comprised a **Seatooth® PPC** mounted on the remotely operated vehicle (ROV).

Both units were bidirectional and no configuration was required; the system was ready to plug in and deliver serial communications wirelessly between the test skid and the ROV. Hydrotest data was downloaded at high speed despite the high levels of salinity and turbidity. This enabled data to be collected quickly and safely, freeing up the ROV to undertake other tasks.

"Use of the Seatooth® PPC optimized the pipeline pre-commissioning process by enabling a high rate of data to be transmitted over a short distance, providing information quickly in order to make informed decisions," said Baker Hughes Process and Pipeline Services Director Andrew Barden..

The project was successful due to the expertise and dedication of WFS highly qualified staff and to the capabilities of radio frequency communications that allow retrieval of logged data to the ROV. This project was successful because the small, low power units can be installed easily on any ROV or subsea system, and the data can be downloaded fast and reliably without any physical connection.

Using **Seatooth® PPC** for pipeline data logging is a time, size and cost effective solution in collecting logged data and deploying assets. **Seatooth® PPC** can provide a reliable wireless communications link in the most challenging subsea environments such as:

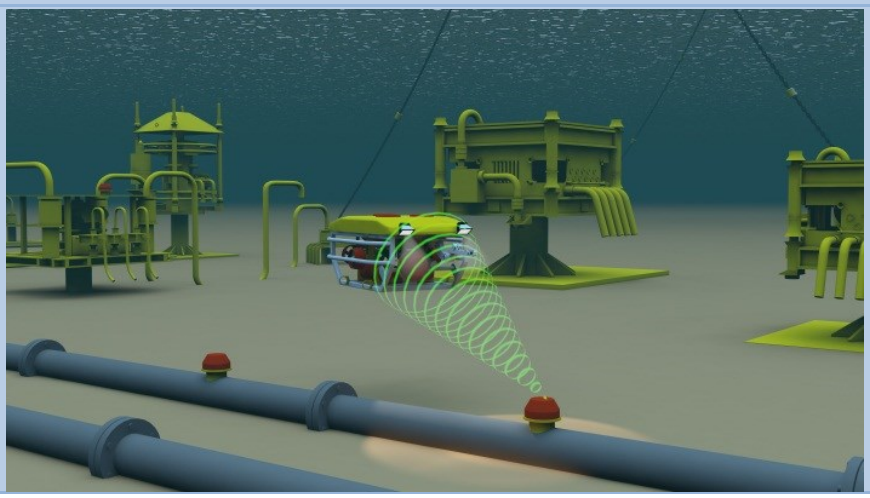


⇒ In shallow water or turbid water

⇒ In the presence of bubbles or contaminants

⇒ Near to large subsea structures

PROJECT TECHNICAL SPECIFICATION

Function	**Wireless datalogging for pipeline pre-commissioning**
Range through sea water	5m
Depth Rating	350m and 4000m
Data Rate	2.4kbps
Power Supply	24V DC
Power (source level)	S100 on skid battery powered, S100 on ROV powered by ROV
Dimensions	350m enclosure: 261mm x 76mm 4000m enclosure: 249.5mm x 91mm
Antenna	Internal
Data Communication Interface	RS232
Operating Temp. Range	-10-60°C
Storage Temp. Range	-20-60°C
Transmitter location, receiver location	**Seatooth® PPC** integrated with hydrotest skid on pipeline asset at seabed. Receiver located on ROV.
Project layout diagram	

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