



# iconic

an Interwell company

*“Realtime data identifies critical parameters in the well by enabling continuous monitoring of the status and performance of a barrier. The data provide results in safer and more efficient operations reducing cost and emissions”*

# Why do we need barrier verification/monitoring?

## The Bravo Blow out in 1977

How can we challenge and make operation safer with new technology?

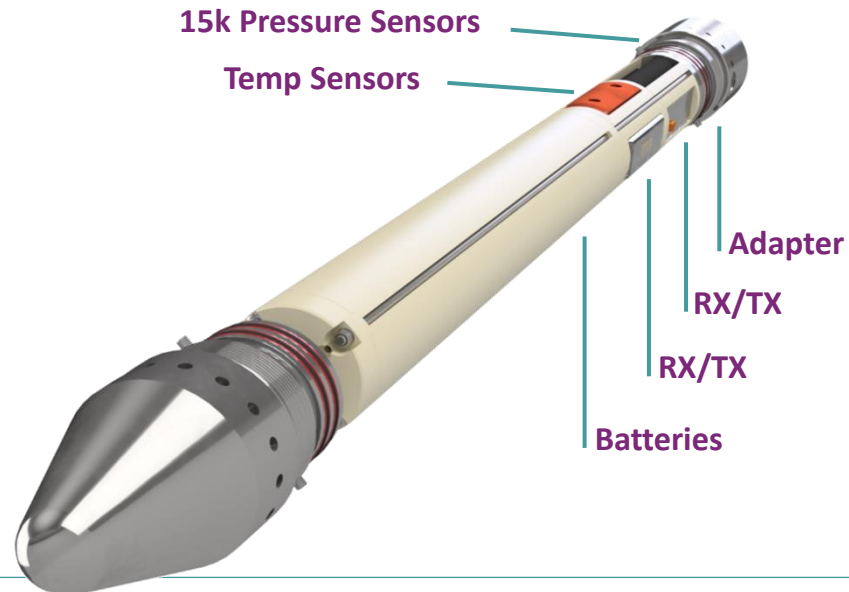


# The base technology – the iDT

ICONIC DIGITAL TRANSPONDER - REAL-TIME PRESSURE AND TEMPERATURE

## WHAT IS IT?

- Robust and reliable acoustic downhole monitoring tool
- Transmits real-time Pressure & Temperature data across well barriers
- Data capture rates are flexible and can be tailor-made to the actual application
- **iDT can receive instructions to perform physical actions (2-way communication)**



## WHAT DOES IT DO?

**iDT** meters physical parameters above and below a well barrier

**iDT** simplifies change-out of X-Trees and Maintenance

**iDT** may be used for deep well applications on electric line

**iDT** may be used to actuate functions below plug(s)

**iDT** provides 2-way full duplex safety (SIL3) communication

## HOW IS IT DONE?

**iDT** communicates wirelessly through tubular

**iDT** does not require any mechanical adaptations



*One integrated system – the iDT send signals through tubing via the plug slips when set*



# Iconic Digital Transponder (iDT) Wireless- Two way Communication

## Xmas Tree Maintenance or change out

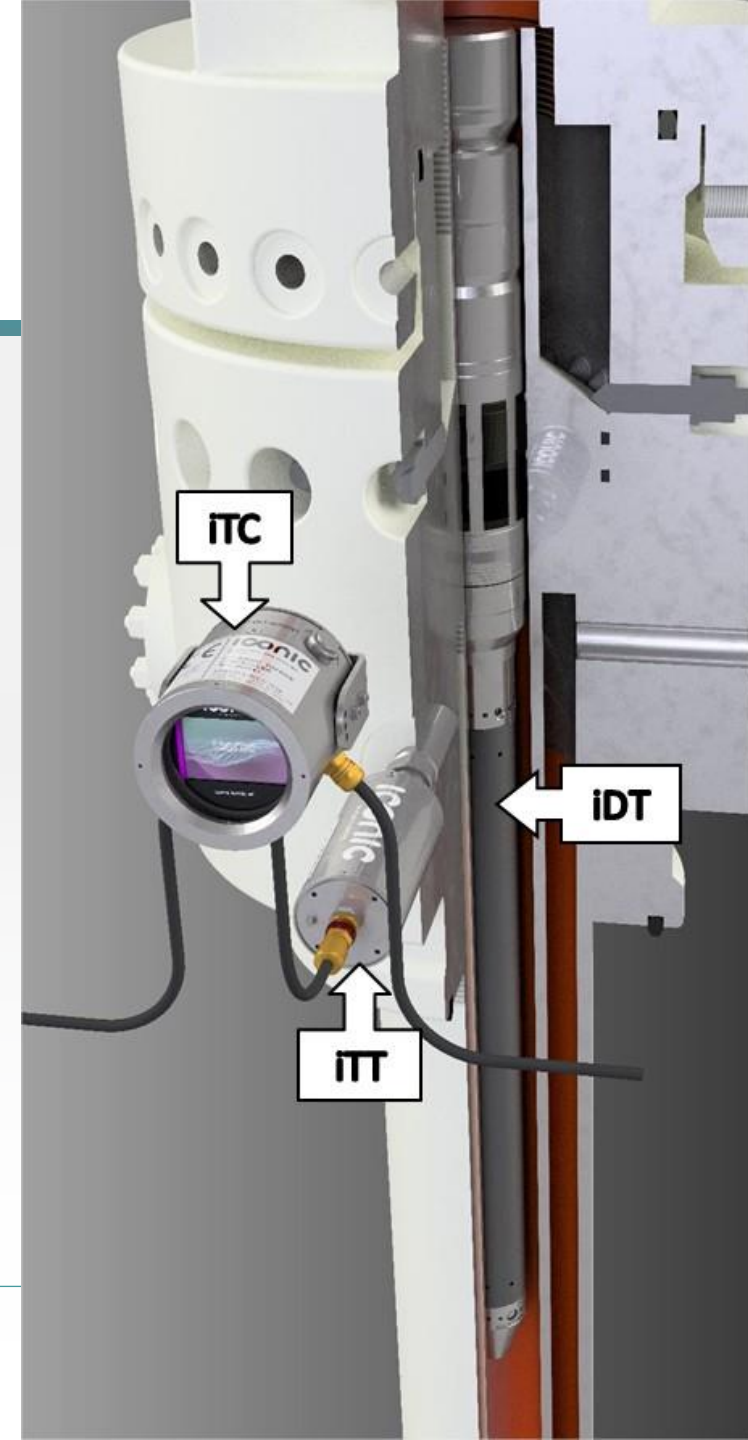
- Real time monitoring during entrie operation, up to 10 years  
P&A Temporary or permanent
- Monitoring below and above a barrier
- Monitoring for several years possible

## Barrier verifications

- Barrier verification when two plugs set close together

## Integrity Survilance

- Integrity verification during operation where Xmas tree is removed



# 3 Years of Continuous Barrier Monitoring

TECHNOLOGY identified barrier breach in field

Shallow Barrier Bridge Plug with iDT installed at 97mMD

## Observation:

Continuous monitoring for 3 years

After 1132 Days – A pressure increase observed on iDT sensor.

Operation center Onshore observed increase of pressure

Indicates a in well Barrier integrity issue.

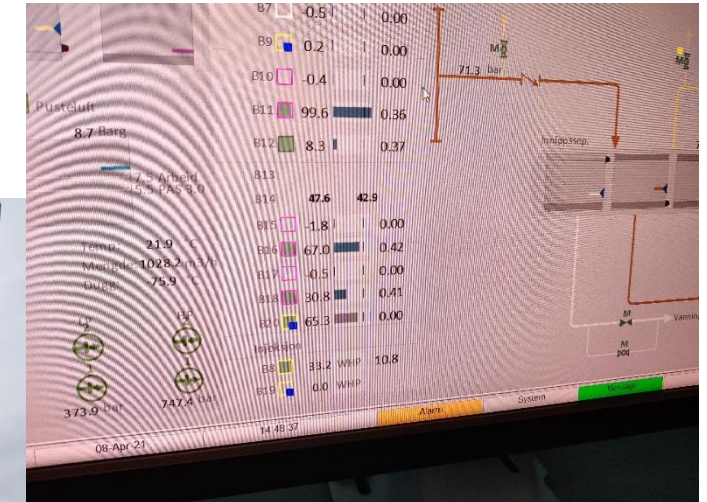
## Planned Resolution:

Pull shallow & deep-set bridge plug

Install new deep-set plug

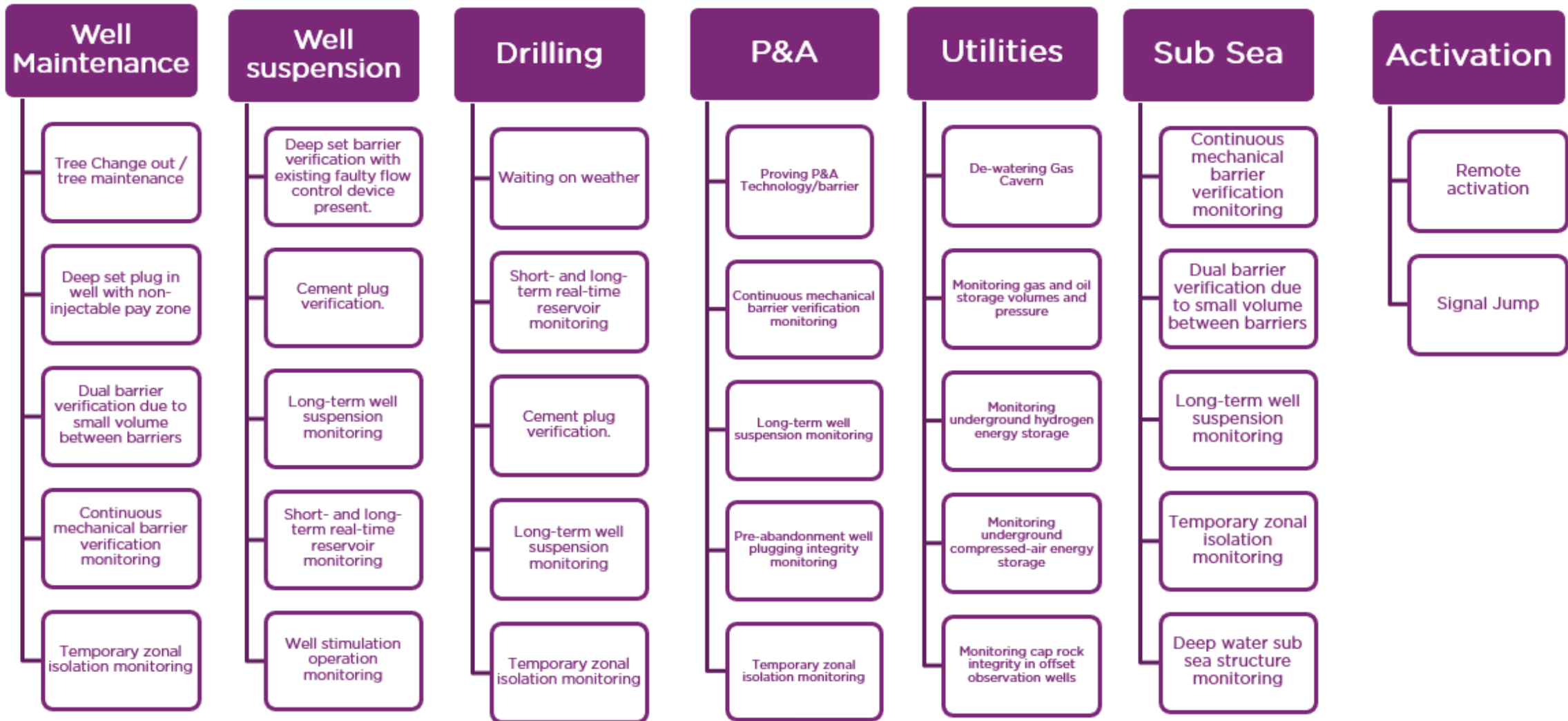
Install shallow set plug w/ Monitoring

Monitor well integrity up to 10 Years



# APPLICATIONS

In 4 years we have gone from 1 to 32 applications



# Iconic iDT wireline – Two way Communication



## Perforation

- Leak off tests

## Stimulation

- Stimulation effectiveness in real time at depth

## Barrier verification

- Monitoring to surface via E-Line above plug
- Test two plugs within close distance

## Slot Recovery

- Barrier verification when two plugs set close together

## Well logging

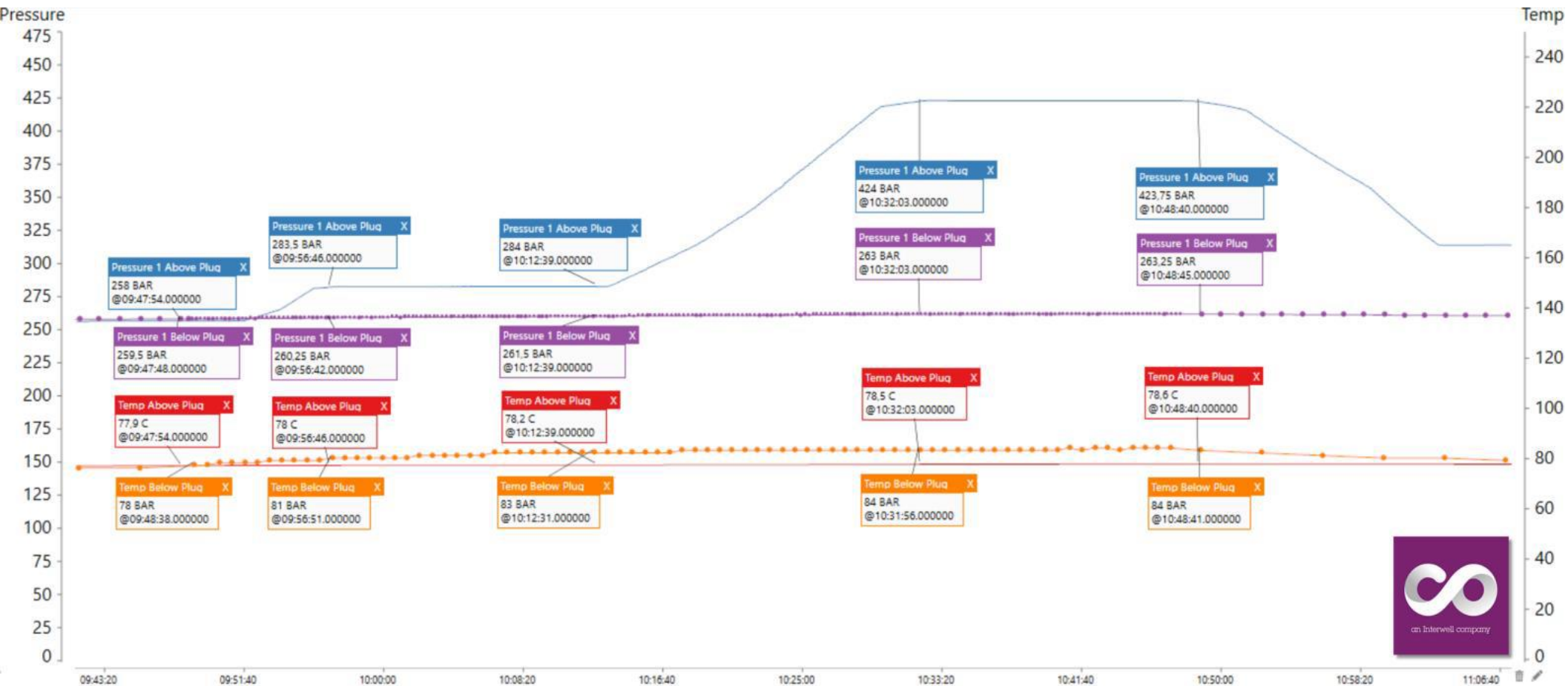
- Pressure & Temperature
- Perforation
- Flow





## Case: Pre P&A of 3 wells on LWI install set 2 deep plugs.

- Due to small volume between the barriers, it was a demand to have verification system when testing
- iDT E-Line system was preferred
- The shallow 7" plug was RIH with the iDT below, to transmit live data during the test.
- The iDT E-line system was sampling every 15sec during the test.
- We achieved perfect well status on this operation





subsea 7  
HD21

Heading: 73.50

Depth: 115.70

Alt: 4.1

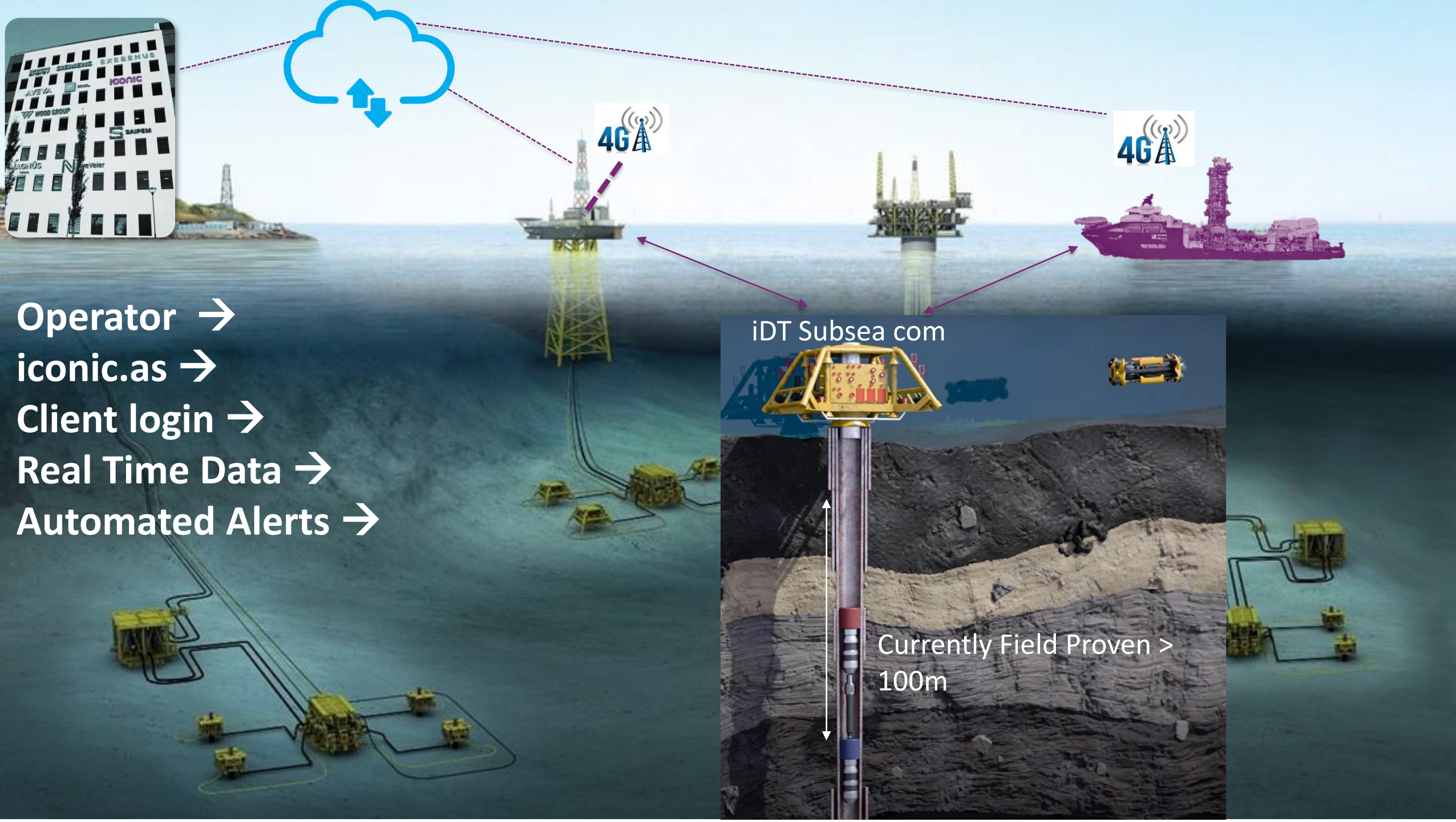
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# How to monitor suspended wells subsea?

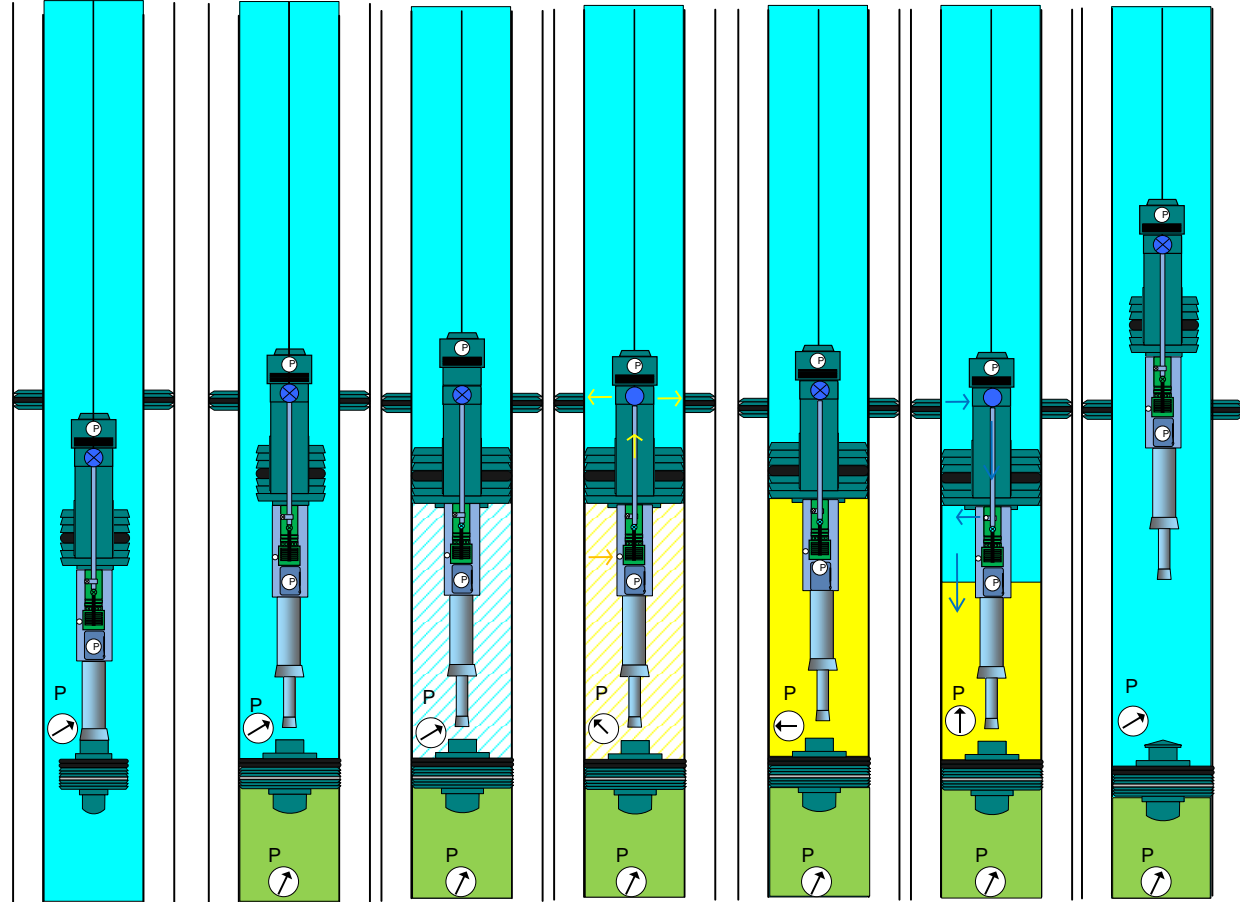




# RITS - Remote Intelligent Test System – Enable Inflow test of a in well Barrier

IMPROVE PRE-P&A EFFICIENCY WITH USE OF 2 WAY COMMUNICATION

1. Run RiTS tool string
2. Set the deep-set Bridge plug by activating iDT Activator
3. Set the Bridge plug/ Multiset plug
4. Start the pump in RiTS and create pr determined draw down.
5. Monitor barrier for 30 min.
6. Equalize RiTS EQ valve/or plug EQ.
7. Retrieve tool string to surface





# Questions?