Through Life of Field Cost Savings by Sharing Technology and Making Data Accessible

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Life of Field Cost Savings and Accessing Data

Focus on the Technology Overlaps

Exploration → Drilling → Construction → Monitoring → Decommissioning
Introduction to Sonardyne

Leading independent provider of underwater acoustic, inertial, optical and sonar technology

70+
The number of countries where we operate

10mm
Positioning accuracy of 6G acoustic technology

Up to 500Mb/s
The speed we can transfer data subsea

100%
Deep water fields where Sonardyne technology is used

330
Sonardyne employees worldwide

80%
Percentage of products we export

48
The age of our company

12,000m
How deep our equipment can operate

10,000
Transducers manufactured each year

24/7
Support any time you need it

156,000
Total square footage of our facilities
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Subsea Application Areas

- Monitor
- Communicate
- Navigate
- Position
- Log
- Measure
- Detect
- Analyze
- Control
- Instrument

Sonardyne
Sound in Depth
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Positioning, Subsidence Monitoring and Ocean Bottom Nodes

Exploration
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Positioning During Exploration Phase

Receiver Deployment
By attaching Small Seismic Transponders at regular intervals along a cable that is also fitted with recording nodes. This allows for the precise location and tracking of the nodes through the water column to the seabed.

Touchdown Monitoring
Knowing the position of touchdown on the seafloor is critical, particularly when deploying at high speeds in shallow water. Using a platform such as an Autonomous Surface Vehicle (ASV) equipped with a Ranger 2 Gyrocompass, it is possible to monitor the operational time whilst improving cable positioning accuracy.

Nodal Deployment
Ensures the nodes are properly deployed on the seabed vessel equipped with SPRINT and ROV to achieve high accuracy positioning. The nodes are then connected to the ROV, allowing for seamless tracking of the nodal nodes in the water column.

Position Inertial Echo Sounder FAS
Using geophone sensors to gather high-resolution water velocity data for acoustic surveys, improving the quality of the surveillance imagery and monitoring important areas in the reservoir description.

Seabed Settlement
Automated Monitoring of environmental changes on the seabed, collecting accurate parameters at predetermined intervals. Data is then collected over a set time period, providing critical information to platform and onshore personnel.
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Semi-Permanent Node Technologies

Surface Drone

Surface Vessel

AUV

ROV

Node
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Wellbore and Drilling Riser Monitoring, Tethered BOP for Fatigue Analysis

Drilling
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Logging Wellbore Gauge Data with Wireless Communications
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Marine Riser Angle Monitoring (MRAMS)
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Tethered BOP – Wellhead Fatigue Monitoring

Images courtesy of Trendsetter Vulcan Offshore, Houston
Subsea Construction
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Long BaseLine (LBL) Arrays
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Asset Walking and Fatigue Monitoring
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Monitoring subsea asset ‘walking’
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Acoustic Leak Detection

Decommissioning
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Sentry Integrity Monitoring Sonar (IMS)
Sentry-B Typical System Diagram

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Acoustic Comms.

RUDICS

RUDICS
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Using AUVS with Solstice Sonar and Automatic Target Recognition

We have automatically detected leaks in real time with our Solstice sonar.
Leak Detection using Solstice on an AUV: Example Results

Integrity and Containment Monitoring Solutions

Leak Image

Automatic Leak Detection Snippet

Automatic Target Recognition
High confidence level of leak detection

u32_SnippetID: 2

f_TimeOfSnippet: 1500133470.05
u08_Class: 1
Sync: 255
f_Score: 251673232.0
f_YGRID: 0.0299999993294
MessageSize: 6748
d_Snippet_Longitude: -0.0806525881527
f_XGRID: 0.0299999993294
MessageID: 70001
u32_SnippetLength: 6699
f_Orientation: 270.421142578
d_Snippet_Latitude: 53.9967560331
Many subsea applications through all phases of a subsea development can share technology when a common language and architecture is present.

Operators could be looking across a wider horizon with different contracting questions to ensure savings are met during each phase.
Thank you.

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