

Upstream **Engineering** Centre



Industry needs – oil & gas

Dr Colin Grant
BP Exploration, 10 September 2013

Presentation Outline

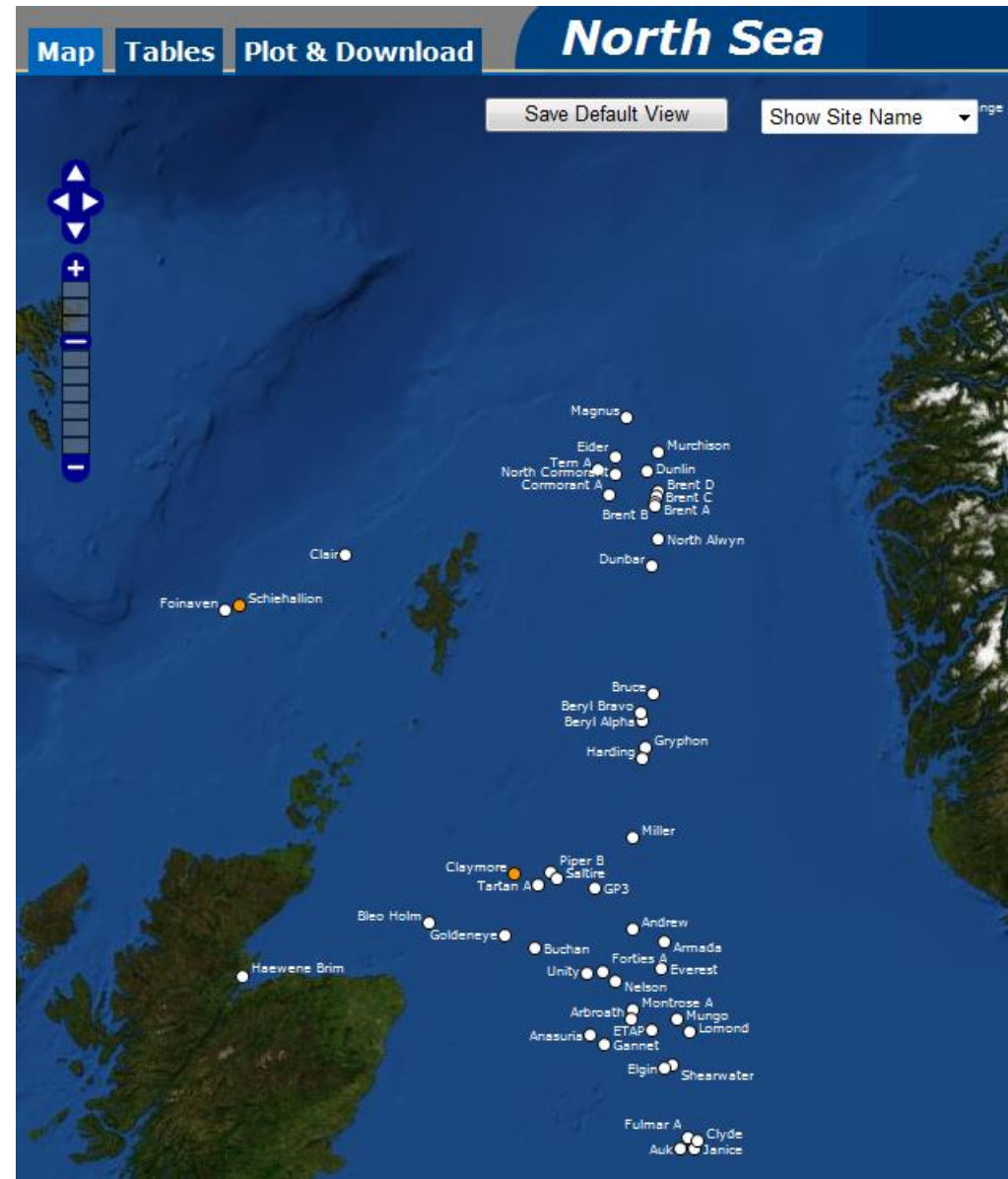


- The role of regulation – HSE & CAA
- Operational monitoring – MetReach & Helimet
- Costs – capital and operational
- Data – quality & standards
- “Measure once use many” - the MEDIN principle
- Data sharing & collaboration - SIMORC
- New technology - TRL’s
- Oil & Gas industry requirements on the UK-IMON timeframe
- Summary

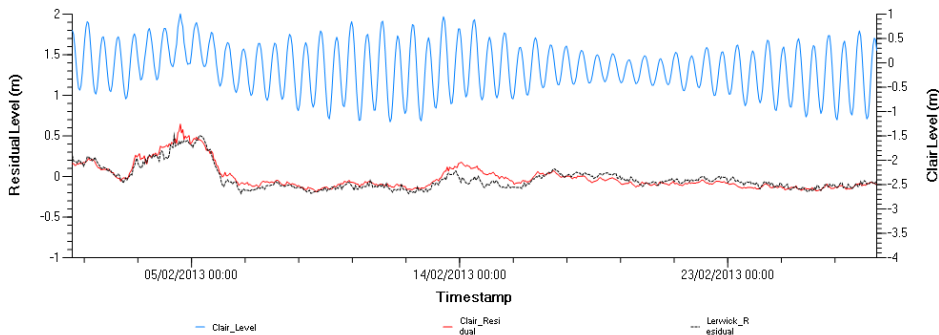
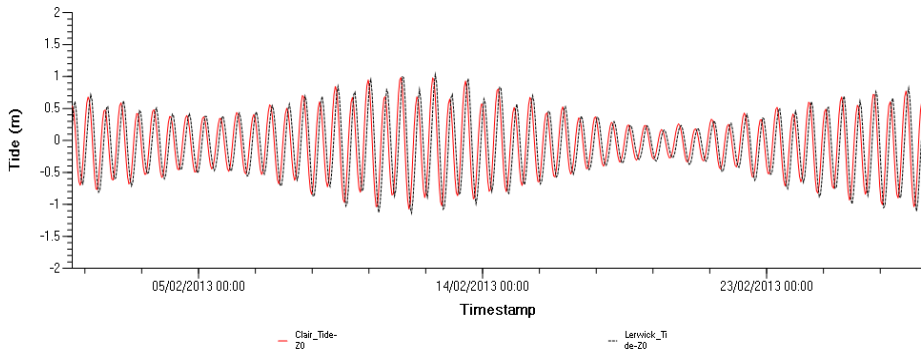
CAP437 - MetReach System



- 68 stations
- Updates at approx. 2 min intervals
- Wind, waves, pressure, air temperature, visibility, cloud height
- Operators fund their stations
- Oil & Gas UK and Vantage
- Daily QC checks
- Regular maintenance and sensor calibration
- Staff training
- Long term data archival and QC - operator responsible



Clair Water Levels





OGP/IPIECA Oil Spill Response JIP

- OSR JIP arose from the GIRG initiative post Macondo
- OGP Committees responsible for providing guidance on several technical areas including surveillance, modelling and visualisation - common operating picture (COP)
- 7 work packages to deliver the objectives
- Metocean Committee led by CKG responsible for WP1: In Water Surveillance
- Initial task – review available information
 - BP Battelle Report; OGP Arctic; NDP

Report

Capabilities and Uses of Sensor-Equipped Autonomous Oceanographic Vehicles for Subsea Detection & Tracking of Oil Spills

BP Crisis & Continuity Management (C&CM)
Safety & Operational Risk Group

November 2012



Source: Underwater Vehicles Monitoring & Search (UVM) Image credits: JIP / M. Gordon. <http://www.oipedia.com/working/01/11/underwater-vehicles-monitoring>

Battelle

Capabilities for detection of oil spills under sea ice from autonomous underwater vehicles

Report for Joint Industry Program on oil spill detection and mapping in low visibility and ice: focus on undersea remote sensing

Final Report

Jeremy Wilkinson
Polar Ocean Services

Ted Maksym and Hanumant Singh
Woods Hole Oceanographic Institution

NDP State of the art study - Deep water remote sensing and monitoring

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Requirements (1)



6months – 2 years:

- Maintain existing North Sea MetReach network
- HF radar systems; gliders, assimilate data into numerical models
- Improved collaboration and data sharing
- MEDIN provides portal for metadata and access route to data and value added services and products. Consistent and reliable data to agreed standards

2 – 5 years

- Extended HF radar network; potential for offshore sites (bi-static technology)
- Increased autonomous in-situ monitoring of multiple parameters with data transmission via existing / new fibre optic networks
- Improved numerical models especially 3D currents to the West of Shetland
- Routine AUV/gliders missions – data assimilation into operational models
- Climate modelling and the potential for changes in criteria for the next 50 years due to changes in storm severity, tracks, increases in sea level (BP KTP with University of Reading)

Requirements (2)



5 – 10 years

- UK wide network of marine monitoring systems
- Data sharing and collaboration is the norm
- All data “freely” available through MEDIN and the DACS

Summary



- Regulatory compliance
- Costs and funding models – public / private partnerships
- Maintenance of equipment and training of staff
- Data quality, sustainability, standards, storage and discovery
- Measure once – use many times (MEDIN)
 - Multi purpose parameters:– e.g. water levels / waves
 - Users: – BP / Wavenet
- Numerical models -
 - Calibrate / validate / data assimilation
 - Design the monitoring network
- Technology
 - TRL's
 - Platforms and sensors
 - Communication systems
 - Data archival, discovery and access – web-based systems
 - Data standards and interoperability