Exploration & Production **Technology**
delivering breakthrough solutions

Investigating the Oceans – a BP viewpoint

Dr Colin Grant
Engineering Technical Authority, Metocean;
November 20th 2007

Overview of the Presentation

- Perspectives from an “end-user” of marine data
- Metocean – a definition
- Metocean and BP’s projects
- Some Examples
- BP’s own metocean data
- Some issues
- Questions

MetOcean

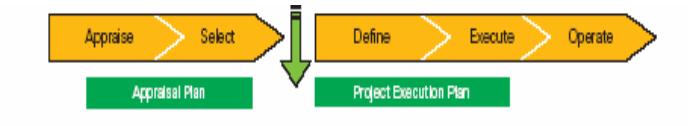
MetOcean = **met**eorology and **ocean**ography

- winds, waves, currents, tides, temperatures, sea ice, etc
- the impact these parameters have on the design, installation & operation of BP's facilities

EPT

3

BP Project Stages & Metocean Input - Overview



- *Access* - basic descriptive summaries of the local conditions
- Appraise – advice for planning seismic & drilling operations
- Select – preliminary criteria and site-specific measurements
- Define – detailed extreme design and operating criteria
- Execute – installation criteria and project support
- Operate – operational metocean monitoring and data archiving
- *Decommission* – criteria for facilities removal

EPT

4

Access – example – Arctic Russia

- Data required:

Basic information on winds, waves, currents, sea ice, temperatures etc

- Sources:

US and Russian public domain

Reports & web sources

- Issues:

Low cost (or free)

Readily available

- UK perspective

Limited global data on public domain sites that are readily available in appropriate formats

EPT

5

Appraise – example – Offshore Columbia

- Data required:

wind and wave frequency data for seismic operations planning

- Sources:

a) Satellite altimetry

b) US commercial hindcast

- Issues:

Required quickly and minimal cost

- UK perspective:

Limited global data on public domain sites that are readily available in appropriate formats

(but D Carter at SOS has just made altimetry info freely available

EPT

6

Define - example – North Sea

- Data required:

winds, waves, currents, levels

- Sources:

proprietary hindcasts and site-specific measured data for calibration

- Issues:

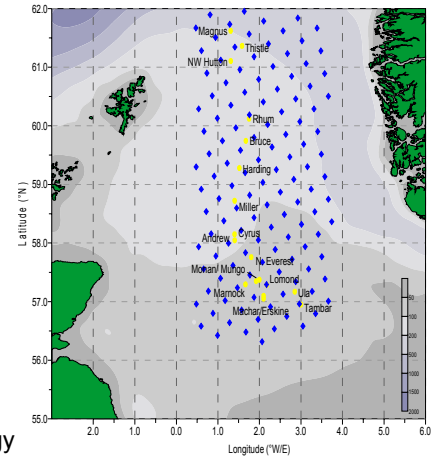
Long term, QC'd data required

Extensive statistical analysis required

- UK perspective:

UK contractors very good at this type of work

Collaboration with the HSE on methodology



EPT

7

Operate - example – North Sea

- Data required:

Wind, wave, temp, press, humidity, cloud cover & height

- Sources:

Offshore platforms - collaboration with Shell Europe

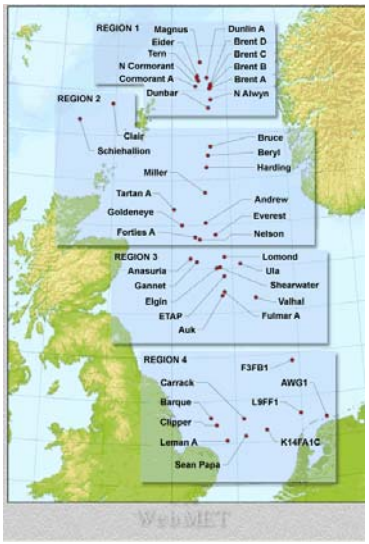
- Issues:

"WebMet" supported by Dyce Marine Logistics

Funded from "JIGSAW" Project (SAR Helicopters)

- UK perspective:

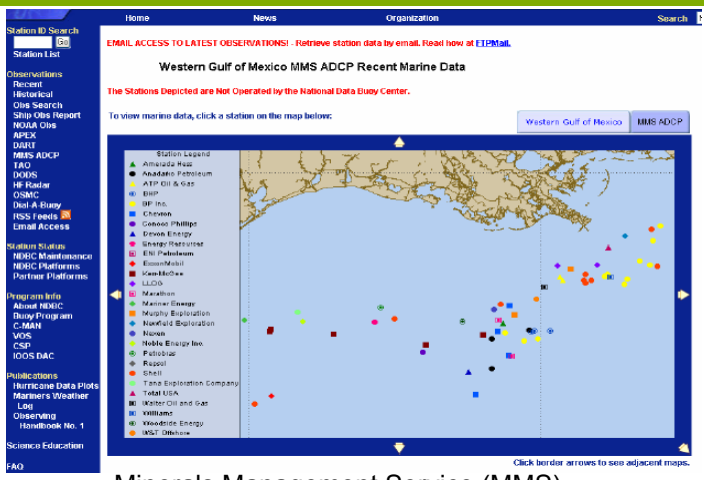
Feed to CEFAS "Wavenet"



EPT

8

Operate - example – Gulf of Mexico



Minerals Management Service (MMS)

ADCP real time data at the National Data Buoy Centre

EPT

9

SIMORC

System of Industry Metocean data for the Offshore and Research Communities

- EU co-funded project under Framework V1:
- Phase 1 June 2005 to December 2007
- BP, Shell, and Total main offshore industry partners working via the OGP (International Association of Oil & Gas Producers)
- Maris – project co-ordination and internet database
- BODC – data quality control & unified formats
- IOC-IODE – promotion and dissemination
- Web based database of offshore industry metocean data -available to registered scientific users and by negotiation for commercial users.

http://www.simorc.com/

EPT

10

Issues 1 – Global infrastructure support

- BP generates site-specific metocean data for its own purposes. This is true of offshore operators generally.
- Increasing willingness to share such data e.g.

  SIMORC / North Sea "WebMet" / MMS currents
- Accuracy of weather forecasts – which BP uses extensively for operations worldwide – is intricately linked to quantity and quality of ocean observations and their assimilation into numerical models.
- The global infrastructure for ocean observations (Argo floats / satellites / data buoys etc) requires international co-operation and funding at a government level – basic operational oceanography
- BP can accrue significant benefits from such global systems

EPT

11

Issues 2 – UK marine data co-ordination

- Depending on the nature of the marine data / information required, BP will need to approach some (or all) of the following UK Govt Depts
- BERR (DTI), CEFAS, Crown Estate, Defra, EA, HSE (+ NERC Institutes etc)
- Widen that to industry generally and it is clear there are many Depts involved in marine data matters

IACMST - MEDAG Workshop on 5/11/07

"Reviewing the use & accessibility of marine data across UK Govt & Industry"

- Some outcomes:
  - General willingness to co-operate & share marine data amongst industry associations and Govt Depts
  - Calls for a unified data policy across Govt Depts
  - Issues of costs and license terms for Govt marine data
  - Strengthen the MEDAG/MDIP process – involve industry

EPT

12

Questions ?

- Can access to marine data and information in the various Government departments be improved?
- Are the present systems of licensing and charging for Government marine data and information allowing the maximum potential benefits to be accrued to the UK economy?
- Can industry rely on the Government to support the global infrastructure for operational oceanography which underpins much of the marine forecast service provision we rely on? .

EPT

13