



Petrofac 

Petrofac Integrated Energy Services

# From a Daily Drilling Reporting System to a Data and Performance Management System

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# The Challenge

## Limitations of conventional Daily Drilling Reporting Systems (DDR)

- Data analysis capability
- High level of manual processing
- Inconsistent coding prevents benchmarking
- Limited flexibility and integration with processes
- NRT data not utilised



# Data and Reporting Requirements

- Automated data analysis and data mining (requires a database set-up)
- Automated data visualisation
- Integration with industry tools and planning process
- Format flexibility
- Multi-lingual
- Standard code set to facilitate benchmarking and performance analyses
- Single data source base
- Standard phase and operation descriptions
- Automated data processing capability
- QA/QC facility

# 3 Tier Benchmarking & Analysis

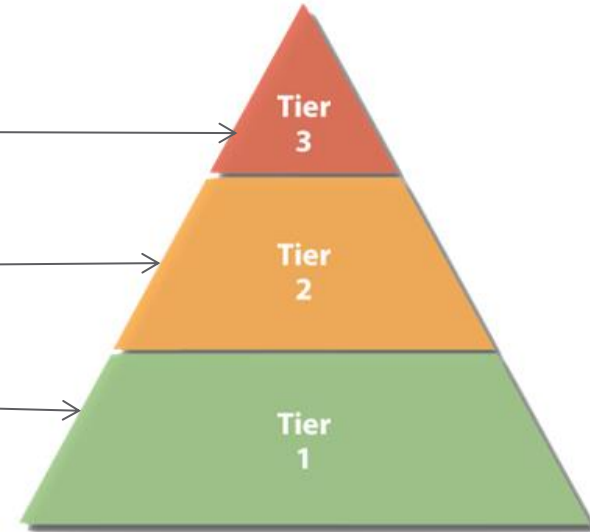
•Tier 3 Time Motion data



•Tier 2 Information captured in the DDR



•Tier 1 Industry data distilled from the DDR



*How much time do Engineers spend gathering information?*

# Fixed Text Reporting

Currently, activity descriptions are logged in free-text boxes.... **Why?**

Fixed-text reporting allows for:

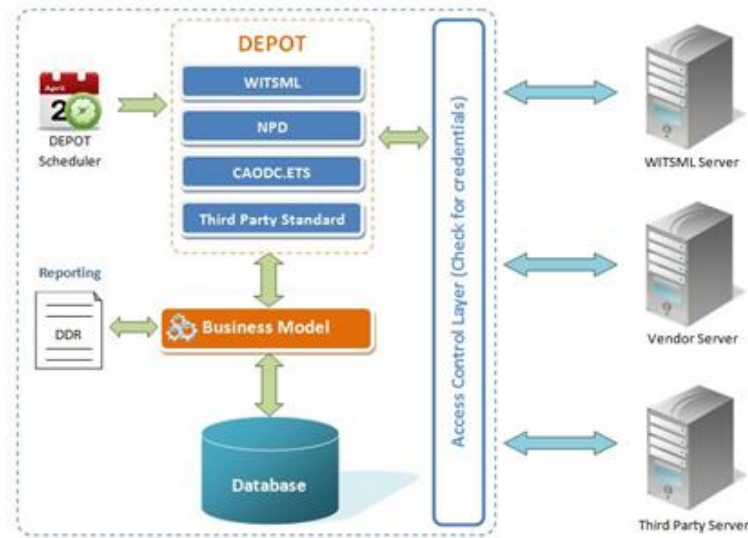
- Flexibility in Measurable data
- Ease of data input
- Performance KPI's directly from data input

Drilling ahead from  ft to  ft with  rpm  
&  gpm ,  psi SPP On Bottom,  psi Off Bottom,  klbs  
WOB,  in OD hole,  klbs Up Weight,  klbs Down Weight,  klbs  
Free Rot Weight,  ft-lbs On Bottom TQ,  ft-lbs Off Bottom TQ .

# NRT data

NRT data is under- utilised

Implementation of WITSML can be used as reporting service  
(automates data population)

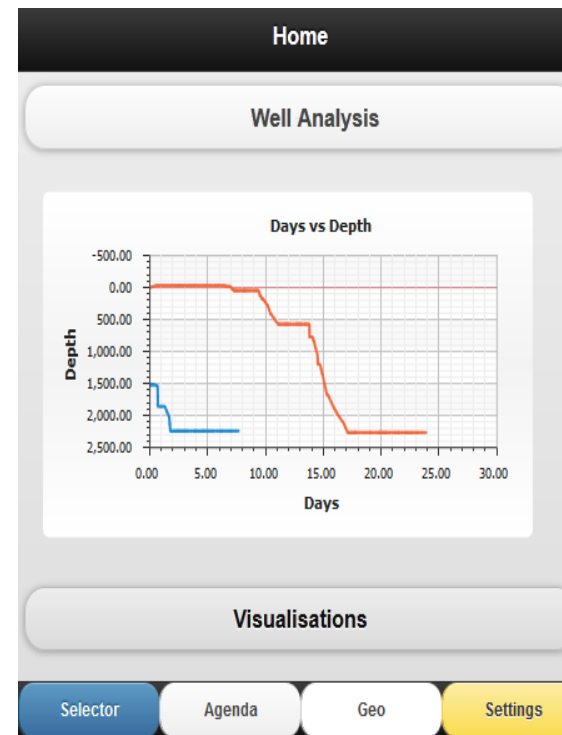
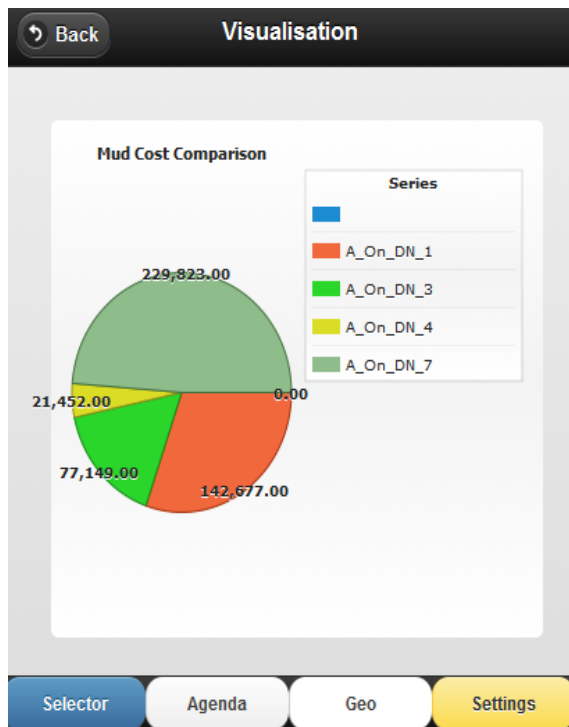


*WITSML – Wellsite Information Transfer Standard Mark-up Language*

# Knowledge mobility

HTML 5 allows for NRT data to be viewed on the go:

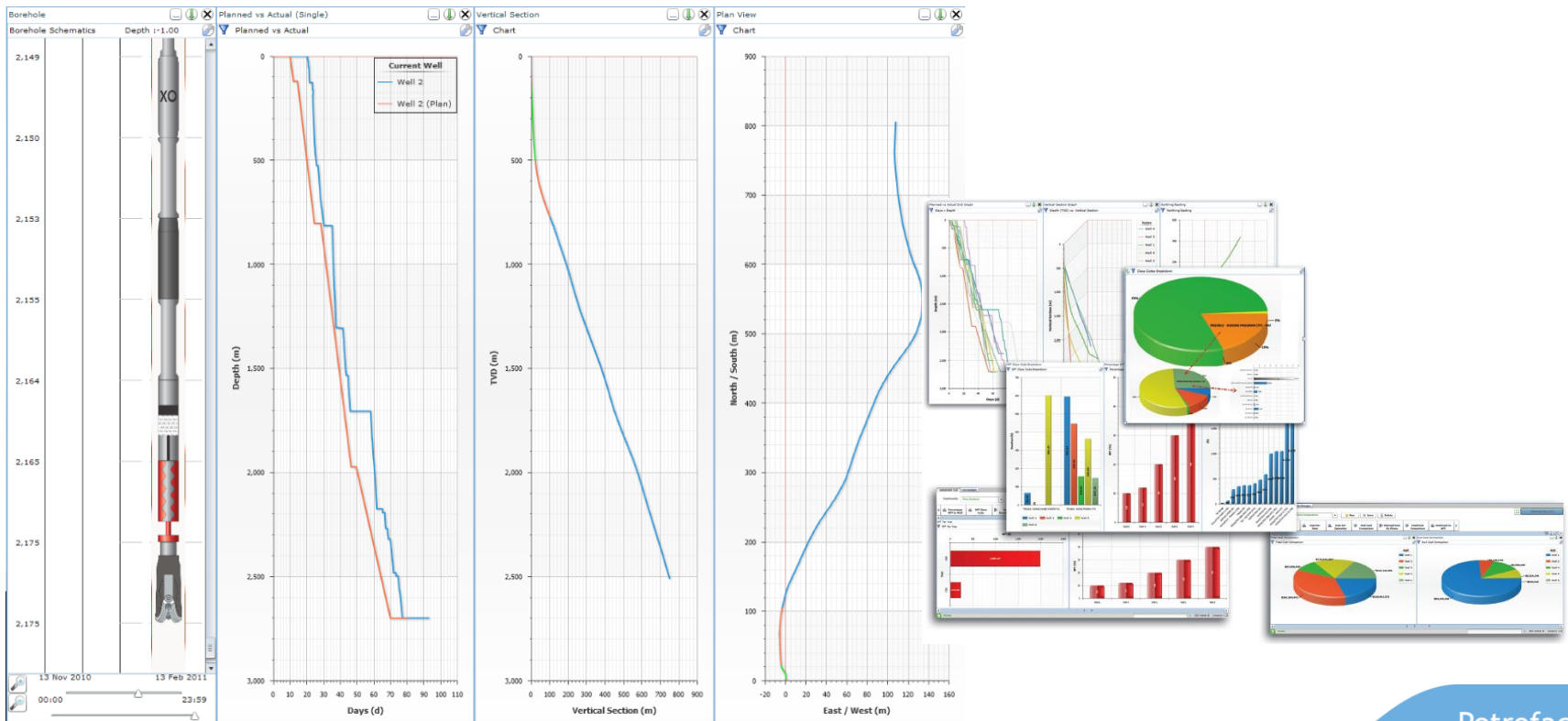
- *Device agnostic*
- *Knowledge at your fingertips*





# Dashboard Analysis

- Data analysis can be evaluated through the use of 'Dashboards' with a pre-set or bespoke layout.



# Benefits

## Performance Optimisation



- Automated drilling performance measurement
- Increased focus on operational performance
- Increased ability to benchmark
- Identification of performance gaps
- Setting of KPI's

“Automated drilling performance measurement could potentially save up to 15% of the total Well construction time”

Significant well engineering time savings during the project delivery process based on improved well analysis capability and automation of reporting.

# QA/QC

- Data entry QA/QC with smart programming and artificial intelligence can detect errors from the input data.
- Data input screens show as overview (data entry QA/QC)

Modules	1	2	3	4	5	6	7	8	9	10	11	12	Modules
Qc-Status	TOC	TOC	TOC	TOC	TOC	TOC	TOC	TOC	TOC	TOC	TOC	TOC	Qc-Status
<b>DrillNet</b>													<b>DrillNet</b>
Activity													Activity
BHA Run													BHA Run
Bit Run													Bit Run
Cement Job													Cement Job
Drilling Parameters													Drilling Parameters
General Comment													General Comment
LOT/FIT													LOT/FIT
Mud Properties													Mud Properties
Mud Volumes													Mud Volumes
Pumps													Pumps
Survey													Survey
Transport Daily													Transport Daily
Support Vessel Param													Support Vessel Param
Weather Environment													Weather Environment
<b>SafeNet</b>													<b>SafeNet</b>
HSE													HSE
<b>Rig Data</b>													<b>Rig Data</b>
Marine													Marine
Personnel													Personnel
Rig Stock													Rig Stock
<b>Report</b>													<b>Report</b>
DDR data													DDR data



- Customized UI
- Query capability



- URL/Database

