



- WITSML enable RDS
- Dashboard – centralized monitoring of all RDS
- WITSML Server

### ABOUT WITSML

WITSML (Wellsite Information Transfer Standard Markup Language) is a petroleum industry standard way of sharing drilling and completions related technical data among various organizations. It is non-proprietary open standard based on XML (eXtensible Markup Language) technology that was specifically created to share data in a format that is both human and machine readable.

By utilizing WITSML, vendors/organizations are relatively easily able to share information in pseudo real time without having to deal with incompatible data formats and software.

### WITSML ON RDS

- RDS aggregates all directional and MWD data at rig site. All data collected is available for viewing, export (LAS) and backup via any web browser. Reports can be generated, viewed and emailed to clients as and when needed directly from RDS.
- Depending on satellite availability, clients can remotely access all available functionality on RDS via web browser.
- Challenges:
  - Users want to view/analyze rig data using third party software.
  - Clients want to store data in their own systems for future reference.
  - Users want to access data in near real time without having to wait for emails.
  - Both data quality and security is of utmost importance to every client.
- Solution:
  - RDS can push data to the clients in near real time, securely and automatically.
  - Data pushed per WITSML specification.
  - RDS can push data to as many as FOUR independent clients in parallel.
  - Built in data transmission error correction.
  - Automatically re-transmit all data corrections from rig site including surveys and logs.
- Completed as of Sept 1<sup>st</sup>, 2012.

- WITSML data push feature implemented on RDS.
- Survey and Depth Logs transmitted to as many as four independent destinations.
- Simple configuration – all that is needed is login information to the destination WITSML server.
- Extensively tested with industry leading WITSML vendors.
- In Progress:
  - Time Log data push is currently being tested. Expected completion date: 15<sup>th</sup> Sept. 2012.

### DASHBOARD PROJECT

- Polaris Dashboard is visual display of consolidated information from various Polaris RDS – all gathered on a single screen so as to allow users to monitor all the RDS' at a glance.
- Each RDS updates one or more cloud based central servers with most recent data collected – this includes well data, log and survey data along with RDS health information.
- Information on dashboard is automatically updated at constant intervals without any user intervention.
- Data is presented on dashboard in both tabular formats as well as on a map.
- Viewable information includes:
  - Well information: Name, API/UWI, IP Address, Rig Name, Location, Operator, Service Company, Drilling Status, Start Date, Contact information.
  - Survey Data
  - Log Data: Hole Depth, Bit Depth, ROP, Gamma, WOB, Torque, Gas etc.
- All data shown on dashboard is configurable. Users can rearrange column order, hide/show columns, sort/filter and search incrementally.
- Access to dashboard are self-managed by clients via built-in administration screen.
- The map shows location of every RDS and allows users to filter by drilling state, rig name, well name or RDS name. Users can overlay weather and temperature data on the map.
- Status: Under development.

### WITSML SERVER

- All directional and MWD data collected at rigsite using RDS is available for download/export.
- With enabling of data push from RDS using WITSML, all collected data can be transmitted to client's WITSML server, if enabled and available.
- Challenges:
  - Not every E&P client has WITSML server.
  - At the completion of drilling, RDS is cleaned up and reused at a different job. Unless data was exported/backed up, there is no way to recover data.
  - Even if data was exported and emailed, there is a very high possibility of not being able to access data at a future date in a timely manner.
- Solution:
  - Polaris WITSML server – Data aggregation server built to WITSML specifications.

- Polaris RDS is configured to automatically push data to Polaris WITSML server(s).
- All data aggregated on Polaris WITSML servers is available to E&P clients at any future date.
- E&P clients can use various tools (e.g., KSI Predict, Petrel, Geosteering packages) to directly connect and pull data off WITSML server for analysis.