

Products and services for real-time transmission

July 3, 2013

PetroDAQ



Universal Data Acquisition

Instrumentation

Data Acquisition

Transmission

Monitoring

Enabling the Digital Oilfield

PetroDAQ Inc. is a technology provider of hardware and software to the Oil & Gas marketplace.

Our mission is to provide leading-edge technology allowing our clients to reach their goal and to facilitate them in reaching their vision of the Digital Oilfield.

Summary

PetroDAQ provides the technology and expertise for a successful real-time Service Provision

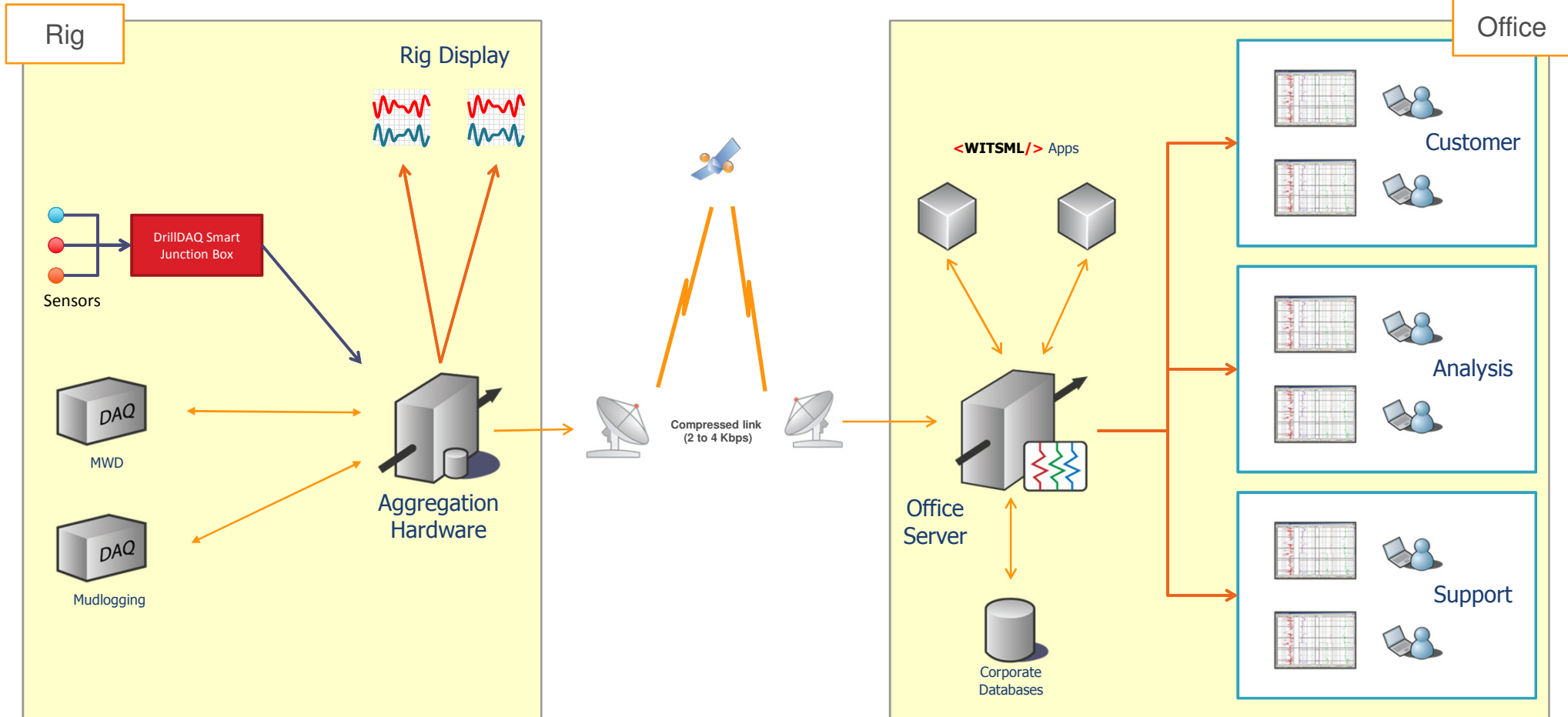
Added values to final customers beyond traditional data transmission

Integration with customer's modeling applications

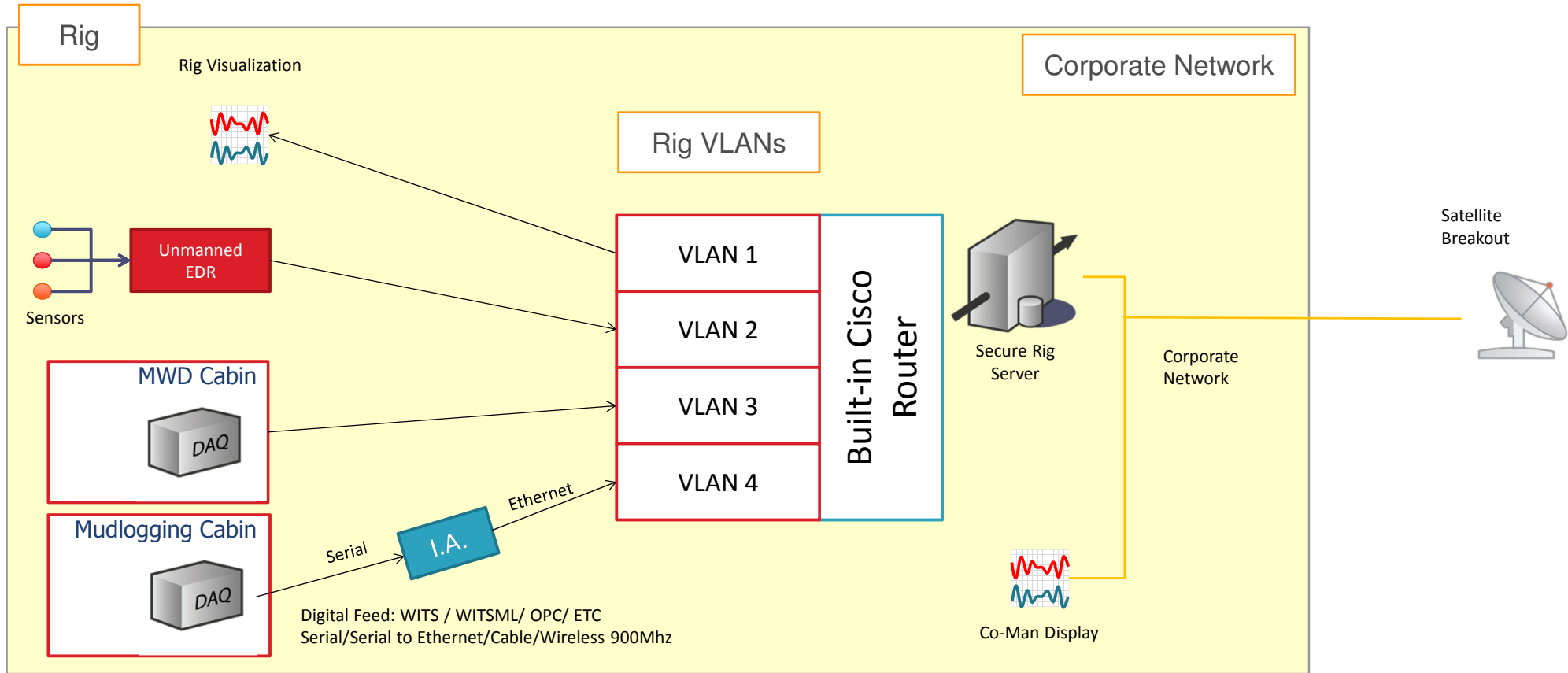
Support Center for 24 x 7 monitoring



Field to Office Dataflow



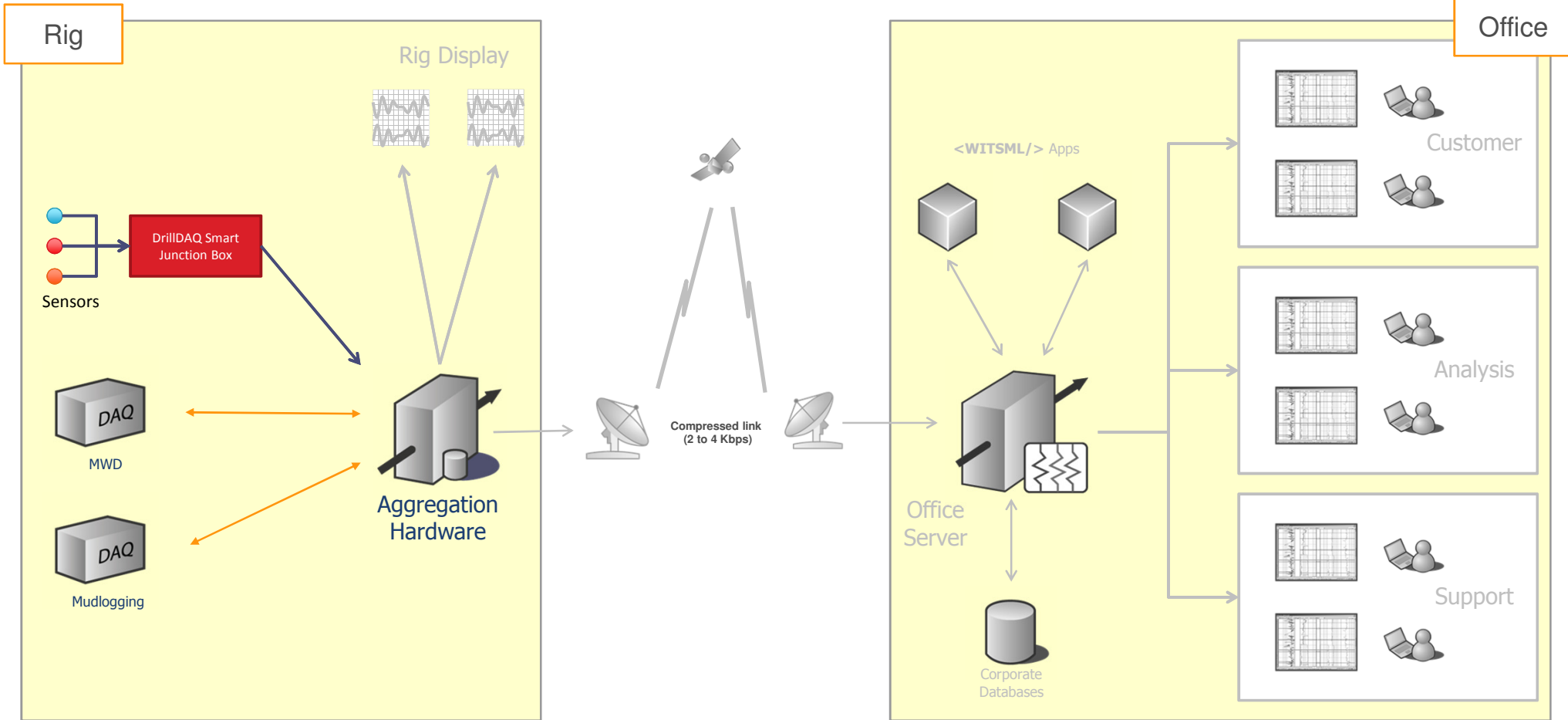
Secure Field Network Topology



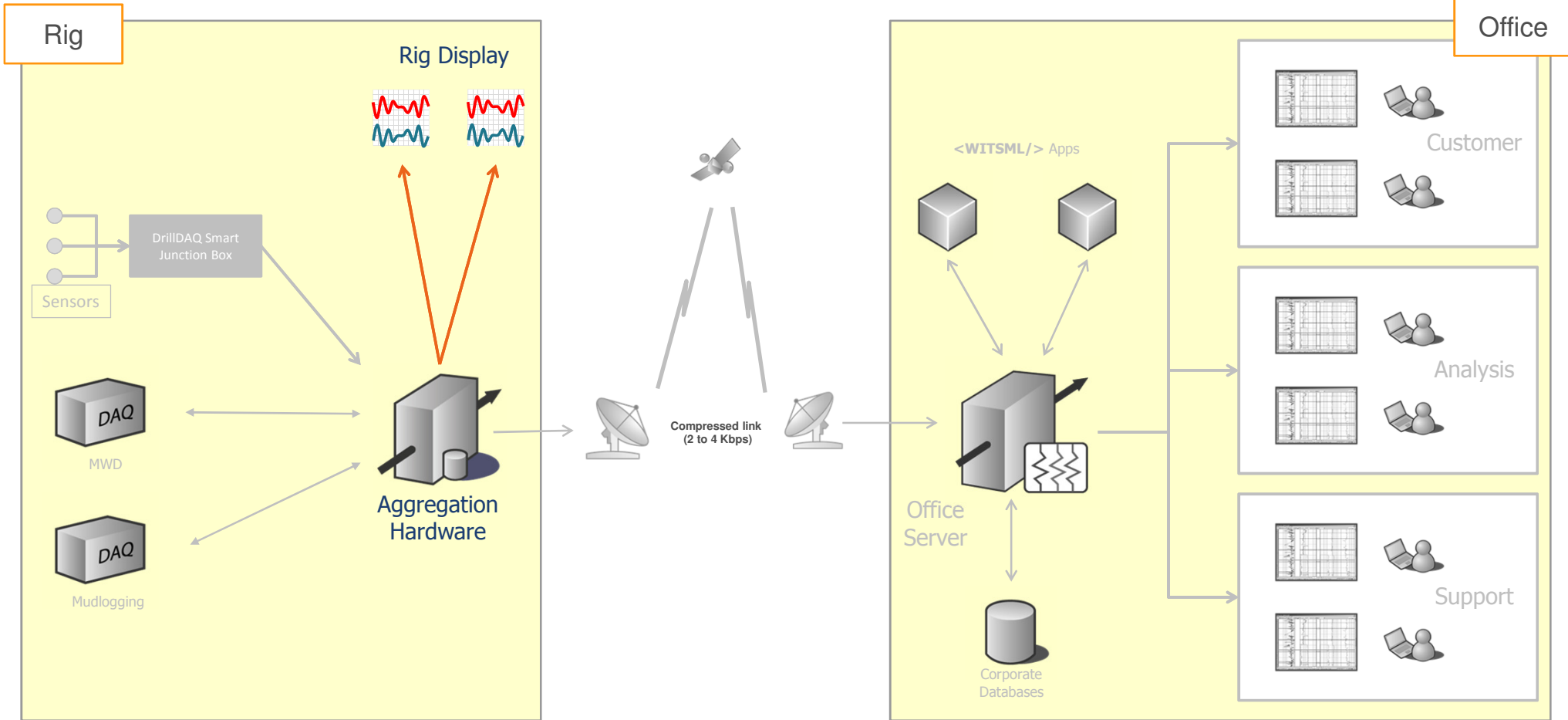
Service deliverables

- Rig Data Aggregation of all rig data: mudlogging, directional, MWD, rig parameters
- Rig Visualization
- Rig to Office Real-time transmission
- Integration with 3rd party applications
- Office real-time visualization
- Information monitoring and analysis
- Integration with WITSML enabled modeling tools

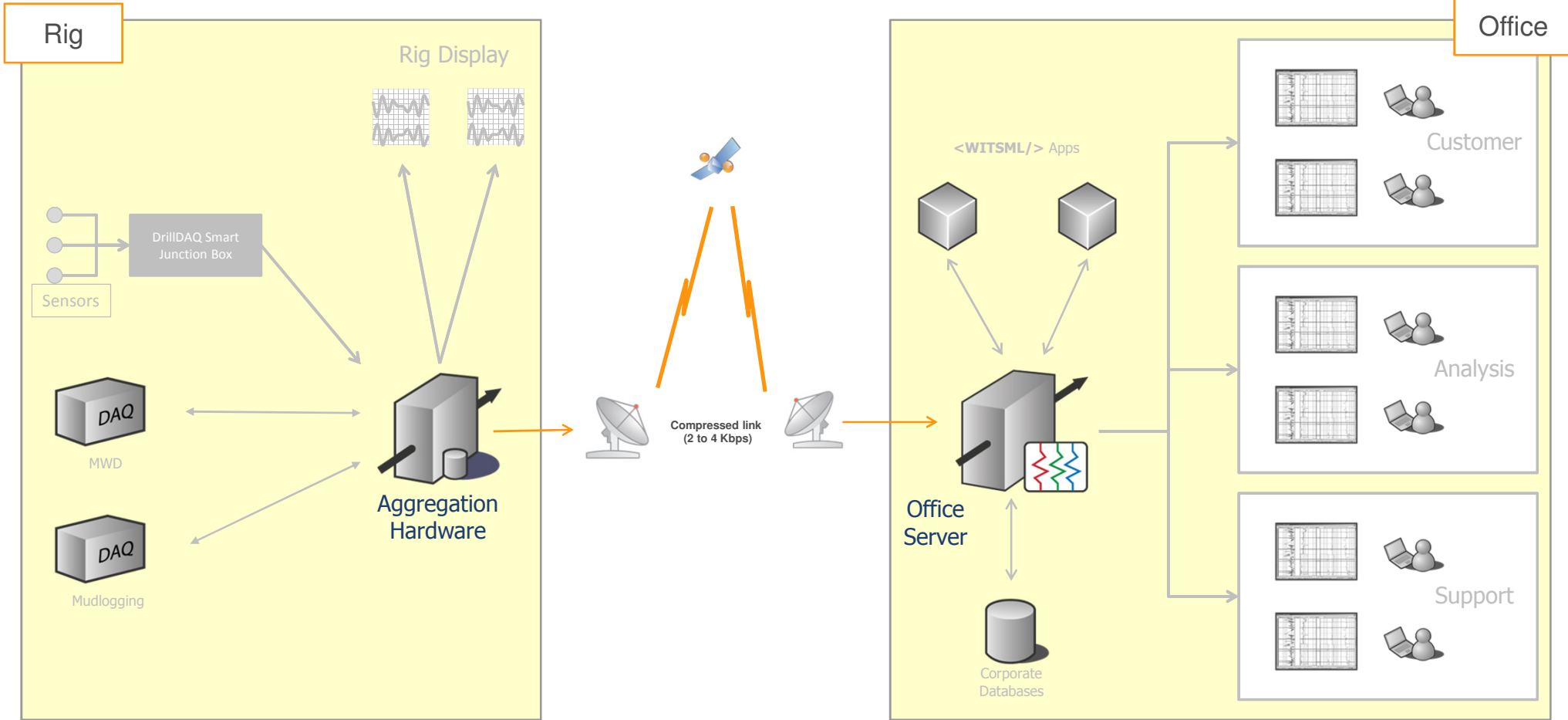
Service delivery – Rig Data Aggregation



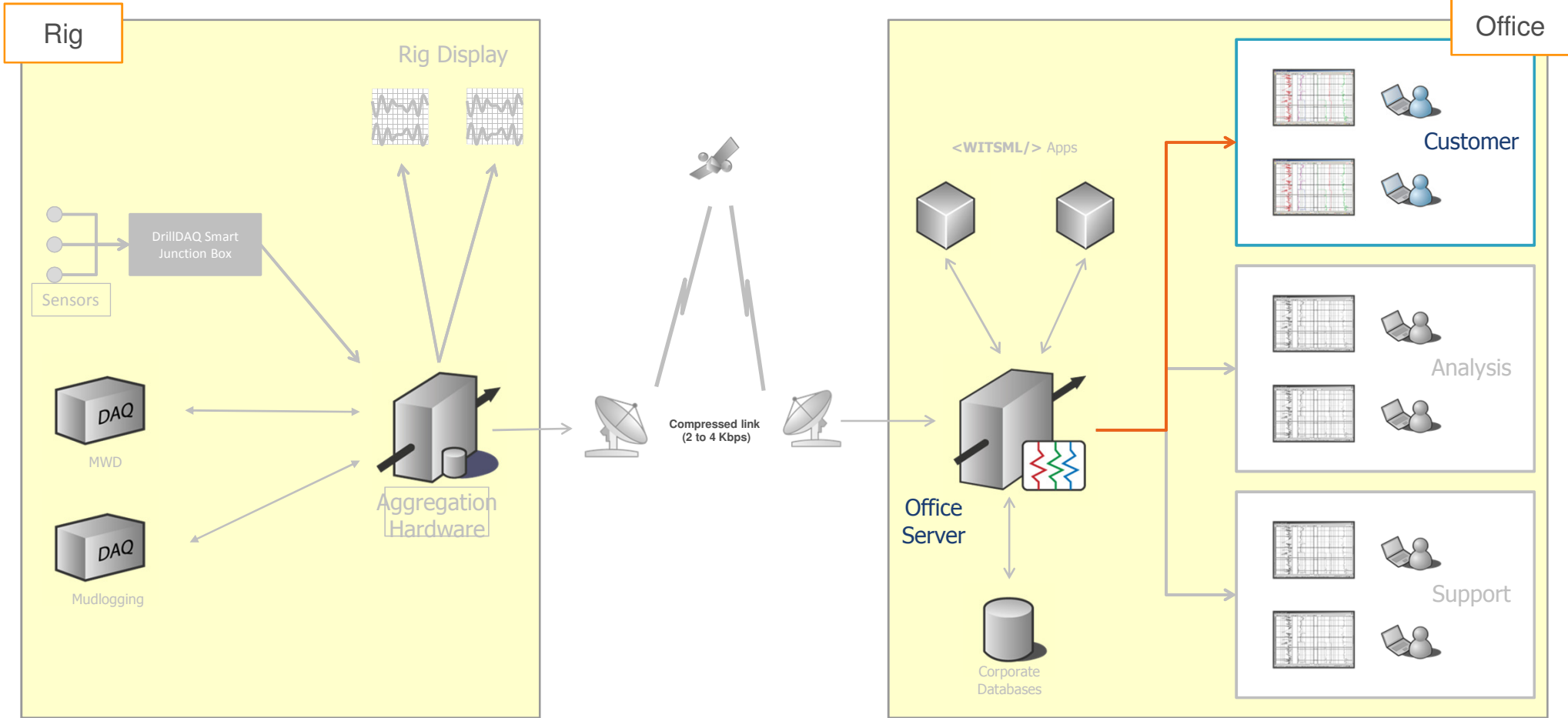
Service delivery – Rig Data Visualization



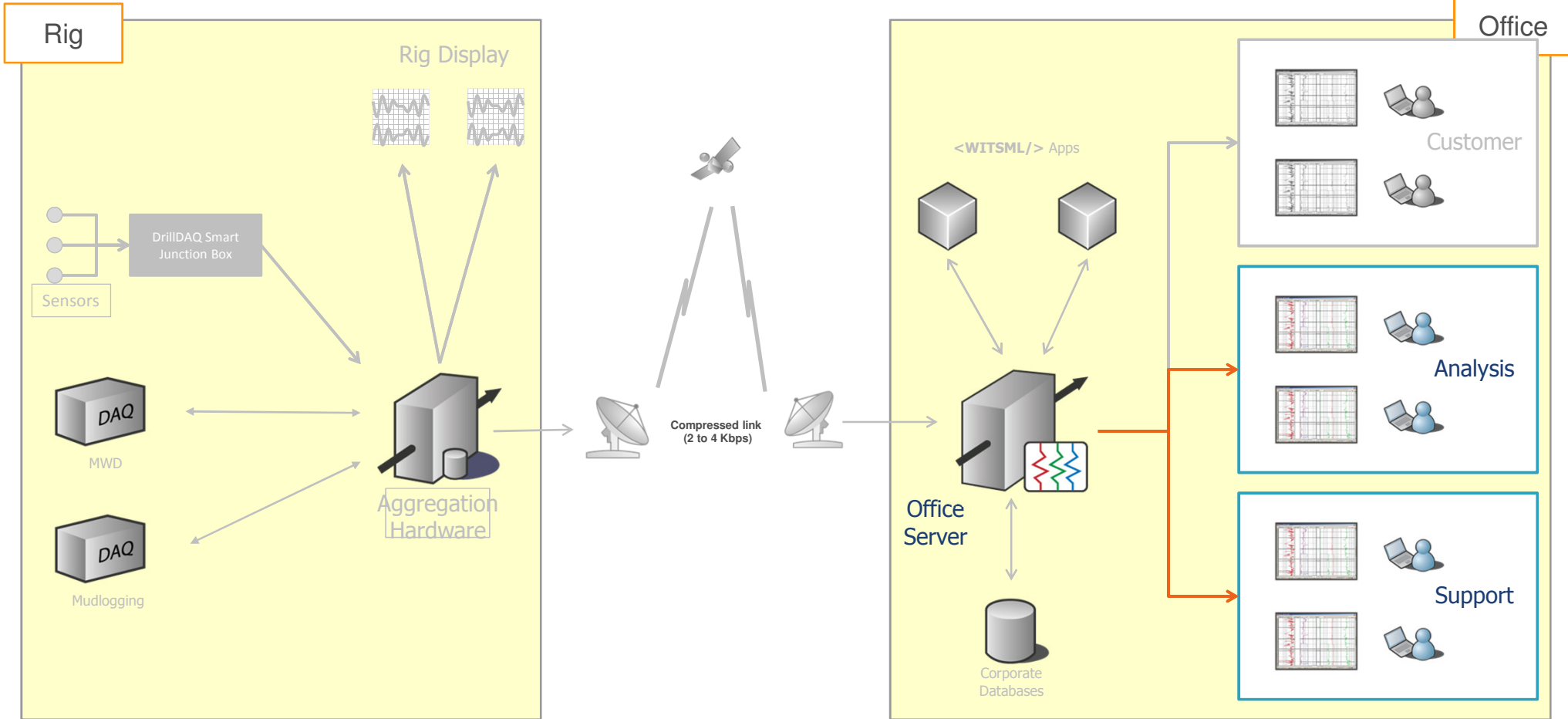
Service delivery – Rig to Office transmission



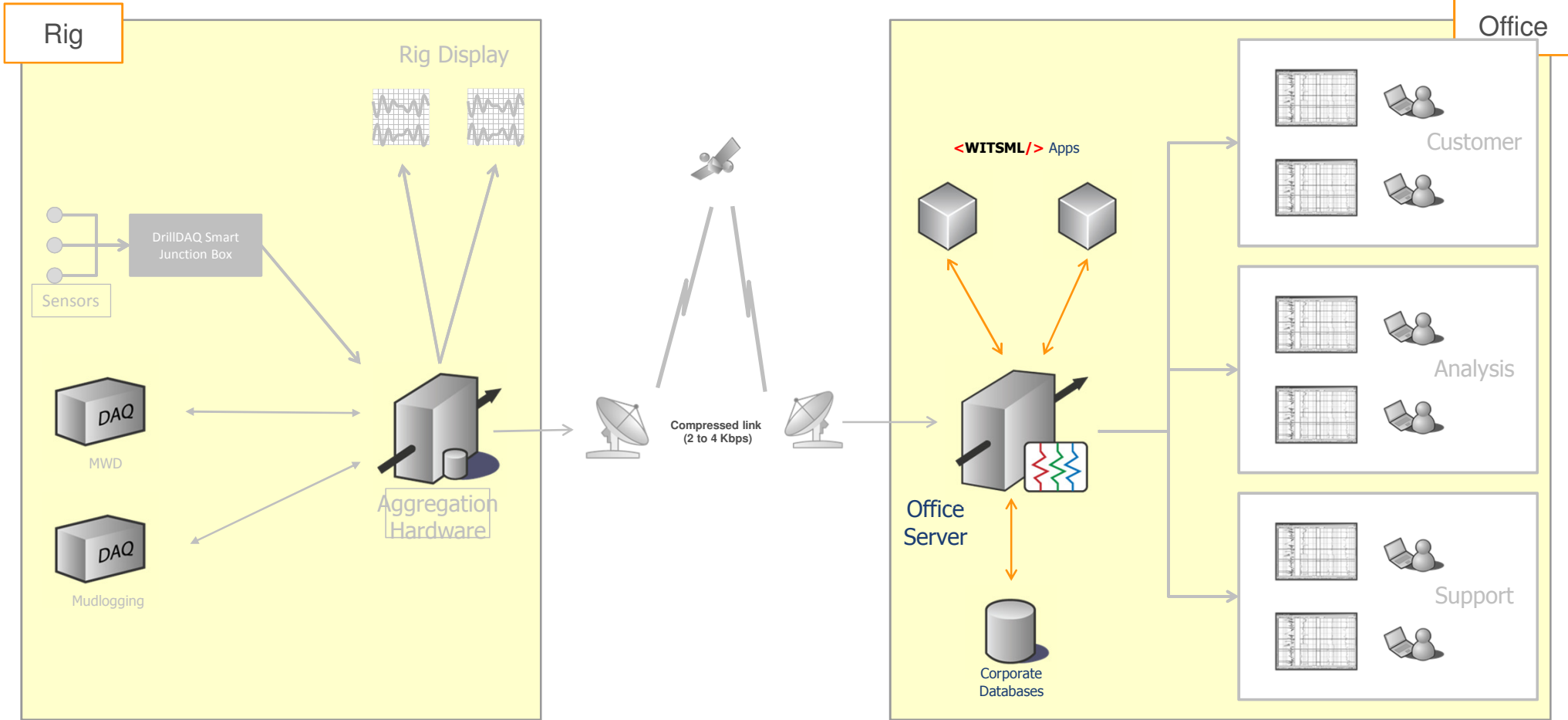
Service delivery – Office Visualization



Service delivery – Information Monitoring and Analysis



Service delivery – Integration with WITSML Applications



Service Requirements

- Rig Hardware and Software
- Field support specialists

- Office / Cloud Hardware and Software
- Office support specialists

- Support Center

PetroDAQ support to customers

- On-site support and training
- Hardware installation
- System maintenance
- Cloud Services

Hardware Platforms

Versatile hardware solutions for data acquisition and aggregation

Aggregation hardware

Rig Aggregator

- Analog and Digital Data
- Extensive I/O Ports
- Field grade construction
- Data Aggregation & Visualization



Aggregation and security hardware

Secure Rig Aggregator

- All the functionality of the Rig Aggregator
- Extensive I/O Ports
- Built-in Cisco Router for VLANs
- Rack-Mountable
- Data Center in a box – transportable in Helicopters



Protocol conversion of 3rd party contractors

Intelligent Appliance

- Single purpose device
- Specialized format conversion
- Contractor specific
- Drop-in upgrade for legacy systems
- Configurable



Mudlogging and Drilling data acquisition

Mudlogging EDR

- 42 Channels – Rack Mounted
- Built-in Aggregation Server
- IS Barriers
- Rack Mountable in Mudlogging Cabin



Software solutions

Field and Office tools for real-time operations

PetroDAQ Acquisition Software

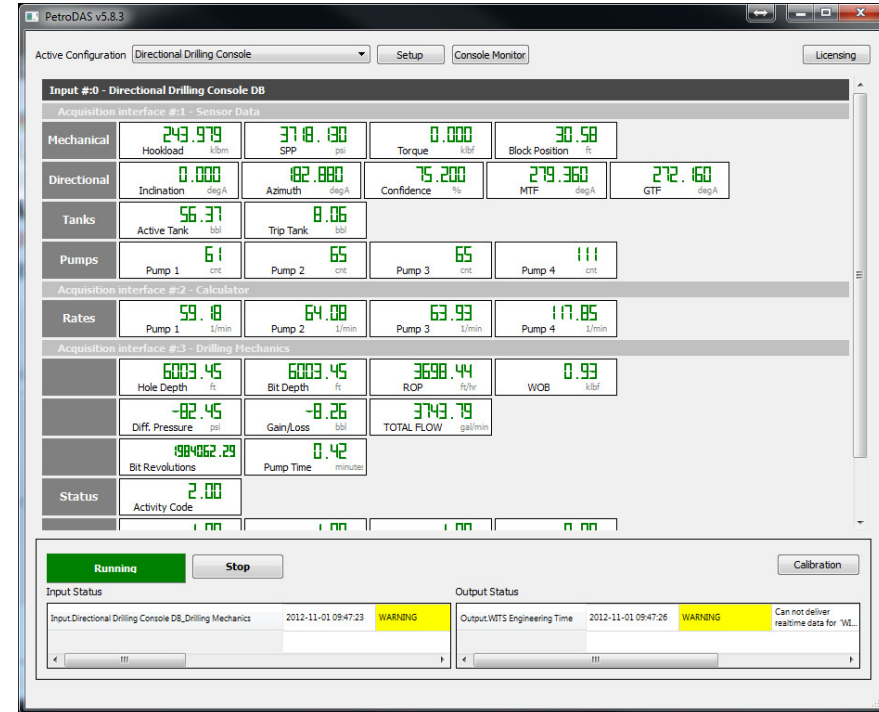
Standard and Proprietary Inputs

Sensor Calibration

Scriptable Calculation Engine

Buffered and True Realtime Modes

Standard and Proprietary Outputs



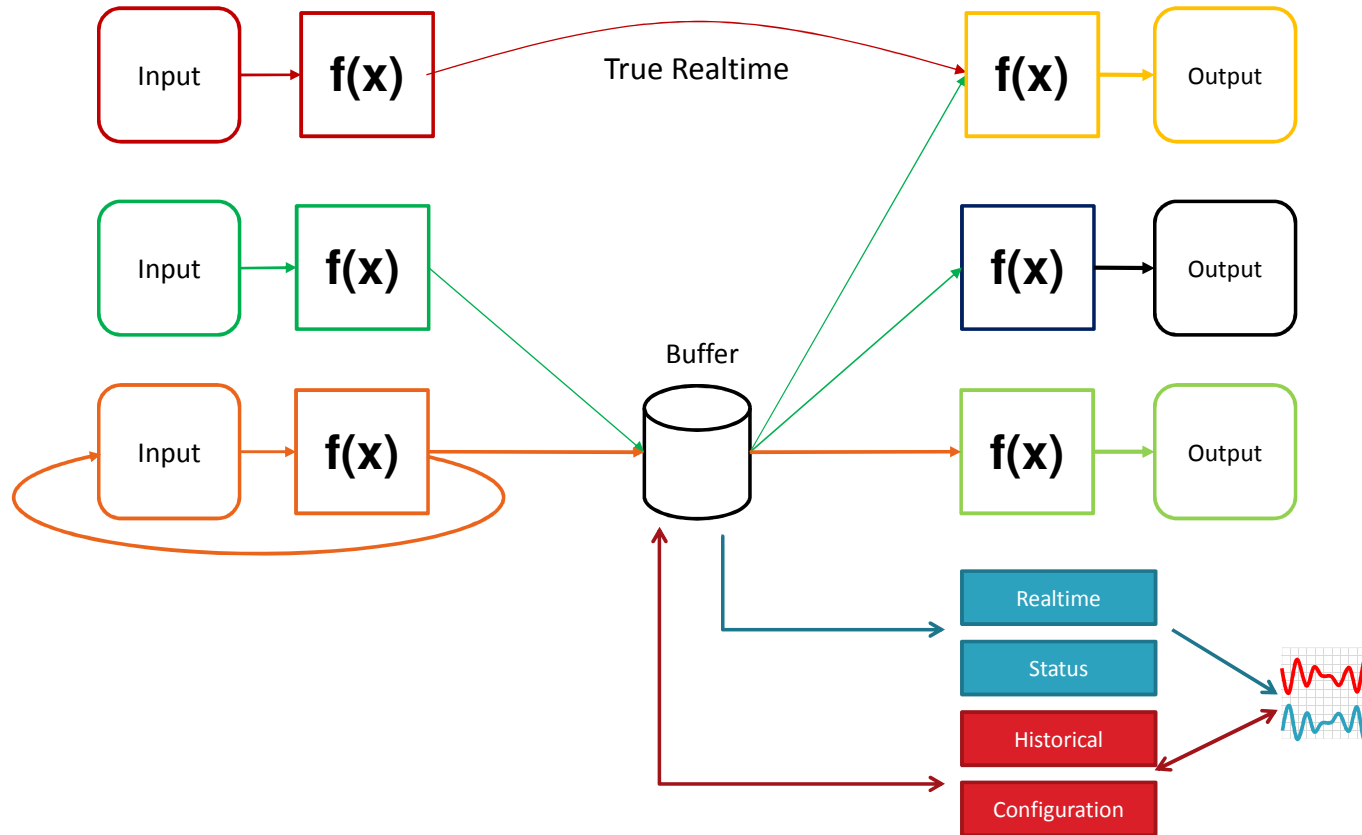
Data Acquisition & Aggregation

Analog:

- 4-20mA
- +- 10VDC
- Counter
- Encoder

Digital:

- PLC
- WITS
- Modbus
- WITSML Client
- HVR
- ICP
- NI
- OPC



Analog:

- 4-20mA
- +- 10VDC
- Counter
- Encoder

Digital:

- WITS
- Modbus
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- HVR
- ICP
- NI
- OPC
- Wise
- Azonix

PetroDAS Remote

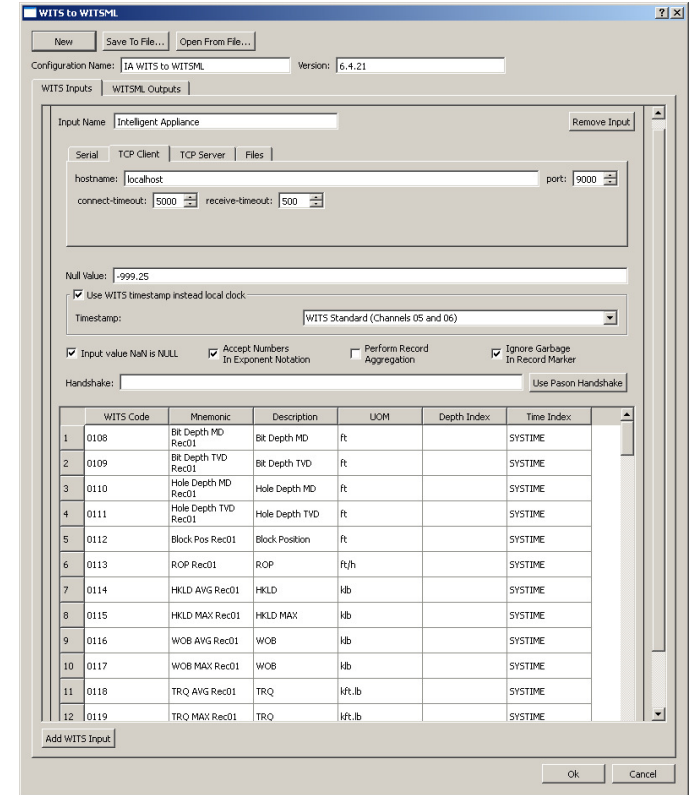
Centralized configuration of multiple operations

Bandwidth efficient

No need for interactive sessions over satellite links

Detailed customization of the Aggregation Process

Protocol specific configuration



PetroDAS Remote Diagnostics

Utility Service | **PetroDAS Service** | **Realtime Data** | **Status Channel Not In Use** | **Alarms Channel Not In Use** | **Acquisition Diagnostics** | **WS-Acquisition Diagnostics**

AQ >> 2013-04-15 15:30:14 **INFO** Realtime Data for 'WITS Engineering Time' has been sent. Latest Index = 2013-04-15T20:30:14.253Z worker='Output.WITS Engineering Time' O:\1\petrodas-dev\PD.PetroDAS\src\acquisition_output_async.cpp:623 @ run
AQ >> 2013-04-15 15:30:15 **INFO** Realtime Data for 'WITS Raw Time' has been sent. Latest Index = 2013-04-15T20:30:15.379Z worker='Output.WITS Raw Time' O:\1\petrodas-dev\PD.PetroDAS\src\acquisition_output_async.cpp:623 @ run
AQ >> 2013-04-15 15:30:16 **INFO** Realtime Data for 'WITS Engineering Time' has been sent. Latest Index = 2013-04-15T20:30:16.353Z worker='Output.WITS Engineering Time' O:\1\petrodas-dev\PD.PetroDAS\src\acquisition_output_async.cpp:623 @ run
WebSrv >> 2013-04-15 15:30:16 **WARNING** Non ascii character is received in receive string method worker='WebService.Client.ID:13' O:\1\petrodas-dev\PD.PetroDAS\src\acquisition_websevice.cpp:4450 @ run
WebSrv >> 2013-04-15 15:30:16 **INFO** Freeing up connection serving thread worker='WebService.Client.ID:13' O:\1\petrodas-dev\PD.PetroDAS\src\acquisition_websevice.cpp:4450 @ run
AQ >> 2013-04-15 15:30:17 **INFO** Realtime Data for 'WITS Raw Time' has been sent. Latest Index = 2013-04-15T20:30:17.610Z worker='Output.WITS Raw Time' O:\1\petrodas-dev\PD.PetroDAS\src\acquisition_output_async.cpp:623 @ run
AQ >> 2013-04-15 15:30:17 **INFO** Receiving... worker='Input.Directionial Drilling Console DB_Sensor Data' O:\1\petrodas-dev\PD.PetroDAS\src\lib\petrodaq\petrodaq_acquisition_interface_icpcon.cpp:99 @ run
AQ >> 2013-04-15 15:30:17 **WARNING** Can not deliver RT channels message worker='#6' O:\1\petrodas-dev\PD.PetroDAS\src\lib\petrodaq\petrodaq_rt_data_channel.hpp:99 @ run
AQ >> 2013-04-15 15:30:18 **WARNING** Can not deliver realtime data for 'WITS Engineering Time' worker='Output.WITS Engineering Time' O:\1\petrodas-dev\PD.PetroDAS\src\acquisition_output_async.cpp:623 @ run
AQ >> 2013-04-15 15:30:18 **WARNING** Can not deliver realtime data for 'WITS Raw Time' worker='Output.WITS Raw Time' O:\1\petrodas-dev\PD.PetroDAS\src\acquisition_output_async.cpp:623 @ run
AQ >> 2013-04-15 15:30:19 **WARNING** Can not deliver realtime data for 'WITS Engineering Time' worker='Output.WITS Engineering Time' O:\1\petrodas-dev\PD.PetroDAS\src\acquisition_output_async.cpp:623 @ run
WebSrv >> 2013-04-15 15:30:19 **INFO** WebService request worker is started... worker='WebService.Client.ID:14' O:\1\petrodas-dev\PD.PetroDAS\src\acquisition_websevice.cpp:4439 @ run
WebSrv >> 2013-04-15 15:30:19 **INFO** Freeing up connection serving thread worker='WebService.Client.ID:14' O:\1\petrodas-dev\PD.PetroDAS\src\acquisition_websevice.cpp:4450 @ run

System	Acquisition	Acquisition-WS	PetroDAS Service	PetroDAS Utility
Up Since : 2013-04-11 07:41:45 Current Time: 2013-04-15 15:30:19	CPU: 0.00% Memory: 0.36% (14.00 MB) Start Time: 2013-04-15 15:30:10	CPU: 0.00% Memory: 0.30% (12.00 MB) Start Time: 2013-04-15 15:30:10	CPU: 0.00% Memory: 0.24% (9.00 MB) Start Time: 2013-04-15 15:30:07	CPU: 2.00% Memory: 0.48% (19.00 MB) Start Time: 2013-04-11 07:42:14

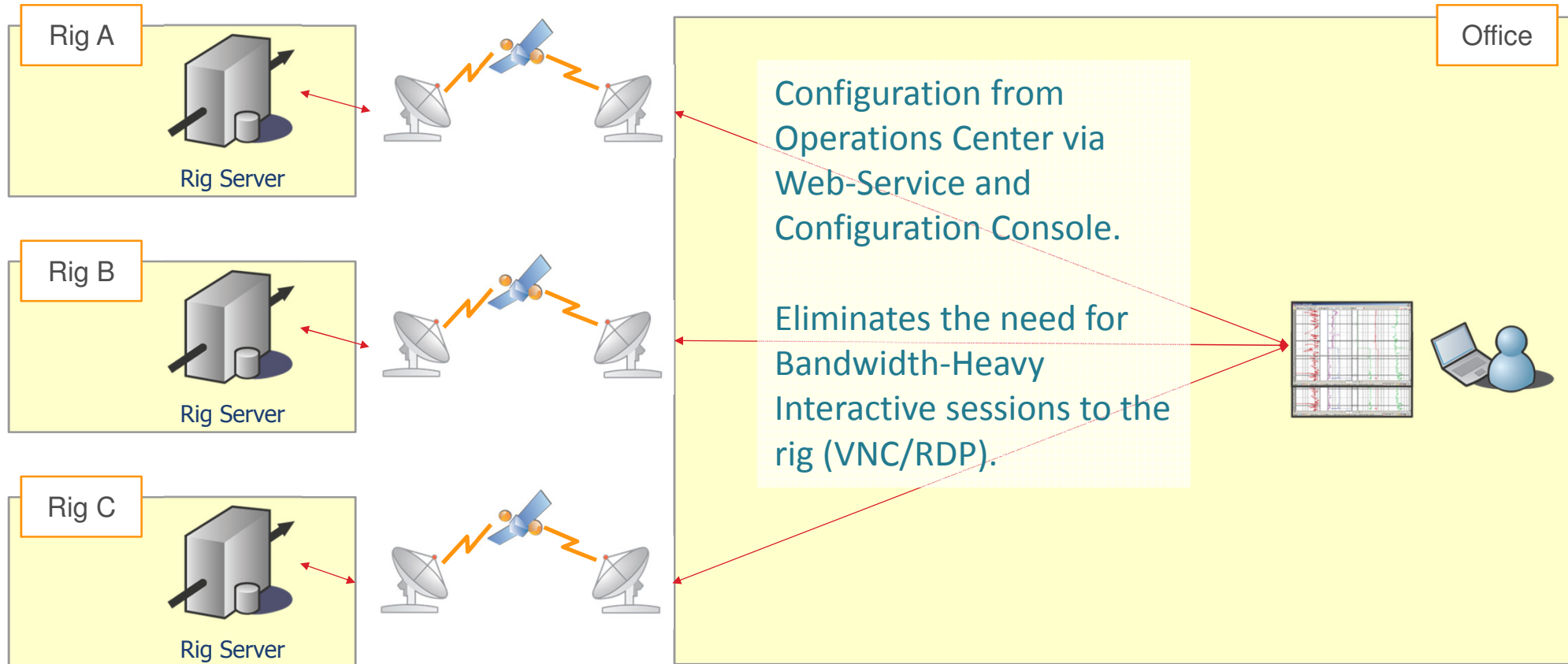
CPU Load: 10.9%

Virtual Memory	Swap Memory	HDD C:
46.60 % Free: 2.130 GB Total: 3.989 GB	24.20 % Free: 6.047 GB Total: 7.977 GB	79.70 % Free: 12.084 GB Total: 59.526 GB

PetroDAS License: Valid | License Details... | Registration...

PetroDAS Is Running | Stop!

Remote Configuration

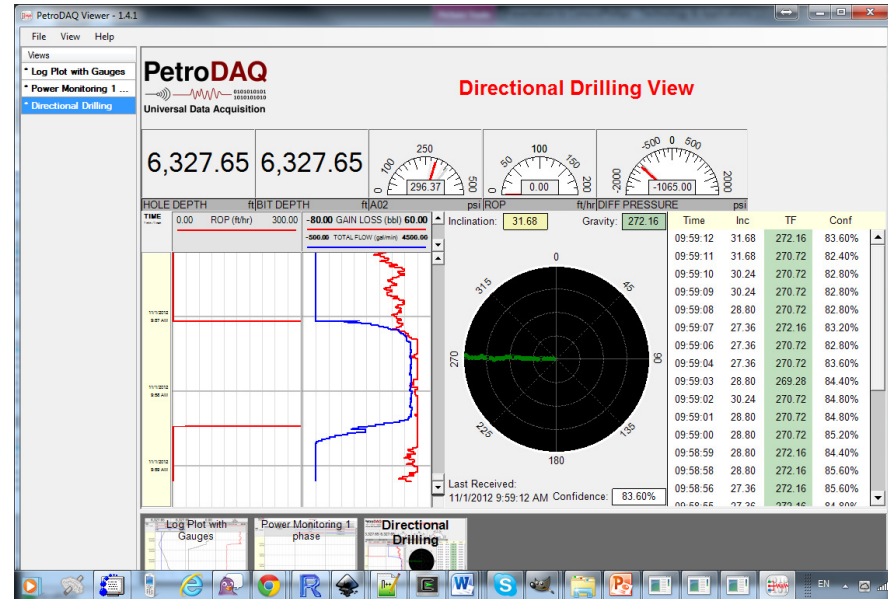


PetroDAQ Rig Viewer

Customizable Views

Controls for Geology, MWD,
PVT, and Equipment Monitoring

Supports fast data rates (Khz)



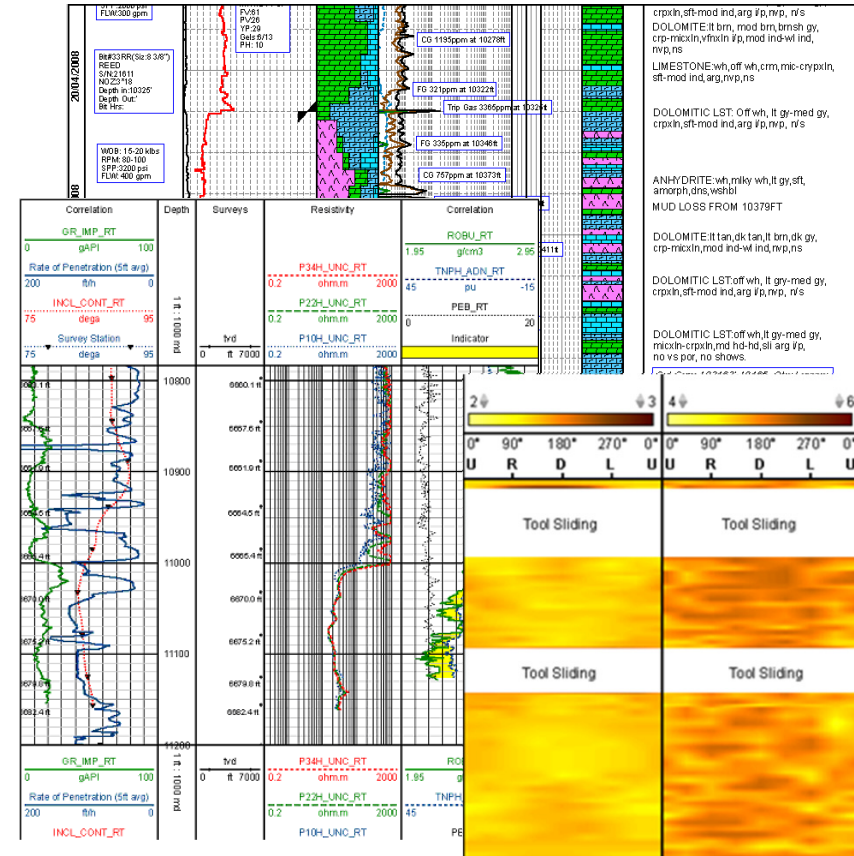
PetroDAQ Office / Cloud Viewer

RTOC Monitoring of multiple operations

Web based-no license installation

Drilling, Geosteering, Mudlogging specialized tools

Customizable plots



RTOC Toolkit

Condition based alarms

Monitoring of drilling information

Monitoring fleet status

Patching tool

WITSML Console, with object editor

Project Management with Backup
and Restoration

The top screenshot shows a table with the following data:

Server	Well	Wellbore	Log	LastIndex	LastUpdated	Status
secure.petrodaq.com	PetroDAQ	PetroDAQ 003	RigDAQ 003	2013-07-03 10...	0 00:02:36	Alarm
secure.petrodaq.com	PetroDAQ	Battery Test	RigDAQ 009 Battery Test	2013-07-03 10...	0 00:00:00	Ok
secure.petrodaq.com	PetroDAQ	Drilling Simulation	time log 1	2013-07-01 17...	0 00:00:00	Ok

The bottom screenshot shows a larger table with the following data:

Server	Well	Wellbore	Log	LastIndex	LastUpdated	Status
secure.petrodaq.com	PetroDAQ	PetroDAQ 003	RigDAQ 003	2013-07-03 10...	0 00:02:02	Alarm
secure.petrodaq.com	PetroDAQ	Battery Test	RigDAQ 009 Battery Test	2013-07-03 10...	0 00:00:00	Ok
secure.petrodaq.com	PetroDAQ	Drilling Simulation	time log 1	2013-07-01 17...	0 00:00:00	Ok
secure.petrodaq.com	DemoWell01	Wellbore A	Geoservices 23 inch ...	2007-08-27 13...	0 00:05:06	Idle
secure.petrodaq.com	DemoWell01	Wellbore A	23in. DAM Real Time D...	2007-08-14 19...	0 00:05:06	Idle
secure.petrodaq.com	DemoWell01	Wellbore B	8 5in Section - Time Log	0001-01-01 00...	0 00:05:06	Idle
secure.petrodaq.com	DemoWell01	Wellbore B	8 5in Ream Down Run...	2008-05-30 12...	0 00:05:06	Idle
secure.petrodaq.com	DemoWell01	Wellbore C	23in Section - Time Log	2007-09-18 11...	0 00:05:06	Idle
secure.petrodaq.com	DemoWell01	Wellbore C	17 5in Section - Time Log	2007-10-31 00...	0 00:05:06	Idle
secure.petrodaq.com	DemoWell01	Wellbore D	175 Section - Time Log	2007-11-28 03...	0 00:05:06	Idle
secure.petrodaq.com	DemoWell01	Wellbore D	175 Geoservices data...	2007-10-31 05...	0 00:05:06	Idle
secure.petrodaq.com	DemoWell01	Wellbore D	14 3/4 X 17 1/2 in Sec...	2008-01-15 08...	0 00:05:06	Idle
secure.petrodaq.com	DemoWell01	Wellbore D	12 1/4 X 13 1/2 in Sec...	2008-02-11 03...	0 00:05:06	Idle
secure.petrodaq.com	DemoWell01	Wellbore E	12 1/4 X 13 1/2 in Sec...	2008-02-13 20...	0 00:05:06	Idle
secure.petrodaq.com	DemoWell01	Wellbore E	10 5/8 in Section - Tim...	2008-03-21 04...	0 00:05:06	Idle
secure.petrodaq.com	DemoWell01	Wellbore E	8 1/2 in. Section - Time...	2008-03-21 00...	0 00:05:06	Idle
secure.petrodaq.com	DemoWell07	Wellbore A	Pts	2009-04-26 01...	0 00:05:06	Idle
secure.petrodaq.com	DemoWell07	Wellbore A	GenTime	2009-04-26 01...	0 00:05:06	Idle

The bottom screenshot also includes a Filter section with fields for Server, Well, Wellbore, and Log, and an Actions panel with buttons for Reset Alarms and Reset Sort Order, along with dropdown menus for Warnings (1) and Alarms (2).

Real-time services on the cloud

Fast-tracking the service via established infrastructure

Real-time services on the cloud

- WITSML Store
- Web Viewer

WITSML Store on the cloud

Benefits

- Maintained and supported by PetroDAQ
- Immediate availability
- Reduced training requirements

Technical Specifications

- High Capacity
- High Performance
- Supports all 1.3.1.1 Objects
- Hosted on a secure colocation facility with backup power

Web Viewer on the cloud

Benefits

- Maintained and supported by PetroDAQ
- Immediate availability
- Reduced training requirements

Technical Specifications

- No license installation required
- Supports all Plot types
- Individual access control
- Audit Access Log
- Hosted on a secure colocation facility with backup power

For more information

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