Vantage Drilling
MESH Energy Management System (MEMS)

Case Study

Duration

- Site survey and specification (1 Week)
- Design and manufacturing (16 Weeks)
- Installation and commissioning (2 Weeks)

Scope Overview

- Initial rig survey of existing hardware and 3rd party systems for data collection and handoff
- Generate project execution plan and detailed Functional Design Specification (FDS)
- Design and develop system, field interfaces and develop bespoke software for data handoffs
- Complete Factory Acceptance Test (FAT) and delivery to customer asset
- Fully complete installation and commissioning work packs, mobilise engineers and install system
- Provide a full documentation pack covering operations and maintenance
- Provide on-going 24/7 support, including remote system access

Achievements

This project highlights the capabilities of MESH Global in quickly understanding the clients needs, translating these needs into a specification and developing a system to the clients requirements.

MESH Global were able to utilise existing rig infrastructure and interface to 3rd party devices to avoid the need for duplication of field sensors.

Engineering

This project consisted of the following:

- Industry standard components
- Full installation and commissioning package (including materials)
- Full life-cycle support
- Full spares and maintenance package

Background

Vantage Drilling had a requirement to collect energy usage onboard the Emerald Driller, and make this data available to TOTAL for onshore analysis. To collect this data it was necessary to interface to the rig's energy producers and consumers and create an interface that passed this data from a rig automation system to a TOTAL IT system. This was achieved by implementation of an industry standard OPC UA server.

Requirement

MESH Global have developed the MEMS system to collect the raw data, process and generate engineering values, and create summary data points. This can be viewed and trended on a locally supplied operator station and passed to TOTAL's onshore E2 system for further analysis.

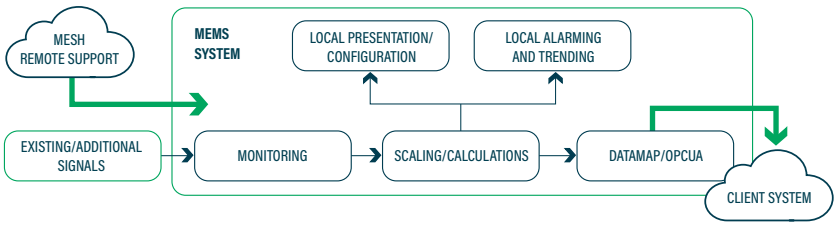
Data collection included:

- Interfacing to CAT diesel engines for instantaneous fuel consumption and engine loading (5-off)
- Monitoring of electrical circuit currents via MESH installed current transducers
- Monitoring of electrical circuit contactors via MESH installed current sensing relays
- Interfacing to the existing Power Management System (PMS) for power and ground fault information
- Monitoring signals from ABB VFD Drives for major drilling equipment power usage

The collected data covers individual power consumption (i.e. laundry and galley power) through to major drilling equipment (Top Drive). The collected data is then:

- Summarised into groups (i.e. power generation, utility consumers, drilling consumers)
- Integrated into totals (i.e. rolling 24 hr fuel consumption)
- Passed into an OPC UA Data Server for connection by any 3rd party OPC client applications

Topology



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