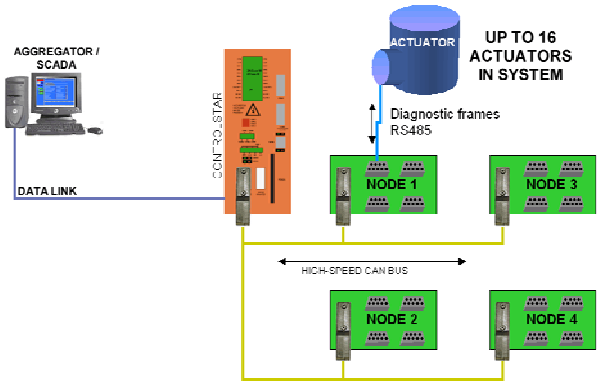
ROTORK CONTROLSTAR

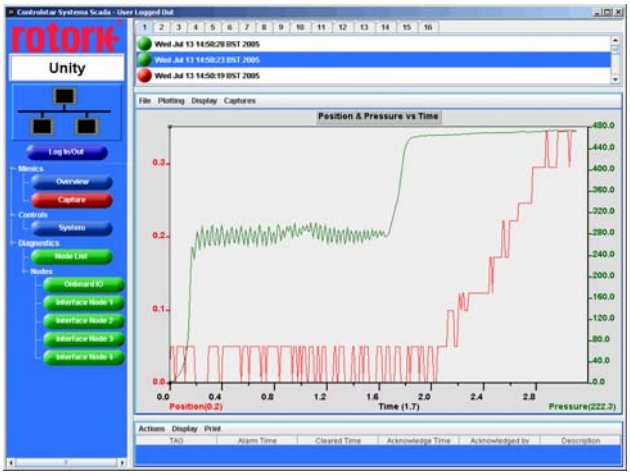
Asset management has become a critical element of all offshore operations and the monitoring of key equipment is essential to plant productivity and safety.

Controlstar Systems Ltd have developed an add-on for their system to provide remote condition monitoring for Rotork's EH Actuator range. The project was undertaken to provide BP with performance information for eleven ESD actuators to be installed onto their North-Sea Unity platform.



Live diagnostics of all system components including pump, motor and solenoids.

Each actuator provides position and pressure data, along with 48 other digital status channels, at a rate of 100 updates per second. A single Controlstar unit located on the platform continuously monitors the data from each actuator. The Controlstar detects when one or more actuators are performing an open or close operation, and performs a high-speed capture of the data from the actuator. Once the open/close operation has completed, this capture file is transmitted to a PC running Controlstar System's SCADA software, where the data can be viewed. The SCADA software shows a live update of all the analogue and digital data, updated once per second.



Operating times and performance are logged to provide key preventative maintenance data.

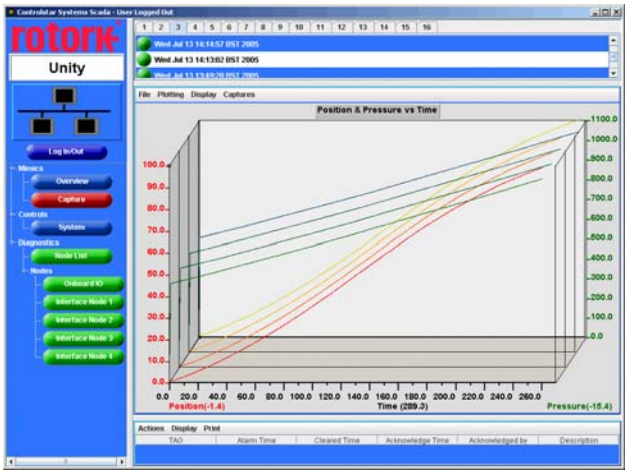
Position and movement monitoring including operating pressure and status.

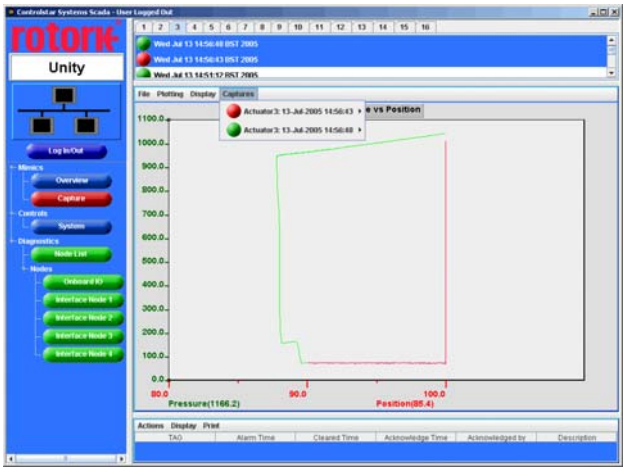
Remote monitoring of operating commands include local/remote, ESD and pressure stroke.

Using the SCADA software, an operator can view a history of open and close operations performed by each actuator, and view multiple graphical plots simultaneously.

The captured data consists of position and pressure measurements, at up to 100Hz sample rates. The graphical capabilities of the SCADA software allow multiple captures to be overlaid, showing how the performance of an actuator varies over time.

The data can be plotted in various ways, including pressure-and-position against time, and pressure against position.





A primary purpose of the system is to monitor 'partial strokes'. This is a maintenance operation that involves closing the valve from 100% open to 90% open, and the back to 100% open again.

This sequence allows the movement of the actuator to be observed without completely closing the pipeline. Normally the valve must be completely closed and reopened as part of an annual maintenance operation. However this is an extremely costly exercise; shutting down the pipeline for even a short period can cause production losses worth millions of pounds. Since a partial-stroke only closes the valve by 10%, the production flow through the pipeline is not impaired.

This means that the interval between complete pipeline shutdowns can be extended out, provided that regular partial-stroke operations show the actuator is performing within specification.

A further development of the system is to provide a Modbus port on the Controlstar, allowing the data to be imported into third-party SCADA systems.

Controlstar Unit has direct or intermittent connection via Ethernet, Radio, GSM and PSTN