



Pump Test Facility
(Manufacturing Industry)



Client Background

Client is a leading global water technology provider, enabling customers to transport, treat, test and efficiently use water in public utility, residential and commercial building services, industrial and agricultural settings. The company does business in more than 150 countries and having 12,500 employees.

Pump Test facility software was designed to provide calibration test certificate to end user of client for their pumps for quality assurance. System takes the data from different sensors, instruments and power devices, uses international pump standards to calculate the test data and compare with it. The system generates calibration test certificate for different tests.



Challenge

Client has multiple test facility with diverse set of instruments, sensors and all different type of measurement and control. As such they wanted to develop automated and integrated system to simultaneously conduct performance tests on multiple test facilities by acquiring data from different field sensors such as flow, pressure, temperature, torque, power, and sound and vibration, sound, generate control signals to start stop different instruments , control valve and power supplies and generate calibration test reports for different test using single user interface. The client had never outsourced a program to this degree before.

Engagement Journey

Started With



Extended To



Ongoing Support



Solution

Designing an integrated pump test facility system using modular instruments for real-time data acquisition and processing of field sensor data, data storage, and report generation using pump test facility software.

With pump test facility software (PTFS), users can confidently test and certify pumps according to international pump standards. This internal quality control procedure helps our customers test their products prior to dispatch. The PTFS gives the customer an internal test certificate for all pumps. The report includes performance curve and net-positive suction head (NPSH) test data with vibration and sound levels. The software can test both horizontal and vertical pumps. PTFS runs on three different touch screen computers to conduct three tests. We can use a single touch screen PC to simultaneously perform three tests or run one test at a time on three different touch screen PCs. Data acquired from all three stations is stored on a workstation database server.





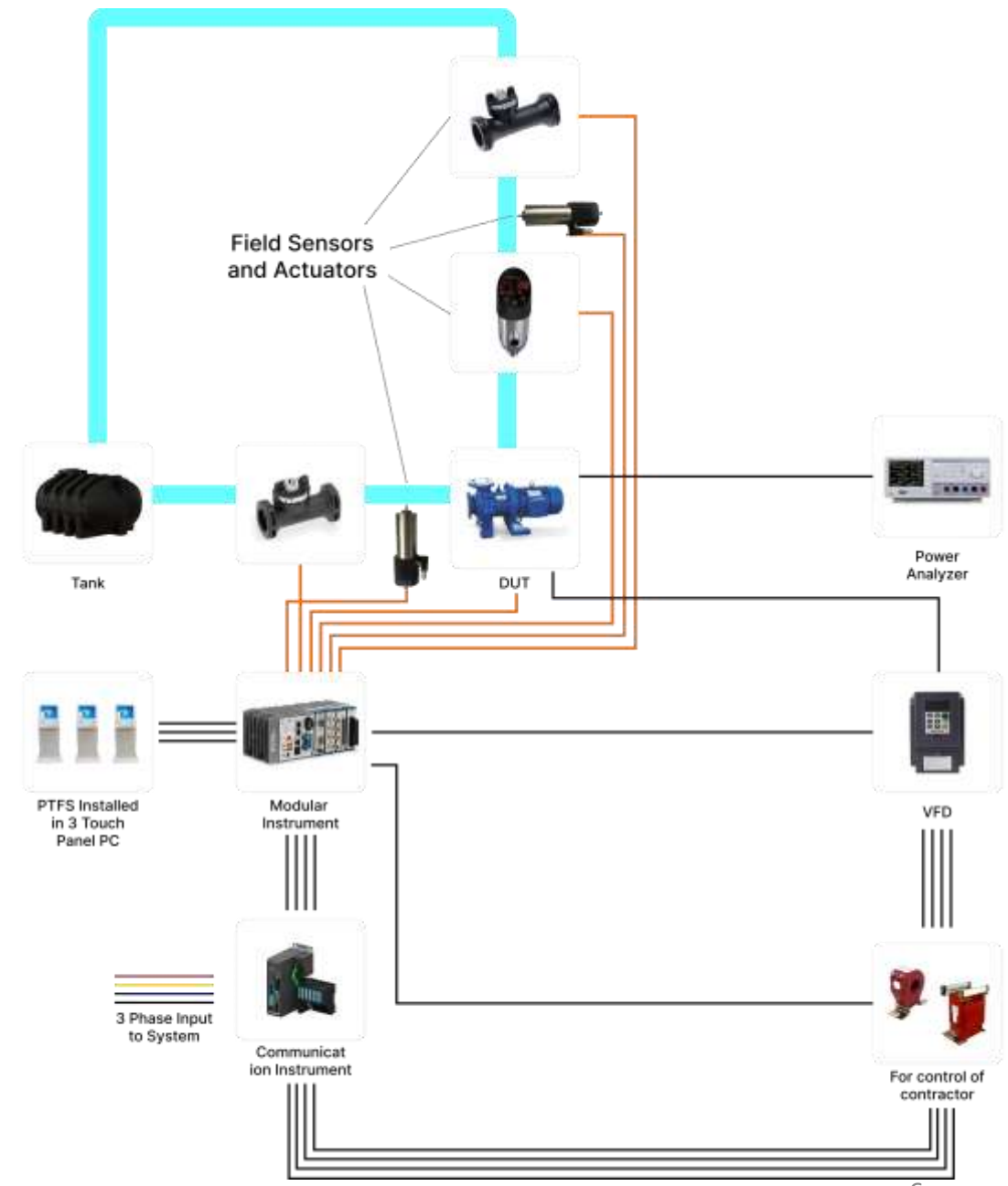
Solution

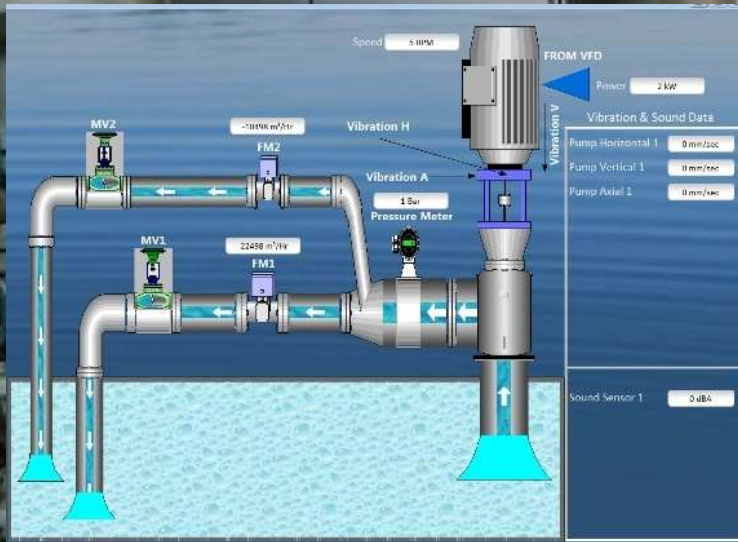
PTFS provides user interface to conduct the tests on up to 7.232 MW pumps. It communicates and instructs real time operating system of modular instrument hardware to acquire measurement data and control field devices as per the system requirements. CCTV system is installed for online viewing of test bed and selection of appropriate sensors in the software. Test Software shares database of ERP system to integrate with CRM software.

Pump Test facility software generate the Performance report, NPSH report, ME Report, Sound & vibration Report and Sample calculation Report at the end of testing.

Software compare the test results with international pump standards for accept rejection criteria.

Pump Test Facility software generate the sample calculation report of tests for end user to see the exact calculations. The system software is made fully automated to reduce human efforts on the test facility system.





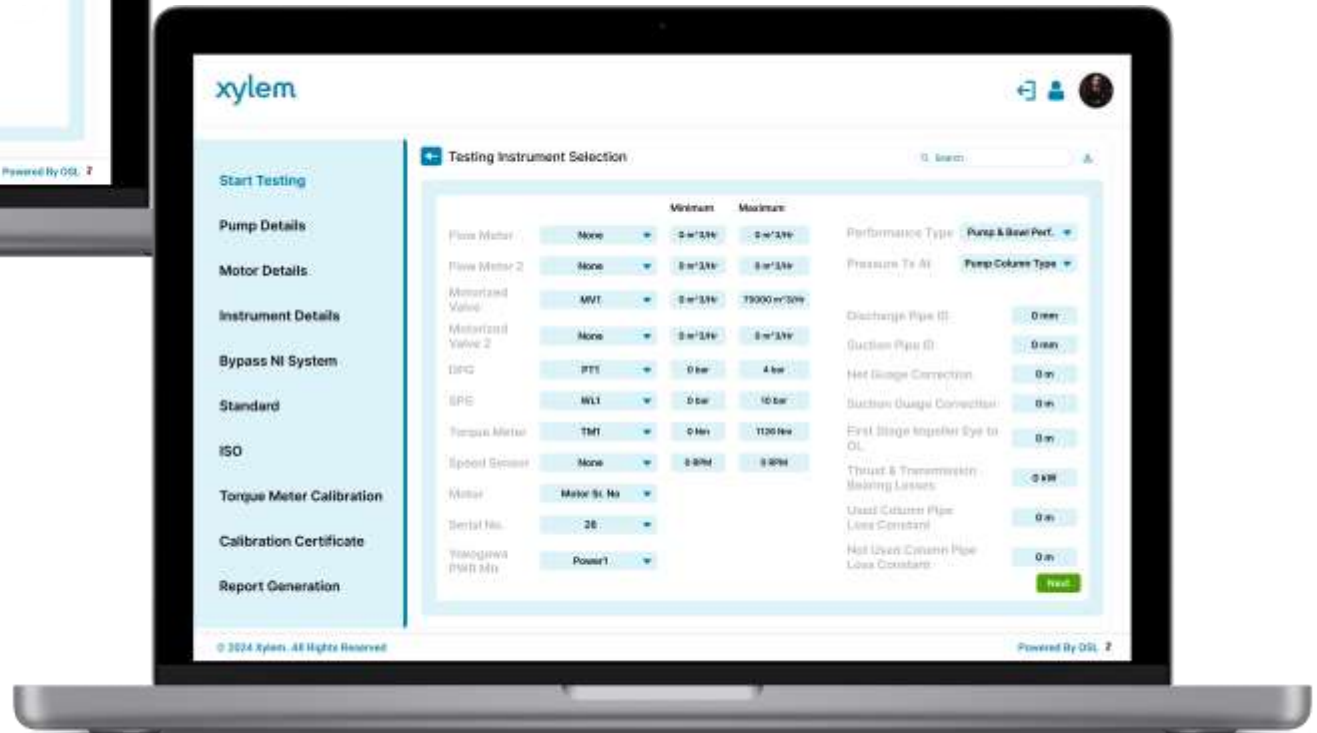
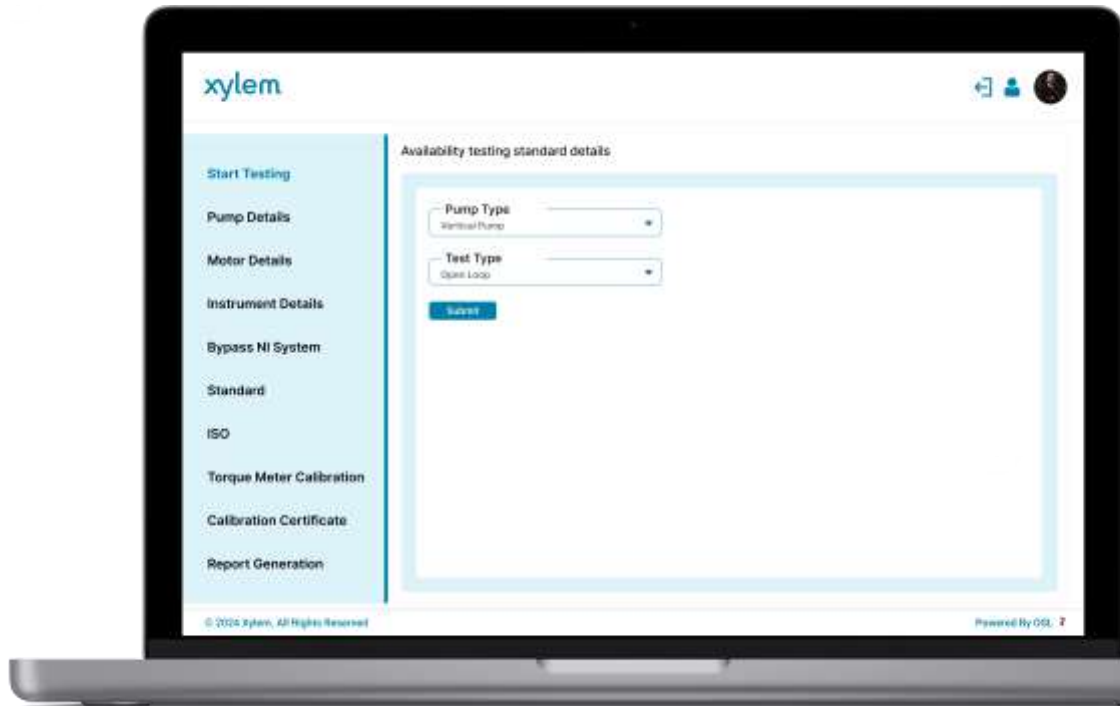
Benefits

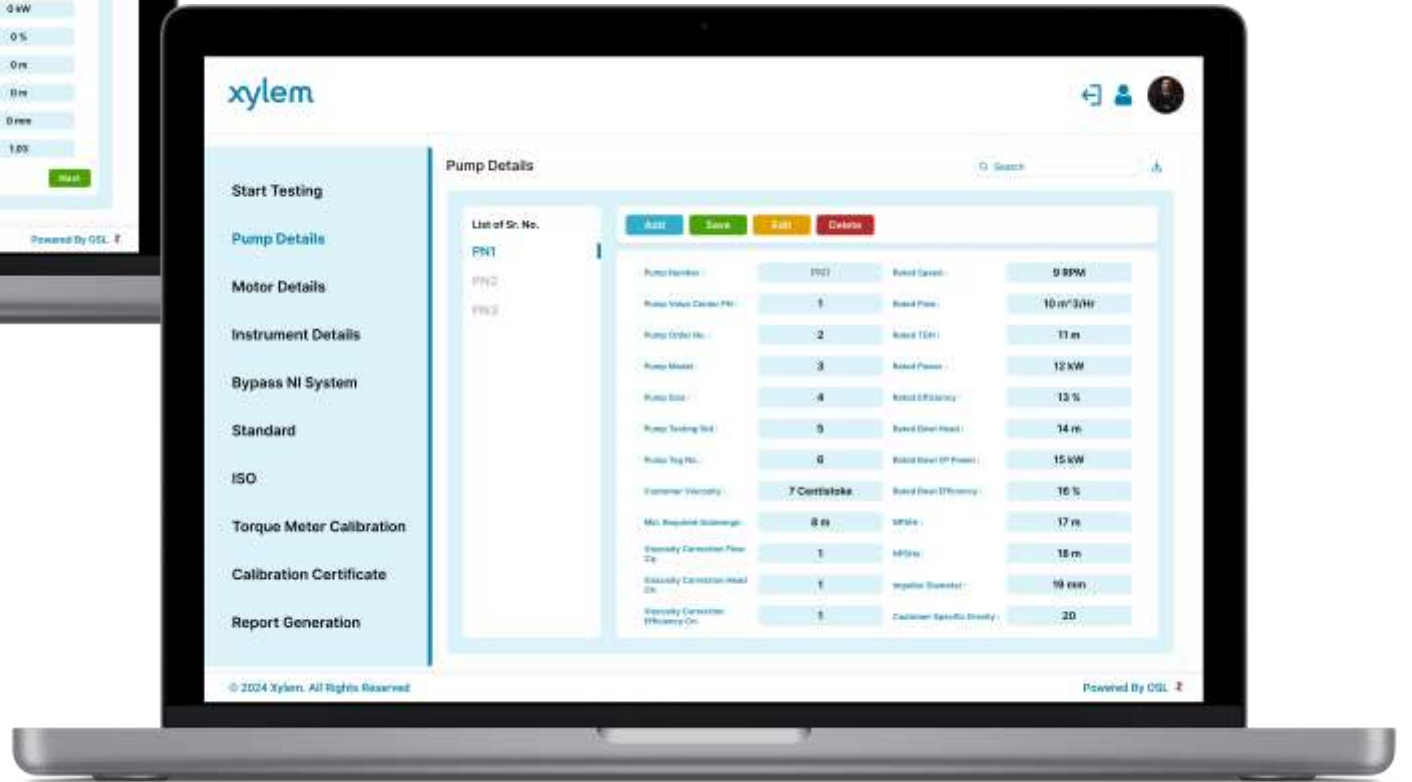
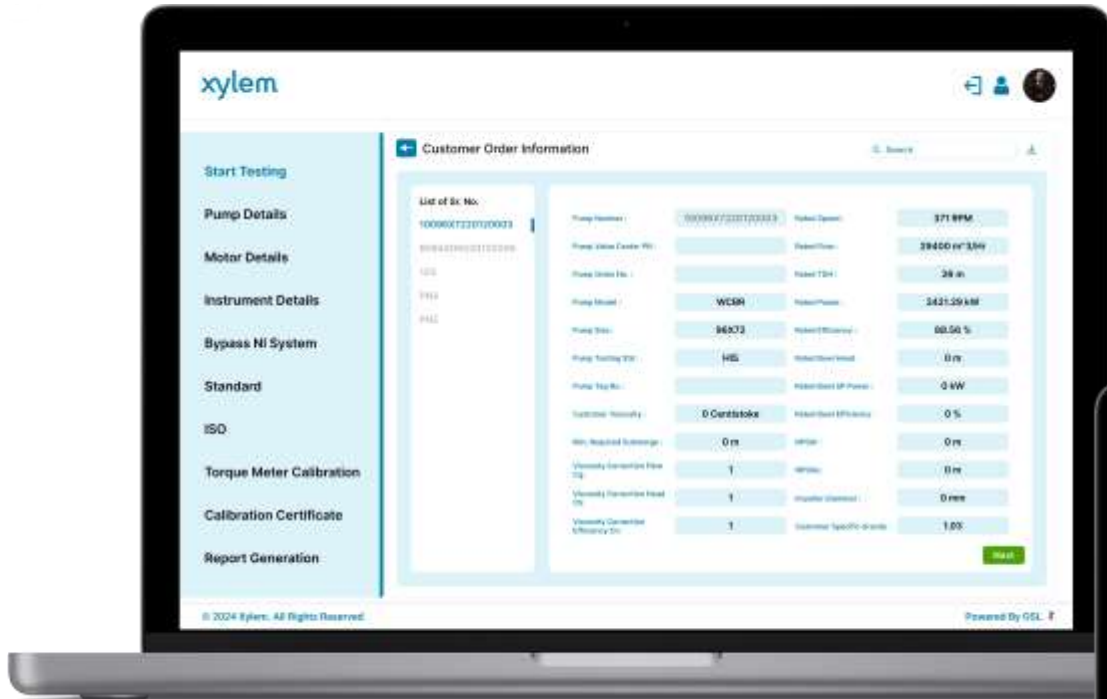
- Significantly reduces human efforts during testing
- Test data stored in memory and remote location
- Post reports can be regenerated
- Alarms Indication
- Suitable for any type of environmental conditions
- Flexibility
- Highly modular
- Cost and time saving solution

Add/Edit Instruments

Add Edit Back Save Remove

Instrument Selection	Model Selection	Instrument Details
Flow Meter	PT1	Instrument Name <input type="text" value="PT3"/>
Suction Transmitter	PT2	Make <input type="text"/>
Pressure Transmitter	PT3	Serial No. <input type="text"/>
Water Level Indicator	PT4	Tag No. <input type="text"/>
Torque Meter	PT5	Lower Range <input type="text" value="0"/> Bar
Torque Speed	PT6	Upper Range <input type="text" value="4"/> Bar
Temperature Sensor		Last Calibration Date <input type="text" value="09/04/2012"/> <input type="button" value="📅"/>
Speed Sensor		Calibration Due Date <input type="text" value="09/12/2012"/> <input type="button" value="📅"/>
Vibration Sensor		
Sound Sensor		
Power Meter		
Motorized Valve		
Atmospheric Pressure		







Prototype : [Link](#)



Benefits against alternatives

Main benefit of the Pump Test facility System is to have single interface to acquire data and control the pump for testing compared to engaging the human to collect the data from each instruments and sensor, operating machine manually. It minimize the human effort for time saving.



Value Proposition

Optimized Solutions has provided this solution to test any kind of pump and it is suitable for any type of environmental conditions. It follows the international testing standards to compare the pump tested data. Cost wise and pump capacity wise solutions available. Simultaneous pump testing is possible based on requirement.