

**WELL PRODUCER™**

# Yokogawa Onshore Wellhead Solution

Bulletin 53U90A01-01E-A

[www.yokogawa.com/us](http://www.yokogawa.com/us)



# Modular Automation for the Oil and Gas Industry

Yokogawa plays an important role in providing a piece of the digital oil and gas field concept as proposed by many of the major Energy companies.

Deploying automation for new oil and gas installations involves updating, propagating and modifying multiple functionalities. The “plug-and-play” modular technology at the field, operation center, and the enterprise level can promote an efficient and sustainable foundation for the company on which to grow towards the future.

## Managing the Information Supply Chain

Technology should be integrated with the business in order to make timely and effective decisions. Yokogawa makes use of field information to provide an integrated, modular, and reliable link from the well to the enterprise so that the enterprise has greater visibility of the equipment and production, and its safety and performance.

## Making critical field information fully visible is just the beginning

Seeing clearly gives you the knowledge necessary to anticipate the changes required at the well head. Knowing in advance brings you the speed and flexibility to adapt to the well in real time. And by acting with agility, you are able to adapt to the ups and downs of the Oil & Gas industry. This is the vision and promise behind **WELL PRODUCER**.

**WELL PRODUCER** excels at bringing out the best in your wells and your people - keeping them fully aware, well informed, and ready to face the next challenge.

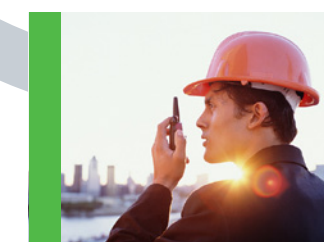


### ACT WITH AGILITY Free of bottlenecks

Reduce delays, lost opportunities, knowledge silos

Minimize reactive measures, unexpected downtime, quality variations

### Fewer surprises KNOW IN ADVANCE



### SEE CLEARLY Less blind spots

Avoid guesswork, instability, sub-optimization



# SOLUTIONS OBTAINED THROUGH EXPERIENCE

The onshore upstream industry faces ever higher demands and greater challenges, and increasingly difficult and hostile environments in which it must operate.

As the unconventional natural gas resources opportunities, particularly shale gas, are growing in North America, Yokogawa's total solution plays an important role helping customers meet the challenges of reducing both CAPEX and OPEX, while enhanced built-in technologies increase production. Our global as well as local experience provides the basis of our unique total solutions to meet the needs of this industry. With experienced upstream experts located in offices around the world, we provide quick and extensive support to meet the demands of our customers.

## Remote Access and Remote Commissioning

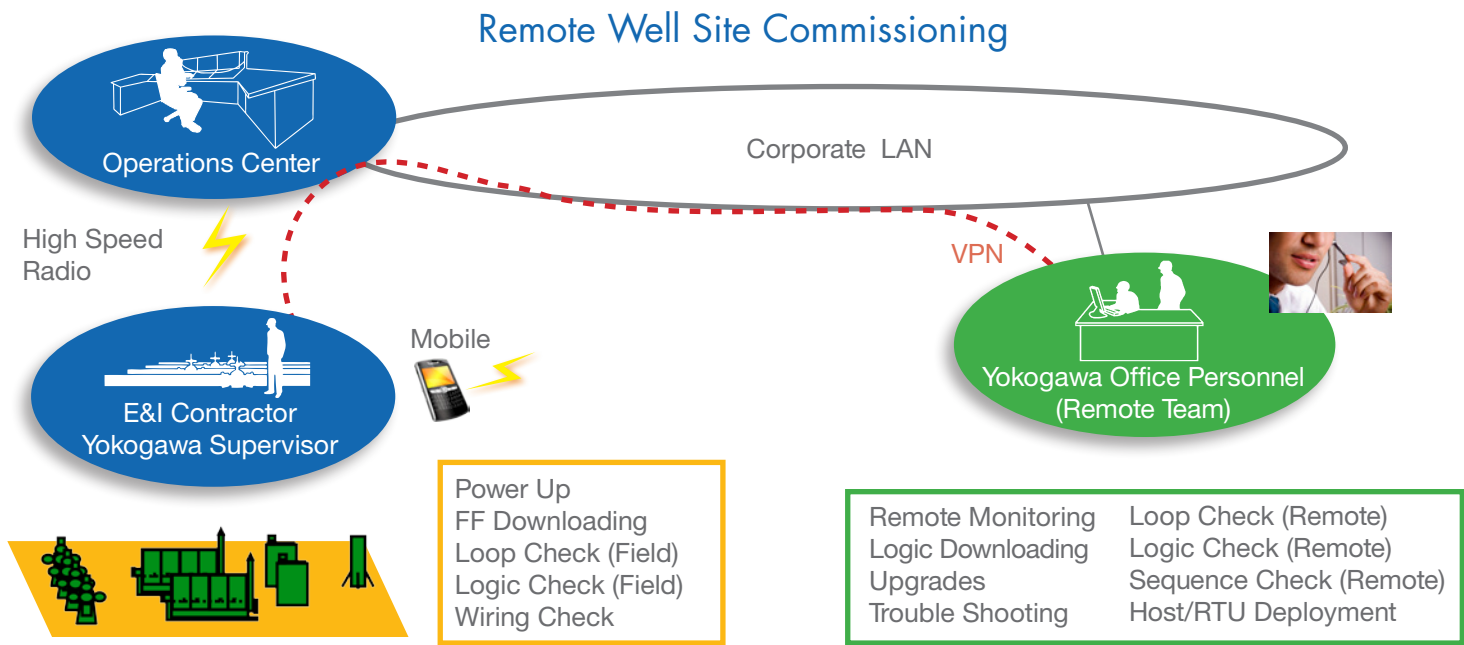
Connecting to the corporate LAN, real-time data and diagnostics can be accessed from a Yokogawa office to troubleshoot any issues in a timely manner. With secure VPN access, the same performance can be achieved as if you were in the Operation Center, to perform graphic and logic modification, downloading, upgrades, etc. Yokogawa has taken advantages of this remote access capability to even execute remote commissioning of the well site. Having one commissioning engineer at site, remote loop check, logic/sequence check, and host configuration deployment can be performed from a Yokogawa office. Significant reduction of cost together with avoiding unnecessary travel to a site are the most important benefits.

## Standardization

Standardization is a major goal for any production company. Many production companies have acquired other companies with different cultures, thus the equipment and the automation philosophy are generally not the same.

Driving corporate standards throughout the different sites is a challenge, but standardization streamlines work processes and provides cost reductions.

Yokogawa has the experience in standardizing the automation efforts throughout the company by providing a single source of equipment, software, functional specification, design, execution, and service.



## WELL PRODUCER™

For single to dual wells, **WELL PRODUCER** is the perfect fit by providing a packaged solution to manage the wells without any need of detailed implementation.

**WELL PRODUCER** consists of a low power STARDOM FCN-RTU operated by solar power, with all the necessary control and flow computer functions for gas wells pre-configured. All parameter settings can be configured by the built-in WEB server. And an open MODBUS communication is offered for any SCADA Host connection.

Any customer who wants to make a drop-in replacement package for their old RTU can use either a standard **WELL PRODUCER** or alternatively, customize their **WELL PRODUCER** solution.



WELL PRODUCER

## RTU Gas Flow Measurement and Control

The STARDOM FCN-RTU will act as an API21.1 compliant flow computer and gas well controller in one device. A single controller is able to configure up to 12 meter runs together with choke valve control, separator control, plunger lift control, tank control, other equipment control and shutdown logic. There is a huge benefit to use this RTU for multi-well sites, as there are many interactions between the wells and also with other equipment.

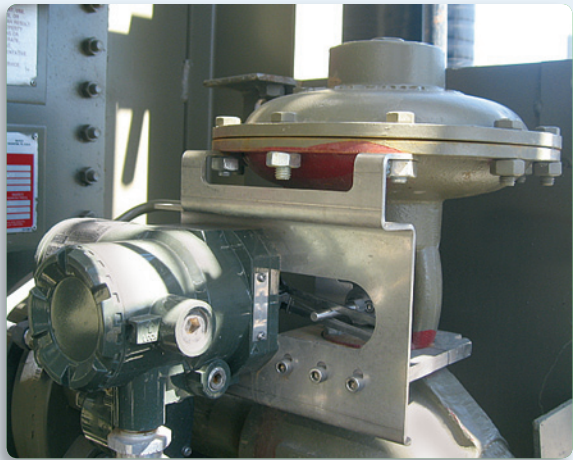
The RTU is based on Yokogawa's super-reliable DCS technology that is world renown for its quality.



API 21.1 Verification at Southwest Research Institute

## Advanced Diagnostics

By using FOUNDATION fieldbus technology, all field device information (transmitters and valves) can be automatically patrolled by Yokogawa's Asset Management Software known as PRM. Diagnostic information can be provided to the operation center which can identify the cause of field device issues. Technicians can be prepared with proper spare and test tools before traveling to the wellhead location. Additionally, valve stroke parameters, including partial stroke testing results, can be captured in the operation center for preventive maintenance.



FOUNDATION fieldbus Positioner



### Scalable SCADA Host

FAST/TOOLS is a JAVA based SCADA host software that is widely used for well management. True WEB based technology enables flexible access from anywhere in the world. Dual redundant and triple redundant configuration is possible with easy online modification that minimizes downtime. The modular structure enables automatic well configuration deployment without copying the configuration manually.

FAST/TOOLS is a scalable host that allows 1 million tags in one server. Configuration can start from a small local SCADA server, and then extend to regional servers in phases. It is a perfect fit for the replacement of the existing SCADA Host.

### Main Automation Contractor Concept

Nowadays, companies are running lean on resources. As such, Yokogawa can offer a turnkey solution, acting as the Main Automation Contractor, and be a single point of contact. Yokogawa can not only be a supplier but can also be a business partner offering an extensive experience in project execution, design engineering, implementation, and site commissioning. This level of collaboration reduces issues between the suppliers, contractors, system integrators and the end user.

### Increase Production, Reduce Cost

By using reliable hardware and proven configurations, the wells continue production with reduced incidents of shutdowns.

The key factors are...

- Use of reliable hardware
- Deployment of reliable application to prevent troubles
- Capture real-time data
- Preventive Maintenance by digital technology
- Understanding the root cause of issues quickly

Yokogawa can offer a combination of various technologies to maintain or increase production and reduce cost.

## YOKOGAWA PRODUCTS INVOLVED IN WELL OPERATION

### RTU



STARDOM is an intelligent RTU with advanced information technology inheriting the ruggedness of the Yokogawa DCS. The modular FCN controller will support multiple wells along with various control and flow measurements configurable in IEC61131 and JAVA. The all-in-one FCJ has built-in FOUNDATION fieldbus ports, and FCN-RTU has the same functionality with the same software lineup operating under significantly less power.

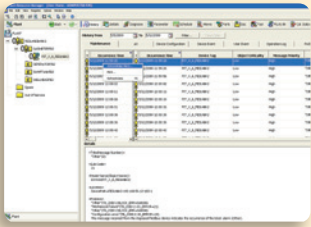
### SCADA HOST



Supervisory Systems  
**FAST/TOOLS**™

FAST/TOOLS is a powerful, scalable, flexible, and open SCADA Host system. It utilizes Web-based supervisory control human machine interface, OPC server/client functions, data acquisition from a variety of controllers and devices, alarm management and historical data management. FAST/TOOLS supports full redundancy of database and communication providing high availability to the system.

### Device Management



**PRM**®  
Plant Resource Manager

PRM is a device asset management software that captures and stores diagnostic information from field devices. Using device patrol, it will periodically identify the field device issues and report them to centralized location. By having diagnostics information, technicians will be well prepared with proper spare and test tools before traveling to a remote wellhead location.

### Gas Flow Measurement



**DPharp EJX**™

By utilizing a full digital sensor, the EJX910 Multivariable Transmitter measures the differential pressure, static pressure, and temperature. The unique silicon resonant sensor structure provides stability for overpressure, and long term stability of 0.1% of the URL guaranteed for 10 years. The EJX series is used in cover tubing and casing pressure, and any other pressure readings.

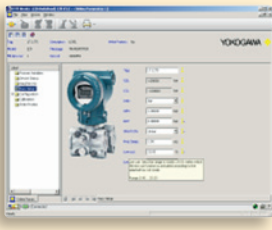
### Water Meter



**ADMAG AXF**™

The ADMAG AXF magnetic flowmeter is a perfect replacement for turbine meters on water flows from the separator. It offers outstanding reliability and ease of operation without mechanical issues.

### Field Calibration



**FieldMate**™

FieldMate is a PC based field instrument configuration tool that performs initial setup, verification, calibration, daily maintenance, and troubleshooting. Both FOUNDATION fieldbus and HART protocols are supported to digitally communicate with the field devices.

# The Wellhead and beyond

Yokogawa total solutions include not only the well site, but also the injection, pipeline, compressor station, and the process plant facility. Our experience for these applications can be integrated to optimize the overall operation capability and maintainability.

## Increase Production and Reduce Costs Safely



## Why Yokogawa?

Yokogawa is being selected by the major energy companies as its automation partner because Yokogawa focuses on delivering highly reliable solutions – from instrumentation to RTU's, SCADA, DCS, Safety Systems and integrated digital oil and gas field applications. Yokogawa offers a wide variety of sensors and controllers that are used to monitor and operate the digital oil & gas field, as well as engineering and configuration services and support, providing a turnkey automation solution. Explore Yokogawa's products to increase the efficiency and environmental performance of your wells, and ensure their safe and stable operation.

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