

Yokogawa Ends 2014 with a Bang: New CENTUM Release with Network-IO

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Keywords

Yokogawa, CENTUM, FieldMate, Network-IO, Flexible I/O, Configurable I/O, Field Device Checkout, System Engineering, Agile Project Execution

Summary

The next generation of flexible, configurable I/O for process automation systems seems to be one of the hottest discussion topics in the DCS world.

Several suppliers have released DCS I/O solutions designed to overcome

Yokogawa is the latest major automation supplier to release its version of configurable I/O as part of the latest release of the CENTUM process automation system.

issues associated with late project changes and address the need for greater flexibility and configurability. With the company's latest release of the CENTUM process automation system (designated R6.01), Yokogawa is the latest major automation supplier to release a version of config-

urable I/O. The company officially unveiled this differentiated solution at a recent press conference at Yokogawa Corporation of America's headquarters in Houston.

Network-IO Combines Hardware Flexibility with Software Configurability

The new I/O offering, called Network-IO (N-IO), represents a major part of the new CENTUM V6.01 system release, along with the new FieldMate Validator tool and Automation Design Suite (AD).

Let's look first at Network-IO and consider how it differs from some of the other offerings in the marketplace today. Most suppliers' configurable I/O offerings today tend to focus on one of two approaches: hardware-based flexibility or software-based configurability.

Hardware-based flexibility involves a plug-in module that goes into a rack to characterize the type of signal (AI, AO, DI, DO, etc.). The user can plug



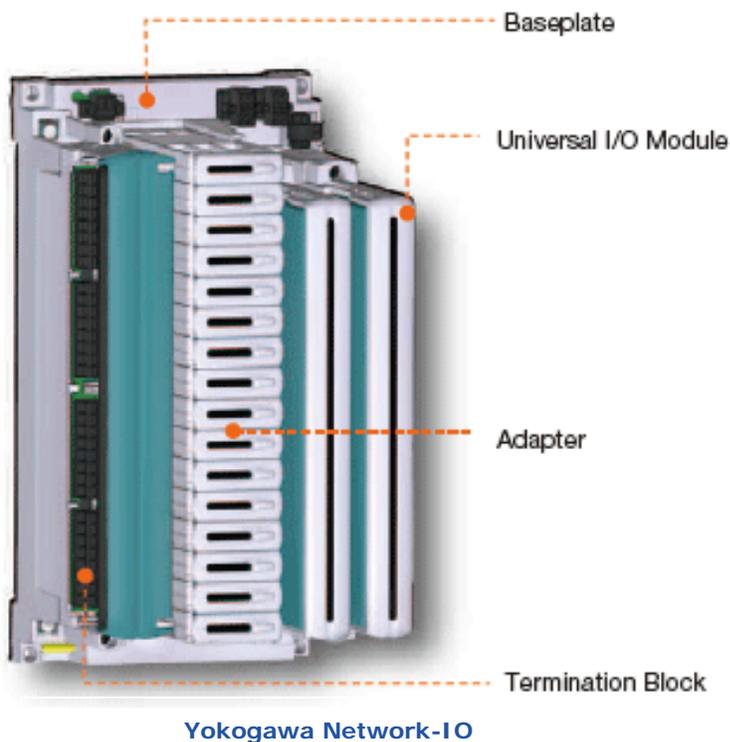
the module into any slot in the chassis, so there are no limitations in terms of adding I/O points at late stages in the project and the user is not bound by the limitations of hardware.

The other approach, software-based configurability for different I/O points in the module, provides similar benefits. But instead of plugging in a characterization module, the user configures the point in software to accommodate the specific input or output channels required.

Yokogawa's Network-IO approach combines elements of both. N-IO features an I/O module that can handle up to 16 I/O points and is software configurable so the end user can choose AI, AO, DI, or DO for each point. Special hardware-based plug-in adapters can be added for specialty inputs

like pulse and relay I/O. Yokogawa expects the new I/O module to result in a 40 percent footprint reduction compared to the current footprint of conventional DCS I/O.

N-IO will also address intrinsic safety. Yokogawa has a large installed base in EMEA, Japan, and Asia, where many applications require intrinsically safe equipment. As part of the release, Yokogawa also announced that it has signed OEM agreements with Pepperl+Fuchs and MTL. Under these agreements, Yokogawa will manufacture IS NIO base plates that can be used with intrinsic safety barriers provided by both companies.

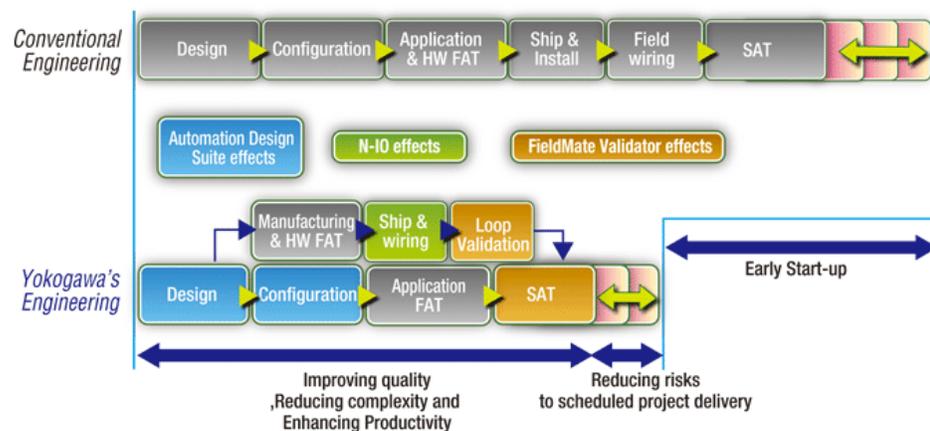


FieldMate Validator Introduced to Reduce Installation Costs, Time to Startup

Network-IO can help reduce projects by decreasing the amount of time needed to implement the physical part of the process control system. A system with configurable I/O allows flexible "binding," in which the software configuration of the system can be loaded into the physical system at

a late stage in the project. Also referred to as “late binding,” flexible binding allows integration to the control system without having to connect to the actual field control stations. As a result, binding can occur at the FAT or even SAT project stages. Flexible binding also provides potential cost savings related to installing, commissioning, and checking out field devices.

Yokogawa's new FieldMate Validator tool addresses this issue by interfacing with field devices connected to Network-IO to check the integrity of the field wiring and verify correct device operation. Conventional methods for wiring, checking out, and commissioning the thousands of field devices installed in most process plants can be time consuming. Traditionally, wiring and instrument checkout had to be performed on the complete installed system. To be able to check out the wiring simultaneously from both sides, this required people in both the control room (on the DCS workstation), and field technicians.



Yokogawa's Latest CENTUM Release Emphasizes Reduction in Overall Project Engineering Costs and Improved Work Processes

FieldMate Validator, part of Yokogawa's FieldMate field device management software suite, establishes a connection with the N-IO module and can check the status of the wiring in real time for all instruments connected to the module. And it can do so without requiring the full DCS installation. The ability to check out wiring and field devices prior to full system installation can reduce time to project completion because all these functions can be performed prior to system startup and with fewer personnel. In cases where needed information is not available on time due to a late project start, it also enables overall project schedule integrity to be maintained.

Automation Design Suite Provides New Perspective on System Engineering

Yokogawa is taking a similar cost-reducing approach to automation project engineering. The current project engineering lifecycle does not adapt well to late-project changes. There are many opportunities to apply new technologies to the traditional project engineering lifecycle to eliminate some factory acceptance testing (FAT) requirements. Yokogawa refers to this new engineering approach as “agile project execution” (APEX).

The third major aspect of the CENTUM 6.01 release, Automation Design Suite (AD Suite), is a fully integrated engineering platform that retains the entire engineering history of the plant from the design phase through commissioning and operations. According to Yokogawa, AD Suite brings a modular approach to engineering. The system features templates for various process loops, alarms, and graphics in addition to several templates for process equipment such as heat exchangers.

AD Suite includes management of change features and can version and audit engineering changes. AD suite can manage functional design documents along with control program master data from the CENTUM database. The company believes this simplifies history management when programs are modified and helps ensure that the latest design information is available when system expansion, modification, or maintenance is performed. Modification packages (called ModPacks) can further reduce project schedules and shave more time off late-stage project changes. Yokogawa also offers a Global Application Repository to support projects. This enables Yokogawa to perform engineering functions from anywhere at any time.

Conclusion

This latest release of CENTUM can be viewed both as a series of new product offerings and as a suite of project optimization tools designed to address many of the key end user requirements today: reducing overall project costs, shrinking time to project completion, and allowing for a collaborative environment in which owner-operators can best deploy their global resources. To do all these things requires a complete rethinking of traditional and conventional automation solutions. This latest release of the

well-established CENTUM DCS appears to represent a major step forward toward these goals.

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