



Safety Instrumented System
ProSafe-RS
N-IO (Network I/O)

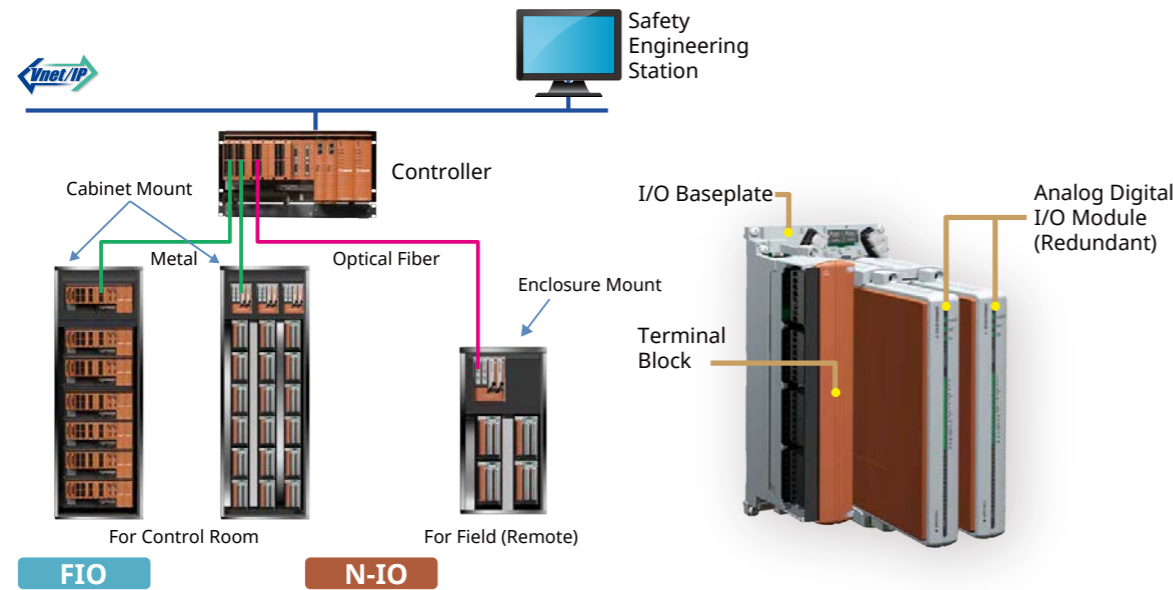
ProSafe-RS R4

N-IO (Network I/O): Smart Configurable I/O (SCIO)

In addition to conventional I/O modules dedicated for specific signal types (FIO module), ProSafe-RS R4 can offer the N-IO module, which handles different signal types at each channel. By concurrently accepting both types of module, ProSafe-RS R4 can deal more flexibly with a customer's plant design requirements.

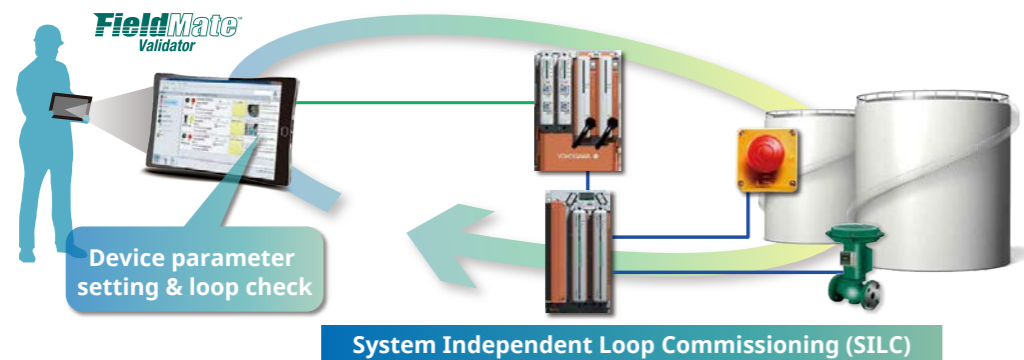
■ Features

- DI/DO/AI/AO signals can be handled at a single module. The types of I/O signal at each channel can be changed with software.
- Remote installation up to 50 km is available by using optical cables.
- SIL3 can be achieved with single configuration. Redundant configuration is also selectable.
- Terminal block has a disconnect function of signal loop of field devices as a standard function.
- An N-IO baseplate is available for intrinsically safe barriers.



FieldMate Validator: software for validating and configuring N-IO loops

Combined with N-IO modules, FieldMate Validator allows the field devices testing and validation without having a controller and an engineering station. This software is offered as an option of FieldMate.



Automation Design Suite (AD Suite)

AD Suite offers the engineering environment integrated with CENTUM VP. Its change management function and other features improve engineering quality and efficiency throughout the plant lifecycle. Based on the customer's design requirements, the engineering environment can be separated, ensuring a flexible configuration.

Benefits of ProSafe-RS R4

Early start-up of a plant

■ Challenge:

Starting up a plant more quickly has long been an issue that directly affects customers' profits.

■ Our solution:

N-IO FieldMate Validator AD Suite

Application engineering and hardware engineering can progress independently and parallel. This parallel work shortens the project schedule, either by starting later or by possibly enabling an earlier start-up.

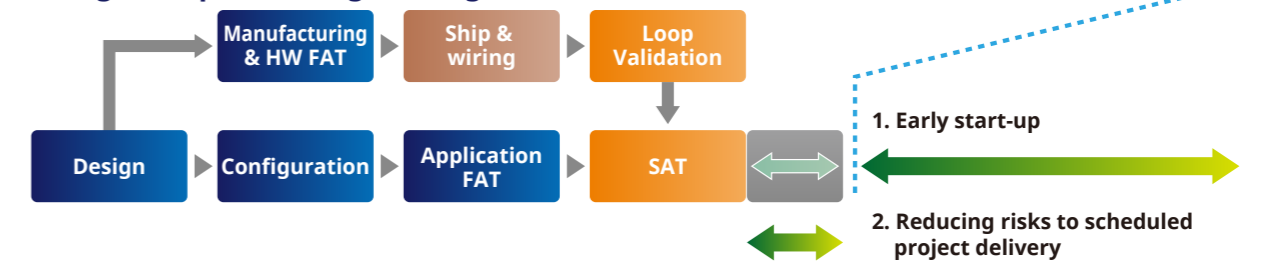
Although the start-up of instruments and the installation of I/O modules can be performed in parallel, the loop check is completed only after the FAT (Factory Acceptance Test) is finished and the controller and the engineering environment are installed.

In Yokogawa's parallel engineering, there is no need to wait for the controller and engineering environment to be completed. The integrity of loops can be checked only with N-IO modules and FieldMate Validator. If any change is found in the I/O definition information, it can be corrected on the spot, and the corrected definition can then be reflected in the master information in the plant.

Conventional engineering



Yokogawa's parallel engineering



Reducing risks to scheduled project delivery

■ Challenge:

The I/O definition often needs to be changed due to physical constraints. Such problems usually occur during commissioning and may prolong the project schedule, as well as require costly re-wiring.

■ Our solution:

N-IO FieldMate Validator

The I/O definition of N-IO modules can be changed more flexibly. Signal types among DI/DO/AI/AO can be switched only with software, and there is no need to change I/O modules. Since signal types can be designated at each channel, there is no need to stock I/O modules for each signal type, reducing maintenance costs.

Highly flexible installation

■ Challenge:

Sufficient space is needed to mount I/O modules. Also, the marshalling to connect field devices and I/O modules require space and work, increasing costs. This may reduce the number of possible locations for arranging I/O modules.

■ Our solution:

N-IO

N-IO modules do not need the hardware marshalling. Conventionally, this marshalling is necessary to arrange field wiring for each signal type and to connect them to I/O modules dedicated for specific signal types. In contrast, multiple types of signal can be assigned to a single N-IO module, and there is no need for arranging signal types and thus marshalling. For this reason, N-IO modules need less space and wiring for installation. This module is ideal for flexible and distributed installation in the field. Furthermore, the use of N-IO modules eliminates the need for marshalling cabinets, further saving space and costs.

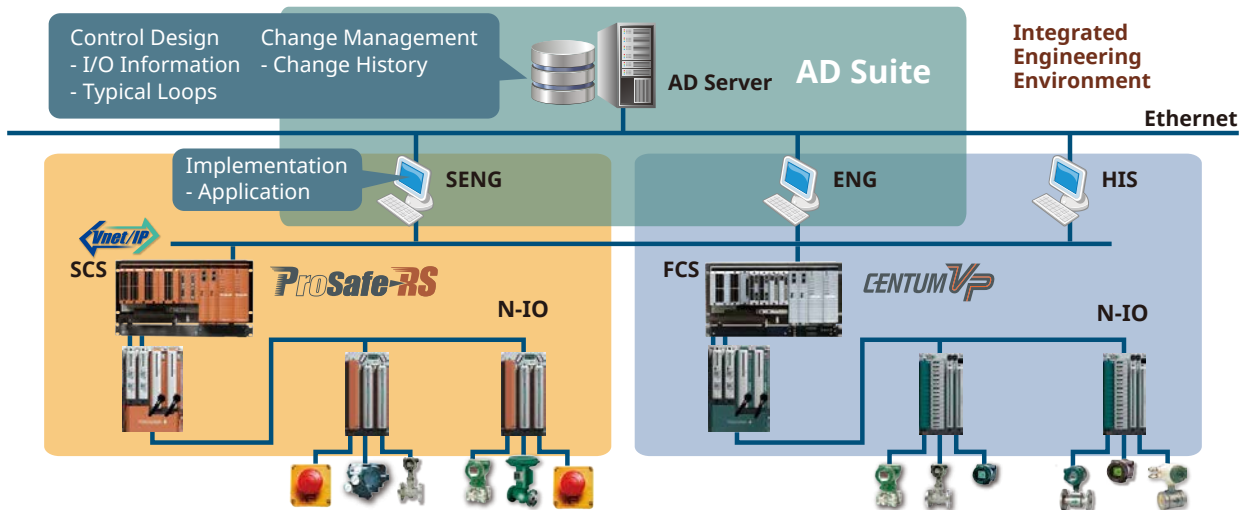
Improving the quality and efficiency of engineering

■ Challenge:

Many issues inevitably occur in the plant lifecycle, such as expansion and reconstruction of the plant as well as a change of person in charge. Over time, the actual system gradually diverges from the configuration at the initial design stage, deteriorating the quality of subsequent engineering.

■ Our solution: N-IO AD Suite

AD Suite maintains the consistency of the design information of the system throughout the plant lifecycle. The customer's design can be kept up-to-date for a long time. Since the range affected by changes can be clarified at any time, deviations do not arise between the actual system and the design information when the system is to be expanded or reconstructed, or during maintenance service. In addition, since ProSafe-RS R4 uses an I/O module similar to those for CENTUM VP (N-IO module), the procedures for installation, verification, and maintenance are the same as for CENTUM VP, which reduces the likelihood of misoperation by engineers and other possible problems.



Yokogawa's commitment

Yokogawa's system platforms combined with proven execution experience provide the highest quality and innovative solutions for secure and optimized process automation and management. Yokogawa's global customer centric focus together with strong local support reduces users' business risks and provides the lowest total cost of ownership. With a long history of progressive compatibility, Yokogawa is your dependable automation partner.

Synaptic
Business
Automation

Synaptic Business Automation underlies a process of co-innovation and collaboration with customers that leverages Yokogawa's domain knowledge and digital automation technologies to create sustainable value.

YOKOGAWA ELECTRIC CORPORATION

World Headquarters

9-32, Nakacho 2-chome, Musashino-shi, Tokyo 180-8750, Japan
<http://www.yokogawa.com/>

YOKOGAWA CORPORATION OF AMERICA

12530 West Airport Blvd, Sugar Land, Texas 77478, USA
<http://www.yokogawa.com/us/>

YOKOGAWA EUROPE B.V.

Euroweg 2, 3825 HD Amersfoort, The Netherlands
<http://www.yokogawa.com/eu/>

YOKOGAWA ENGINEERING ASIA PTE. LTD.

5 Bedok South Road, Singapore 469270, Singapore
<http://www.yokogawa.com/sg/>

YOKOGAWA CHINA CO., LTD.

3F TowerD Cartelo Crocodile Building,
No.568 West Tianshan Road, Shanghai 200335, China
<http://www.yokogawa.com/cn/>

YOKOGAWA MIDDLE EAST & AFRICA B.S.C.(c)

P.O. Box 10070, Manama,
Building 577, Road 2516, Busaiteen 225, Muharraq, Bahrain
<http://www.yokogawa.com/bh/>

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