



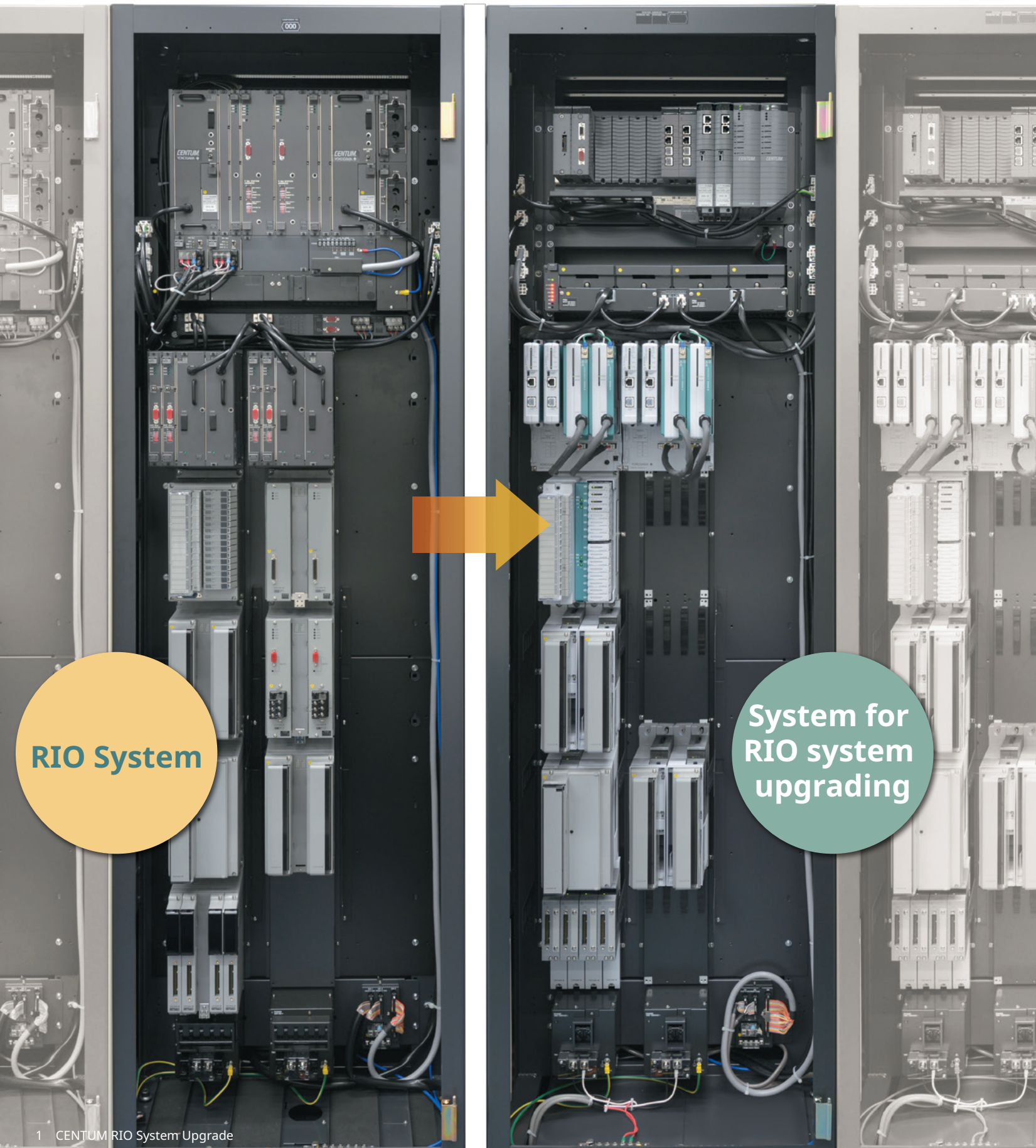
CENTUM RIO System Upgrade

Safely and reliably upgrade from your
existing system to the latest environment



Highly reliable RIO (Remote I/O)* upgrade with short delivery !

*RIO (Remote I/O): It is an input/output module that Yokogawa can support I/O signals ahead of market introduction in 1993.



"CENTUM VP" is the latest control system that provides optimum operation monitoring and engineering environment throughout the plant's lifecycle and sustainable grows with our customers.

At the plant, the control system will be updated to reduce costs, increase production, respond to legal requirements, countermeasures against aging of the system, and so on. In that case, it is necessary to switch over in a short period and to prevent troubles in order to minimize the influence on production.



■ Benefits of upgrading to CENTUM VP

- The intuitive and easy-to-understand HIS (Human Interface Station) environment inherits the conventional operability focused on improving operational efficiency by reducing the burden of operation monitoring.
- Integration with the production management system can be easily realized with a high-speed control bus and general-purpose communication I/F (OPC standard interface).
- Designed with maintenance cost reduction and modern field device compatibility in mind. We support field devices compatible with digital communication and the expanding proven ISA100 wireless device global standard.
- Safety instrumentation system integrated interfacing provides easily deployed, safe, and secure plant operation.



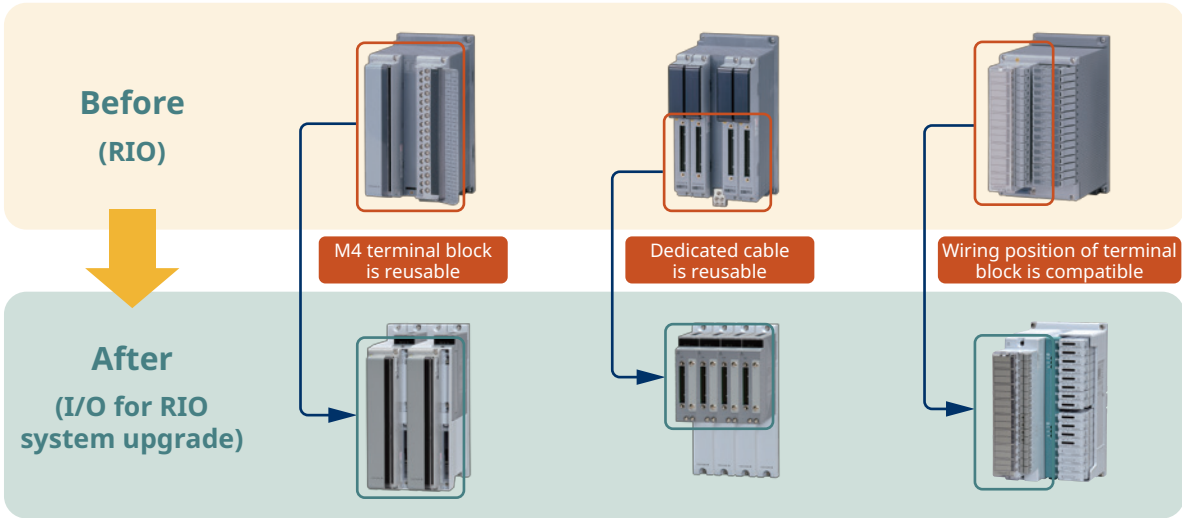
■ Features of RIO system upgrade

Realize short turn-around, reliable update to the latest system by fully utilizing existing facility assets.

- New devices for the RIO system upgrade are compatible with existing RIO in both function and physical form for low risk implementation compatibility. Existing cabinets and terminal blocks can be re-used as they are; it is not necessary to change the wiring between the I/O device and the sensor or valve.
- Project risk and execution time is minimized as existing database can be efficiently and reliably converted to utilize the latest engineering environment.



Inheritance of signal connection



Stepwise upgrade by making full use of existing assets of the existing system

Realize stepwise upgrade according to Yokogawa's "Sustainable Plant" concept which is to provide long-term functional maintenance and performance improvement of the automation system. Stepwise upgrade can achieve reduction of OPEX (Operating Expense) and production loss by shortening project execution time.

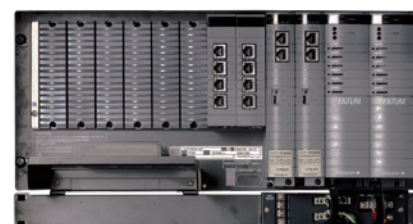
RIO system upgrade example

Step 1 - Upgrade EWS/ICS/PICS to CENTUM VP's latest HIS/ENG



Intuitive and easy-to-understand HMI environment

Step 2 - Upgrade FCS respectively - Remove unnecessary equipment after completion of all FCS upgrade



FCS for RIO system upgrade



I/O module compatible with field digital communication (HART 7) for RIO system upgrade



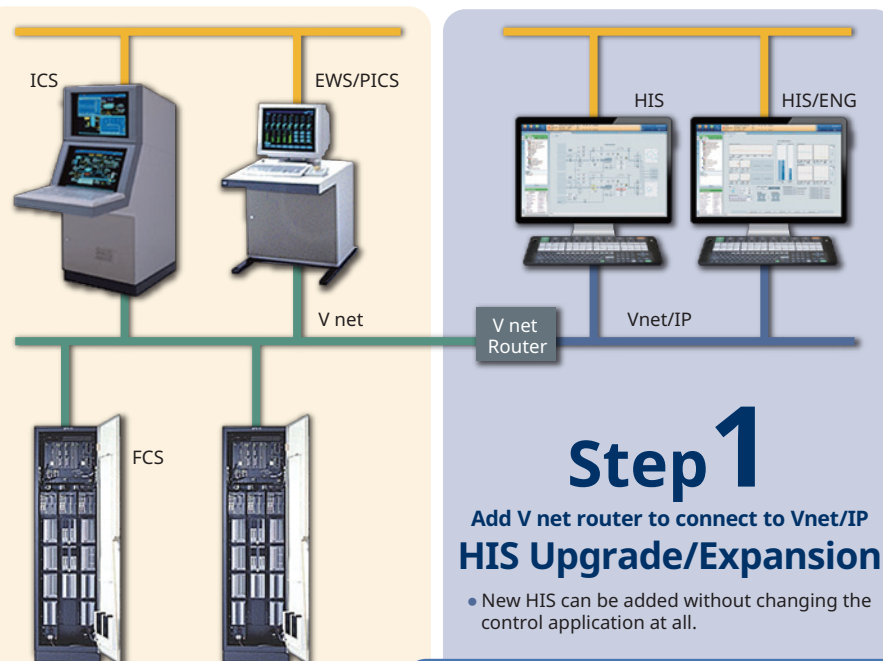
Yokogawa develops products that conform to the four concepts in order to realize the "Sustainable Plant."

CENTUM VP



RIO system

CENTUM VP



Step 1

Add V net router to connect to Vnet/IP
HIS Upgrade/Expansion

- New HIS can be added without changing the control application at all.

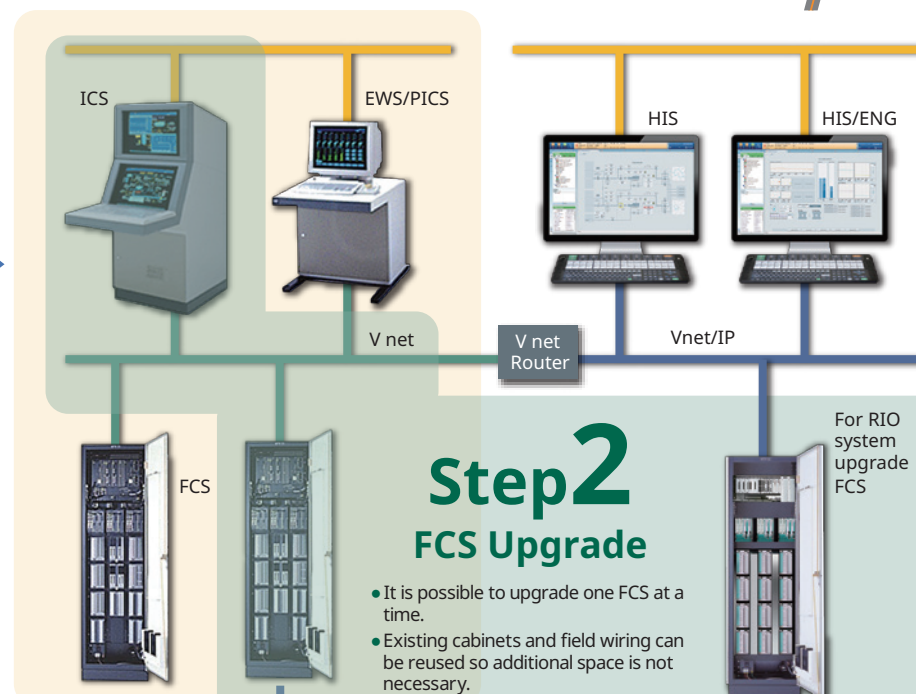
Benefits

- Reduce burden on operation monitoring and improve operation efficiency in intuitive and easy-to-understand HIS environment while inheriting conventional operability.
- Cooperate with the production management system due to a high-speed control bus and general-purpose communication I/F (OPC standard interface).

EWS: Engineering Workstation
ICS: Information Command Station
PICS: PC based ICS
FCS: Field Control Station
ENG: Engineering Station
V net, Vnet/IP: Controller Bus

RIO system

CENTUM VP



Step 2 FCS Upgrade

- It is possible to upgrade one FCS at a time.
- Existing cabinets and field wiring can be reused so additional space is not necessary.
- The system reconstruction time can be shortened by efficient and reliable database conversion.

Benefits

- Utilize modern digital communication and ISA100 wireless field devices in order to reduce maintenance cost.
- Improve safe and secure plant operation by integrating with safety instrumentation system.

A rack mounting type upgrade unit is also available.



Smart Operation

To ensure safe, secure, and efficient operation by providing appropriate and intuitive information to operators.



Smart Control

To realize overall optimization control that maximizes plant performance by flexibly adapt to change of operating conditions.



Smart Engineering

To realize high quality and low cost engineering by providing the new engineering environment.



Sustainable System

To realize long-term stable operation of the system by using new service models.

Service such as Life-span parts exchange, Basic software upgrade, Improve security, and Patrol inspection.

● Solution for realizing Sustainable Plant

Product Yokogawa provides products that realize long-term functional maintenance by developing products that keep compatibility and inheritance of functions with both hardware and software.

Service Yokogawa provides global unified maintenance service in the following plans.

● Basic Support Plan

This support plan provides basic maintenance focusing on breakdown maintenance for trouble shooting and patrol inspection.

•Basic Maintenance Providing prompt solutions and reliable services with comprehensive global service network and escalation system.

● Custom Support Plan

This support plan provides a wide range of maintenance works based on our long-term maintenance plan called the lifecycle execution plan. This maintenance plan provides more than just peace of mind; it provides tangible safety benefits for your assets.

•Lifecycle Planning Yokogawa manages the Lifecycle Execution Plan and propose the necessary service work on systems in a timely manner.

•Safety & Security Services for protecting plants against virus infections, cyber attacks, and illegal invasions.

•Secured Remote Solutions System monitoring service via remote monitoring.

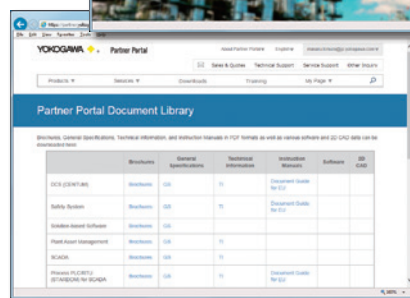
● Partner Portal

Deliver the necessary information to customer's system in a timely manner.

Yokogawa provides information such as product specifications and technical information necessary for each product's life cycle to customers.

In addition, customers who use "Customer Support Information" based on product maintenance agreement can see software revision information of contracted products, information on improvement of maintainability, etc.

Partner Portal <https://partner.yokogawa.com/global/>



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