

# General Specifications

## NT755FJ FCN/FCJ Duolet Application Development Kit



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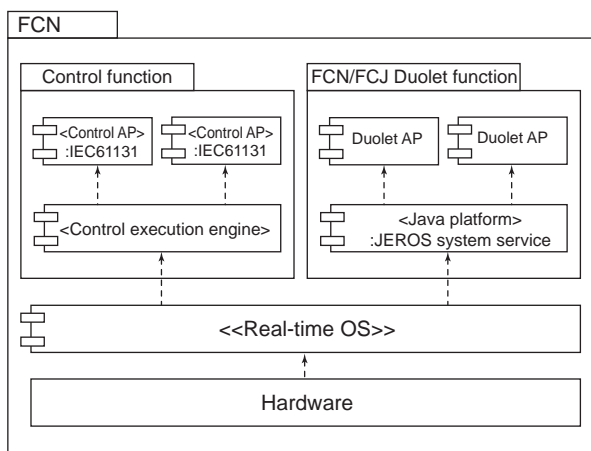
### ■ GENERAL

This document describes the FCN/FCJ Duolet Application Development Kit for creating Duolet application (Java language application) running on Duolet function of Autonomous Controllers - FCN (Field Control Nodes).

Note: Duolet application can be used in FCN-500 (autonomous controller with NF501/NF502 CPU module) and FCN-RTU (low power autonomous controllers with NF050 CPU module).

### ■ OVERVIEW OF FCN/FCJ DUOLET FUNCTION

The FCN/FCJ Duolet function is used to execute Duolet application on the FCN-500 and FCN-RTU Autonomous Controllers. Control function written in IEC 61131-3 compliant programming languages runs on the FCN-500 and FCN-RTU. The FCN/FCJ Duolet function runs in parallel with this control function, performing control data monitoring, alarm notification, and logging using Duolet application without requiring separate SCADA software.



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Figure Schematic of FCN/FCJ Duolet Function

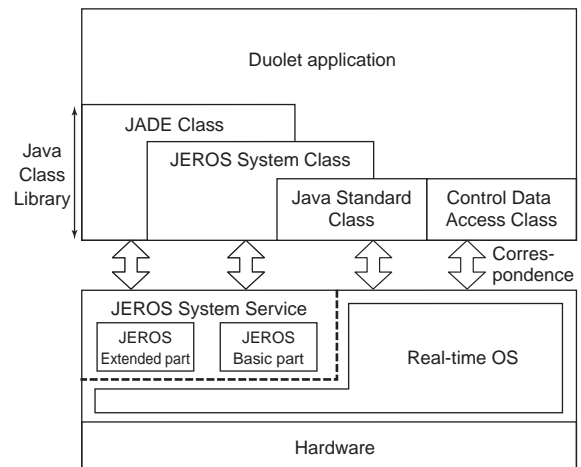
### ■ FEATURES OF FCN/FCJ DUOLET FUNCTION

- FCN/FCJ Duolet function enables the execution of user-created Duolet application, alarm notification by email, and data transfer and storage by FTP.
- This function works in a memory area separate from the control function, so do not affect the memory area used by the “control engine” even though the Duolet application use large amounts of memory.
- Duolet application operate at a lower priority level than control function, so the CPU load due to Duolet application does not have any effect on the control function.

### ■ FCN/FCJ DUOLET APPLICATION DEVELOPMENT KIT OVERVIEW

The FCN/FCJ Duolet function is configured as follows:

As shown in the figure below, our “Duolet applications” Java language applications run on the Java Class Library provided by the FCN/FCJ Duolet function.



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Figure Configuration of FCN/FCJ Duolet Function

The FCN/FCJ Duolet Application Development Kit is software to develop Duolet application as shown in the figure above.

Use the Oracle JDK (Java Development Kit) to develop Duolet application.

The FCN/FCJ Duolet Application Development Kit includes Class Libraries required for developing Duolet application on the FCN-500 and FCN-RTU - such as JADE class, JEROS system class, and control data access class. This kit also includes a Duolet monitor that allows Duolet operations on the FCN-500 and FCN-RTU to be monitored on Windows and a JEROS emulator which runs on Windows and emulates the JEROS system service.

## ■ SOFTWARE

### ● FCN/FCJ Duolet Application Development Kit

This kit comes with the following software media. Use the supplied software together with the Oracle JDK (Java Development Kit) to create a Duolet application on Windows.

#### Class libraries

- JADE Class Library  
A class library for executing and managing Duolet application multitasking
- JEROS Class Library  
A class library for system management
- Control Data Access Class Library  
A class library for accessing data for control function

#### Duolet monitor

This software, running on a Windows machine, monitors Duolet application running on the FCN-500 and FCN-RTU.

While the Duolet application is being tested on the FCN-500 and FCN-RTU, you can monitor or debug the Duolet application running on the FCN-500 and FCN-RTU via a network.

#### JEROS emulator

This software runs on Windows and emulates JEROS system services.

This software enables Duolet application to be tested on Windows.

Note: The JEROS emulator does not support control data access. To test Duolet application which access control data, run them on the FCN.

## ■ IT SECURITY SUPPORT

FCN/FCJ Duolet Application Development Kit supports IT security compliant with other Yokogawa system products security policy.

Note: The IT Security is not available either for Domain Management or for Combination Management in CENTUM VP.

## ■ METHOD OF PROVIDING SOFTWARE

### ● Software Media

The FCN/FCJ Duolet Application Development Kit program and help are supplied on the FCN/FCJ Software Media (Model NT203AJ).

### ● The FCN/FCJ Duolet Application Development Kit License

The FCN/FCJ Duolet Application Development Kit comes with an order ID sheet as the order ID and password. After purchasing the license, access the specified Yokogawa Web site and enter this order ID and password. The corresponding key code is then issued. Use this key code to install the FCN/FCJ Duolet Application Development Kit on a PC.

## ■ OPERATING ENVIRONMENT

### ● Development Environment

#### Hardware operating environment

PC: Must satisfy operating environment requirements for logic designer.

#### Software operating environment

OS: Must satisfy operating environment requirements for logic designer.

Java development environment:

Oracle JDK 1.4.2

Web browser :

Internet Explorer (32-bit) 11.0 (\*1)(\*2)  
or Edge (\*1)(\*2)

\*1: The web browser is needed to set the operating environments of FCN/FCJ Duolet function.

\*2: Use the web browser included in the Windows OS.

### ● Execution Environment

Execution Environment		
Item	Model of CPU Module	Software
FCN-500 (*1)	NFCP501, NFCP502	The license for FCN-500 is bundled with the CPU module (With Duolet function) R4.10.01 or later
FCN-RTU	NFCP050	The license for FCN-RTU is bundled with the CPU module (With Duolet function).

Note: When there is possibility of power interruption in the electric supply to FCN, please connect an uninterruptible power supply system (UPS).

\*1: FCN/FCJ Duolet Function cannot be used with FCN-500 duplexed CPUs.

## ■ MODEL AND SUFFIX CODES

### ● FCN/FCJ Duolet Application Development Kit License

Description		
Model		
NT755FJ		FCN/FCJ Duolet Application Development Kit License
Suffix codes	-L	License
	W	Issued on the WebW
	1	Always 1
	1	Always 1
	A	Standard

Note: One license is required per PC running the FCN/FCJ Duolet Application Development Kit.

## ■ ORDERING INFORMATION

Specify model and suffix codes when ordering.

## ■ TRADEMARK ACKNOWLEDGMENTS

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