General Specifications

GS 33M05F10-40E

Model LHS2411
Exaopc OPC Interface Package (for HIS)
Model LHS2412
CENTUM Data Access Library

CENTUM VP

■ GENERAL

This GS covers the Open Data Interface Packages, which provide a Human Interface Station (HIS) with a process data server function.

The databases in HISes and control stations include actual process data and trend data. The following optional software packages add the process data server function to the HIS:

- *Model LHS2411 Exaopc OPC Interface Package (for HIS)*
- *Model LHS2412 CENTUM Data Access Library*

To access the database in the HIS from an external application, use either of the interface packages. These interfaces protect the HIS like a firewall. With these packages, the system is easily connected to Windows applications, Manufacturing Execution System (MES) and Plant Information Management (PIM) software.

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■ LHS2411 EXAOPC OPC INTERFACE PACKAGE (FOR HIS)

● General

As data sharing between information systems increases, there is an increasing need to effectively access and use plant information to meet business needs in a timely manner. In the process industry, there are a variety of data sources in plant devices and databases in the control room. However, until now, it was not necessarily easy to access operation data on DCS from supervisory information systems.

To solve this problem, the Exaopc package provides an interface that is compliant with an OPC (OLE for Process Control) standard interface developed by the OPC Foundation. It also has Yokogawa's proprietary functions to act as a more advanced interface.

Exaopc is an OPC server, which can be connected to a variety of PCSes (Process Control Systems) and provides an OPC client with process data via OPC interface. With the package, the OPC client can acquire and define process data from DCSes and receive alarm events.

This GS covers the specifications of the Exaopc OPC Interface Package.

Major Applications
Exaopc OPC Interface can be used in a wide variety of OPC client applications.

- Yokogawa MES packages, including Exapilot (Operation Efficiency Improvement Package)
- User applications created by Visual Basic

● Function Specifications

The Exaopc package provides the OPC specifications-compliant interface.

Data Access (DA) Server
The DA Server reads and writes process data using item IDs as identifiers.

Alarms & Events (A&E) Server
The A&E Server notifies alarms and events from plants that asynchronously occur. The following messages are sent:

- System alarm messages
- Process alarm messages
- Mode/status change messages
- Sequence messages
- Operation guide messages
- Engineering maintenance messages
- Operation record messages
- Server internal errors

Historical Data Access (HDA) Server
The OPC client can access PCS data by connecting to the HDA Server. It also automatically saves instantaneous values acquired from the DA Server and alarms/events that the A&E Server receives, to a historical database in the HDA Server.

Batch Server
The Batch Server reads and writes common blocks and recipe data.

● System Configuration

Server/Client Composition
The following two client/server configurations are available:

- The OPC client exists on a PC with Exaopc installed.
- The OPC client exists on a general-purpose PC.

Multiple Clients
Users can access one Exaopc from multiple OPC clients.

Multiple Servers
Users can access multiple Exaopc from one OPC client.

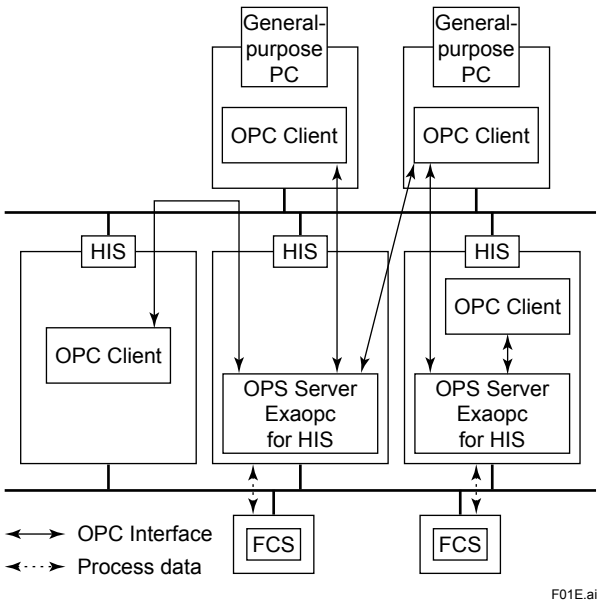

Figure System Configuration

● Application Capacity

DA Server

A number of clients (A number of server objects):
4 clients
A number of groups (A number of group objects):
20 groups
A number of Item IDs:
1000 item IDs/group
20000 item IDs/ all group
Cache update period (Data gathering period):
1 to 3600 sec
Max. throughput of data access: 500 item IDs/sec

A&E Server

A number of clients (A number of server objects):
4 clients
Max. number of event-registered objects: 20 objects
(Max. number of event subscription objects)

HDA Server

A number of clients (A number of server objects):
4 clients
A number of browser (A number of browser objects):
8 browser/server object
32 browser/all server objects
A number of item IDs: 1000 item IDs/group
Max. historical data save period: Not restricted
(Depends on trend definition)

Batch Server

A number of clients (A number of server objects):
4 clients
A number of groups (A number of group objects):
5 groups
A number of item IDs: 1000 item IDs/group

● Operating Environment

Hardware

The same operating environment as Model LHS1100 Standard Operation and Monitoring Function.

Software

LHS1100 Standard Operation and Monitoring Function

OPC Client

IBM PC/AT compatible
Windows OS and Service Pack must be used in the operating environment for LHS1100 Standard Operation and Monitoring Function.

Restrictions

OPC Interface cannot be used with Microsoft Visual Studio .NET or Microsoft Visual Studio 2005.

It is recommended to use the library provided by Model LHS2412 CENTUM Data Access Library when developing an OPC client application using OPC Interface. CENTUM Data Access Library provides a library of ActiveX controls for OPC Interface. For OPC Interface, see the OPC Foundation's Internet homepage.

● Supported OPC Specifications

The Exaopc package provides the OPC client with an interface with the following specifications:

DA Server

- OPC Data Access Custom Interface Specification Version 2.05A
- OPC Data Access Automation Specification Version 2.0

A&E Server

- OPC Alarms and Events Custom Interface Specification Version 1.10

HDA Server

- Yokogawa specific interface

Batch Server

- Yokogawa specific interface

■ LHS2412 CENTUM DATA ACCESS LIBRARY

● General

The CENTUM Data Access Library is a complete library of OPC communication functions, and provides a simple interface. Usually, both programming resources and complex programming are required to implement communications with an OPC server. However, this library makes it possible for ordinary users to develop applications efficiently.

● Function Specifications

The CENTUM Data Access Library is provided as an ActiveX control for Microsoft Visual Basic. The ActiveX control has the following functions:

Station Information (DA Server)
Acquires a list of stations defined by the System Configuration Definition, and other station information such as models and operating statuses.

Tag Information (DA Server)
Acquires a list of tags contained in control stations, and other tag information such as tag comments and instrument names.

Tag Data Item Information (DA Server)
Acquires a list of tag data items as well as other tag data item information such as engineering units, item comments, current values and quality codes. Can set values for tag data items.

Common Block Information (Batch Server)
Acquires a list of common blocks defined for the system.

Common Block Data Item Information (Batch Server)
Acquires a list of common block data items as well as other common block data item information such as engineering units, item comments, and current values. Can set values for common block data items.

Recipe Information (Batch Server)
Acquires information related to recipe headers (such as recipe names, recipe product names), a list of names of recipes defined by the system, and control recipe batch IDs.

Messages (A&E Server)
Acquires historical messages, and generates operator guide messages using arbitrary character strings.

Trend Data (HDA Server)
Acquires a list of item IDs (“tag name. tag data item name. data acquisition cycle”) of target historical trend data, and historical trend data during the specified period.

Closing Data (HDA Server)
Acquires a list of item IDs (“tag name.tag data item name”) of target closing data, and closing data during the specified period.

HIS Startup Information (A&E Server)
Acquires the start date and time of HIS (OPC server).

Event (A&E Server)
Acknowledges the occurrence of sequence messages and operator guide messages, and HIS shutdown.

● Operating Environment

HIS (OPC Server)
Hardware: Same as operating environment of LHS1100 Standard Operation and Monitoring Function.
Software: LHS1100, LHM1101 Standard Operation and Monitoring Function, LHS2411 Exaopc OPC Interface Package (for HIS), LHS6660 (*1), LHM6660 Process Management Package

HIS (OPC Client) (*2)
Hardware: Same as operating environment of LHS1100 Standard Operation and Monitoring Function
Software: LHS1100 Standard Operation and Monitoring Function

General-Purpose PC (OPC Client) (*2)
Hardware: IBM PC/AT-compatible
Software: Windows OS and Service Pack must be used in the operating environment for LHS1100 Standard Operation and Monitoring Function.

User Application Development Environment (*2)
User applications can be developed on a general-purpose PC or an HIS using the following software:

- Microsoft Visual Basic 6.0 (*3)
- Microsoft Visual Basic .NET 2003
- Microsoft Visual Basic 2005
- Microsoft Visual Basic 2008

*1: Required to access batch data. In the CENTUM CS system, batch data access is not supported.
*2: The OPC client function must be installed using a setup disk created by the OPC server.
*3: Visual Basic Ver 6.0 is for compatibility with the existing programs.
Select Visual Basic .NET for new development.
LHS2412 CENTUM data access library is required to access from Visual Basic .NET.

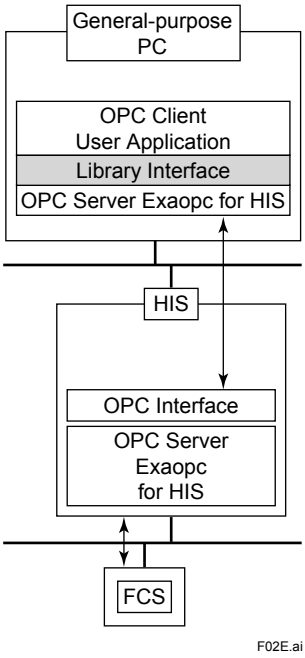

Figure Data Flow with Library

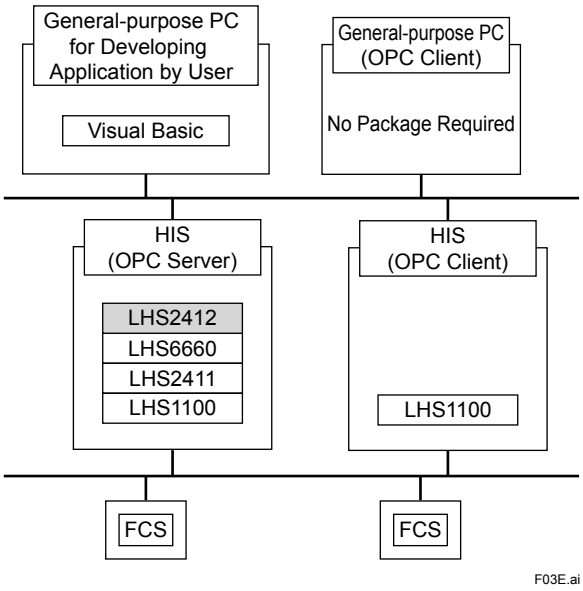

Figure Package Installation

● Application Capacity

Same as application capacity of LHS2411 Exaopc OPC Interface Package (for HIS)

■ MODEL AND SUFFIX CODES

Exaopc OPC Interface Package (for HIS)

		Description
Model	LHS2411	Exaopc OPC Interface Package (for HIS) [Media model: LHSKM30-V11]
Suffix Codes	-V	Software License
	1	Always 1
	1	English Version

Note: To use the package, make sure to purchase software licenses equivalent to the number of computers in which the package is installed.

CEMTUM Data Access Library

		Description
Model	LHS2412	CENTUM Data Access Library [Media model: LHSKM30-V11]
Suffix Codes	-V	Software License
	1	Always 1
	1	English Version

Note: To use the Package, the number of software licenses you order should equal the number of Exaopc (OPC servers). The number of OPC clients is not counted.

■ ORDERING INFORMATION

Specify model and suffix codes.

■ TRADEMARKS

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