Introduction

Thank you for purchasing the ASIU Analyzer Server Interface Unit Software.

ASIU Analyzer Server Interface Unit is the software to communicate with DCS and to make the data storage and the maintenance of the field analyzer/sensor on a PC by inputting their information (Analog and Digital) except GC into the I/O unit (FCN) Connected by the ANABUS network.

This manual describes the basic method of operating the ASIU.

For how to operate GC8000 or GC1000 MarkII, refer to their corresponding user's manuals.

• Applicable Readers

The description of the installation method assumes that the reader has a basic knowledge of hardware and software that is necessary for installing the ASIU, and Windows as well.

For further details of Windows, refer to the respective manuals.

• Contents of the Package

The contents of the package are as follows. Check the contents of your package.

• ASIU installation disc
• ASIU User’s Manual (this manual)
Safety Precautions

• In order to protect the system controlled by the product and the product itself and ensure safe operation, observe the safety precautions described in this user’s manual. We assume no liability for safety if users fail to observe these instructions when operating the product.

• Modification of the product is strictly prohibited.

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• Please hand over the user’s manuals to your end users so that they can keep the user’s manuals on hand for convenient reference.

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Throughout this user’s manual, you will find several different types of symbols are used to identify different sections of text. This section describes these icons.

- **NOTE**
  Identifies important information required to understand operations or functions.

- **TIP**
  Identifies additional information.

- **SEE ALSO**
  Identifies a source to be referred to.

- **HELP !**
  Indicates text describing the action to be taken when a message or indication is displayed during an operation.

**Keyboard Inscriptions**

Keyboard operations are indicated in this manual as shown in the following example.

(Inscription example)

[Shift] + [F1]

(Meaning)

Indicates that the operator must press the [F1] key while pressing the [Shift] key.

**Menu Inscriptions**

Menu operations are indicated in this manual as shown in the following example.

(Inscription example)

Click on [Connect] in the [System] menu.

(Meaning)

Click on the [System] menu, then click on the [Connect] command.

**Drawing Conventions**

Some drawings may be partially emphasized, simplified, or omitted, for the convenience of description.

Some screen images depicted in the user’s manual may have different display positions or character types (e.g., the upper / lower case). Also note that some of the images contained in this user’s manual are display examples.
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1. Outline

ASIU is a component designed for Ethernet analyzer bus system. It is realized with the I/O unit software on FCN hardware.

ASIU is equipped max. 3 sets of I/O card and transfer I/O information to outside by two type interfaces: Modbus TCP Ethernet one port and Modbus RTU serial.

Modbus mapping is realized with address table and programming is not necessary.

FCN is described as ASIU is in this document.

![System Configuration Diagram]

**Figure 1.1** System Configuration

- **Network:** Ethernet (Redundancy is available. Port-1 is used on the single communication), Serial (RS-232C)
- **Power card:** Single
- **CPU card:** Single
- **DI card:** 1 pc (Read up to 16 points)
- **DO card:** 1 pc (Read and write up to 16 points)
- **AI card:** 1 pc (Read and write up to 16 points)
2. Configuration

This chapter explains the configuration of the hardware and software of STARDOM FCN required for ASIU.

Refer to the General Specifications of STARDOM for details of each item.

2.1 Hardware configuration

The following type FCN is required for the ASIU.

* Specification Code

Specify these codes when ordering.

<table>
<thead>
<tr>
<th>Model Name</th>
<th>Item</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>NFBU200-S□□</td>
<td>Base module</td>
<td></td>
</tr>
<tr>
<td>NFCP100-S0□□</td>
<td>CPU module</td>
<td></td>
</tr>
<tr>
<td>NFPW441-1□</td>
<td>Power module 100 to 120 V AC</td>
<td></td>
</tr>
<tr>
<td>NFPW442-1□</td>
<td>Power module 220 to 240 V AC</td>
<td></td>
</tr>
<tr>
<td>NFPW444-1□</td>
<td>Power module 24 V DC</td>
<td></td>
</tr>
<tr>
<td>NFDV151</td>
<td>Digital input module</td>
<td>32 points, 24 V DC</td>
</tr>
<tr>
<td>NFDV551</td>
<td>Digital output module</td>
<td>32 points, 24 V DC</td>
</tr>
<tr>
<td>NFDR541</td>
<td>Relay output module</td>
<td>16 points, 24 to 110 V DC /100 to 240 V AC</td>
</tr>
<tr>
<td>NFAI135</td>
<td>Analog input module</td>
<td>4 to 20 mA, 8 points, channel isolation</td>
</tr>
<tr>
<td>NFAI143</td>
<td>Analog input module</td>
<td>4 to 20 mA, 16 points, system isolation</td>
</tr>
<tr>
<td>NFDCV01</td>
<td>Dummy cover</td>
<td>Cover for empty I/O module</td>
</tr>
<tr>
<td>NFDCV02</td>
<td>Dummy cover</td>
<td>Cover for empty power module</td>
</tr>
</tbody>
</table>

2.2 Software configuration

ASIU requires the license and software shown below.

<table>
<thead>
<tr>
<th>License Code</th>
<th>Item</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>NT711AJ-LS05A</td>
<td>FCN/FCJ basic software license for single CPU without Java</td>
<td>It is supplied by a system card.</td>
</tr>
<tr>
<td>NT8035J-LW11A</td>
<td>Modbus communication portfolio license</td>
<td>The license number is indicated on the order ID sheet.</td>
</tr>
</tbody>
</table>
The following software is required as an engineering tool.

<table>
<thead>
<tr>
<th>CD-ROM Code</th>
<th>Item</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>NT203AJ-PC11E</td>
<td>Resource configurator</td>
<td>It is supplied by CD ROM. Loading a license for installation Modification of IP address</td>
</tr>
</tbody>
</table>
3. Functions

ASIU has the following functions.

1. Access the I/O cards (DI read, DO write and read back, AI read)
2. Creating the alarm information
3. Interface to DCS through Modbus RTU Slave or Modbus TCP Server

3.1 I/O card

ASIU accesses the I/O card such as DI, DO and AI attached on the FCN to read and write the data periodically.

Scan interval: 100 msec.

The slots which is not assign the I/O on the resource configurator are not made a read and write, even IOP check.

- **DI card**
  
  Max. 16 points of the digital inputs are read periodically.

- **DO card**
  
  Max. 16 points of the digital output are written and read back the output status periodically.

- **AI card**
  
  Max. 16 points of the analog data is read periodically.

  Data type: Real number
  
  Range: 0.0 to 1.0
  
  Accuracy: It follows the specification of each module used. Refer to the GS of the relevant analog card.

<table>
<thead>
<tr>
<th>Input signal</th>
<th>AI</th>
<th>IOP</th>
</tr>
</thead>
<tbody>
<tr>
<td>106.3 % or more</td>
<td>1.0</td>
<td>1</td>
</tr>
<tr>
<td>100 to 106.3 %</td>
<td>1.0</td>
<td>0</td>
</tr>
<tr>
<td>0 to 100 %</td>
<td>0.0 to 1.0</td>
<td>0</td>
</tr>
<tr>
<td>-6.3 to 0 %</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>-6.3 % or less</td>
<td>0.0</td>
<td>1</td>
</tr>
</tbody>
</table>

The value of the analog data which is not assigned on the resource configurator is always 0, and the IOP is also 0.
3.2 Alarm information

ASIU checks the status of I/O and power card, and the following alarm information is provided on Modbus interface as Boolean data.

- Main power failure, 24 V DC power failure, I/O module failure

3.3 Modbus interface table

ASIU has the function of Modbus TCP Server and Modbus RTU slave at the same time, and indicate DI, DO, AI and the alarm information on the specific address by mapping. The writing command to DO is also set on the specific address by Modbus interface.

### Modbus interface table

<table>
<thead>
<tr>
<th>Function</th>
<th>Function Code</th>
<th>BIT/WORD</th>
<th>Maximum data by access in one communication packet.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Read coil status</td>
<td>1 (0x01)</td>
<td>BIT</td>
<td>2000 bits</td>
</tr>
<tr>
<td>Read input relay status</td>
<td>2 (0x02)</td>
<td>BIT</td>
<td>2000 bits</td>
</tr>
<tr>
<td>Read holding registers</td>
<td>3 (0x03)</td>
<td>WORD</td>
<td>125 words</td>
</tr>
<tr>
<td>Read input registers</td>
<td>4 (0x04)</td>
<td>WORD</td>
<td>125 words</td>
</tr>
<tr>
<td>Write coil</td>
<td>5 (0x05)</td>
<td>BIT</td>
<td>1 bit</td>
</tr>
<tr>
<td>Write single register</td>
<td>6 (0x06)</td>
<td>WORD</td>
<td>1 word</td>
</tr>
<tr>
<td>Loopback test</td>
<td>8 (0x08)</td>
<td>WORD</td>
<td>1 word</td>
</tr>
<tr>
<td>Write multiple coils</td>
<td>15 (0x0F)</td>
<td>BIT</td>
<td>800 bits</td>
</tr>
<tr>
<td>Write multiple registers</td>
<td>16 (0x10)</td>
<td>WORD</td>
<td>100 words</td>
</tr>
<tr>
<td>Read device ID *</td>
<td>43 (0x2B)</td>
<td>ASCII string</td>
<td></td>
</tr>
</tbody>
</table>

*: Device ID consists of vendor, product code and revision number.

Vendor: "YOKOGAWA"

Product: "ASIU"

REVISION: "1.01.01" (example)

- **Max number of Client**

  When Modbus TCP Server is used, up to 4 clients (DCS) can be connected at the same time. When the multiple clients request the same command, the last requested command in the action interval of ASIU is accepted.

- **Update Interval**

  The Modbus data is updated every 100 msec for DI, DO, AI and all alarm information.

- **Serial Port**

  RS-232C COM port on CPU card is used for Modbus RTU.

- **Monitoring Time**

  When there is no command from a client as a Modbus TCP server within 30 sec, the communication is cut off.
Coil (00001 to 09999)

<table>
<thead>
<tr>
<th>Data</th>
<th>Address</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DO ON command</td>
<td>00101 to 00116</td>
<td>A 1 is set when DO001 to DO016 is ON. The coil is back to 0 automatically after setting a 1.</td>
</tr>
<tr>
<td>DO OFF command</td>
<td>00201 to 00216</td>
<td>A 1 is set when DO001 to DO016 is OFF. The coil is back to 0 automatically after setting a 1.</td>
</tr>
</tbody>
</table>

Input relay (10001 to 19999)

<table>
<thead>
<tr>
<th>Data</th>
<th>Address</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASIU normal</td>
<td>10001</td>
<td>Neither Power Failure, I/O module error nor IOP status happens. All of the address from 12001 to 12199 has 0 values.</td>
</tr>
<tr>
<td>ASIU error</td>
<td>10002</td>
<td>Either Power Failure, I/O module error or IOP status happens. One of the addresses from 12001 to 12199 has 1 value.</td>
</tr>
<tr>
<td>DI (Digital Input) read</td>
<td>10301 to 10316</td>
<td>DI01 to DI16</td>
</tr>
<tr>
<td>DO (Digital Output) read</td>
<td>10401 to 10416</td>
<td>DO16 to DO16</td>
</tr>
<tr>
<td>Power Failure</td>
<td>12001, 12002</td>
<td>A 1 is displayed when Main Power is failed. A 1 is displayed when 24 V DC Power is failed.</td>
</tr>
<tr>
<td>I/O module error</td>
<td>12011 to 12014</td>
<td>A 1 is displayed when the module is failed. The address is followed the location of the I/O module. From left to right, 11, 12, 13 and 14 is applied.</td>
</tr>
<tr>
<td>AI IOP status</td>
<td>12101 to 12116</td>
<td>It corresponds to AI01 to AI16. A 1 is displayed when it is IOP status.</td>
</tr>
</tbody>
</table>

Input register (30001 to 39999)

<table>
<thead>
<tr>
<th>Data</th>
<th>Address</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AI read (Real data)</td>
<td>30401 to 30432</td>
<td>The average value during 1 second with 10 scans times. However when it is IOP status, IOP value, which is 0 or 1, is displayed. When real number format is selected, the data is displayed with 2 words address. The data range is 0.0 to 1.0</td>
</tr>
<tr>
<td>AI read (9999)</td>
<td>30501 to 30516</td>
<td>The average value during 1 second with 10 scans times. However when it is IOP status, IOP value, which is 0 or 9999, is displayed. It means data normalized by 9999 (Scaling Coefficient). The data range is 0 to 9999</td>
</tr>
<tr>
<td>AI read (65535)</td>
<td>30601 to 30616</td>
<td>The average value during 1 second with 10 scans times. However when it is IOP status, IOP value, which is 0 or 65535, is displayed. It means data normalized by 65535 (Scaling Coefficient). The data range is 0 to 65535</td>
</tr>
</tbody>
</table>

Holding register (40001 to 49999)

<table>
<thead>
<tr>
<th>Data</th>
<th>Address</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not used</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Access to the address not listed or mapped**

Access to the address that is not shown on the table or not mapped does not generate an error. However, the value of data is uncertain.

DCS can write on coil or holding register of ASGW that is not defined, however ASGW does not write it on analyzers and the written data is kept on ASIU until turning off.
4. Engineering

ASIU requires the engineering at installation, and modification.

The install procedure of FCN is referred to “STARDOM FCN/FCJ Software Installation” (IM 34P02Q91-01E), and “STARDOM FCN/FCJ Guide” (IM 34P02Q01-01E).

4.1 Installation

This section explains the setup of FCN, license registration, loading of the application software, initializing of IP address and assignment of I/O cards.

4.1.1 Preparation

- **Installation of the engineering tool**
  Install the resource configurator software from CD-ROM (NT203AJ-PC11E) to PC.
  Resource configurator software is an engineering tool for STARDOM FCN/FCJ.

- **Installation of the ASIU software**
  Set the ASIU application software CD on PC.
  Uncompress the following compressed file on PC.
  (CD Drive)/ASIU/INSTALL_ASIU.ZIP

  Confirm the following folder is created.
  [Uncompressed folder]/INSTALL_ASIU

4.1.2 Initial setting

- **Loading the license file**
  Download the FCN license file from the STARDOM license publishing web site.
  Refer to D1. License in “STARDOM FCN/FCJ Guide” (IM 34P02Q01-01E) about the license.
Setting the system card

Set the system compact flash card for FCN to PC by USB adaptor.
Run the following batch file.

[Uncompressed folder]/INSTALL_ASIU/install_ASIU.bat

This batch file sets the ASIU application and system setting file on the system card.
System setting file includes initial IP address setting.
The initial IP address can be changed later.
After writing, the system card set on the CPU card of FCN, and turn on the FCN.
Initial IP address = 192.168.1.101

NOTE

Do not format the system compact flash card. The card becomes invalid and new one is required.

Initializing with resource configurator

The method of initial setting operation with resource configurator is described on the instruction manual of FCN.
The work flow is described in this chapter. However, refer to the instruction manual for details of each operation.

(1) Setting the IP address
Refer to 4.3.1 Modification of IP address.

(2) Downloading the license file
Download the license file that is loaded from the STARDOM web site to ASIU with the resource configurator.
Refer to on-line help of resource configurator.

(3) Setting the network
Specify the Ethernet connection for ASIU if it is single or duplex.
Ethernet of ASIU has dual or single type and dual type has duplex and separated mode.
After completing the above 3 items, download the information by [File] - [Download].
Reboot the ASIU by pressing Reset button or Web browser. After starting ASIU confirm that the IP address is correct by ping command of PC.

(4) Assignment of I/O terminal and application
ASIU application reads the data to access Device Label, which is DI variable, DO variable and AI variable. It is accessible by assignment of Device Label into I/O terminal. The Device Label has no relation with I/O terminal at the initial installation. Refer to 4.2.1 Assignment of I/O terminal.

(5) Setting the serial port
In the case of Modbus RTU, the communication parameters should be adjusted to a connected device.
Refer to 4.3.2 Modification of serial port setting.
4.2 Modification work

There are 2 modification works at site. One is to change of IP address and the other is to change an assignment of I/O terminal. Here explains how to change the assignment of I/O terminal. This work requires the resource configurator.

Assignment of I/O terminal

ASIU application accesses Device Label, which is DI variable, DO variable and AI variable. It is accessible by assignment of Device Label into I/O terminal. This assignment work is executed after the following works are completed. Loading of ASIU application and the license, and setting of IP address.

The following Device Label in the table is defined in an ASIU. Assign these Device Label into I/O module terminal by resource configurator.

<table>
<thead>
<tr>
<th>Signal</th>
<th>Device label</th>
<th>Data Range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analog input</td>
<td>ASIU_AI_01</td>
<td>0.0 - 1.0</td>
<td>Correspond to AI01 in Modbus table</td>
</tr>
<tr>
<td></td>
<td>ASIU_AI_02</td>
<td>0.0 - 1.0</td>
<td>Correspond to AI02 in Modbus table</td>
</tr>
<tr>
<td></td>
<td>ASIU_AI_16</td>
<td>0.0 - 1.0</td>
<td>Correspond to AI16 in Modbus table</td>
</tr>
<tr>
<td>Degital input</td>
<td>ASIU_DI_01</td>
<td></td>
<td>Correspond to DI01 in Modbus table</td>
</tr>
<tr>
<td></td>
<td>ASIU_DI_02</td>
<td></td>
<td>Correspond to DI02 in Modbus table</td>
</tr>
<tr>
<td></td>
<td>ASIU_DI_16</td>
<td></td>
<td>Correspond to DI16 in Modbus table</td>
</tr>
<tr>
<td>Degital output</td>
<td>ASIU_DO_01</td>
<td></td>
<td>Correspond to DO01 in Modbus table</td>
</tr>
<tr>
<td></td>
<td>ASIU_DO_02</td>
<td></td>
<td>Correspond to DO02 in Modbus table</td>
</tr>
<tr>
<td></td>
<td>ASIU_DO_16</td>
<td></td>
<td>Correspond to DO16 in Modbus table</td>
</tr>
</tbody>
</table>

(1) Start Resource Configurator
   Connect ASIU to a PC for operation by Ethernet. Turn on ASIU and start Resource Configurator on the PC.

(2) Connect to ASIU
   Press Connect at Menu bar, and then input IP address of ASIU. The information inside ASIU is uploaded from ASIU and displayed.

(3) Verify the project
   Display the project information in the uploaded one from ASIU, and then confirm that the project name is "ASIU". When the project name is different, re-execute the setting of system card at Initial Setting of ASIU.
4.3 Supplement

This chapter explains how to change the IP address of ASIU.

The tool software that is shown below needs to be installed on PC.

<table>
<thead>
<tr>
<th>CD-ROM Code</th>
<th>Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>NT203AJ-PC11E</td>
<td>Resource configurator</td>
</tr>
</tbody>
</table>

4.3.1 Modification of IP addressing setting

■ Preparation of PC

Connect the PC on which resource configurator software is installed to FCN with Ethernet

■ Starting the ASIU on the IP address setting mode

There are two methods of starting the FCN on the IP address setting mode.

One is use of web browser on PC, the other is use of switches on CPU module.

Select one depending on the location of FCN.

During the IP address setting mode, LEDs on CPU module of FCN are indicated as follows.

HRDY: Flashing quickly
RDY: Flashing slowly
CTRL: Not lit

To release this mode, press the RESET button or turn off the power.

■ Method of use the switch on CPU module of FCN

(1) Turn on FCN, or press “RESET” button.

(2) FCN starts and during the “HRDY” and “RDY” LED are flashing rapidly (about for two seconds), press “SHUTDOWN” button once.

(3) FCN starts on IP address setting mode.

■ Method of use web browser on PC.

(1) Access to the URL

URL = http://FCJ’s IP address/MNT

User Account = “stardom”
Password = “YOKOGAWA”
(2) Click the Maintenance Menu

![STARDOM FCX Maintenance Page](image1)

- **Host name**: FCX
- **IP Address**: 192.168.1.101
- **Subnet Mask**: 255.255.255.0
- **MAC Address**: 00:0D:64:02:01:42
- **TYPE**: STARDOM/FCX
- **H/W Serial No**: C2EFB2161X
- **SysCard Serial No**: C13510616
- **OS Revision**: RL.79.01(BuildNo 3)
- **BootROM Revision**: RL.79.01(BuildNo 3)
- **JEtR05 Revision**: JR6.13.04.11
- **Main Memory(TOTAL)**: 141115318 byte
- **SRAM(TOTAL)**: 1048576 byte
- **Flash Memory(TOTAL)**: 31556845 byte
- **Flash Memory(FREE)**: 2066334 byte
- **Date and Time**: 2006/09/10 16:03:31
- **Timezone**: JST: +540:
- **Status**: Online

**Maintenance Menu**

(3) Click the Reboot

![FCX Maintenance Menu](image2)

- **System Setting File**
  - **Edit**
  - **Display**
  - **Initialize**
- **System Operation**
  - **Reboot**
  - **Set Date and Time**
  - **Save Retain Data**
  - **Display Log File**
  - **Display Resource Configuration**
  - **Display CPU Status**
  - **Download the Backup Tools**

**Top Page**
(4) Select the Reboot (IP Address Setting Mode) and press "OK"

FCN restarts on IP address setting mode.
Setting IP address

Start the resource configurator software on PC and wait for a message “A new controller is connected”.

When the message appears, select the “Setting IP Address” on “File” menu.

IP address, Subnet mask, Gateway and Time zone parameters are set on this dialogue window. Reboot the FCN after the setting.
4.3.2 Modification of serial port setting

In the case of using the Modbus RTU as external interface of ASIU, this operation is required. ASIU has two communication ports and all initial setting data are as follows.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baudrate</td>
<td>9600</td>
</tr>
<tr>
<td>DataBitLength</td>
<td>8</td>
</tr>
<tr>
<td>StopBitLength</td>
<td>1</td>
</tr>
<tr>
<td>Parity</td>
<td>NONE</td>
</tr>
</tbody>
</table>

After FCN mode is changed to maintenance mode, the communication port is set with the maintenance window on web browser.

Refer to the guide of STARDOM FCN/FCJ (IM 34P02Q01-01E) about the method of modification.

Setting parameters are “COM1 Port Setting File” or “COM2 Port Setting File”.

![Setting IP Address](image)
5. **OPC DA 2.0 Interface**

This chapter explains the OPC DA 2.0 interface of ASGW and ASIU.

Adding an OPC server of STARDOM to the system allows ASGW/ASIU to have the OPC interface. There is no need to add any special settings to the ASGW/ASIU application. Mapping Modbus data of ASIU to ASGW allows ASIU data to be read and written by accessing ASGW through the OPC interface.

### 5.1 System Configuration

![Diagram of System Configuration]

### 5.2 Software Required

ASGW do not require additional software to be installed for OPC. The STARDOM software listed below is required for a PC on which an OPC server is to be installed.

<table>
<thead>
<tr>
<th>Model</th>
<th>Item</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>NT781AJ</td>
<td>FCN/FCJ OPC Server for Windows</td>
<td></td>
</tr>
<tr>
<td>NT783AJ</td>
<td>Redundant Network Function License for FCN/FCJ OPC Server</td>
<td>Required only for redundant network.</td>
</tr>
</tbody>
</table>

### 5.3 Installation and Settings

For installation and settings of the OPC server and the duplexed package, refer to their respective user’s manuals or online help.

### 5.4 Update rate

Data for the OPC interface is updated every second. Therefore, a delay of about one second may occur when the OPC client reads the latest data from analyzers.

⚠️ TIP

Separating OPC data from Modbus data causes hogging of the CPU. To avoid this, the OPC data update rate is set to 1 second while the Modbus communication is updated every 200 ms.
5.5 List of OPC Data Names

The table below shows a list of ASGW/ASIU's data names that can be accessed via STARDOM OPC DA2.0 server. Data names are common to ASGW and ASIU.

ASGW/ASIU's node name designated in the setting file on the STARDOM OPC server is assigned to “Node.”

OPC data name example 1: ASGW01!@GV.IREG2(312) represents the address 32312 of the Modbus data of ASGW01.

OPC data name example 2: ASGW01!@GV.COIL2(1000) represents the address 03000 of the Modbus data of ASGW01.

- **COIL (00001 to 09000)**
  Read/write is possible. Writing data onto unmapped areas is ignored. Unmapped address data is always read as “FALSE”.

<table>
<thead>
<tr>
<th>OPC Data Name</th>
<th>OPC Data Type</th>
<th>Function</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Node!@GV.COIL0(n)</td>
<td>VT_BOOL</td>
<td>Modbus Address 00001 to 01000</td>
<td>n = 1 to 1000</td>
</tr>
<tr>
<td>Node!@GV.COIL1(n)</td>
<td>VT_BOOL</td>
<td>Modbus Address 01001 to 02000</td>
<td>n = 1 to 1000</td>
</tr>
<tr>
<td>Node!@GV.COIL2(n)</td>
<td>VT_BOOL</td>
<td>Modbus Address 02001 to 03000</td>
<td>n = 1 to 1000</td>
</tr>
<tr>
<td>Node!@GV.COIL3(n)</td>
<td>VT_BOOL</td>
<td>Modbus Address 03001 to 04000</td>
<td>n = 1 to 1000</td>
</tr>
<tr>
<td>Node!@GV.COIL4(n)</td>
<td>VT_BOOL</td>
<td>Modbus Address 04001 to 05000</td>
<td>n = 1 to 1000</td>
</tr>
<tr>
<td>Node!@GV.COIL5(n)</td>
<td>VT_BOOL</td>
<td>Modbus Address 05001 to 06000</td>
<td>n = 1 to 1000</td>
</tr>
<tr>
<td>Node!@GV.COIL6(n)</td>
<td>VT_BOOL</td>
<td>Modbus Address 06001 to 07000</td>
<td>n = 1 to 1000</td>
</tr>
<tr>
<td>Node!@GV.COIL7(n)</td>
<td>VT_BOOL</td>
<td>Modbus Address 07001 to 08000</td>
<td>n = 1 to 1000</td>
</tr>
<tr>
<td>Node!@GV.COIL8(n)</td>
<td>VT_BOOL</td>
<td>Modbus Address 08001 to 09000</td>
<td>n = 1 to 1000</td>
</tr>
</tbody>
</table>

- **DSCI (10001 to 19000)**
  Read only. Writing through the OPC interface does not cause an error, but nothing can be written onto the Modbus area of ASGW/ASIU. Unmapped address data is always read as “FALSE”.

<table>
<thead>
<tr>
<th>OPC Data Name</th>
<th>OPC Data Type</th>
<th>Function</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Node!@GV.DSCI0(n)</td>
<td>VT_BOOL</td>
<td>Modbus Address 10001 to 11000</td>
<td>n = 1 to 1000</td>
</tr>
<tr>
<td>Node!@GV.DSCI1(n)</td>
<td>VT_BOOL</td>
<td>Modbus Address 11001 to 12000</td>
<td>n = 1 to 1000</td>
</tr>
<tr>
<td>Node!@GV.DSCI2(n)</td>
<td>VT_BOOL</td>
<td>Modbus Address 12001 to 13000</td>
<td>n = 1 to 1000</td>
</tr>
<tr>
<td>Node!@GV.DSCI3(n)</td>
<td>VT_BOOL</td>
<td>Modbus Address 13001 to 14000</td>
<td>n = 1 to 1000</td>
</tr>
<tr>
<td>Node!@GV.DSCI4(n)</td>
<td>VT_BOOL</td>
<td>Modbus Address 14001 to 15000</td>
<td>n = 1 to 1000</td>
</tr>
<tr>
<td>Node!@GV.DSCI5(n)</td>
<td>VT_BOOL</td>
<td>Modbus Address 15001 to 16000</td>
<td>n = 1 to 1000</td>
</tr>
<tr>
<td>Node!@GV.DSCI6(n)</td>
<td>VT_BOOL</td>
<td>Modbus Address 16001 to 17000</td>
<td>n = 1 to 1000</td>
</tr>
<tr>
<td>Node!@GV.DSCI7(n)</td>
<td>VT_BOOL</td>
<td>Modbus Address 17001 to 18000</td>
<td>n = 1 to 1000</td>
</tr>
<tr>
<td>Node!@GV.DSCI8(n)</td>
<td>VT_BOOL</td>
<td>Modbus Address 18001 to 19000</td>
<td>n = 1 to 1000</td>
</tr>
</tbody>
</table>
IREG (30001 to 39000)

Read only. Writing through the OPC interface does not cause an error, but nothing can be written onto the Modbus area of ASGW/ASIU. Unmapped address data is always read as “0.”

<table>
<thead>
<tr>
<th>OPC Data Name</th>
<th>OPC Data Type</th>
<th>Function</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Node!@GV.IREG0(n)</td>
<td>VT/UI2</td>
<td>Modbus Address 30001 to 31000</td>
<td>n = 1 to 1000</td>
</tr>
<tr>
<td>Node!@GV.IREG1(n)</td>
<td>VT/UI2</td>
<td>Modbus Address 31001 to 32000</td>
<td>n = 1 to 1000</td>
</tr>
<tr>
<td>Node!@GV.IREG2(n)</td>
<td>VT/UI2</td>
<td>Modbus Address 32001 to 33000</td>
<td>n = 1 to 1000</td>
</tr>
<tr>
<td>Node!@GV.IREG3(n)</td>
<td>VT/UI2</td>
<td>Modbus Address 33001 to 34000</td>
<td>n = 1 to 1000</td>
</tr>
<tr>
<td>Node!@GV.IREG4(n)</td>
<td>VT/UI2</td>
<td>Modbus Address 34001 to 35000</td>
<td>n = 1 to 1000</td>
</tr>
<tr>
<td>Node!@GV.IREG5(n)</td>
<td>VT/UI2</td>
<td>Modbus Address 35001 to 36000</td>
<td>n = 1 to 1000</td>
</tr>
<tr>
<td>Node!@GV.IREG6(n)</td>
<td>VT/UI2</td>
<td>Modbus Address 36001 to 37000</td>
<td>n = 1 to 1000</td>
</tr>
<tr>
<td>Node!@GV.IREG7(n)</td>
<td>VT/UI2</td>
<td>Modbus Address 37001 to 38000</td>
<td>n = 1 to 1000</td>
</tr>
<tr>
<td>Node!@GV.IREG8(n)</td>
<td>VT/UI2</td>
<td>Modbus Address 38001 to 39000</td>
<td>n = 1 to 1000</td>
</tr>
</tbody>
</table>

HREG (40001 to 49000)

Read/write is possible. Writing data onto unmapped areas is ignored. Do not write data onto the DSCI-mapped address since the DCS may read wrong values until ASGW/ASIU reads the next data from devices. Unmapped address data is always read as “0.”

<table>
<thead>
<tr>
<th>OPC Data Name</th>
<th>OPC Data Type</th>
<th>Function</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Node!@GV.HREG0(n)</td>
<td>VT/UI2</td>
<td>Modbus Address 40001 to 41000</td>
<td>n = 1 to 1000</td>
</tr>
<tr>
<td>Node!@GV.HREG1(n)</td>
<td>VT/UI2</td>
<td>Modbus Address 41001 to 42000</td>
<td>n = 1 to 1000</td>
</tr>
<tr>
<td>Node!@GV.HREG2(n)</td>
<td>VT/UI2</td>
<td>Modbus Address 42001 to 43000</td>
<td>n = 1 to 1000</td>
</tr>
<tr>
<td>Node!@GV.HREG3(n)</td>
<td>VT/UI2</td>
<td>Modbus Address 43001 to 44000</td>
<td>n = 1 to 1000</td>
</tr>
<tr>
<td>Node!@GV.HREG4(n)</td>
<td>VT/UI2</td>
<td>Modbus Address 44001 to 45000</td>
<td>n = 1 to 1000</td>
</tr>
<tr>
<td>Node!@GV.HREG5(n)</td>
<td>VT/UI2</td>
<td>Modbus Address 45001 to 46000</td>
<td>n = 1 to 1000</td>
</tr>
<tr>
<td>Node!@GV.HREG6(n)</td>
<td>VT/UI2</td>
<td>Modbus Address 46001 to 47000</td>
<td>n = 1 to 1000</td>
</tr>
<tr>
<td>Node!@GV.HREG7(n)</td>
<td>VT/UI2</td>
<td>Modbus Address 47001 to 48000</td>
<td>n = 1 to 1000</td>
</tr>
<tr>
<td>Node!@GV.HREG8(n)</td>
<td>VT/UI2</td>
<td>Modbus Address 48001 to 49000</td>
<td>n = 1 to 1000</td>
</tr>
</tbody>
</table>

**NOTE**

Although the input relay and input register are read-only data, they are not write protected in the OPC interface. They should be engineered so that they are write protected from the OPC client application. Otherwise, if ASGW/ASIU is connected to DCS, the value of input relay or input register that has been accidentally written via the OPC interface may be read by the DCS.
Revision Information

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