



THE VISION IS YOURS

IMPACT DEVICE RSLogix 5000 EDS- AOI QuickStart Guide

Updated Dec. 2016

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Overview

- The Electronic Data Sheet (EDS) and Add-On Instruction (AOI) are designed to enhance the integration experience of the technician tasked with the installation and commissioning of EIP communication between an IMPACT Vision Device and a PLC which is programmed with RSLogix 5000 software.
- The EDS file registers the IMPACT Device as a selectable Ethernet Module in the RSLogix 5000 software. When the module is added to a Controllogix or Compactlogix project, it configures the communication parameters.
- The AOI is imported to a RSLogix 5000 Controllogix or Compactlogix project, and is instantiated for each IMPACT device.
- The AOI v2.x was created with RSLogix v20.03. It is intended for use with RSLogix v20 and later.
- This QuickStart Guide assumes the user's familiarity with this process. For complete instructions please refer to the IMPACT DEVICE RSLogix 5000 EDS-AOI User Guide.

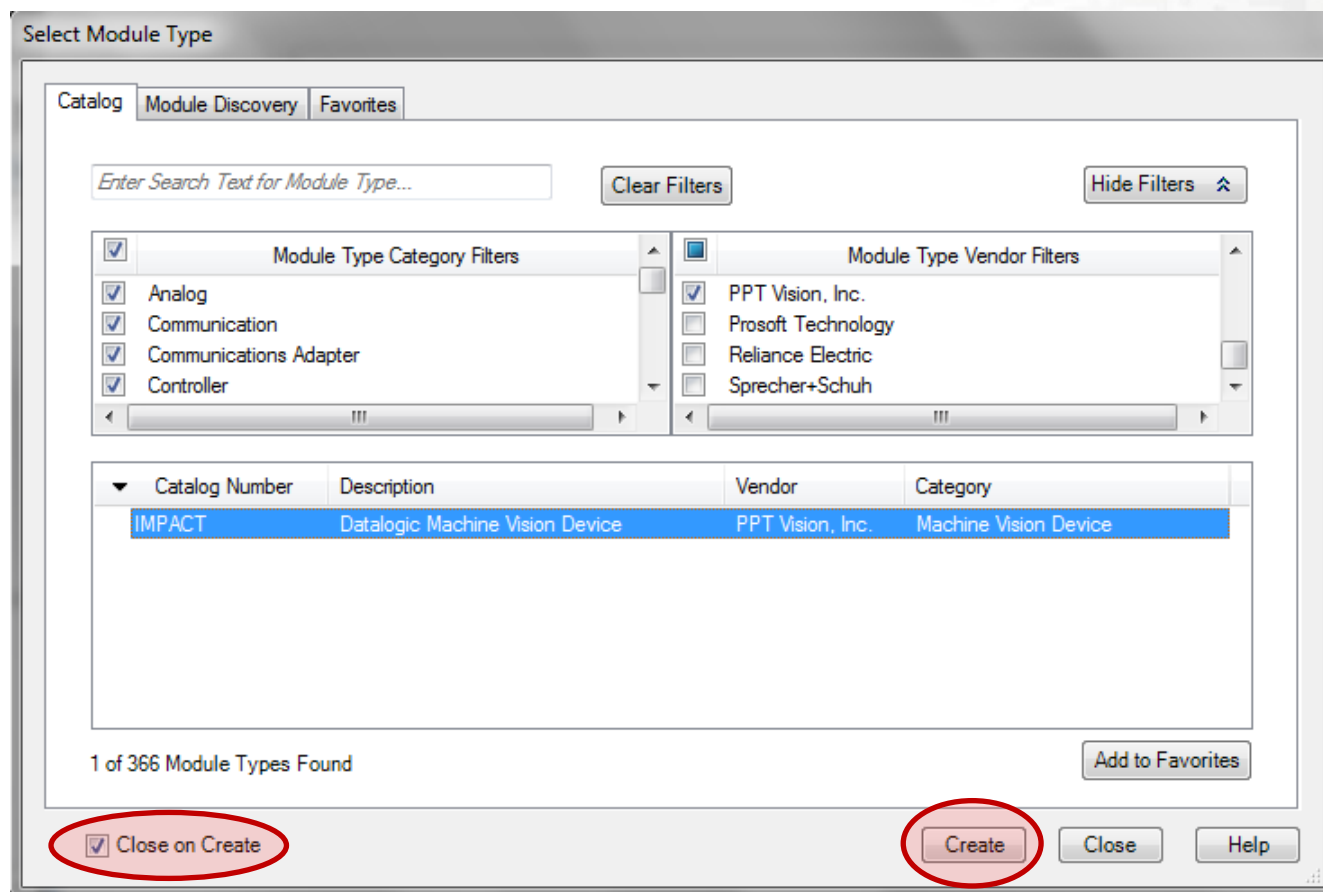
Register the EDS File

- Use the RSLogix EDS Hardware Installation Tool to register the EDS file.
- Once registered, the IMPACT module(s) can be created and installed into the Ethernet I/O tree of the Logix Processor.
- V2.x creates a data transfer of 48 values both in and out. The first 8 are reserved for dedicated control and status. The remaining 40 values are for User Data.

Create the Ethernet I/O Module(s)

- The creation of the Ethernet module will create Module-Defined Data Types, as well as add Input and Output tag sets to the Controller Tags database. The Input and Output tag sets use the name defined in the creation of the Ethernet module.

Creating the Module - Select



Change Module Data Type to REAL

The screenshot shows the 'New Module' dialog box with the following details:

- General Tab:**
 - Type: IMPACT Datalogic Machine Vision Device
 - Vendor: PPT Vision, Inc.
 - Parent: EIP_Scanner
 - Name: Camera_1
 - Description: (Empty text area)
- Ethernet Address:**
 - Private Network: 192.168.1 (disabled)
 - IP Address: 192 . 168 . 108 . 81 (selected)
 - Host Name: (Empty text field)
- Module Definition:**
 - Revision: 1.1
 - Electronic Keying: Compatible Module
 - Connections: O<->T
 - Change ... button
- Status:** Creating
- Buttons:** OK, Cancel, Help

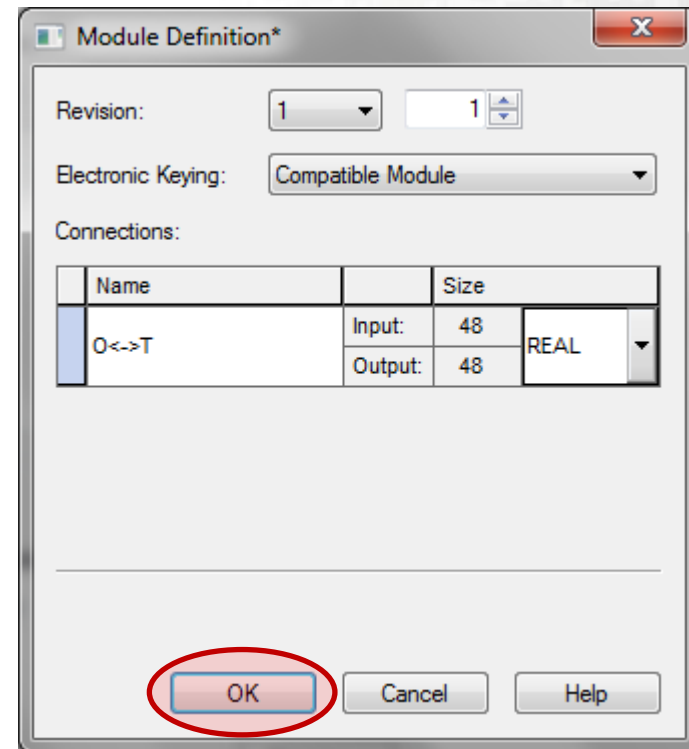
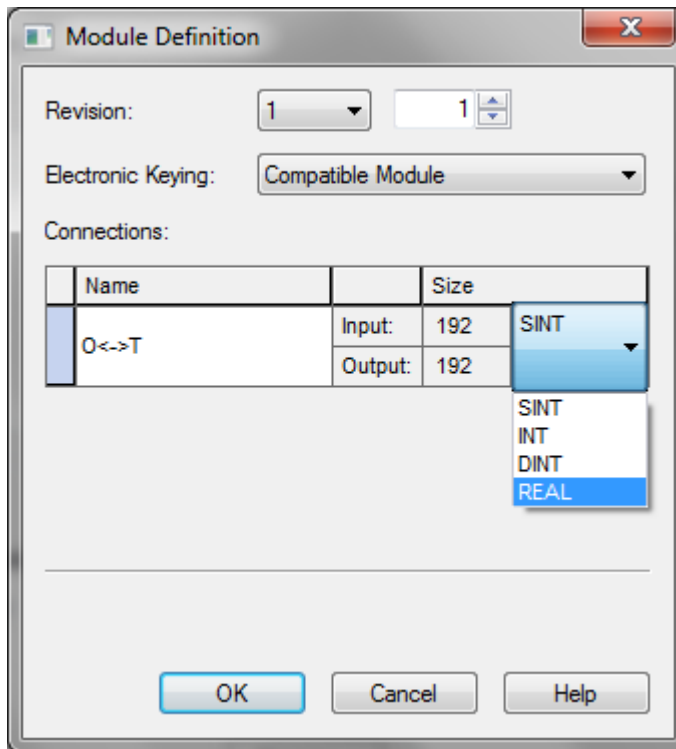
The new module window appears once the module has been created.

Naming the device in a manner relevant to the process or task intuitively identifies the device for all users.

Enter the IP address for the device. With a unique identifier for a name, (Camera_1 in this example), and an IP address.

Select the Change button under Module Definition.

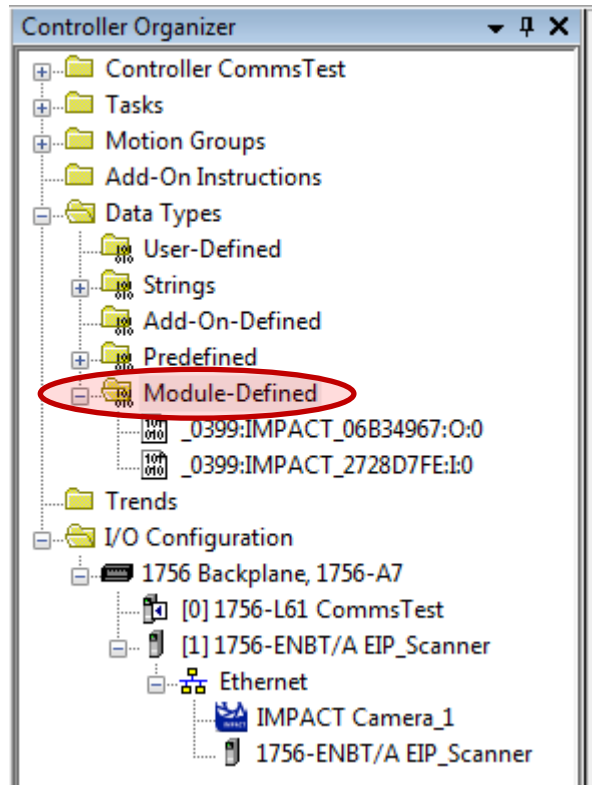
Change Module Data Type to REAL



Select REAL. When the SINT has been replaced with REAL, press the OK pushbutton.

A message box will appear indicating that the data type of the module will be changed.

Created Module-Defined Data Types



The new module icon appears in the Ethernet I/O tree under the appropriate Ethernet Card.

Using a process-based naming approach to identify the I/O module makes module identification easier and quicker.

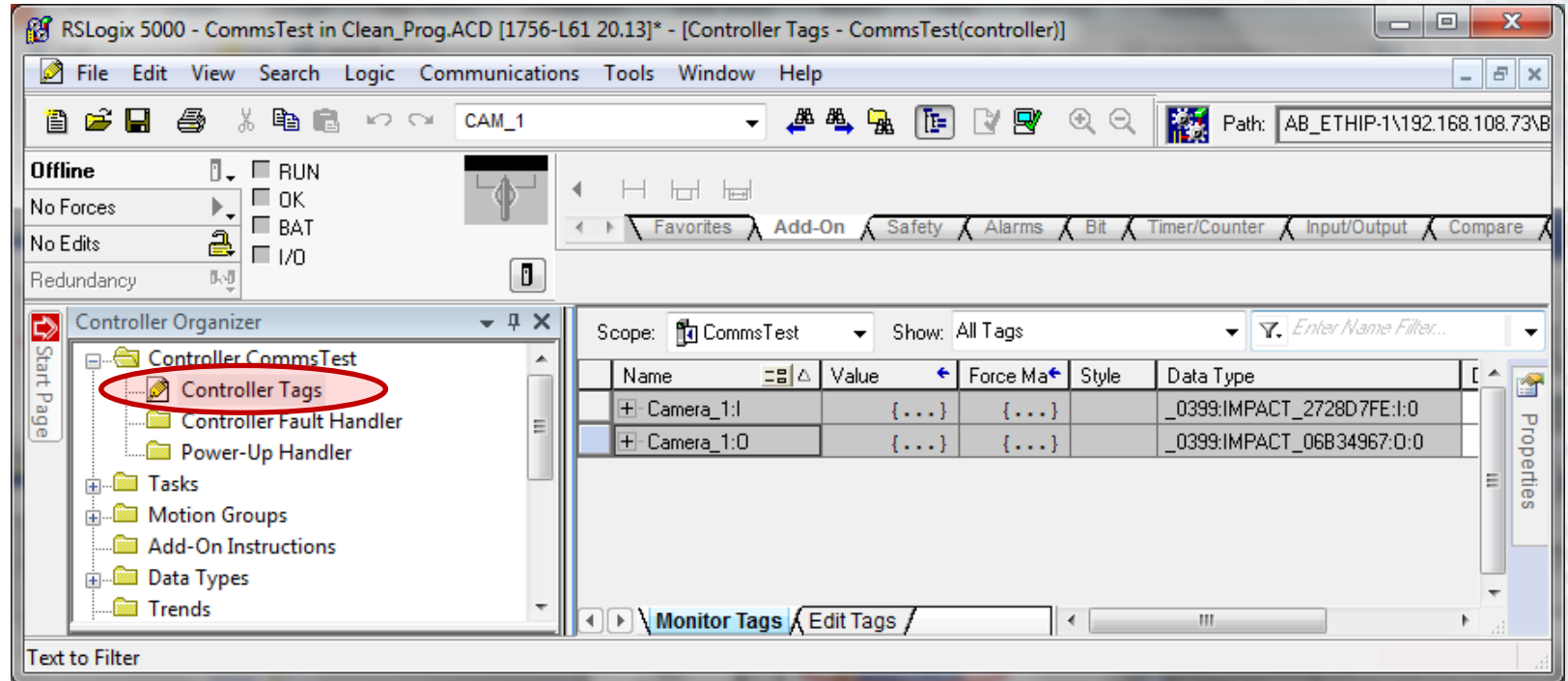
Open the Data Type directory and double click on the Module Defined sub-folder to reveal the two data types created with the module.

The Data types created by the module consist of two data types, an Input and an Output.

The first 8 REALS in either direction are reserved for IMPACT Control use.

There are 40 Real In and 40 Real Out available as User Data for transfer purposes. Though they are defined here as Real, an Integer or a String can also be Copied to these values and then defined as such in the Impact software to transfer data using these data types.

Created Controller Tags



Two controller-level tag sets were also created, one for each Module-Defined Data Type, and named the same as the module name entered in Step 6.

These tags will be used by the Add-On Instruction, as illustrated in the Instantiating the Add-On Instruction section.

Import the AOI

- Once the IMPACT Vision Device EDS file is registered with the RSLogix5000 software, and the module has been created, the Add-On Instruction can be imported.
- The AOI references the Module-Defined data types, as well as the tags created with the module, thus the installation sequence.

Importing the AOI

Controller Organizer

Scope: **IMPACT_Vision_Device** Show: All Tags

Data Context: **IMPACT_Vision_Device <d**

Name	Usage	Default	Force Ma	Style	Data Type	De
ModInstIn	InOut	{...}	{...}		_0399:IMPACT_2728D7FE:I:0	
ModInstOut	InOut	{...}	{...}		_0399:IMPACT_06B34967:O:0	
Online_Control	Input	0		Decimal	BOOL	
Online_Status	Output	0		Decimal	BOOL	
ShutterTime	Input	0.0		Float	REAL	
ShutterTime_Status	Output	0.0		Float	REAL	
Trigger	Input	0		Decimal	BOOL	
Trigger_Overrun_...	Output	0		Decimal	BOOL	
Trigger_Status	Output	0		Decimal	BOOL	
User_Event_1	Input	0		Decimal	BOOL	
User_Event_1_St...	Output	0		Decimal	BOOL	
User_Event_2	Input	0		Decimal	BOOL	

After importing the IMPACT_Vision_Device AOI:

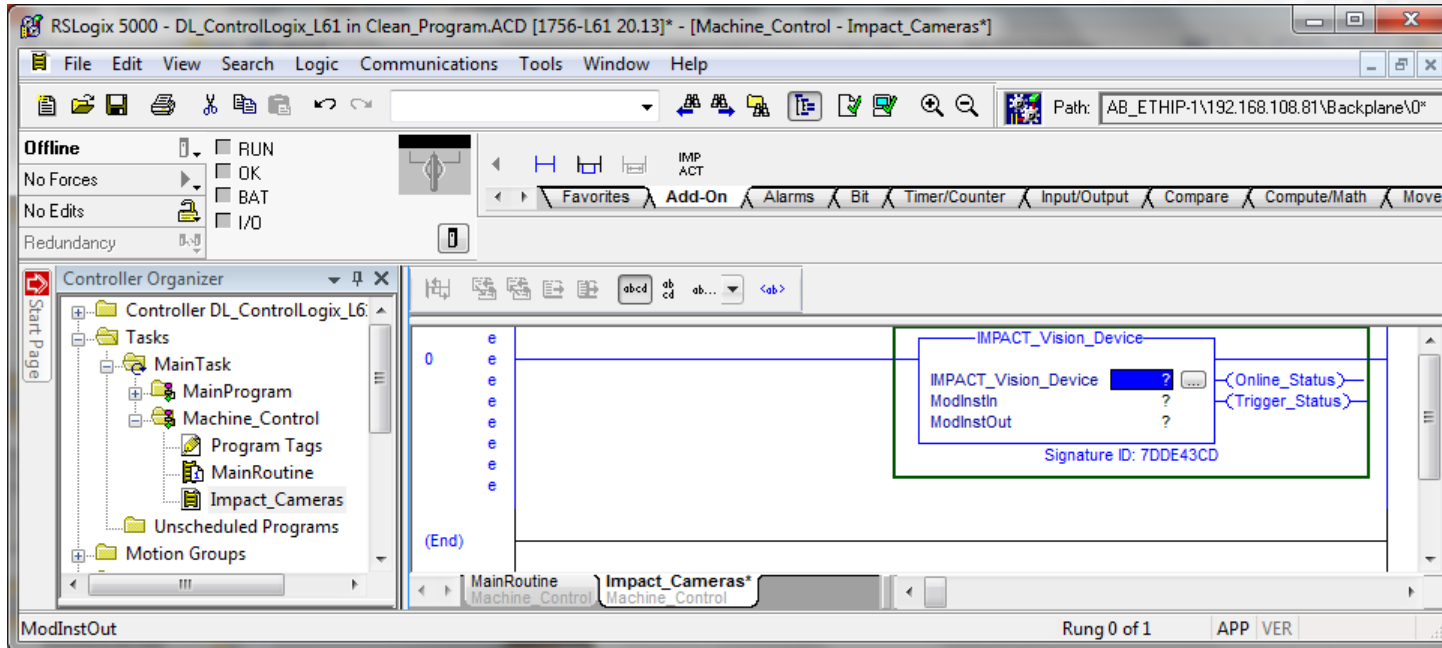
Double Click on the Parameters and Local Tags under the newly imported IMPACT_Vision_Device Add-On Instruction, which brings up the definition screen for the Instruction.

Verify that the ModInstIn and ModInstOut Data Type ID numbers match that of the Module Defined Data Type. If not, this signifies that the EDS and AOI do not match. Contact Datalogic for further assistance.

Instantiate the AOI

- Once the IMPACT Vision Device EDS file is registered with the RSLogix5000 software, the module has been created, and the Add-On Instruction has been imported; the IMPACT Add-On instruction can be used.
- The AOI references the Module-Defined data types, as well as the tags created with the module.
- When the IMPACT Add-On instruction is instantiated in a Program, it creates Program specific tags within that Program.
- The majority of the parameters (tags) required by the instruction already exist because of the EDS file registration, Ethernet module installation, and AOI importation.
- A basic installation only requires instantiating the device.

Instantiate the AOI – Step 1

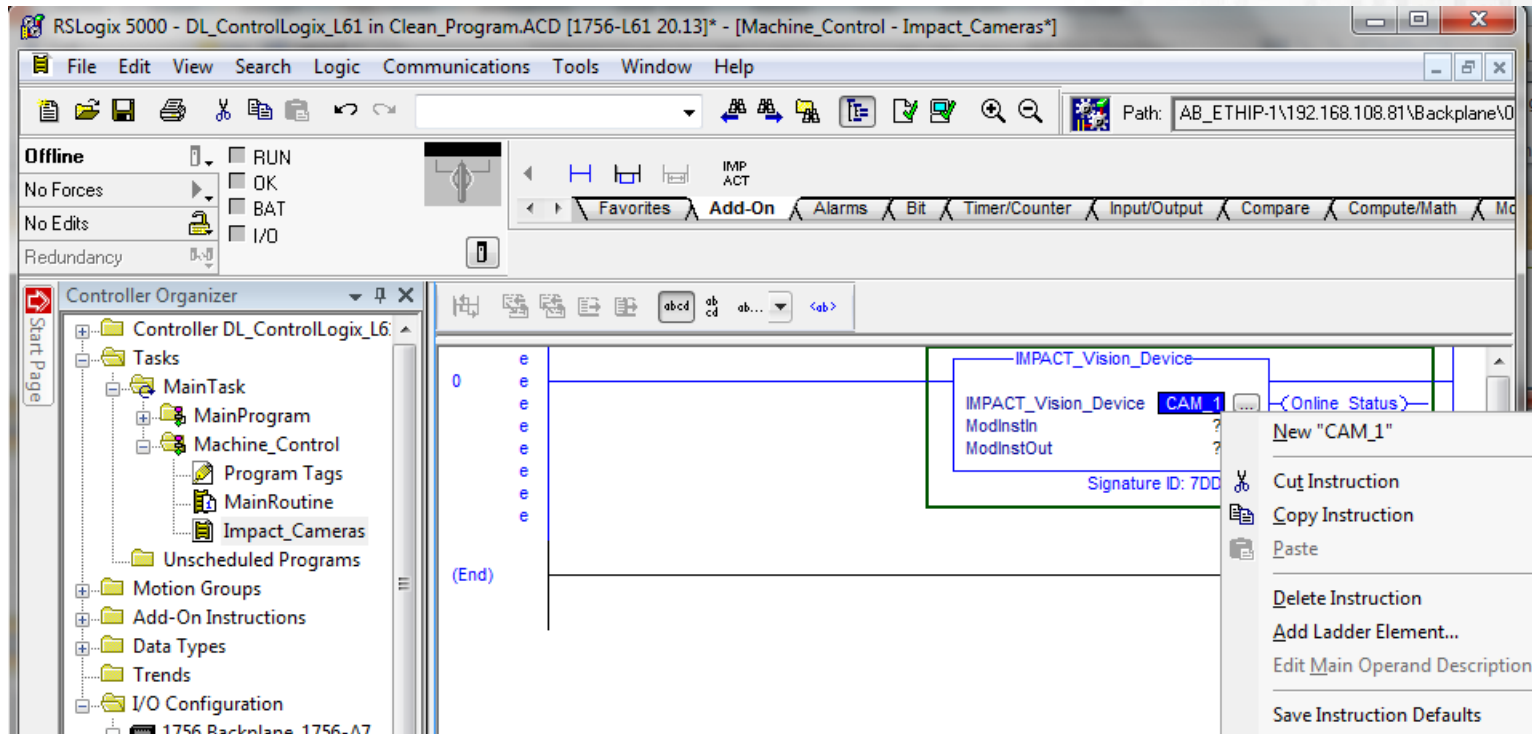


The Controller Level tags created with the module, Camera_1, took the name of the IMPACT Device.

Creating a new program for the IMPACT Device allows the instantiation of the instruction using the same tag name, because the tag will be program scoped, avoiding conflict with the controller scoped tags created by the module.

Creating a separate routine for every Device aids in troubleshooting efforts, while encapsulating the programming for efficient replication.

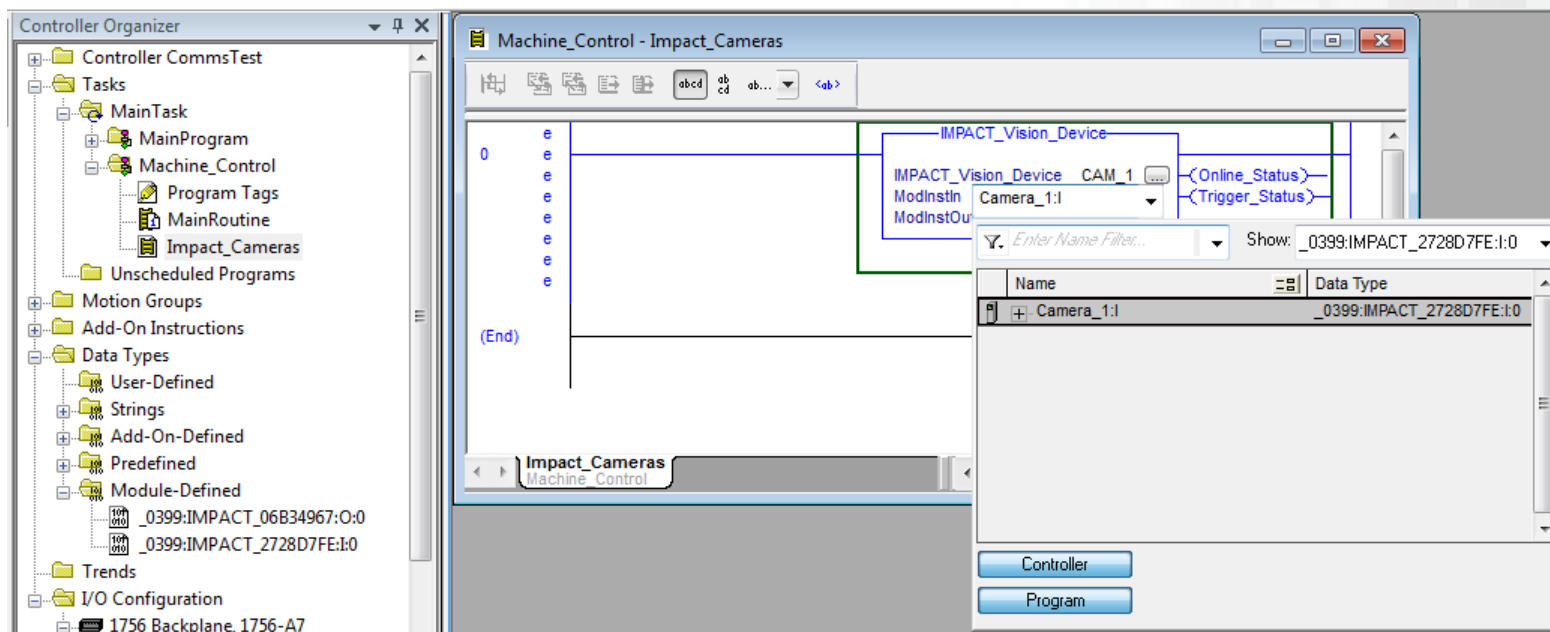
Instantiate the AOI – Step 2



In the parameter field labeled IMPACT_VISION_DEVICE, enter CAM_1.

Right click on the CAM_1 text and select the New "CAM_1" menu option.

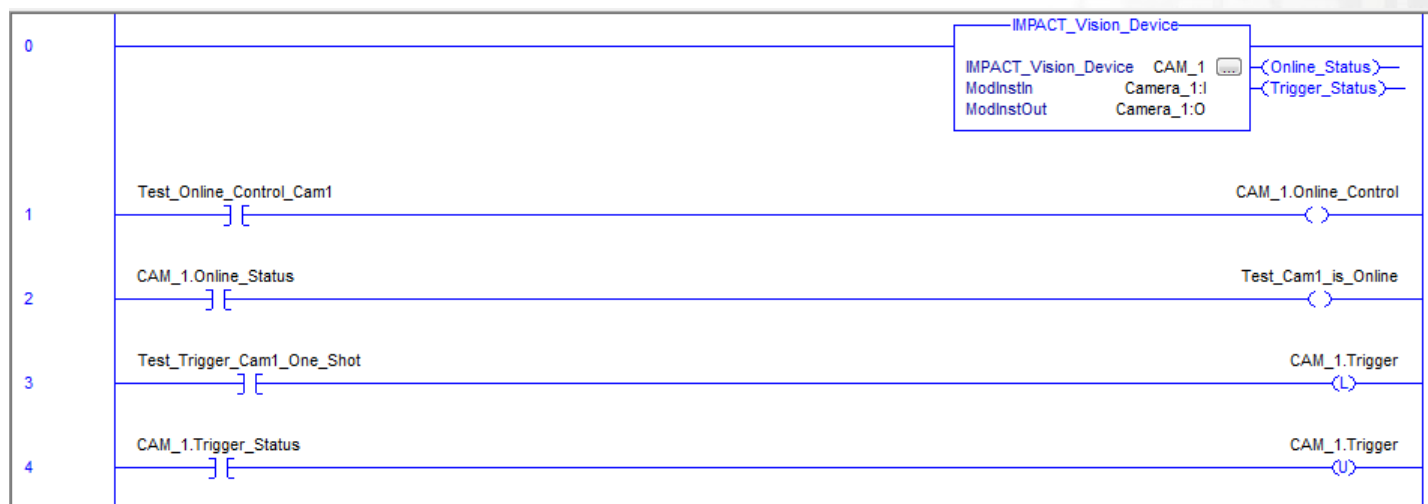
Instantiate the AOI – Step 3



For the ModInstIn and ModInstOut (Module Instance In/Out) use the controller-level (scoped) tags created with the module. (In to In – Out to Out).

In this Example Camera_1:I and Camera_1:O.

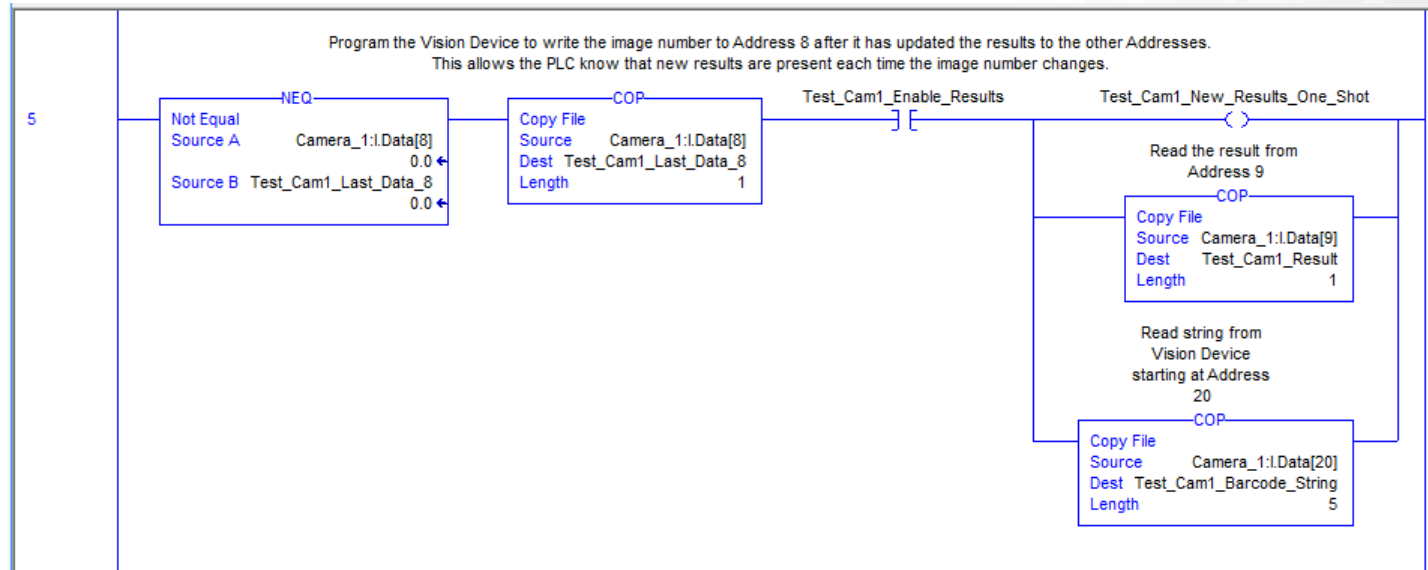
Instantiate the AOI – Example Programming



Simple programming example for manipulating the Online and Trigger commands to the IMPACT Device.

Note that the Online_Status and Trigger_Status outputs are also available programmatically. Program Tags are available for all reserved data communication to the Impact Device.

Instantiate the AOI – Example Programming



Programming example monitoring results from the IMPACT Device.
Note that the user data is directly mapped to the Ethernet Device I/O Controller Tags.

Instantiate the AOI – User Data Registers

Name	Value	Force Mas	Style	Data Type
Camera_1:I	{...}	{...}		_0399:IMPACT_2728D7FE:I:0
Camera_1:I.ConnectionFaulted	0		Decimal	BOOL
Camera_1:I.Data	{...}	{...}	Float	REAL[48]
Camera_1:I.Data[0]	0.0		Float	REAL
Camera_1:I.Data[1]	0.0		Float	REAL
Camera_1:I.Data[2]	0.0		Float	REAL
Camera_1:I.Data[3]	0.0		Float	REAL
Camera_1:I.Data[4]	0.0		Float	REAL
Camera_1:I.Data[5]	0.0		Float	REAL
Camera_1:I.Data[6]	0.0		Float	REAL
Camera_1:I.Data[7]	0.0		Float	REAL
Camera_1:I.Data[8]	0.0		Float	REAL
Camera_1:I.Data[9]	0.0		Float	REAL
Camera_1:I.Data[10]	0.0		Float	REAL
Camera_1:I.Data[11]	0.0		Float	REAL
Camera_1:I.Data[12]	0.0		Float	REAL

Name	Value	Force Mas	Style	Data Type
Camera_1:O	{...}	{...}		_0399:IMPACT_06B34967:O:0
Camera_1:O.Data	{...}	{...}	Float	REAL[48]
Camera_1:O.Data[0]	0.0		Float	REAL
Camera_1:O.Data[1]	0.0		Float	REAL
Camera_1:O.Data[2]	0.0		Float	REAL
Camera_1:O.Data[3]	0.0		Float	REAL
Camera_1:O.Data[4]	0.0		Float	REAL
Camera_1:O.Data[5]	0.0		Float	REAL
Camera_1:O.Data[6]	0.0		Float	REAL
Camera_1:O.Data[7]	0.0		Float	REAL
Camera_1:O.Data[8]	0.0		Float	REAL
Camera_1:O.Data[9]	0.0		Float	REAL
Camera_1:O.Data[10]	0.0		Float	REAL
Camera_1:O.Data[11]	0.0		Float	REAL
Camera_1:O.Data[12]	0.0		Float	REAL

In Data is received from the IMPACT Device.
Out Data is sent to the IMPACT Device.

Data[0] through Data[7] are reserved for IMPACT Device control and are only accessed via the tags created by the instantiation of the Add-On Instruction.

Starting at Data[8], there are 40 UserDataIn and 40 UserDataOut Controller Tags available for each Ethernet IMPACT Device. These tags are available for the PLC programmer to employ in sending User Data to and from the IMPACT Device.

There are no reservations or limits placed on the usage. Though they are defined as REAL, you may copy an INT or a STRING (uses multiple registers) to the User Data Controller Tags. The data type must match on the IMPACT Device.

To access these Controller Tags programmatically, simply invoke them in ladder logic.

Congratulations!

You have completed the registration, installation, and instantiation of the IMPACT Vision Device AOI.

Additional installations of the same revision will not require the EDS file to be registered again, nor the AOI to be imported.

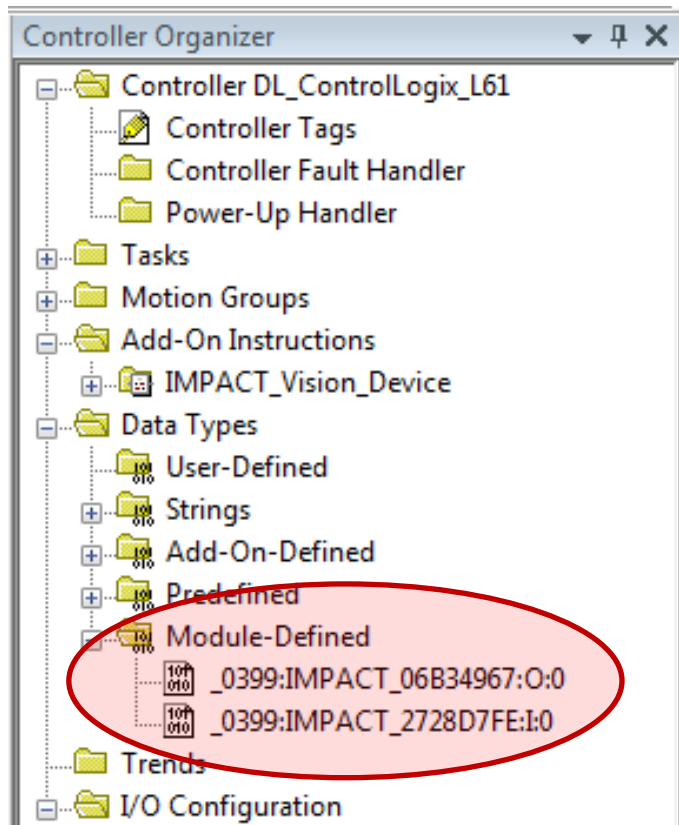
Simply create the module, add the routine, and instantiate the device!

Thank You for choosing Datalogic!

Non-Standard Ethernet I/O Modules (not using the IMPACT EDS file)

- If a larger or smaller User Data area is required from the standard EDS provided (40 in and 40 out), it is possible to use a Generic Ethernet Module with the IMPACT_Vision_Device AOI.
- This requires modification of the IMPACT_Vision_Device AOI.
- This section details this modification.
- NOTE: This modification MUST be performed

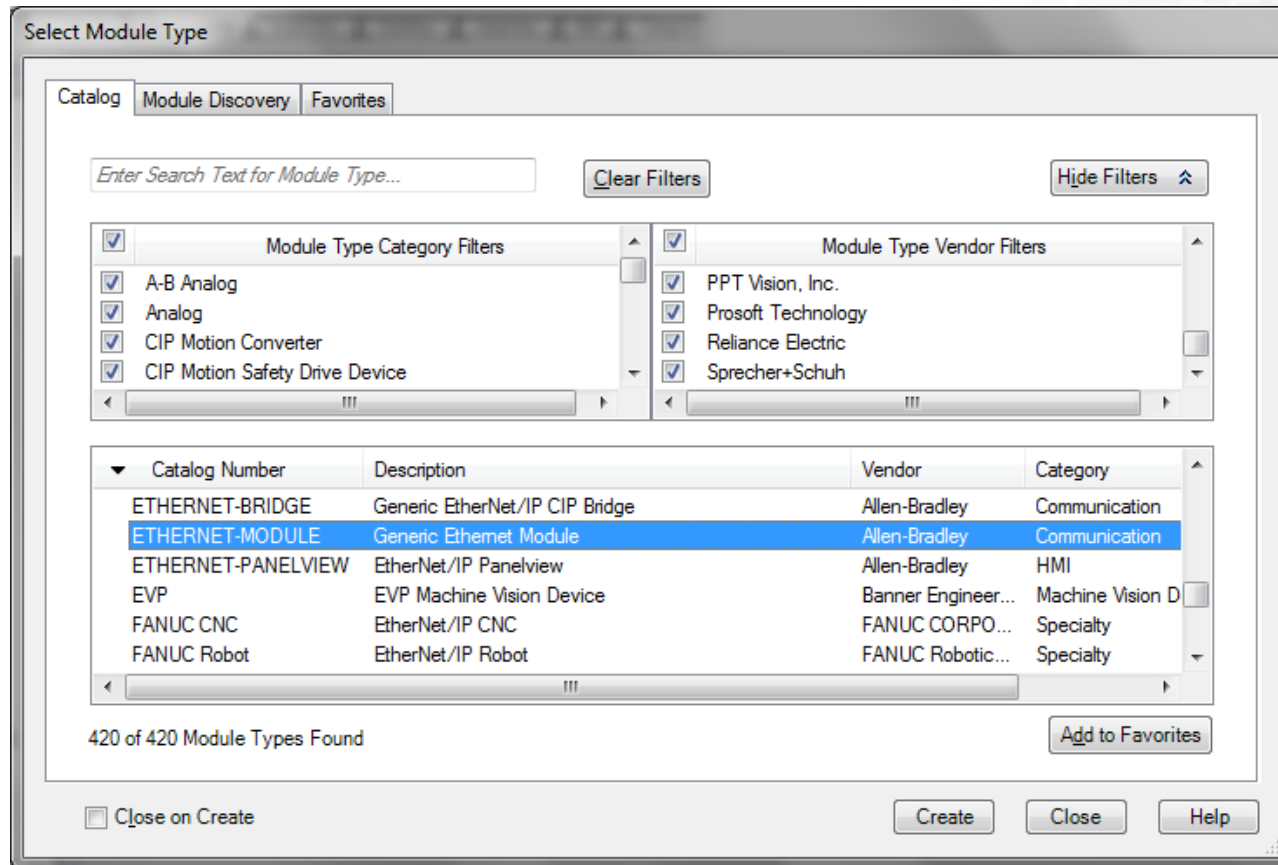
Non-Standard Ethernet I/O Modules - Step 1



Inspect and record the current Module-Defined Data Types.

The Generic Ethernet Module will create modules and they need to be identified after module creation.

Non-Standard Ethernet I/O Modules - Step 2



Select and create the Generic Ethernet Module.

Non-Standard Ethernet I/O Modules - Step 3

New Module

Type: ETHERNET-MODULE Generic Ethernet Module
Vendor: Allen-Bradley
Parent: EIP_Scanner
Name: Camera_2
Description:

Comm Format: Data - REAL

Address / Host Name
☒ IP Address: 192 . 168 . 108 . 85
☐ Host Name:

☒ Open Module Properties

OK Cancel Help

Connection Parameters

	Assembly Instance	Size	
Input:	1	10	(32-bit)
Output:	1	10	(32-bit)
Configuration:	1	0	(8-bit)
Status Input:			
Status Output:			

Input and Output Size must be a minimum of 8 (max 1024) REAL.

Note that a setting of 8 will result in no User Data as all the data will exist in the reserved AOI area.

Configuration Size must be zero.

Module Properties Report: EIP_Scanner (ETHERNET-MODULE 1.1)

General Connection Module Info

Requested Packet Interval (RPI): 50.0 ms (1.0 - 3200.0 ms)

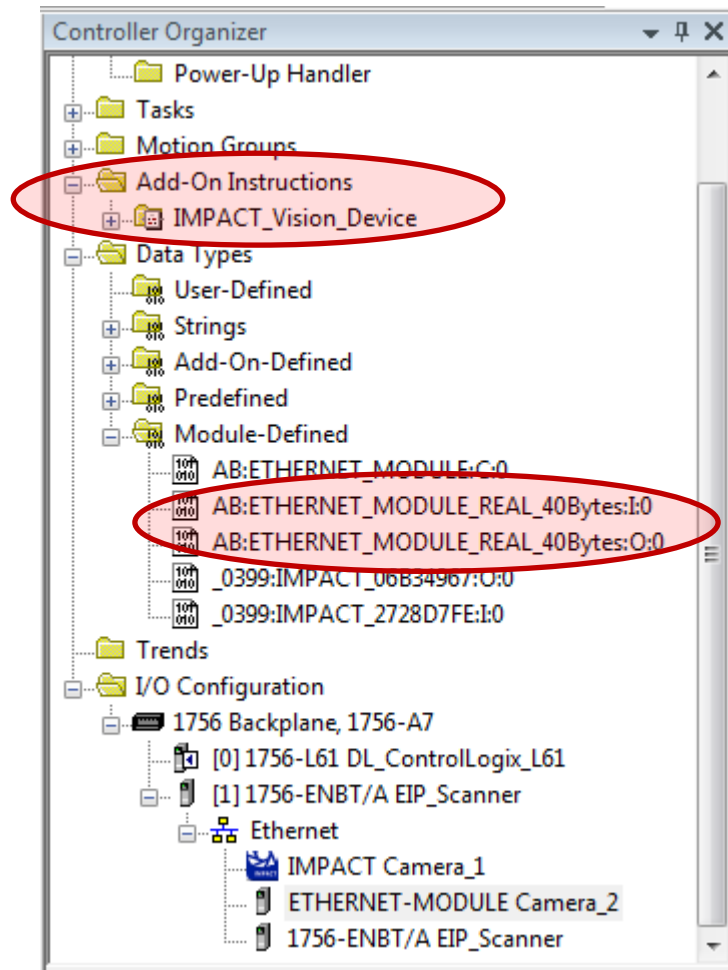
☐ Inhibit Module

☐ Major Fault On Controller If Connection Fails While in Run Mode

☒ Use Unicast Connection over EtherNet/IP

Caution is advised when setting the RPI lower than 20.

Non-Standard Ethernet I/O Modules - Step 4

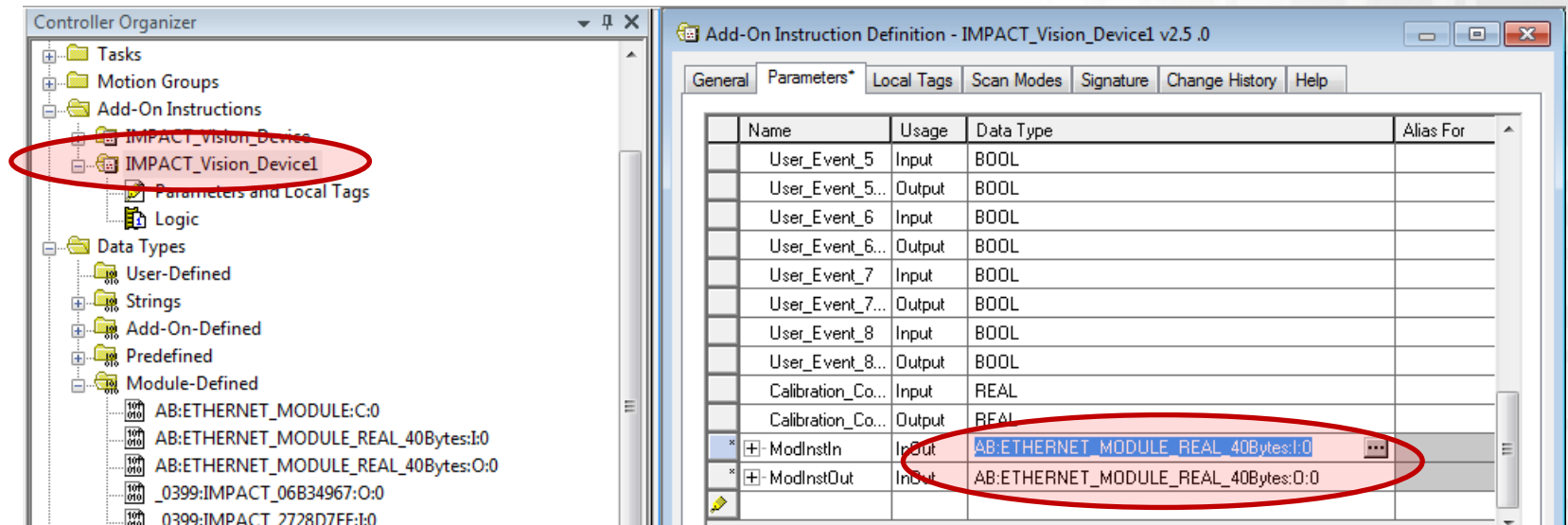


Note the new Module-Defined Data Types.

Right click the IMPACT_Vision_Device AOI and select Copy.

Right click Add_On Instructions and select Paste.

Non-Standard Ethernet I/O Modules - Step 5



- Double click on the newly created AOI "IMPACT_Vision_Device1"
- Modify the name to make it obvious that it is a modified version of the standard AOI.
- In the Parameters tab, scroll down to locate ModInstIn and ModInstOut and change the selected Data Type to reference the I/O from the Generic Ethernet I/O Module.
- Now, when the modified IMPACT_Vision_Device1 AOI is instantiated in the PLC program, it will allow you to select the I/O from the Generic Ethernet Module.

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