Matrox Imaging Library (MIL) 10 Update 50
Release Notes (Mcom)
April, 2017

This document outlines what is new with the MIL Industrial Communication (Mcom) module and explains the current limitations and particularities when using MIL for industrial communication.

It also presents last-minute information that did not make it into the manual or on-line help. Note that this help file serves to complement your manual. The information found in this file overrides your formally documented material.

Contents

1. General information

The MIL Industrial Communication module supports the EtherNet/IP™, Modbus® and PROFINET protocols as well as a protocol to communicate with robot controllers from ABB, DENSO, EPSON, FANUC, KUKA and Stäubli.

2. PROFINET information

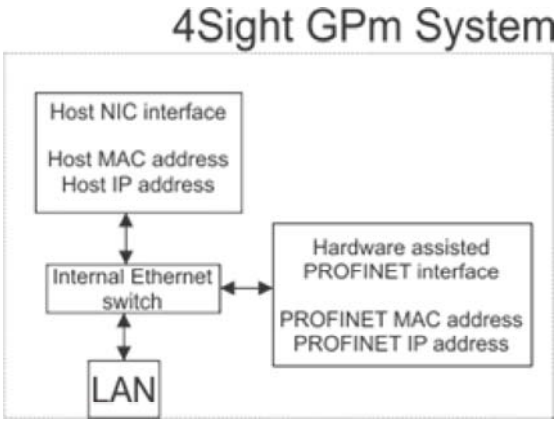
The PROFINET protocol in the Industrial Communication module supports a software-only interface and a hardware-assisted interface. The latest versions of Matrox 4Sight GPm (Ivy Bridge and Bay Trail), Matrox Iris GTR and Matrox Indio provide the hardware-assisted interface. The hardware-assisted interface is only available on the LAN2-labelled port for the 4Sight GPm (Ivy Bridge) and the LAN-labelled port for the 4Sight GPm (Bay Trail).

Product	RJ-45 network connection for the hardware-assisted PROFINET interface
Matrox 4Sight GPm (Ivy Bridge)	LAN2
Matrox 4Sight GPm (Bay Trail)	LAN

The hardware-assisted PROFINET interface supports a minimum I/O cycle time of 1 msec, whereas the software-only PROFINET interface which supports a minimum I/O cycle time of 16 msecs.

The LAN connection associated with the hardware-assisted PROFINET communication can be shared with other Ethernet traffic, while the software-only PROFINET interface cannot.

When using the hardware-assisted PROFINET interface, the LAN connection will create a second Ethernet communication device with its own MAC and IP settings, which are distinct to those of the main Ethernet communication interface available generally to the operating system.



Both interfaces require a static IP address to be set. The static IP address of the hardware-assisted PROFINET interface must be compatible with the automation network. The Host NIC interface should also be set to a static IP address, otherwise the Auto-IP or DHCP modes might lead to the connection failing when the Host NIC interface attempts to discover a DHCP server or renegotiate its IP address.

Make sure that both IP addresses are unique to your network, and that they do not interfere with each other. The Host NIC interface and the hardware-assisted PROFINET interface must also be on the same subnet in order to run the Siemens TIA Portal application. Consult the PROFINET tab under Communication in the MILConfig utility to verify whether a conflict between the two IP addresses exists. If there is a conflict, you can either change the Host NIC's IP address in the operating system settings, or you can change the hardware-assisted PROFINET interface's IP address using the Siemens TIA Portal application.

Use the MILConfig utility to activate and configure the industrial communication. After the installation of this Industrial Communication package, users can use the MILConfig utility to manage the supported industrial communication protocols.

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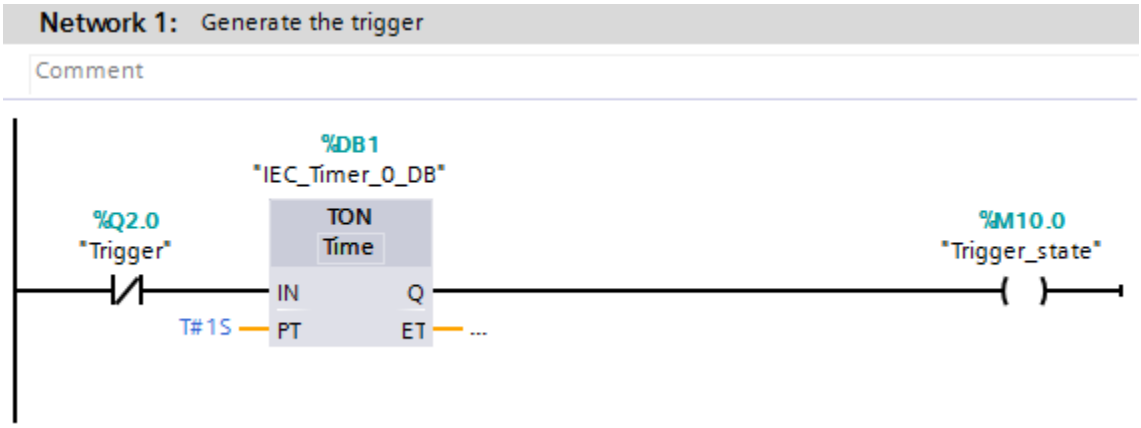
3. Using a PLC with the provided MIL sample code

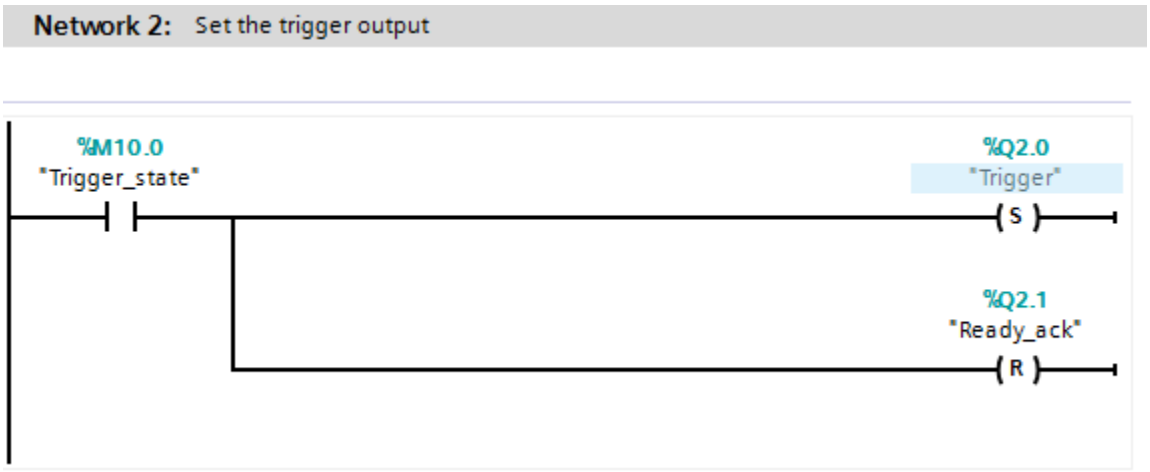
MIL examples are provided to demonstrate the usage of MIL's Industrial Communication module. These examples implement communication with an industrial controller (PLC). For these examples to run properly, the PLC needs to be configured with specific logic code. Refer to the following Ladder logic to setup the industrial controllers to use the provided MIL examples.

PLC Ladder code for the MIL examples

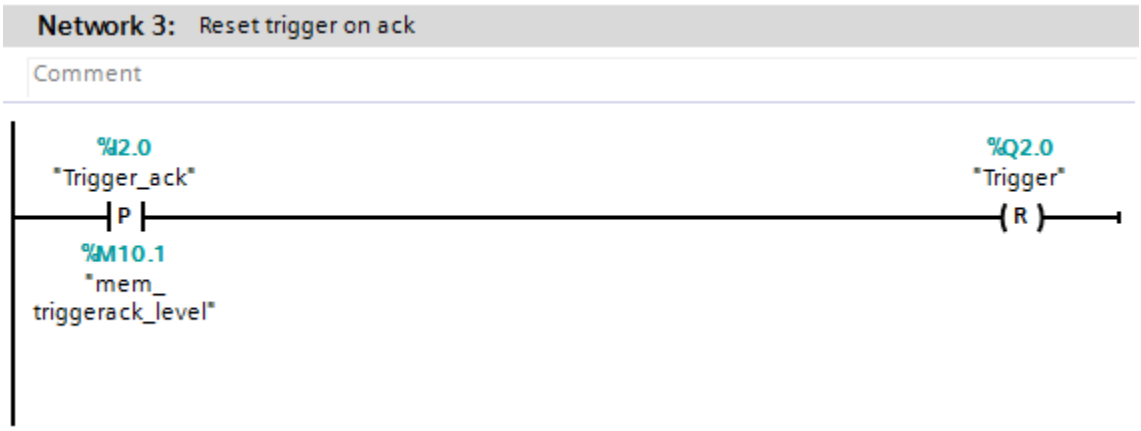
1. The Ladder logic initially generates a trigger pulse with a duration of 1 second.



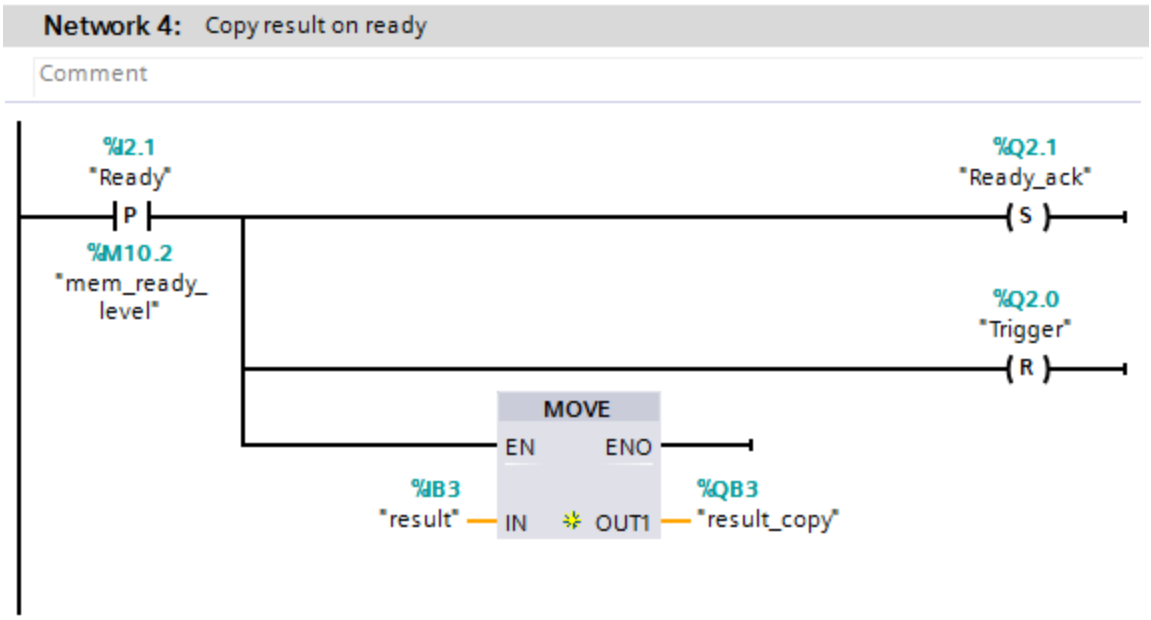
2. When the trigger pulse is generated, the Ladder logic sets the trigger bit, and resets the ready ACK-bit on the slave device.



3. When the Ladder logic receives the trigger ACK-bit from the slave device, it resets the trigger bit.



4. Finally, when the Ladder logic receives the ready bit from the slave device, it moves the result from the input to the output, and it sets the ready ACK-bit.



The following table contains the resulting sequence of the Ladder code.

Output (Set by the PLC)	**T1**	**T2**	**T3**	**T4**	**T5**	**T6**
Trigger (1bit)	1	1	0	0	0	0
Ready ACK (1bit)	0	0	0	0	1	1
Result copy (8bits)	0	0	0	0	22	22
Input (Set by Mil example)						
Trigger ACK (1bit)	0	1	1	0	0	0
Ready (1bit)	0	0	0	1	1	0
Result (8bit)	0	0	0	22	22	22

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4. MIL 10 support for Industrial Communication history

MIL 10 Update 23

- Contains support for FANUC, DENSO, KUKA and EPSON robots protocol.
- Added support for ABB robots protocol.

MIL 10 Update 38

- Added support for EtherNet/IP, Modbus and PROFINET (including hardware-assisted) communication protocols.
- Added support for communication protocol with ABB, DENSO, EPSON, FANUC, KUKA and Stäubli robot controllers.

MIL 10 Update 50

- Added support for hardware-assisted PROFINET communication on the Matrox Indio and Matrox Iris GTR.

- Fixed bugs.