In-Sight Sample Projects Using a Mitsubishi GOT1000

Overview

This document describes the sample applications installed with In-Sight Explorer to show methods of using the Mitsubishi GOT to control and get results from an In-Sight vision system. In these examples, the user will select an inspection type from the main screen of the Mitsubishi GOT. The GOT will load an In-Sight job file from the In-Sight vision system.

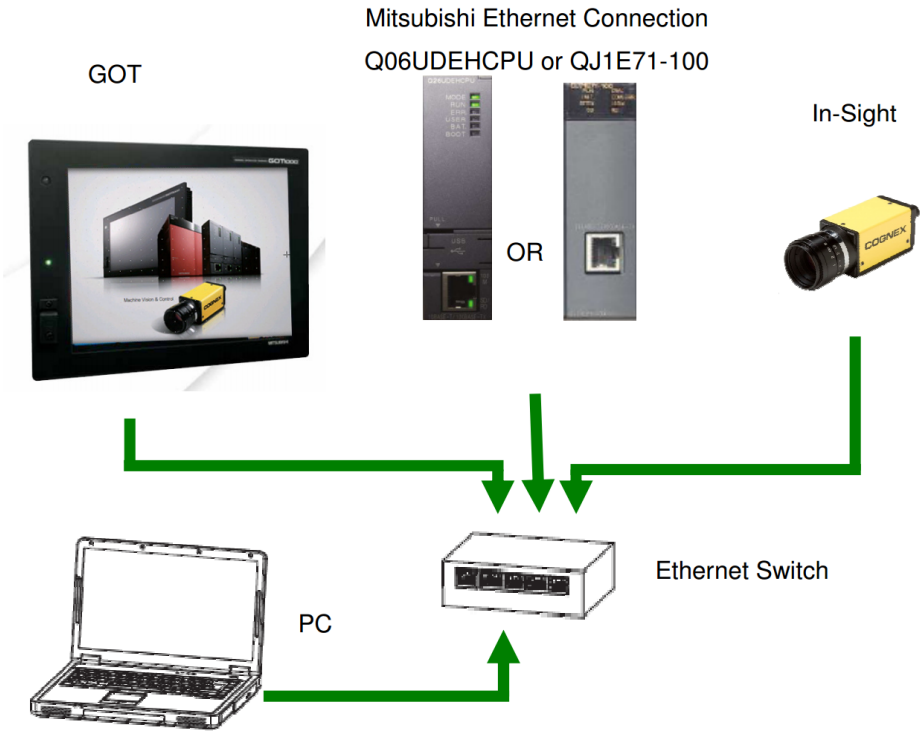
Minimum Software Requirements

The following table lists the minimum software versions for Cognex and Mitsubishi software:

	Software	Examples	Version
Cognex	In-Sight Explorer	All	4.3
Mitsubishi	GT Designer	All	2.92W
	GX Developer	Ladder Logic	8.78G
	GX Works2	Function Blocks	1.09K

System Setup

For these examples, the In-Sight vision system, GOT, PLC, and PC are connected to an Ethernet switch.



The following settings are used in the examples:

In-Sight:

- IP Address: `192.168.0.1`
- Subnet Mask: `255.255.255.0`
- Telnet Port: `23` (default)

Q-Series PLC:

- IP Address: `192.168.0.2`
- Subnet Mask: `255.255.255.0`

GOT1000:

- IP Address: `192.168.0.4`
- Subnet Mask: `255.255.255.0`

The PLC and GOT files have the IP addresses in the projects. Loading the project files will update the IP addresses for the PLC and GOT. If necessary, change the IP Address and telnet port of the vision system through the Sensor > Network Settings or the System > Add Sensor/Device to Network menus.

Vision System Setup

In these examples, the user will use the controls on the GOT screen to acquire an image in In-Sight, perform an inspection, and send the results to the GOT. PDF files can be used as samples for each of the inspections; these should be printed out and used with the In-Sight vision system. The PDF files are located in the following directory:

Windows 7/Vista/Server 2008/R2:

```
C:\Users\Public\Documents\Cognex\In-Sight\In-Sight Sample Projects 5.6.1\Mitsubishi Communications\Part Images
```

Windows XP/Server 2003:

```
C:\Documents and Settings\All Users\Documents\Cognex\In-Sight\In-Sight Sample Projects 5.6.1\Mitsubishi Communications\Part Images
```

PDF Filename	Example In-Sight JOBs
xy and inspect.pdf	xy-en.job, inspect-en.job
IDCode.pdf	IDCode-en.job

Example Setup

This document provides an example of a lens, working distance and field of view to use with these printed PDF files. The field of view does not need to be exact because the PatMax tools and ReadID tools will tolerate changes in scale of the part.

The user can also retrain the PatMax models in `xy-en.job` and `inspect-en.job` and then retrain the ReadID tool in `IDCode-en.job` to work with a different field of view. The jobs must be re-saved to the In-Sight vision system to work properly with the GOT sample program.

- **Vision System**: In-Sight Micro 1400
- **Lens**: 8 mm c-mount lens with a 5 mm spacer
- **Working Distance:** 280 mm (11 inches)
- **Field of View**: 170 mm (approximately 6 ¾ inches)

Cognex In-Sight Files

Three In-Sight job files are used in the GOT control examples. The In-Sight files are located in the following directory:

Windows 7/Vista/Server 2008/R2:

```
C:\Users\Public\Documents\Cognex\In-Sight\In-Sight Sample Pro-
jects 5.6.1\Mitsubishi Communications\Control Examples\In-Sight
Job Files
```

Windows XP/Server 2003:

```
C:\Documents and Settings\All Users\Documents\Cognex\In-
Sight\In-Sight Sample Projects 5.6.1\Mitsubishi Com-
munications\Control Examples\In-Sight Job Files
```

Descriptions of the In-Sight job files:

In-Sight Job Filename	Examples	Purpose
xy-en.job	All	Returns X, Y, Angle
inspect-en.job	All	Returns Pass/Fail
IDCode-en.job	All	Returns QR Decode String

Mitsubishi Files

The files to use for the specific model of GOT and PLC are described in the tables in this section.

The files to use for the Mitsubishi GOT depend on the model of GOT and PLC that you will use. The GOT files for the GT15 model are located in the following directory:

Windows 7/Vista/Server 2008/R2:

```
C:\Users\Public\Documents\Cognex\In-Sight\In-Sight Sample Pro-
jects 5.6.1\Mitsubishi Communications\GOT Examples\GT15
```

Windows XP/Server 2003:

```
C:\Documents and Settings\All Users\Documents\Cognex\In-
Sight\In-Sight Sample Projects 5.6.1\Mitsubishi Com-
munications\GOT Examples\GT15
```

Following is a description of the GT15 files:

GOT Model	GOT Screen Resolution	Filenames
GT15	SVGA	GT15_SVGA_E71_EN.GTE GT15_SVGA_QnUDEH_EN.GTE

The PLC files to use depend on the model of PLC that you will use and the method: Ladder Logic or Function Block. The Q Series PLC programs are located in folders within the following directory:

Windows 7/Vista/Server 2008/R2:

```
C:\Users\Public\Documents\Cognex\In-Sight\In-Sight Sample Projects 5.6.1\Mitsubishi Communications\GOT Examples
```

Windows XP/Server 2003:

```
C:\Documents and Settings\All Users\Documents\Cognex\In-Sight\In-Sight Sample Projects 5.6.1\Mitsubishi Communications\GOT Examples
```

A description of the PLC programs follows:

Filename	Example	Ethernet Port	SubDirectory
In-Sight_E71_Q06UDHCPU_EN	Ladder Logic	QJ7171-100	Ladder Logic
In-Sight_QnUDE_Q06UDEHCPU_EN	Ladder Logic	Q06UDEHCPU	
In-Sight_FB_E71_EN	Function Blocks	QJ7171-100	Function Block\Cognex_In-Sight
In-Sight_FB_QnUDEH_EN	Function Blocks	Q06UDEHCPU	

Loading Files

Loading In-Sight Files

Save all three In-Sight job files (xy-en.job, inspect-en.job and IDCode-en.job) to the In-Sight vision system. The GOT main screen will load the correct In-Sight job directly from the In-Sight vision system.

Loading Q-Series PLC Files

- For Ladder Logic examples, launch **GX Developer**.
- For Function Block examples, launch **GX Works2**.

Load the appropriate file for the CPU on your PLC. PLC files are located in the following directories:

Ladder Logic:

Windows 7/Vista/Server 2008/R2:

```
C:\Users\Public\Documents\Cognex\In-Sight\In-Sight Sample Pro-
jects 5.6.1\Mitsubishi Communications\GOT Examples\Ladder Logic
```

Windows XP/Server 2003:

```
C:\Documents and Settings\All Users\Documents\Cognex\In-
Sight\In-Sight Sample Projects 5.6.1\Mitsubishi Com-
munications\GOT Examples\Ladder Logic
```

Function Blocks:

Windows 7/Vista/Server 2008/R2:

```
C:\Users\Public\Documents\Cognex\In-Sight\In-Sight Sample Pro-
jects 5.6.1\Mitsubishi Communications\GOT Examples\Function
Block
```

Windows XP/Server 2003:

```
C:\Documents and Settings\All Users\Documents\Cognex\In-
Sight\In-Sight Sample Projects 5.6.1\Mitsubishi Com-
munications\GOT Examples\Function Block
```

Loading GOT Files

Launch GT Designer and load the appropriate GOT file for your GOT model. GOT Files are located in the following directory:

Windows 7/Vista/Server 2008/R2:

```
C:\Users\Public\Documents\Cognex\In-Sight\In-Sight Sample Pro-
jects 5.6.1\Mitsubishi Communications\GOT Examples\GTxx
```

Windows XP/Server 2003:

```
C:\Documents and Settings\All Users\Documents\Cognex\In-
Sight\In-Sight Sample Projects 5.6.1\Mitsubishi Com-
munications\GOT Examples\GTxx
```

Load the GT Designer file onto the GOT

The GOT uses information stored in the file `tagname.txt` to communicate with the job files in In-Sight; this file should be stored on the compact flash (CF) card on the GOT.

Saving the file '`tagname-en.txt`' to the CF Card on the GOT

The batch file `send_tagname.bat` will send the files `tagname-en.txt` and `tagname.txt` to the CF card on the GOT at IP address `192.168.0.4`.

You can run `send_tagname.bat` in one of the following ways:

Windows Explorer

1. Browse to the following folder:

   Windows 7/Vista/Server 2008/R2:

   ```
   C:\Users\Public\Documents\Cognex\In-
   Sight\In-Sight Sample Projects 5.6.1\Mit-
   subishi Communications\GOT Examples\GTxx
   ```

   Windows XP/Server 2003:

   ```
   C:\Documents and Settings\All User-
   s\Documents\Cognex\In-Sight\In-Sight Sample
   Projects 5.6.1\Mitsubishi Communications\GOT
   Examples\GTxx
   ```

2. Launch `send_tagname.bat`.

Command Prompt

1. Launch `cmd.exe` to open a command prompt

2. Change directory to the following:

   Windows 7/Vista/Server 2008/R2:

   ```
   C:\Users\Public\Documents\Cognex\In-
   Sight\In-Sight Sample Projects 5.6.1\Mit-
   subishi Communications\GOT Examples\GTxx
   ```

   Windows XP/Server 2003:

   ```
   C:\Documents and Settings\All User-
   s\Documents\Cognex\In-Sight\In-Sight Sample
   Projects 5.6.1\Mitsubishi Communications\GOT
   Examples\GTxx
   ```

3. Run `send_tagname.bat`.

Running the Example Files

1. Put In-Sight Online.
2. Reset the PLC.
3. Put the PLC into Run mode.
4. Apply power to the GOT.

You can now control the In-Sight vision system using the GOT interface.