



In-Sight® Explorer 4.2.0 Release Notes

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Overview

This document describes Release 4.2.0 of In-Sight Explorer, including the following topics:

- [System Requirements](#)
- [New Features](#)
- [Changes & Fixes](#)
- [Known Issues](#)
- [Release History](#)

For updated release notes, documentation and more, visit the [In-Sight Online Support Center](#).

System Requirements

Supported In-Sight Vision Sensors

In this release, new firmware is available for the following sensors:

- In-Sight 3400
- In-Sight 5000 Series
- In-Sight Micro Vision Systems

Note: Support has been removed for the In-Sight 1000 series, 3000, 4000 series sensors and the 1700/1701 wafer readers.

Hardware Requirements

- Intel® Pentium®4 processor running at 2 GHz (or equivalent)
- 256MB of available RAM
- 1GB of available hard-disk space
- Video card capable of displaying 1024x768 resolution at 16-bit color depth. The DPI Display setting must be set to 96 DPI.
- Network Interface Card (at least 100Mbps) for connecting to In-Sight sensors

Operating System Requirements

In-Sight Explorer has been tested on the following 32-bit operating systems:

- Microsoft® Windows™ Server 2003, Service Pack 2
- Microsoft Windows XP Professional, Service Pack 3
- Microsoft Windows Vista Business, Service Pack 1

Although In-Sight Explorer may function on other operating systems, systems not meeting the preceding requirements are not supported.

Supported Languages

- English
- Japanese

- French
- German
- Spanish (European)
- Korean
- Chinese (Simplified)

Old Firmware Version Support

In-Sight vision systems with older firmware *may* work properly with In-Sight Explorer 4.2.0; however, firmware versions prior to 3.1.0 are not fully tested.

Licensing

In-Sight Explorer 4.2.0 is distributed in two different packages: a full version and a trial version. The full version is completely functional and does not expire. The trial version runs for 30 days and then ceases to function. An Offline Programming Key is required for the full version to use In-Sight Explorer in emulator mode if no In-Sight sensors are present on your network.

New Features

Note: The following features are only available when using In-Sight Explorer 4.2.0 with sensors that have been upgraded to firmware version 4.2.0, and are not accessible when using the In-Sight 3400 GUI. Cognex strongly recommends upgrading sensors to firmware version 4.2.0 so that all of the new features are available.

In-Sight Explorer Enhancements

This release of In-Sight Explorer provides new functionality for both the EasyBuilder and Spreadsheet development environments, while also providing new functionality shared by both, including the following:

- Support for the new In-Sight CIO-Micro I/O Module.
- EasyView, a convenient and easy way to customize how data is displayed on the VisionView™ Operator Interface Panel and to determine if the data is editable by the operator.
- The ability to emulate specific In-Sight vision systems.

EasyBuilder™

- The Inspect Part step now includes a new set of Inspection Tools, the Geometry Tools, to create geometric references and measurements.
- Support for the Modbus TCP Server protocol has been added to the Communications Application Step, allowing an In-Sight sensor or vision system to be configured as a server for Modbus TCP communications.
- The Read Text Identification Tool now supports up to four custom fonts within a single job, as well as sharing a custom font between multiple Read Text Identification Tools in a job.
- The Read ID Code Identification Tool now supports reading 144 x 144 Data Matrix symbols.

Spreadsheet

Added Functions

Note: The following functions are only available when using the In-Sight Explorer Spreadsheet View.

- The GetBufferData function (Vision Data Access --> Input/Output) and the ReadModbusBuffer and WriteModbusBuffer functions (Input/Output --> Network) have been added to support the Modbus TCP communication protocol.

Function Enhancements

- A number of enhancements have been made to the ReadIDCode function, including the support to read 144 x 144 Data Matrix symbols and enhancements when reading PharmaCode and RSS symbols.
- The GetSymbologyIdentifier function (Vision Data Access --> IDCode) has been added, which returns the identity of a symbol using a three-character code, based on AIM-U.S.A. (Automatic Identification Manufacturers) specifications.

- The BGetFloat, BGetInt, BGetString and BStringf functions (Text --> Binary) have added optional arguments to support byte-swapping to better support Modbus TCP communication protocols.
- The FormatInputBuffer and FormatOutputBuffer functions (Input/Output) now accept byte-swapped strings as a data type to better support Modbus TCP communication protocols.

Spreadsheet View Enhancements

- Job Protection has been added, which allows spreadsheet cells to be protected by hiding cell formulas and limiting cell execution to a single vision sensor.
- The Active Cells Limit dialog, accessible from the Sensor Menu, has been added to enable the configuration of the number of programmable spreadsheet cells.
- The MC Protocol snippet has been added to the Communication Snippets directory, enabling communication between In-Sight sensors and devices using the MC Protocol.

Changes & Fixes

NOTE: Change Request numbers (CR#) have been included (where applicable) to improve tracking of Known Issues reported via Cognex Technical Support.

- EasyBuilder now supports partial acquisitions. Previously, if a job was created in EasyBuilder, and the AcquireImage function was edited in the Spreadsheet to enable partial acquisition by adjusting the Start Row and Number of Rows parameters, tools and their region graphics would not function properly. (CR# 54310)
- The External Region parameter of FindPatMaxPattern, TrainPatMaxPattern, ExtractHistogram and ExtractBlobs has been adjusted to properly support references to an Annulus, EditAnnulus, Circle, EditCircle, Region, EditRegion, EditPolygon or EditCompositeRegion function. Previously, if a FindPatMaxPattern function's External Region parameter was referencing an Annulus, EditAnnulus, Circle, EditCircle, Region, EditRegion, EditPolygon or EditCompositeRegion function, when launching interactive graphics mode through the FindPatMaxPattern function's Find Region parameter, the FindPatMaxPattern function's interactive graphics mode would appear to control the External Region instead of the FindPatMaxPattern's region. Any changes that appeared to take place for the External Region were not stored. (CR# 53866)
- In the Set Up Image Application Step, the Scale - Circular Calibration Type has been modified to provide more accurate edge detection. Previously, the Scale - Circular Calibration Type could provide erroneous values due to an incorrect detection of the edge. (CR# 55408)
- The performance of In-Sight vision systems connected to a VisionView has been improved. Previously, if an In-Sight vision system was connected to a VisionView, and the In-Sight vision system was Online with the active cell set to an EditAnnulus, EditCircle, EditCompositeRegion, EditLine, EditPoint, EditPolygon or EditRegion function, the performance of the VisionView could steadily decrease, requiring the In-Sight vision system to be removed from the Selected Sensors list before restoring normal operation. (CR# 56171)
- The ExtractBlobs function's support for the Bend parameter has been corrected. Previously, if an ExtractBlob function's Bend parameter was adjusted above zero in interactive graphics mode, the function could cause In-Sight Explorer to become unresponsive. (CR# 55816)
- The ExtractBlobs function's calculation of results has been modified. Previously, if an ExtractBlobs function was being referenced by a SortBlobs or FindBlobs function, and those functions were in turn being referenced by a BlobToPoint function, erroneous result data could be produced and/or the connected emulator or In-Sight sensor could become unresponsive. (CR# 56016)
- The FormatOutputBuffer function has been modified, enabling the function to return a valid buffer even if an input error has occurred. The erroring input will be replaced with either a 0 or an empty string depending upon its data type. Previously, the FormatOutputBuffer function would produce an error output if any of its inputs encounter an error. The Protocol parameter of FormatOutputBuffer has been renamed to WithErr. When this parameter is set to 0 (default), the FormatOutputBuffer will put data in the buffer even if there was an error; when set to 1, the function will produce an error output if any of its inputs encounter an error. Previously, the Protocol parameter was ignored. (CR# 55326)
- The FindLine function has been modified to more accurately identify edges when the height of the region of interest is less than 4 pixels. Previously, when the region of interest of a FindLine function was less than 4 pixels, it could possibly misidentify the correct edge. (CR# 56283)
- The Discrete Input Settings dialog, when accessed via the In-Sight 3400 GUI, has been modified to correctly display the correct I/O information. Previously, when connected to an In-Sight 3400 sensor, and accessing the sensor through the In-Sight 3400 GUI, the Discrete Input Settings could display I/O information for a different type of I/O module than the one that was actually selected. (CR# 55047)
- Inserting a row into the spreadsheet no longer halts the software. Previously, in some cases, when a row was inserted near

an expression containing the ErrFree function, the software would halt, requiring the user to power cycle the sensor and restart the software. (CR# 56669)

Consult the [Release History](#) for changes and fixes in previous releases.

Known Issues

This section describes known issues with the In-Sight Explorer 4.2.0 software, including any known workarounds. Change Request numbers (CR#) have been included to improve tracking of Known Issues reported via Cognex Technical Support.

Updating In-Sight sensor firmware while directly connected to a PC

Issue: If an In-Sight sensor's network cable is connected directly to an Ethernet port on a local PC, and an attempt is made to update the firmware of that sensor, an error message may result and the sensor may become unresponsive and require the sensor to be power cycled. (CR# 56735)

Workaround: The In-Sight.exe program may be blocked from performing network operations by the Windows Firewall settings. To correct this issue, the In-Sight.exe program must be set as an exception in the Windows Firewall utility (note that these steps should only be performed *after* the In-Sight sensor has been directly connected to the local PC):

1. From the Control Panel, open the Windows Firewall utility.
2. Select the Exceptions tab.
3. Press the Add Program button.
4. Press the Browse button and navigate to the Emulator directory of In-Sight Explorer (i.e. Program Files > Cognex > In-Sight > In-Sight Explorer x.x.x > Emulator).
5. Select In-Sight.exe and press the Open button.
6. In-Sight.exe should now be displayed in the Add a Program dialog; press the OK button to continue.
7. In-Sight.exe should now be displayed, with a checkmark beside it, in the list of Programs and Services in the Exceptions tab of the Windows Firewall dialog. Press the OK button to continue. If the checkmark is not present, check the box and then press the OK button.

Updating In-Sight sensor firmware in EasyBuilder while connected to a VisionView

Issue: If an In-Sight sensor is in Run Mode within VisionView, then the sensor is logged on to from EasyBuilder and the sensor's firmware is updated, after the firmware update is complete, both VisionView and EasyBuilder may be unable to reestablish a connection to the sensor and may need to be power cycled or restarted, respectively. (CR# 54251)

Workaround: From the VisionView Network Settings screen, configure the Subnet Mask to an invalid value (ex. 255.255.255.252). Next, update the sensor's firmware. After the sensor's firmware has been updated, restore the correct VisionView Subnet Mask value.

The In-Sight Modbus TCP Server implementation only supports one connection at a time

Issue: The current In-Sight Modbus TCP Server implementation only supports one connection between the Modbus TCP Server (the In-Sight sensor) and one client device at a time, and does not support TCP-Keepalive or another similar mechanism to close a socket when the network is disconnected. (CR# 56136)

Workaround: If an In-Sight sensor is configured as a Modbus TCP Server, and the Modbus TCP client does not properly close its connection to the In-Sight sensor Modbus TCP Server, the sensor must be power-cycled to re-establish communications.

Rockwell RSLogix 5000 Add-On Profile support for In-Sight Vision Sensors

Issue: The Rockwell RSLogix 5000 Add-On Profile has not been updated to properly handle In-Sight 3400, 5000 series sensors or Micro vision systems running 4.2.0 firmware. (CR# 52947)

Workaround: The In-Sight 3400, 5000 series sensors or Micro vision systems may still be used with the existing Add-On Profile, however it requires disabling keying from within RSLogix 5000. For In-Sight 3400 and 5000 series sensors, disable keying when configuring the profile within RSLogix 5000. For In-Sight Micro vision systems, when establishing the connection, select an In-Sight 5000 series sensor as the module type and also disable keying.

Using the Add Sensor/Device to Network dialog with firmware 3.4.x or earlier may launch an error message

Issue: If the Add Sensor/Device to Network dialog is used to change the network settings of a sensor running firmware 3.4.x or

earlier, you will be prompted to power cycle the sensor. In some cases, an error message will appear afterward, indicating that the sensor did not reboot properly. (CR# 53425)

Workaround: Click OK in the error message to dismiss it. No further action is needed.

Cut cell contents may be lost if error occurs

Issue: During cut-and-paste, the contents of the cut cell may be lost if an error occurs, even if you select Cancel to stop the operation. (CR# 40584)

Workaround : Use Undo (CTRL+Z) to restore the contents of the cut cell.

Get Job only returns status data with Motoman mode

Issue: When a Get Job (GJ) command is issued using Motoman mode, the status data is returned but the result data is not returned. (CR# 40160)

Workaround: Use the Get File (GF) command instead of the Get Job command, or place the job ID number in another cell in the spreadsheet and use the Get Value (GV) command.

Using the Cancel button to exit the AcquireImage property sheet causes unexpected behavior

Issue: With an image currently displayed on an In-Sight 5000 series sensor, and the AcquireImage property sheet is opened, closing the property sheet by clicking the Cancel button will not restore the displayed image or property sheet to its status prior to being opened. Opening the AcquireImage property sheet will cause the sensor to display a new image, and regardless of whether the Cancel button is used to exit the property sheet, the new image and any changes made in the property sheet will be retained in both the displayed image and the property sheet. (CR# 38201, 38242)

Workaround: If you need the currently displayed image, save the image before opening the AcquireImage property sheet, and then re-load that image if you need to revert to that displayed image.

In-Sight Explorer allows invalid Subnet Mask addresses to be entered

Issue: When entering a Subnet Mask address in either the Network Settings dialog or the In-Sight Connection Manager of In-Sight Explorer, it is possible to specify an invalid Subnet Mask. However, the firmware will recognize invalid Subnet Mask addresses in proc.set files for all 3400 and 5000 series sensors, and override such entries with functional settings. (CR# 43645)

Workaround: Avoid entering addresses that are less than 128.0.0.0 and greater than 255.255.255.252. In addition, make sure that the mask bits are contiguous and located as the most significant bits.

In-Sight CIO-Micro I/O Module Environmental Operating Temperature Rating

Issue: Due to the limitations of the current plastic housing design, the environmental operating temperature rating of the In-Sight CIO-Micro I/O Module is 0°C (0° F) to 40° C (104° F).

Release History

<p>Release 4.1.0</p>	<ul style="list-style-type: none"> ■ Introduced the EasyBuilder development environment to In-Sight Explorer: An image-centric interface that facilitates point-and-click selection of features of interest in the image to configure measurements; a set of Applications Steps to provide a step-by-step template to simplify application set up; a Settings Pane/Results Table in the bottom pane of the interface that updates based on the selected step, and also includes a results table to monitor tool results and troubleshoot applications; and integrated Help and Input/Output Monitoring to guide the user through application set-up and provide useful feedback during application deployment.. ■ Introduced the In-Sight Micro Vision System. ■ Added the Caliper function (Vision Tools --> Edge), which detects the location of edges and edges pairs and distances according to adjustable scoring methods. ■ Added the EditCompositeRegion function (Graphics Functions --> Controls), which allows multiple shapes to be used to add to, and subtract (masking), the analyzed area in an image. ■ Added the EditPolygon function (Graphics Functions --> Controls), which provides a flexible control that can be manipulated to any shape in an image.
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- The Results Queue Settings dialog was renamed to the Sensor Filmstrip Settings dialog, and included functionality enhancements.
- The Job Pass/Fail Cell Setup dialog was added to the Sensor menu, to monitor a cell that determines the job's overall pass/fail status, which can be sent as an output from the sensor to other applications, such as the Cognex VisionView.
- Link-local IP addressing capability was added, enabling an In-Sight sensor to assign itself a temporary IP address if a unique, dynamic or static IP address is not immediately available.
- Support for two-byte character sets (East Asian characters) in OPC tags and cell names was added.
- A CC-Link communication protocol snippet was added to the Snippets tab of the Palette.
- The Trigger Delay parameter was added to the AcquireImage function, to specify a delay between the time the camera trigger is received and the time the sensor begins acquisition.
- The In-Sight 5600 was updated to support the AcquireImage function's Automatic Exposure parameter.
- The Timeout parameter was added to the FindPatterns function (Vision Tools --> PatFind), to specify the amount of time that the function will search for patterns before execution is halted.
- The number of character models that can be trained using the OCV/OCR Font Training dialog was increased from 64 to 255.



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