In-Sight® Explorer 4.7.0 Release Notes

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Overview

This document describes Release 4.7.0 of In-Sight® Explorer, including the following topics:

- System Requirements
- New Features
- Changes & Fixes
- Known Issues

For updated release notes, documentation and more, visit the In-Sight Online Support Center.

System Requirements

Supported In-Sight Vision Systems

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

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

Note: In-Sight Explorer 4.7.0 does not support vision systems with less than 32MB Flash memory.

Hardware Requirements

- Intel® Pentium®4 processor running at 2 GHz (or equivalent)
- 256MB of available RAM
- 2GB 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 vision systems

Operating System Requirements

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

- Microsoft® Windows Server® 2003, Service Pack 2
- Microsoft Windows XP Professional, Service Pack 3
- Microsoft Windows Vista Business, Service Pack 2
- Microsoft Windows 7 Professional (32- and 64-bit)
- Microsoft Windows Server 2008 R2, Service Pack 1 (64-bit)

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

Supported Languages
Old Firmware Version Support

In-Sight vision systems with older firmware *may* work properly with In-Sight Explorer 4.7.0; however, firmware versions prior to 3.1.0 are not fully tested.

Licensing

In-Sight Explorer 4.7.0 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 vision systems are present on your network.

New Features

*Note*: The following features are only available when using In-Sight Explorer 4.7.0 with vision systems that have been upgraded to firmware version 4.7.0. Cognex strongly recommends upgrading vision systems to firmware version 4.7.0 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 has been added for In-Sight 7000 series vision systems.
- Added the External Light Settings dialog to specify the type of external strobe device (PNP or NPN) connected to the In-Sight 7000 series vision system.
- Added the Allow Online Job Save checkbox to the User dialog to allow users with Full or Protected access to save jobs while an In-Sight vision system is Online.
- The Mitsubishi FX Series PLC/Motion Controller (MC) is now supported by the SLMP/MC Protocol and SLMP/MC Protocol Scanner communications.

EasyBuilder® View

Tool Enhancements

- The Sharpness Presence/Absence Tool has been added, which determines the relative focus of images acquired by In-Sight vision systems.
- The Read Text (OCRMax) Identification Tool has been added, which, after training and creating user-defined character fonts, reads and/or verifies text strings using the OCRMax algorithm.
- The Read 1D and and Read 1D (1-20) Identification Tools have been updated and now include the ability to train 1D codes.
- The Read 1D (1-20) Identification Tool has been modified and now includes the Allow Identical 1D Symbols parameter in the Settings tab, which allows the tool to specify if it should decode all symbols within the region, even if they are identical.
- The Read 2D and Read 2D (1-20) Identification Tools have been modified and now include the Allow Binary Results parameter in the Settings tab, which allows the tool to specify if it will decode as hex ASCII DataMatrix symbols encoded as base-256 binary data.

Spreadsheet View
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Added Functions

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

- The OCRMax function has been added, which, after training and creating user-defined character fonts, reads and/or verifies a text string within a Region of Interest (ROI).
- The OCRMaxSettings function has been added, providing external Segmentation, Advanced Classification and Fielding settings for the OCRMax function, which can be adjusted at run-time.
- The Focus functions, Autofocus, GetCurrentFocusPosition and SetFocusPosition, have been added, which provide focus support for In-Sight 7000 series vision systems with autofocus capabilities.
- The SetExternalLightMode and GetExternalLightMode Extended Native Mode commands have been added, which are used to set and retrieve the External Light Settings for In-Sight 7000 series vision systems.
- The GetLearnedSymbology Vision Data Access function (Vision Data Access --> IDMax) has been added, which is used to return a string containing the currently trained symbology in the referenced ReadIDMax function.

Function Enhancements

- The ReadIDMax function (ID) has added support for training of all symbology groups, including 1D/Stacked and Postal symbols.
- The ReadIDMax function (ID) has added the Allow Binary Results Decode Setting parameter, to convert binary results to ASCII for display.
- The ReadIDMax function (ID) has added the Row/Column options to the Sort By parameter to support grid sorting.
- The performance of the Flaw Detection Vision Tools has been improved, and the functions' execution time has been reduced by approximately 15%.
- The performance of the EditCompositeRegion function (Graphics Functions --> Controls) has been improved, and the functions' execution time has been reduced.

Spreadsheet View Enhancements

- The OCRMax Show and Go snippet (OCRMax_ShowAndGo.cxd) has been added to the OCV & OCR Snippets directly, enabling users with Full or Protected access to adjust the region and train the font in one step during run-time.

Changes & Fixes

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

- When images are saved from a color vision system using the Sensor Filmstrip, the images are now saved as 24-bit images. Previously, color images were saved as 16-bit images, preventing these images from being used to reproduce the exact job results as the original image. (CR# 74867)
- The CIO-MICRO and CIO-MICRO-CC I/O modules now support In-Sight 5100 and 5400 series vision systems with 128MB non-volatile flash memory or higher. Models can be identified by the Type number (821-xxxx-xx). The Type number is located on the yellow label affixed to the vision system.
- The ReadMC and WriteMC functions (Input/Output --> Network) have been modified to correct an issue when the Timeout parameter value was set below 100ms. Previously, when a Timeout value below 100ms was specified in either function, the response would not reliably be received from the PLC/Motion Controller. (CR# 71270)
- An issue preventing In-Sight Emulators from loading images after changing the Emulator's Online/Offline status has been fixed. Previously, if an Emulator's Online/Offline status was toggled, no images could be loaded unless the Emulator was restarted. (CR# 76022)
- The In-Sight 1402 vision system now supports the AcquireImage function's Trigger Delay parameter. Previously, the Trigger Delay parameter was not supported on the In-Sight 1402 vision system. (CR# 76978)

Please see past In-Sight Explorer Release Notes for changes and fixes in previous releases.
Known Issues

This section describes known issues with the In-Sight Explorer 4.7.0 software, including any known workarounds. Change Request numbers (CR#) have been included to improve tracking of Known Issues reported via Cognex Technical Support.

Uninstalling In-Sight Explorer 4.x.x results in unhandled exception errors for other installed versions of In-Sight Explorer 4.x.x

Issue: If there are multiple versions of In-Sight Explorer 4.x.x (e.g. 4.1.0, 4.1.1, 4.2.0, 4.3.0) installed on a PC and a version of In-Sight Explorer 4.x.x is un-installed, other versions of In-Sight Explorer 4.x.x may generate an unhandled exception error after opening. (CR# 61127)

Workaround: From the Windows Control Panel, run a repair on the version of In-Sight Explorer 4.x.x that is generating the error. To correct this issue, follow these steps:

For Windows XP:
1. Open the Windows Control Panel and select Add/Remove Programs.
2. From the list, select the version of In-Sight Explorer 4.x.x that is generating the error.
3. Below the Cognex In-Sight Explorer 4.x.x label, click on the link: "Click here for support information." This launches the Support Info dialog.
4. Press the Repair button in the Support Info dialog.

For Windows Vista:
1. Open the Windows Control Panel and select Programs and Features.
2. From the list, right-click on the version of In-Sight Explorer 4.x.x that is generating the error.
3. From the right-click menu, select Repair.

PatMax Patterns and Patterns Location and Inspection Tools may not properly display bent Model Regions

Issue: If a PatMax Patterns or Patterns Location or Inspection Tool is added to a job, and the Model Region is bent into a large annular shape, the thumbnail image of the Model may not appear in the Trained Image tab of the tool. (CR# 60798)

Workaround: Although the Model is not displayed as a thumbnail, the Model is still a valid, usable Model. If you need to display the Model as a thumbnail, attempt to utilize a smaller Model Region, or decrease the size of the inner radius of the annulus.

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 (32°F) to 40°C (104°F).

LatchString function referencing either GetColorLibraryName or GetActiveMatchClrColorName may result in an inaccurate #ERR state

Issue: If a LatchString function references the string value returned by either a GetColorLibraryName or GetActiveMatchClrColorName function, if those functions result in a #ERR state, the LatchString function will also be updated to #ERR, even if the event that is set to drive the function's execution has not been fired. The LatchString function will also retain the #ERR status even after the referenced functions are returning valid string data. (CR# 60757)

Workaround: Adjust the Cell State of the referenced cell(s) to "Conditionally Enabled" and reference the cell that contains the event that will drive the LatchString Event parameter.

WriteImageFTP does not write images if the Host Name or User Name have a leading or trailing space in the name

Issue: When using the WriteImageFTP function to write images to an FTP server (in EasyBuilder, the FTP option in the Communications Application Step utilizes this function), if the name specified in the Host Name or User Name parameters contains a space before or after the name, the function will fail to write the image to the specified server. (CR# 62578)

Workaround: Edit the name specified in the Host Name or User Name to not use spaces before or after the name.

Entering formulas longer than 248 characters in property sheets causes In-Sight Explorer to become unresponsive

Issue: While parameters of certain In-Sight Vision Tool functions accept formulas to be entered, there is a limit of 248 characters per formula. If
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a formula is entered that is longer than 248 characters, In-Sight Explorer may become unresponsive until the property sheet is closed by canceling the change. All changes will be lost and the updated formula will not be accepted. (CR# 62574)

Workaround: Ensure that there are fewer than 248 characters in the formula before entering it.

In-Sight connectivity and the ControlLogix EN2T card reports invalid reply to an error

Issue: When an EIP implicit connection is initiated from a ControlLogix EN2T card, with exact or compatible keying enabled and the version number or the device type do not match their corresponding values, the ControlLogix EN2T card may incorrectly report the following error code:
“(Code 16#0022) An invalid reply was received. Reply service code does not match the requested service code.” (CR# 62851)

Workaround: Either disable keying or correct the mismatched values by selecting the appropriate version number or product type.

EasyBuilder MC Protocol changing the Source Device may affect tool results

Issue: In EasyBuilder, if an In-Sight vision system is configured in the Communications Application Step to communicate with a Mitsubishi PLC via MC Protocol, and the Source Device parameter is set to <None> while there are still signals in the input buffer, the tools left in the buffer will be in an error state. In addition, the Remove button will be disabled, and the tools left in the buffer will fail or not execute until they are removed. (CR# 61113)

Workaround: Before changing the Source Device parameter, remove all tool signals from the input buffer.

CIO-1400 Output Lines 4 and 5 use Green and Red LED pulse length

Issue: If an In-Sight vision system is connected to a CIO-1400 with a WriteDiscrete function configured to activate output Lines 4 and 5 with the output Type set to Programmed (level), and output Lines Green and Red LED Type are set to Acquisition Start, Acquisition End or Job Complete, output Lines 4 and 5 will use the pulse length specified for output Lines Green and Red LED. (CR# 65501)

Workaround: Do not set output Lines Green or Red LED to Acquisition Start, Acquisition End or Job Complete; use another output Line for those Types.

Sending Native Mode RT command from a Compact/ControlLogix PLC renders In-Sight vision system unresponsive

Issue: If a Reset System (RT) Native Mode command is sent to a vision system via a generic CIP message or PCCC from a Compact/ControlLogix PLC over EtherNet/IP (EIP), the vision system may become unresponsive and the vision system must be physically power cycled. (CR# 65624)

Workaround: Reset the vision system via the Reset option from the Sensor menu in In-Sight Explorer, or sending the RT command through a telnet client or an In-Sight ISDK application.

PROFINET IO and reading user data records 30-33 returns inconsistent results

Issue: When an In-Sight vision system is configured to communicate over a PROFINET IO network, writing user data to records 30 through 33 is successful, while attempting to read user data records 30 through 33 will return inconsistent results. (CR# 65532)

Inability to utilize the Upgrade Firmware, System Menu command for a CIO-Micro I/O Module

Issue: Unless a user is logged onto In-Sight Explorer as anything other than Admin, with a blank password, the user will not be able to upgrade the firmware of the CIO-Micro using the Upgrade Firmware dialog. (CR# 66054)

Workaround: Upgrade the firmware of the CIO-Micro using the I/O Module Configuration Dialog.

EditMaskedRegion and EditPolylinePath Unable to Disable Delete Keyboard Key

Issue: The EditMaskedRegion and EditPolylinePath functions are unable to prevent the Delete keyboard key from being used to remove a mask or point, even though their respective property sheets have been configured to prevent the removal of masks or points (i.e. the Remove Masks/Remove Points checkboxes are unchecked/disabled). (CR#s 66119 & 66133)

In-Sight Explorer and IPsec on Windows XP

Issue: For PCs running Windows XP (32-bit), in order to allow In-Sight Explorer to enable IPsec settings on Windows XP, the ipseccmd.exe file must be installed on the PC. (CR# 75047)

IPsec Rules Covering UDP Traffic

**Issue**: When configuring an In-Sight vision system that is utilizing UDP communications and an IPsec rule is added, if the rule is set with the Protocol type parameter set to UDP or Any, the Source Ports parameter is set to Any Ports and the Destination Ports parameter is set to Any Ports, after accepting the rule, the vision system will no longer appear on the network, or in the OPC server. (CR# 75630)

**Workaround**: If the In-Sight vision system no longer appears in the In-Sight Network pane, launch the Add Sensor/Device to Network Dialog and restore it to its factory default settings. When re-configuring the vision system for IPsec, do not set both the Source Ports and Destination Ports to Any; always use a specific port or range of ports for either the Source Ports or Destination Ports parameters, if using UDP.

IPsec and UDP Must Use Mirrored Rules

**Issue**: If an In-Sight vision system has been configured to communicate over port 1069, and UDP is the communication method, to properly encrypt messages, the rules must be mirrored. (CR# 75771)

**Workaround**: For UDP communications to be properly encrypted with IPsec, ensure that all rules are mirrored.

ReadIDMax Exceeding Timeout Value

**Issue**: At times, the ReadIDMax function may exceed the specified Timeout parameter value by varying percentages. (CR# 76721)

**Workaround**: Adjust the Timeout parameter value lower to compensate for the overage.

TestRun™ Results in Unhandled Exception When Activating MessageBox Functions

**Issue**: When configuring a TestRun test, if the job being tested contains a MessageBox function that is being activated by a Setup Action, an unhandled exception will be issued. (CR# 77100)

**Workaround**: MessageBox functions should not be initiated as a TestRun Setup Action.

OCRMax and Displaying Bent Input Regions

**Issue**: When an OCRMax function is configured to utilize a bent region of interest, with the Show parameter set to Show All and the Output Image Graphic parameter set to Input Image, the segmented characters will not be displayed correctly. (CR# 77019)

**Workaround**: Set the Show parameter to Show Results.

OCRMax Does Not Display Large Characters in Train Font Tab

**Issue**: When an OCRMax function is configured to train large characters (larger than approximately 40,000 pixels in area), they will not be displayed in the Train Font tab or in the Add Individual Characters to Font dialog. (CR# 77060)

**Workaround**: Reduce the size of the characters before training.

In-Sight 1402 and 7000 Series Vision Systems and Gain

**Issue**: When connected to an In-Sight Micro 1402 or 7000 series vision system, if the Gain value in the AcquireImage property sheet is set to a value greater than 50, errors may occur during the analog-to-digital conversion, resulting in a loss of image intensity accuracy. (CR# 77056)

Closing OCRMax Function Property Sheet on In-Sight Vision Systems

**Issue**: When connected to an In-Sight vision system and editing an OCRMax function's property sheet, after completing the edits and closing the function's property sheet, the amount of time to close the property sheet may take several seconds, especially if the function contains a large font database. (CR# 76801)

Microsoft Windows Firewall Settings

**Issue**: In-Sight Explorer and In-Sight OPC Server are not automatically added to the Windows Firewall Programs exception list, and a warning dialog may be launched that Windows Firewall Programs has blocked portions of the application. (CR# 77369)

**Workaround**: To add the programs, either allow access through the warning dialogs, or manually add the following to the Windows Firewall exception list:
For In-Sight Explorer, add the following applications:

- (In-Sight Explorer folder location)\In-Sight Explorer.exe
- (In-Sight Explorer folder location)\Emulator\In-Sight.exe

For the In-Sight OPC Server, add the following application:

- (In-Sight OPC Server folder location)\OPCInSight.exe

### Changing Light Control Mode or Light Intensity Settings in EasyBuilder View

**Issue:** When connected to an In-Sight 7000 vision system and editing the vision system's Light Control Mode or Light Intensity parameters in the Edit Acquisition Settings group box in EasyBuilder View, changes made to those settings do not cause the vision system to acquire a new image. (CR# 77601)

**Workaround:** After adjusting the settings, press the Trigger button or the F5 key to manually acquire a new image.

### After Loading Job, Autofocus Function Executes Regardless of Disabled Cell Condition

**Issue:** If a job contains an Autofocus function that is in a cell that is disabled, after loading the job, the function will return the lens to the last position it was at prior to when the job was saved, disregarding the cell's disabled status. Once the job has been loaded and the function has returned to the last saved position, the Autofocus function will correctly enforce the enabled/disabled status. (CR# 77622)

**Workaround:** For jobs that require multiple focal distances, use multiple SetFocusPosition functions instead of multiple Autofocus functions.