Interfacing a Control Logix PLC with iNspect

Using AB Control Logix Tags

This simple (iNspect 1450) example illustrate how to setup iNspect and interact with a Control Logix PLC using Tags or “explicit messaging”. It assumes that the Control Logix PLC is already configured and ready to connect with the following tag definitions:

IPD_Heartbeat	IPD system online check
IPD_Barcode_Value	Expected barcode string from PLC
IPD_Barcode_String	Barcode string read by IPD system
IPD_ResetCount	Reset IPD inspection count from PLC
IPD_PassCount	# of pass inspections
IPD_FailCount	# of fail inspections
IPD_SolutionNum	Solution of the day

IP Address of the Vision Appliance is 192.168.10.105

IP Address of the PLC is 192.168.10.100

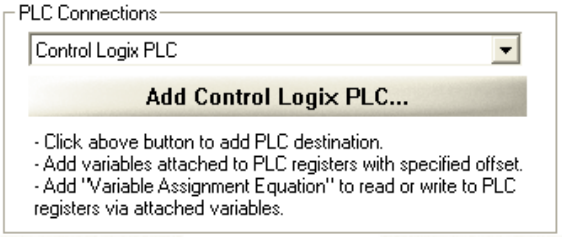
Application requirement:

1. Compare the barcode on a package against a predefined string (set by the PLC) and report pass/fail count.
2. Return barcode string read
3. Reset Pass/Fail count is signaled by “IPD_ResetCount”
4. Switch solution at the end of inspection as specified by IPD_SolutionNum
5. Reset heartbeat flag if set anytime

Step 1: Define a PLC Control Logix Connection

Add Control Logix PLC

Setup Outputs->PLC Connections



Define a Connection

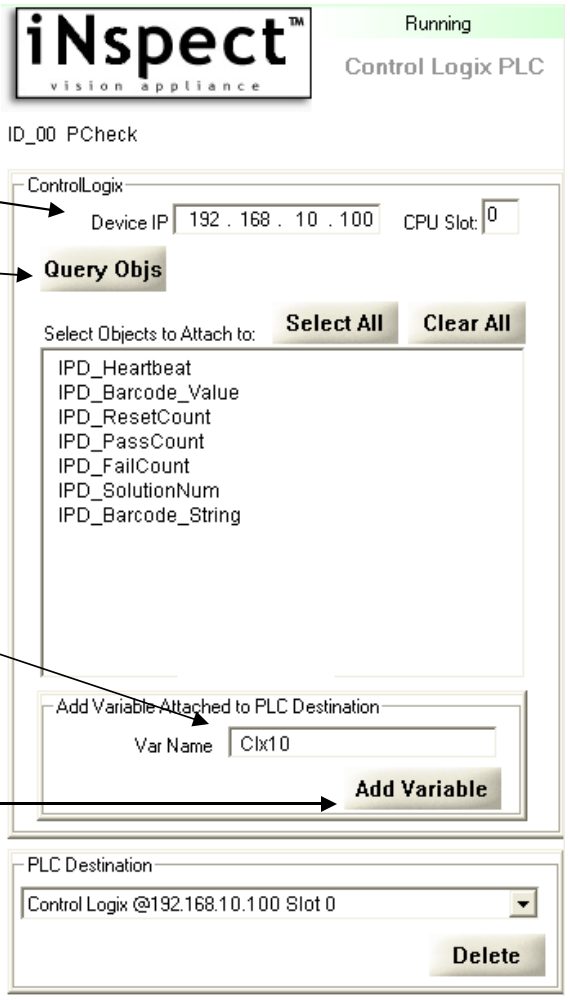
Select PLC IP Address

Click “Query” to view the defined PLC control tags

Click “Select All” to bring all the tags into iNspect

Define a variable name to attach the tags to (these will appear in the variable manager)

Click “Add Variable” to complete the PLC Connection



Step 2: Setup the Variable Manager

The Variable Manager shows the attached Control Logix tags in the variable tree window

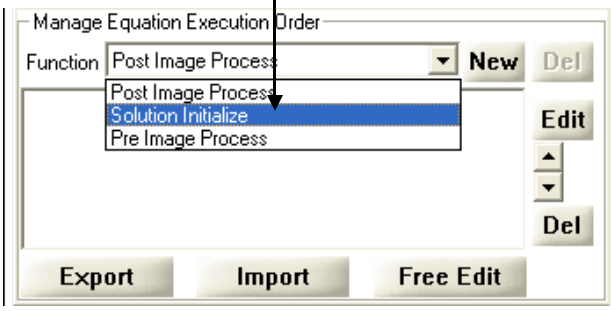
The complete tag looks like:

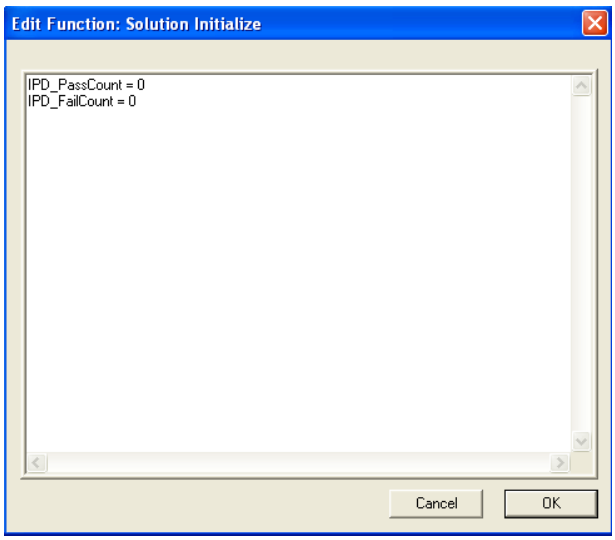
“IPD_FailCount : Attached to Control Logix @ 192.168.10.100 Slot0”

The variable Type (i.e. BOOL, INT, DINT, Char String etc) is resolved by iNspect when the connection is made.

In this example, the barcode tool has been setup with a result variable “Barcode1”

To setup the application, we’ll first use the “solution initialize” function to reset the inspection counts when the solution loads:

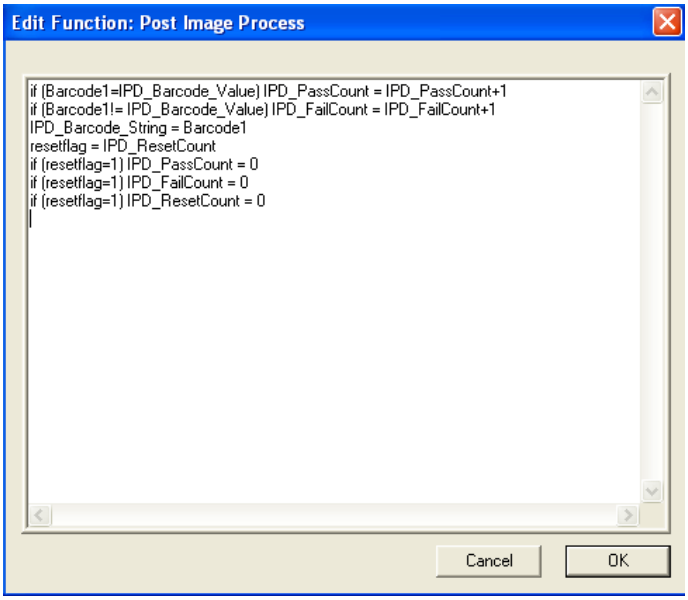




Free form editor window

We'll then use the Post Image Process function to interact with the PLC after each inspection.

Since in this case the VA is not physically controlling any external equipment, we only have to setup equations to compare the string, set the pass/fail counts and reset any parameters for the next inspection.



Lastly, we'll set up a periodic function that monitors the heartbeat and loads the appropriate solution file (if it changes)

We're now ready to run!