

May 10<sup>th</sup>, 2012

FANUC RL

### About iRVision on R-30iB Controller (Notification)

Specification of iRVision is improved and modified in some points for R-30iB controller. We FANUC RL plans to provide details in manuals, presentation slides and so on later, but this paper provides quick summary of the improvements and modifications.

## Hardware

### Hardware Configuration

- The VISION optional CPU board is not supported on R-30iB. Instead, the high-speed CPU card option is supported for the MAIN CPU board.
- The new Ethernet iPendant is supported for R-30iB, and iRVision setup is available not only on PC but also on the new iPendant with touch screen. (Note: Setup of visual tracking and bin picking are available only on PC for the time being.)

### Analog Cameras

- Image resolution of an analog camera (i.e. XC-56) connected to the MAIN CPU board is increased from 512x480 to 640x480 pixels.
- MUX for the analog cameras can supply power to the Camera Package's LED light. It also can control the LED light's on/off and intensity without the process I/O board.

### Digital Cameras

- Communication with color camera and high-resolution camera are completely digitized, and those cameras are more functional. The brand-new, inexpensive digital CCU (Camera Connection Unit) is designed for R-30iB. The CCU for R-30iA is no longer available for R-30iB. Camera heads are common to R-30iA and R-30iB.
- Camera cables are revised for them. The new camera cables can be used not only for digital cameras but also for analog cameras (i.e. XC-56)

## Software

### Option Configuration

- Software option lineup for iRVision are restructured to make them easy to order.
- Table-1 below shows the major iRVision options. Order at least one to use iRVision.

- Table-2 below shows the addendum options. Order them if necessary.
- See also the attachment about functions included in each software option.

#### Easier to Use

- The compensation plane for 2D offset can be specified in vision process. This allows using the same camera calibration in 2D applications for different 2D planes.
- The compensation plane for 2D tool offset can be specified with respect to a user tool. This improves accuracy of tool offset, especially in the case of snap-in-motion.
- The color extraction parameters can be setup in vision process side. This allows using the same camera calibration for various color extraction, and also allows extracting different colors in a single vision process.
- Robot Ring setup is integrated in the communication setup menu screen.

#### Vision Data Compatibility

- Vision data created on R-30iA cannot be loaded on R-30iB

#### Others

- The simple 2D camera calibration is no longer supported.

Table-1 Major Options

Order Number	Option Name	Description
A05B-2600-J901	iRVision 2DV	2D application, Inspection, Barcode reading, 3D tri-view
A05B-2600-J902	iRVision 3DL	3D Laser Vision Sensor
A05B-2600-J903	iRVision Visual Tracing	Visual Tracking, including tracking queue
A05B-2600-J909	iRVision Bin Picking	Bin Picking
A05B-2600-J912	iRVision Image to Points	Image to Points

Table-2 Addendum Options

Order Number	Option Name	Description
A05B-2600-J917	iRVision Slave	Vision instructions, for controllers without iRVision
A05B-2600-J871	Vision UIF Controls	UIF Controls to enable vision setup on PC
A05B-2600-J873	Vision Support Tools	KAREL programs such as MATRIX
A05B-2600-J874	Tracking Queue	Tracking queue for controllers without iRVision

Attachment: Functions included in each software options

	J901	J902	J903	J909	J912	J917	J873	J874
	2DV	3DL	Visual Tracking	Bin Picking	Image to Points	Slave	Support Tool	Tracking Queue
<b>Vision Processes</b>								
2D Single View Vision Process	•							
2D Multi View Vision Process	•							
Depalletizing Vision Process	•							
Inspection Vision Process	•							
Barcode Reader Vision Process	•							
3D Tri View Vision Process	•							
3DL Single View Vision Process		•						
3DL Multi View Vision Process		•						
3DL Cross Section Vision Process		•						
3DL Curved Surface Vision Process		•						
Visual Tracking Vision Process			•					
Bin-Pick Search Vision Process				•				
Image to Points Vision Process					•			
<b>Other Functions</b>								
Robot Ring (RIPE)	•	•	•	•	•	•	•	•
TPP Instructions	•	•	•	•	•	•		•
SupportTool, such as MATRIX			•				•	•
Tracking Queue			•					•
Line Tracking (=J512)			•					•
Bin Pick Workpiece Manager, Interference Avoidance				•				