

# Vision[Ai]ry

## Vision[Ai]ry Tracking

### Setup and User Guide

for Vision[Ai]ry version 2.0

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David Ross  
CEO, Ross Video  
[dross@rossvideo.com](mailto:dross@rossvideo.com)

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# Setup and User Guide for Vision[Ai]ry Tracking

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## Company Address and Contact Information



**Ross Video Limited**  
8 John Street  
Iroquois, Ontario  
Canada, K0E 1K0

**Ross Video Incorporated**  
P.O. Box 880  
Ogdensburg, New York  
USA 13669-0880

General Business Office: (+1) 613 • 652 • 4886

Fax: (+1) 613 • 652 • 4425

Toll Free Technical Support: 1-844-652-0645 (North America)  
+800 1005 0100 (International)

Technical Support: (+1) 613 • 652 • 4886

E-mail for Technical Support: [techsupport@rossvideo.com](mailto:techsupport@rossvideo.com)

ROSS VIDEO | HELP CENTER: <https://support.rossvideo.com/hc/en-us>

E-mail for General Information: [solutions@rossvideo.com](mailto:solutions@rossvideo.com)

Ross Video Website: <http://www.rossvideo.com>

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# Welcome

Welcome to the Setup and User Guide for Vision[Ai]ry Tracking.

This manual provides a general overview of Vision[Ai]ry and describes how to set up and operate a Vision[Ai]ry system.

**IMPORTANT:** This manual provides general product information and describes how to perform selected tasks. It is not a comprehensive service manual and is not a replacement for product commissioning or formal training.

**IMPORTANT:** Initial setup and commissioning must be performed by Ross Video personnel only. Unauthorized attempts by customers or third parties to unpack, assemble, or commission any components of the robotics system may result in equipment damage and/or injury. Any such attempts may void product warranties.

## Text Formatting Conventions

Special text formats are used in this Setup and User Guide to identify parts of the user interface, text that a user must enter, or a sequence of menus and sub-menus that must be followed to reach a particular command.

Text Format	Meaning
<b>Bold text</b>	Bold text is used to identify a user interface element such as a dialog box, menu item, or button. For example: In the <b>Options</b> area, click the <b>Basic</b> tab.
Courier text	Courier text is used to identify text that a user must type. For example: In the <b>IP Address</b> box, type <code>localhost</code> .
<i>Italic text</i>	Italic text is used to identify the titles of referenced guides, manuals, or documents. For example: For more information, refer to <i><b>Site Requirements for Vision[Ai]ry Ft (5100DR-092-x.x)</b></i> .
>	Menu arrows are used in procedures to identify a sequence of menu items that you must follow. For example, if a step reads, "In the menu, navigate to <b>Settings &gt; Network</b> ", you would click <b>Settings</b> and then click <b>Network</b> .

# Contacting Technical Support

At Ross Video, we take pride in the quality of our products, but if problems occur, help is as close as the nearest telephone.

Our 24-hour Hot Line service ensures you have access to technical expertise around the clock. After-sales service and technical support is provided directly by Ross Video personnel.

During business hours (Eastern time), technical support personnel are available by telephone any time. Emergency after hours calls are answered by an answering service (live person) who will patch your call to the on-call support specialist. In the event that the on-call person is assisting another customer, the answering service will contact the back-up support specialist.

Our team of highly trained staff is available to react to any problem and to do whatever is necessary to ensure customer satisfaction.

- **Toll Free Technical Support 24/7:** 1-844-652-0645 (North America), or +800 1005 0100 (International)
- **Technical Support:** (+1) 613-652-4886
- **E-mail for Technical Support:** [techsupport@rossvideo.com](mailto:techsupport@rossvideo.com)
- **ROSS VIDEO | HELP CENTER:** <https://support.rossvideo.com/hc/en-us>
- **E-mail for General Information:** [solutions@rossvideo.com](mailto:solutions@rossvideo.com)
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# About Vision[Ai]ry

Vision[Ai]ry is a Ross Video software solution that enhances existing robotic systems by enabling robotic cameras to automatically correct and maintain video framing.

It reduces camera operator workload by eliminating the need for manual corrections of the camera position to compensate for talent movement such as day-to-day variations in seating position, posture, and talent height.

Vision[Ai]ry is optimized for use in Broadcast News, Weather, and Sports studio broadcasts where the subjects are typically seated at a desk or standing in front of a backdrop or video display. The system automatically adjusts the pan, tilt, and zoom (PTZ) axes of the robotic camera to ensure that the subject is properly framed in the image at all times, based on a configurable framing target.

This section describes aspects of the Vision[Ai]ry system. For more detailed information about site requirements including computer system requirements, video routing requirements, supported video formats and video transport, positional data requirements, and head and lens calibration profiles, see ***Site Requirements for Vision[Ai]ry (5100DR-092-xx)***.

## ***Vision[Ai]ry Engine***

The heart of the system is the Vision[Ai]ry Engine service, which ingests and analyzes live video from a robotic camera. The Engine uses artificial intelligence (AI) technology to detect and track subjects. Based on choices made by the operator, such as which subject to track and where they should appear in the video frame, the Vision[Ai]ry Engine controls the PTZ axes of the robotic camera to keep talent framed as desired.

The Engine's robust subject-detection algorithm is trained against a gender, ethnicity, and age-diverse data set that includes a wide variety of poses, head coverings and accessories. The algorithm can be configured to detect either subjects' faces or their entire heads.

Subjects are accurately identified and located no matter who they are, whether they are wearing glasses, hats, turbans, or masks, or looking at or partially away from the camera. As long as 50% or more of a face is visible and the height of the face is at least 9% of the video frame height, Vision[Ai]ry can reliably track it. The Engine can detect up to 30 subjects simultaneously.

In addition to facial tracking, Vision[Ai]ry can optionally support full-body detection, providing enhanced tracking capabilities even when a subject's face is not fully visible. The AI algorithm identifies the subject's body for accurate tracking, with the option to enable a 'simulated head' projection within the body bounding box as an additional feature. This ensures continuous tracking even when the subject's head is not fully visible. This allows the system to continue tracking subjects who turn away from the camera or move behind obstacles.

Body tracking ensures that the camera maintains the desired framing and smooth operation, further reducing the need for manual adjustments by operators. This capability also enables framing and active tracking of the entire body, not just the face or head, especially when the subject is too far from the camera or when it is desired to include the whole body in the frame.

## Vision[Ai]ry Key Features

Vision[Ai]ry offers several key features that enhance the operation and control of robotic cameras, ensuring accurate and consistent subject tracking:

- **Advanced Tracking Controls**

Vision[Ai]ry allows for precise control over how subjects are tracked within the video frame, utilizing several key features:

- › **Target Mode**

Allows you to select whether Vision[Ai]ry tracks single or multiple subjects, with options to focus on heads or bodies (if body tracking is licensed).

- › **Bounding Boxes**

These visually highlight the detected subjects within the video frame. Blue bounding boxes indicate selected subjects for tracking, while gray boxes indicate non-selected subjects.

- › **Deadband**

Determines how far a subject can move away from the framing target before Vision[Ai]ry begins to adjust the camera. You can configure deadband settings separately for the pan, tilt, and zoom axes.

- › **Damping**

Controls how smoothly the camera responds to changes in the subject's position within the frame. Higher damping values result in slower, smoother camera movements, while lower values cause quicker, more abrupt movements.

- **Templates and Links to Presets**

Framing templates in Vision[Ai]ry are used to save and recall specific framing settings, ensuring consistent shot composition. These templates include settings for the size and position of the framing target, deadband, damping, and the enable/disable status of each axis (pan, tilt, zoom). Templates can also be linked to robotic presets, so that recalling a preset automatically applies the linked template, providing a seamless transition between different shots

- **Body vs. Head Targeting**

Vision[Ai]ry offers flexible tracking options that allow you to choose which part of the subject to focus on during detection. **Target Mode** determines whether Vision[Ai]ry tracks the subject's head or body, ensuring that the most relevant area is accurately followed based on your chosen configuration.

- › **Head Targeting**

Actively tracks the subject's head, ensuring focused tracking when facial visibility is crucial.

- › **Body Targeting**

Actively tracks the subject's entire body, useful for scenarios where full-body movements are important.

- › **Face Only vs. Full Head Detection**

Vision[Ai]ry can be configured to detect just the face or the entire head, with head detection being more robust in situations where the face is partially obscured or the subject turns away from the camera. Vision[Ai]ry detects subjects most reliably when their faces are at least 9% of the video height and less than 50% obscured.

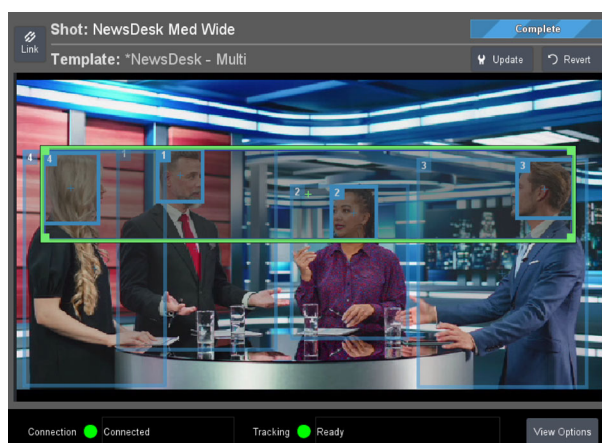
**Note:** This mode must be configured with the system is set up. Refer to **Step 8d** from "**To install Vision[Ai]ry Engine:**" on [page 22](#). Additional information is available in the **Site Requirements for Vision[Ai]ry Ft (510DR-092-x.x)**.

- **Subject Selection mode**

Vision[Ai]ry offers both automatic and manual subject selection modes. In automatic mode, the system prioritizes subjects based on their proximity to the framing target. In manual mode, operators can select specific subjects for tracking, allowing for greater precision in choosing which subjects the camera will follow.

- **Multi-Subject Tracking**

Multi-subject tracking in Vision[Ai]ry enables the system to track multiple subjects within a single frame simultaneously.



**Figure 1 - Multi-subject Tracking**

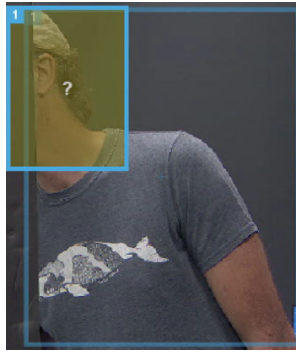
This feature is essential for productions involving multiple on-screen participants, such as panel discussions or group interviews.

Overview:

- › **Configurable Subject Limit:** Users can define the maximum number of subjects Vision[Ai]ry will track at any given time, supporting up to 30 simultaneous subjects. This setting allows for flexibility based on the specific needs of the production.
  - › **Real-Time Framing Adjustments:** The system continuously adjusts the pan, tilt, and zoom of the camera to ensure that all selected subjects remain within the designated framing target. This dynamic adjustment minimizes the need for manual intervention during live production.
  - › **Bounding Box Visualization:** Each detected subject is highlighted with a bounding box, aiding in visual tracking. Selected subjects are marked with a blue bounding box, while non-selected subjects are indicated with a gray box. When tracking multiple subjects, a dark blue bounding box encloses the group, showing the area the system actively frames.
  - › **Application Scenarios:** Multi-subject tracking is particularly beneficial in scenarios where multiple individuals need to be kept in frame, reducing the operator's workload and ensuring consistent shot composition.
- **Simulated Head Projection and Tracking**  
**Simulated Head Projection and Tracking** is a feature designed to maintain accurate tracking even when a subject's head is not fully visible. This is critical in scenarios where subjects may turn away from the camera or become partially obscured.

Overview

- › **Simulated Head Projection:** When a subject's head is no longer visible, Vision[Ai]ry projects a "simulated head" within the body bounding box. This allows the system to continue tracking the subject based on the projected head, ensuring continuous and accurate tracking.
  - › **Transition Handling:** The system transitions seamlessly from tracking the actual head to the simulated head, maintaining smooth camera movements and avoiding disruptions in framing.
  - › **Customizable Tracking Behavior:** Operators can configure how the system handles simulated head tracking for each axis:
    - **Pan and Tilt Axes:** Users can enable or disable simulated head tracking for panning and tilting. This allows for customized responses based on the specific production requirements.
    - **Tilt Up/Down:** Separate controls for tilting up and down provide additional flexibility, ensuring that the camera behaves appropriately as the subject moves.
- Note:** Zoom axis is always disabled when Vision[Ai]ry is actively tracking a simulated head, as changes in detected body size are not a reliable indicator of changes in head size (for example if part of the body is cut off).
- › **Visual Indicators:** When Vision[Ai]ry is projecting a simulated head, the subject's bounding box will display a question mark (?). This provides a clear visual cue to the operator.



**Figure 2** - Simulated Head Projection Bounding Box

- › **Application Scenarios:** This feature is ideal for environments with unpredictable subject movement or frequent obstructions, ensuring reliable tracking and consistent framing without the need for constant manual adjustments.

### **Vision[Ai]ry Control**

The Vision[Ai]ry Control service provides easy-to-use interfaces for configuration and channel control, presented within a Ross Video DashBoard client interface. While viewing embedded live video, you can manually select subjects for tracking or let Vision[Ai]ry select them automatically. You can also create and recall framing templates that ensure consistent shot framing.

You retain artistic control, deciding how the subject is to be framed — its size and position within the video frame — as well as which axes are enabled, how far the subject can move before the system responds (deadband), and how abruptly the camera accelerates and decelerates (damping).

### **Vision[Ai]ry Channels**

A Vision[Ai]ry Engine controlled by the Vision[Ai]ry Control service constitutes a Vision[Ai]ry channel. A channel can provide facial tracking and PTZ control for one robotic camera system at a time.

A Vision[Ai]ry system may include a single channel or multiple channels:

- In a **single-channel** system, you can connect multiple cameras to the channel and use the **Channel Control** page to operate them one at a time. For more information about single-channel systems, refer to the Architecture section in the **Site Requirements for Vision[Ai]ry (5100DR-092-2.0)**.
- In a **multi-channel** system, each channel is typically dedicated to a single camera. You can use **Channel Control** pages to operate any number of individual channels or use the **MultiChannel** page to control up to six channels simultaneously, showing live video and controls for all six cameras. For more information about multi-channel systems, refer to the Architecture section in the **Site Requirements for Vision[Ai]ry (5100DR-092-2.0)**.

A Vision[Ai]ry system includes one or more DashBoard client workstations. In multi-channel systems each workstation can be configured to control one or more channels from a common pool of channels.

### **Supported Robots**

Vision[Ai]ry is fully compatible with existing Ross robotic camera systems. It is designed to control the following robots:

- Ross Video Artimo Robotic System.
- Furio VR100 and VR600 PT heads, whether standalone or mounted on a Furio Dolly and/or Furio robotic lift. Furio firmware v5.2c (or higher) is required.

**Note:** Vision[Ai]ry controls the pan, tilt, and zoom axes only. If the head is mounted to a lift and/or dolly that moves while Vision[Ai]ry is tracking, the system operates the pan, tilt, and zoom axes to continue tracking the subject.

- Ross Video X300 and X350 PT Heads.
- Ross Video PTZ-12G+, PTZ-12G, and PTZ-NDI Cameras.

**Note:** Vision[Ai]ry does not support NDI | HX video, which is the type of NDI format that Ross Video PTZ-NDI cameras output. Vision[Ai]ry supports NDI format, but not NDI | HX.

- CamBot heads (520PT, 600PT, 700PT) that are running CamBot firmware version 3.4.x (or earlier) AND are controlled via a Robotics Server running v5.2e (or higher). Hot fix 5.2.505.8000 is required when using v5.2e. Contact Ross Video Tech Support for more information.
- CamBot heads mounted on CamBot XY free-roaming pedestals when one of the following is true:
  - › The pedestal is running Furio firmware v5.2c (or higher).
  - › The pedestal is running CamBot firmware AND is controlled via a Robotics Server running v5.2e (or higher). If the Robotics Server is running v5.2e, hot fix 5.2.505.8000 is required.

**Note:** Vision[Ai]ry controls the pan, tilt, and zoom axes only. If the lift and/or pedestal move while Vision[Ai]ry is tracking, the system operates the pan, tilt, and zoom axes to continue tracking the subject.

## ***Integrated Control***

Vision[Ai]ry integrates seamlessly with other Ross Robotics control applications such as SmartShell, OverDrive, and DashBoard PT Head Control. For example, when you run a Furio Dolly move in SmartShell with Motion Control, Vision[Ai]ry provides supplemental control to keep the subject perfectly framed in the shot as the dolly rolls along the track.

With Vision[Ai]ry, you no longer need to maintain collections of nearly-identical presets to compensate for minor variations in framing requirements such as accommodating multiple hosts of different heights. If the subject unexpectedly starts to move, no operator action is required. The robotic camera automatically follows the subject and frames it as desired within the shot.

You can link Vision[Ai]ry framing templates to presets so that when you recall a preset, the subject is automatically framed as specified in the linked framing template.

## ***Zoom Compensation***

Vision[Ai]ry avoids any sudden, jarring camera motion by scaling the acceleration rate and speed of the pan and tilt axes based on the position of the zoom axis. For example, if the lens is zoomed in tightly, Vision[Ai]ry accelerates the pan and tilt axes more gently and moves them more slowly to provide consistently smooth, steady camera motion.

## ***Vision[Ai]ry Licensing***

Vision[Ai]ry requires specific software licenses to operate its various features. This section outlines the necessary licenses, including the body tracking license, and the requirements for using the Ross Platform Manager (RPM).

### **Required Licenses**

- **DashBoard Client Workstation License**  
A license is needed for each DashBoard client workstation controlling Vision[Ai]ry channels.  
Order Number: **RRB-VAI-FT-CLIENT**
- **Vision[Ai]ry Channel License**  
Each Vision[Ai]ry channel, which consists of a connection between an instance of the Vision[Ai]ry Control service and a Vision[Ai]ry Engine, requires a license.  
Order Number: **RRB-VAI-FT-ENGINE**
- **Body Tracking License**

Each Vision[Ai]ry channel which uses body tracking requires an additional license on top of the channel license.

Order Number: **RRB-VAI-BT-ENGINE**

### **Ross Platform Manager (RPM) Requirement**

All Vision[Ai]ry licenses must be managed through the Ross Platform Manager (RPM), or directly back to the Ross Video Activation Server. The RPM Licensing Server software is available free of charge, but requires hardware to run on.

For information about purchasing Vision[Ai]ry licenses or an RPM server, contact your Ross Video sales representative.

### **System Architecture**

For architecture diagrams and system configurations, refer to the Architecture section in the ***Site Requirements for Vision[Ai]ry (5100DR-092-2.0)***.

These architecture diagrams include:

- Single-channel systems
- Multi-channel systems
- Multi-channel systems with Vision[Ai]ry server(s)

# Vision[Ai]ry Setup

This section describes how to install and configure a Vision[Ai]ry Tracking system.

Procedures in this section assume you already have a working Ross Robotics system that includes the SmartShell Control application and a Robotics Server. The Robotics Server is a software service that may run on the same computer as SmartShell, or on a separate dedicated computer. The procedures in this section describe how to add Vision[Ai]ry capabilities to your existing Ross Robotics system.

Setup procedures vary depending on whether you are setting up a single-channel system or a multi-channel system. You must know what type of system you are setting up before you begin. For more information, see “**Vision[Ai]ry Channels**” on [page 11](#).

If you already have a working Vision[Ai]ry system and want to upgrade to a newer version of Vision[Ai]ry, see “**Upgrading Vision[Ai]ry**” on [page 57](#).

Perform all procedures in the order presented.

Before you begin, we recommend that you review the product site requirements, which include minimum system requirements for installing Vision[Ai]ry software. For more information, see **Site Requirements for Vision[Ai]ry (5100DR-092-xx)**.

**Note:** Vision[Ai]ry requires the following software licenses:

- One license for each DashBoard client workstation controlling Vision[Ai]ry channels. The license order number is **RRB-VAI-FT-CLIENT**.
- One license for each Vision[Ai]ry channel, which consists of a connection between an instance of the Vision[Ai]ry Control service and a Vision[Ai]ry Engine. The license order number is **RRB-VAI-FT-ENGINE**.
- One license for each Vision[Ai]ry channel using body detection, which enables the body tracking capabilities within Vision[Ai]ry. The license order number is **RRB-VAI-BT-ENGINE**.
- All Vision[Ai]ry licenses must be managed through the Ross Platform Manager (RPM). RPM centralizes license management, streamlining the process of requesting, releasing, and monitoring licenses.

For information about purchasing Vision[Ai]ry licenses, contact your Ross Video sales representative.

**IMPORTANT:** Before you operate Vision[Ai]ry, ensure that the persistent pan and tilt axis limits for all robotic camera systems are set appropriately, to prevent damage to their heads and payloads. Also set the persistent zoom axis limits to optimize performance. Be sure to configure the **persistent** axis limits for each head, not only the **temporary** limits available in a robotic control application such as SmartShell, so the limits are not lost when the head is rebooted.

**IMPORTANT:** The Vision[Ai]ry Control application and Vision[Ai]ry Engine(s) communicate over a network and require access to certain inbound network ports. Port access must be configured before you set up Vision[Ai]ry. Approval from your organization’s IT department may be required. For a list of network configuration requirements, see **Site Requirements for Vision[Ai]ry (5100DR-092-xx)**.

**IMPORTANT:** Setting up Vision[Ai]ry requires specialized knowledge. Ross Video commissioners are trained to set up complete Vision[Ai]ry systems to interact seamlessly with your facility’s existing Ross Robotics system, IP network, cameras, video router, etc.

**Initial Setup of Vision[Ai]ry consists of the following main tasks:**

1. “**Set Up Hardware Components**” on [page 15](#)
2. “**Install Vision[Ai]ry Control and Engine Software**” on [page 17](#)
3. “**Install DashBoard**” on [page 26](#)
4. “**Connect to the Vision[Ai]ry Control Service**” on [page 27](#)

5. "License, Add, and Edit Channels" on [page 28](#)
6. "Add and Edit Cameras in Vision[Ai]ry" on [page 34](#)
7. "Configure Video Routing" on [page 40](#)
8. "Configure RossTalk Listener" on [page 42](#)
9. "License Vision[Ai]ry Workstations for Channel Control" on [page 44](#)
10. "Configure the MultiChannel Page (multi-channel systems)" on [page 45](#)
11. "Rearrange User Interfaces for Optimal Workflow (optional)" on [page 49](#)
12. "Link Vision[Ai]ry with Camera Control (optional)" on [page 53](#)

After you set up Vision[Ai]ry, you may want to:

- Create a backup copy of Vision[Ai]ry configuration data generated by the Vision[Ai]ry Control service including framing templates and links to robotic presets, and a backup copy of MultiChannel page layout data saved by DashBoard on each Vision[Ai]ry workstation. For more information, see "**Backup and Restore Vision[Ai]ry Configuration Data**" on [page 152](#).
- Add a USB joystick to control framing operations such as resizing and repositioning the framing target, enabling and disabling axes, and changing the **Subject Selection Mode** mode and **Active Tracking** mode. For more information, see "**Appendix**" on [page 156](#).
- Adjust settings to control how each channel Control page operates. For more information, see "**Channel Control Page Overview**" on [page 60](#).

## Set Up Hardware Components

Procedures and information in this manual assume you already have a working Ross Robotics system. This section describes additional hardware components that may be required to support Vision[Ai]ry.

Topics in this section include the following:

- "**Control Computer(s) and Engine Computer(s)**" on [page 15](#)
- "**Video Router**" on [page 16](#)
- "**Video Cabling and Video Format Converter**" on [page 17](#)

### Control Computer(s) and Engine Computer(s)

Set up the computer(s) that will host the Vision[Ai]ry Control and Engine services. The required computers for these software components depend on whether the system is single-channel or multi-channel:

- **Single-Channel System**

**Installation:** You will install the Engine and Control services on the SmartShell computer.

**System Requirements:**

- › Older SmartShell computers may not satisfy the minimum system requirements for running the Vision[Ai]ry Engine and Control services.
- › SmartShell computers will not support body tracking, as this requires a GPU.  
**Note:** For more information about whether your SmartShell computer satisfies the minimum system requirements, see *Site Requirements for Vision[Ai]ry (5100DR-092-x.x)*.

- **Multi-Channel System**

**Control Service:** You will install the Control service on the computer that runs the Robotics Server service.

**Engine Service:**

- › You will install an instance of the Engine service for each channel, on dedicated computers.

- › Typically, this means one Engine per computer. However, a single computer can be configured to support multiple engine channels if the system hardware supports it.

**Note:** For information about minimum system requirements for computers running the Engine service, see *Site Requirements for Vision[Ai]ry (5100DR-092-x.x)*.

- **Vision[Ai]ry Server**

A Vision[Ai]ry server will support up to 4 channels of Vision[Ai]ry together with the Control Service and Robotic Server.

**Important:** When using multiple servers to support more than 4 channels of Vision[Ai]ry, only install the Control Service and Robotics Server on one of them.

**Note:** For multi-channel systems, do not install the Engine service on any computers that you plan to use as Vision[Ai]ry workstations.

**IMPORTANT:** Configure each computer's power settings such that it does not automatically shut down or go into **Sleep** mode or **Hibernate** mode.

## Video Router

Each Vision[Ai]ry Engine ingests and analyzes live streaming video from one robotic camera at a time.

Vision[Ai]ry Engines accept video from NDI streams (Not NDI|HX), via USB input. Converters from SDI video to NDI over USB can be external devices, or an installed video capture card.

If there is only one robotic camera per channel (typical for multi-channel systems), a video router may not be required because video from the camera can be hard-wired to pass through a video format converter to the computer running the channel's Vision[Ai]ry Engine.

If there are multiple robotic cameras per channel, each time the operator selects a camera for tracking, video routing is required to switch the video source sent to the channel's Vision[Ai]ry Engine. Having multiple cameras per channel is typical for single-channel systems, and is also possible for multi-channel systems.

For more information about components and signal paths for single-channel and multi-channel systems, refer to the Architecture section in the *Site Requirements for Vision[Ai]ry (5100DR-092-2.0)*.

In typical installations where routing is required, the Vision[Ai]ry Control service sends a routing request to the Routing service, which is typically pre-installed on the SmartShell computer or Robotics Server. The Routing service then commands the video router to send the required video stream. To establish connectivity between the Vision[Ai]ry Engine(s) and the video router in later procedures, the following information is required for **each Engine**:

- The **IP Address** and **Port** number of the computer running the Routing service:
  - › If your system includes a standard SmartShell AIO computer and separate Robotics Server, the Routing service is already installed on the Robotics Server.
  - › If your system includes a standalone SmartShell tower-style computer with integrated Robotics Server, the Routing service is already installed on the SmartShell computer.
- The **ROUTER ID**, as configured in the Routing service, for the video router.
- The router **Source Port** and **Router Level** for each camera that will be controlled by the Engine.

**Tip:** If there is only one Engine (single-channel system), typically there are multiple cameras it can control. If there are multiple Engines (multi-channel system), typically there is only one camera per Engine.
- The router **Destination Port** for the video stream sent from the router.

For more information, and to obtain a copy of the video Routing service software, contact your Ross Video sales representative.

## Video Cabling and Video Format Converter

Each live video stream can be delivered from the router to the corresponding Vision[Ai]ry Engine computer through any of the following methods:

- **NDI video**, via the IP network, to the corresponding Engine computer.
  - The NDI source must be visible to the Engine computer on the IP network.
  - IMPORTANT:** NDI video is supported by Vision[Ai]ry but NDI | HX video is not.
  - NDI video streams require significantly less bandwidth than uncompressed video streams of the same format. For example:
    - › SD video over NDI requires 20 Mbps
    - › 720p50/59.94 video over NDI requires 90 Mbps
    - › 1080i50/59.94 video over NDI requires 100 Mbps
    - › 1080p50/59.94 video over NDI requires 125 Mbps
- To convert SDI video to NDI video, Ross Video recommends either of the following:
  - › **Ross softGear Streaming Gateway** ([www.rossvideo.com/remote-production/streaming-devices/softgear](http://www.rossvideo.com/remote-production/streaming-devices/softgear)).
  - › The **Magewell® Pro Convert SDI TX** converter ([www.magewell.com/products/pro-convert-sdi-tx](http://www.magewell.com/products/pro-convert-sdi-tx)). Magewell® part numbers for this converter vary by country: 64060 US; 64062 EU; 64063 UK; 64064 AU; 64065 KR; 64066 JP).
- **USB video**, via a USB port on the corresponding Engine computer.
  - To convert SDI video to a USB video stream, Ross Video recommends the **Magewell® USB Capture SDI Gen 2** ([www.magewell.com/products/usb-capture-sdi-gen-2](http://www.magewell.com/products/usb-capture-sdi-gen-2)). The Magewell® part number for this device is **32070**.
- **Blackmagic DeckLink video capture card** installed on the corresponding Engine computer.
  - The Vision[Ai]ry Server has a DeckLink Duo card which supports 4 channels of SDI video input. The minimum supported DeckLink software version is v12.2.
  - Note:** A given channel of a video capture card can be used to process either thumbnails for SmartShell, or video for Vision[Ai]ry, but not both.

For more information about supported video formats, see **Site Requirements for Vision[Ai]ry (5100DR-092-xx)**.

## Install Vision[Ai]ry Control and Engine Software

This section describes how to install Vision[Ai]ry software, which includes two services:

- Vision[Ai]ry **Control** — Works in conjunction with a DashBoard client interface to control the operation of one or more Vision[Ai]ry Engines.
- Vision[Ai]ry **Engine** — Analyzes live video from a robotic camera to detect subjects, and operates the pan, tilt, and zoom axes to correctly position a selected subject within the video frame.

**Note:** For upgrading existing Vision[Ai]ry services, go to “**Upgrading Vision[Ai]ry**” on [page 57](#).

**IMPORTANT:** On each computer where you install Vision[Ai]ry software, configure the power settings such that it does not automatically shut down or go into **Sleep** mode or **Hibernate** mode.

Before you begin, obtain the Vision[Ai]ry software package from Ross Video. It includes installers for Vision[Ai]ry Control and Vision[Ai]ry Engine.

When installing software on a Vision[Ai]ry Server, Vision[Ai]ry Engine is pre-installed, and the Vision[Ai]ry Control installer is available on the desktop but not yet installed. Confirm that you have the latest versions. The installed Vision[Ai]ry engine can be updated by running the newer installer on the server.

The following topics describe how to install the Vision[Ai]ry software:

- “**Install Vision[Ai]ry Control**” on [page 18](#)
- “**Install Vision[Ai]ry Engine(s)**” on [page 22](#)

## Install Vision[Ai]ry Control

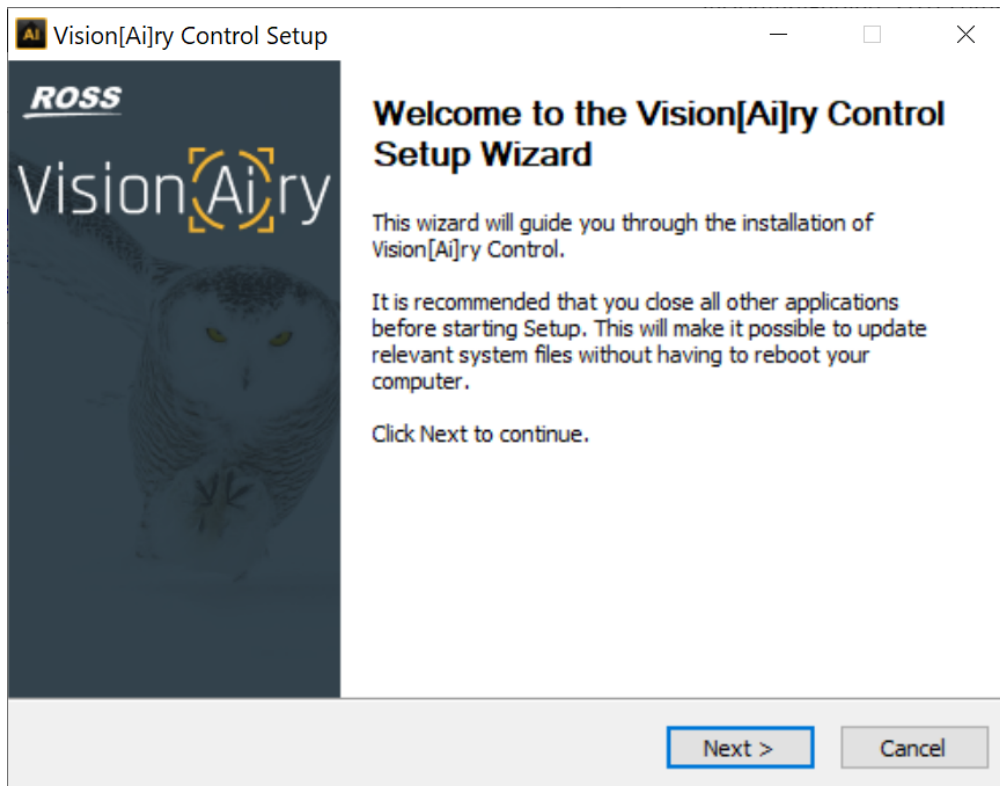
The Vision[Ai]ry Control service works in conjunction with a DashBoard client interface to control the operation of one or more Vision[Ai]ry Engines.

Where you install the Control service depends on whether you are installing a single-channel system or a multi-channel system:

- For single-channel systems, install the Control service and the Engine service on the same computer. Typically, this would be the SmartShell computer.
- For multi-channel systems, install the Control service on the computer running the Robotics Server, which may be the SmartShell computer or a separate Robotics Server computer.
- When using one or more Vision[Ai]ry servers, install the Control Service on one of your Vision[Ai]ry servers, which will act as the primary server.

### To install Vision[Ai]ry Control:

1. Run the installation file, **VisionAiryControl-2.x.x-setup.exe**.  
The **Vision[Ai]ry Control Setup Wizard** dialog box appears ([Figure 3](#)).



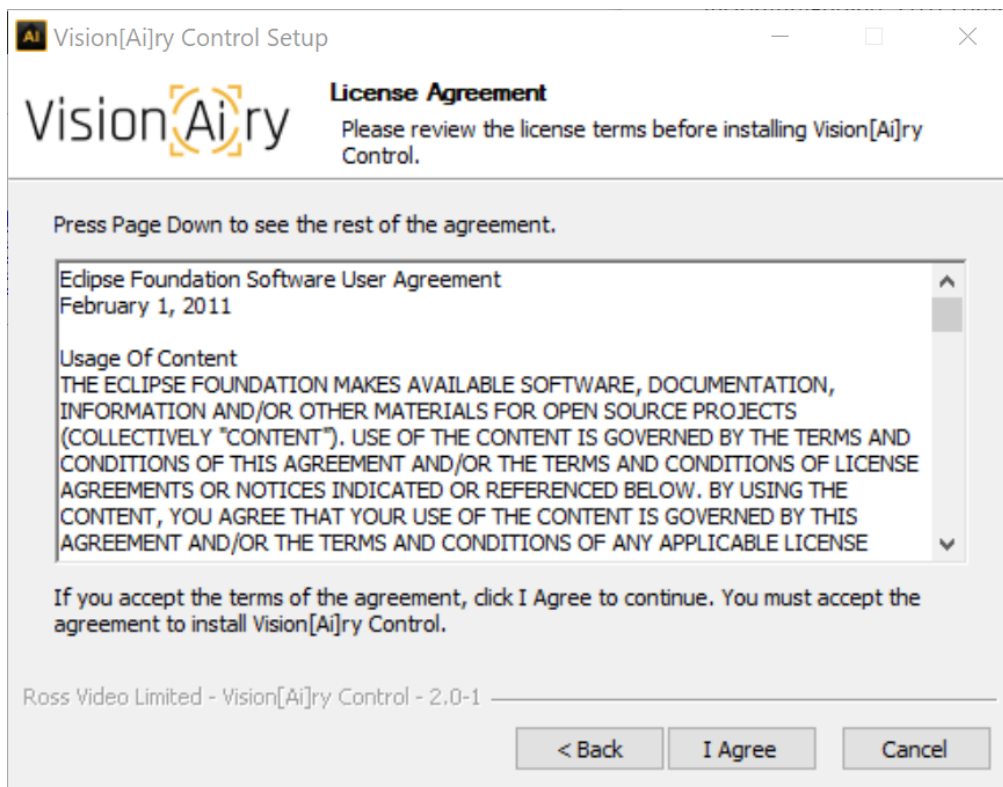
**Figure 3** - Vision[Ai]ry Control Setup Dialog Box

2. Click **Next**.  
The **License Agreement** appears ([Figure 4](#)).



*Figure 4 - Reviewing the License Agreement*

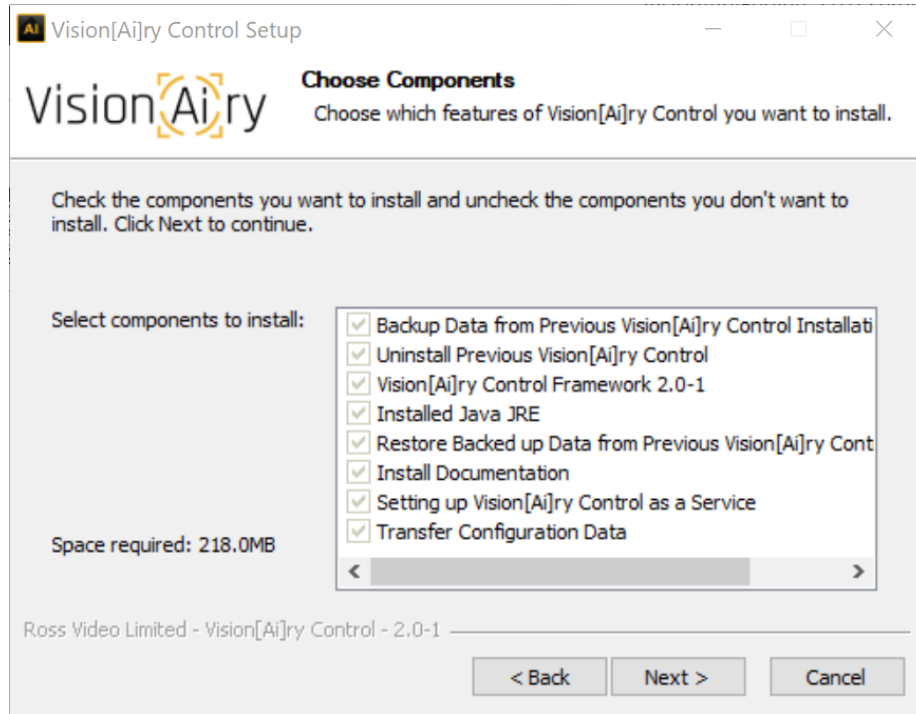
3. Click **I Agree**.  
The rest of the **License Agreement** appears.



*Figure 5 - Reviewing the License Agreement*

4. Click **I Agree**.

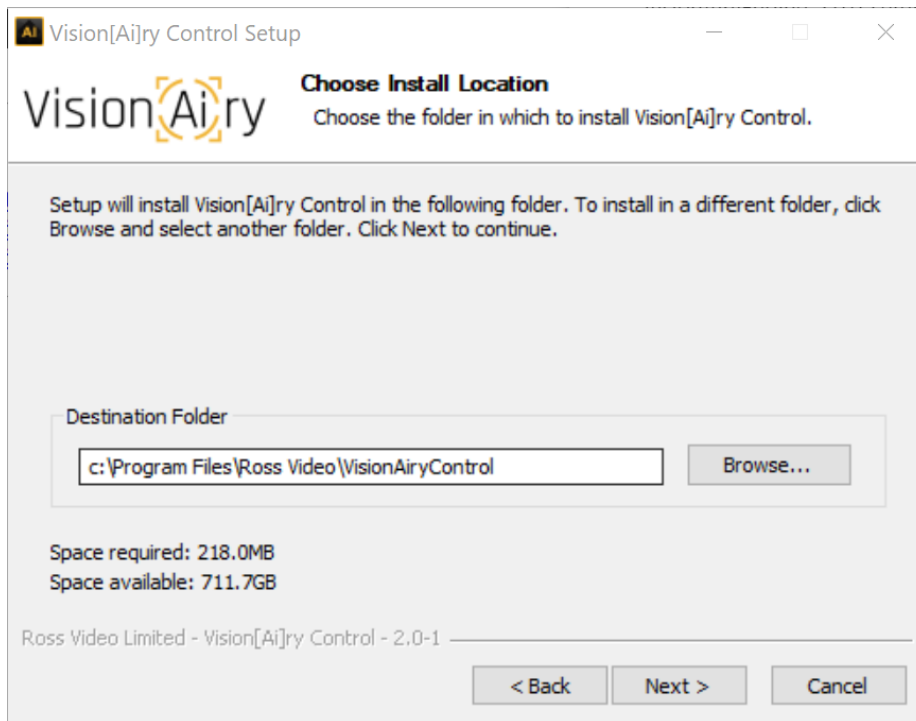
**Note:** Agreement with all terms of the license is required for software installation. The **Choose Components** page appears ([Figure 6](#)).



*Figure 6 - Choosing Components*

5. Click **Next**.

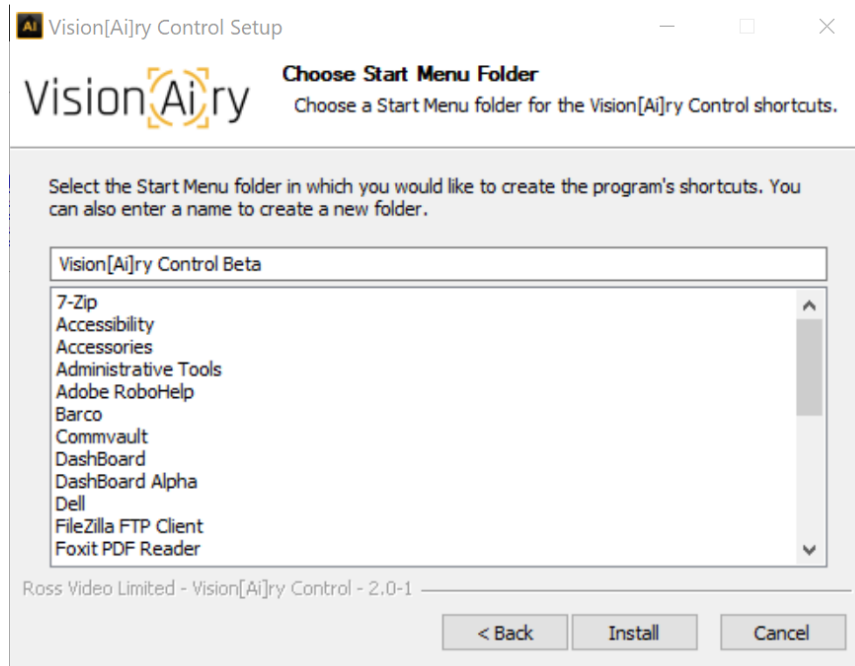
The **Choose Install Location** page appears.



*Figure 7 - Choose Install Location*

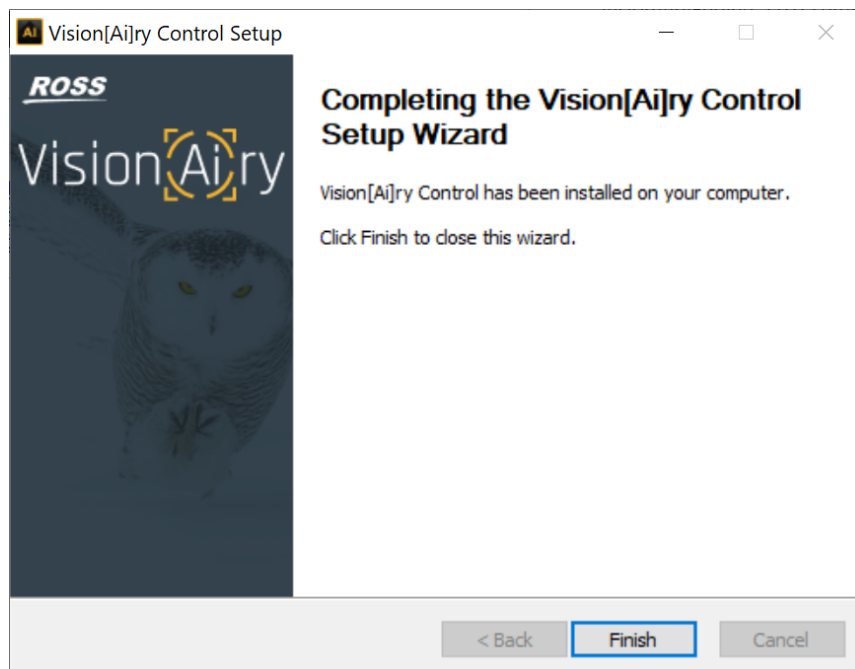
The recommended (default) install location is **c:\Program Files\Ross Video\VisionAiryControl**.

- If you want to specify a different install location, click the **Browse** button, navigate to the folder where you want to install the Vision[Ai]ry Control service, and then click **OK**.  
**Tip:** For enhanced security, the Setup Wizard automatically sets permissions on the install location folder to prevent write access by non-admin users.
- Click **Next**.  
The **Choose Start Menu Folder** page appears (Figure 8).



**Figure 8 - Choosing a Start Menu Folder**

- Click **Install**.  
During installation, various windows may appear temporarily. Ignore these windows.
- When installation is complete, click **Finish**.



**Figure 9 - Successful Vision[Ai]ry Control Install**

The Setup Wizard closes.

**Tip:** The Vision[Ai]ry Control service is installed in the **c:\Program Files\Ross Video\VisionAiryControl** folder by default.

## Install Vision[Ai]ry Engine(s)

The Vision[Ai]ry Engine service analyzes live video from a robotic camera to detect subjects, and operates the pan, tilt, and zoom axes to correctly position a selected subject within the video frame.

Where you install instances of the Engine service depends on whether you are installing a single-channel system or a multi-channel system:

- For single-channel systems, install one instance of the Engine service on the computer where you installed the Control service. Typically, this would be the SmartShell computer.
- For multi-channel systems, install one instance of the Engine service per channel. Each instance must be installed on a separate computer. Typically, instances of the Engine service would be installed on a set of servers or VMs (virtual machines) in a rack room. Do not install the Engine service on any computers you plan to use as Vision[Ai]ry workstations.
- If you are installing multiple engine channels on a single computer, such as a Vision[Ai]ry server, you only need to install the Vision[Ai]ry engine service once - you will later configure it to support multiple channels.

**Note:** Engine service comes pre-installed on the Vision[Ai]ry server. This step may not be required, unless you wish to update to a newer version of the Engine service.

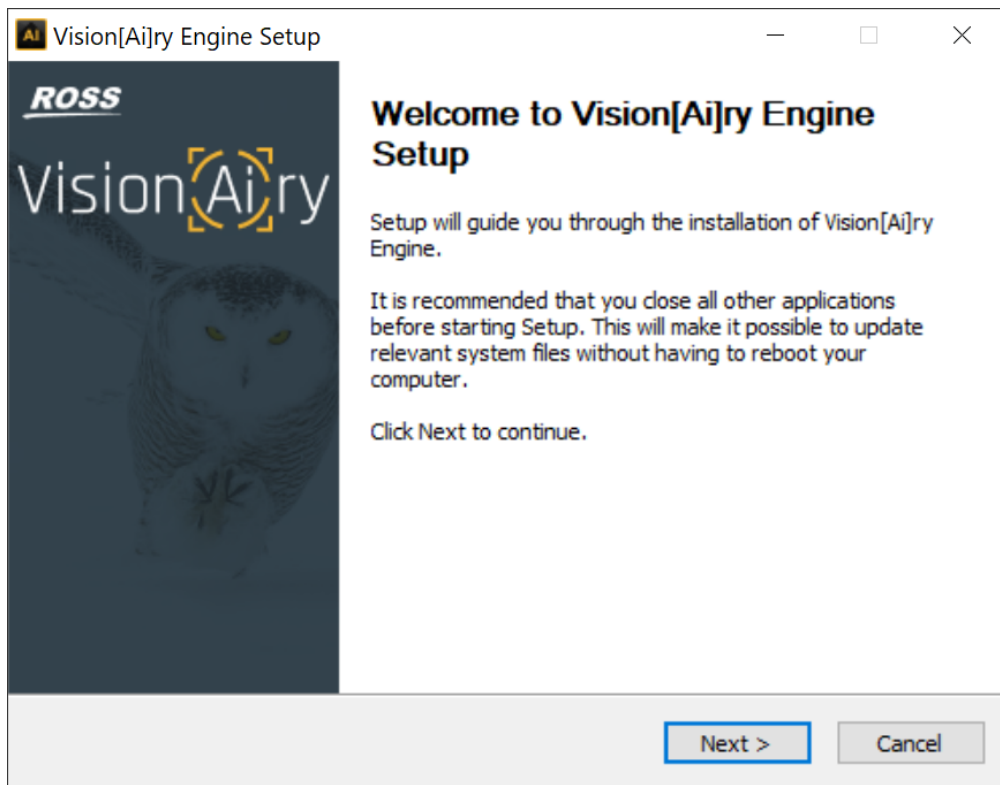
**Note:** Ensure that each Engine computer meets or exceeds the minimum system requirements. For more information, see ***Site Requirements for Vision[Ai]ry (5100DR-092-xx)***.

### To install Vision[Ai]ry Engine:

1. Run the installation file, ***VisionAiryEngine-2.x.x-setup.exe***.

**Note:** Perform this step once per computer that will run VisionAiry engine. You can later configure the engine to support multiple channels.

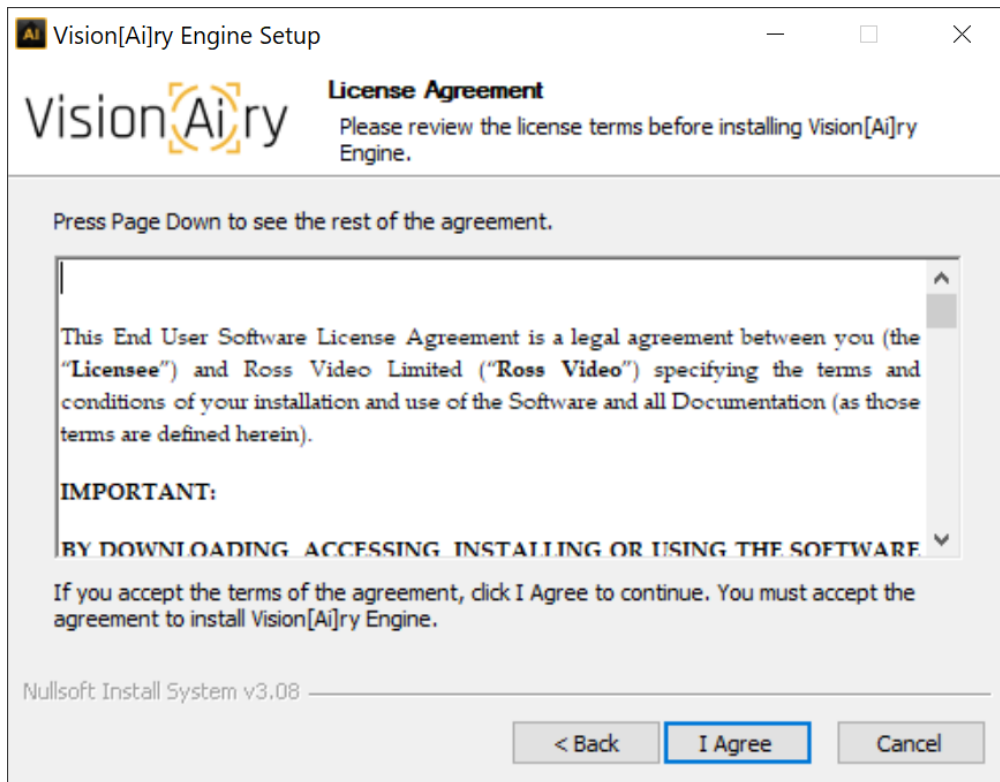
The **Vision[Ai]ry Engine Setup** dialog box appears ([Figure 10](#)).



*Figure 10 - Vision[Ai]ry Engine Setup Dialog Box*

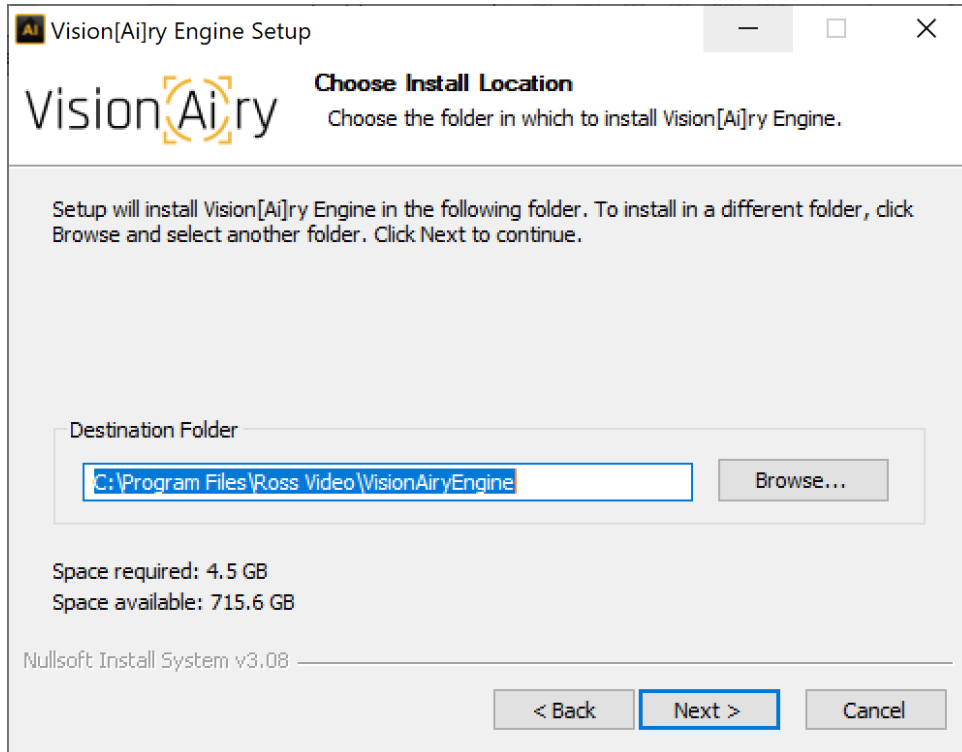
2. Click **Next**.

The **License Agreement** appears ([Figure 11](#)).



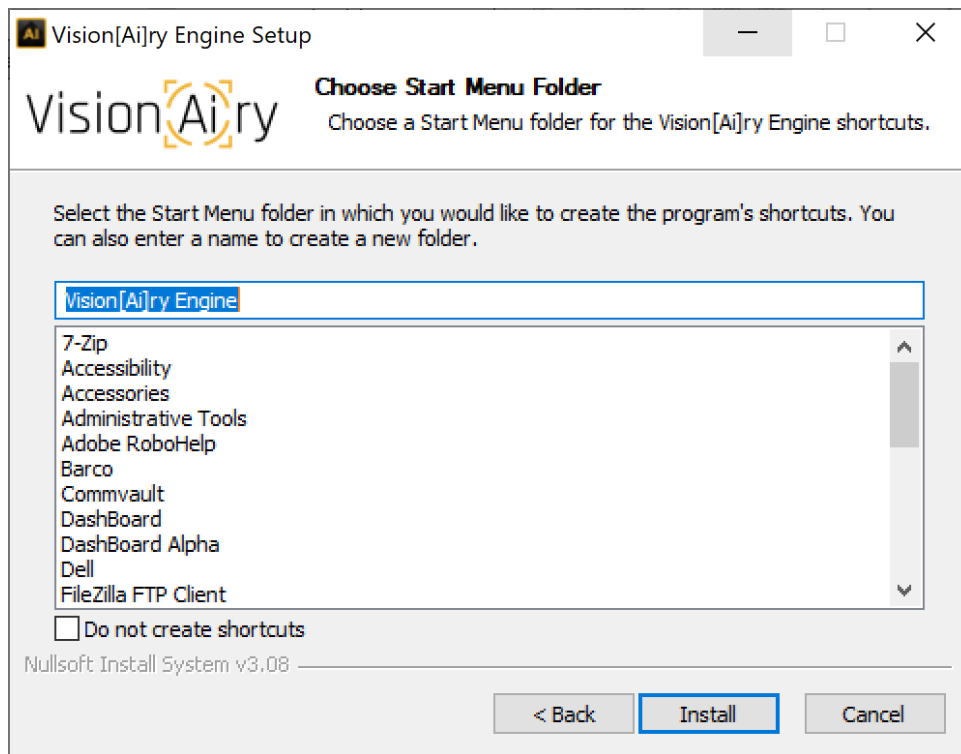
*Figure 11 - Reviewing the License Agreement*

3. For each part of the **License Agreement**, read the terms and if you agree with them, click **I Agree**.  
**Note:** Agreement with all terms of the License is required for software installation.  
The **Choose Install Location** page appears ([Figure 12](#)).



**Figure 12 - Choosing the Install Location**

- The recommended (default) install location is **c:\Program Files\Ross Video\VisionAiryEngine**.
4. If you want to specify a different install location, click the **Browse** button, navigate to the folder where you want to install Vision[Ai]ry Engine, and then click **OK**.  
**Tip:** For enhanced security, the Setup Wizard automatically sets permissions on the install location folder to prevent write access by non-admin users.
  5. Click **Next**.  
The **Choose Start Menu Folder** page appears ([Figure 13](#)).



**Figure 13 - Choosing the Start Menu Folder**

**6. Click **Install**.**

During installation, various windows may appear temporarily. Ignore these windows.

**7. When installation is complete, click **Finish**.**

The installer closes.

**Tip:** Vision[Ai]ry Engine is installed in the **c:\Program Files\Ross Video\VisionAiryEngine** folder by default.

**WARNING:** Engine service takes up to a minute to start after it is installed or the service is installed. During that time, control will be unable to connect to it.

**8. If required, and working under the direction of Ross Video Technical Support, open and edit the **visionAiryEngine.properties** file to configure special Engine settings:**

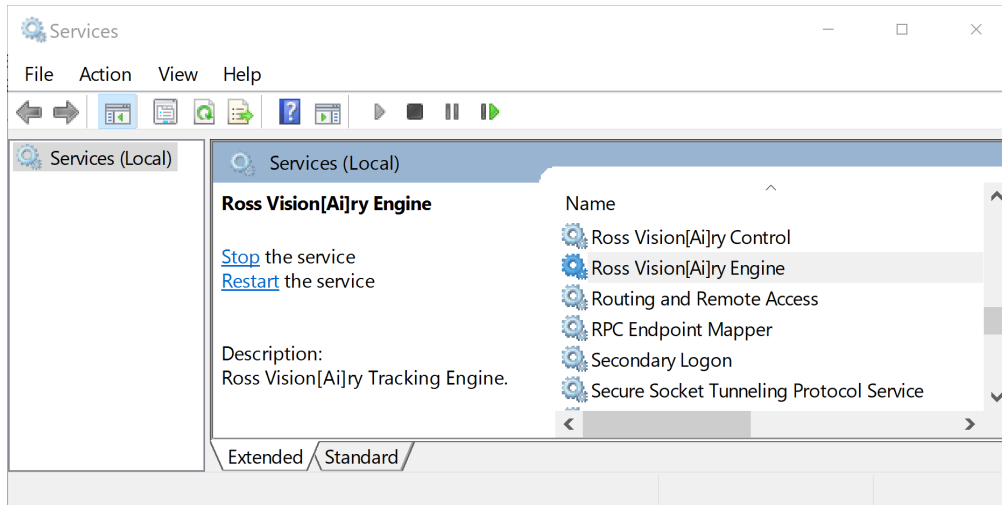
**Note:** The Vision[Ai]ry server comes preconfigured to support 4 channels of Vision[Ai]ry and body tracking.

You will need to edit the visionAiryEngine.properties file if you wish to:

- Draw bounding boxes around the entire head (head tracking) instead of just the face (face tracking).
- You have not purchased licenses for body tracking and would like to fully disable body tracking to limit GPU processing load and power consumption.

All other VisionAiry installations come preconfigured for a single channel of Vision[Ai]ry and with body tracking disabled. If you are installing multiple engine channels on the same computer, or wish to change from the default options (face tracking, body tracking disabled, you will need to edit the visionAiryEngine.properties file.

- a. In **Windows Services**, stop the **Ross Vision[Ai]ry Engine** service ([Figure 14](#)).



**Figure 14** - Windows Services, showing the Ross Vision[Ai]ry Engine Service

- b. Using **Windows Explorer**, navigate to the folder where the Vision[Ai]ry **Engine** service was installed.
- Tip:** The default location is **C:\Program Files\Ross Video\VisionAiryEngine**.
- c. Create a backup copy of the **visionAlryEngine.properties** file, with a different file name.
- d. Using a text editor such as Windows Notepad (running in administrator mode), edit the original **visionAlryEngine.properties** file to configure Engine settings such as:
- Number of channels and their ports
  - Number of processor cores to use for the Engine service
  - Select head detection instead of face detection, enable body tracking.
- Note:** Contact Ross Video Tech Support for more information.
- For information about settings you can configure, contact Ross Video Technical Support. The Vision[Ai]ry server comes pre-configured for 4 engine channels running body tracking and face detection on the GPU. You do not need to reconfigure it unless you wish to fully disable body tracking, or switch to head detection.
- e. Save and close the **visionAlryEngine.properties** file.
- f. In **Windows Services**, restart the **Ross Vision[Ai]ry Engine** service.
- g. Close **Windows Services**.

## Install Dashboard

DashBoard Facility Control is the software application that presents the Vision[Ai]ry Configuration and Control interfaces.

Install the latest version of DashBoard on each Vision[Ai]ry workstation computer.

**Note:** For multi-channel systems, do not use any Engine computers as Vision[Ai]ry workstations. The Engine service requires significant video processing resources, as does DashBoard when displaying the Control interface.

DashBoard and the DashBoard User Guide are available as free downloads from Ross Video. The DashBoard User Guide contains instructions for installing DashBoard. Both are available from the following location:

<http://www.rossvideo.com/control-systems/dashboard/index.html>.

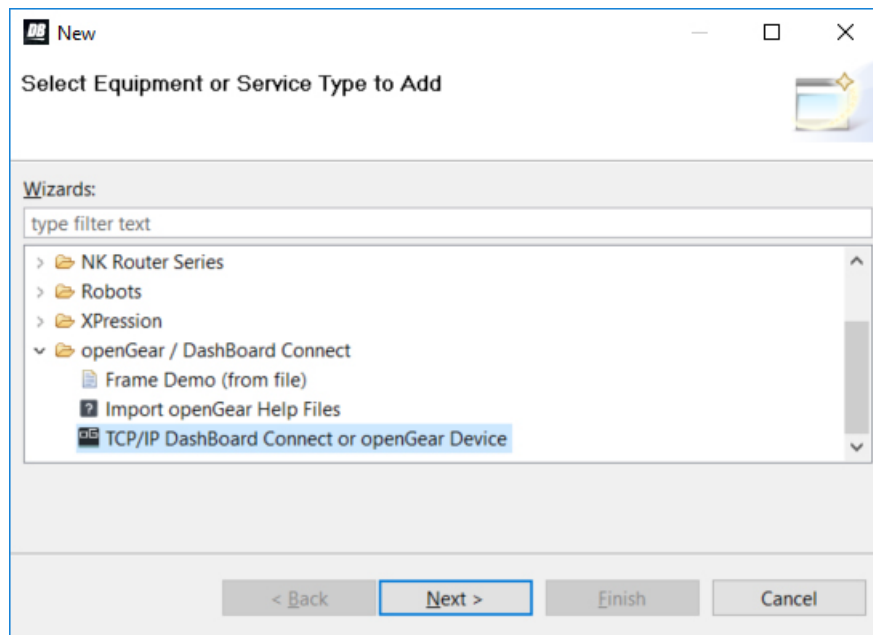
## Connect to the Vision[Ai]ry Control Service

This section describes how to prepare a Vision[Ai]ry workstation computer by creating a connection between DashBoard and the Vision[Ai]ry Control service.

If you have multiple Vision[Ai]ry workstations, perform the steps in this section on each of them.

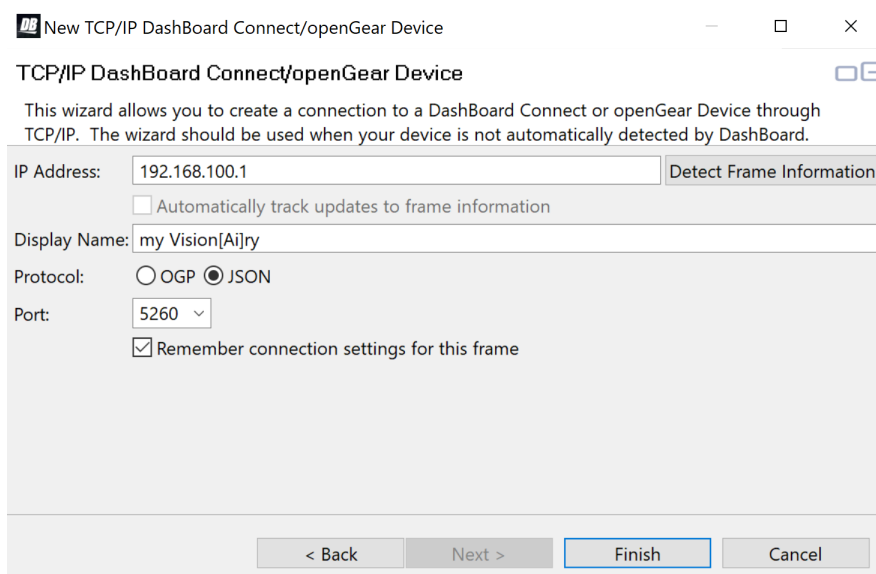
### To add a Vision[Ai]ry connection in DashBoard:

1. Start DashBoard.
2. From the **File** menu, click **New**, and then click **Other**.  
The **New** dialog box appears ([Figure 16](#)).



*Figure 15 - NEW Dialog Box*

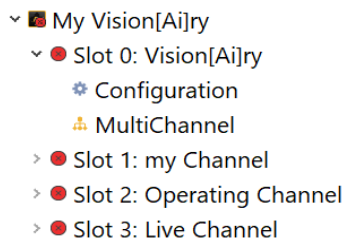
3. Expand the **openGear / DashBoard Connect** node, and then click **TCP/IP DashBoard Connect or openGear Device**.
4. Click **Next**.
5. The **TCP/IP DashBoard Connect/openGear Device** dialog box appears ([Figure 16](#)).



**Figure 16** - TCP/IP DashBoard Connect/openGear Device Dialog Box

6. In the **IP Address** box, type the IP address of the computer running the Vision[Ai]ry Control service.  
**Tip:** If the Vision[Ai]ry workstation computer is also running the Vision[Ai]ry Control service, you can type `localhost` instead of the IP address.
7. In the **Display Name** box, type a name for the Vision[Ai]ry connection, as you want it to appear in the DashBoard tree.
8. Set the **Protocol** to **JSON**.
9. Set the **Port** number to **5260**.
10. Select **Remember connection settings for this frame**.
11. Click **Finish**.

The new Vision[Ai]ry node appears in the DashBoard tree ([Figure 17](#)).



**Figure 17** - Vision[Ai]ry Node in the DashBoard Tree

## License, Add, and Edit Channels

Topics in this section describe how to license, add, and edit (configure) one or more Vision[Ai]ry channels using a Vision[Ai]ry workstation connected to the Vision[Ai]ry Control service.

Major steps to license, add, and edit a channel are as follows:

- “**License Channels**” (see [page 29](#))
- “**Add Channels**” (see [page 31](#))
- “**Edit Channels**” (see [page 32](#))

## License Channels

This section describes how to license Vision[Ai]ry channels from any Vision[Ai]ry workstation. Channels must be licensed before they can be used.

To activate one or more purchased Vision[Ai]ry channel (Engine) licenses (order number **RRB-VAI-FT ENGINE** and **RRB-VAI-BT-ENGINE**), you will require a product key from Ross Video. Contact Ross Video prior to the installation to obtain the product key for your system.

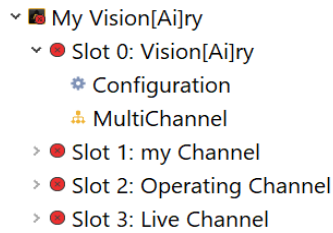
Channel licenses are applied to Vision[Ai]ry Control and make all licensed channels available to any Vision[Ai]ry workstation connected to the Control service.

All Vision[Ai]ry licenses, must be managed through the Ross Platform Manager (RPM). RPM centralizes license management, streamlining the process of requesting, releasing, and monitoring licenses.

For more information about purchasing Vision[Ai]ry licenses and setting up RPM, refer to “**Contacting Technical Support**” on [page 7](#).

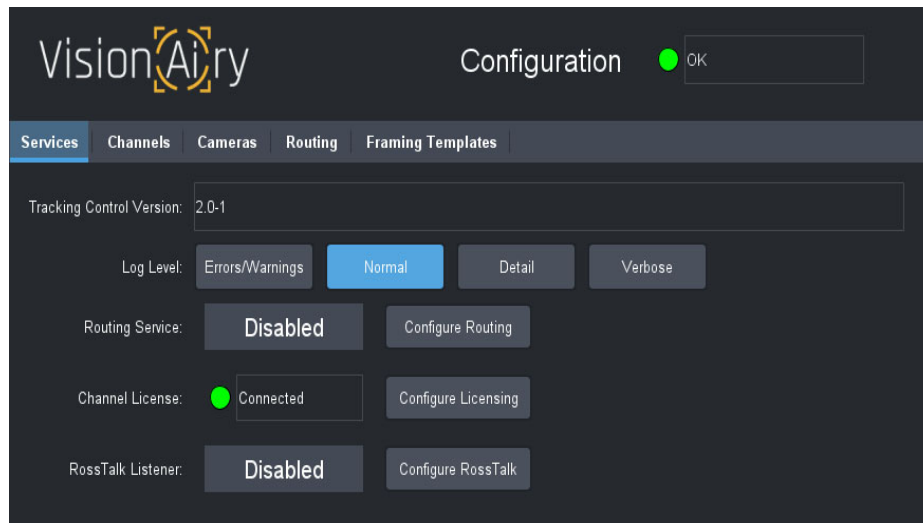
### To apply a channel license:

1. In the DashBoard tree, expand the Vision[Ai]ry node and the **Slot 0** node fully, and then double-click **Configuration** ([Figure 18](#)).



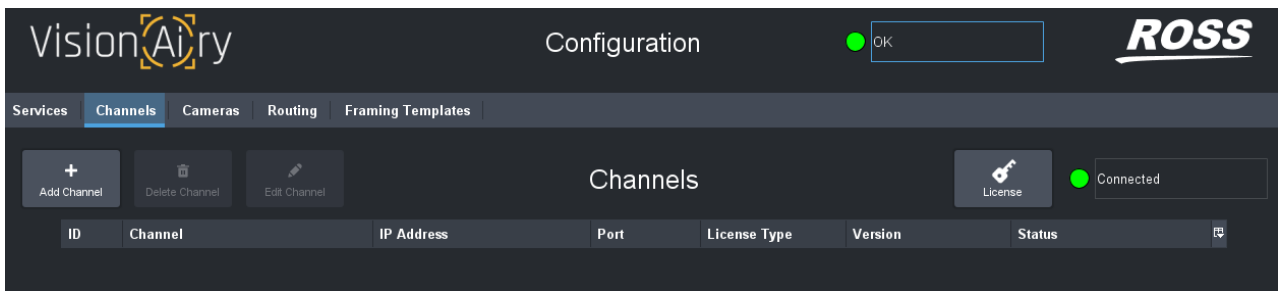
*Figure 18 - Opening the Configuration Page in DashBoard*

The **Configuration** page appears ([Figure 19](#)).



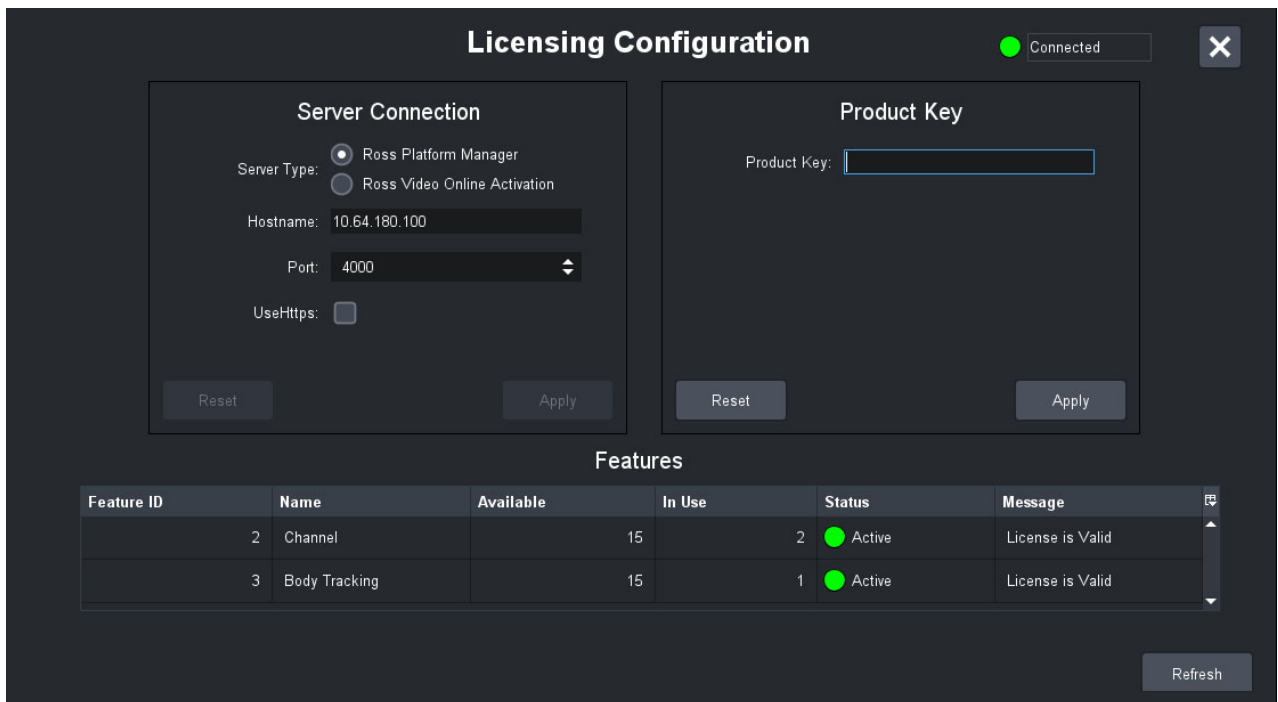
*Figure 19 - The Configuration Page, showing the Services Tab*

2. Click the **Configure Licensing** button.  
The **Channels** tab opens ([Figure 20](#)).



**Figure 20** - Channels Page, before Licensing any Channels

3. Click the **License** button.  
The **Licensing Configuration** page appears ([Figure 21](#)).



**Figure 21** - Licensing the Channel

4. In the **Server Connection** section, configure your connection to your **Ross Platform Manager** server, or directly back to the **Ross Activation Server**.
5. Select the appropriate **Server Type**.
6. When connecting to Ross Platform Manager, enter the **IP address** and **Port** and check the box if you are using **https**.
7. Select **Apply**.  
The status button at the top right of the window will turn green to show that you have successfully connected to the licensing server.
8. In the **Product Key** section, enter the product key provided by Ross Video.
9. Select **Apply**.  
If the product key is read successfully, the **Features** section will be updated to show the licenses available on your product key.  
**Note:** Product keys can only be applied while you are connected to the licensing server.

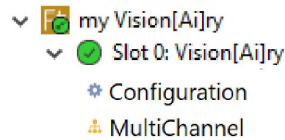
For additional details on licensing issues, refer to “**License Errors Troubleshooting**” on [page 165](#).

## Add Channels

When you add a channel, it becomes accessible from any Vision[Ai]ry workstation connected to the Vision[Ai]ry Control service.

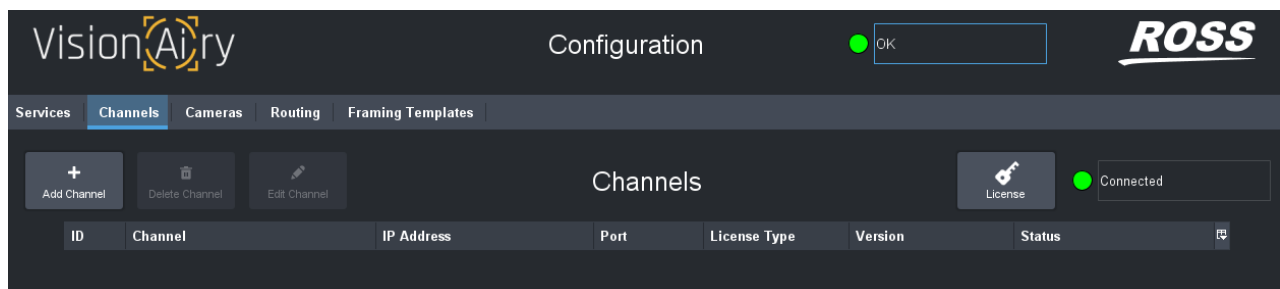
**To add one or more channels:**

1. In the DashBoard tree, expand the Vision[Ai]ry node and the **Slot 0** node fully, and then double-click **Configuration** (Figure 22).



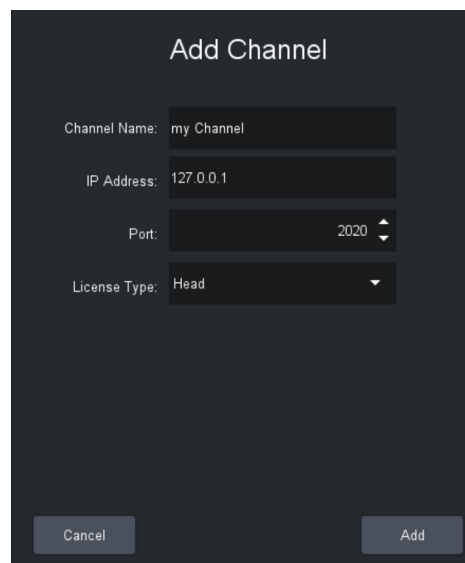
**Figure 22** - Opening the Vision[Ai]ry Configuration Page in DashBoard

The **Configuration** page appears.



**Figure 23** - The Configuration Page, before Adding a Channel

2. On the **Channels** tab, click **Add Channel**.  
The **Add Channel** dialog box appears.



**Figure 24** - Adding a Channel

3. In the **Channel Name** box, type a name for the channel, as you want it to appear in the DashBoard tree.
4. In the **IP Address** box, type the IP address of the computer running the Vision[Ai]ry Engine service for the channel.

5. In the **Port** box, type or select the port number for communicating with the Vision[Ai]ry Engine service for the channel.

**Tip:** The default port number is **2020**. Where you have multiple channels running on the same computer, such as the Vision[Ai]ry Server, default port numbers are 2020, 2021, 2022 and 2023 for channels 1 to 4.

6. Select the **License Type** from the drop-down menu.

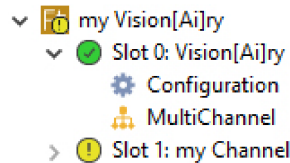
The following options appear:

- **Head** — for detection and tracking of subject heads only.
- **Body + Head** — for detection and tracking of subject heads and bodies.  
Requires **RRB-VAI-BT-ENGINE** license.
- **Disabled** — to temporarily disable the channel so that it does not connect to an engine and does not check out any licenses.

**Note:** License type can be changed in the Channels page after the channel has been added.

7. Click **Add**.

A node for the new channel appears in the DashBoard tree ([Figure 25](#)).



**Figure 25** - Expanded Vision[Ai]ry Node after a New Channel has been Added (Slot 1: my Channel)

8. To add another channel, repeat steps **2** to **6**.

## Edit Channels

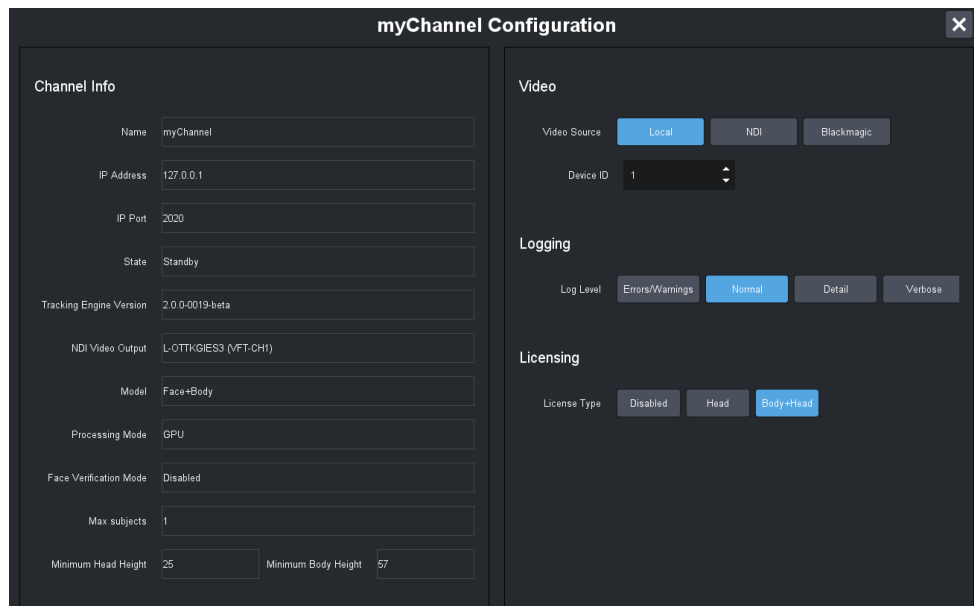
This section describes how to edit (configure) Vision[Ai]ry channels, using a Vision[Ai]ry workstation. Perform the steps in this section for each channel you want to edit.

After you edit a channel, any changes you make take effect the next time a camera is selected on the channel Control page or awakened on the MultiChannel page. If the camera you want to use is already selected on the channel Control page, you can click the **Standby** button and then select the camera again.

### To edit a channel:

1. On the **Channels** tab of the **Configuration** page, click the channel you want to edit.
2. Click **Edit Channel**.

The channel configuration page appears ([Figure 26](#)).



**Figure 26 - Channel Configuration Page**

3. In the **Video** area, do one of the following:
  - If the video source is accessed through a USB port on the Engine computer, click the **Local** button, and then specify the **Device ID** for the video source.
 

**Tip:** You may have to try numbers in ascending order until you find the correct one and video appears when you select a camera on the channel control page.
  - If the video source is transported over the IP network, click the **NDI** button, and then specify the **NDI Source** by typing the **NDI host name** and the **source name** (in brackets), separated by a single space.
 

**Tip:** The NDI host name and source name are available from the web interface for the NDI converter.

**IMPORTANT:** If video arrives over the IP network, it must conform to the NDI protocol (not NDI|HX).
  - If the video source is accessed through a Blackmagic DeckLink video capture card installed on the Engine computer, click the **Blackmagic** button, and then specify the **Device ID** for the video source.
 

**Note:** A given channel of a video capture card can be used to process either thumbnails for SmartShell, or video for Vision[Ai]ry, but not both.
4. If you want to set the level of detail recorded in system activity logs, in the **Logging** area, click the button corresponding to the desired logging level.
 

The options, from least detailed to most detailed, are **Errors/Warnings**, **Normal**, **Detail**, and **Verbose**.

**Note:** Logs help Ross Video Technical Support diagnose technical issues. More intensive logging consumes CPU capacity and results in more logging data. The default setting is **Normal**. There is no need to adjust the logging level unless requested to do so by Ross Video Technical Support.
5. Close the channel configuration page.

# Add and Edit Cameras in Vision[Ai]ry

When you add and edit (configure) a camera in Vision[Ai]ry, you are making a robotic camera system available for Vision[Ai]ry channels to control. Vision[Ai]ry can control pan, tilt, and zoom functions.

This section contains the following topics:

- “**Add Cameras in Vision[Ai]ry**” on [page 34](#)
- “**Edit Cameras**” on [page 36](#)

## Add Cameras in Vision[Ai]ry

When you add a robotic camera system, you make it available for Vision[Ai]ry to control. Perform the steps in this section for each camera you want to add.

**IMPORTANT:** Before you use Vision[Ai]ry, ensure that the persistent pan and tilt axis limits for all robotic camera systems are set appropriately, to prevent damage to their heads and payloads. Also set the persistent zoom axis limits to optimize performance. Be sure to configure the **persistent** axis limits for each head, not only the **temporary** limits available in a control application such as SmartShell, so the limits are not lost when the head is rebooted.

If you are adding a PTZ-12G+, PTZ-12G, or PTZ-NDI camera, ensure the following:

- The camera has been added to DashBoard and the **Furio Gateway** is **Enabled**.  
To enable the **Furio Gateway**, double-click the camera’s **Remote Control** node in the DashBoard tree, navigate to **Config > Gateway**, and then in the **Furio Gateway** area, click the **Enable** button.
- **Variable Zoom** is turned **ON**.  
To turn on **Variable Zoom**, double-click the camera’s **Remote Control** node in the DashBoard tree, navigate to **Config > Camera**, and then in the **Camera Options** area, click the **ON** button below **Variable Zoom**.

**Tip:** You can specify a set of default camera options (**Tracking Options**) that apply to cameras you later add. You can also apply this set of options to all cameras. The options include enabling/disabling **Auto Reselect**, how long Vision[Ai]ry waits before declaring a subject lost, and how Vision[Ai]ry behaves when you run a move or preset with no linked template. For more information, and for steps to specify default camera options, see “**Specify Default Camera Options**” on [page 142](#).

**Before you add a camera, you must know the following:**

- The IP address of the robotic camera (PT Head or PTZ Camera).  
If it is a CamBot PT head or a CamBot XY pedestal running CamBot firmware, the required IP address is the IP address of the Robotics Server.  
If it is a PTZ-12G+, PTZ-12G, or a PTZ-NDI camera, the required IP address is the IP address of the computer hosting the DashBoard Furio Gateway.
- The port number of the command channel for the robotic head or PTZ camera:
  - › If it is a Furio PT head, the default command port is number **10240**.
  - › If it is a CamBot PT head, or a CamBot XY pedestal running CamBot firmware, the port number is defined on the Robotics Server.
  - › If it is a PTZ-12G+, PTZ-12G, or PTZ-NDI camera, the command channel is exposed via the **Furio Gateway**. To find the port number, double-click the head’s **Remote Control** node in the DashBoard tree, navigate to **Config > Gateway > Furio Gateway**, and then below **Command Channel** find the **Port** value.
- The port number of the status channel for the robotic head:
  - › If it is a Furio PT head, the default status command port is number **10242**.
  - › If it is a CamBot PT head, or a CamBot XY pedestal running CamBot firmware, the port number is defined on the Robotics Server.

- › If it is a PTZ-12G+, PTZ-12G, or PTZ-NDI camera, the status channel is exposed via the **Furio Gateway**. To find the port number, double-click the head's **Remote Control** node in the DashBoard tree, navigate to **Config > Gateway > Furio Gateway**, and then below **Status Channel** find the **Port** value.

**To add a camera:**

1. On the **Cameras** tab of the **Configuration** page, click the **Add Camera** button. The **Add Robotic Camera** dialog box appears (Figure 27).

**Figure 27 - Adding a Robotic Camera**

2. In the **Role** box, type the **Role** value of the camera. Each camera must have a unique **Role** value.
 

**Tip:** The camera **Role** value uniquely identifies the camera across all control applications within the robotics system. Ensure that the **Role** value specified here matches the **Role** value assigned to the camera in all other applications such as on the Robotics Server, in SmartShell, and in DashBoard Camera/Head Control plugins.

In Vision[Ai]ry, consistent **Role** values facilitate the linking of robotic presets with Vision[Ai]ry framing templates. Roles can also facilitate the linking of camera selection between different control systems at the same operator workstation, for example, between SmartShell and Vision[Ai]ry.
3. Do one of the following to define how the camera name is displayed in Vision[Ai]ry:
  - If you want to use the **Role** value as the camera name, select the **Use Role** check box.
  - If you want to specify a camera name that is different than the **Role** value, clear the **Use Role** check box and then in the **Display Name** box, type a name for the camera.
4. If you want to assign the camera to a channel now, specify the channel in the **Channel** box:
  - For single-channel systems, assign the cameras you want to use to the channel you added earlier.
  - For multi-channel systems, you typically assign one camera to each channel but can assign more cameras if desired. Each channel can control only one camera at a time.

Assigning the camera to a channel makes the camera available to only that channel. You can leave the camera unassigned, and assign it later.

5. In the **Type** list, select the type of robotic camera (**Ross PT Head** or **Ross PTZ Camera**).  
**Tip:** Unless the robotic camera system is a PTZ-12G+, PTZ-12G, or PTZ-NDI camera, select **PT Head**.
6. In the **IP Address** box, type the IP address of the robotic camera.
7. In the **Cmd Port** box, specify the port number of the command channel for the robotic camera.
8. In the **Status Port** box, specify the port number of the status channel for the robotic camera.  
The camera appears in the list of robotic cameras.

## Edit Cameras

When you edit (configure) a camera in Vision[Ai]ry, you adjust settings related to how Vision[Ai]ry interacts with the camera.

After you edit a robotic camera system, any changes you make take effect the next time the camera is selected on the channel Control page or awakened on the MultiChannel page. If the camera is already selected on the channel Control page, you can click the **Standby** button and then select the camera again.

A head/lens calibration profile provides information to the Vision[Ai]ry Engine about the performance characteristics of a given head and lens combination. When you add a PTZ-12G+, PTZ-12G, or PTZ-NDI camera in Vision[Ai]ry, the required calibration profile (PTZ-12G/NDI) is automatically applied.

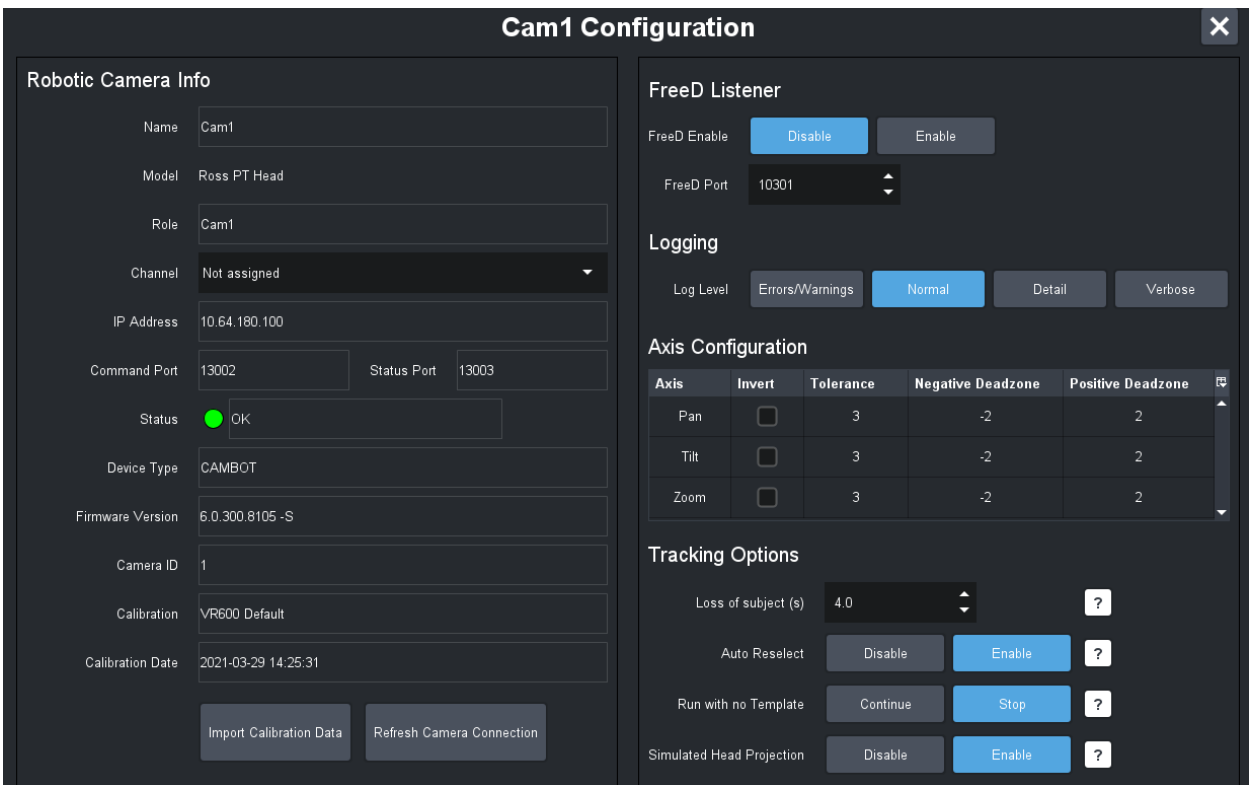
For other robotic camera systems, calibration profiles to support various head/lens combinations are available from Ross Video Technical Support. If a head/lens profile does not yet exist for your specific head/lens combination, a Ross Video commissioner can create one on-site. This task cannot be completed by a customer.

For information about existing profiles, contact Ross Video Technical Support.

For more information about head/lens calibration profiles, see “**Apply a Head/Lens Calibration Profile to a Camera**” on [page 144](#).

### To edit a camera:

1. On the **Cameras** tab of the **Configuration** page, click the camera’s name and then click the **Edit Camera** button.  
The camera configuration page appears ([Figure 28](#)).



**Figure 28 - Configuring a Robotic Camera for Vision[Ai]ry**

2. If the robot is a PTZ-12G+, PTZ-12G, or PTZ-NDI camera, or if the robot is a Furio (or a CamBot XY pedestal running Furio firmware) and you want Vision[Ai]ry to receive FreeD positional data from it, do the following:

- a. In the **FreeD Listener** area, click the **FreeD Enable** button.

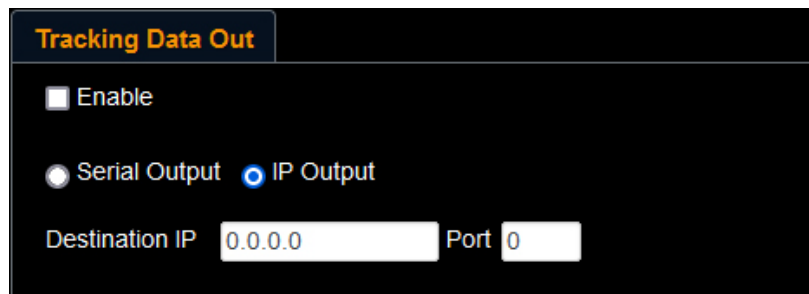
**Notes:**

- › If the robot is a Ross PTZ-12G+, PTZ-12G, or PTZ-NDI camera, you must enable FreeD data. Vision[Ai]ry requires FreeD data from these cameras in order to control them.
  - › Vision[Ai]ry does not normally require FreeD data from Furio PT heads or from CamBot XY pedestals running Furio firmware. By default, Vision[Ai]ry requests axis position data directly from the robotic head. For some lens models, problems with zoom position data may arise and cause tracking to fail. If this occurs, configuring Vision[Ai]ry to receive FreeD data may solve the problem.
  - › CamBot heads running CamBot firmware do not provide FreeD data.
  - › If FreeD Listener is enabled, the camera can be controlled only by the channel(s) to which the camera sends its FreeD data. Ross PTZ-12G+, PTZ-12G, and PTZ-NDI cameras can send FreeD data to only one destination. Ross PT heads running Furio software can send their FreeD data to as many as three destinations. The steps that follow explain how to configure camera systems to transmit FreeD data.
- b. In the **FreeD Port** box, type the number of the port on the Vision[Ai]ry Engine computer through which you want the Engine to receive FreeD data from the camera system.
  - c. If the camera system includes a PT head, do the following to configure the head to send FreeD data to the Vision[Ai]ry Engine computer's IP address, using the **FreeD Port** number you specified:
    - Type the IP address of the head into the address bar of a web browser to access the web interface for the robot.
    - Using the web interface, configure the **Tracking** settings to transmit **FreeD** data over **UDP** to the Vision[Ai]ry Engine computer's IP address.

**Tip:** You can configure **Tracking** settings to transmit FreeD data to as many as three destinations. If you plan to multiple Vision[Ai]ry channel to control the camera, provide the IP address and FreeD Port number for each channel.

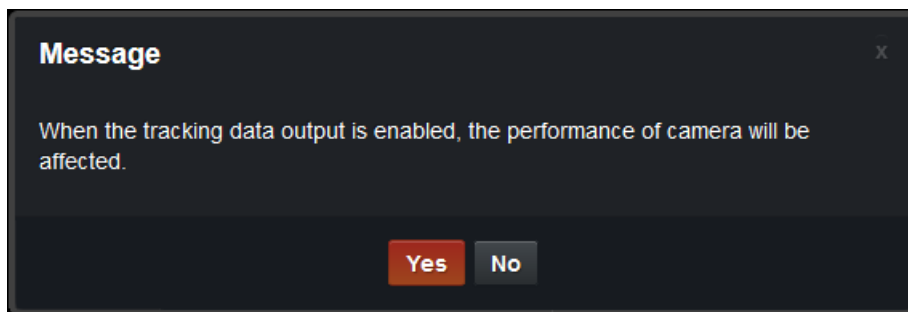
For detailed information about using the web interface to configure X300 and X350 heads, see **Technical Manual for X300 and X350 (5100DR-082-xx)**.

- d. If the camera system is a PTZ-12G+, PTZ-12G, or PTZ-NDI camera, do the following to configure the camera to send FreeD data to the Vision[Ai]ry Engine computer's IP address, using the **FreeD Port** number you specified:
  - › Because each camera system sends its FreeD data to one specific Vision[Ai]ry Engine, the camera can be controlled only by that Engine's channel.
  - Type the IP address of the camera into the address bar of a web browser to access the web interface for the camera.
  - Log in.
  - If you do not know the **User Name** and **Password**, contact your system administrator.
  - In the menu, navigate to **Settings > Network**.
  - Find the **Tracking Data Out** area ([Figure 29](#)).



**Figure 29** - Tracking Data Out Area of the Web Interface for a PTZ-12G+, PTZ-12G, or PTZ-NDI Camera

- In the **Tracking Data Out** area:
  - › Select **IP Output**.
  - › In the **Destination IP** box, type the IP address of the Vision[Ai]ry Engine computer.
  - › In the **Port** box, type the number of the port on the Vision[Ai]ry Engine computer through which you want to receive FreeD positional data from the camera.
  - › Select the **Enable** check box.A warning message appears ([Figure 30](#)).



**Figure 30** - Warning Message about Tracking Data and Camera Performance

- › Click **Yes**.
3. If you want to change the camera's channel assignment, in the **Robotic Camera Info** area, specify the channel in the **Channel** box.

**Note:** If the FreeD Listener is enabled for a camera and you reassign the camera to a different channel, you must ensure that the camera system is configured to send its FreeD data to the Engine computer for the new channel.

4. If you want to set the level of detail recorded in system activity logs, in the **Logging** area, click the button corresponding to the desired logging level.

The options, from least detailed to most detailed, are **Errors/Warnings**, **Normal**, **Detail**, and **Verbose**.

**Note:** Logs help Ross Video Technical Support diagnose technical issues. More intensive logging consumes CPU capacity and results in more logging data. The default setting is **Normal**. There is no need to adjust the logging level unless requested to do so by Ross Video Technical Support.

5. In the **Axis Configuration** area, configure the following as required for each axis (**Pan**, **Tilt**, and **Zoom**):

- **Invert** — Reverses the direction of movement for the axis.

For example, if a PT head and camera are ceiling mounted, invert the pan and tilt axes so they move in the proper directions when the head is controlled by Vision[Ai]ry.

**Tip:** Inverting an axis in Vision[Ai]ry does not affect axis behavior when that axis is controlled by other applications.

- **Tolerance** — Determines how close the selected subject has to get to the framing target before tracking motion stops:

- › If set too low, active tracking may oscillate around the desired location without settling.
- › If set too high, active tracking may stop before reaching the desired location.

The value range is **1** to **20**, and the default value is **3**.

- **Negative Deadzone** — This number must match the **PathGenJoystickNegativeDeadzone** value configured on the PT head. It determines whether some joystick values are ignored (treated as **0**).

The value range is **0** to **-10**, and the default value for Furio PT heads is **-2**.

**Note:** This setting does not apply to PTZ-12G, PTZ-NDI, or CamBots.

- **Positive Deadzone** — This number must match the **PathGenJoystickPositiveDeadzone** value configured on the PT head. It determines whether some joystick values are ignored (treated as **0**).

The value range is **0** to **10**, and the default value for Furio PT heads is **2**.

**Note:** This setting does not apply to PTZ-12G, PTZ-NDI, or CamBots.

6. In the **Tracking Options** area, configure the following settings as required:

- **Loss of subject (s)** — Specify how long, in seconds, Vision[Ai]ry searches for a subject who is no longer visible in the video feed before declaring them lost. The recommended default value is **4** seconds.

- **Auto Reselect** — When Vision[Ai]ry is actively tracking a subject with **Subject Selection** set to **Auto**, this option determines what happens if the actively tracked subject is declared lost:

- › **Disable Auto Reselect** if you want Vision[Ai]ry to stop actively tracking and show an error condition (**Subject Lost**).
- › **Enable Auto Reselect** if you want Vision[Ai]ry to automatically reselect a new subject for active tracking. Vision[Ai]ry selects the closest subject to the framing target when the subject is declared lost. If no other subjects are visible, Vision[Ai]ry shows a warning (**Searching**), automatically selects the first subject who appears in the video, and resumes active tracking at that point.

- **Run with no Template** — This option determines what Vision[Ai]ry does when a **Preset Run** or **Move Run** is started with no linked framing template:

- › Select **Continue** if you want Vision[Ai]ry to continue any active tracking while the **Run** is in progress.
- › Select **Stop** if you want Vision[Ai]ry to stop any active tracking as soon as the **Run** starts.

- **Simulated Head Projection** — allows Vision[Ai]ry to maintain accurate tracking of a subject using a projected "simulated head" within the body bounding box when the actual head is not fully visible.

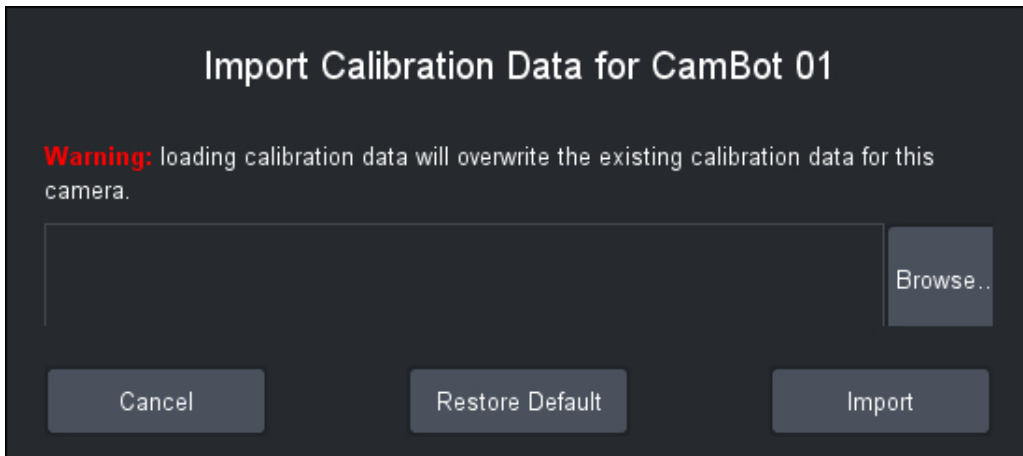
**Note:** This option is only applicable when the **License Type** for a channel is **Body + Head**.

- › **Enable:** Activates the simulated head projection, allowing Vision[Ai]ry to continue tracking the subject even when their head is obstructed or turned away from the camera.
- › **Disable:** Deactivates the simulated head projection, requiring Vision[Ai]ry to rely solely on visible head tracking.

**Tip:** The **Tracking Options** settings initially shown when you add a camera are based on a set of previously-specified **Default Camera Options**. You can configure these default options so they apply to cameras you add later. You can also apply them to all cameras. For more information, and for steps to specify default camera options, see “**Specify Default Camera Options**” on [page 142](#).

7. To achieve smooth and accurate tracking throughout the zoom axis range, you must apply a head/lens calibration profile specifically tailored to work with your PT head and lens.  
If your camera system is a PTZ-12G+, PTZ-12G, or PTZ-NDI camera, the correct profile (Ross PTZ-12G/NDI) is automatically applied. You can skip the remaining steps in this procedure.
  - a. Click the **Import Calibration Data** button.

The **Import Calibration Data** dialog box appears ([Figure 31](#)).



**Figure 31** - Importing Head/Lens Calibration Data

- b. Click **Browse**, navigate to the correct head/lens calibration profile, and then click **Open**.  
**Tip:** The name of the file indicates the head and lens type, and the file extension is **.json**.
    - c. Click **Import**.
8. Close the camera configuration page.

## Configure Video Routing

Each Vision[Ai]ry Engine ingests and analyzes live streaming video from one robotic camera at a time.

Vision[Ai]ry Engines accept video from NDI streams (Not NDI | HX), via USB input. Converters from SDI video to NDI over USB can be external devices, or an installed video capture card.

If there is only one robotic camera per channel (typical for multi-channel systems), a video router may not be required because video from the camera can be hard-wired to pass through a video format converter to the computer running the channel's Vision[Ai]ry Engine.

If there are multiple robotic cameras per channel, each time the operator selects a camera for tracking, video routing is required to switch the video source sent to the channel's Vision[Ai]ry Engine. Having multiple cameras per channel is typical for single-channel systems, and is also possible for multi-channel systems.

For more information about components and signal paths for single-channel and multi-channel systems, refer to the Architecture section in the **Site Requirements for Vision[Ai]ry (5100DR-092-2.0)**.

In typical installations where routing is required, the Vision[Ai]ry Control service sends a routing request to the Routing service, which is typically pre-installed on the SmartShell computer or Robotics Server. The Routing service then commands the video router to send the required video stream.

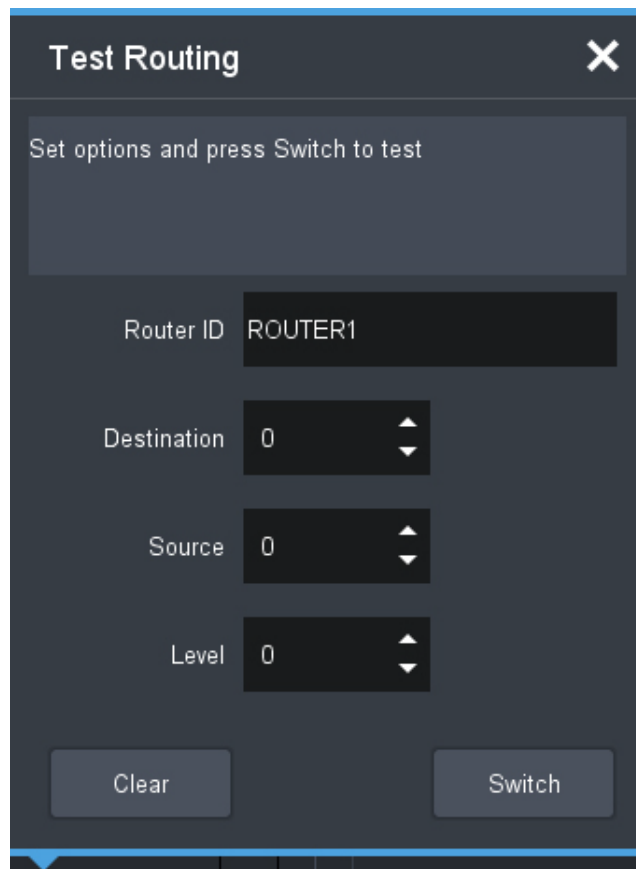
**To turn off video routing requests from Vision[Ai]ry Control if routing is not required:**

- In the **Routing Service Connection** area, click **Disable**.

Vision[Ai]ry stops sending video routing requests. Video routing, if required, must be performed by other means.

**To configure video routing through the Routing Service:**

1. On the **Routing** tab of the **Configuration** page, in the **Routing Service Connection** area, click the **Disable** button.  
This disables the connection between the Vision[Ai]ry Control service and the Routing Service so you can you configure the properties of the connection.
2. In the **IP Address** box, type the IP address of the computer running the Routing Service.
3. In the **Port** box, specify the port number that the Vision[Ai]ry Control service uses to communicate with the Routing Service.  
**Tip:** The default port number for the Routing Service is **10270**. To set the port number to the default value, click the **Reset to default** button.
4. Click the **Enable** button.  
If the connection details are valid, the **Status** box turns green and reads **Connected**.
5. If you want to set the level of detail recorded in system activity logs, in the **Logging** area, click the button corresponding to the desired logging level.  
The options, from least detailed to most detailed, are **Errors/Warnings**, **Normal**, **Detail**, and **Verbose**.  
**Note:** Logs help Ross Video Technical Support diagnose technical issues. More intensive logging consumes CPU capacity and results in more logging data. The default setting is **Normal**. There is no need to adjust the logging level unless requested to do so by Ross Video Technical Support.
6. In the **Switch Delay** box, specify the number of milliseconds (ms) Vision[Ai]ry waits after sending a switch command before it starts analyzing the incoming video stream.  
**Tip:** If the **Switch Delay** is too short, when you select a different camera, you may see video from the previous camera until the video switches.  
**Note:** Seeing a single frame of video from the previous camera is normal. It cannot be eliminated by adjusting **Switch Delay**.
7. In the **Video Routing** area, in the **Router ID** box, type the router ID (name), as configured in the Routing Service.
8. In the **Channels** list, do the following for each channel:
  - In the **Router Destination** box, specify the router destination port for the video stream sent by the router to the channel's Engine computer (through the video converter).
9. In the **Robotic Cameras** list, do the following for each camera:
  - a. In the **Router Source** column, type the router source number for the camera's video feed.
  - b. In the **Router Level** column, type the router level number for the camera's video feed.  
**Tip:** For information about router levels, refer to documentation for your router.
10. If you want to test router switching paths, do the following:
  - a. Click the **Test Routing** button.  
The **Test Routing** dialog box appears ([Figure 32](#)).



*Figure 32 - Testing Video Routing*

- b. Specify the **Destination**, **Source**, and **Level** you want to test, and then click **Switch**.  
The message box near the top of the **Test Routing** dialog box display the results of the test.
- c. When you are finished testing router switching paths, close the **Test Routing** dialog box.

## Configure RossTalk Listener

The RossTalk Listener service monitors a specified port for incoming RossTalk commands. Other devices such as production switchers or SmartShell can send commands to select a camera in Vision[Ai]ry, or to change the Active Tracking mode.

This section describes how to enable and configure the RossTalk Listener service, or disable it. It also lists the RossTalk commands supported in Vision[Ai]ry.

### Enable and Configure RossTalk Listener, or Disable it

This section describes how to enable and configure the RossTalk Listener service, or disable it.

**To configure the RossTalk Listener service, or disable it:**

1. On the **Routing** tab of the **Configuration** page, in the **RossTalk Listener** area, click the **Disable** button.  
This disables the RossTalk listener so you can you configure its properties.

If you do not want Vision[Ai]ry to use the RossTalk Listener, leave it **Disabled** and skip the rest of this section.

2. In the **Port** box, specify the port number that the RossTalk Listener service should monitor for RossTalk commands.  
**Tip:** The default port number for the RossTalk Listener is **7788**. To set the port number to the default value, click the **Reset to default** button.
3. Click the **Enable** button.
4. The **Status** bar turns green and indicates that the RossTalk Listener is **Ready**.

## RossTalk Commands for Vision[Ai]ry

[Table 1](#) describes the RossTalk commands supported by Vision[Ai]ry. Within the syntax examples, text formatted like <<this>> represents a variable. When using the command, replace the text and << >> symbols with the desired variable value. Variable values are not case-sensitive, and extra spaces before or after variable values are ignored.

**Table 1 - Supported RossTalk Commands**

Purpose	Syntax and Notes
Select a camera by ID	<p>VAT SELECTCAM:CH:&lt;&lt;ch_id&gt;&gt;:CAMID:&lt;&lt;cam_id&gt;&gt;</p> <p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>• &lt;&lt;ch_ID&gt;&gt; is the Channel ID of the channel you want to control.  <b>Tip:</b> To find the ID for a channel, see the <b>Channels</b> tab on the Vision[Ai]ry <b>Configuration</b> page.</li> <li>• &lt;&lt;cam_id&gt;&gt; is the camera selection ID, as assigned in Vision[Ai]ry.            To place Vision[Ai]ry into <b>Standby</b> mode, use a value of <b>-1</b>.  <b>Tip:</b> To find the selection ID for a camera, see the <b>Cameras</b> tab on the Vision[Ai]ry <b>Configuration</b> page.</li> </ul>
Select a camera by name	<p>VAT SELECTCAM:CH:&lt;&lt;ch_id&gt;&gt;:CAMNAME:&lt;&lt;cam_name&gt;&gt;</p> <p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>• &lt;&lt;ch_ID&gt;&gt; is the Channel ID of the channel you want to control.  <b>Tip:</b> To find the ID for a channel, see the <b>Channels</b> tab on the Vision[Ai]ry <b>Configuration</b> page.</li> <li>• &lt;&lt;cam_name&gt;&gt; is the display name of the camera.            To place Vision[Ai]ry into <b>Standby</b> mode, set &lt;&lt;cam_name&gt;&gt; to the value <b>Standby</b>.</li> </ul>
Set the Active Tracking mode	<p>VAT TRACKMODE:CH:&lt;&lt;ch_id&gt;&gt;:&lt;&lt;track_mode&gt;&gt;</p> <p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>• &lt;&lt;ch_ID&gt;&gt; is the Channel ID of the channel you want to control.  <b>Tip:</b> To find the ID for a channel, see the <b>Channels</b> tab on the Vision[Ai]ry <b>Configuration</b> page.</li> <li>• &lt;&lt;track_mode&gt;&gt; is the Active Tracking mode.            Valid values are <b>ON</b>, <b>OFF</b>, and <b>ONESHOT</b>.</li> </ul>

# License Vision[Ai]ry Workstations for Channel Control

This section describes how to license Vision[Ai]ry workstations for channel control, so you can use them to operate Vision[Ai]ry channels.

Perform the steps in this section on each workstation.

To activate a purchased Vision[Ai]ry workstation license (order number **RRB-VAI-FT-CLIENT**, feature ID **1059841**), you will require a product key from Ross Video.

All Vision[Ai]ry licenses must be managed through the Ross Platform Manager (RPM), which centralizes license management and streamlines the process of requesting, releasing, and monitoring licenses.

## To add a Vision[Ai]ry Product Key to Dashboard:

1. In the top menu bar, select **Window > Preferences**.

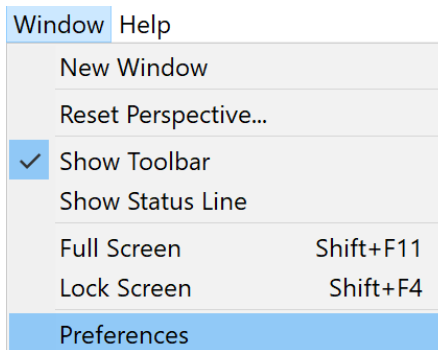


Figure 33 - Window > Preferences

2. In the **Preferences** window, select **Licensed Features** from the left menu.

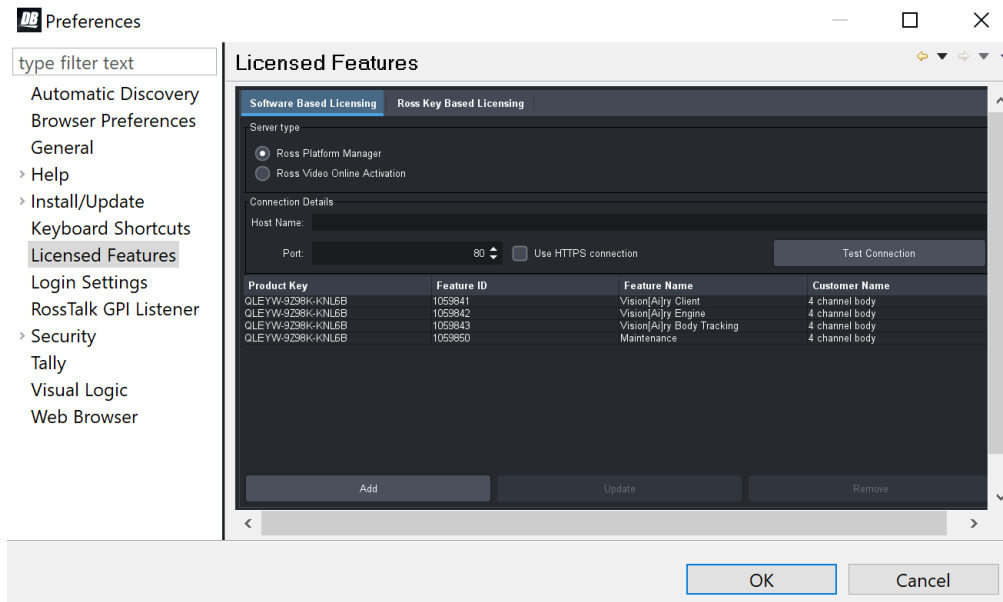
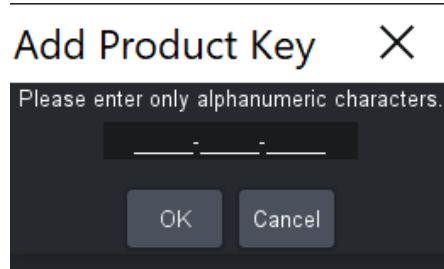


Figure 34 - Window > Preferences

3. Configure the server connection by selecting the correct Server Type:
  - For connecting via a Ross Platform Manager server:
    - i. Select **Ross Platform Manager**.

- ii. Enter the host name and port for your **RPM Licensing Server**.
- For connecting directly back to the Ross Video Activation Server:
  - i. Select **Ross Video Online Activation**.  
The correct **Host Name** and **Port** will automatically be entered by DashBoard.
- 4. Use the **Test Connection** button to confirm the connection to the desired server.
- 5. Select **Apply** to save server settings.
- 6. Select **Add**.
- 7. Enter the **Product Key** provided by Ross Video.  
**Note:** This will typically be the same **Product Key** used to license your channels.



*Figure 35 - Window > Preferences*

- 8. Select **OK**.

If the **Product Key** is applied successfully, a list of supported features will be shown in the table. Confirm that **Vision[Ai]ry Client** feature (feature ID **1059841**) is included in that list.

## Configure the MultiChannel Page (multi-channel systems)

The MultiChannel page enables you to monitor and control up to six Vision[Ai]ry channels from a single DashBoard tab ([Figure 36](#)). It features live video and primary tracking controls (**Active Tracking** and **Subject Selection**) for each channel view. The MultiChannel page can display the individual channel views arranged either as a grid or as a ribbon. You can also open the full control page for each channel.

Vision[Ai]ry operators typically use the MultiChannel page to control cameras during shows, temporarily accessing full channel control pages as needed.



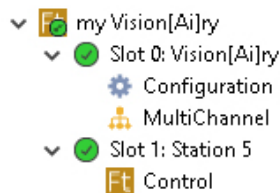
**Figure 36** - MultiChannel Page, showing Live Video and Tracking Controls for Four Channels

The MultiChannel layout applies only to the local Vision[Ai]ry workstation and is automatically saved so it persists even if you restart DashBoard. You can also back up the layout and restore it on any workstation that has access to the same set of channels. For more information, see “**Backup and Restore Vision[Ai]ry Configuration Data**” on [page 152](#).

Before you can use the MultiChannel page, you must specify which channels to show and how the channel views are arranged. You can also set the **View Options** applied to all channel views.

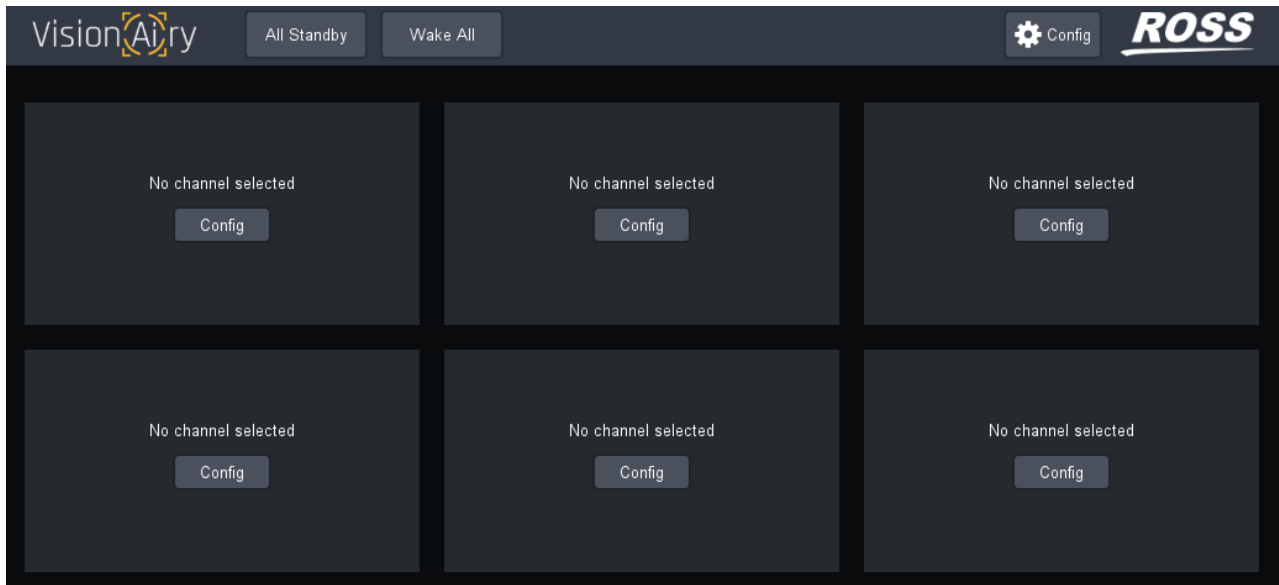
**To configure the MultiChannel page:**

1. In the DashBoard tree, expand the Vision[Ai]ry node and the **Slot 0** node fully, and then double-click **MultiChannel** ([Figure 37](#)).



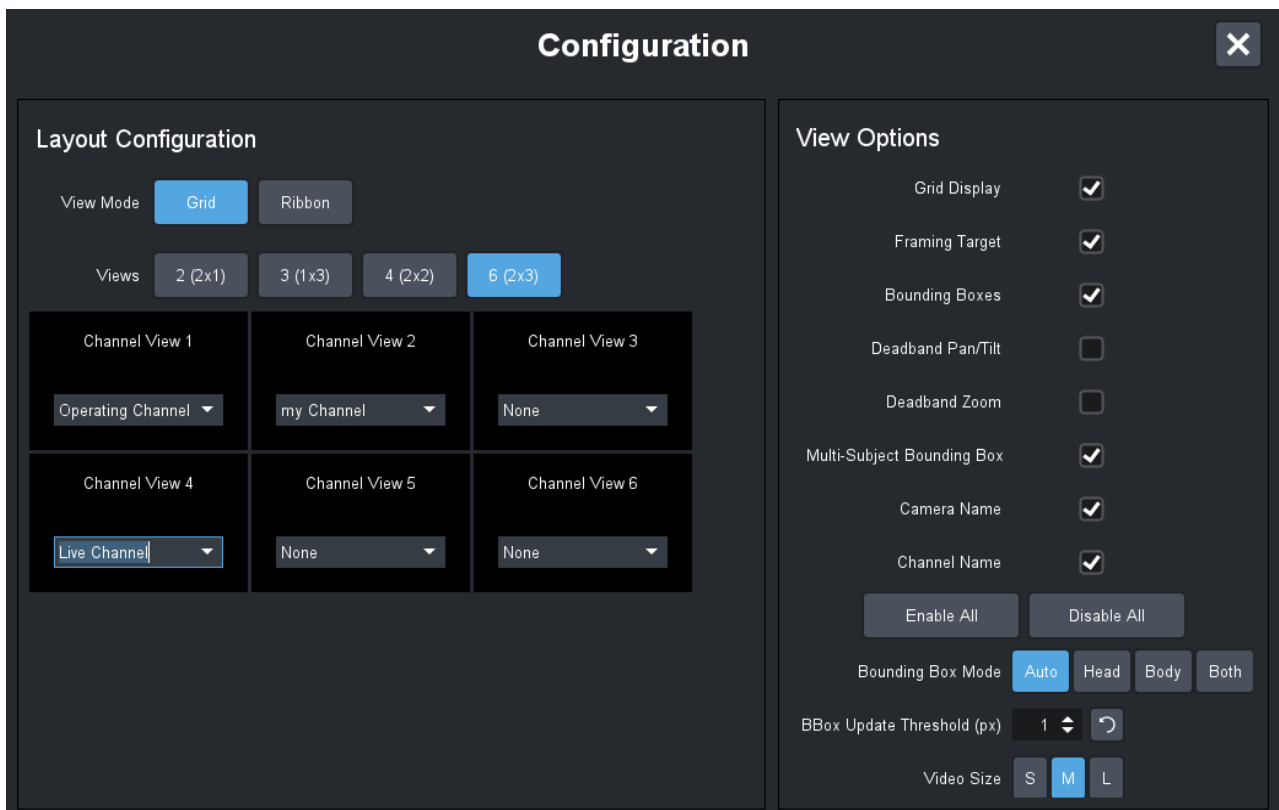
**Figure 37** - Opening the MultiChannel Page in DashBoard

The **MultiChannel** page appears ([Figure 38](#)).



**Figure 38** - The MultiChannel Page, before Configuration

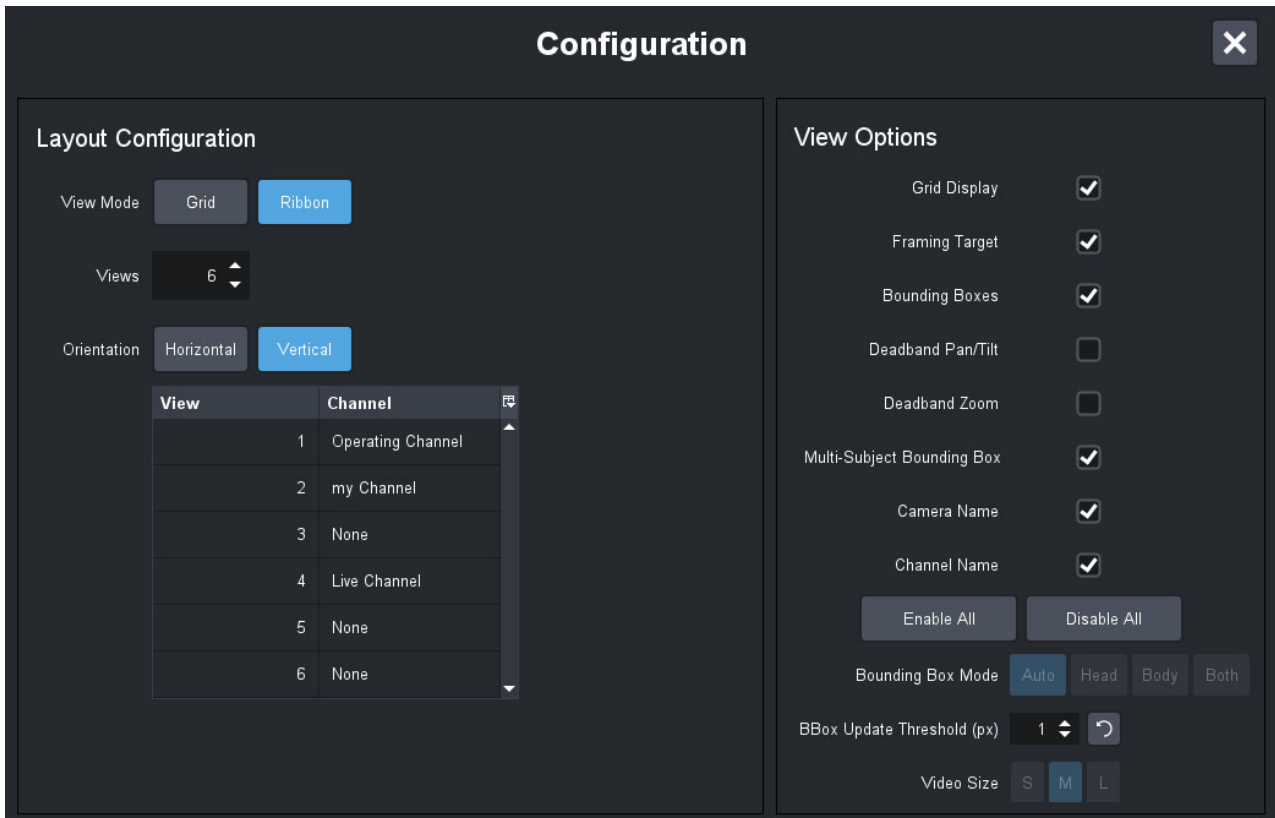
2. From the MultiChannel page, click the **Config** button.  
The MultiChannel **Configuration** page appears ([Figure 39](#)).



**Figure 39** - MultiChannel Configuration Page, showing Layout Configuration Settings for Grid View Mode

3. If you want the channel views to be arranged as a grid, click the **Grid** button and then:
  - a. Click one of the **Views** buttons to specify the grid shape:
    - **2 (2x1)** — The grid is two views wide by one view tall (two channel views total)
    - **3 (1x3)** — The grid is one view wide by three views tall (three channel views total)

- **4 (2x2)** — The grid is two views wide by two views tall (four channel views total)
  - **6 (2x3)** — The grid is two views wide by three views tall (six views total)
- b. In each **Channel View** box, select the channel to show in that box.
- c. Skip the next step. Proceed to **Step 5**.
4. If you want the channel views to be arranged in a horizontal or vertical line, click **Ribbon** and then:
- a. In the **Views** list, specify how many channel views you want to show ([Figure 40](#)).



**Figure 40** - MultiChannel Configuration Page, showing Settings for Ribbon View Mode

- b. Select a ribbon **Orientation (Horizontal or Vertical)**.
- c. For each view in the **View / Channel** list, select the channel to display.
- Tip:** For a horizontal ribbon, the views are numbered from left to right. For a vertical ribbon, the views are numbered from top to bottom.
5. Specify the **View Options** for the channel views:
- Tip:** With the exception of **Bounding Box Mode**, use the **Enable All** and **Disable All** buttons to quickly select or deselect all viewing options.
- **Grid Display** — shows/hides a rule of thirds grid.
  - **Framing Target** — shows/hides the framing target.
  - **Bounding Box** — shows/hides bounding boxes. If **License Type** is **Body + Head**, the **Bounding Box Mode** below will determine which bounding boxes are displayed when this option is enabled.
  - **Deadband Pan/Tilt** — shows/hides the deadband zone indicators for the pan and tilt axes. The indicators appear as horizontal and vertical lines of an orange cross-hairs at the center of the framing target.
  - **Deadband Zoom** — shows/hides the deadband zone indicator for the zoom axis. The indicator appears as an orange-shaded box that encloses the framing target.
  - **Multi-Subject Bounding Box** — shows a bounding box around the group of selected subjects when a multi-subject target is selected.
  - **Camera Name** — shows/hides the name of the camera.

- **Channel Name** — shows/hides the name of the channel.
  - **Bounding Box Mode** — When **License Type** is **Body + Head**, this option determines which bounding boxes are shown, with the following options:
    - › **Auto:** Automatically selects the most appropriate bounding box type based on whether current target is head or body.
    - › **Head:** Shows head bounding boxes only.
    - › **Body:** Shows body bounding boxes only.
    - › **Both:** Shows both head and body bounding boxes.
6. Set the threshold for updating the bounding box (**BBox Update Threshold**), in pixels (**1 to 10**). The threshold value defines how far the tracked position of the subject can move before the bounding box is redrawn. A low value requires more frequent re-drawing of the bounding box. A higher value may result in improved performance of embedded video, but bounding box motion may be jerky. The threshold value does not affect the performance or tracking accuracy of Vision[Ai]ry Engines.
- Tip:** To reset to the default value (**1**), click the reset icon.
7. Set the **Video Size**:
- **S** — Small viewing area
  - **M** — Medium-sized viewing area
  - **L** — Large viewing area
- Note:** **Video Size** settings are available only for **Grid View** mode. In **Ribbon View** mode, the views are of a fixed, small size.

## Rearrange User Interfaces for Optimal Workflow (optional)

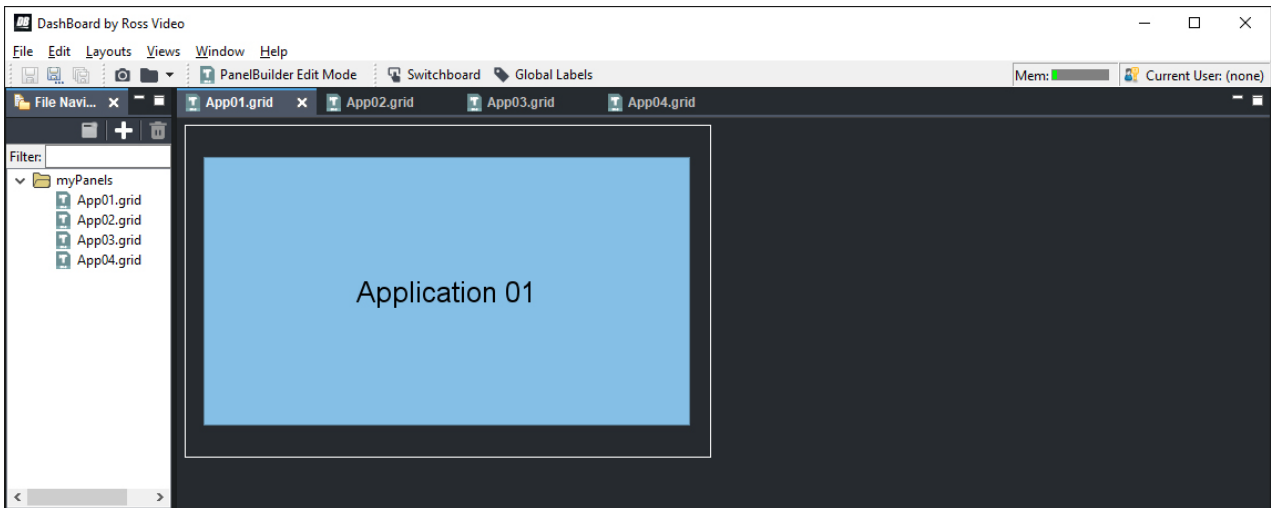
Vision[Ai]ry user interfaces, such as the Configuration page, MultiChannel page, and the Channel Control page(s), appear within DashBoard. PT Head Control and PTZ Camera Control are also DashBoard applications.

By default, DashBoard shows one application interface at a time. All application tabs appear in a single tab group. By rearranging DashBoard application tabs into multiple tab groups and/or resizing the DashBoard window to make space for other applications such as SmartShell, you can optimize the layout of your screen for better operational workflow.

This section explains how to rearrange DashBoard application tabs and presents examples of common Vision[Ai]ry operator layouts.

### Manipulate Tab Groups in DashBoard

When you open multiple applications from the DashBoard tree, by default they appear as tabs within a single tab group along the top of DashBoard. Only one tab's contents are visible at a time, but you can click a tab to make it the visible one. [Figure 41](#) shows four tabs in a single tab group. Only the application on the **App01** tab is visible.

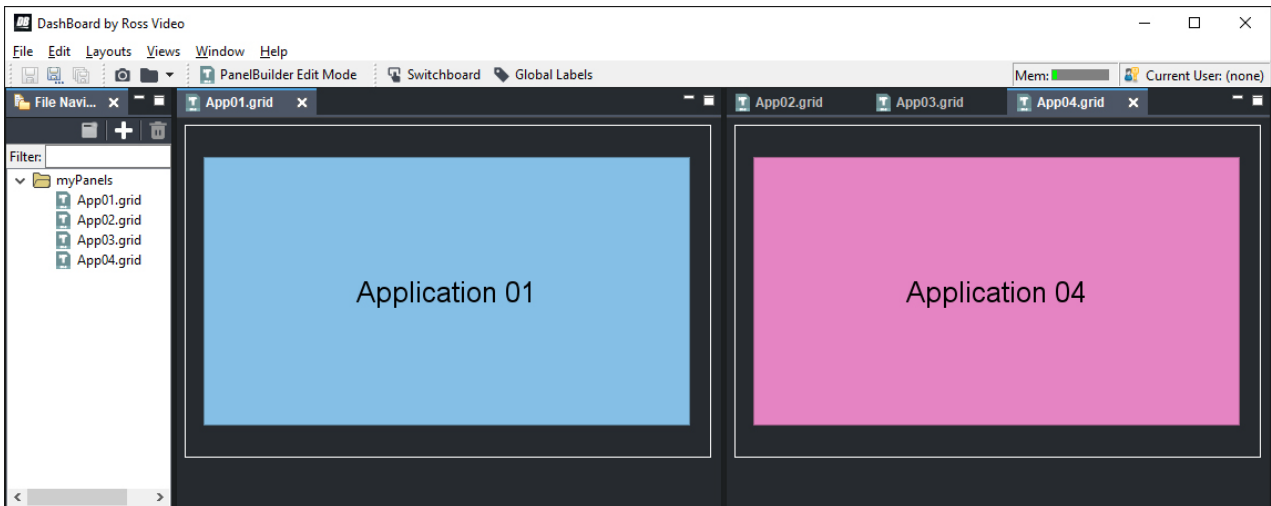


**Figure 41** - Four DashBoard Tabs in One Tab Group

If you drag a tab to dock it along an edge of the DashBoard interface, it forms a new tab group.

If you drag a tab and drop it beside another tab, it becomes part of that tab's group.

[Figure 42](#) shows two tab groups formed by docking one a tab along the right side and then dragging two more tabs into the new tab group. The tab group on the left has only one tab. The tab group on the right has three tabs.



**Figure 42** - Two Tab Groups Containing One Tab (left group) and Three Tabs (right group)

In addition to rearranging tabs, you can optimize screen space by closing the DashBoard tree, hiding the DashBoard toolbar, and hiding the Windows taskbar.

## Example Screen Layouts for Vision[Ai]ry

This section presents examples of common Vision[Ai]ry operator layouts:

- "Layout: Channel Control Page and PT/PTZ Control Pages" (see [page 51](#))
- "Layout: MultiChannel Ribbon and SmartShell" (see [page 51](#))
- "Layout: MultiChannel Ribbon, Channel Control Pages, and PT/PTZ Control Pages" (see [page 52](#))

## Layout: Channel Control Page and PT/PTZ Control Pages

This example is typically used for single-channel Vision[Ai]ry systems that do not have SmartShell, but instead use DashBoard plugins to control PT Heads and PTZ Cameras. This layout enables you to keep the Channel Control page visible while you access Control pages for PT Heads and PTZ Cameras.



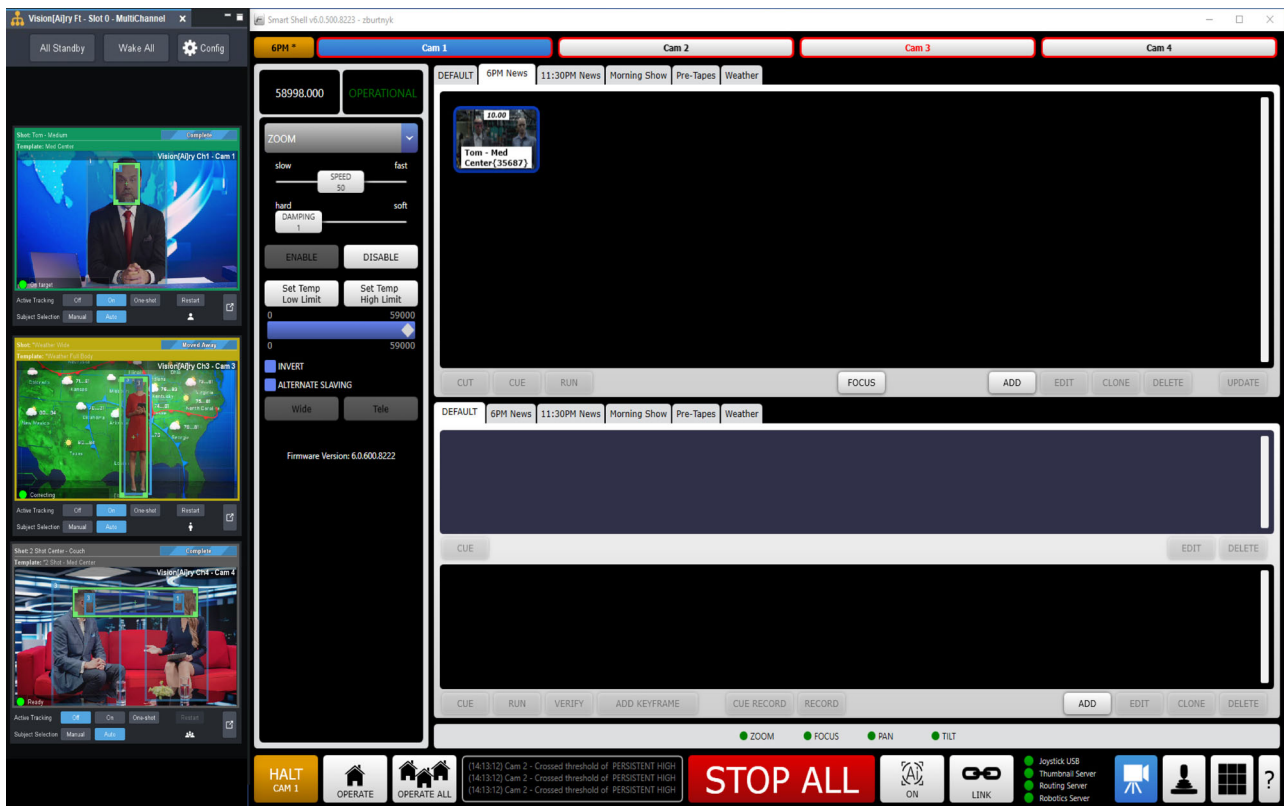
Figure 43 - Example Layout showing Channel Control Page and PT/PTZ Control Pages

### To set up this layout:

1. In DashBoard, open the Vision[Ai]ry Channel Control page.
2. Open one PT Head Control page or PTZ Camera Control page.
3. Drag the PT/PTZ Control tab and dock it to the right side of the DashBoard interface. The PT/PTZ Control tab appears in a new tab group.
4. Open all the other PT Head Control pages and PTZ Camera Control pages. The new tabs appear within the tab group on the right.
5. If you want to have easy access to the Vision[Ai]ry Configuration page, open it and drag its tab to the tab group where you want it to reside. In this example, it is in the tab group on the left.
6. Close the DashBoard tree and hide the DashBoard toolbar.

## Layout: MultiChannel Ribbon and SmartShell

This example is for MultiChannel systems where you use SmartShell for most operations and want to occasionally reframe subjects manually using the MultiChannel page's ribbon view. This option is typical for control rooms where having an additional monitor dedicated to SmartShell is not practical.



**Figure 44 - Example Layout showing a Vertical MultiChannel Ribbon (left) and SmartShell (right)**

**To set up this layout:**

1. In DashBoard, open the Vision[Ai]ry MultiChannel page.
2. Click the **Config** button and then configure the MultiChannel page to appear as a vertical ribbon that includes the channels you want to control.
3. Close the DashBoard tree and hide the DashBoard toolbar.
4. Resize the DashBoard interface to fit the ribbon view neatly, and then drag DashBoard to one side of the screen.
5. Open SmartShell and resize/position it to occupy the remaining portion of the screen.

**Note:** If you open a Channel Control page, you will need to temporarily resize the DashBoard window to view it all.

**Layout: MultiChannel Ribbon, Channel Control Pages, and PT/PTZ Control Pages**

This example is for MultiChannel systems where you want to use the MultiChannel ribbon view and PT/PTZ Control pages, but also want easy access to Channel Control pages without having to resize the DashBoard window.

With this layout, From any channel's ribbon view, you can click the Open Channel Control button to make that channel's Control page appear. You can also use PT/PTZ Controls to move cameras while watching live video in the ribbon view.



*Figure 45 - Example Layout showing MultiChannel Ribbon, Channel Control, and PT/PTZ Control*

**To set up this layout:**

1. In DashBoard, open the Vision[Ai]ry MultiChannel page.
2. Click the **Config** button and then configure the MultiChannel page to appear as a vertical ribbon that includes the channels you want to control.
3. Open one Channel Control page.
4. Drag the Channel Control tab and dock it to the right side of the DashBoard interface. The Channel Control tab appears in a new tab group.
5. Open all the other Channel Control pages. The new tabs appear within the tab group on the right.
6. Open all the PT Head Control pages and PTZ Camera Control pages. The new tabs appear within the tab group on the right, alongside the Channel Control tabs.
7. If you want to have easy access to the Vision[Ai]ry Configuration page, open it and drag its tab to the tab group where you want it to reside. In this example, it is in the same tab group as the Channel Control tabs.
8. If you want the order of the Channel Control tabs and the PT/PTZ Control tabs to reflect the order of the ribbon views, drag the tabs to set the desired order. Arranging the tabs in the same order as the ribbon views makes it easy to identify which tab to click when you want to access Channel controls or PT/PTZ controls.
9. Close the DashBoard tree and hide the DashBoard toolbar.

## Link Vision[Ai]ry with Camera Control (optional)

This section applies to single-channel Vision[Ai]ry systems only.

Vision[Ai]ry is designed to work in conjunction with your camera control application(s) (SmartShell, DashBoard PT Head Control, and DashBoard PTZ Camera Control), and with associated physical controllers (SmartShell Joystick Panel and/or USB game controllers).

If you use **SmartShell** to control cameras, you can do one or both of the following:

- Link camera selection between SmartShell and Vision[Ai]ry so when you select a camera in one application, it is automatically selected in the other. For more information, see “**Linking Camera Selection Between SmartShell and Vision[Ai]ry**” on [page 54](#).
- Add a USB controller to control framing operations such as resizing and repositioning the framing target, enabling and disabling axes, and changing the **Subject Selection** mode and **Active Tracking mode**. For more information, see “**Appendix**” on [page 156](#).

If you use DashBoard plugins (PT Head Control and/or PTZ Camera Control applications) to control cameras, you can link camera selection between these DashBoard applications and Vision[Ai]ry so that selecting a camera in Vision[Ai]ry also selects it in the DashBoard application, and vice-versa. For more information, see “**Linking Camera Selection Between DashBoard Plugins and Vision[Ai]ry**” on [page 54](#).

## Linking Camera Selection Between SmartShell and Vision[Ai]ry

This section applies to single-channel Vision[Ai]ry systems only.

When camera selection is linked, selecting a camera in one application automatically selects it in the other. You can then use the SmartShell joystick panel to manually control the selected camera.

Linking camera selection between SmartShell and Vision[Ai]ry requires installation of the Bridge Server application, editing of a SmartShell configuration file, and some DashBoard configuration.

For assistance setting up linked camera selection, contact Ross Video Technical Support.

## Linking Camera Selection Between DashBoard Plugins and Vision[Ai]ry

This section applies to single-channel Vision[Ai]ry systems only.

When camera selection is linked, selecting a camera in one application automatically selects it in the other.

If a USB controller is configured to control DashBoard parameters for PT heads and/or Ross PTZ cameras, it always controls the selected camera. For information about adding a USB controller to control Ross PT Heads, see the **User Manual for PT Head Control Plugin (8351DR-019-xx)**. For information about adding a USB controller to control Ross PTZ-12G+, PTZ-12G, and PTZ-NDI Cameras, see the **User Manual for PTZ Camera Control Plugin (8351DR-015-xx)**.

**Note:** If camera selection is linked between Vision[Ai]ry and DashBoard plugins, you cannot use a USB controller for camera selection or for framing.

This section describes how to link camera selection. Perform all steps in the order presented.

The main steps are as follows:

1. “**Set Selection IDs in Vision[Ai]ry**” (see [page 55](#))
2. “**Map Selection IDs to DashBoard Camera Control Plugins in Selector UI Mappings**” (see [page 55](#))
3. “**Set the Vision[Ai]ry Channel as the Selector in Device Class Mappings**” (see [page 56](#))

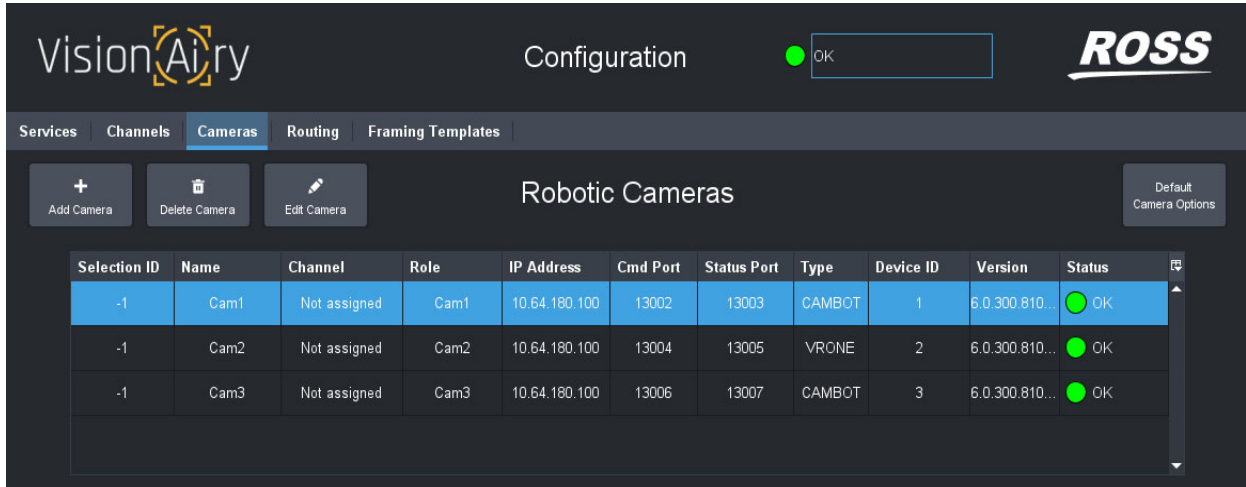
**Tip:** You can rearrange application interfaces in DashBoard so both the Vision[Ai]ry Channel Control interface and the current DashBoard camera control interface (PT Head Control or PTZ Camera Control) are always visible. For more information, see “**Rearrange User Interfaces for Optimal Workflow (optional)**” on [page 49](#).

## Set Selection IDs in Vision[Ai]ry

**Selection IDs** are unique identifiers for camera systems. They enable external control systems to refer to specific cameras. For example, they can be used in RossTalk commands to select a camera.

### To set selection IDs:

1. On the Vision[Ai]ry **Configuration** page, click the **Cameras** tab.  
The list of cameras appears.



*Figure 46 - Cameras Tab of the Configuration Page*

2. For each camera, in the **Selection ID** column, specify a unique **Selection ID** number for the camera. The assignment of numbers is arbitrary. Note which ID you assigned to each camera.

### Notes:

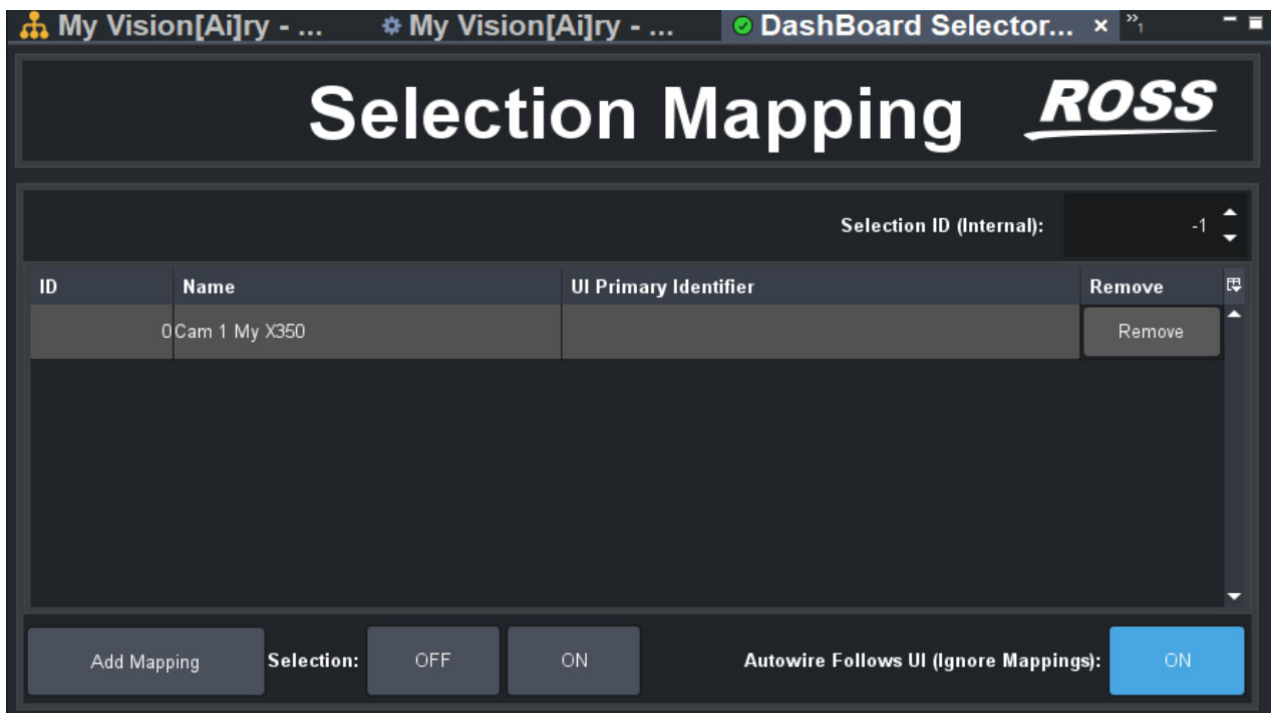
- Any camera with a negative **Selection ID** cannot participate in DashBoard camera selection.
- If you connect multiple DashBoard clients to the same Vision[Ai]ry channel, the **Selection IDs** will be the same for all clients and need only be set once.

## Map Selection IDs to DashBoard Camera Control Plugins in Selector UI Mappings

Mapping **Selection IDs** to DashBoard camera control plugins (PT Head Control and/or PTZ Camera Control) enables DashBoard to open the correct camera control interface when a camera is selected in Vision[Ai]ry.

### To map Selection IDs to DashBoard camera control plugins:

1. In the DashBoard tree, expand the **DashBoard Services** node and then double-click **Selector UI Mappings**.  
The **Selection Mapping** interface appears.
2. For each camera, do the following:
  - a. Click the **Add Mapping** button.  
A new mapping row appears in the **Selection Mapping** table.



**Figure 47 - Mapping Selector IDs to PT Head Control Plugins**

- b. In the new mapping, set **ID** to the **Selection ID** number you specified for the camera on the **Cameras** tab of the Vision[Ai]ry **Configuration** page.
  - c. Specify a **Name** for the mapping (optional).
  - d. For **UI Primary Identifier**, navigate to **Remote Control** for the camera to be selected, as shown in [Figure 47](#), and then double-click it.
3. At the bottom of the **Selection Mapping** interface, click the appropriate **UI Follow** button:
  - **UI Follows Selection — ON**  
 Select this option if you have arranged the DashBoard application interfaces to make the Vision[Ai]ry Channel Control interface and the camera control interface (PT Head Control or PTZ Camera Control) visible at the same time. When you select a camera in Vision[Ai]ry, the control interface for that camera becomes active and visible.
  - **UI Follows Selection — OFF**  
 Select this option if the Vision[Ai]ry occupies the whole DashBoard window, but you want to use a USB joystick to control the camera that is currently selected in Vision[Ai]ry. When you select a camera, its camera control interface remains hidden, but you can use a USB joystick to control the head.

**Note:** The **Autowire Follows UI — ON** option is not appropriate for systems with linked camera selection.

### ***Set the Vision[Ai]ry Channel as the Selector in Device Class Mappings***

Setting the Vision[Ai]ry channel as the **selector** enables Vision[Ai]ry to open DashBoard applications that are mapped to **Selection IDs**.

**To set the Vision[Ai]ry channel as the Selector:**

1. In the DashBoard tree, within the **DashBoard Services** node, double-click **Device Class Mappings**. The **Device Class Mappings** interface appears ([Figure 48](#)).

Device Class Mappings <b>ROSS</b>			
Class	Selected Device	Status	Clear Selection
db.uiselect	Selector UI Mappings on DashBoard Selector Service	<span style="color: green;">●</span> OK	Clear Selection
selector	Slot 1: 107 on My Vision[Ai]ry	<span style="color: red;">●</span> Channel Tracking Status Subject lost	Clear Selection

**Figure 48** - Device Class Mappings, showing the selector Device Class Mapped to the Vision[Ai]ry Channel

- In the **selector** row, in the **Selected Device** column, select the name of the Vision[Ai]ry channel, as highlighted in [Figure 48](#).  
**Tip:** Click the **Selected Device** box, and then click the down arrow to open a list of available devices.  
**IMPORTANT:** Do not edit any other device class mappings at this time. If a USB controller has already been configured to control camera operations such as pan/tilt/zoom, shot control (cut, run, etc), and paint functions, there are mappings for the **ptzjoystick**, **paintbox**, and **shotcontrol** device classes. Editing these mapping would disable USB control of the corresponding camera functions. For information about adding a USB controller to control Ross PT Heads, see the **User Manual for PT Head Control Plugin (8351DR-019-xx)**. For information about adding a USB controller to control PTZ-12G+, PTZ-12G, and PTZ-NDI cameras, see the **User Manual for PTZ Camera Control Plugin (8351DR-015-xx)**.

## Upgrading Vision[Ai]ry

If you have a working Vision[Ai]ry system, you can upgrade to a newer version. Upgrading is considerably easier than performing a complete installation.

Before you upgrade, we recommend that you back up all configuration data on a different computer. For more information, see **“Backup and Restore Vision[Ai]ry Configuration Data”** on [page 152](#).

**Note:** If you have a multi channel deployment for **v1.2** or earlier, where each engine has a dedicated control service, you will need to reconfigure as part of the upgrade. Contact Ross Video technical support for assistance.

**IMPORTANT:** The default installation folder location has changed in version 2.0. Folders and filenames differ from previous versions.

During installation:

- The previous Vision[Ai]ry service will be uninstalled.
- Vision[Ai]ry Control service configuration files will be copied to a new folder and renamed.
- Vision[Ai]ry Engine service will create a new properties file in the new directory.
- If you modified the old properties file, apply similar changes to the new one.

**Note:** Property file formats have changed. Do not replace the 2.0 properties file with the old version. Although the upgrade shouldn't affect configuration files, it's recommended to back them up before starting

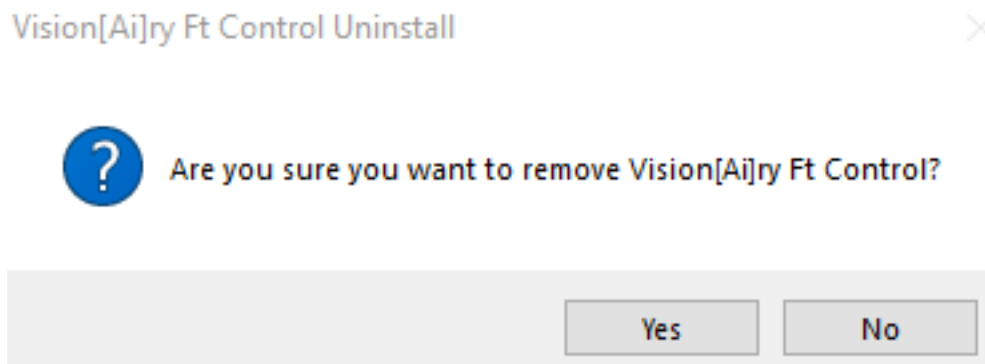
**IMPORTANT:** If you are upgrading from v1.0 or v1.1 to v1.2 (or higher), ensure that the **Role** setting for each camera is set as desired before you upgrade. Failure to set the camera roles before upgrading will cause problems that can not be resolved without assistance from Ross Video Technical Support personnel. For more information about setting camera roles, see **“Add Cameras in Vision[Ai]ry”** on [page 34](#).

## Upgrade Vision[Ai]ry

This section applies if you have a single channel system (any version), or if you have a multi-channel system that uses a single Control service (typical configuration for v1.3 and higher).

**To upgrade a single-channel system, or a multi-channel system that uses a single Control service:**

1. Install **Vision[Ai]ry Control** and **Vision[Ai]ry Engine** on the same computer(s) to which the previous versions were installed.  
**Note:** When upgrading Vision[Ai]ry Control you, will be prompted to uninstall the previous "Vision[Ai]ry Ft Control", select **Yes**.



*Figure 49 - Vision[Ai]ry Control Prompt When Upgrading to Version 2.0*

For more information, see **“Install Vision[Ai]ry Control and Engine Software”** on [page 17](#).

**IMPORTANT:** You must upgrade **Vision[Ai]ry Control** and all instances of **Vision[Ai]ry Engine**. You cannot upgrade only one. All components must be from the same software release.

2. If any changes had been made to the default configuration for the previous installation of Vision[Ai]ry, compare the **visionAiryEngine.properties** file for the new installation with the **visionAiryFtEngine.properties** file for the old installation and make any required changes (do not just replace the new file with the old file).
3. Restart the engine service for the changes to take effect.
4. Use DashBoard to test that Vision[Ai]ry performs as expected.
5. To copy over your stored DashBoard settings, on your DashBoard machine, go to **C:\DashBoard\workspace\SavedChoices** and rename all folders that start with **VisionAiryFt** to **VisionAiry**.

If you experience any difficulties, contact Ross Video Technical Support.

# Channel Control Pages

Each **Channel Control** page gives you complete control over one Vision[Ai]ry channel. There is one Control page per channel. They appear as DashBoard tabs.

In a single-channel system, the Channel Control page is typically the only control interface used to operate Vision[Ai]ry.

If you have a multi-channel system, you can also use the **MultiChannel** page to monitor and control up to six Vision[Ai]ry channels simultaneously. It features live video and primary tracking controls (**Active Tracking** and **Subject Selection**) for each channel view. Vision[Ai]ry operators typically use the **MultiChannel** page to control cameras during shows, and to temporarily access Channel Control pages as needed. For more information, see “**The MultiChannel Page**” on [page 108](#).

The section provides an overview of a **Channel Control** page and describes tasks you can perform. It includes the following sections:

- “**Channel Control Page Overview**” on [page 60](#)
- “**Channel Control Page Tasks**” on [page 85](#)

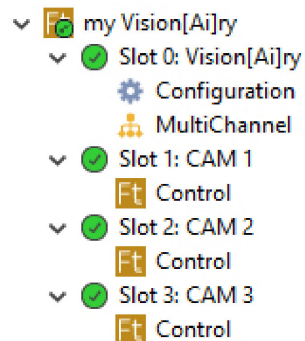
## Accessing Channel Control Pages

You can access Channel Control pages from the DashBoard tree.

### To access a Channel Control page:

1. On a Vision[Ai]ry workstation, open DashBoard.
2. In the DashBoard tree, expand all nodes within the **Vision[Ai]ry** node.

**Tip:** The names of the Vision[Ai]ry node and the channel nodes were defined by the installation technician when the system was set up. For example, in [Figure 50](#), the name of the Vision[Ai]ry node is **my Vision[Ai]ry**, and the name of the channel nodes are **CAM 1**, **CAM 2**, and **CAM 3**.



*Figure 50 - Accessing a Vision[Ai]ry Channel Control page in DashBoard (three channel nodes shown)*

3. Double-click the **Control** node for the channel you want to control. The channel control page appears.

# Channel Control Page Overview

Figure 51 and the topics that follow describe various features of a Vision[Ai]ry **Channel Control** page.

**Tip:** If you are reading this document on a computer, click the numbered buttons or areas of the diagram to jump to the feature descriptions.

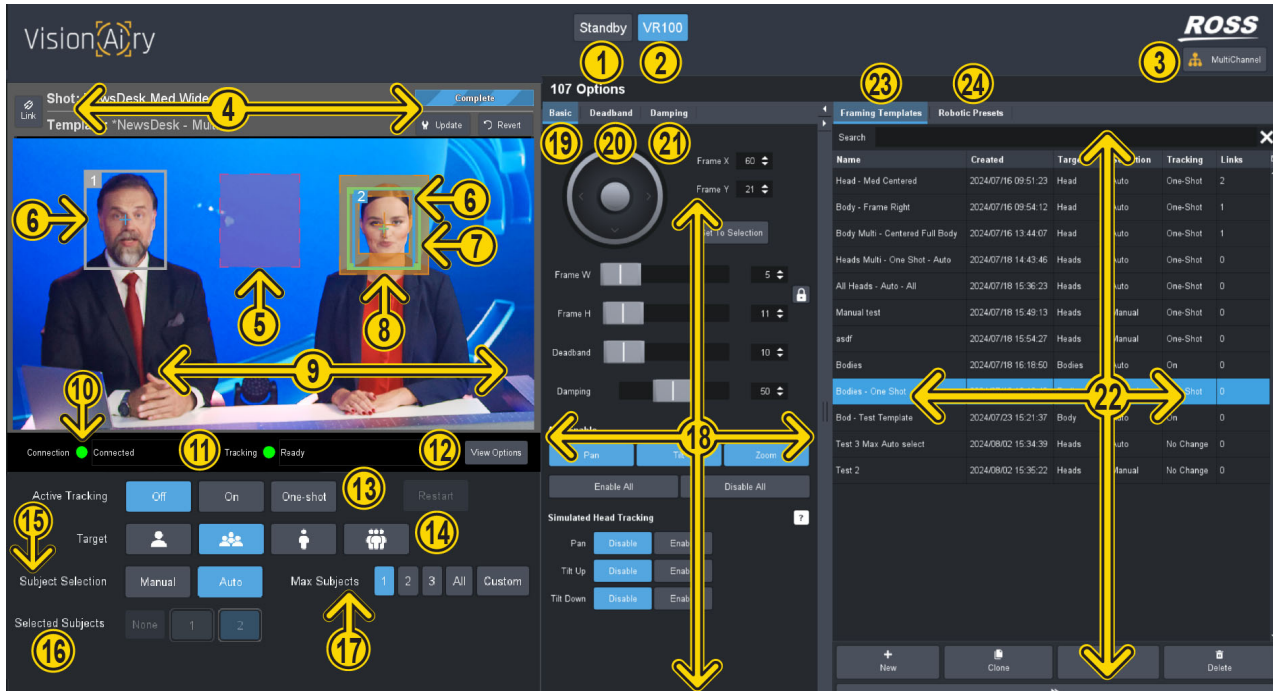


Figure 51 - Vision[Ai]ry Channel Control Page

Each Channel Control page includes the following:

1. **Standby Button** (see [page 61](#))
2. **Camera Selection Buttons** (see [page 61](#))
3. **MultiChannel Button** (see [page 61](#))
4. **Shot and Template Status Area** (see [page 61](#))
5. **Target Preview Box (pink-shaded box)** (see [page 65](#))
6. **Bounding Boxes (blue and gray)** (see [page 66](#))
7. **Framing Target (green box)** (see [page 66](#))
8. **Deadband Zone Indicators (orange-shaded box and cross-hairs)** (see [page 67](#))
9. **Video Viewing Area** (see [page 67](#))
10. **Connection Status** (see [page 68](#))
11. **Tracking Status and Viewing Area Border** (see [page 68](#))
12. **View Options Button** (see [page 70](#))
13. **Active Tracking Buttons** (see [page 72](#))
14. **Target Buttons** (see [page 72](#))
15. **Subject Selection Buttons** (see [page 73](#))
16. **Selected Subject Buttons** (see [page 73](#))
17. **Max Subject Buttons** (see [page 73](#))
18. **Framing Options Area** (see [page 74](#))
19. **Basic Tab (Framing Options Area)** (see [page 74](#))

- 20. **Deadband Tab (Framing Options Area)** (see [page 76](#))
- 21. **Damping Tab (Framing Options Area)** (see [page 77](#))
- 22. **Templates and Presets Area** (see [page 78](#))
- 23. **Framing Templates Tab (Templates and Presets Area)** (see [page 78](#))
- 24. **Robotic Presets Tab (Templates and Presets Area)** (see [page 80](#))

## 1 Standby Button

Click the **Standby** button to halt facial tracking and release camera control.

When Vision[Ai]ry is in **Standby** mode:

- No camera is selected or controlled by Vision[Ai]ry.
- A **Standby Mode** message appears above the viewing area.

Tap [HERE](#) to return to the diagram.

## 2 Camera Selection Buttons

Click a camera selection button to select a camera to control.

When a camera is selected:

- Video from the camera appears in the viewing area.
- If one or more subjects are detected, a bounding box appears around each subject.

**Tip:** Single-channel systems usually have multiple cameras available for the channel to control. For multi-channel systems, each channel is typically dedicated to only one camera, but may have more.

Tap [HERE](#) to return to the diagram.

## 3 MultiChannel Button

The MultiChannel button opens the MultiChannel page, which is a DashBoard tab that enables you to monitor and control up to six Vision[Ai]ry channels from a single interface. It features live video and primary tracking controls (**Active Tracking** and **Subject Selection**) for each channel view.

For more information, see “**The MultiChannel Page**” on [page 108](#).

Tap [HERE](#) to return to the diagram.

## 4 Shot and Template Status Area

The shot and template status area ([Figure 52](#)) displays status information about the most recently recalled shot (robotic preset or move) and the most recently recalled framing template.



**Figure 52 - Shot and Template Status Area**

A preset is a saved record of the position of each controllable axis of a robotic PT head or a PTZ camera. A move is a series of presets that are recalled in sequence. PTZ cameras do not perform moves. Moves are created in SmartShell, and not in the DashBoard PT Head Control plugin. PT heads store the individual presets that form moves. Vision[Ai]ry can recall these presets.

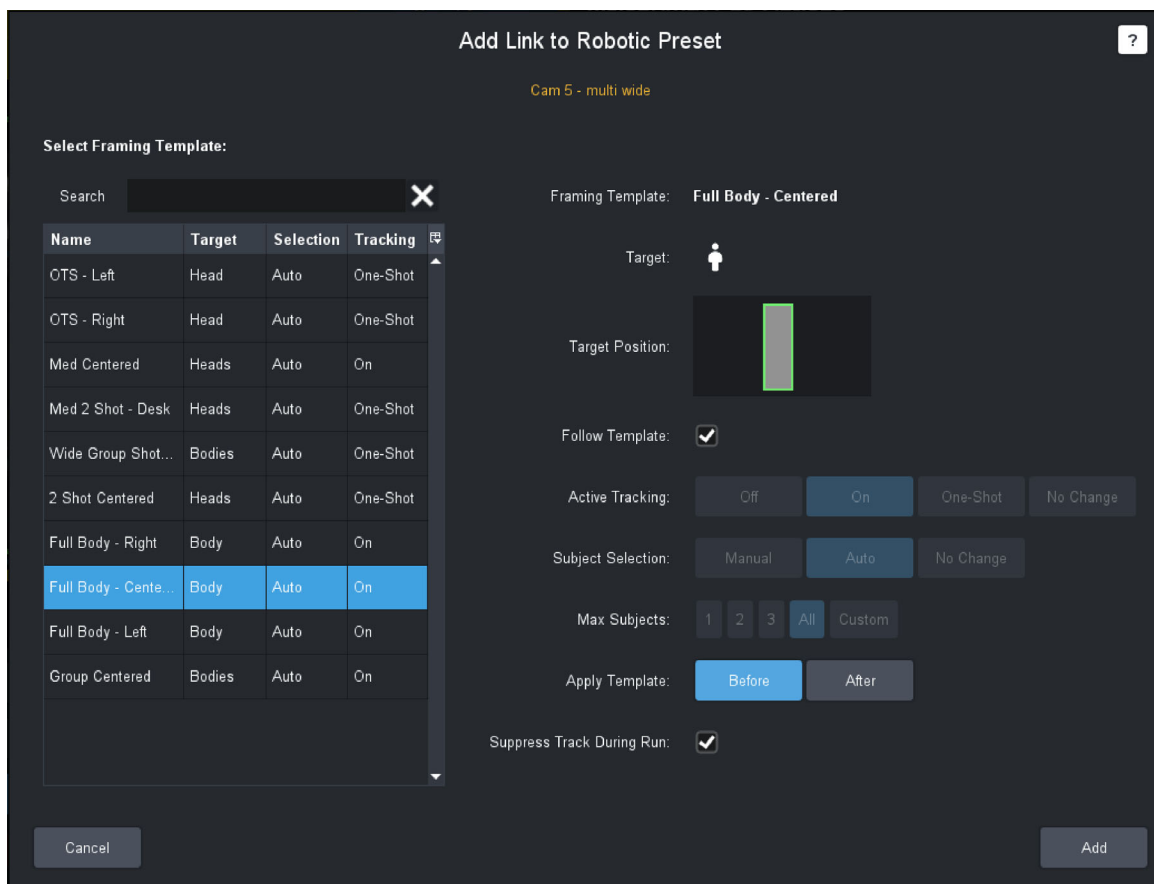
A framing template is a saved record of the size and position of the framing target, as well as deadband and damping values, and the enable/disable status of each axis (pan, tilt, zoom). It may also include **Subject Selection** mode and **Active Tracking** mode options.

When you recall a framing template, the framing target adjusts to the size and position specified in the template and all other values stored in the template are applied. Depending on the current **Subject Selection** mode and **Active Tracking** mode settings, and those stored in the template, the camera may or may not move to center a selected subject within the framing target, and may or may not track that subject.

You can link a framing template to one or more presets so that when you recall a preset on a camera controlled by Vision[Ai]ry, the linked framing template is also recalled.

The shot and framing template status area includes the following:

- **Shot or Move** — Displays the name of the most recently recalled **Shot** (preset) or **Move**.  
**Tip:** If the name of the shot or move is in faint text and is preceded by an asterisk (\*), one or more properties of the shot have changed since it was recalled or updated.
- **Template** — Displays the name of the most recently recalled framing template.  
**Tip:** If the template name is in faint text and is preceded by an asterisk (\*), one or more properties of the framing target (size, position, deadband, damping, or axis enable/disable status) have changed since the template was recalled or updated.
- **Link button** — Links the most recently recalled framing template to the most recently recalled preset. When you later recall the preset from Vision[Ai]ry, the linked framing template is also recalled.  
**Note:** The **Link** button is available only if the last recalled shot was a preset, and that preset is not already linked to a framing template.  
**Tip:** After you link, the **Link** button changes to an **Edit** button. Click it to review and modify the properties of the link.
- **Edit button** — Opens the **Edit Link for Robotic Preset** dialog box ([Figure 53](#)).



**Figure 53** - The Edit Link for Robotic Preset Dialog Box

The **Edit Link for Robotic Preset** dialog box enables you to modify or delete the link between the most recently recalled preset and its linked framing template. The dialog box includes the following:

- › **Select Framing Template List** — Enables you to select a different framing template to link to the preset. Each preset can be linked to a maximum of one framing template.

**Tip:** Use the **Search** tool to find a framing template by typing part or all of its name.

- › **Framing Template** — Displays the name of the linked framing template.
- › **Target** — Indicates the type of framing template.
- › **Target Position** — Provides a visual indication of the size and position of the framing target within the video frame, as defined by the framing template.
- › **Follow Template** — Determines whether **Subject Selection** and **Active Tracking** settings are based on those in the framing template, or based on settings specified in the link definition (this dialog box):

If **Follow Template** is selected, the **Subject Selection** and **Active Tracking** settings specified in the linked framing template are applied in conjunction with the preset recall.

If **Follow Template** is not selected, the **Subject Selection** and **Active Tracking** settings shown in this dialog box override those in the linked framing template, and are applied in conjunction with the preset recall.

- › **Active Tracking buttons** — Determine the active tracking setting to be applied when the preset is recalled (**Off**, **On**, **One-Shot**, **No Change**).

These buttons are available only if the **Follow Template** check box is not selected.

For more information about these buttons, see “**Active Tracking Buttons**” on [page 72](#).

- › **Subject Selection buttons** — Determine the selection setting to be applied when the preset is recalled (**Manual**, **Auto**, **No Change**).

These buttons are available only if the **Follow Template** check box is not selected.

For more information about these buttons, see “**Subject Selection Buttons**” on [page 73](#).

- › **Max Subjects** — Available only when in a multi-subject target with subject selection set to auto. Determines the maximum number of subjects that can be selected by the auto selection.
- › **Apply Template** — Specifies whether the framing template is to be applied before the preset recall begins or after the preset recall is complete.

Choose **Before** if you want to keep the subject framed while the preset is recalled.

Choose **After** if you want to start tracking only when the recall is complete, or if you want to continue tracking with the previous framing template until the recall is complete.

If you want to suppress all tracking during recall, choose **Before** and turn tracking suppression on. When the recall begins, the framing target moves to its new location but tracking doesn't begin until the recall is complete.

- › **Suppress Track During Run** — If selected, active tracking is suppressed while the preset is being recalled. If **Active Tracking** is turned **On** and tracking is not suppressed, Vision[Ai]ry overrides the preset to keep the subject framed as the preset runs.

**Tip:** Tracking is always suppressed during **Cut** operations.

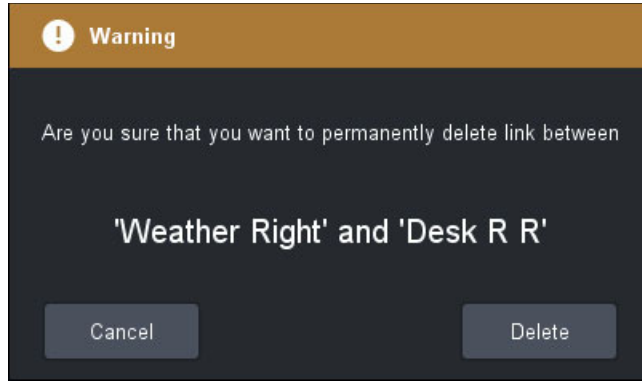
After preset recall is complete, **Active Tracking** settings are applied based on cascading priority, as described in **Table 2** on [page 64](#).

**Table 2 - Prioritized Application of Active Tracking Settings**

<b>First Priority: Link Settings</b>	<b>Second Priority: Framing Template Settings</b>	<b>Third Priority: Previously-Active Settings</b>	<b>Resulting Active Tracking Setting</b>	
Follow Template	Off	Irrelevant	Active tracking is turned off.	
	On	Irrelevant	Active tracking is turned on.	
	One-Shot	Irrelevant	One-Shot tracking is applied. The camera moves to fit the subject within the framing target once. The camera does not continue to track the subject.	
	No Change	Off	Off	Active tracking is turned off.
		On	On	Active tracking is turned on.
		One-Shot	One-Shot	One-Shot tracking is applied. The camera moves to fit the subject within the framing target once. The camera does not continue to track the subject.
	Off	Irrelevant	Irrelevant	Active tracking is turned off.
On	Irrelevant	Irrelevant	Active tracking is turned on.	
One-Shot	Irrelevant	Irrelevant	One-Shot tracking is applied. The camera moves to fit the subject within the framing target once. The camera does not continue to track the subject.	
No Change	Irrelevant	Off	Active tracking is turned off.	
		On	Active tracking is turned on.	
		One-Shot	One-Shot tracking is applied. The camera moves to fit the subject within the framing target once. The camera does not continue to track the subject.	

- › **Cancel Button** — Cancels any changes, and closes the dialog box.

- › **Delete Link** — Opens a **Warning** dialog box that prompts you to confirm the deletion request (Figure 54). To confirm the deletion request, click **Delete**.



**Figure 54** - Warning Message to Confirm the Deletion of a Link

- › **Save Button** — Saves your changes and closes the dialog box.
- **Progress Strip** — Displays the elapsed duration, in seconds, of a cueing operation or of the recall of a move or preset.



**Figure 55** - Progress Strip, showing Elapsed Duration of 3.4 Seconds

When the recall or cueing operation is finished, the strip displays **Prepared** (for cueing) or **Complete** (for a recall) (Figure 56).

**Tip:** The progress strip activates whether the robotic motion is initiated by Vision[Ai]ry or by another control application such as SmartShell or the DashBoard PT Head Control plugin.



**Figure 56** - The Progress Strip, displaying Prepared Status after cueing (left), and Complete Status after a Recall.

- **Update button** — Updates properties of the framing template based on changes made since it was recalled (size, position, deadband, damping, and enabled axes).
- **Revert button** — Recalls the framing template again, reverting all changes made since the previous recall.

For more information about framing templates, see “**Framing Templates Tab (Templates and Presets Area)**” on [page 78](#).

Tap [HERE](#) to return to the diagram.

## 5 Target Preview Box (pink-shaded box)

The target preview box appears whenever a framing template is selected on the **Framing Templates** tab, or a preset linked to a framing template is selected on the **Robotic Presets** tab.

The target preview box indicates the size and position of the selected or linked framing template’s framing target, and appears as a pink-shaded box. It appears for a few seconds and then automatically disappears.

**Note:** The target preview box appears only if **Target Preview** is enabled in the **View Options** list. For more information, see “**View Options Button**” on [page 70](#).

Tap [HERE](#) to return to the diagram.

## 6 Bounding Boxes (blue and gray)

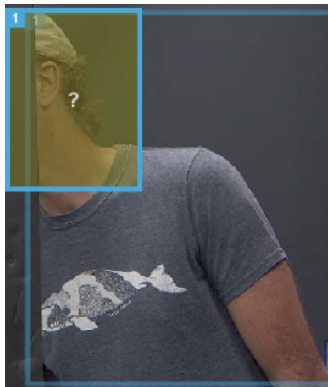
In the viewing area, a bounding box surrounds each detected subject (head or body). Bounding boxes move with their subjects.

**Note:** Where both head and body bounding boxes are shown, the bounding box that is not associated with the active target is less bold.

Bounding boxes are color-coded:

- **Blue** — A subject that is selected and is available for tracking.
- **Gray** — A subject that is not selected.
- **Dark Blue** — The multi-subject bounding box that surrounds all selected subjects when there is more than one. This box indicates the area that Vision[Ai]ry will adjust the framing to, ensuring all selected subjects are included.

For **Simulated Head** bounding boxes, a question mark (?) appears in the center of the box.



**Figure 57** - Simulated Head Bounding Box

Bounding boxes are numbered, and correspond to **Selected Subject** buttons below the viewing area. The number for each subject is assigned by the channel's Engine when the subject is first detected. If the Engine loses track of the subject, the bounding box disappears and the number becomes available to be assigned to a different target.

For more information about selecting a subject, see "**Selected Subject Buttons**" on [page 73](#).

**Tip:** Vision[Ai]ry detects subjects most reliably when their faces are at least 9% of the video height and less than 50% obscured. For best results, ensure the set is well-lit, that subjects do not turn away from the camera, and that their faces are not obscured by hats, long hair, etc. By default, Vision[Ai]ry detects faces, but can be configured to detect entire heads instead. Head tracking may help avoid loss of tracking when subjects turn away or their faces are obscured.

Tap [HERE](#) to return to the diagram.

## 7 Framing Target (green box)

When tracking is active, the framing target controls the size and position of the selected subject within the video frame. Vision[Ai]ry controls the pan, tilt, and zoom axes of the selected camera system to fit the selected subject within the framing target.

You can reposition and resize the framing target to control the size and position of the selected subject within the video frame.

For more information, see "**Reposition or Resize the Subject within the Video Frame**" on [page 90](#).

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## 8 Deadband Zone Indicators (orange-shaded box and cross-hairs)

Deadband zones determine how far a tracked subject can move away from the framing target before Vision[Ai]ry operates the camera system to correct tracking.

You can set deadband values for the pan, tilt, and zoom axes. For information about setting deadband values, see “**Adjust Deadband (slack)**” on [page 93](#).

**Tip:** Deadband zone indicators are shown only for enabled axes. For more information, see “**Enable and Disable Control of Pan, Tilt, and Zoom Axes**” on [page 92](#).

**Tip:** You can show or hide deadband zone indicators. For more information, see “**Adjust View Options**” on [page 95](#).

### ***Deadband Zone Indicators for the Pan and Tilt Axes***

For the pan and tilt axes, the deadband zone is indicated by orange cross-hairs at the center of the framing target:

- The horizontal line of the cross-hairs represents the deadband zone for the pan axis.
- The vertical horizontal line of the cross-hairs represents the deadband zone for the tilt axis.

The deadband zones for the pan and tilt axes are centered on the framing target by default, but can be offset. For example, the deadband zone on one side of the framing target can be made narrower than on the other side, so that tracking reacts sooner when the subject moves one way than it does when the subject moves the other way. Offsetting deadband zones may help keep the subject within the video frame.

When tracking is active, if the center of the subject’s bounding box is beyond the horizontal or vertical deadband zones, Vision[Ai]ry operates the pan and/or tilt axes to correct tracking.

### ***Deadband Zone Indicator for the Zoom Axis***

For the zoom axis, the deadband zone is indicated by an orange-shaded box that encloses the framing target. The box consists of two concentric rectangles. The orange-shaded area between the two rectangles represents the deadband zone of the zoom axis.

The deadband zone for the zoom axis is centered on the current zoom axis position by default, but can be offset. For example, you can make tracking react sooner when the subject moves closer to the camera than it does when the subject moves away, to ensure that the subject remains within the video frame.

When tracking is active, if the size of the subject’s bounding box becomes too large or too small to conform to the deadband zone, Vision[Ai]ry operates the zoom axis to correct zoom tracking.

Tap [HERE](#) to return to the diagram.

## 9 Video Viewing Area

The video viewing area displays video from the selected camera.

Depending on the **View Options** specified, the video viewing area may also display any or all of the following:

- A bounding box around each detected subject: If a face or head is selected as a tracking subject, its bounding box is blue. All other bounding boxes are gray.  
For more information, see “**Bounding Boxes (blue and gray)**” on [page 66](#).
- The framing target (green box).  
For more information, see “**Framing Target (green box)**” on [page 66](#).
- Deadband zone indicators: These appear as a set of cross-hairs (for pan and tilt axes) and/or an orange-shaded box (for zoom axis), overlapping the framing target.

For more information, see “**Deadband Zone Indicators (orange-shaded box and cross-hairs)**” on [page 67](#).

- Target preview box: A pink-shaded box that appears briefly whenever a framing template is selected on the **Framing Templates** tab, or a preset linked to a framing template is selected on the **Robotic Presets** tab. The target preview box indicates the size and position of the framing target that is defined in the selected or linked framing template.

If no camera is selected, the viewing area displays a **STANDBY MODE** message.

Tap [HERE](#) to return to the diagram.

## 10 Connection Status

The connection status area indicates the status of the connection between the Vision[Ai]ry Control service and the Vision[Ai]ry Engine service.

[Table 3](#) lists the possible states of the **Connection** status indicators.

**Table 3 - Connection Status Indicators**

Dot	Message	Description
Green	Connected	Connection is good. This is the normal state.
Yellow	Connecting	Vision[Ai]ry Control is attempting to connect to the Vision[Ai]ry Engine.
Yellow	Licensing Disconnected	Vision[Ai]ry is no longer connected to the licensing server, and the licensing grace period is in operation. If the connection is not restored before the 7 day grace period expires, the channel will revert to Unlicensed status.
Yellow	Body Unlicensed	Channel license type is set to Body+Head, but no body license is available to check out. Channel is running in head detection mode.
Yellow	Body Not Supported	Channel license type is set to Body+Head, but the engine is configured for head detection only. Channel is running in head detection mode.
Red	Not connected	Vision[Ai]ry Control is unable to connect to the Vision[Ai]ry Engine service. Ensure that the Vision[Ai]ry Engine service is running and that the IP Address and Port are correct on the Channel configuration page.
Red	Unlicensed	No license, or expired license

Tap [HERE](#) to return to the diagram.

## 11 Tracking Status and Viewing Area Border

The **Tracking** status dot and message provide information about issues related to subject tracking. They work in conjunction with the color-coded border around the video viewing area.

[Table 4](#) lists the possible combinations of video border color and **Tracking** dot/message:

**Table 4 - Tracking Status Indicators**

Dot	Border	Message	Description
Green	Gray	Ready	Active tracking has been disabled by operator.
Green	Green	On target	Active tracking is enabled, subject is correctly centered within target so no active correction of axis is occurring. If subject moves out of target, active correction will resume.
Green	Yellow	Correcting	Active tracking is enabled ( <b>Active Tracking</b> is set to <b>On</b> or <b>One-shot</b> ). Subject is not correctly centered within target, so system is actively correcting at least one axis.
Green	Gray	One shot complete	Active tracking was enabled in <b>One-shot</b> mode. Subject is now centered in target and tracking has stopped - this is a transitory state - control block will respond to this state by instructing channel to disable tracking so state will quickly transition to <b>Ready</b> .
Yellow	Orange	All axes disabled	Operator has disabled all axes, so there is nothing for tracking to do.
Yellow	Orange	Searching	This message appears when active tracking is suspended while Vision[Ai]ry searches for the selected subject. If subject <b>Subject Selection</b> mode is set to <b>Auto</b> and active tracking is enabled while no subject is visible in the frame, Vision[Ai]ry remains in <b>Searching</b> state indefinitely until a subject appears. If the subject reappears in the frame while Vision[Ai]ry is in <b>Searching</b> state, it resumes active tracking and switches to <b>Correcting</b> or <b>On target</b> , depending on whether the subject is in correct location. In other cases when a selected subject is no longer visible in the frame, Vision[Ai]ry searches for a specified period (default is four seconds) before declaring the subject lost and switching to <b>Subject not found</b> or <b>Subject lost</b> .
Red	Red	Subject not found	Manual tracking started but subject was not in the frame and was not found within the specified search period (default is four seconds). To restart tracking, select a subject that is visible in the frame.
Red	Red	Subject lost	Tracked subject was lost and could not be recovered within the specified search period (default is four seconds). This status applies only when <b>Subject Selection</b> is set to <b>Manual</b> , or if the camera's <b>Auto Reselect</b> setting is disabled. To resume tracking a new subject must be selected, either manually by turning on <b>Manual Subject Selection</b> mode and then clicking the subject or a numbered subject button, or automatically by turning on <b>Auto Subject Selection</b> mode and then turning <b>Active Tracking Off</b> and then <b>On</b> again.
Red	Red	No control of head	Tracking is enabled, but another controller, typically a joystick has taken active manual control of the robotic camera (via UDP direct control) so that the channel is no longer able to operate the robot. Vision[Ai]ry takes control of the camera when tracking starts or is reconfigured, but not if it loses control while it is actively tracking. To regain control, select the <b>Restart</b> button.
Red	Red	Camera disconnected	Regardless of whether tracking is enabled - controller has lost connection to currently-selected camera. If connection is restored, system will revert to <b>Ready</b> (tracking disabled).

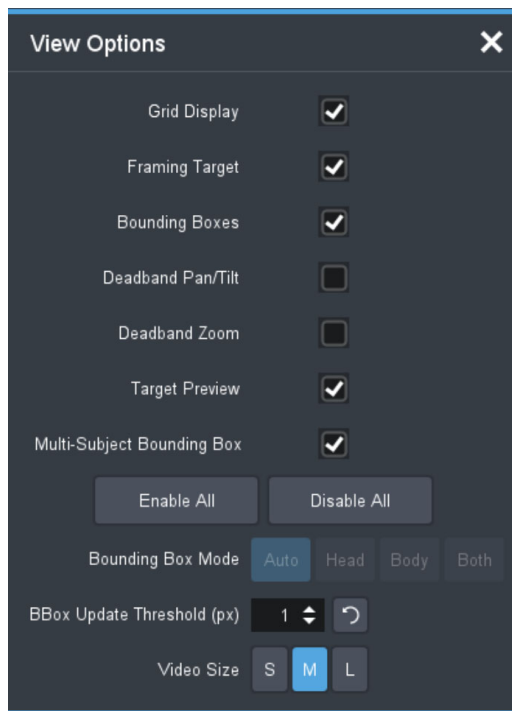
**Table 4 - Tracking Status Indicators**

Dot	Border	Message	Description
Red	Red	Channel disconnected	Regardless of whether tracking is enabled - controller has lost connection to the Vision[Ai]ry Engine service. If the connection is restored, the system will revert to <b>Standby</b> .
Red	Red	No Video	Not receiving video. Will recover if video is restored.
Yellow	Orange	Standby	In Standby mode.
Green	Orange	Switching Cameras	Transitory state when switching cameras. Duration is set by <b>Switch Delay</b> on the <b>Routing</b> tab of the channel configuration page.
Red	Red	Video Routing Failed	Request to switch video routing rejected or no connection to Routing Service. Check routing and reselect camera to recover.
Yellow	Orange	No position data	<p>Not receiving any position data from camera:</p> <ul style="list-style-type: none"> <li>• If FreeD is enabled, this means the FreeD data is not being received. Check FreeD configuration on the PT head or PTZ camera, and in Vision[Ai]ry.</li> <li>• If FreeD is disabled, this means Vision[Ai]ry is failing to poll the camera system for position data. If this problem persists, configure the PT head or PTZ camera to send FreeD data and Vision[Ai]ry to use it. For more information, see “<b>Edit Cameras</b>” on <a href="#">page 36</a>.</li> </ul> <p>This status recovers when position data becomes available.</p> <p><b>Note:</b> CamBot PT heads running CamBot firmware do not transmit FreeD data.</p>
Red	Red	Unlicensed	Channel license is invalid or expired

Tap [HERE](#) to return to the diagram.

## 12 View Options Button

The **View Options** button opens the **View Options** dialog box ([Figure 58](#)):



**Figure 58** - View Options Dialog Box

The **View Options** dialog box includes the following settings that affect the viewing area:

- **Grid Display** — shows/hides a rule of thirds grid.
- **Framing Target** — shows/hides the framing target.
- **Bounding Boxes** — determines whether bounding boxes are shown. When **License Type Body + Head** is in use, the **Bounding Box Mode** option determines which bounding boxes will be shown when **Bounding Boxes** option is checked.
- **Deadband Pan/Tilt** — shows/hides the deadband zone indicators for the pan and tilt axes. The indicators appear as horizontal and vertical lines of an orange cross-hairs at the center of the framing target.
- **Deadband Zoom** — shows/hides the deadband zone indicator for the zoom axis. The indicator appears as an orange-shaded box that encloses the framing target.
- **Target Preview** — enables/disables display of the target preview box. If enabled, the target preview box appears briefly whenever a framing template is selected on the **Framing Templates** tab, or a preset linked to a framing template is selected on the **Robotic Presets** tab. The target preview box indicates the size and position of the framing target, as defined in the selected or linked framing template. It appears as a pink-shaded box.
- **Multi-Subject Bounding Box** — shows a bounding box around the group of selected subjects when a multi-subject target is selected.
- **Bounding Box Mode** — When **License Type** is **Body + Head**, this option determines which bounding boxes are shown, with the following options:
  - › **Auto**: Automatically selects the most appropriate bounding box type based on whether current target is head or body.
  - › **Head**: Shows head bounding boxes only.
  - › **Body**: Shows body bounding boxes only.
  - › **Both**: Shows both head and body bounding boxes.
- **Note**: This setting is only relevant when channel is in **Body + Head** mode.
- **Enable All** and **Disable All** buttons — select or deselect all visible view options (**Grid Display**, **Framing Target**, **Bounding Box**, **Deadband Pan/Tilt**, **Deadband Zoom**, and **Target Preview**).

- **BBox Update Threshold (px)** — defines how far the tracked position of the subject can move before the bounding box is redrawn. A low value requires more frequent re-drawing of the bounding box. A higher value may result in improved performance of embedded video, but bounding box motion may be jerky. The threshold value does not affect the performance or tracking accuracy of Vision[Ai]ry Engines.

**Tip:** To reset to the default value (**1**), click the reset icon.

- **Video Size** — Controls the size of the video viewing area:
  - › **S** — Small viewing area
  - › **M** — Medium-sized viewing area
  - › **L** — Large viewing area

View options apply to the local workstation only. They persist when the DashBoard tab is closed and reopened, and when DashBoard is restarted.

**Note:** Topics and procedures in this manual refer to interface elements that can be hidden by view options. The manual assumes that the view options are configured to show all such items.

Tap [HERE](#) to return to the diagram.

## 13 Active Tracking Buttons

Tracking mode buttons control whether the robotic camera follows the selected subject (if any).

They function as follows:

- **Off** — The camera does not follow any subject.
- **On** — If a subject is selected, the camera follows the subject.
- **One-shot** — Clicking the **One-shot** button instructs the robotic camera to fit the subject within the framing target once. The camera does not continue to track the subject.
- **Restart** — Takes control of the camera and resumes tracking.

Use this button to restart tracking when a tracked subject is lost, or a different device has taken control of the camera. When tracking resets, it uses the current **Active Tracking** and **Subject Selection** settings. If the **Subject Selection** mode is **Auto**, Vision[Ai]ry selects the subject or subjects nearest to the framing target, or starts searching for a target if none is available.

The **Restart** button is available only while tracking is active.

Tap [HERE](#) to return to the diagram.

## 14 Target Buttons

The **Target** buttons control how many subjects are targeted for tracking and whether the framing target shows the desired position of the head or the entire body.

They function as follows:

- **Head** — Targets and tracks one subject's head, ensuring focused and detailed tracking of a single individual.
- **Heads** — Targets and tracks multiple subjects' heads, allowing the system to follow several individuals' head movements simultaneously.
- **Body** — Targets and tracks one subject's body, providing comprehensive tracking of the full body movements of a single individual.
- **Bodies** — Targets and tracks multiple subjects' bodies, enabling the system to monitor the full body movements of several individuals at the same time.

**Note:** Options for body targeting are only visible when channel license type is **Body + Head**.

## 15 Subject Selection Buttons

The **Subject Selection** buttons control how subjects are selected for tracking.

They function as follows:

- **Manual** — Enables you to manually select a subject by clicking a numbered **Selected Subject** button, or by clicking the subject's bounding box.  
If **Active Tracking** is set to **On**, the robotic camera immediately starts tracking the selected subject.
- **Auto** — Vision[Ai]ry automatically selects the subject closest to the center of the framing target.  
If no subject is available, Vision[Ai]ry searches until one appears.  
Once active tracking starts, the selected subject remains fixed and will not change even if another subject moves closer to the framing target. To automatically select another subject, turn **Active Tracking** mode **Off** and then **On**.  
If the selected subject (or one of the subjects in multi-subject tracking modes) is lost while tracking is active, Vision[Ai]ry immediately stops moving all axes and **Tracking** status changes to **Searching**:
  - › If the subject reappears in the same location in the frame (and is assigned the same ID), tracking resumes.
  - › If the subject does not reappear within a specified search period (default is four seconds), **Tracking** status changes to **Subject lost**. Depending on the **Auto Reselect** setting, the system may or may not automatically select a new subject and track it. To restart tracking, you can select the **Restart** button.

Tap [HERE](#) to return to the diagram.

## 16 Selected Subject Buttons

The **Selected Subject** buttons are available when **Subject Selection** is set to **Manual**.

The buttons function as follows:

- **None button** — Deselects all subject.  
If the robotic camera was tracking the subject, it stops doing so.
- **Numbered buttons (1, 2, 3, etc.)** — Select a subject to make them available for tracking.  
The button numbers correspond to the numbered bounding boxes in the viewing area. When a subject is selected, the corresponding bounding box turns blue. Only one subject can be selected at a time when in a single subject Target mode.  
**Tip:** Alternatively, you can select or deselect a detected subject (gray or blue bounding box) by clicking it. Ensure the exact position you click is not blocked by the framing target.  
**Tip:** Tracking cannot occur if **Active Tracking** is set to **Off**.

**Tip:** If **Subject Selection** is set to **Auto**, the **Selected Subject** buttons are still visible and still indicate which subject is selected, but the button colors are muted to show that they are not available.

**Tip:** Subject buttons that appear with a red border represent subjects that cannot be tracked in the active Target mode. This could mean that the required head or body bounding box has not been detected, or that the subject can no longer be detected.

Tap [HERE](#) to return to the diagram.

## 17 Max Subject Buttons

The Maximum Subjects buttons appear only when the Target is set to multiple subjects and Subject Selection is set to Auto. It determines the maximum number of subjects that can be selected by the automatic subject selection. If the number of subjects detected in the frame is less than the maximum number specified, all of the subjects will be selected.

This control provides several options:

- **Quick Select (1, 2, 3)** — Quickly choose to track a maximum of 1-3 subjects.
- **All** — Track all available subjects in the frame.
- **Custom** — Opens a field where you can specify a custom maximum number of subjects, up to 30.

## 18 Framing Options Area

This area displays the following tabs related to framing options:

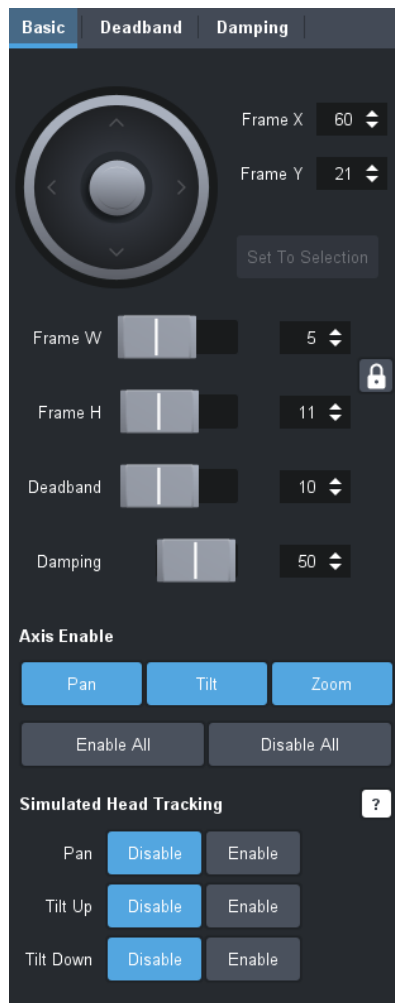
- **Basic tab** — Settings related to the size and position of the framing target, as well as deadband, damping, and enabling/disabling individual robotic axes.  
For more information, see “**Basic Tab (Framing Options Area)**” on [page 74](#).
- **Deadband tab** — Settings related to deadband, which determines far a tracked subject can move away from the framing target before Vision[Ai]ry operates the camera system to correct tracking.  
For more information, see “**Deadband Tab (Framing Options Area)**” on [page 76](#).
- **Damping tab** — Settings related to damping, which determines how abruptly the system responds to errors in target position.  
For more information, see “**Deadband Tab (Framing Options Area)**” on [page 76](#).

Tap [HERE](#) to return to the diagram.

## 19 Basic Tab (Framing Options Area)

The **Basic** tab contains settings related to the size and position of the framing target, as well as deadband, damping, and enabling/disabling individual robotic axes.

In the **Framing Options** area, click the **Basic** tab to access **Basic Options** ([Figure 59](#)) related to framing.



**Figure 59 - Basic Tab (Framing Options Area)**

The **Basic** tab contains the following controls:

- **Joystick for Framing Target** — Click and drag the joystick to reposition the framing target. If tracking is active, the camera system moves to correct tracking.
- **Frame X** and **Frame Y** — Control the horizontal position (**Frame X**) and vertical position (**Frame Y**) of the framing target.  
If tracking is active, Vision[Ai]ry operates the robotic camera to fit the subject within the framing target. Alternatively, you can move the framing target in the viewing area by clicking and dragging the cross-hairs at the center of the target.
- **Set to Selection** — Sets the position (**Frame X** and **Frame Y**) and size (**Frame W** and **Frame H**) of the framing target to match the position and size of the selected (blue) bounding box.  
This option is available only when a subject is selected and the selected bounding box is visible.
- **Frame W** and **Frame H** — Control the width (**Frame W**) and height (**Frame H**) of the framing target.  
If tracking is active, Vision[Ai]ry operates the robotic camera to fit the subject within the framing target.  
**Tip:** To lock the aspect ratio of the framing target, click the lock icon to turn it blue. When you change the width or height of the framing target, its width-to-height ratio is maintained. To unlock the aspect ratio, click the lock icon to turn it gray.  
Alternatively, you can resize the framing target in the viewing area by clicking and dragging an edge or corner of the target.
- **Deadband** — Displays one of the following:

- › **Deadband slider and numeric input** — Set the deadband value for all three axes (**Pan, Tilt, and Zoom**) together. The slider appears if all three axes are already set to a common deadband value and the offset is **0**.
- › **Adjust per axis button** — Opens the **Deadband** tab, where you can set deadband values for each axis individually (**Pan, Tilt, and Zoom**), or set them to a common value. For more information, see “**Deadband Tab (Framing Options Area)**” on [page 76](#).

Deadband determines how far a tracked subject can move away from the framing target before tracking resumes.

- **Damping** — Displays one of the following:
  - › **Damping slider and numeric input** — Set the damping value for all three axes (**Pan, Tilt, and Zoom**) together. The slider appears if all three axes are already set to a common damping value.
  - › **Adjust per axis button** — Opens the **Damping** tab, where you can set damping values for each axis individually (**Pan, Tilt, and Zoom**), or set them to a common value. For more information, see “**Damping Tab (Framing Options Area)**” on [page 77](#).

Damping determines how abruptly the system responds to errors in target position. A low damping value results in a quick, abrupt response, but may cause the camera to overshoot the subject. High damping results in a slow, smooth response.

- **Axis Enable buttons** — Determine which axes Vision[Ai]ry can control. You can enable or disable any or all controllable axes. When an axis is enabled, its button is blue.

**Tip:** If you start tracking with no axes enabled, **Tracking** status changes to **All axes disabled**. Enable one or more axes to give Vision[Ai]ry control of those axes.

- **Simulated Head Tracking** — A simulated head will be projected when a subject’s head can no longer be detected, but their body is still detected. Simulated tracking options determine whether tracking will continue on an axis when one or more selected subjects have a simulated head. This applies only when tracking is active, target mode is set to head or heads, and the axis is enabled.

Simulated head tracking options for controlled axes are:

- › **Pan** — Enables simulated head tracking for the pan axis.
- › **Tilt Up** — Enables simulated head tracking for the tilt axis upward.
- › **Tilt Down** — Enables simulated head tracking for the tilt axis downward.

Tracking will never continue on the zoom axis when there is a simulated head. For tilt, you have the option to separately determine whether Vision[Ai]ry can tilt the camera up or down, as the same behavior may not be desirable in both cases.

For **Simulated Head** bounding boxes, a question mark (?) appears in the center of the box.

**Note:** Simulated head tracking settings are stored and recalled with templates.

**Note:** Simulated Head Tracking options are only visible when the **License Type** is **Body + Head**, as body bounding boxes are required for simulated head projection.

Tap [HERE](#) to return to the diagram.

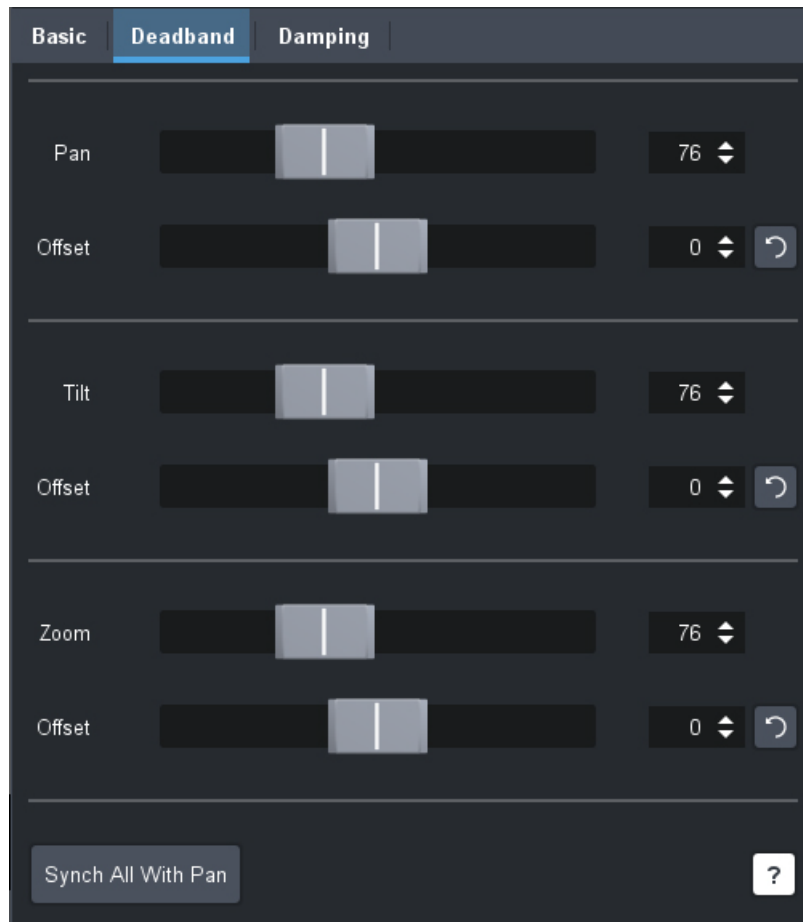
## Deadband Tab (Framing Options Area)

The **Deadband** tab contains settings that determine how far a tracked subject can move before Vision[Ai]ry operates the camera system to correct tracking. The area within which the subject can move without triggering camera motion is called the deadband zone.

Deadband zones can be set for each of the three controlled axes (pan, tilt, and zoom).

By default, the deadband zone for each axis is centered on the framing target. Deadband zones can be offset so that tracking reacts sooner when the subject moves in one direction than when they move in the other. Offsetting the deadband zone for one or more axes can help keep the subject well-positioned within the video frame.

In the **Framing Options** area, click the **Deadband** tab to access **Deadband Options** (Figure 60).



**Figure 60** - Deadband Tab (Framing Options Area)

The **Deadband** tab contains the following controls:

- Deadband controls for each axis (**Pan**, **Tilt**, and **Zoom**):
  - › **Deadband slider (Pan, Tilt, Zoom) and list** — Set the deadband value for the axis.
  - › **Offset slider and list** — Set the deadband offset value for the axis.  
**Tip:** to reset the **Offset** to zero, select the reset icon.
- **Synch All With Pan button** — Sets the tilt and zoom deadband values to match the pan deadband value, and resets all offsets to **0**.

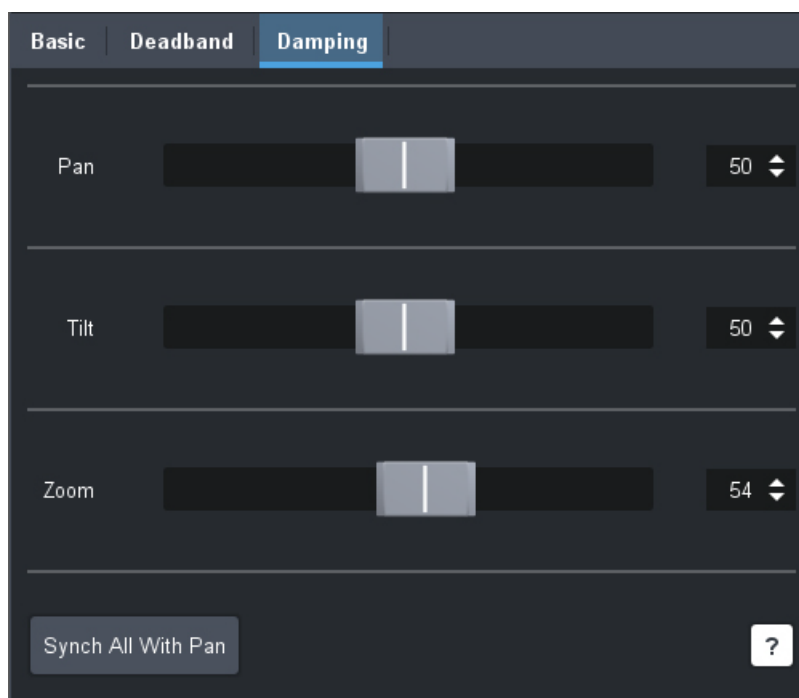
If you want to quickly set the same deadband value for all three axes, set the value for the pan axis and then select the **Synch All With Pan** button. Offsets are reset to **0**.

Tap [HERE](#) to return to the diagram.

## 21 Damping Tab (Framing Options Area)

The **Damping** tab contains settings that determine how abruptly the system responds to errors in target position. A low damping value results in a quick, abrupt response, but may cause the camera to overshoot the subject. High damping results in a slow, smooth response.

In the **Framing Options** area, click the **Damping** tab to access **Damping Options** (Figure 61).



**Figure 61** - Damping Tab (Framing Options Area)

The **Damping** tab contains a damping slider and list for each axis (**Pan**, **Tilt**, and **Zoom**).

If you want to quickly set the same damping value for all three axes, set the value for the pan axis and then select the **Synch All With Pan** button.

Tap [HERE](#) to return to the diagram.

## 22 Templates and Presets Area

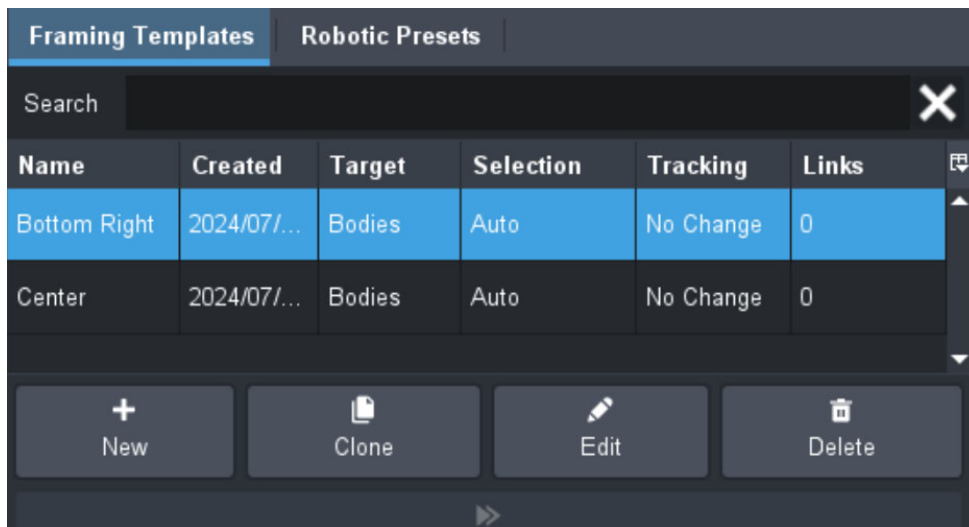
This area displays the following tabs related to framing templates and robotic presets:

- **Framing Templates tab** — enables you to select, add, edit, recall, clone, and delete framing templates.  
For more information about the **Framing Templates** tab, see “**Framing Templates Tab (Templates and Presets Area)**” on [page 78](#).
- **Robotic Presets tab** — enables you to select and recall robotic presets, and link each preset to a framing template so that when you recall a preset in Vision[Ai]ry, the linked framing template is also recalled.  
For more information about the **Robotic Presets** tab, see “**Robotic Presets Tab (Templates and Presets Area)**” on [page 80](#).

Tap [HERE](#) to return to the diagram.

## 23 Framing Templates Tab (Templates and Presets Area)

The **Framing Templates** tab enables you to select, add, edit, recall, clone, and delete framing templates.



**Figure 62** - The Framing Templates Tab, with a Template Named **Bottom Right** Selected

A framing template is a saved record of the current size and position of the framing target, as well as current deadband and damping values, and the enable/disable status of each axis (pan, tilt, zoom). It may also include **Subject Selection**, **Active Tracking**, and **Target** options.

When you recall a framing template, the framing target adjusts to the size and position specified in the template, and all other values stored in the template are applied. Depending on the current **Subject Selection**, **Active Tracking**, and **Target** settings, and those stored in the template, the camera may or may not move to center a selected subject within the framing target, and may or may not track that subject.

The list of framing templates enables you to find and select a template. The list is available to all Vision[Ai]ry channels in the system. You can select a template and then recall, edit, clone, or delete it.

Click a column heading to sort the list based on values in that column.

**Tip:** To quickly search for a specific template, start typing part of the **Template Name** in the **Search** box. Vision[Ai]ry filters the list as you type.

**Tip:** Framing templates can be linked to robotic presets, so that when you recall the preset, the linked template is also recalled. For more information, see **“Working With Robotic Presets”** on [page 103](#).

The list of framing templates includes the following columns:

- **Name** — The name of the template.
- **Created** — The date and time the template was created. Date and time format is **YYYY-MM-DD hh-mm-ss**.
  - Tip:** To view other dates and times associated with templates, including **Last Modified** and **Last Recalled**, see the **Framing Templates** tab of the **Configuration** page. For more information, see **“The Framing Templates Tab”** on [page 139](#).
- **Target** — The type of target mode selected:
  - › **Head** — Targets and tracks one subject's head, ensuring focused and detailed tracking of a single individual.
  - › **Heads** — Targets and tracks multiple subjects' heads, allowing the system to follow several individuals' head movements simultaneously.
  - › **Body** — Targets and tracks one subject's body, providing comprehensive tracking of the full body movements of a single individual.
  - › **Bodies** — Targets and tracks multiple subjects' bodies, enabling the system to monitor the full body movements of several individuals at the same time.
- **Selection** — The **Subject Selection** mode to be applied when the template is recalled:

- › **Manual** — When the template is recalled, **Subject Selection** is set to **Manual**.
- › **Auto** — When the template is recalled, **Subject Selection** is set to **Auto**.
- › **No Change** — The template does not change the **Subject Selection**.

For more information about **Subject Selection**, see “**Subject Selection Buttons**” on [page 73](#).

- **Tracking** — The **Active Tracking** mode to be applied when the template is recalled:
  - › **On** — When a template is recalled, **Active Tracking** is set to **On**.
  - › **Off** — When a template is recalled, **Active Tracking** is set to **Off**.
  - › **One-Shot** — When a template is recalled, **Active Tracking** is set to **One-shot**.
  - › **No Change** — The template does not change the **Active Tracking** mode.

For more information about **Active Tracking** modes, see “**Active Tracking Buttons**” on [page 72](#).

- **Links** — Shows the number of robotic presets that are linked to the template.

The **Framing Templates** tab includes the following buttons:

- **New** — Opens the **Add New Template** dialog box, which enables you to create a new template based on the current target type, size and position of the framing target, as well as deadband and damping values and the enable/disable status of each axis (pan, tilt, zoom). You can also set the template’s **Subject Selection** mode, and **Active Tracking** mode.
- **Clone** — Opens the **Clone Template** dialog box, which enables you to create a copy of the selected framing template. You can then edit the cloned template to customize it.
- **Edit** — Opens the **Edit Template** dialog box, which enables you to edit the selected template to set the **Subject Selection** mode and **Active Tracking mode**, and to update the template’s framing settings (framing target size and position, as well as deadband, and damping values).
- **Recall** — Applies the selected template.
- **Delete** — Opens a dialog box that enables you to permanently delete the selected preset.

**Tip:** Deleting a template also deletes its links to robotic presets.

For more information, see “**Working with Framing Templates**” on [page 97](#).

Tap [HERE](#) to return to the diagram.

## 24 Robotic Presets Tab (Templates and Presets Area)

The **Robotic Presets** tab enables you to select and recall robotic presets. You can also link each robotic preset to a framing template so that when you recall a preset in Vision[Ai]ry, the linked framing template is also recalled.



**Figure 63** - The Robotic Presets Tab, with a Preset Named **Desk C WD** Selected

The **Robotic Presets** tab enables you to review, cue, cut, and run robotic presets for the currently-selected camera. You can also create, edit, or delete links between presets and framing templates.

The list of presets enables you to find and select a preset. You can:

- Select a preset bank or preset category from the **Categories** list.  
The list shows presets from the only the selected bank or category.  
**Tip:** For PTZ cameras, presets are stored in banks. For robots that have PT heads, presets are stored in categories.
- Click a column heading to sort the list based on values in that column.
- Find a specific preset by typing some or all of the preset name in the **Search** box. Vision[Ai]ry filters the list as you type.
- Click a preset to select it.

If you select a preset that is linked to a framing template, link settings that control how the template is applied appear below the list:

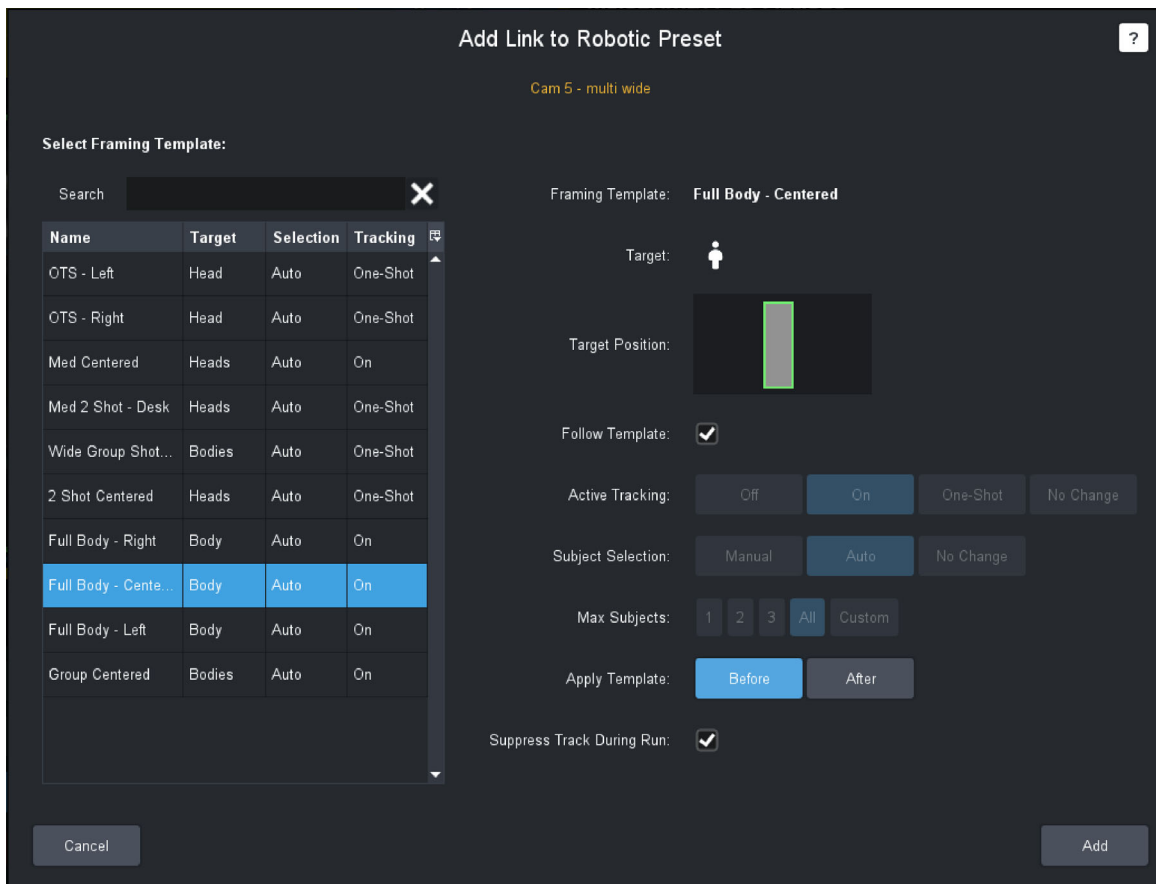
- › **Selection** — The **Subject Selection** mode to be applied (**Manual**, **Auto**, **No Change**).

- › **Target** — The type of target mode selected:
  - › **Head** — Targets and tracks one subject's head, ensuring focused and detailed tracking of a single individual.
  - › **Heads** — Targets and tracks multiple subjects' heads, allowing the system to follow several individuals' head movements simultaneously.
  - › **Body** — Targets and tracks one subject's body, providing comprehensive tracking of the full body movements of a single individual.
  - › **Bodies** — Targets and tracks multiple subjects' bodies, enabling the system to monitor the full body movements of several individuals at the same time.
- › **Tracking** — The **Active Tracking** mode to be applied (**Off, On, One-Shot, No Change**)
- › **Apply** — Whether the template is applied **Before** or **After** robotic preset recall is complete.
- › **Suppress** — Whether active tracking suppression is **On** or **Off** during robotic preset recall.

The **Robotic Presets** tab includes the following controls related to recalling presets:

- **Cue Button** — For CamBot XY pedestals, cues the preset by aligning the pedestal's wheels with the preset's floor destination so that when the preset is later recalled, the pedestal base does not need to rotate before moving across the floor.
- **Cut Button** — All robotic axes move to their preset destinations as quickly as possible. If the preset is linked to a framing template, the template is applied in accordance with the link settings and template settings. Active tracking is always suppressed during a cut operation.
- **Run Button** — Recalls the preset. If the preset is linked to a framing template, the template is applied in accordance with the link settings and template settings. The duration of the preset depends on the type of camera system:
  - › X-Series PT Heads and Furio robots, including CamBot XY pedestals running Furio firmware: All robotic axes move to their preset destinations in the amount of time specified in the **Duration** box. All axes reach their destinations at the same time.
 

**Tip:** If tracking is turned on and active tracking is not suppressed, Vision[Ai]ry overrides the preset to keep the subject framed as the preset runs.
  - › PTZ-12G+. PTZ-12G, and PTZ-NDI Cameras: All robotic axes move to their preset destinations as quickly as possible. For these cameras, a **Run** operation is the same as a **Cut** operation.
- **Duration box** — Specify a duration value, in seconds, to override the duration value defined in the preset.
- **Link Button** — Opens the **Add Link for Robotic Preset** dialog box or the **Edit Link for Robotic Preset** dialog box ([Figure 64](#)).



**Figure 64** - The Add Link for Robotic Preset Dialog Box

The **Add Link to Robotic Preset** dialog box appears if there is no existing link between the selected preset and a framing template. This dialog box enables you to create such a link.

The **Edit Link for Robotic Preset** dialog box appears if there is an existing link between the selected preset and a framing template. This dialog box enables you to modify or delete the existing link.

These two dialog boxes include the following:

- › **Select Framing Template List** — Enables you to select which framing template is linked to the preset. Each preset can be linked to a maximum of one framing template.

**Tip:** Use the **Search** tool to find a framing template by typing part or all of its name.

- › **Framing Template** — Displays the name of the linked framing template.

- › **Target** — Indicates the type of framing template.

- › **Target Position** — Provides a visual indication of the size and position of the framing target within the video frame, as defined by the framing template.

- › **Follow Template** — Determines whether **Subject Selection**, and **Active Tracking** settings are based on those in the framing template, or based on settings specified in the link definition (this dialog box):

If **Follow Template** is selected, the **Subject Selection** and **Active Tracking** settings specified in the linked framing template are applied in conjunction with the preset recall.

If **Follow Template** is not selected, the **Subject Selection** and **Active Tracking** settings shown in this dialog box override those in the linked framing template, and are applied in conjunction with the preset recall.

- › **Active Tracking buttons** - Determine the active tracking setting to be applied when the preset is recalled (**Off**, **On**, **One-Shot**, **No Change**).

These buttons are available only if the **Follow Template** check box is not selected. For more information about these buttons, see **“Active Tracking Buttons”** on [page 72](#).

- › **Subject Selection buttons** — Determine the selection setting to be applied when the preset is recalled (**Manual, Auto, No Change**).  
These buttons are available only if the **Follow Template** check box is not selected.  
**Note:** The **Max Subjects** options appear when **Subject Selection** mode is set to **Auto** and if the template **Target** mode is multi-subject.  
For more information about these buttons, see “**Subject Selection Buttons**” on [page 73](#).
- › **Apply Template** — Specifies whether the framing template is to be applied before the preset recall begins, or after the preset recall is complete.  
Choose **Before** if you want to keep the subject framed while the preset is recalled.  
Choose **After** if you want to start tracking only when the recall is complete, or if you want to continue tracking with the previous framing template until the recall is complete.  
If you want to suppress all tracking during recall, choose **Before** and turn tracking suppression on. When the recall begins, the framing target moves to its new location but tracking doesn't begin until the recall is complete.
- › **Suppress Track During Run** — If selected, active tracking is suppressed while the preset is being recalled. If **Active Tracking** is turned **On** and tracking is not suppressed, Vision[Ai]ry overrides the preset to keep the subject framed as the preset runs.  
**Tip:** Tracking is always suppressed during **Cut** operations.  
After the preset recall is complete, **Active Tracking** settings are applied based on cascading priority, as described in **Table 2** on [page 64](#).

**Table 5 - Prioritized Application of Active Tracking Settings**

<b>First Priority: Link Settings</b>	<b>Second Priority: Framing Template Settings</b>	<b>Third Priority: Previously-Active Settings</b>	<b>Resulting Active Tracking Setting</b>	
Follow Template	Off	Irrelevant	Active tracking is turned off.	
	On	Irrelevant	Active tracking is turned on.	
	One-Shot	Irrelevant	One-Shot tracking is applied. The camera moves to fit the subject within the framing target once. The camera does not continue to track the subject.	
	No Change	Off	Off	Active tracking is turned off.
		On	On	Active tracking is turned on.
		One-Shot	One-Shot	One-Shot tracking is applied. The camera moves to fit the subject within the framing target once. The camera does not continue to track the subject.
	Off	Irrelevant	Irrelevant	Active tracking is turned off.

**Table 5 - Prioritized Application of Active Tracking Settings**

First Priority: Link Settings	Second Priority: Framing Template Settings	Third Priority: Previously-Active Settings	Resulting Active Tracking Setting
On	Irrelevant	Irrelevant	Active tracking is turned on.
One-Shot	Irrelevant	Irrelevant	One-Shot tracking is applied. The camera moves to fit the subject within the framing target once. The camera does not continue to track the subject.
No Change	Irrelevant	Off	Active tracking is turned off.
		On	Active tracking is turned on.
		One-Shot	One-Shot tracking is applied. The camera moves to fit the subject within the framing target once. The camera does not continue to track the subject.

- › **Cancel Button** — Cancels any changes, and closes the dialog box.
- › **Delete Link Button** — Opens a dialog box that enables you to permanently delete the link to a robotic preset. This button appears in the **Edit Link for Robotic Preset** dialog box only. For more information, see “**Manage Links Between Robotic Presets and Framing Templates**” on [page 105](#).
- › **Add Button** or **Save Button** — Saves your changes and closes the dialog box.
- **Halt Button** — The **Halt** button immediately stops all movement of the selected camera due to **Cue**, **Cut**, and **Run** operations.

The list of robotic presets displays the following columns:

- **External ID** — An identification number assigned to a preset. External IDs enable automation control systems to address and run presets.
- **Name** — The name of the preset.
- **Duration** — The time, in seconds, that it takes to recall the preset when you run it.
- **Template** — The name of the framing template (if any) that is linked to the preset.

For more information about robotic presets, see “**Working With Robotic Presets**” on [page 103](#).

Tap [HERE](#) to return to the diagram.

## Channel Control Page Tasks

This section describes tasks you can perform on **Channel Control** pages. There is one Control page for each channel in your Vision[Ai]ry system.

Major topics in this section include the following:

- **Select a Camera or Enter Standby Mode** (see [page 86](#))
- **Access the MultiChannel Page** (see [page 86](#))
- **Change the Target Mode** (see [page 87](#))
- **Select a Subject and Start Tracking** (see [page 87](#))
- **Deselect a Subject** (see [page 89](#))
- **Turn Active Tracking Mode On or Off** (see [page 89](#))
- **Change Subject Selection Mode (Manual / Auto)** (see [page 89](#))

- **Perform One-shot Tracking** (see [page 89](#))
- **Manually Select a Different Subject or Subjects While Tracking** (see [page 90](#))
- **Reposition or Resize the Subject within the Video Frame** (see [page 90](#))
- **Manually Operate the Selected Camera by Adjusting the Framing Target** (see [page 91](#))
- **Restart Tracking** (see [page 92](#))
- **Enable and Disable Control of Pan, Tilt, and Zoom Axes** (see [page 92](#))
- **Adjust Deadband (slack)** (see [page 93](#))
- **Adjust Damping (responsiveness)** (see [page 94](#))
- **Adjust View Options** (see [page 95](#))
- **Working with Framing Templates** (see [page 97](#))
- **Working With Robotic Presets** (see [page 103](#))

**Note:** Even if multiple Vision[Ai]ry workstations have access to a given Vision[Ai]ry channel, the channel can control only one camera at a time. If multiple operators try to control the same channel time, each person's actions will interfere with those of the others.

## Select a Camera or Enter Standby Mode

Each Vision[Ai]ry channel can operate multiple cameras, but only one at a time. You can select which camera Vision[Ai]ry operates.

You can also deselect all cameras by entering **Standby** mode.

**Tip:** To minimize unnecessary processing load on the channel's Vision[Ai]ry Engine computer, place the channel into **Standby** mode when it is not in use.

### To select a camera:

- At the top of the Control page, click a camera selection button (to the right of the **Standby** button).  
Video from the camera appears in the viewing area.  
The green framing target appears.  
If one or more subjects are detected, a gray bounding box appears around each subject.

### To enter standby mode:

- At the top of the Control page, click the **Standby** button.  
Facial tracking stops and camera control is released.  
No camera is selected or controlled by Vision[Ai]ry.  
The viewing area displays a **Standby Mode** message.

## Access the MultiChannel Page

The **MultiChannel** page enables you to monitor and control up to six Vision[Ai]ry channels from a single DashBoard tab. Vision[Ai]ry operators typically use the MultiChannel page to control cameras during shows, temporarily accessing full Channel Control pages as needed.



### To access the MultiChannel page from a Channel Control page:

- At the top of the **Control** page, click the **MultiChannel** button.  
The **MultiChannel** page appears.  
**Tip:** After you close the MultiChannel page, DashBoard shows the Control page from which you opened the MultiChannel page.



## Change the Target Mode

The **Target** buttons allow you to control whether Vision[Ai]ry will actively track single or multiple subjects, and, if body tracking is licensed and enabled for the channel, whether active tracking corrects to the head or body bounding boxes of subjects.



**To turn multi-subject targeting on:**

- Click the **Heads**  or **Bodies**  button.  
The **Bodies** option will only be available if body tracking is licensed and enabled.
  - › **Manual** subject selection allows multiple subjects to be selected by clicking on the bounding boxes in the video image, or the selected subjects buttons at the bottom of the page. Selecting another subject adds them to the selection. Clicking on a selected subject removes them from the set of selected subjects.
  - › **Auto** subject selection will select the subject or subjects closest to the target center when tracking starts or reset, up to the limit of the **Max Subjects** value.



**To turn single subject targeting on:**

- Click the **Head**  or **Body**  button. The **Body** option will only be available if body tracking is licensed and enabled.
  - › **Manual** subject selection allows a subject to be selected by clicking on the bounding boxes in the video image, or the selected subjects buttons at the bottom of the page. Selecting another subject deselects the previously selected subject.
  - › **Auto** subject selection will select the single subject closest to the target center when tracking starts or is reset

**To turn head targeting on:**

- Click the **Head**  or **Heads**  button.
- Subject's head bounding boxes will become selectable in the video view.

**To turn body targeting on:**

- Click the **Body**  or **Bodies**  button. These options will only be available if body tracking is licensed and enabled.
- Subject's body bounding boxes will become selectable in the video view, and head bounding boxes will no longer be selectable.

**WARNING:** When changing from head targeting to body targeting, you will need to adjust the size and shape of the bounding box. Switching while on-air without use of a pre-stored template is not recommended.

## Select a Subject and Start Tracking

You can select subjects manually or enable Vision[Ai]ry to select subjects automatically.

Manual selection enables you to choose one or more subjects to be tracked. If any subject becomes lost, tracking stops. If you want to resume tracking, you must select a new subject, or, if tracking multiple subjects and at least one subject is still selected, you can resume tracking with the Restart button.

Automatic selection tracks the subjects that are closest to the framing target when active tracking begins. When using a multi-subject target mode, the Max Subjects control can be used to set the maximum number of subjects that can be automatically selected.

Switching to automatic selection from manual selection will cause the subjects to be reselected automatically.

**Note:** Once tracking has started automatic selection will not change which subjects are selected, or add any new subjects to the selection.

If any subject becomes lost, tracking stops. Depending on the **Auto Reselect** setting, the system may or may not automatically select a new subject and track them. To restart tracking, you can select the **Restart** button.

**Before you select and track subjects, do the following:**

1. Select a camera for the channel to operate.  
Video appears in the viewing area.
2. Select a **Target** mode for the type of subjects that will be targeted. Targeting options include single or multi-subject targeting, and if licensed, adds body targeting.  
**Note:** Switching between single or multi-subject targeting changes the way that subject selection behaves.
3. Reposition and resize the framing target, if necessary, to place it where you want the subject or subjects to appear within the video frame.

**To manually select subjects and start tracking:**

1. Click the **Manual** button.
2. In the viewing area, find the desired subject or subjects and then note the number on the bounding box around it.  
**Tip:** If a subject does not have a bounding box, Vision[Ai]ry cannot detect the subject. For reliable detection, the subject must be less than 50% obscured. For head tracking, head height must be at least 9%. For body tracking, body height must be at least 20%.
3. In the row of **Selected Subject** buttons, click the button that corresponds to the number on the subject's bounding box.  
**IMPORTANT:** Repeat this step for all desired subjects if using a multi-subject Target mode.  
**Tip:** Alternatively, you can select a detected subject (gray bounding box) by clicking it. The exact position you click must not be blocked by the framing target.
4. Turn **Active Tracking** mode **On**.  
Vision[Ai]ry immediately starts tracking the selected subject(s), operating the pan, tilt, and zoom axes as required to fit the subject(s) within the framing target.  
**Tip:** You can disable one or two axes to limit tracking to the remaining enabled axes only. For example, if you don't want the robotic camera to tilt, disable the tilt axis. For more information, see "**Basic Tab (Framing Options Area)**" on [page 74](#).
5. If you want to track a different subject, click the **Selected Subject** button that corresponds to the number on the subject's bounding box.

**To automatically select subjects and start tracking:**

1. Set the **Subject Selection** mode to **Auto**.
2. If using a multi-subject **Target** mode, set the **Max Subjects** to the maximum number of subjects you want automatically selected.
3. Turn **Active Tracking** mode **On**.

If one or more subjects are detected, Vision[Ai]ry immediately starts tracking the subject or subjects nearest to the framing target, operating the pan, tilt, and zoom axes as required to fit the subject within the framing target.

If no subject is available, Vision[Ai]ry searches until one appears.

## Deselect a Subject

When you deselect a subject, they are no longer considered for tracking, and their bounding box in the viewing area turns gray. If **Active Tracking** mode is **On**, Vision[Ai]ry stops tracking the subject.

**Tip:** To deselect all selected subjects, select the **None** button.

**To deselect a subject:**

1. Click the **Manual** button.
2. In the row of **Selected Subject** buttons, click the button of the subject you want to deselect.

**Tip:** Alternatively, you can deselect a subject (blue bounding box) by clicking it. The exact position you click must not be blocked by the framing target.

## Turn Active Tracking Mode On or Off

The **Active Tracking** buttons control whether the robotic camera follows the selected subject(s) (if any).

**To turn tracking mode on:**

- Click the **On** button.  
If a subject is selected, the camera follows the subject.

**To turn tracking mode off:**

- Click the **Off** button.  
The camera does not follow any subject.

## Change Subject Selection Mode (Manual / Auto)

The **Subject Selection** buttons control how subjects are selected for tracking.

**To turn manual subject selection on:**

- Click the **Manual** button.  
You can manually select a subject or subjects by clicking a numbered **Selected Subject** button or by clicking the subject's bounding box.

**To turn automatic subject selection on:**

- Click the **Auto** button.  
Vision[Ai]ry automatically selects the subject or subjects closest to the center of the framing target. In multi-subject target modes, Vision[Ai]ry will select subjects up to the **Max Subjects** value.  
If no subject is available, Vision[Ai]ry searches until one appears.

## Perform One-shot Tracking

When you perform one-shot tracking, Vision[Ai]ry operates the robotic camera to fit the selected subject or subjects within the framing target once. The camera does not continue to track the subject(s).

### To perform one-shot tracking:

1. Manually select the desired subject(s).
2. Click the **One-shot** button.  
Vision[Ai]ry operates the robotic camera to fit the selected subject(s) within the framing target, and **Active Tracking** mode turns **Off**.

## Manually Select a Different Subject or Subjects While Tracking

When Vision[Ai]ry is tracking a subject, it remains locked on that subject or subjects. You can manually select a different subject or subjects to track, depending on if you've chosen single or multi subject mode.

### To manually select a different subject:

1. Click the **Manual** button.
2. In the viewing area, find your desired subject and then note the number on the bounding box around it.  
**Tip:** If the subject does not have a bounding box, Vision[Ai]ry cannot detect the subject. For reliable detection, the subject must be less than 50% obscured. For head tracking, head height must be at least 9%. For body tracking, body height must be at least 20%.
3. In the row of **Selected Subject** buttons, click the button that corresponds to the number on the subject's bounding box.  
Vision[Ai]ry immediately starts tracking the selected subject, operating the pan, tilt, and zoom axes as required to fit the subject within the framing target.  
**Tip:** Alternatively, you can select a detected subject (gray bounding box) by clicking it. The exact position you click must not be blocked by the framing target.

## Reposition or Resize the Subject within the Video Frame

When tracking is active, the framing target controls the size and position of the selected subject or subjects within the video frame. Vision[Ai]ry operates the pan, tilt, and zoom axes of the selected robotic camera system to fit the selected subject(s) within the framing target.

You can reposition and resize the framing target to control the size and position of the selected subject(s) within the video frame:

- Reposition the framing target to specify where you want the selected subject(s) to appear in the frame. For example, if you want the host of your show to appear on the left side of the video frame and a keyed-in graphic to appear on the right side, position the framing target on the left side of the viewing area. Vision[Ai]ry operates the pan and tilt axes as required to frame the shot.
- Resize the framing target to specify how much of the video frame the selected subject or subjects occupy. Vision[Ai]ry operates the zoom axis to make the subject as big as possible without exceeding the boundaries of the framing target.
- Apply a framing template to reposition and/or resize the framing target, as defined in the template. For more information, see "**Working with Framing Templates**" on [page 97](#)

**Note:** Tracking between some start and end positions may not be possible when the framing target is close to the edge of the image and tracking correction requires changing the zoom position of the lens. This is due to the subject drifting too close to the edge and being lost while the system is correcting. To avoid this problem, leave a gap of at least 3% of the viewing area between the edge of the framing target and the edge of the viewing area. We recommend that you test framing targets and tracking prior to use on-air.

### To fit the framing target to the selected subject:

1. Select the subject or subjects to which you want to fit the framing target.
2. In the **Options** area, on the **Basic** tab, click the **Set to Selection** button.  
The framing target is resized and repositioned to frame the selected subject.

### To manually reposition the framing target:

- Do one of the following:
  - › In the viewing area, click and drag the cross-hairs in the center of the framing target.
  - › In the **Options** area, on the **Basic** tab, adjust the **Frame X** and **Frame Y** sliders/values.  
For more information, see “**Basic Tab (Framing Options Area)**” on [page 74](#).
  - › In the **Options** area, on the **Basic** tab, manipulate the virtual joystick.  
For more information, see “**Basic Tab (Framing Options Area)**” on [page 74](#).

### To manually resize the framing target:

- Click and drag a corner or edge of the framing target:
  - › Dragging a corner resizes the framing target while maintaining its aspect ratio.
  - › Dragging the top or bottom edge resizes the framing target vertically unless the aspect ratio is locked.
  - › Dragging the right or left edge resizes the framing target horizontally unless the aspect ratio is locked.

**Tip:** When you resize the framing target, its center does not move.

Alternatively, you can resize the framing target by adjusting the **Frame W** and **Frame H** sliders/values on the **Basic** tab of the **Options** area. You can also lock the aspect ratio of the framing target so its shape remains constant when you drag its corners and edges. For more information, see “**Basic Tab (Framing Options Area)**” on [page 74](#).

## Manually Operate the Selected Camera by Adjusting the Framing Target

While Vision[Ai]ry is actively tracking a subject, you can effectively operate the pan, tilt, and zoom axes of the camera by adjusting the position or size of the framing target. This can be particularly useful when the camera is off-air and you want to bring an additional subject into view so you can select it for tracking.

When you move or resize the framing target while Vision[Ai]ry is tracking, the robotic camera moves as required to keep the selected subject within the framing target.

### To operate the selected camera by adjusting the framing target:

1. Ensure that Vision[Ai]ry is tracking a subject.  
Tracking is active when **Active Tracking** mode is **On** and a subject is selected.
2. If you want to move the framing target without resizing it, do one of the following:
  - In the viewing area, click and drag the cross-hairs at the center of the framing target.
  - In the **Options** area, on the **Basic** tab, click and manipulate the virtual joystick, or edit the **Frame X** and **Frame Y** values.
3. If you want to resize the framing target, do one of the following:
  - In the viewing area, click and drag a corner or edge of the framing target:
    - › Dragging a corner resizes the framing target while maintaining its aspect ratio.
    - › Dragging the top or bottom edge resizes the framing target vertically unless the aspect ratio is locked.

- › Dragging the right or left edge resizes the framing target horizontally unless the aspect ratio is locked.

**Tip:** When you resize the framing target, its center does not move.

- In the **Options** area, on the **Basic** tab, edit the **Frame W** and **Frame H** values. You can also lock the aspect ratio of the framing target so its shape remains constant when you drag its corners and edges. For more information, see “**Basic Tab (Framing Options Area)**” on [page 74](#).

## Restart Tracking

Vision[Ai]ry tracking can be lost if a different device takes control of the camera, or if a subject moves out of range or moves in a way that obscures their face and head for too long a period.

### To restart tracking:

- Click the **Restart** button.

Vision[Ai]ry takes control of the camera and resumes tracking.

When tracking restarts, it uses the current **Active Tracking**, **Target**, and **Subject Selection** settings. If the **Subject Selection** mode is **Auto**, Vision[Ai]ry selects the subject or subjects nearest to the framing target, or starts searching for a subject if none is available.

## Enable and Disable Control of Pan, Tilt, and Zoom Axes

You can enable or disable the pan, tilt, and zoom axes, individually or as a group. If you disable one or more axes, Vision[Ai]ry does not operate them while tracking.

**Tip:** Enabling and disabling axes in Vision[Ai]ry does not affect axis behavior when that axis is controlled by other applications.

### To enable or disable one or more axes:

1. In the **Options** area, click the **Basic** tab.
2. On the **Basic** tab, in the **Axis Enable** area select from the following:
  - › Pan
  - › Tilt
  - › Zoom
  - › Enable All
  - › Disable All

### To enable or disable one or more axes with Simulated Heads Projection active:

Simulated Head Projection will show the estimated position of the subject's head when their actual head cannot be detected but their body is still visible. The Simulated Head Tracking options determine whether active tracking will continue on enabled axes when one or more of the selected subjects has a simulated head. Simulated Head Tracking options are only available for axes that are currently enabled. Simulated Head Tracking is only available when body tracking is licensed, the feature is enabled for the camera and the target mode is head or heads.

1. In the **Options** area, click the **Basic** tab.
2. On the **Basic** tab, in the **Simulated Head Tracking** area:
  - To enable or disable an axis, click its button.  
An axis is enabled when its button is blue.

## Adjust Deadband (slack)

Deadband determines how far a tracked subject can move before Vision[Ai]ry operates the camera system to correct tracking. The area within which the subject can move without triggering camera motion is called the deadband zone.

The size of the deadband zone can be adjusted for each of the three controlled axes (pan, tilt, and zoom). You can specify one deadband size value that applies to all axes, or specify separate values for each axis. Deadband size is expressed as a percentage of the framing target size. Higher deadband values allow the subject to move farther before the robotic camera responds.

**Tip:** Avoid using a very low deadband value (less than 5%) on tight shots. A very low deadband value may cause oscillation of the camera. If this occurs, increase deadband.

**Tip:** If a deadband value you specify is smaller than the tolerance value for that axis, the Vision[Ai]ry Engine automatically adjusts the deadband value to match the tolerance value. The resulting deadband zone is reflected in the deadband zone indicators in the viewing area (orange-shaded box and cross-hairs), but the numeric deadband value remains set at the value you specified. Axis tolerance values are set on the camera configuration page. For more information about setting axis tolerance, see “**Edit a Camera**” on [page 144](#).

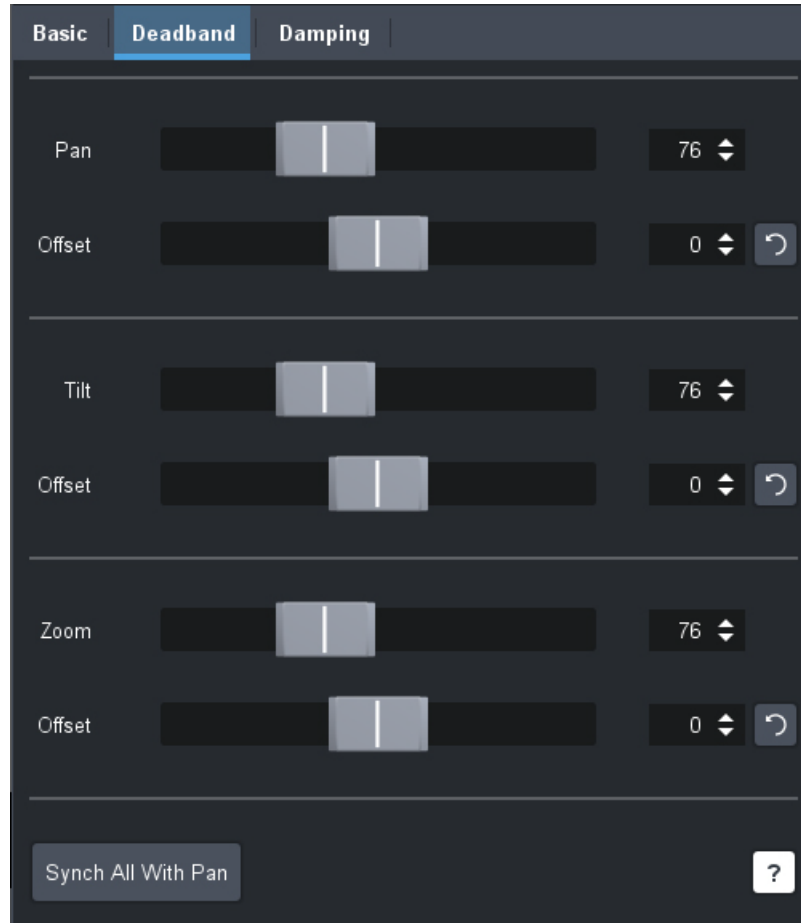
By default, deadband zones for the pan and tilt axes are centered on the framing target, and the deadband zone for the zoom axis is centered on the current zoom position. Deadband zones for each axis can be offset so that tracking reacts sooner when the subject moves in one direction than in the other. Offsetting the deadband zone for one or more axes can help keep the subject well-positioned within the video frame.

We recommend testing the effect of deadband and damping before taking shots to air.

**Tip:** Before you adjust deadband settings, enable **Deadband Pan/Tilt** and **Deadband Zoom** in **View Options** so you can immediately see the effects of your changes in the viewing area as you make them. For example, when you adjust deadband for the pan and tilt axes, the cross-hair lines on the framing target change accordingly. For more information, see “**Adjust View Options**” on [page 95](#).

**To adjust deadband settings:**

1. In the **Options** area, on the **Deadband** tab (Figure 65), use the **Pan** slider or the number box beside it to adjust the deadband size value for the **Pan** axis.



*Figure 65 - Adjusting Deadband Settings*

2. If you want to apply the same deadband size value to all axes, select the **Synch All With Pan** button at the bottom of the **Deadband** tab.  
Deadband size values for all axes match the value you set for the **Pan** axis and their **Offset** values reset to **0**.  
Go to step 4.
3. Adjust the **Offset** value for the **Pan** axis.  
**Tip:** If you want to reset **Offset** to the default value (**0**), select the reset button beside the number box.
4. Adjust the deadband size value and **Offset** value for the **Tilt** axis and for the **Zoom** axis.

## Adjust Damping (responsiveness)

Damping determines how abruptly the system responds to errors in target position.

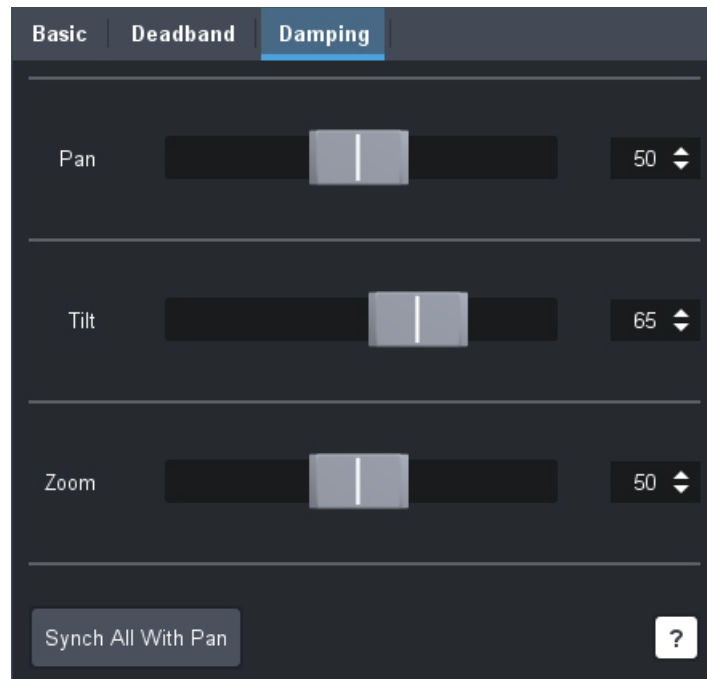
Set damping low for a quick, abrupt response which may overshoot, or high for a slow, steady response.

You can specify one damping value that applies to all axes, or specify separate damping values for each axis (pan, tilt, and zoom). We recommend testing the effect of damping and deadband before taking shots to air.

**Tip:** If the camera is zoomed out and the selected subject is small in the video frame, set damping to a high value (at least 50%) to prevent rapid camera movement and to avoid losing tracking of the selected subject.

**To adjust damping settings:**

1. In the **Options** area, on the **Damping** tab (Figure 66), use the **Pan** slider or the number box beside it to adjust the damping value for the **Pan** axis.



*Figure 66 - Adjusting Damping Settings*

2. If you want to apply the same damping value to all axes, select the **Synch All With Pan** button at the bottom of the **Damping** tab.  
Damping values for all axes match the value you set for the **Pan** axis.  
Skip the remaining step.
3. Adjust the damping value for the **Tilt** axis and for the **Zoom** axis.

## Adjust View Options

You can control whether Vision[Ai]ry displays each of the following interface elements in the viewing area:

- rule of thirds grid
- framing target
- bounding boxes
- deadband indicators for the pan and tilt axes
- deadband indicator for the zoom axis
- target preview box

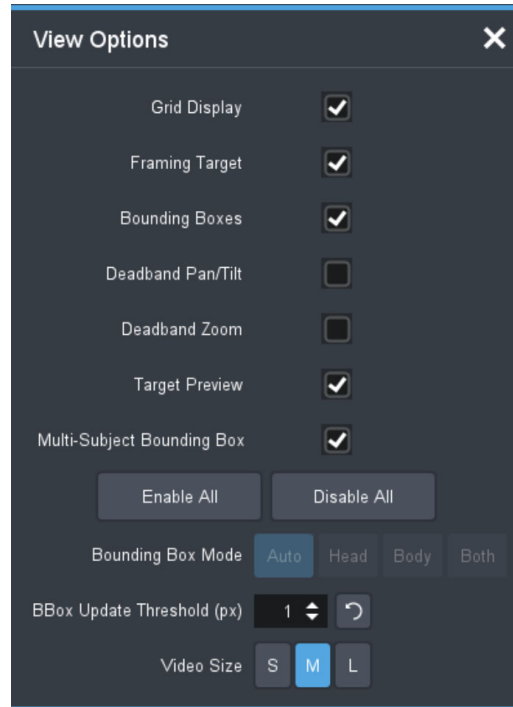
You can also control the size of the viewing area, and how far subjects can move before their bounding boxes are redrawn by Vision[Ai]ry.

View options apply to the local workstation only. They persist when the DashBoard tab is closed and reopened, and when DashBoard is restarted.

**Note:** Topics and procedures in this manual refer to interface elements that can be hidden by view options. The manual assumes that the view options are configured to show all such items.

**To adjust view options:**

1. Below the viewing area, click the **View Options** button.  
The **View Options** dialog box appears ([Figure 67](#)):



**Figure 67 - View Options Dialog Box**

2. Do one of the following:
  - If you want to enable or disable individual view options, select or clear the corresponding check boxes:
    - › **Grid Display** — shows/hides a rule of thirds grid.
    - › **Framing Target** — shows/hides the framing target.
    - › **Bounding Box** — shows/hides bounding boxes. If **License Type** is **Body + Head**, the **Bounding Box Mode** below will determine which bounding boxes are displayed when this option is enabled.
    - › **Deadband Pan/Tilt** — shows/hides the deadband zone indicators for the pan and tilt axes. The indicators appear as horizontal and vertical lines of an orange cross-hairs at the center of the framing target.
    - › **Deadband Zoom** — shows/hides the deadband zone indicator for the zoom axis. The indicator appears as an orange-shaded box that encloses the framing target.
    - › **Target Preview** — enables/disables display of the target preview box. If enabled, the target preview box appears briefly whenever a framing template is selected on the **Framing Templates** tab, or a preset linked to a framing template is selected on the **Robotic Presets** tab. The target preview box indicates the size and position of the framing target, as defined in the selected or linked framing template. It appears as a pink-shaded box.
    - › **Multi-Subject Bounding Box** — shows a bounding box around the group of selected subjects when a multi-subject target is selected.
    - › **Enable All and Disable All buttons** — select or deselect all visible view options (**Grid Display**, **Framing Target**, **Bounding Box**, **Deadband Pan/Tilt**, **Deadband Zoom**, **Target Preview** and **Multi-Subject Bounding Box**).

- › **Bounding Box Mode** — When **License Type** is **Body + Head**, this option determines which bounding boxes are shown, with the following options:
  - › **Auto**: Automatically selects the most appropriate bounding box type based on whether current target is head or body.
  - › **Head**: Shows head bounding boxes only.
  - › **Body**: Shows body bounding boxes only.
  - › **Both**: Shows both head and body bounding boxes.

**Note:** This setting is only relevant when channel is in **Body + Head** mode.
- 3. If you want to adjust how far subjects can move before their bounding boxes are redrawn by Vision[Ai]ry, specify the **BBox Update Threshold**, in pixels (px).  
A low value requires more frequent re-drawing of bounding boxes. A higher value may result in improved performance of embedded video, but bounding box motion may be jerky. The threshold value does not affect the performance or tracking accuracy of Vision[Ai]ry Engines.  
**Tip:** To reset to the default value (**1**), click the reset icon.
- 4. If you want to change the size of the viewing area, click one of the following buttons:
  - **S** — Small viewing area
  - **M** — Medium-sized viewing area
  - **L** — Large viewing area

**Note:** View options apply to the local workstation only. They persist when the DashBoard tab is closed and reopened, and when DashBoard is restarted.

## Working with Framing Templates

A framing template is a saved record of the current size and position of the framing target, as well as current deadband and damping values, and the enable/disable status of each axis (pan, tilt, zoom) and simulated head tracking options. It also includes **Subject Selection** mode, **Target** mode, and **Active Tracking** mode options.

When you recall a framing template, the framing target adjusts to the size and position specified in the template, and all other values stored in the template are applied. Depending on the current **Subject Selection** mode and **Active Tracking** mode options settings, and those stored in the template, the camera may or may not move to center a selected subject, or subjects, within the framing target, and may or may not track the subject(s).

There are three ways to recall a framing template:

- From the **Framing Templates** tab.
- From the **Robotic Presets** tab, by recalling a robotic preset that is linked to the template. For more information, see “**Working With Robotic Presets**” on [page 103](#).
- From an external device, using RossTalk commands. for more information, see “**Configure RossTalk Listener**” on [page 148](#).

This section includes the following topics:

- “**Find and Select a Framing Template**” on [page 98](#)
- “**Add a New Framing Template**” on [page 98](#)
- “**Recall and/or Update a Framing Template**” on [page 100](#)
- “**Edit a Framing Template**” on [page 101](#)
- “**Clone (copy) a Framing Template**” on [page 102](#)
- “**Delete a Framing Template**” on [page 103](#)

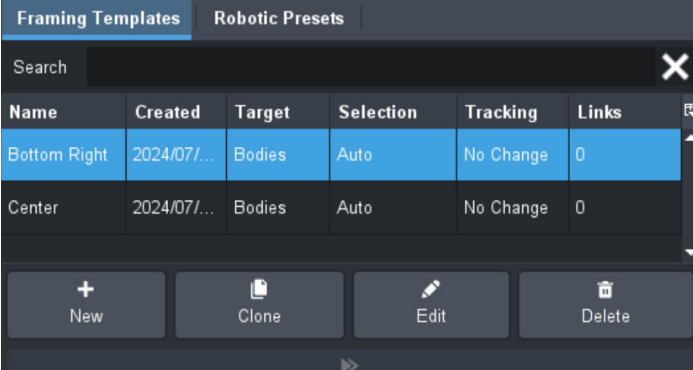
**Tip:** After you create a framing template, we recommend you test it to confirm it performs as desired before you use it on-air.

**Note:** When a template is created, the target type of the template (head/body, single/multi subject) is set based on the target option currently active on the channel, and is shown in the top left hand corner of the **Add / Edit Template** dialog. The target type for a template can't be changed - to switch template settings to a template with a different target, recall the template, change target type and any other required settings, then create a new template.

**Note:** You can create an archived copy of all framing templates, and later restore it to the same Vision[Ai]ry computer, or a different one. For more information, see "**Backup and Restore Vision[Ai]ry Configuration Data**" on [page 152](#).

### Find and Select a Framing Template

The list of framing templates enables you to find and select a template ([Figure 68](#)). After you select a template, you can recall, edit, clone, or delete it.



The screenshot shows a dialog box titled "Framing Templates" with a sub-tab "Robotic Presets". It features a search bar at the top right. Below is a table with columns: Name, Created, Target, Selection, Tracking, and Links. The "Bottom Right" template is selected, highlighted in blue. Below the table are four buttons: New, Clone, Edit, and Delete.

Name	Created	Target	Selection	Tracking	Links
Bottom Right	2024/07/...	Bodies	Auto	No Change	0
Center	2024/07/...	Bodies	Auto	No Change	0

**Figure 68** - List of Framing Templates with a Template Named **Bottom Right** Selected

#### To find and select a template:

1. In the list of framing templates, find the template you want to select.

**Tip:** To locate a specific template quickly, do one or both of the following:

- In the **Search** box, start typing part of the template's **Name**.  
Vision[Ai]ry filters the list as you type.
- Click a column heading (**Name, Created, Target, Selection, Tracking, Links**).  
Vision[Ai]ry sorts the list based on the data in the column.

**Tip:** To reverse the list order, click the column heading again.

2. In the list of templates, click the desired template to select it.

The template is selected. In the video viewing area, the target preview (pink-shaded box) briefly appears, to indicate the size and position of the selected framing target within the video frame, as defined by the selected framing template.

**Note:** The target preview box appears only if **Target Preview** is enabled in the **View Options** list. For more information, see "**Adjust View Options**" on [page 95](#).

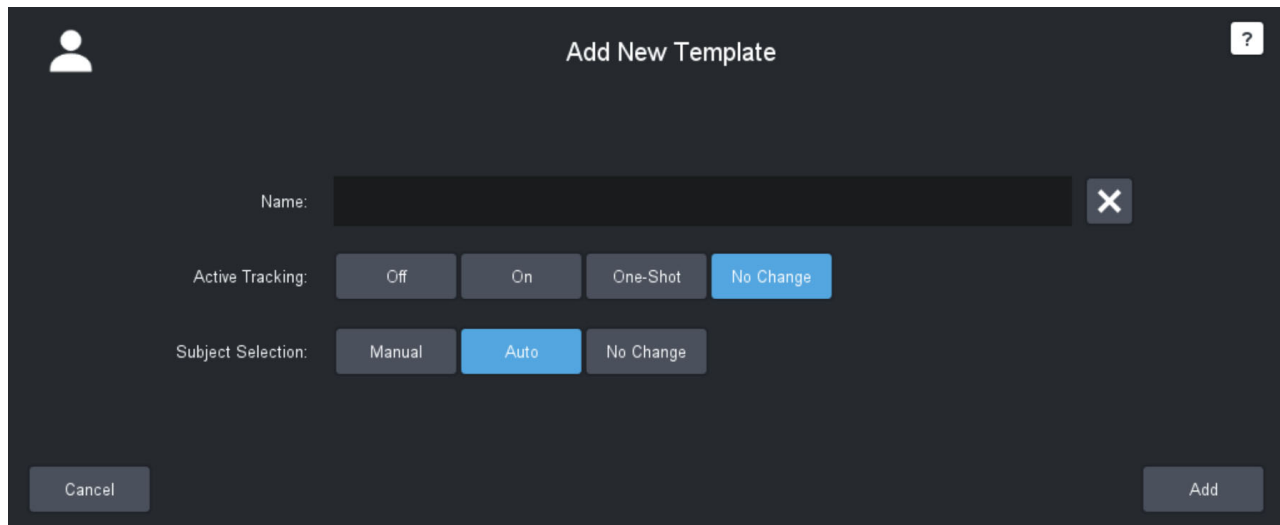
### Add a New Framing Template

When you add a new framing template, it is based on the current target type, size and position of the framing target, as well as deadband and damping values and the enable/disable status of each axis (pan, tilt, zoom), and simulated head tracking options. You can also specify **Subject Selection** mode and **Active Tracking** mode options.

**Note:** The **Target** mode is taken directly from the value the channel is set to when the template is created. It cannot be manually set to a different value in the dialog.

### To add a new template:

1. Adjust framing as you want it to be recorded in the new template:
  - Select desired **Target** mode.
  - Reposition and/or resize the framing target.  
When the template is recalled, the framing target adjusts to the specified size and position.
  - On the **Basic** tab of the **Options** area, enable or disable each axis as desired (pan, tilt, zoom).  
After the template is recalled, these settings are applied, and affect subsequent tracking.  
**Note:** In **Body + Head** operating mode, if **Simulated Heads** are enabled, you can also adjust the **Simulated Head Tracking** options.
  - Adjust the **Deadband** and **Damping** values as desired.  
**Tip:** To adjust all **Deadband** and **Damping** values, use settings on the **Deadband** and **Damping** tabs, respectively. For more information, see “**Adjust Deadband (slack)**” on [page 93](#) and “**Adjust Damping (responsiveness)**” on [page 94](#).  
After the template is recalled, these settings are applied, and affect subsequent tracking.
2. On the **Framing Templates** tab, click the **New** button.  
The **Add New Template** dialog box appears ([Figure 69](#)).



*Figure 69 - Adding a New Framing Template*

3. In the **Name** box, type a name for the new template.  
Names must be unique, and they are not case-sensitive.
4. Click a **Active Tracking** button to specify which **Active Tracking** mode is to be applied when the template is recalled:
  - **Off** — When a template is recalled, the **Active Tracking** mode is set to **Off**.
  - **On** — When a template is recalled, the **Active Tracking** mode is set to **On**.
  - **One-Shot** — When a template is recalled, the **Active Tracking** mode is set to **One-shot**.
  - **No Change** — The template does not change the **Active Tracking** mode.For more information about **Active Tracking** modes, see “**Active Tracking Buttons**” on [page 72](#).
5. Click a **Subject Selection** button to specify which **Subject Selection** mode is to be applied when the template is recalled:
  - **Manual** — When the template is recalled, the **Subject Selection** mode is set to **Manual**.
  - **Auto** — When the template is recalled, the **Subject Selection** mode is set to **Auto**.
  - **No Change** — The template does not change the **Subject Selection** mode.For more information about **Subject Selection** modes, see “**Subject Selection Buttons**” on [page 73](#).
6. **Select Max Subjects** from the available options, or choose **Custom** and input the desired number.  
This determines the maximum number of subjects that can be selected by the auto selection.

**Note:** **Max Subjects** only appear if the template **Target** mode is multi-subject, and if **Subject Selection** is **Auto**.

7. Click **Add**.

The new template is created, and appears in the **Framing Templates** list.

### ***Recall and/or Update a Framing Template***

When you recall a framing template, the framing target adjusts to the size and position specified in the template, and all other values stored in the template are applied.

After you recall a template, you can adjust the framing target and other framing properties (deadband, damping, and axis enable/disable status). You can then update the template to record these changes. Alternatively, you can revert to the original template, effectively recalling it again.

**Tip:** Before you recall a template, we suggest you check the current **Subject Selection** mode, **Active Tracking** mode, **Target** mode, as well as the **Subject Selection** mode and **Active Tracking** mode settings stored in the template, to ensure that you know how recalling the template will affect subject selection and tracking.

#### **To recall a template:**

- In the list of framing templates, click the desired template, and then click **Recall**.

The template is recalled.

Depending on the **Subject Selection** mode, **Active Tracking** mode, and **Target** mode settings before recall, and those stored in the template, the camera may or may not move to center a selected subject within the framing target, and may or may not track that subject. For more information, see **“Add a New Framing Template”** on [page 98](#).

#### **To update the most-recently recalled template:**

1. Note the template name above the viewing area.

This is the most recently-recalled template.

If the template name is in faint text and is preceded by an asterisk (\*), one or more framing properties (target size and/or position, deadband, damping, or axis enable/disable status) have changed since the template was recalled or updated.

2. If you want to update the template to store the current framing properties, click the **Update** button.

The template is updated.

**Note:** If the **Target** mode on the channel has been changed and is different to the **Target** mode stored in the template, you won't be able to update the template.

#### **To revert to the framing properties of the most-recently recalled template:**

1. Note the template name above the viewing area.

This is the most recently-recalled template.

If the template name is in faint text and is preceded by an asterisk (\*), one or more framing properties (target size and/or position, deadband, damping, or axis enable/disable status) have changed since the template was recalled or updated.

2. If you want to revert to the framing properties stored in the template, click the **Revert** button.

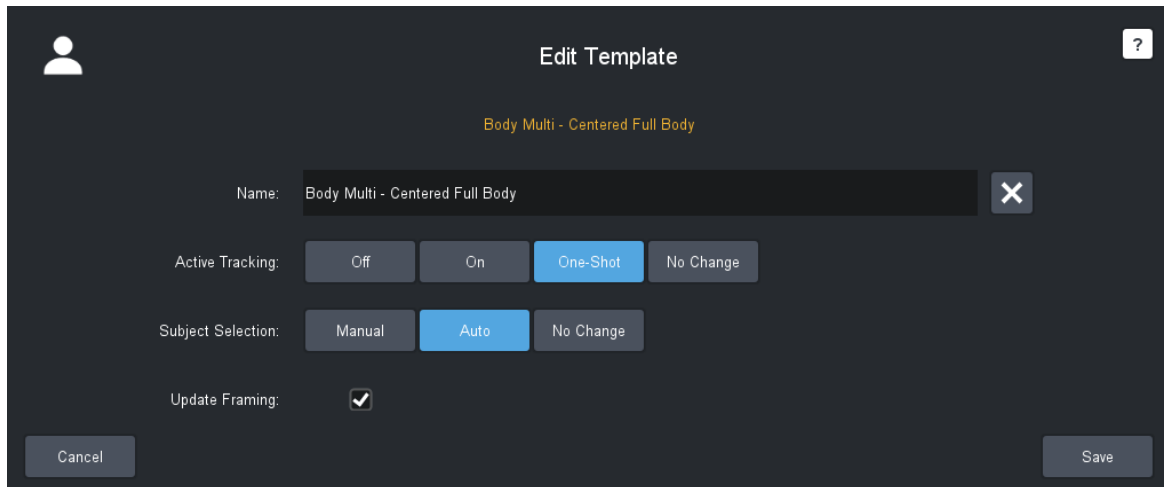
The template is re-applied.

## Edit a Framing Template

When you edit a framing template, you can rename it, change its **Subject Selection** and/or **Active Tracking** settings, and update its framing properties to match the current framing (target size and position, deadband, damping, and enable/disable status of all axes).

### To edit a template:

1. In the list of framing templates, click the template you want to edit.  
The **Edit Template** dialog box appears ([Figure 70](#)).



*Figure 70 - Editing a Framing Template*

2. If you want to rename the template, in the **Name** box, type a new name.
3. If you want to change the tracking mode, click an **Active Tracking** button:
  - **On** — When a template is recalled, the **Active Tracking** mode is set to **On**.
  - **Off** — When a template is recalled, the **Active Tracking** mode is set to **Off**.
  - **One-Shot** — When a template is recalled, the **Active Tracking** mode is set to **One-shot**.
  - **No Change** — The template does not change the **Active Tracking** mode.  
For more information about **Active Tracking** modes, see “**Active Tracking Buttons**” on [page 72](#).
4. If you want to change the selection mode, click a **Subject Selection** button:
  - **Manual** — When the template is recalled, the **Subject Selection** mode is set to **Manual**.
  - **Auto** — When the template is recalled, the **Subject Selection** mode is set to **Auto**.  
**Note:** The **Max Subjects** options appear when **Subject Selection** mode is set to **Auto** and if the template **Target** mode is multi-subject.
  - **No Change** — The template does not change the **Subject Selection** mode.  
For more information about **Subject Selection** modes, see “**Subject Selection Buttons**” on [page 73](#).
5. If you want to update all framing properties of the template (framing target size and position, deadband, damping, and enable/disable status of the pan, tilt, and zoom axes and simulated head tracking options) to match the values currently active on the channel, select the **Update Framing** check box.  
**Note:** The **Update Framing** check box will be disabled if the template target mode doesn't match the channel target mode.
6. Click **Save**.  
The template is updated.

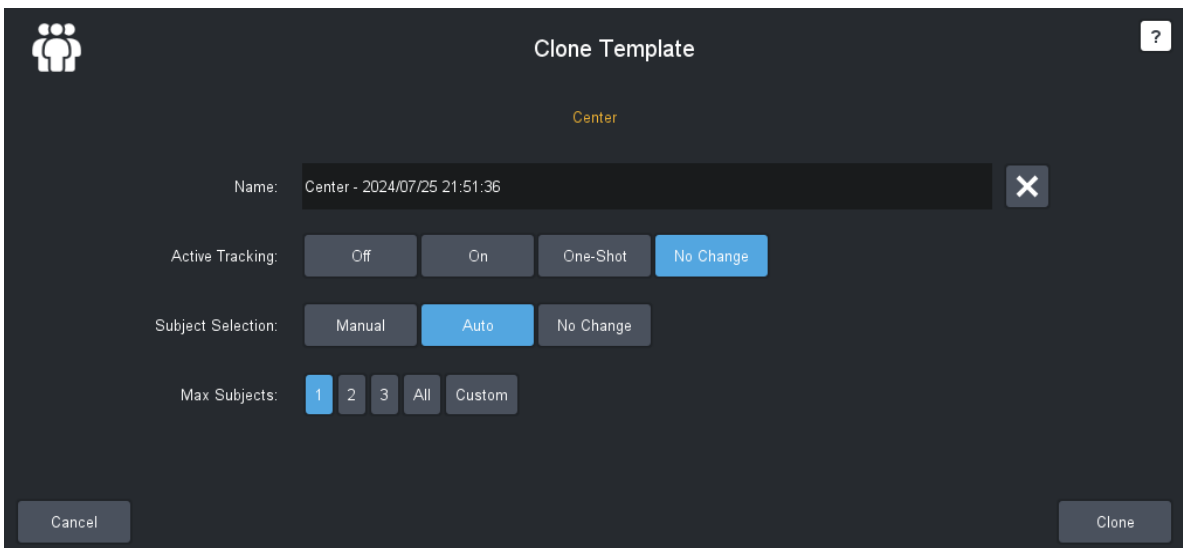
## Clone (copy) a Framing Template

When you clone a framing template, a new template is created featuring the same framing properties (framing target size and position, deadband, damping, and enable/disable status of the pan, tilt, and zoom axes). By default, the name of the cloned template is the same as the original, but with the current date and time appended to it. You can choose whether to change or keep the original template's **Subject Selection** or **Active Tracking** settings. The **Target** type of the new template will be the same as the original template and can't be changed.

**Note:** When you clone a framing template, its links to presets (if any) are not cloned. A preset can not be linked to more than one template.

### To clone an existing framing template:

1. On the **Framing Templates** tab, in the list of framing templates, click the template you want to clone.
2. Click the **Clone** button.  
The **Clone Template** dialog box appears ([Figure 71](#)).



**Figure 71** - The Clone Template Dialog Box

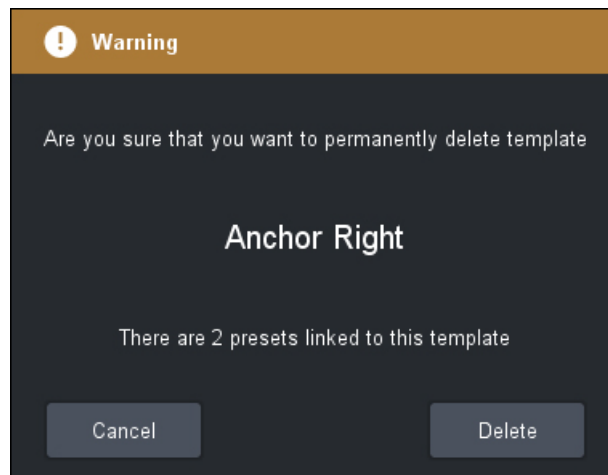
3. In the **Name** box, edit the name of the new template as desired.
4. If you want to change the tracking mode, click an **Active Tracking** button:
  - **On** — When a template is recalled, **Active Tracking** mode is set to **On**.
  - **Off** — When a template is recalled, **Active Tracking** mode is set to **Off**.
  - **One-Shot** — When a template is recalled, **Active Tracking** mode is set to **One-shot**.
  - **No Change** — The template does not change the **Active Tracking** mode.  
For more information about **Active Tracking** mode, see “**Active Tracking Buttons**” on [page 72](#).
5. If you want to change the **Subject Selection** mode, click a **Subject Selection** button:
  - **Manual** — When the template is recalled, **Subject Selection** mode is set to **Manual**.
  - **Auto** — When the template is recalled, **Subject Selection** mode is set to **Auto**.
  - **No Change** — The template does not change the **Subject Selection** mode.
  - The **Max Subjects** options appear when **Subject Selection** mode is set to **Auto** and if the template **Target** mode is multi-subject.  
For more information about **Subject Selection** mode, see “**Subject Selection Buttons**” on [page 73](#).
6. Click **Clone**.  
The new template is created, and appears in the list of framing templates.

## Delete a Framing Template

When you delete a framing template, it is permanently discarded, and removed from the list of framing templates.

### To delete a template:

1. On the **Framing Templates** tab, in the list of framing templates, click the template you want to delete.  
A **Warning** dialog box appears, prompting you to confirm the deletion request ([Figure 72](#)).  
The warning message indicates the number of presets (if any) that are linked to the template.  
**Tip:** Deleting a template also deletes its links.
2. Click the **Delete** button.  
The deletion **Warning** Message appears ([Figure 72](#)).



*Figure 72 - Warning Message to Confirm the Deletion of the Selected Framing Template*

3. Click the **Delete** button.  
The framing template is permanently deleted.

## Working With Robotic Presets

A robotic preset is a saved record of all controllable axes of a robotic camera system, such as pan, tilt, zoom, and focus. Depending on the camera system a preset may also include a recall duration.

Robotic presets are created using robotic control applications such as SmartShell or the DashBoard PT Head Control plugin. Vision[Ai]ry does not create robotic presets.

You can recall robotic presets in Vision[Ai]ry. You can also link each preset to a framing template, so that when you recall the preset, the linked template is also recalled.

The **Robotic Presets** tab enables you to review, cue, cut, and run robotic presets. You can also create, edit, or delete links between presets and framing templates.

This section describes tasks you can perform on the **Robotic Presets** tab, and includes the following major topics:

- “**Find and Select a Robotic Preset**” on [page 104](#)
- “**Recall a Robotic Preset**” on [page 104](#)
- “**Manage Links Between Robotic Presets and Framing Templates**” on [page 105](#)

### ***Find and Select a Robotic Preset***

The **Robotic Presets** tab features a list of presets stored on the selected camera system. You can find and select, a specific preset.

#### **To find and select a robotic preset:**

1. In the **Categories** list, select the bank or category that contains the preset you want to select. The list shows presets from the only the selected bank or category.  
**Tip:** For PTZ cameras, presets are stored in banks. For robots that have PT heads, presets are stored in categories.
2. In the list of robotic presets, find the preset you want to select.  
**Tip:** To locate a specific preset quickly, do one or both of the following:
  - In the **Search** box, start typing part of the preset’s **Name**.  
Vision[Ai]ry filters the list as you type.
  - Click a column heading (**External ID, Name, Duration, Template**).  
Vision[Ai]ry sorts the list based on the data in the column.  
**Tip:** To reverse the list order, click the column heading again.
3. Click the preset to select it.  
If you selected a preset that is linked to a framing template, link settings that control how the template is applied appear below the list:
  - **Target** — Specifies the type of target mode selected, including single or multiple heads or bodies.
  - **Selection** — The **Subject Selection** mode to be applied (**Manual, Auto, No Change**).
  - **Tracking** — The **Active Tracking** mode to be applied (**Off, On, One-Shot, No Change**)
  - **Apply** — Whether the template is applied **Before** or **After** robotic preset recall is complete.
  - **Suppress** — Whether active tracking suppression is **On** or **Off** during robotic preset recall.

### ***Recall a Robotic Preset***

When you recall a robotic preset in Vision[Ai]ry, each axis of the camera system moves to its destination, as defined in the preset.

If the preset is linked to a framing template, the template is applied based on settings specified in the link to the preset, and in the preset itself. The properties of the framing template may prevent the robot from reaching the preset destination because active tracking overrides the preset request.

If the preset is not linked to a framing template and Vision[Ai]ry is actively tracking a subject when you recall the preset, whether tracking continues after recall depends on the **Run with no template** setting. For more information, see “**Specify Default Camera Options**” on [page 142](#).

This section describes how to recall a robotic preset from Vision[Ai]ry, including cue, cut, and run operations.

**Note:** To immediately stop all movement of the selected camera due to **Cue, Cut, and Run** operations, click the **Halt** button.

**To recall a robotic preset:**

1. Select the preset you want to recall.  
For more information, see “**Find and Select a Robotic Preset**” on [page 104](#).
2. If the robot is a CamBot XY pedestal and the **Cue** button is visible, click **Cue**.  
The pedestal base rotates to align the wheels with the preset’s floor destination.
3. If you want each axis of the camera system to move to its preset destinations as quickly as possible, click **Cut**.  
Skip the remaining steps.
4. In the **Duration** box, note the duration value and edit it if required.  
**Tip:** The duration is the number of seconds the preset takes to run.
5. Click **Run**.  
The preset runs.  
If you specified a duration that is not enough time for the preset to run, an error message appears and provides the minimum valid duration value. Click **OK**, specify a valid **Duration** value, and then click **Run** again.

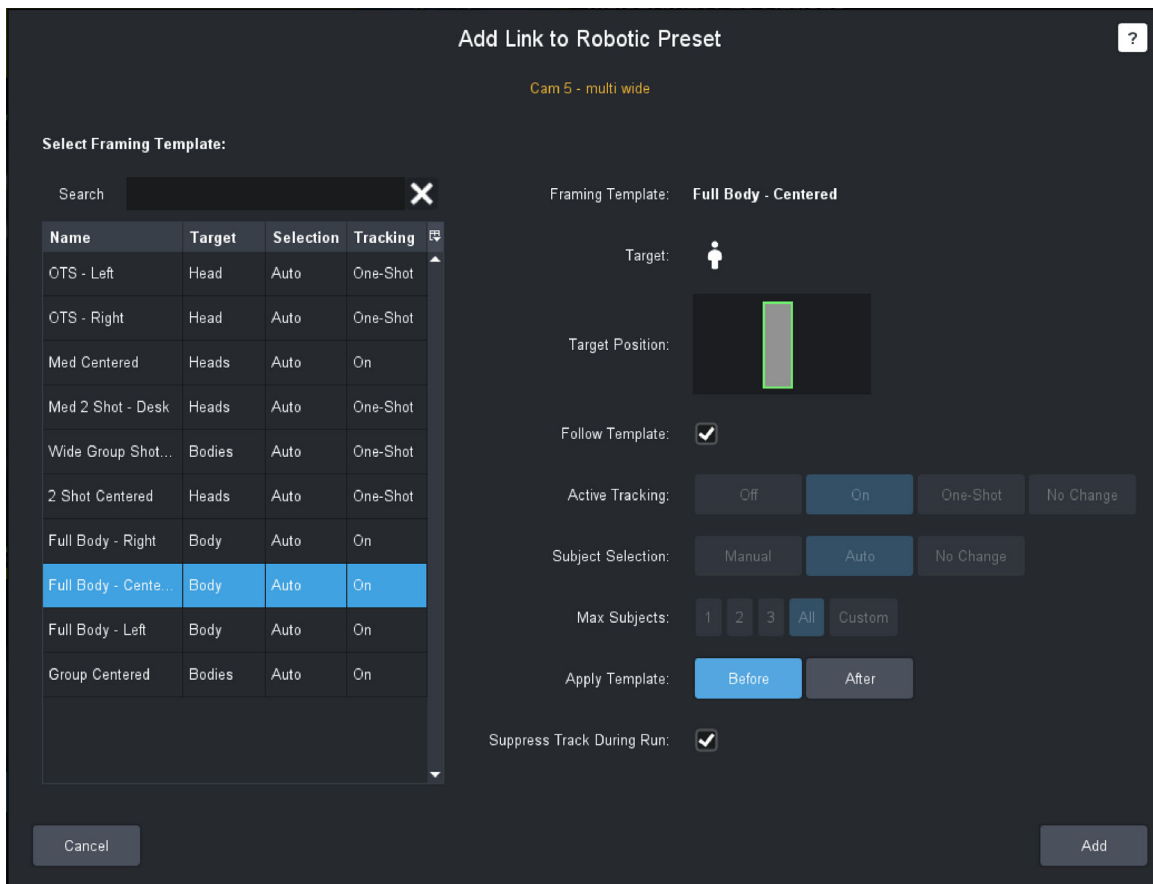
***Manage Links Between Robotic Presets and Framing Templates***

You can link each robotic preset to a framing template, so that when you recall the preset from Vision[Ai]ry, the linked template is also recalled. Each preset can be linked to no more than one template.

This section describes how to add, edit, and delete links between presets and templates.

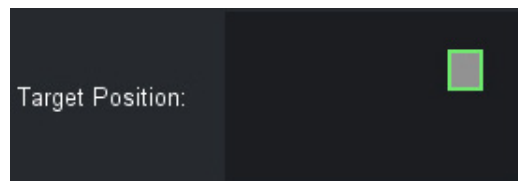
**To add, edit, or delete a link between a robotic preset and a framing template:**

1. Select the robotic preset.  
For more information, see “**Find and Select a Robotic Preset**” on [page 104](#).
2. Click the **Link** button.
3. One of the following occurs:  
The **Add Link to Robotic Preset** dialog box appears if there is no existing link between the selected preset and a framing template. This dialog box enables you to create such a link.  
The **Edit Link for Robotic Preset** dialog box appears if there is an existing link between the selected preset and a framing template ([Figure 73](#)). This dialog box enables you to modify or delete the existing link.



**Figure 73 - The Add Link for Robotic Preset Dialog Box**

4. If there is an existing link and you want to delete it without creating a new link:
  - a. Click the **Delete Link** button.  
A **Warning** dialog box that prompts you to confirm the deletion request.
  - b. Click **Delete**.
  - c. Skip the remaining steps in this procedure.
5. Find and select the framing template you want linked to the robotic preset.  
**Tip:** The **Target Position** graphic illustrates the size and position of the selected template's framing target.



**Figure 74 - Target Position Graphic**

**Tip:** To locate a specific template quickly, do one or both of the following:

- In the **Search** box, start typing part of the template's **Name**.  
Vision[Ai]ry filters the list as you type.
- Click a column heading (**Name**, **Selection**, **Tracking**).  
Vision[Ai]ry sorts the list based on the data in the column.

**Tip:** To reverse the list order, click the column heading again.

6. Specify the **Subject Selection** and **Active Tracking** settings you want Vision[Ai]ry to apply when the preset is recalled:
  - If you want Vision[Ai]ry to apply the **Subject Selection** and **Active Tracking** settings as defined in the template, select the **Follow Template** check box.  
**Tip:** When the **Follow Template** check box is selected, the **Subject Selection** and **Active Tracking** settings below the check box become uneditable and are shown as defined by the template.
  - If you want to specify **Subject Selection** and **Active Tracking** settings that override those defined in the template, clear the **Follow Template** check box, and then click the desired options for **Subject Selection** and **Active Tracking**.  
For more information about these settings, see “**Subject Selection Buttons**” on [page 73](#), and “**Active Tracking Buttons**” on [page 72](#).
7. Click one of the **Apply Template** buttons to specify whether the framing template is to be applied **Before** the preset recall begins, or **After** the preset recall is complete.  
Choose **Before** if you want to keep the subject framed while the preset is recalled.  
Choose **After** if you want to start tracking only when the recall is complete, or if you want to continue tracking with the previous framing template until the recall is complete.  
If you want to suppress all tracking during recall, choose **Before** and turn tracking suppression on. When the recall begins, the framing target moves to its new location but tracking doesn’t begin until the recall is complete.
8. Select or clear the **Suppress Track During Run** check box:
  - If you want active tracking to be suppressed while the preset is being recalled, select the **Suppress Track During Run** check box.
  - If you do not want active tracking to be suppressed while the preset is being recalled, clear the **Suppress Track During Run** check box.  
If active tracking is not suppressed during preset recall, Vision[Ai]ry overrides the preset to keep the subject framed.
9. Click the **Add** button or the **Save** button to save your changes and close the dialog box.

# The MultiChannel Page

The MultiChannel page enables you to monitor and control up to six Vision[Ai]ry channels from a single DashBoard tab (Figure 75). It features live video and primary tracking controls (**Active Tracking** and **Subject Selection**) for each channel view. Vision[Ai]ry operators typically use the MultiChannel page to monitor and control cameras during shows, temporarily accessing full Channel Control pages as needed. For more information about Control pages, see “**Channel Control Pages**” on page 59.



**Figure 75** - The MultiChannel Page, showing Live Video and Tracking Controls for Four Channels

This section describes the controls available on the MultiChannel page, and tasks you can perform.

- “**Accessing the MultiChannel Page**” (see page 109)
- “**Wake All, Standby All, and Config Buttons**” (see page 110)
- “**Channel View Features and Controls**” (see page 110)
- “**Tasks Performed on the MultiChannel Page**” (see page 117)

The MultiChannel page displays up to six individual channel views, arranged in a grid or as a ribbon (Figure 76).



**Figure 76** - Four Channel Views Arranged as a Vertical Ribbon (left), as a grid (right), as a Horizontal Ribbon (bottom)

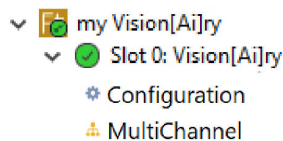
You can configure MultiChannel settings to control what channels are shown and how they are arranged, and to set view options. For more information, see **“Configure the MultiChannel Page”** on [page 147](#).

## Accessing the MultiChannel Page

You can access the MultiChannel page from the DashBoard tree or from any Channel Control page.

### To access the MultiChannel page from the DashBoard tree:

- In the DashBoard tree, expand the Vision[Ai]ry node and the **Slot 0** node fully, and then double-click **MultiChannel** ([Figure 77](#)).



**Figure 77** - Opening the MultiChannel Page in DashBoard

The **MultiChannel** page appears.

### To access the MultiChannel page from any Channel Control page:

- At the top of any **Channel Control** page, click the **MultiChannel** button.

The **MultiChannel** page appears.

**Tip:** After you close the MultiChannel page, DashBoard shows the Channel Control page from which you opened the MultiChannel page.

## Wake All, Standby All, and Config Buttons

The following buttons appear at the top of the MultiChannel page:

- **Wake All** — Awakens all channels from **Standby** mode. Vision[Ai]ry commands each channel shown on the MultiChannel page to select the first camera from its list of available cameras, unless the channel was not in **Standby** mode and therefore already has a camera selected.

**Tip:** If a channel has multiple cameras, when the channel is awakened from Standby mode the first camera (as represented by the leftmost camera selection button on the Channel Control page) is selected.

- **All Standby** — Halts tracking and releases camera control for all channels shown on the MultiChannel page. A **Standby Mode** message appears on each channel view.

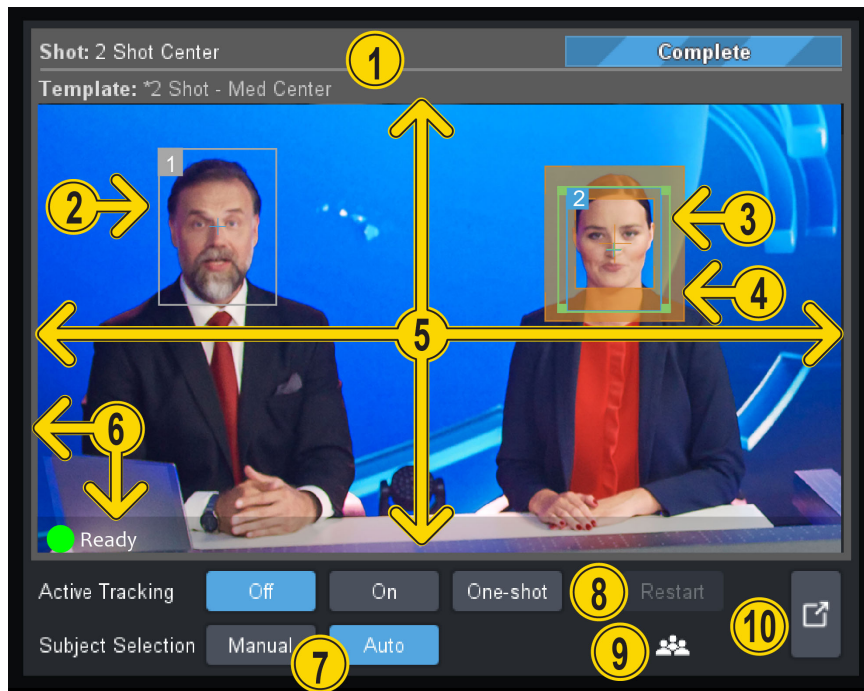
When channels are in standby mode, the processing load on their Engine computers and on the Control computer is significantly reduced.

**Tip:** To put an individual channel into **Standby** mode, open its channel control page and select the **Standby** button.

- **Config** — Opens the configuration page for the MultiChannel page. For more information, see “**Configure the MultiChannel Page**” on [page 147](#).

## Channel View Features and Controls

This section describes the features and controls available in each channel view ([Figure 78](#)) within the MultiChannel page.



**Figure 78** - An Individual Channel View within the MultiChannel page

Each channel view includes the following:

1. "Shot and Template Status Area" (see [page 111](#))
2. "Bounding Boxes (blue and gray)" (see [page 112](#))
3. "Framing Target (green box)" (see [page 112](#))
4. "Deadband Zone Indicators (orange-shaded box and cross-hairs)" (see [page 112](#))
5. "Video Viewing Area" (see [page 113](#))
6. "Tracking Status and Viewing Area Border" (see [page 113](#))
7. "Subject Selection Buttons" (see [page 115](#))
8. "Active Tracking Buttons" (see [page 116](#))
9. "Target Type" (see [page 116](#))
10. "Channel Control Button" (see [page 116](#))

## 1 Shot and Template Status Area

The shot and template status area ([Figure 79](#)) displays status information about the most recently recalled shot (robotic preset or move) and the most recently recalled framing template.



**Figure 79** - Shot and Template Status Area

The shot and framing template status area includes the following:

- **Shot or Move** — Displays the name of the most recently recalled **Shot** (preset) or **Move**.  
**Tip:** If the name of the shot or move is in faint text and is preceded by an asterisk (\*), one or more properties of the shot have changed since it was recalled.
- **Template** — Displays the name of the most recently recalled framing template.  
**Tip:** If the template name is in faint text and is preceded by an asterisk (\*), one or more properties of the framing target (size, position, deadband, damping, or axis enable/disable status) have changed since the template was recalled or updated.
- **Progress Strip** — Displays the elapsed duration, in seconds, of a cueing operation or of the recall of a move or preset.



**Figure 80** - The Progress Strip, showing Elapsed Duration of 3.4 Seconds

When the recall or cueing operation is finished, the strip displays **Prepared** (for cueing) or **Complete** (for a recall) ([Figure 81](#)).

The progress strip activates whether the robotic motion is initiated by Vision[Ai]ry or by another control application such as SmartShell or the DashBoard PT Head Control plugin. You can recall moves or presets from a Vision[Ai]ry Channel Control page but not from a MultiChannel view.



**Figure 81** - Progress Strip, displaying Prepared Status after cueing (left), and Complete Status after a Recall.

Tap [HERE](#) to return to the diagram.

## 2 Bounding Boxes (blue and gray)

In the viewing area, a bounding box surrounds each detected subject (face). Bounding boxes move with their subjects.

Bounding boxes are color-coded:

- **Blue** — A subject that is selected and available for tracking.
- **Gray** — A subject that is not selected.
- **Dark Blue** — The multi-subject bounding box that surrounds all selected subjects when there is more than one. It shows the framing Vision[Ai]ry will try to correct to.

For **Simulated Head** bounding boxes, a question mark (?) appears in the center of the box.

When the MultiChannel page is in **Grid View** mode, its bounding boxes are numbered. The number for each subject is assigned by the channel's Engine when the subject is first detected. If the Engine loses track of the subject, the bounding box disappears and the number becomes available to be assigned to a different target. Bounding boxes in **Ribbon View** mode are not numbered.

**Tip:** Vision[Ai]ry detects subjects most reliably when their faces are at least 9% of the video height and less than 50% obscured. For best results, ensure the set is well-lit, that subjects do not turn away from the camera, and that their faces are not obscured by hats, long hair, etc. By default, Vision[Ai]ry detects faces, but can be configured to detect entire heads instead. Head tracking may help avoid loss of tracking when subjects turn away or their faces are obscured.

Tap [HERE](#) to return to the diagram.

## 3 Framing Target (green box)

When tracking is active, the framing target controls the size and position of the selected subject within the video frame. Vision[Ai]ry controls the pan, tilt, and zoom axes of the selected camera system to fit the selected subject within the framing target.

**Note:** Depending on the target mode, the target can set the desired position of the subject, or subjects face or head (**Head** target mode), or body (**Body** target mode).

You can reposition and resize the framing target to control the size and position of the selected subject within the video frame.

For more information, see "**Reposition or Resize the Subject within the Video Frame**" on [page 120](#).

Tap [HERE](#) to return to the diagram.

## 4 Deadband Zone Indicators (orange-shaded box and cross-hairs)

Deadband zones determine how far a tracked subject can move away from the framing target before Vision[Ai]ry operates the camera system to correct tracking.

Deadband zones are defined on the Channel Control page. For more information, see "**Adjust Deadband (slack)**" on [page 93](#).

**Tip:** You can show or hide deadband zone indicators. For more information, see "**Configure the MultiChannel Page**" on [page 147](#).

### ***Deadband Zone Indicators for the Pan and Tilt Axes***

For the pan and tilt axes, the deadband zone is indicated by orange cross-hairs at the center of the framing target:

- The horizontal line of the cross-hairs represents the deadband zone for the pan axis.

- The vertical horizontal line of the cross-hairs represents the deadband zone for the tilt axis.

The deadband zones for the pan and tilt axes are centered on the framing target by default, but can be offset. For example, the deadband zone on one side of the framing target can be made narrower than on the other side, so that tracking reacts sooner when the subject moves one way than it does when the subject moves the other way. Offsetting deadband zones may help keep the subject within the video frame.

When tracking is active, if the center of the subject's bounding box is beyond the horizontal or vertical deadband zones, Vision[Ai]ry operates the pan and/or tilt axes to correct tracking.

### ***Deadband Zone Indicator for the Zoom Axis***

For the zoom axis, the deadband zone is indicated by an orange-shaded box that encloses the framing target. The box consists of two concentric rectangles. The orange-shaded area between the two rectangles represents the deadband zone of the zoom axis.

The deadband zone for the zoom axis is centered on the current zoom axis position by default, but can be offset. For example, you can make tracking react sooner when the subject moves closer to the camera than it does when the subject moves away, to ensure that the subject remains within the video frame.

When tracking is active, if the size of the subject's bounding box becomes too large or too small to conform to the deadband zone, Vision[Ai]ry operates the zoom axis to correct zoom tracking.

Tap [HERE](#) to return to the diagram.

## **5** Video Viewing Area

The video viewing area displays video from the selected camera.

Depending on the **View Options** specified, the video viewing area may also display any or all of the following:

- A bounding box around each detected subject: If a face or head is selected as a tracking subject, its bounding box is blue. All other bounding boxes are gray.  
For more information, see "**Bounding Boxes (blue and gray)**" on [page 112](#).
- The framing target (green box).  
For more information, see "**Framing Target (green box)**" on [page 112](#).
- Deadband zone indicators: These appear as a set of cross-hairs (for pan and tilt axes) and/or an orange-shaded box (for zoom axis), overlapping the framing target.  
For more information, see "**Deadband Zone Indicators (orange-shaded box and cross-hairs)**" on [page 112](#).

If no camera is selected, the viewing area displays a **STANDBY MODE** message.

Tap [HERE](#) to return to the diagram.

## **6** Tracking Status and Viewing Area Border

The **Tracking** status dot and message provide information about issues related to subject tracking. They work in conjunction with the color-coded border around the video viewing area.

[Table 6](#) lists the possible combinations of video border color and **Tracking** dot/message:

**Table 6 - Tracking Status Indicators**

Dot	Border	Message	Description
Green	Gray	Ready	Active tracking has been disabled by operator.
Green	Green	On target	Active tracking is enabled, subject is correctly centered within target so no active correction of axis is occurring. If subject moves out of target, active correction will resume.
Green	Yellow	Correcting	Active tracking is enabled ( <b>Active Tracking</b> is set to <b>On</b> or <b>One-shot</b> ). Subject is not correctly centered within target, so system is actively correcting at least one axis.
Green	Gray	One shot complete	Active tracking was enabled in <b>One-shot</b> mode. Subject is now centered in target and tracking has stopped - this is a transitory state - control block will respond to this state by instructing channel to disable tracking so state will quickly transition to <b>Ready</b> .
Yellow	Orange	All axes disabled	Operator has disabled all axes, so there is nothing for tracking to do.
Yellow	Orange	Searching	This message appears when active tracking is suspended while Vision[Ai]ry searches for the selected subject. If subject <b>Subject Selection</b> mode is set to <b>Auto</b> and active tracking is enabled while no subject is visible in the frame, Vision[Ai]ry remains in <b>Searching</b> state indefinitely until a subject appears. If the subject reappears in the frame while Vision[Ai]ry is in <b>Searching</b> state, it resumes active tracking and switches to <b>Correcting</b> or <b>On target</b> , depending on whether the subject is in correct location. In other cases when a selected subject is no longer visible in the frame, Vision[Ai]ry searches for a specified period (default is four seconds) before declaring the subject lost and switching to <b>Subject not found</b> or <b>Subject lost</b> .
Red	Red	Subject not found	Manual tracking started but subject was not in the frame and was not found within the specified search period (default is four seconds). To restart tracking, select a subject that is visible in the frame.
Red	Red	Subject lost	Tracked subject was lost and could not be recovered within the specified search period (default is four seconds). This status applies only when <b>Subject Selection</b> is set to <b>Manual</b> , or if the camera's <b>Auto Reselect</b> setting is disabled. To resume tracking a new subject must be selected, either manually by turning on <b>Manual Subject Selection</b> mode and then clicking the subject, or automatically by turning on <b>Auto Subject Selection</b> mode and then turning <b>Active Tracking Off</b> and then <b>On</b> again.
Red	Red	No control of head	Tracking is enabled, but another controller, typically a joystick has taken active manual control of the robotic camera (via UDP direct control) so that the channel is no longer able to operate the robot. Vision[Ai]ry takes control of the camera when tracking starts or is reconfigured, but not if it loses control while it is actively tracking. To regain control, select the <b>Restart</b> button.
Red	Red	Camera disconnected	Regardless of whether tracking is enabled - controller has lost connection to currently-selected camera. If connection is restored, system will revert to <b>Ready</b> (tracking disabled).

**Table 6 - Tracking Status Indicators**

Dot	Border	Message	Description
Red	Red	Channel disconnected	Regardless of whether tracking is enabled - controller has lost connection to the Vision[Ai]ry Engine service. If the connection is restored, the system will revert to <b>Standby</b> .
Red	Red	No Video	Not receiving video. Will recover if video is restored.
Yellow	Orange	Standby	In Standby mode.
Green	Orange	Switching Cameras	Transitory state when switching cameras. Duration is set by <b>Switch Delay</b> on the <b>Routing</b> tab of the channel configuration page.
Red	Red	Video Routing Failed	Request to switch video routing rejected or no connection to Routing Service. Check routing and reselect camera to recover.
Yellow	Orange	No position data	<p>Not receiving any position data from camera:</p> <ul style="list-style-type: none"> <li>• If FreeD is enabled, this means the FreeD data is not being received. Check FreeD configuration on the PT head or PTZ camera, and in Vision[Ai]ry.</li> <li>• If FreeD is disabled, this means Vision[Ai]ry is failing to poll the camera system for position data. If this problem persists, configure the PT head or PTZ camera to send FreeD data and Vision[Ai]ry to use it. For more information, see <b>"Edit Cameras"</b> on <a href="#">page 36</a>.</li> </ul> <p>This status recovers when position data becomes available.</p> <p><b>Note:</b> CamBot PT heads running CamBot firmware do not transmit FreeD data.</p>
Red	Red	Unlicensed	Channel license is invalid or expired

Tap [HERE](#) to return to the diagram.

## 7 Subject Selection Buttons

The **Subject Selection** buttons control how subjects are selected for tracking.

**Note:** Non-trackable subjects are marked with red boundaries.

They function as follows:

- **Manual** — Enables you to manually select a subject by clicking the subject's bounding box. If **Active Tracking** is set to **On**, the robotic camera immediately starts tracking the selected subject.
- **Auto** — Vision[Ai]ry automatically selects the subject closest to the center of the framing target. If no subject is available, Vision[Ai]ry searches until one appears.

Once active tracking starts, the selected subject remains fixed and will not change even if another subject moves closer to the framing target. To automatically select another subject, turn **Active Tracking** mode **Off** and then **On**.

If the selected subject is lost while tracking is active, Vision[Ai]ry immediately stops moving all axes and **Tracking** status changes to **Searching**:

- › If the subject reappears in the same location in the frame (and is assigned the same ID), tracking resumes.
- › If the subject does not reappear within a specified search period (default is four seconds), **Tracking** status changes to **Subject lost**. Depending on the **Auto Reselect** setting, the system may or may not select a new subject and track it.

Tap [HERE](#) to return to the diagram.

## 8 Active Tracking Buttons

Active Tracking buttons control whether the robotic camera follows the selected subject (if any).

They function as follows:

- **Off** — The camera does not follow any subject.
- **On** — If a subject is selected, the camera follows the subject.
- **One-shot** — Clicking the **One-shot** button instructs the robotic camera to fit the subject within the framing target once. The camera does not continue to track the subject.
- **Restart** — Takes control of the camera and resumes tracking.

Use this button to restart tracking when a tracked subject is lost, or a different device has taken control of the camera. When tracking resets, it uses the current **Active Tracking** and **Subject Selection** settings. If the **Subject Selection** mode is **Auto**, Vision[Ai]ry selects the subject nearest to the framing target, or starts searching for a target if none is available.

The **Restart** button is available only while tracking is active.

Tap [HERE](#) to return to the diagram.

## 9 Target Type

The **Target Type** button displays the active type of target, including:

- **Head** — Targets and tracks one subject's head, ensuring focused and detailed tracking of a single individual.
- **Heads** — Targets and tracks multiple subjects' heads, allowing the system to follow several individuals' head movements simultaneously.
- **Body** — Targets and tracks one subject's body, providing comprehensive tracking of the full body movements of a single individual.
- **Bodies** — Targets and tracks multiple subjects' bodies, enabling the system to monitor the full body movements of several individuals at the same time.

**Important:** You cannot select the Target Type in the MultiChannel views, it only shows what the active target type is.

**Note:** Options depend on whether body tracking is licensed and enabled.

## 10 Channel Control Button

The **Channel Control** button ([Figure 82](#)) opens the full Control page for the channel.



*Figure 82 - The Channel Control Button*

When you open a Channel Control page, it appears on a new tab in DashBoard.

Control pages include all the controls that are available in a MultiChannel view, plus controls that enable you to perform additional tasks such as setting deadband and damping values, creating and recalling framing templates, and recalling shots. For more information about Control pages, see "**Channel Control Pages**" on [page 59](#).

Tap [HERE](#) to return to the diagram.

# Tasks Performed on the MultiChannel Page

The MultiChannel page gives you easy access to controls most commonly used while controlling cameras during a show. These controls are a subset of the controls available on Channel Control pages.

This section describes tasks you can perform using controls on the MultiChannel page:

- “**Put All Channels into Standby Mode**” (see [page 117](#))
- “**Wake All Channels**” (see [page 117](#))
- “**Open the MultiChannel Configuration Page**” (see [page 118](#))
- “**Select a Subject and Start Tracking**” (see [page 118](#))
- “**Deselect a Subject**” (see [page 119](#))
- “**Turn Active Tracking Mode On or Off**” (see [page 119](#))
- “**Change Subject Selection Mode (Manual / Auto)**” (see [page 119](#))
- “**Perform One-shot Tracking**” (see [page 120](#))
- “**Manually Select a Different Subject While Tracking**” (see [page 120](#))
- “**Reposition or Resize the Subject within the Video Frame**” (see [page 120](#))
- “**Manually Operate the Selected Camera by Adjusting the Framing Target**” (see [page 121](#))
- “**Restart Tracking**” (see [page 121](#))
- “**Open a Channel Control Page**” (see [page 122](#))

## Put All Channels into Standby Mode

When channels are in standby mode, the processing load on their Engine computers and on the Control computer is significantly reduced.

When you put all channels into **Standby** mode, tracking is halted and camera control is released for all channels shown on the MultiChannel page. A **Standby Mode** message appears on each channel view.

### To put all channels into Standby mode:

- At the top of the MultiChannel page, click the **All Standby** button.

**Tip:** To put an individual channel into **Standby** mode, open its channel control page and select the **Standby** button.

## Wake All Channels

When you wake all channels, Vision[Ai]ry commands each channel shown on the MultiChannel page to select the first camera from its list of available cameras, unless the channel was not in **Standby** mode and therefore already has a camera selected.

### To wake all channels:

- At the top of the MultiChannel page, click the **Wake All** button.  
After a few seconds, all channels become active.

**Tip:** If a channel has multiple cameras, when the channel is awakened from Standby mode the first camera (as represented by the leftmost camera selection button on the Channel Control page) is selected.

## Open the MultiChannel Configuration Page

The MultiChannel Configuration page contains settings that enable you to specify which channels to show and how the channel views are arranged. You can also set the **View Options** applied to all channel views.

### To open the MultiChannel Configuration page:

- At the top of the MultiChannel page, click the **Config** button.  
The **Configuration** page appears.

For more information, see “**Configure the MultiChannel Page**” on [page 147](#).

## Select a Subject and Start Tracking

You can select subjects manually, or enable Vision[Ai]ry to select subjects automatically. You can also select the initial subject manually and then switch to automatic selection.

Manual selection enables you to choose one or more subjects to be tracked. If any subject becomes lost, tracking stops. If you want to resume tracking, you must select a new subject, or, if tracking multiple subjects and at least one subject is still selected, you can resume tracking with the Restart button.

Automatic selection tracks the subjects that are closest to the framing target when tracking begins. When using a multi-subject target mode, the Max Subjects control can be used to set the maximum number of subjects that can be automatically selected.

**Note:** Once tracking has started automatic selection will not change add any new subjects to the selection.

If any subject becomes lost, tracking stops. Depending on the **Auto Reselect** setting, the system may or may not automatically select a new subject and track it. To restart tracking, you can select the **Restart** button.

**Tip:** You can set the period of time Vision[Ai]ry searches for a subject before declaring it lost. The default is four seconds. For more information, see “**Edit a Camera**” on [page 144](#).

**Tip:** Before you select and track a subject, reposition and resize the framing target, if necessary, to place it where you want the subject to appear within the video frame.

### To manually select subjects and start tracking:

1. Click the **Manual** button.
2. In the viewing area, find the desired subject or subjects and then note the number on the bounding box around it.

**Tip:** If a subject does not have a bounding box, Vision[Ai]ry cannot detect the subject. For reliable detection, the subject must be less than 50% obscured, and their height must be at least 9% of the height of the viewing area.

3. Turn **Active Tracking** mode **On**.

Vision[Ai]ry immediately starts tracking the selected subject(s), operating the pan, tilt, and zoom axes as required to fit the subject(s) within the framing target.

**Tip:** You can disable one or two axes to limit tracking to the remaining enabled axes only. For example, if you don't want the robotic camera to tilt, disable the tilt axis. For more information, see “**Basic Tab (Framing Options Area)**” on [page 74](#).

4. If you want to track a different subject:
  - a. In single target mode, click inside the bounding box of the subject who you want to track.

b. In multi target mode:

- Click inside the bounding box of a currently selected subject to deselect them.
- Click inside the bounding box of a deselected subject to add them to the group of selected subjects.

**To automatically select subjects and start tracking:**

1. Set the **Subject Selection** mode to **Auto**.

2. Turn **Active Tracking** mode **On**.

If one or more subjects are detected, Vision[Ai]ry immediately starts tracking the subject nearest to the framing target, operating the pan, tilt, and zoom axes as required to fit the subject within the framing target.

If no subject is available, Vision[Ai]ry searches until one appears.

## Deselect a Subject

When you deselect a subject, it is no longer selected or tracking, and its bounding box in the viewing area turns gray. If **Active Tracking** mode is **On**, Vision[Ai]ry stops tracking the subject.

**To deselect a subject:**

- Click the blue bounding box around the subject.  
The bounding box turns gray.  
If **Active Tracking** mode is **On**, Vision[Ai]ry stops tracking the subject.

## Turn Active Tracking Mode On or Off

The **Active Tracking** buttons control whether the robotic camera follows the selected subject (if any).

**To turn tracking mode on:**

- Click the **On** button.  
If a subject is selected, the camera follows the subject.

**To turn tracking mode off:**

- Click the **Off** button.  
The camera does not follow any subject.

## Change Subject Selection Mode (Manual / Auto)

The **Subject Selection** buttons control how subjects are selected for tracking.

**To turn manual subject selection on:**

- Click the **Manual** button.  
You can manually select a subject by clicking the subject's bounding box.

**To turn automatic subject selection on:**

- Click the **Auto** button.

Vision[Ai]ry automatically selects the subject closest to the center of the framing target.  
If no subject is available, Vision[Ai]ry searches until one appears.

## Perform One-shot Tracking

When you perform one-shot tracking, Vision[Ai]ry operates the robotic camera to fit the selected subject within the framing target once. The camera does not continue to track the subject.

### To perform one-shot tracking:

1. Manually select the desired subject.
2. Click the **One-shot** button.  
Vision[Ai]ry operates the robotic camera to fit the selected subject within the framing target, and **Active Tracking** mode turns **Off**.

## Manually Select a Different Subject While Tracking

When Vision[Ai]ry is tracking a subject, it remains locked on that subject. You can manually select a different subject to track.

### To manually select a different subject:

1. Click the **Manual** button.
2. In the viewing area, find the desired subject.  
**Tip:** If the subject does not have a bounding box, Vision[Ai]ry cannot detect the subject face or head. For reliable tracking, subject faces must be less than 50% obscured, and their height must be at least 9% of the height of the viewing area.
3. Click the bounding box around the subject.  
**Tip:** The exact position you click must not be blocked by the framing target.  
Vision[Ai]ry immediately starts tracking the selected subject, operating the pan, tilt, and zoom axes as required to fit the subject within the framing target.

## Reposition or Resize the Subject within the Video Frame

When tracking is active, the framing target controls the size and position of the selected subject within the video frame. Vision[Ai]ry operates the pan, tilt, and zoom axes of the selected robotic camera system to fit the selected subject within the framing target.

You can reposition and resize the framing target to control the size and position of the selected subject within the video frame:

- Reposition the framing target to specify where you want the selected subject to appear in the frame.  
For example, if you want the host of your show to appear on the left side of the video frame and a keyed-in graphic to appear on the right side, position the framing target on the left side of the viewing area. Vision[Ai]ry operates the pan and tilt axes as required to frame the shot.
- Resize the framing target to specify how much of the video frame the selected subject occupies.  
Vision[Ai]ry operates the zoom axis to make the face as big as possible without exceeding the boundaries of the framing target.

**Note:** Tracking between some start and end positions may not be possible when the framing target is close to the edge of the image and tracking correction requires changing the zoom position of the lens. This is due to the subject drifting too close to the edge and being lost while the system is correcting. To avoid this problem, leave a gap of at least 3% of the viewing area between the edge of the framing target and the edge of the viewing area. We recommend that you test framing targets and tracking prior to use on-air.

#### To manually reposition the framing target:

- In the viewing area, click and drag the cross-hairs in the center of the framing target.

#### To manually resize the framing target:

- Click and drag a corner or edge of the framing target:
  - › Dragging a corner resizes the framing target while maintaining its aspect ratio.
  - › Dragging the top or bottom edge resizes the framing target vertically unless the aspect ratio is locked.
  - › Dragging the right or left edge resizes the framing target horizontally unless the aspect ratio is locked.

**Tip:** When you resize the framing target, its center does not move.

## Manually Operate the Selected Camera by Adjusting the Framing Target

While Vision[Ai]ry is actively tracking a subject, you can effectively operate the pan, tilt, and zoom axes of the camera by adjusting the position or size of the framing target. This can be particularly useful when the camera is off-air and you want to bring an additional subject into view so you can select it for tracking.

When you move or resize the framing target while Vision[Ai]ry is tracking, the robotic camera moves as required to keep the selected subject within the framing target.

#### To operate the selected camera by adjusting the framing target:

1. Ensure that Vision[Ai]ry is tracking a subject.  
Tracking is active when **Active Tracking** mode is **On** and a subject is selected.
2. If you want to move the framing target without resizing it, in the viewing area, click and drag the cross-hairs at the center of the framing target.
3. If you want to resize the framing target, in the viewing area, click and drag a corner or edge of the framing target:
  - › Dragging a corner resizes the framing target while maintaining its aspect ratio.
  - › Dragging the top or bottom edge resizes the framing target vertically unless the aspect ratio is locked.
  - › Dragging the right or left edge resizes the framing target horizontally unless the aspect ratio is locked.

**Tip:** When you resize the framing target, its center does not move.

## Restart Tracking

Vision[Ai]ry tracking can be lost if a different device takes control of the camera, or if a subject moves out of range or moves in a way that obscures their face and head for too long a period.

#### To restart tracking:

- Click the **Restart** button.

Vision[Ai]ry takes control of the camera and resumes tracking.

When tracking restarts, it uses the current **Active Tracking** and **Subject Selection** settings. If the **Subject Selection** mode is **Auto**, Vision[Ai]ry selects the subject or subjects nearest to the framing target, or starts searching for a target if none is available.

## Open a Channel Control Page

Channel Control pages include all the controls that are available in a MultiChannel view, plus controls that enable you to perform additional tasks such as setting deadband and damping values, creating and recalling framing templates, and recalling shots. For more information about Control pages, see **“Channel Control Pages”** on [page 59](#).

Each channel view on the MultiChannel page includes a button that launches the Channel Control page for that channel.

# Configuration Page Overview

This section describes the channel **Configuration** page for Vision[Ai]ry, including properties you can view and settings you can change. The settings on the **Configuration** page apply to all channels in your Vision[Ai]ry system.

Major topics in this section include the following:

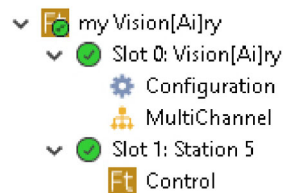
- “**System Status Indicator**” on [page 124](#)
- “**The Services Tab**” on [page 125](#)
- “**The Channels Tab**” on [page 125](#)
- “**The Cameras Tab**” on [page 130](#)
- “**The Routing Tab**” on [page 136](#)
- “**The Framing Templates Tab**” on [page 139](#)

For more information about configuration tasks you can perform, see “**Configuration Tasks**” on [page 141](#).

**Note:** This section describes the **Configuration** page as it appears after Vision[Ai]ry has been fully installed and configured. For information about how to install and configure a new Vision[Ai]ry system, see “**Vision[Ai]ry Setup**” on [page 14](#).

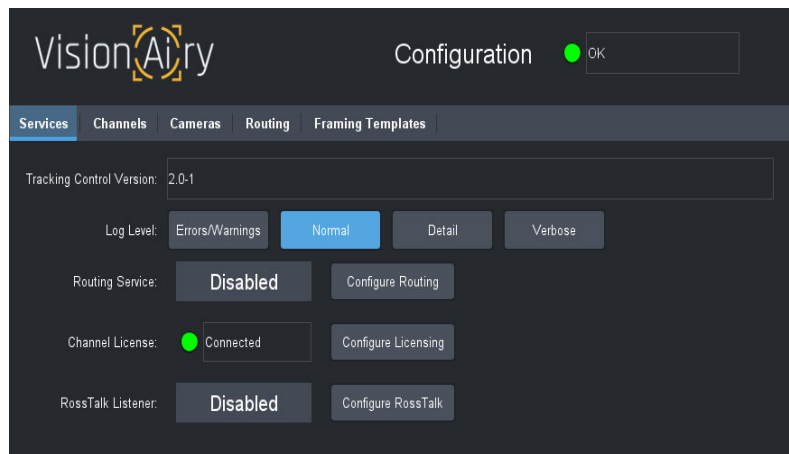
**To access the configuration page:**

1. In DashBoard, in the DashBoard tree, expand all nodes within the main Vision[Ai]ry node.  
**Tip:** The name of the Vision[Ai]ry node was defined by the install technician when the system was set up. For example, in [Figure 83](#), the name of the main Vision[Ai]ry node is **my Vision[Ai]ry (Ft)**.



*Figure 83 - Accessing the Vision[Ai]ry Configuration Page in DashBoard*

2. Double-click the **Configuration** node.  
The configuration page appears ([Figure 84](#)).



**Figure 84** - Configuration Page (Services tab)

## System Status Indicator

The status dot and message at the top of the **Configuration** page indicates the overall status of the Vision[Ai]ry system.

[Table 7](#) lists the possible states.

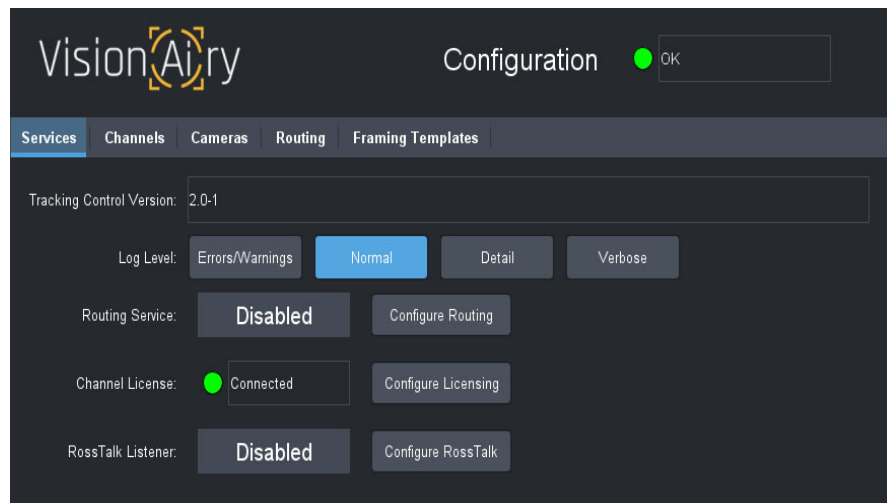
**Table 7 - Connection Status Indicators**

Dot	Message	Description
Green	Connected	This is the normal operational state.
Yellow	Routing Service Error	Video routing service is disconnected.
Yellow	Body Unlicensed	Channel license type is set to <b>Body+Head</b> , but no body license is available to check out. Channel is running in head detection mode.
Yellow	Body Not Supported	Channel license type is set to <b>Body+Head</b> , but the engine is configured for head detection only. Channel is running in head detection mode.
Yellow	Connecting	Vision[Ai]ry Control is attempting to connect to the Vision[Ai]ry Engine.
Yellow	Licensing Disconnected	Vision[Ai]ry is no longer connected to the licensing server, and the licensing grace period is in operation. If the connection is not restored before the 7 day grace period expires, the channel will revert to Unlicensed status.
Red	Not Connected	Vision[Ai]ry Control is unable to connect to the Vision[Ai]ry Engine service. Ensure that the Vision[Ai]ry Engine service is running and that the IP Address and Port are correct on the Channel configuration page.
Red	Unlicensed	There is no channel license, or the license has expired

# The Services Tab

The **Services** tab ([Figure 85](#)) includes the following:

- **Tracking Control Version box** — Displays the software version for the Vision[Ai]ry Control application.
- **Log Level buttons** — Enable you to set the current overall logging level.  
For information about logging levels and how to set them, see “**Set Logging Levels**” on [page 148](#).
- **Routing Service status box**— Shows whether the video routing service is **Connected** (green box) or **Disconnected** (red box).
- **Configure Routing button** — Opens the **Routing** tab, where you can view and change routing settings.  
For information about configuring routing, see “**Configure Video Routing**” on [page 148](#).
- **Channel License box** — Indicates whether Vision[Ai]ry is connected to the licensing server.
- **Configure Licensing button** — Opens the **Channels** tab, which features the **Licensing** button.  
For information about licenses, see “**License Channels**” on [page 29](#).
- **RossTalk Listener status box** — Opens the **Routing** tab, which features the **RossTalk Listener** area, where you can configure the RossTalk listener. For more information, see “**RossTalk Listener Area**” on [page 138](#).

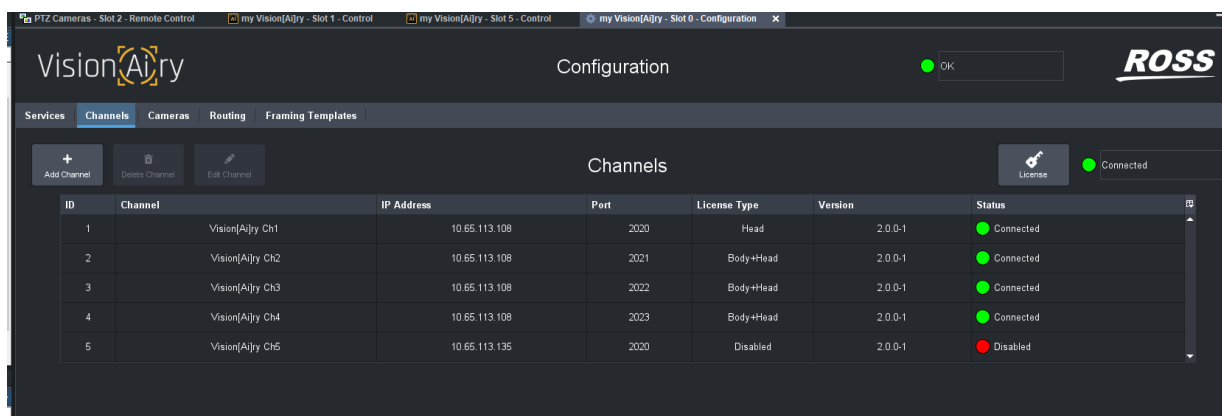


**Figure 85 - The Services Tab**

# The Channels Tab

A Vision[Ai]ry channel accepts video from a selected robotic camera, analyzes the video to identify human faces or heads (subjects), and operates the robotic camera to maintain the position of a selected subject within the video frame.

This section describes properties and settings on the **Channels** tab ([Figure 86](#)).



**Figure 86 - The Channels Tab**

The list of channels displays the following properties for each channel:

- **ID** — Displays Vision[Ai]ry's unique identifier for this channel.
- **Channel** — The name of the channel, as defined when the channel was added.
- **IP Address** — The IP address of the computer running the channel's Engine service.
- **Port** — The computer port that the channel's Engine service uses to communicate with the computer running the Vision[Ai]ry Control service.  
**Tip:** The default port number is **2020**.
- **License Type** — The type of license to check out, options are as follows:
  - **Head** — For detection and tracking of subject heads only.
  - **Body + Head** — For detection and tracking of subject heads and bodies. Requires **RRB-VAI-BT-ENGINE** license.
  - **Disabled** — to temporarily disable the channel so that it does not connect to an engine and does not check out any licenses.
- **Version** — The software version for the channel's Engine service.
- **Status** — Indicates connectivity status between the channel's Engine service and the Vision[Ai]ry Control service.

The following buttons open pages that enable you to add a channel if none exists, or to edit, license or delete the selected channel:

- **"Add Channel Button"** (see [page 126](#))
- **"Edit Channel Button"** (see [page 127](#))
- **"License Button"** (see [page 129](#))
- **"Delete Channel Button"** (see [page 129](#))

**Tip:** To select a channel, find its row in the channels list, and then click the row. The row turns blue.

## Add Channel Button

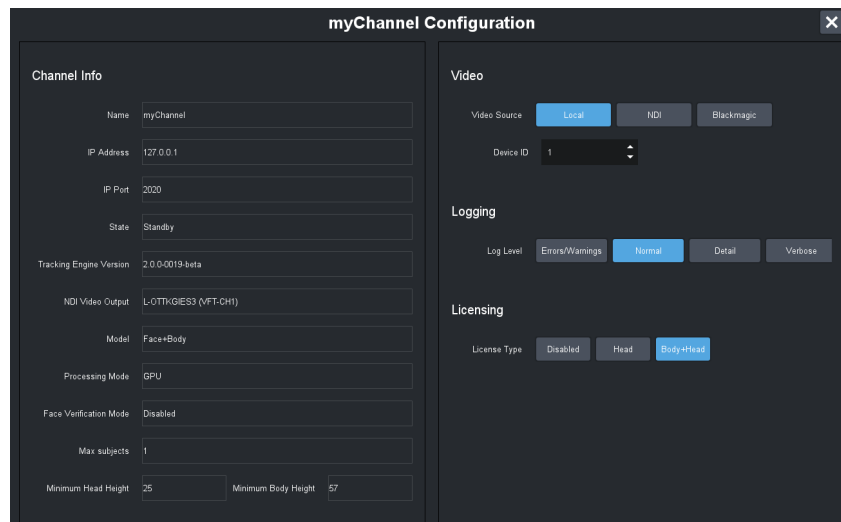
The **Add Channel** button opens a dialog box that enables you to specify connection properties to add a channel.

For information about how to add a channel, see **"License, Add, and Edit Channels"** on [page 28](#).

For information about deleting a channel, see **"Delete a Channel"** on [page 147](#).

## Edit Channel Button

The **Edit Channel** button opens the channel configuration page for the selected channel ([Figure 87](#)):



**Figure 87** - The Channel Configuration Page

After you edit the channel, any changes you make take effect the next time a camera is selected on the channel control page or awakened on the MultiChannel page. If a camera is already selected on the channel control page, you can click the **Standby** button and then select the camera again.

The **Channel Info** area displays the following channel properties:

- **Name** — The name of the channel, as defined when the channel was created.
- **IP Address** — The IP address of the computer running the Vision[Ai]ry Engine service.
- **IP Port** — The computer port that the Vision[Ai]ry Engine service uses to communicate with the computer running the Vision[Ai]ry Control service.  
**Tip:** The default port number is **2020**.
- **State** — Connectivity status between the Vision[Ai]ry Engine service and the Vision[Ai]ry Control service.
- **Tracking Engine Version** — The software version for the Vision[Ai]ry Engine service.
- **NDI Video Output** — Connection details for the NDI video stream generated by the Vision[Ai]ry Engine and shown in the viewing area of the channel control page. The connection details consist of the **NDI host name** and **source name** (in brackets), separated by a single space.

This information is provided so you can access the NDI video stream for other purposes. The video format is 640x360 pixels, with a frame rate of 10 fps.

- **Model** — Shows the subject detection algorithm running on the engine.  
**Note:** Some features may not be available if the correct license type has not been selected, and a license successfully checked out.
  - › **Face** — Head detection only, with bounding boxes drawn around the face
  - › **Head** — Head detection only, with bounding boxes drawn around the full head
  - › **Face + Body** — Head and body detection, with head bounding boxes drawn around the face
  - › **Head + Body** — Head and body detection, with head bounding boxes drawn around the full head
- **Processing Mode** — Indicates whether the Vision[Ai]ry subject detection algorithm is running on CPU or GPU.
- **Face Verification Mode** — Indicates whether the face verification algorithm is running to help improve performance when subjects cross.
- **Max Subjects** — Indicates the maximum number of subjects that can be simultaneously detected by the engine.

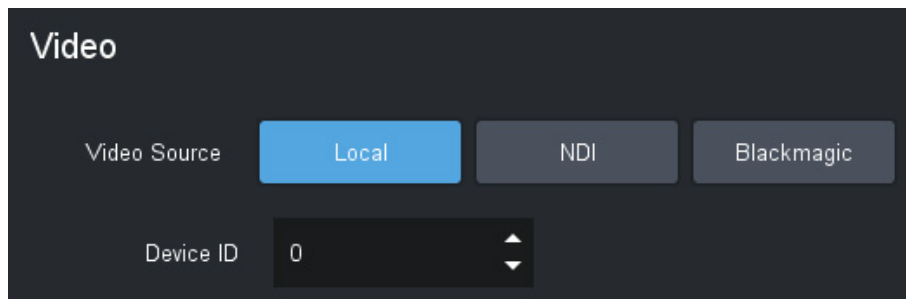
- **Minimum Head Height** — Indicates, as a percentage, the minimum height that a head must be in the video frame to have a displayed bounding box.
- **Minimum Body Height** — Indicates, as a percentage, the minimum height that a body must be in the video frame to have a displayed bounding box.

The **Video** area includes the following:

- **Video Source buttons** — The **Video Source** buttons enable you to specify how the Vision[Ai]ry Engine service on the Vision[Ai]ry computer receives video for analysis and tracking:

- › **Local:** Video arrives via a USB connection.

When you click the **Local** button, the **Device ID** box appears ([Figure 88](#)).



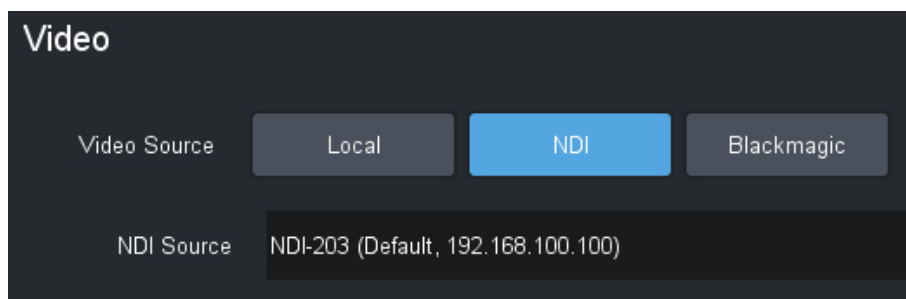
**Figure 88** - The Video Area, with the Local Option Selected and the Device ID Box Visible

You can specify the device number for the video source.

**Tip:** If the computer has a webcam, it is usually **Device 0**. You may have to try numbers in ascending order until you find the correct one and video appears when you select a camera on the channel control page.

- › **NDI:** Video arrives over the IP network. It must conform to the NDI protocol (not NDI|HX).

When you click the **NDI** button, the **Device ID** box appears ([Figure 89](#)).



**Figure 89** - The Video Area, with the NDI Option Selected and the NDI Source Box Visible

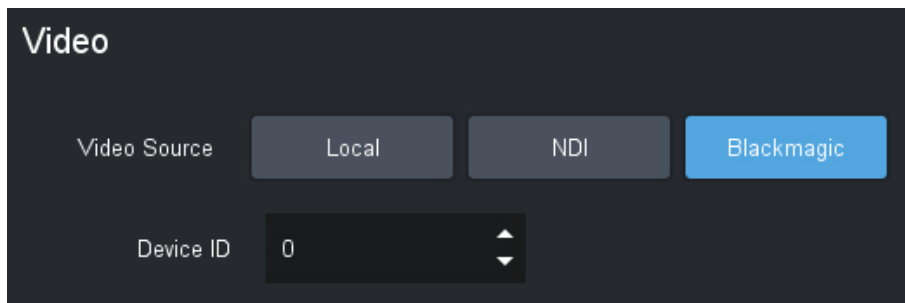
You can specify the NDI Source by typing the **NDI host name** and **source name** (in brackets), separated by a single space.

**Tip:** The NDI host name and source name are available from the web interface for the NDI converter.

- › **Blackmagic:** Video arrives via a Blackmagic DeckLink video capture card installed on the Vision[Ai]ry computer. The video capture card converts the video to a supported protocol.

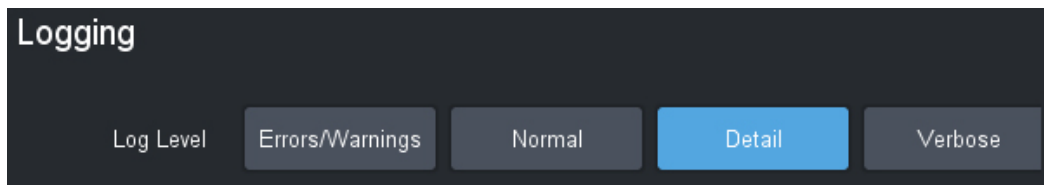
**Note:** A given channel of a video capture card can be used to process either thumbnails for SmartShell, or video for Vision[Ai]ry, but not both.

When you click the **Blackmagic** button, the **Device ID** box appears ([Figure 89](#)).



**Figure 90** - The Video Area, with the Blackmagic Option Selected and the Device ID Box Visible

The **Logging** area ([Figure 91](#)) contains **Log Level** buttons, which enable you to the level of detail recorded in activity logs. The options, from least detailed to most detailed, are **Errors/Warnings**, **Normal**, **Detail**, and **Verbose**.



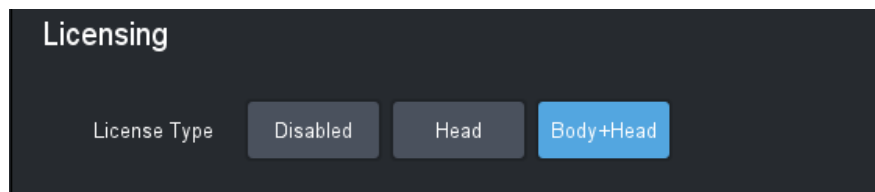
**Figure 91** - Logging Area of the Channel Configuration Page

For information about logging levels and how to set them, see **“Set Logging Levels”** on [page 148](#).

The **Licensing** area ([Figure 92](#)) selects the license type. This determines which licenses the channel will check-out and the mode in which it will attempt to operate.

Options are:

- **Disabled** - In this mode, the channel will not check out any licenses or attempt to connect to the engine.
- **Head** - In this mode, the channel will check out a channel license, and will only track heads
- **Body + Head** - In this mode, the channel will check out both a channel and a body tracking license, and allows choosing between tracking heads and bodies.



**Figure 92** - Licensing Area of the Channel Configuration Page

## License Button

Licenses are required to use Vision[Ai]ry channels. Some licenses expire after a certain period and must be renewed.

The **License** button opens a dialog box that displays current licensing details, and enables you to activate a new license.

For more information, see **“License Channels”** on [page 29](#).

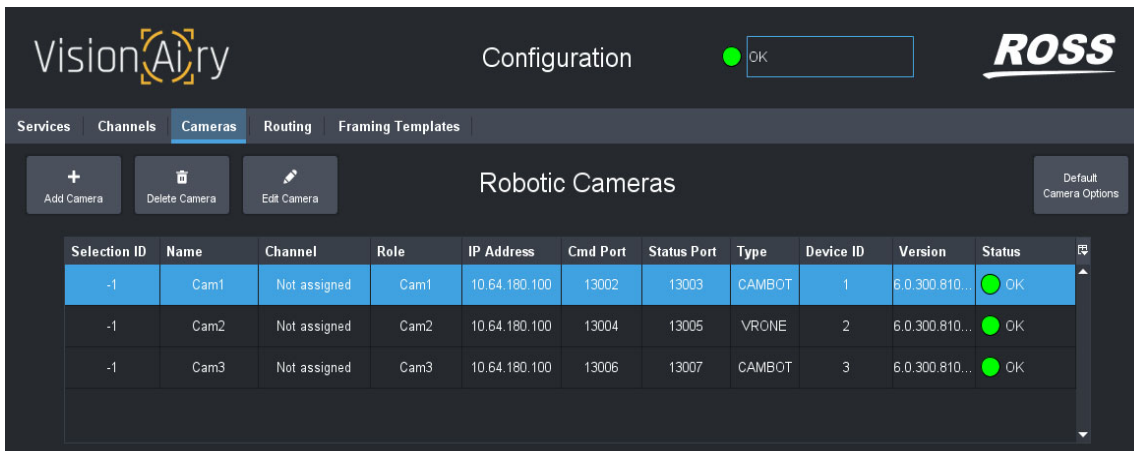
## Delete Channel Button

The **Delete Channel** button enables you to delete the selected channel.

For more information, see **“Delete a Channel”** on [page 147](#).

# The Cameras Tab

This section describes properties and settings on the **Cameras** tab (Figure 93).



**Figure 93** - The Cameras Tab

After you edit a camera, any changes you make take effect the next time the camera is selected on the channel control page or awakened on the MultiChannel page. If the camera is already selected on the channel control page, you can click the **Standby** button and then select the camera again.

Topics in this section are as follows:

- “**List of Robotic Cameras**” on [page 130](#)
- “**Default Camera Options Button**” on [page 131](#)
- “**Add Camera Button**” on [page 131](#)
- “**Delete Camera Button**” on [page 131](#)
- “**Edit Camera Button**” on [page 131](#)

## List of Robotic Cameras

The list of robotic cameras displays the following properties for each camera:

- **Selection ID** — A unique identifier for the camera system. The **Selection ID** is required to (optionally) link camera selection between Vision[Ai]ry and the camera control application (either SmartShell or DashBoard PT Head Control). For more information about linking camera selection, see “**Link Vision[Ai]ry with Camera Control (optional)**” on [page 53](#). The **Selection ID** is editable
- **Name** — The name of the camera, as defined when the camera was added.
- **Channel** — The channel to which the camera is assigned. Each camera can be controlled by only one channel at a time. The **Channel** is editable.
- **Role** — The **Role** value for the robotic camera system, as defined when the camera was added. When adding a camera, set the role to match its role in SmartShell.
- **IP Address** — The IP address of the camera.
- **Cmd port** — The port number of the command channel on the robotic head.
- **Status port** — The port number of the status channel on the robotic head.
- **Type** — The type of robotic camera system, such as **VR600**.
- **Device ID** — The device identifier reported by the robotic camera.
- **Version** — The version of firmware installed on the robotic head.
- **Status** — Indicates the connectivity status between the Vision[Ai]ry Control service and the robotic camera.

**Tip:** To select a camera, find its row in the list and then click the row. The row turns blue.

## Default Camera Options Button

The **Default Camera Options** button opens a dialog box that enables you to specify a set of camera options (**Tracking Options**) to be applied by default to cameras you later add. You can also apply this set of options to all cameras. The options include enabling/disabling **Auto Reselect**, how long Vision[Ai]ry waits before declaring a subject lost, and how Vision[Ai]ry behaves when you run a move or preset with no linked template. For more information, and for steps to specify default camera options, see “**Specify Default Camera Options**” on [page 142](#).

## Add Camera Button

The **Add Camera** button opens a dialog box that enables you to specify connection properties to add a camera.

For information about how to add a camera, see “**Add a Camera**” on [page 144](#).

## Delete Camera Button

The **Delete Camera** button enables you to delete the selected camera.

For more information, see “**Delete a Camera**” on [page 146](#).

## Edit Camera Button

The **Edit Camera** button opens the camera configuration page for the selected camera:

Axis	Invert	Tolerance	Negative Deadzone	Positive Deadzone
Pan	<input type="checkbox"/>	3	-2	2
Tilt	<input type="checkbox"/>	3	-2	2
Zoom	<input type="checkbox"/>	3	-2	2

**Figure 94** - Camera Configuration Page

### Robotic Camera Info Area

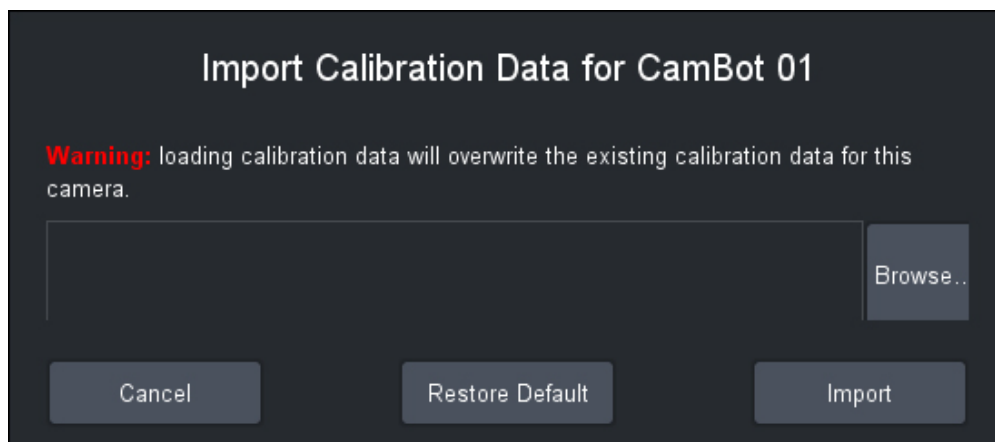
The **Robotic Camera Info** area displays the following camera properties:

- **Name** — The name of the camera, as defined when the camera was added.
- **Model** — The model of the robotic camera, as reported by the camera.

- **Role** — The **Role** value for the robotic camera system, as defined when the camera was added to Vision[Ai]ry.
- **Channel** — The channel to which the camera is assigned. Each camera must be assigned to a channel, in order to be controlled by Vision[Ai]ry. Each camera can be controlled by only one channel at a time.  
**Note:** If the FreeD Listener is enabled for a camera and you reassign the camera to a different channel, you must ensure that the camera sends its FreeD data to the Engine computer for the new channel. For more information, see “**Edit a Camera**” on [page 144](#).
- **IP Address** — The IP address of the robotic camera.
- **Command Port** — The port number of the command channel on the robotic head.  
For Furio PT heads, the default command port is number **10240**.
- **Status Port** — The port number of the status channel on the robotic head.  
For Furio PT heads, the default status port is number **10242**.
- **Status** — Indicates the connectivity status between the Vision[Ai]ry Control service and the robotic head.
- **Device Type** — The type of robotic camera system, such as **VR600**.
- **Firmware Version** — The version of firmware installed on the robotic head.
- **Camera ID** — An identifier reported by the robotic camera.
- **Calibration** — The identity of the current head/lens calibration profile.  
A head/lens calibration profile provides information to Vision[Ai]ry about the performance characteristics of a specific head and lens combination.  
For PTZ-12G+, PTZ-12G, and PTZ-NDI cameras, an appropriate calibration file (**Ross PTZ-12G/NDI**) is automatically applied when you add the camera in Vision[Ai]ry.
- **Calibration Date** — The date that the current head/lens calibration profile was created.

### **Import Calibration Data Button**

The **Import Calibration Data** button opens the **Import Calibration Data** dialog box ([Figure 95](#)).



**Figure 95** - The *Import Calibration Data* Dialog Box

The **Import Calibration Data** dialog box includes the following:

- **Browse** button — Enables you to navigate to, and select, a head/lens calibration profile.
- **Cancel** button — Closes the **Import Calibration Data** dialog box without importing a head/lens calibration profile.
- **Restore Default** button — Applies the default head/lens calibration profile, which varies based on the camera type specified when the camera was added:
  - › For PTZ-12G+, PTZ-12G, and PTZ-NDI cameras, the default profile is named **Ross PTZ-12G/NDI**, and it is automatically applied when you add the camera in Vision[Ai]ry.

- › For cameras other than PTZ-12G+, PTZ-12G and PTZ-NDI, the default profile is named **VR600 Default**, and it is optimized for a Furio VR600 head and Canon KJ17e x 7.7B IASE S lens.
- **Import** button — Applies the selected head/lens calibration profile, as shown in the box beside the **Browse** button.

PTZ-12G+, PTZ-12G, and PTZ-NDI cameras do not require a head/lens calibration profile.

For more information about head/lens calibration profiles, “**Apply a Head/Lens Calibration Profile to a Camera**” on [page 144](#).

### **Refresh Camera Connection Button**

The **Refresh Camera Connection** button disconnects and then reconnects to the robotic camera.

- You can click this button to refresh the connection, when trying to resolve connection issues.

### **FreeD Listener Area**

The **FreeD Listener** area contains settings that enable or disable Vision[Ai]ry to receive FreeD positional data from the robotic camera system.

If the robot is a Ross Video PTZ-12G+, PTZ-12G, or PTZ-NDI Camera, Vision[Ai]ry requires FreeD position tracking data from it.

If the robot has a Furio PT head or is a CamBot XY pedestal running Furio firmware, Vision[Ai]ry does not normally require FreeD data. By default, Vision[Ai]ry requests axis position data directly from the robotic head. For some lens models, problems with zoom position data may arise and cause tracking to fail. If this occurs, providing FreeD data from the robot to Vision[Ai]ry may solve the problem.

CamBot heads running CamBot firmware do not provide FreeD data.

The **FreeD Listener** area contains the following:

- **FreeD Enable and Disable buttons** — These buttons enable or disable the listener. If FreeD data is not required, disable the listener.

**Note:** If FreeD is **Enabled**, Vision[Ai]ry relies on receiving FreeD data and stops polling the robots for axis encoder data. If FreeD data is not available, tracking is adversely affected and the warning message, “**no position data**” appears in the **Status Message** area below the **Viewing Area**.

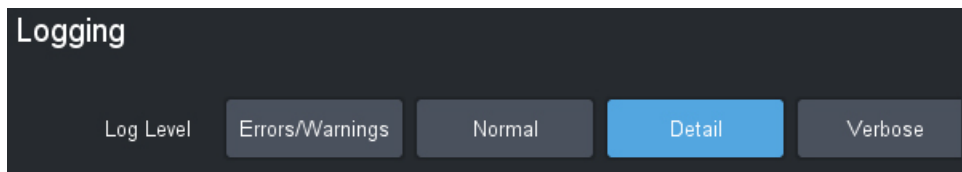
- **FreeD Port box** — Specify which port on the computer running the Engine service will receive the FreeD data.

Be sure to configure the robotic camera to send FreeD data to the Engine computer’s IP address, on the specified port.

**IMPORTANT:** In addition to enabling the FreeD Listener, you must also configure the PT head or PTZ camera to transmit FreeD data. For more information and detailed steps, see “**Edit a Camera**” on [page 144](#)

### **Logging Area**

The **Logging** area ([Figure 96](#)) contains **Log Level** buttons, which enable you to the level of detail recorded in activity logs. The options, from least detailed to most detailed, are **Errors/Warnings**, **Normal**, **Detail**, and **Verbose**.



**Figure 96** - Logging Area of the Channel Configuration Page

For information about logging levels and how to set them, see “**Set Logging Levels**” on [page 148](#).

### Axis Configuration Area

The **Axis Configuration** area contains a list of axes with settings you can configure for each axis (pan, tilt, and zoom):

- **Invert** — Reverses the direction of movement for the axis.  
For example, if a PT head and camera are ceiling mounted, invert the pan and tilt axes so they move in the proper directions when the head is controlled by Vision[Ai]ry.  
**Tip:** Inverting an axis in Vision[Ai]ry does not affect axis behavior when that axis is controlled by other applications.
- **Tolerance** — Determines how close the selected subject has to get to the framing target before tracking motion stops:
  - › If set too low, active tracking may oscillate around the desired location without settling.
  - › If set too high, active tracking may stop before reaching the desired location.  
The value range is **1** to **20**, and the default value is **3**.
- **Negative Deadzone** — This number must match the `PathGenJoystickNegativeDeadzone` value configured on the PT head. It determines whether some joystick values are ignored (treated as **0**).  
The value range is **0** to **-10**, and the default value for Furio PT heads is **-2**.  
**Note:** This setting does not apply to PTZ-12G+, PTZ-12G, PTZ-NDI, or CamBots.
- **Positive Deadzone** — This number must match the `PathGenJoystickPositiveDeadzone` value configured on the PT head. It determines whether some joystick values are ignored (treated as **0**).  
The value range is **0** to **10**, and the default value for Furio PT heads is **2**.  
**Note:** This setting does not apply to PT-12G+, PTZ-12G, PTZ-NDI, or CamBots.

### Tracking Options Area

The **Tracking Options** area enables you to specify how long Vision[Ai]ry waits before declaring a subject lost, and how Vision[Ai]ry behaves when you run a move or preset with no linked template. It includes the following controls:

- **Loss of subject (s)** — Specify how long, in seconds, Vision[Ai]ry searches for a subject who is no longer visible in the video feed before declaring them lost. The recommended default value is **4** seconds.
- **Auto Reselect** — When Vision[Ai]ry is actively tracking a subject with **Subject Selection** set to **Auto**, this option determines what happens if the actively tracked subject is declared lost:
  - › **Disable Auto Reselect** if you want Vision[Ai]ry to stop actively tracking and show an error condition (**Subject Lost**).
  - › **Enable Auto Reselect** if you want Vision[Ai]ry to automatically reselect a new subject for active tracking. Vision[Ai]ry selects the closest subject to the framing target when the subject is declared lost. If no subjects are visible, Vision[Ai]ry shows a warning (**Searching**), automatically selects the first subject who appears in the video, and resumes active tracking at that point.
- **Run with no Template** — This option determines what Vision[Ai]ry does when a **Preset Run** or **Move Run** is started with no linked framing template:
  - › Select **Continue** if you want Vision[Ai]ry to continue any active tracking while the **Run** is in progress.
  - › Select **Stop** if you want Vision[Ai]ry to stop any active tracking as soon as the **Run** starts.

**Note:** Active tracking always stops whenever a Preset Cut or Move Cue is executed.

- **Simulated Head Projection** — This option turns on simulated head projection, displaying simulated head bounding boxes when the real head cannot be found.
  - › **Enable** — Activates the simulated head projection, allowing Vision[Ai]ry to continue tracking the subject even when their head is obstructed or turned away from the camera.
  - › **Disable** — Deactivates the simulated head projection, requiring Vision[Ai]ry to rely solely on visible head tracking.

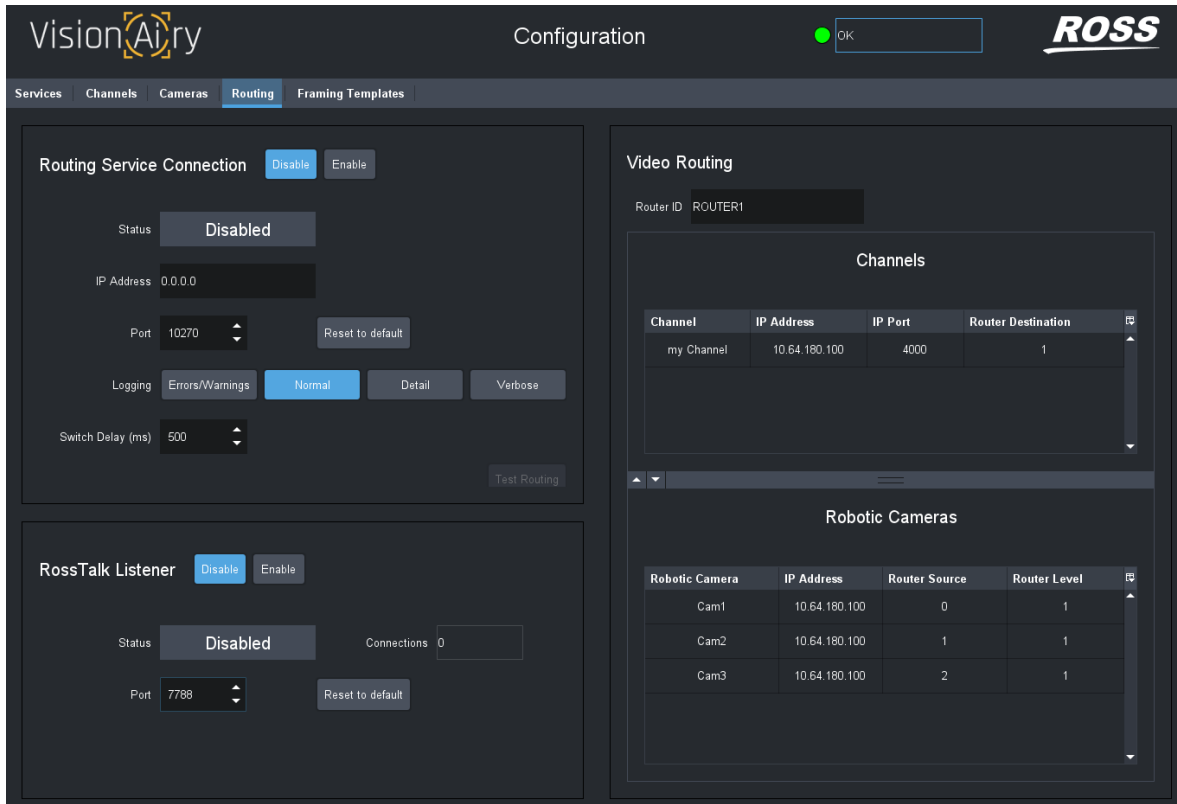
**Note:** This option is only applicable when the **License Type** for a channel is **Body + Head**.

**Note:** For **Simulated Head** bounding boxes, a question mark (?) appears in the center of the box.

**Tip:** You can specify a set of default camera options (**Tracking Options**) to be applied to cameras you later add. You can also apply this set of options to all cameras. For more information, and for steps to specify default camera options, see “**Specify Default Camera Options**” on [page 142](#).

# The Routing Tab

This section describes properties and settings on the **Routing** tab (Figure 93).



**Figure 97 - The Routing Tab (Routing Disabled)**

The Vision[Ai]ry Engine ingests and analyzes live streaming video from one robotic camera at a time.

If there is only one camera per engine, video routing may not be required because the video can be hard-wired to the Vision[Ai]ry computer.

If there are multiple cameras for a given engine, each time the operator selects a robotic camera for tracking, video routing is required to send that camera's video stream through a video format converter to the engine.

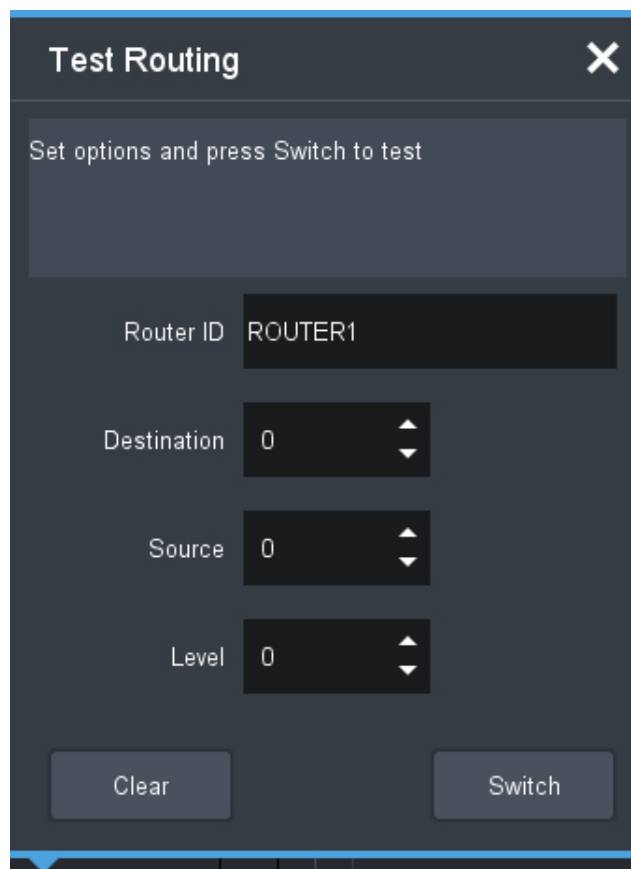
In typical installations, the Vision[Ai]ry Control service sends a request to the Routing service, which then commands the video router to send the required video stream.

## Routing Service Connection Area

This area contains the following:

- **Routing Service Connection** buttons:
  - › **Enable** — Vision[Ai]ry sends routing requests to the Routing service, based on the settings configured on the **Routing** tab.
  - › **Disable** — Vision[Ai]ry does not send routing requests to the Routing service. Routing, if required, must be performed by other means.
- **Status** — Indicates whether routing is **Connected** or **Disabled**.
- **IP Address** — The IP address of the of the computer running the Routing service.  
**Tip:** The **Routing Service Connection** must be **Disabled** to change the **IP Address**.

- **Port** — The port number that the Vision[Ai]ry Control service uses to communicate with the Routing service.  
**Tip:** The default port number for the Routing service is **10270**. To set the **Port** to the default value, click the **Reset to default** button.  
**Tip:** The **Routing Service Connection** must be **Disabled** to change the **Port** number.
- **Logging** — The level of detail recorded in system activity logs.  
The options, from least detailed to most detailed, are **Errors/Warnings**, **Normal**, **Detail**, and **Verbose**.  
**Note:** Logs help Ross Video Technical Support diagnose technical issues. More intensive logging consumes CPU capacity and results in more logging data. The default setting is **Normal**. There is no need to adjust the logging level unless requested to do so by Ross Video Technical Support.
- **Switch Delay (ms)** — The number of milliseconds (ms) Vision[Ai]ry waits after sending a switch command before it starts analyzing the incoming video stream.  
**Tip:** If the **Switch Delay** is too short, when you select a different camera, you may see video from the previous camera until the video switches.  
**Note:** Seeing a single frame of video from the previous camera is normal. It cannot be eliminated by adjusting **Switch Delay**.
- **Test Routing** button — Opens the **Test Routing** dialog box (Figure 98), which enables you to test router settings:



**Figure 98 - Test Routing Dialog Box**

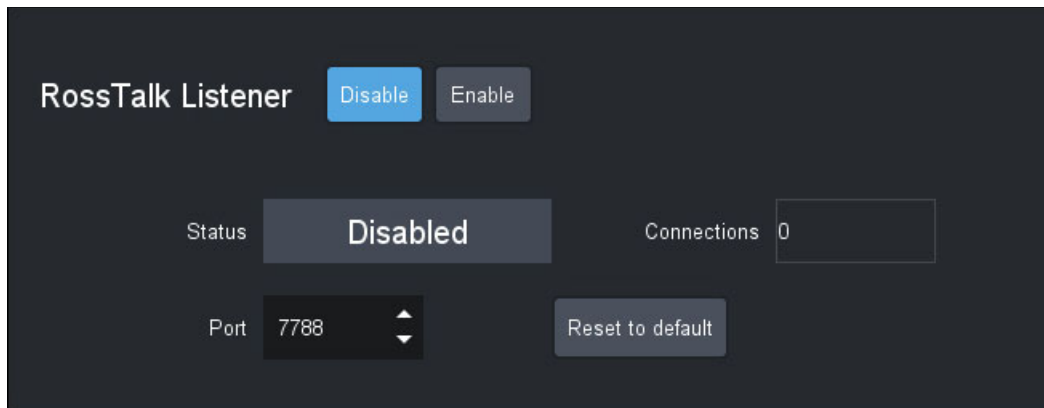
The **Test Routing** dialog box includes the following:

- › Results box (at the top of the dialog box).
- › **Router ID** box — The router ID (name) of the router you want to test, as configured in the Routing Service.
- › **Destination** box — The router destination port you want to test. This is the port for the video stream sent by the router to the Vision[Ai]ry Engine computer (through the video converter).

- › **Source** box — The router source number you want to test. This is the router source level for the camera’s video feed.
- › **Level** box — The router level number you want to test. This is the router level number for the camera’s video feed.  
**Tip:** For information about router levels, refer to documentation for your router.
- › **Clear** button — Resets the results box at the top.
- › **Switch** button — Performs the router task specified, and displays results in the results box at the top.

## RossTalk Listener Area

The RossTalk Listener area enables you to enable and configure the RossTalk Listener service, or disable it.



**Figure 99** - The RossTalk Listener Area

This area contains the following:

- **Enable** and **Disable** buttons:
  - › **Enable** — Enables RossTalk Listener service.
  - › **Disable** — Disables RossTalk Listener service.
- **Port** — Specify the port number that the RossTalk Listener service should monitor for RossTalk commands.  
**Note:** You can modify the **Port** number only when the RossTalk Listener service is disabled.  
**Tip:** The default port number for the RossTalk Listener is **7788**. To set the port number to the default value, click the **Reset to default** button.

For more information about using RossTalk commands with Vision[Ai]ry, see “**Configure RossTalk Listener**” on [page 148](#).

## Video Routing Area

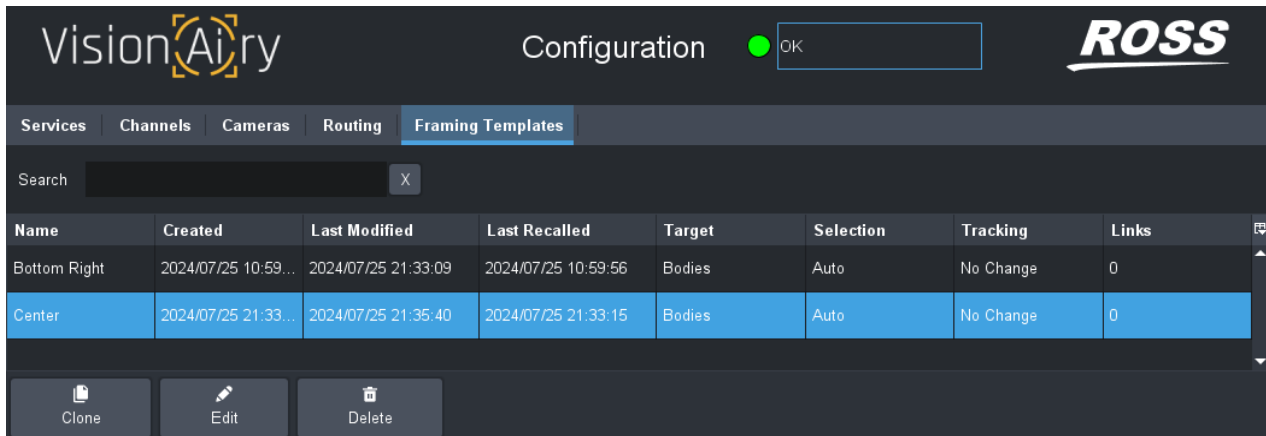
This area contains the following:

- **Router ID** box — The router ID (name), as configured in the Routing service.
- **Channels** list — Includes the following columns:
  - › **Channel** — The name of the channel (not editable).
  - › **IP Address** — The IP address of the Vision[Ai]ry Engine computer (not editable).
  - › **IP Port** — The IP port the channel uses for communication (not editable).
  - › **Router Destination** — the router destination port for the video stream sent by the router to the Vision[Ai]ry Engine computer (through the video converter).
- **Robotic Cameras** list — A list of all robotic cameras added to Vision[Ai]ry. Includes the following columns:

- › **Robotic Camera** — The name of the robotic camera (not editable).
  - › **IP Address** — The IP address of the robotic camera (not editable).
  - › **Router Source** — The router source number for the camera’s video feed.
  - › **Robotic Level** — The router level number for the camera’s video feed.
- Tip:** For information about router levels, refer to documentation for your router.

## The Framing Templates Tab

The **Framing Templates** tab of the **Configuration** page enables you to view a list of all framing templates and modify them. You can select, clone, edit, and delete framing templates. The list is available to all Vision[Ai]ry channels in the system.



**Figure 100** - The Framing Templates Tab, with a Template Named **Center** Selected

**Note:** Templates cannot be created or updated from the channel settings. For creating or updating templates, refer to “**Working with Framing Templates**” (see [page 97](#)).

A framing template is a saved record of the current size and position of the framing target, as well as current deadband and damping values, and the enable/disable status of each axis (pan, tilt, zoom), and simulated head tracking options). It may also include **Subject Selection** mode, **Target** mode, and **Active Tracking** mode options.

When you recall a framing template, the framing target adjusts to the size and position specified in the template, and all other values stored in the template are applied. Depending on the current **Subject Selection** mode, **Target** mode, and **Active Tracking** mode, and settings stored in the template, the camera may or may not move to center a selected subject within the framing target, and may or may not track that subject.

The list of framing templates enables you to select a template. Click a template to select it. You can then clone, edit, or delete the selected template.

Click a column heading to sort the list based on values in that column.

**Tip:** To quickly search for a specific template, start typing part of the template **Name** in the **Search** box. Vision[Ai]ry filters the list as you type.

The list of framing templates includes the following columns:

- **Name** — The names of the templates, as defined when they were created.
- **Created** — The date and time the template was created. Date and time format is **YYYY-MM-DD hh-mm-ss**.
- **Last Modified** — The date and time the template was edited or updated. Date and time format is **YYYY-MM-DD hh-mm-ss**.

- **Last Recalled** — The date and time the template was most recently recalled. This information can help you identify templates that are no longer in use. Date and time format is **YYYY-MM-DD hh-mm-ss**.
- **Target** — Determines whether the target represents the desired position of the subject's head or body, and whether it represents a single subject or multiple subjects.
- **Selection** — The **Subject Selection** mode to be applied when the template is recalled:
  - › **Manual** — If a subject is already selected and **Active Tracking** is set to **On** or **One-Shot**, Vision[Ai]ry frames the selected subject as defined in the template. Otherwise, the framing target is positioned as defined in the template, but the camera view does not change.  
After the template is recalled, **Subject Selection** remains set to **Manual**.
  - › **Auto** — If a subject is not already selected, Vision[Ai]ry selects the subject closest to the framing target. If **Active Tracking** is set to **On** or **One-Shot**, Vision[Ai]ry frames the selected subject as defined in the template.  
If no subject is available, Vision[Ai]ry searches until one appears.  
After the template is recalled, **Subject Selection** remains set to **Auto**.
  - › **No Change** — The template does not change the **Subject Selection** mode.
- **Tracking** — The **Active Tracking** mode to be applied when the template is recalled:
  - › **On** — If a subject is already selected, or if the **Subject Selection** setting in the template causes a subject to be selected, Vision[Ai]ry frames the selected subject as defined in the template. Otherwise, the framing target is positioned as defined in the template, but the camera view does not change.  
After the template is recalled, **Active Tracking** remains **On**.
  - › **Off** — Vision[Ai]ry stops tracking. The framing target is positioned as defined in the template, but the camera view does not change.  
After the template is recalled, the **Subject Selection** mode remains **Off**.
  - › **One-Shot** — If a subject is already selected, or if the **Subject Selection** setting in the template causes a subject to be selected, Vision[Ai]ry frames the selected subject as defined in the template. Otherwise, the framing target is positioned as defined in the template, but the camera view does not change.  
If no subject is available, Vision[Ai]ry searches until one appears.  
After the template is recalled, the **Active Tracking** mode changes to **Off**.
  - › **No Change** — The template does not change the **Active Tracking** mode.

The **Framing Templates** tab includes the following buttons:

- **Clone** — Opens the **Clone Template** dialog box, which enables you to create a copy of the selected framing template. You can then edit the cloned template to customize it.
- **Edit** — Opens the **Edit Template** dialog box, which enables you to modify the selected template's **Subject Selection** mode and **Active Tracking** mode.
- **Delete** — Opens a dialog box that enables you to permanently delete the selected preset.  
**Tip:** Deleting a template also deletes its links to robotic presets.

**Note:** Framing templates are created and recalled from the **Framing Templates** tab of Vision[Ai]ry **Control** pages. For information about using **Control** pages to create, clone, edit, update, recall, and delete framing templates, see “**Working with Framing Templates**” on [page 97](#).

# Configuration Tasks

This section describes optional configuration tasks you can perform after initial system setup, including tasks you can perform on the **Configuration** page.

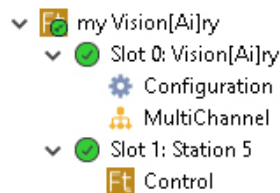
**Note:** This section does not describe how to perform initial setup of Vision[Ai]ry. It describes tasks you may want to perform after the initial setup is complete. For information about how to install and configure a new Vision[Ai]ry system, see “**Vision[Ai]ry Setup**” on [page 14](#).

Major topics in this section include the following:

- “**Add a Channel**” on [page 142](#)
- “**Edit a Channel**” on [page 142](#)
- “**Specify Default Camera Options**” on [page 142](#)
- “**Add a Camera**” on [page 144](#)
- “**Edit a Camera**” on [page 144](#)
- “**Apply a Head/Lens Calibration Profile to a Camera**” on [page 144](#)
- “**Add a Vision[Ai]ry Workstation**” on [page 145](#)
- “**Delete a Camera**” on [page 146](#)
- “**Delete a Channel**” on [page 147](#)
- “**Configure the MultiChannel Page**” on [page 147](#)
- “**Configure Video Routing**” on [page 148](#)
- “**Configure RossTalk Listener**” on [page 148](#)
- “**Set Logging Levels**” on [page 148](#)
- “**Review, Clone, Edit, or Delete Framing Templates**” on [page 148](#)
- “**Backup and Restore Vision[Ai]ry Configuration Data**” on [page 152](#)

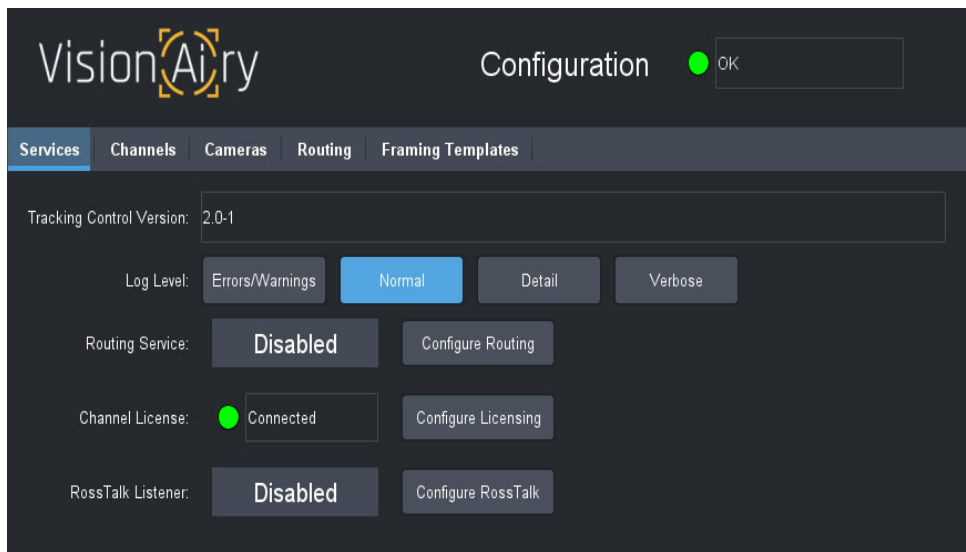
To access the configuration page:

1. In DashBoard, in the DashBoard tree, expand all nodes within the Vision[Ai]ry node.  
**Tip:** The name of the Vision[Ai]ry node was defined by the install technician when the system was set up. For example, in [Figure 101](#), the name of the Vision[Ai]ry node is **my Vision[Ai]ry**.



*Figure 101 - Accessing the Vision[Ai]ry Configuration Page in DashBoard*

2. Double-click the **Configuration** node.  
The configuration page appears ([Figure 102](#)).



**Figure 102** - Configuration Page (Services tab)

## Add a Channel

When you add a channel, it becomes accessible from any Vision[Ai]ry workstation connected to the Vision[Ai]ry Control service.

Refer to “**Add Channels**” on [page 31](#).

After you add a channel, it must be configured (edited) before you can use it.

## Edit a Channel

This section describes how to edit (configure) Vision[Ai]ry channels, using a Vision[Ai]ry workstation. Perform the steps in this section for each channel you want to edit.

After you edit a channel, any changes you make take effect the next time a camera is selected on the channel control page. If the camera you want to use is already selected, you can click the **Standby** button and then select the camera again.

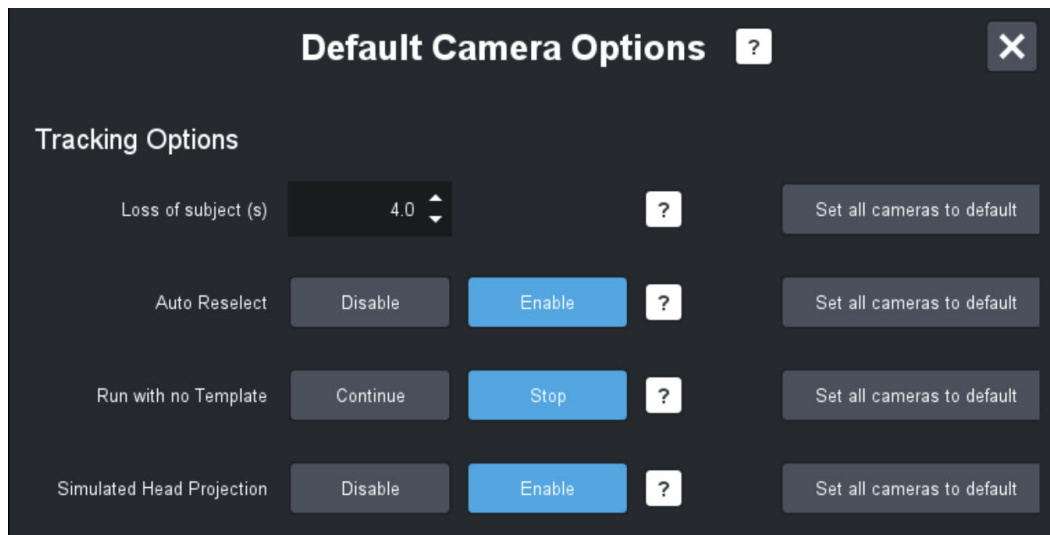
Refer to “**Edit Channels**” on [page 32](#).

## Specify Default Camera Options

This section describes how to specify a set of default camera options (**Tracking Options**) that apply to cameras you later add. You can also apply this set of options to all cameras. The options include enabling/disabling **Auto Reselect**, how long Vision[Ai]ry waits before declaring a subject lost, and how Vision[Ai]ry behaves when you run a move or preset with no linked template.

**To specify default camera options:**

1. On the **Cameras** tab, click the **Default Camera Options** button.  
The **Default Camera Options** dialog box appears ([Figure 103](#)).



**Figure 103 - Default Camera Options Dialog Box**

2. In the **Loss of subject** box, specify how long, in seconds, Vision[Ai]ry searches for a subject who is no longer visible in the video feed before declaring them lost.  
The recommended default value is **4** seconds.
3. If you want to immediately set the **Loss of subject** value for all cameras to the value you set in **Step 2**, select the **Set all cameras to default button** that is across from the **Loss of subject** box.
4. Select one of the **Auto Reselect** buttons to determine what happens when Vision[Ai]ry is actively tracking a subject with **Subject Selection** set to **Auto** and the tracked subject is declared lost:
  - **Disable** — When the tracked subject is declared lost, Vision[Ai]ry stops actively tracking and shows an error condition (**Subject Lost**).
  - **Enable** — When the tracked subject is declared lost, Vision[Ai]ry automatically reselects a new subject for active tracking. It selects the closest subject to the framing target. If no subjects are visible, Vision[Ai]ry shows a warning (**Searching**), automatically selects the first subject who appears in the video, and resumes active tracking at that point.
5. Select one of the **Run with no Template** buttons to determine what Vision[Ai]ry does when a **Preset Run** or **Move Run** is started with no linked framing template:
  - **Continue** — Vision[Ai]ry continues any active tracking while the **Run** is in progress.
  - **Stop** — Vision[Ai]ry stops any active tracking as soon as the **Run** starts.

**Note:** Active tracking always stops whenever a Preset Cut or Move Cue is executed.
6. Select one of the **Simulated Head Projection** buttons to determine whether simulated head projection is enabled. When **Simulated Head Projection** is enabled and the **License Type** is **Body+Head**, Vision[Ai]ry will project a simulated head when it detects a subject body bounding box, but can no longer detect their head. **Simulated Head Tracking** options will be exposed in the channel control page, which can then be used to continue tracking of a subject using the projected "simulated head" within the body bounding box when the actual head is not fully visible
  - **Enable** — Activates the simulated head projection, allowing Vision[Ai]ry to continue tracking the subject even when their head is obstructed or turned away from the camera.
  - **Disable** — Deactivates the simulated head projection, requiring Vision[Ai]ry to rely solely on visible head tracking.

For **Simulated Head** bounding boxes, a question mark (?) appears in the center of the box.
7. To immediately change the value of an option for all cameras, select the **Set all cameras to default** button beside the option.
8. Close the **Default Camera Options** dialog box (X).

# Add a Camera

When you add a camera in Vision[Ai]ry, you make it available for one or more Vision[Ai]ry channels to control. Vision[Ai]ry can control pan, tilt, and zoom functions.

After you add a camera, you must edit (configure) it.

Refer to “**Add Cameras in Vision[Ai]ry**” on [page 34](#).

# Edit a Camera

When you edit (configure) a camera in Vision[Ai]ry, you are adjusting settings related to how Vision[Ai]ry interacts with the camera.

Before you can edit a camera, you must add it. For more information, see “**Add a Camera**” on [page 144](#).

Refer to “**Edit Cameras**” on [page 36](#).

# Apply a Head/Lens Calibration Profile to a Camera

A head/lens calibration profile provides information to Vision[Ai]ry about the performance characteristics of a specific head and lens combination. PTZ-12G and PTZ-NDI cameras do not require a head/lens calibration profile.

For each robotic camera added to Vision[Ai]ry, you must apply a head/lens calibration profile to ensure smooth and accurate tracking throughout the zoom axis range.

You can do one of the following:

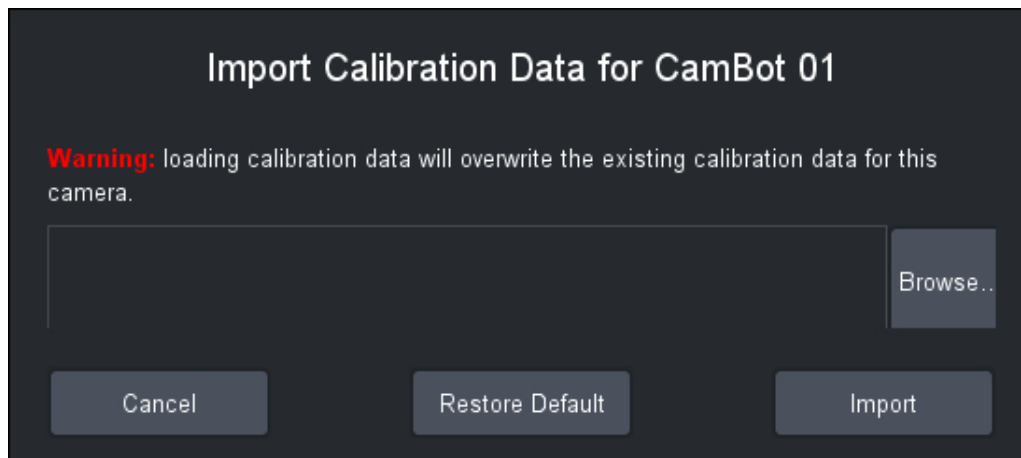
- Accept the default calibration profile, which is optimized for a Furio VR600 head and Canon KJ17e x 7.7B IASE S lens.
- Import an existing calibration profile for your specific head/lens combination. These are available from Ross Video Technical Support. When you obtain a calibration profile from Ross Video, save it to the Vision[Ai]ry Control computer, and note the folder location. The file name of each profile indicates the head and lens type, and the file extension is **.json**.
- If Ross Video Technical Support does not have an existing calibration profile suitable for your head/lens combination, Ross Video Commissioners can create one on-site.

After you apply a head/lens calibration profile, we recommend you test performance at various zoom levels. Poor calibration can cause the following issues while Vision[Ai]ry is actively correcting tracking:

- Very slow movement of the camera and failure to reach the subject.
- Very fast movement of the camera and overshooting of the subject position, followed by oscillation of the camera. If the movement is too fast, subject detection may be lost.

## To import a head/lens calibration profile or apply the default profile:

1. On the **Cameras** tab, in the list of robotic cameras, select the camera for which you want to import a calibration profile and then click the **Edit Camera** button. The camera **Configuration** page appears.
2. Click the **Import Calibration Data** button. The **Import Calibration Data** dialog box appears ([Figure 104](#)).



**Figure 104** - The Import Calibration Data Dialog Box

3. If you want to apply the default head/lens calibration profile, click **Restore Default**. Proceed to **Step 7**.
4. Click **Browse**, navigate to the head/lens calibration profile you want to import, and then click **Open**.  
**Tip:** The name of the file indicates the head and lens type, and the file extension is **.json**.
5. Click **Import**.
6. Close the camera **Configuration** page.
7. On the **Channel Control** page, deselect and then select the camera to refresh its settings, and then test performance at various zoom levels.

## Add a Vision[Ai]ry Workstation

You can configure and operate Vision[Ai]ry channels from multiple DashBoard workstations.

This section describes how to install DashBoard Facility Control and configure it to access existing Vision[Ai]ry channels.

**Note:** When operators at different workstations control the same channel, their actions may interfere with each other. We recommend that you co-ordinate the activities of the operators to prevent undesirable camera motion during a show.

Before you begin, set up the computer you want to use as a workstation. The IP network must enable the workstation computer and the Vision[Ai]ry Control computer to communicate.

The main steps of adding a Vision[Ai]ry workstation are as follows:

1. Install DashBoard.  
For more information, see “**Install DashBoard**” on [page 146](#).  
**Tip:** If DashBoard is already running on the workstation computer, upgrade to the latest version.
2. Connect DashBoard to the Vision[Ai]ry channel(s) you want to operate.  
For more information, see “**Connect to the Vision[Ai]ry Control Service**” on [page 146](#).
3. License the new Vision[Ai]ry workstation.  
For more information, see “**License the Workstation for Channel Control**” on [page 146](#).

## Install DashBoard

Refer to “**Install DashBoard**” on [page 26](#).

## Connect to the Vision[Ai]ry Control Service

This section describes how to prepare a Vision[Ai]ry workstation computer by creating a connection between DashBoard and the Vision[Ai]ry Control service.

Refer to “**Connect to the Vision[Ai]ry Control Service**” on [page 27](#).

## License the Workstation for Channel Control

To activate a purchased Vision[Ai]ry workstation license (order number **RRB-VAI-FT-CLIENT**, feature ID **1059841**) you will require a product key from Ross Video.

Refer to “**License Vision[Ai]ry Workstations for Channel Control**” on [page 44](#).

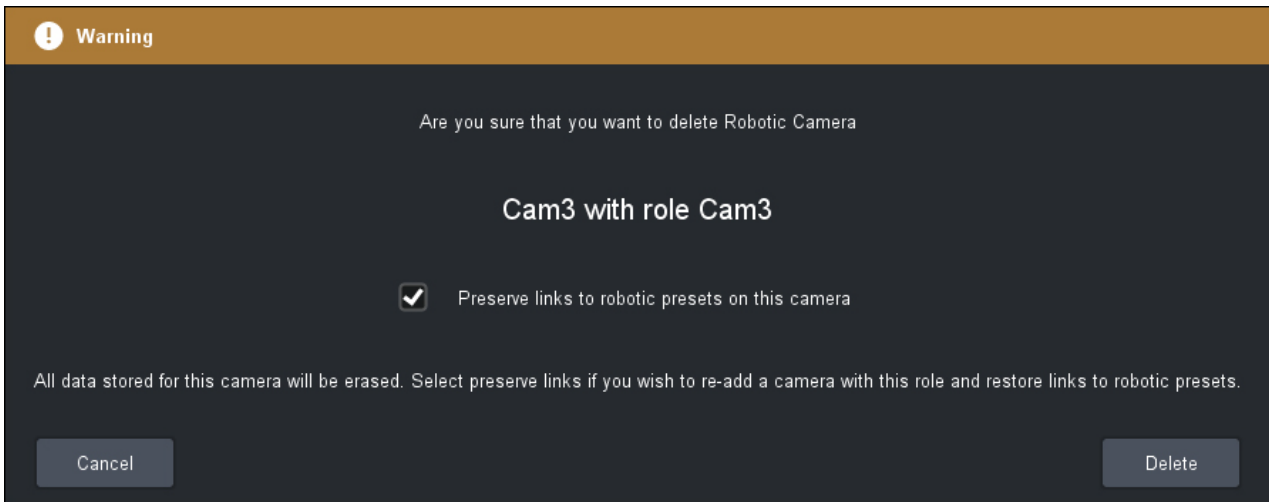
## Delete a Camera

When you delete a camera, it is no longer available to be controlled by Vision[Ai]ry.

### To delete a camera:

1. On the **Cameras** tab, in the list of robotic cameras, select the camera you want to delete.
2. Click the **Delete Camera** button.

A **Warning** dialog box appears to confirm that you want to delete the camera [Figure 105](#).



**Figure 105** - Warning Dialog Box (Delete Camera)

3. If you do not want to permanently discard all links between robotic presets stored on this camera and framing templates, select the **Preserve links to robotic presets on this camera** check box. Preserving the links assists in the process of replacing a camera. If you copy all presets to the replacement camera and then add it to Vision[Ai]ry using the same name and role, the links between presets and templates will be restored.
4. Click **Delete**.

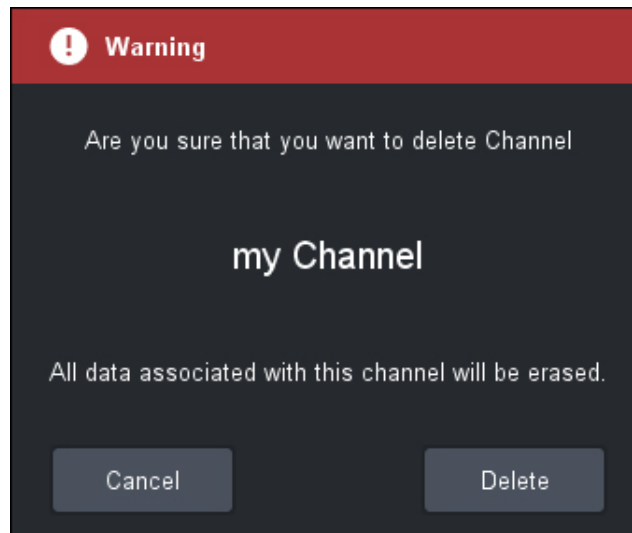
# Delete a Channel

This section describes how to delete a Vision[Ai]ry channel.

**Note:** After you delete a channel, all channel information is lost. If the channel was licensed and the license was not removed, you can add a new channel and it will be automatically licensed. For more information about adding and editing a channel, see “**License, Add, and Edit Channels**” on [page 28](#).

## To delete a channel:

1. On the **Channels** tab, click the **Delete Channel** button.  
A **Warning** dialog box appears ([Figure 106](#)), to confirm that you want to delete the channel.



**Figure 106** - Warning Dialog Box (Delete Channel)

2. Do one of the following:
  - To delete the channel, click **Delete**.
  - To retain the channel, click **Cancel**.
3. In the DashBoard tree, right-click the node for the channel (parent of the Control node), and then click **Remove**. Confirm the removal.  
The channel node is deleted from the DashBoard tree.

# Configure the MultiChannel Page

The MultiChannel page enables you to monitor and control up to six Vision[Ai]ry channels from a single DashBoard tab. Vision[Ai]ry operators typically use the MultiChannel page to control cameras during shows, temporarily accessing full channel control pages as needed. For more information about the controls available on the MultiChannel page, see “**The MultiChannel Page**” on [page 108](#).

You can configure the MultiChannel page to specify which channels to show and how the channel views are arranged. You can also set the **View Options** applied to all channel views.

Refer to “**Configure the MultiChannel Page (multi-channel systems)**” on [page 45](#).

# Configure Video Routing

Refer to “**Configure Video Routing**” on [page 40](#).

# Configure RossTalk Listener

Refer to “**Configure RossTalk Listener**” on [page 42](#).

# Set Logging Levels

System activity log files help Ross Video Technical Support diagnose technical issues.

There are a number of components within the Vision[Ai]ry system that contribute data to the log files. For each, you can set the level of detail recorded in the log files. The options, from least detailed to most detailed, are **Errors/Warnings**, **Normal**, **Detail**, and **Verbose**.

More intensive logging consumes CPU capacity and results in more logging data. The default setting is **Normal**.

There is no need to adjust the logging level unless requested to do so by Ross Video Technical Support.

**Tip:** If you experience problems with Vision[Ai]ry, Ross Video Technical Support may ask you to copy and send log files for analysis.

Log files are stored on each Engine computer in the **VisionAiryEngine > log** folder.

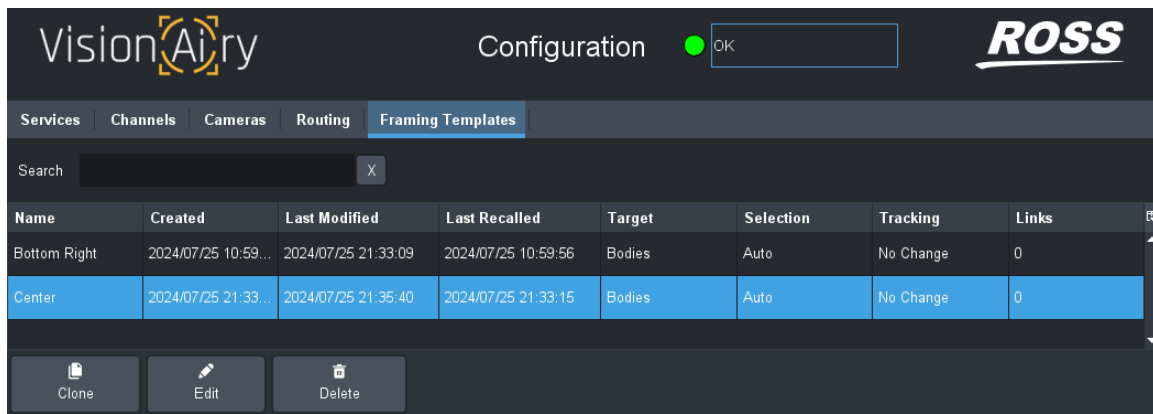
Log files are stored on the Control computer in the **VisionAiryControl > workspace > logs** folder.

## To review and set all logging levels:

1. On the **Services** tab, access the **Log Level** buttons.  
These buttons set the detail level for activities associated with configuring the system.
2. On the **Channels** tab:
  - a. Select the channel and then click **Edit Channel**.
  - b. In the **Logging** area, access the **Log Level** buttons.  
These buttons set the detail level for the selected Vision[Ai]ry channel.
3. On the **Cameras** tab for each camera:
  - a. Select the camera and then click **Edit Camera**.
  - b. In the **Logging** area, access the **Log Level** buttons.  
These buttons set the detail level for the selected camera.
4. On the **Routing** tab, access the **Logging** buttons.  
These buttons set the detail level for routing request activity.

# Review, Clone, Edit, or Delete Framing Templates

The **Framing Templates** tab of the **Configuration** page enables you to view a list of all framing templates and modify them. You can select, clone, edit, and delete framing templates. The list is available to all Vision[Ai]ry channels in the system



**Figure 107** - The Framing Templates Tab, with a Template Named **Template 2** Selected

A framing template is a saved record of the current size and position of the framing target, as well as current deadband and damping values, and the enable/disable status of each axis (pan, tilt, zoom). It may also include **Subject Selection** mode, **Target** mode, and **Active Tracking** mode options.

When you recall a framing template, the framing target adjusts to the size and position specified in the template, and all other values stored in the template are applied. Depending on the current **Subject Selection** mode, **Target** mode, and **Active Tracking** mode settings, and those stored in the template, the camera may or may not move to center a selected subject within the framing target, and may or may not track that subject.

This section includes the following topics:

- “**Review Framing Templates**” on [page 149](#)
- “**Clone (copy) a Framing Template**” on [page 150](#)
- “**Edit a Framing Template**” on [page 150](#)
- “**Delete a Framing Template**” on [page 152](#)

**Note:** Framing templates are created and recalled in the **Framing Templates** tab of the Vision[Ai]ry **Control** page. For more information, see “**Working with Framing Templates**” on [page 97](#).

## Review Framing Templates

The list of framing templates contains information about selected properties of the templates.

### To review properties of a framing template:

1. In the list of templates, click a template to select it.
 

**Tip:** To find a template quickly, you can do the following:

  - Click a column heading to sort the list based on values in that column.
  - Start typing part of the template **Name**, **Subject Selection** mode, or **Active Tracking** mode in the **Search** box. Vision[Ai]ry filters the list as you type.
2. Review properties of the framing templates, as displayed in the following columns:
  - **Name** — The names of the templates, as defined when they were created.
  - **Created** — The date and time the template was created. Date and time format is **YYYY-MM-DD hh-mm-ss**.
  - **Last Modified** — The date and time the template was edited or updated. Date and time format is **YYYY-MM-DD hh-mm-ss**.

- **Last Recalled** — The date and time the template was most recently recalled. This information can help you identify templates that are no longer in use. Date and time format is **YYYY-MM-DD hh-mm-ss**.
- **Target** — The type of target mode selected, either single/multiple head(s)/body/bodies.
- **Selection** — The **Subject Selection** mode to be applied when the template is recalled:
  - › **Manual** — If a subject is already selected and **Active Tracking** is set to **On** or **One-Shot**, Vision[Ai]ry frames the selected subject as defined in the template. Otherwise, the framing target is positioned as defined in the template, but the camera view does not change. After the template is recalled, the **Subject Selection** remains set to **Manual**.
  - › **Auto** — If a subject is not already selected, Vision[Ai]ry selects the subject closest to the framing target. If **Active Tracking** is set to **On** or **One-Shot**, Vision[Ai]ry frames the selected subject as defined in the template. If no subject is available, Vision[Ai]ry searches until one appears. After the template is recalled, the **Subject Selection** mode remains set to **Auto**.
  - › **No Change** — The template does not change the **Subject Selection** mode.
- **Tracking** — The **Active Tracking** mode to be applied when the template is recalled:
  - › **On** — If a subject is already selected, or if the **Subject Selection** setting in the template causes a subject to be selected, Vision[Ai]ry frames the selected subject as defined in the template. Otherwise, the framing target is positioned as defined in the template, but the camera view does not change. After the template is recalled, the **Active Tracking** remains **On**.
  - › **Off** — Vision[Ai]ry stops tracking. The framing target is positioned as defined in the template, but the camera view does not change. After the template is recalled, the **Subject Selection** remains **Off**.
  - › **One-Shot** — If a subject is already selected, or if the **Subject Selection** setting in the template causes a subject to be selected, Vision[Ai]ry frames the selected subject as defined in the template. Otherwise, the framing target is positioned as defined in the template, but the camera view does not change. If no subject is available, Vision[Ai]ry searches until one appears. After the template is recalled, the **Active Tracking** mode changes to **Off**.
  - › **No Change** — The template does not change the **Active Tracking** mode.

## Clone (copy) a Framing Template

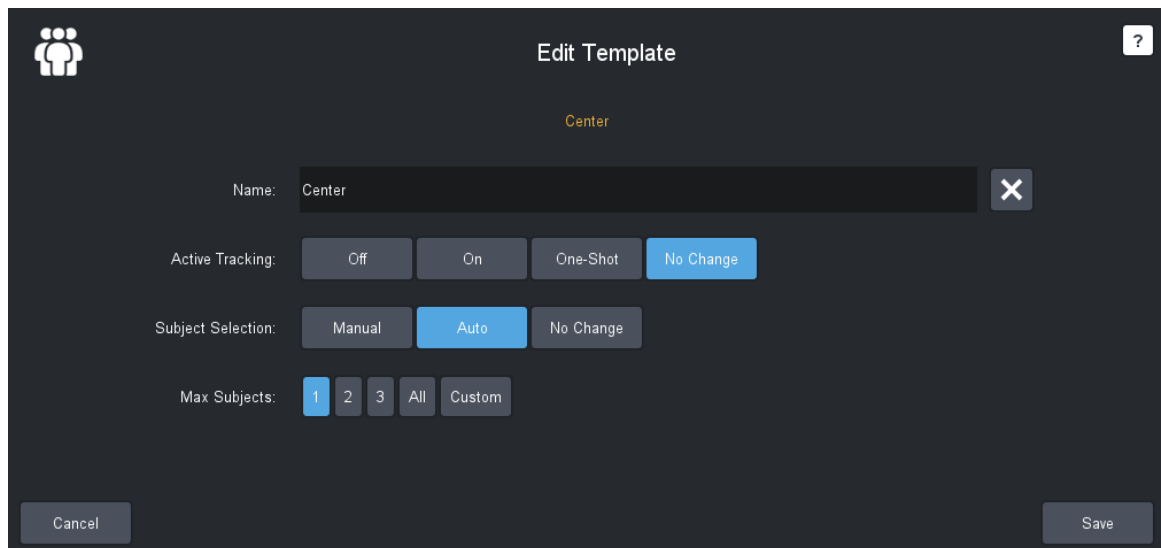
Refer to “**Clone (copy) a Framing Template**” on [page 102](#).

## Edit a Framing Template

When you edit a framing template, you can rename it, and change its **Subject Selection** mode and/or **Active Tracking** mode.

### To edit a template:

1. In the list of framing templates, click the template you want to edit. The **Edit Template** dialog box appears ([Figure 108](#)).



**Figure 108 - The Edit Template Dialog Box**

2. If you want to rename the template, in the **Name** box, type a new name.
3. If you want to change the **Subject Selection** mode, click a **Subject Selection** button:
  - **Manual** — When the template is recalled, if a subject is already selected and **Subject Tracking** is set to **On** or **One-Shot**, Vision[Ai]ry frames the selected subject as defined in the template. Otherwise, the framing target is positioned as defined in the template, but the camera view does not change.  
After the template is recalled, **Subject Selection** remains set to **Manual**.
  - **Auto** — When the template is recalled, if a subject is not already selected, Vision[Ai]ry selects the subject closest to the framing target. If **Active Tracking** is set to **On** or **One-Shot**, Vision[Ai]ry frames the selected subject as defined in the template.  
If no subject is available, Vision[Ai]ry searches until one appears.  
After the template is recalled, **Subject Selection** remains set to **Auto**.  
**Note:** The **Max Subjects** options appear when **Subject Selection** mode is set to **Auto**.
  - **No Change** — The template does not change the **Subject Selection** mode.
4. If you want to change the tracking mode, click a **Active Tracking** button:
  - **On** — When the template is recalled, if a subject is already selected, or if the **Subject Selection** setting in the template causes a subject to be selected, Vision[Ai]ry frames the selected subject as defined in the template. Otherwise, the framing target is positioned as defined in the template, but the camera view does not change.  
After the template is recalled, **Active Tracking** remains **On**.
  - **Off** — When the template is recalled, Vision[Ai]ry stops tracking. The framing target is positioned as defined in the template, but the camera view does not change.  
After the template is recalled, **Subject Selection** remains **Off**.
  - **One-Shot** — When the template is recalled, if a subject is already selected, or if the **Subject Selection** setting in the template causes a subject to be selected, Vision[Ai]ry frames the selected subject as defined in the template. Otherwise, the framing target is positioned as defined in the template, but the camera view does not change.  
If no subject is available, Vision[Ai]ry searches until one appears.  
After the template is recalled, the **Active Tracking** setting changes to **Off**.
  - **No Change** — The template does not change the **Active Tracking** mode.
5. Click **Save**.  
The template is updated.

## Delete a Framing Template

Refer to “**Delete a Framing Template**” on [page 103](#).

# Backup and Restore Vision[Ai]ry Configuration Data

You can create backup copies of Vision[Ai]ry configuration data, and later restore them.

Data you can back up includes the following:

- **From the Vision[Ai]ry Control computer** — Configuration data generated by the Vision[Ai]ry Control service including camera and routing configuration, framing templates (including links to robotic presets), and channel license data.

You can choose what data to back up:

- › All Vision[Ai]ry configuration data, including camera and routing configuration, framing templates (including links to robotic presets), and channel license data.  
This creates a complete configuration archive of your installation. Because it includes channel license data, this backup archive can be restored to the same Vision[Ai]ry computer only.
- › All Vision[Ai]ry configuration data and framing templates (including links to robotic presets), but not licensing data.  
This backup archive can be restored to the same Vision[Ai]ry computer or a different one. If you restore the data to a different Vision[Ai]ry computer, you must set up licensing of the Vision[Ai]ry channel.
- › Vision[Ai]ry framing templates and links only  
This creates an archive of the framing templates (including links to robotic presets). You can restore this archive to any Vision[Ai]ry computer.

**IMPORTANT:** If you are restoring data to a different computer, the destination computer must have the same IP address as the source computer. Otherwise, you must edit the Vision[Ai]ry configuration on the destination computer accordingly.

- **From each Vision[Ai]ry Engine Computer** — The **visionAiryEngine.properties** file, if it has been edited since the Engine service was installed.  
**Tip:** The default location is **C:\Program Files\Ross Video\VisionAiryEngine**.
- **From each Vision[Ai]ry workstation** — MultiChannel page layout data generated by DashBoard, and view options for individual channels.

**IMPORTANT:** When you restore archived configuration data, it permanently overwrites current data.

**IMPORTANT:** When you back up Vision[Ai]ry configuration data, be sure to also back up all presets and configuration data from all camera systems controlled by Vision[Ai]ry. Restoration of archived Vision[Ai]ry configuration data works only if the camera systems connected to Vision[Ai]ry have the same configuration and presets as they did when the configuration data was saved.

**To create a backup copy of ALL Vision[Ai]ry configuration data, INCLUDING channel license data:**

1. On the Vision[Ai]ry Control computer, navigate to the following folder:  
**c:\Program Files\Ross Video\VisionAiryControl\workspace\metadata\**  
**Note:** The preceding directory path assumes the default installation path, **c:\Program Files\Ross Video\**.
2. Copy the **.plugins** folder and paste it into a new folder.  
**Tip:** Assign the new folder a meaningful name, to help you later identify the nature of the data it contains.
3. Store the new folder in different directory for safekeeping, preferably on a different computer.

**To create a backup copy of Vision[Ai]ry configuration data, EXCLUDING channel license data:**

1. On the Vision[Ai]ry Control computer, navigate to the following folder:  
**c:\Program Files\Ross Video\VisionAiryControl\workspace\metadata\plugins\  
Note:** The preceding directory path assumes the default installation path, **c:\Program Files\Ross Video\**. If the Vision[Ai]ry Control service was installed to a different folder, adjust the preceding path accordingly.
2. Copy the **com.rossvideo.snowyowl.control** folder and paste it into a new folder.  
**Tip:** Assign the new folder a meaningful name, to help you later identify the nature of the data it contains.  
**Tip:** Framing templates and links files must be saved and restored together.
3. Store the new folder in different directory for safekeeping, preferably on a different computer.

**To create a backup copy of Vision[Ai]ry framing templates (including links to robotic presets):**

1. On the Vision[Ai]ry Control computer, navigate to the following folder:  
**c:\Program Files\Ross Video\VisionAiryControl\workspace\plugins\com.rossvideo.snowyowl.control**  
**Note:** The preceding directory path assumes the default installation path, **c:\Program Files\Ross Video\**. If the Vision[Ai]ry Control service was installed to a different folder, adjust the preceding path accordingly.
2. Copy the **VisionAiry-templates.json** file and the **VisionAiry-links.json** file, and paste them into a new folder.  
**Tip:** Assign the new folder a meaningful name, to help you later identify the nature of the data it contains.
3. Store the new folder in different directory for safekeeping, preferably on a different computer.

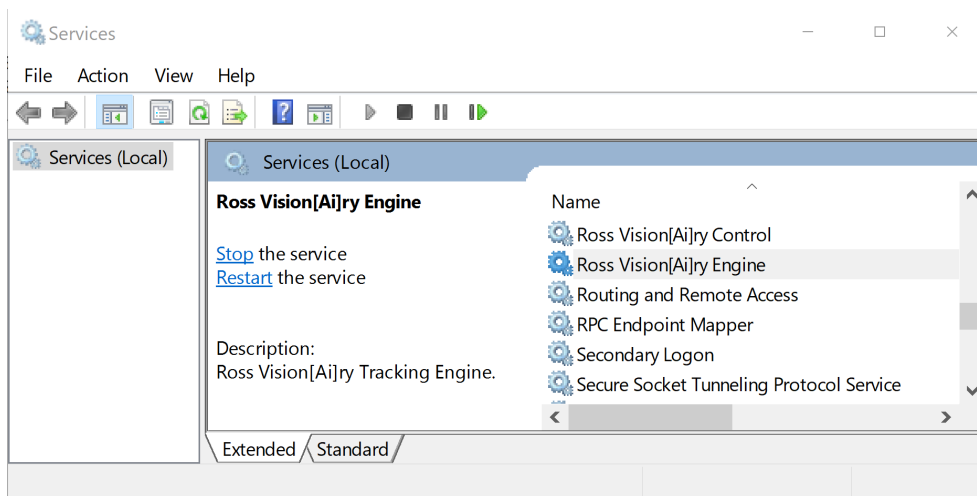
**IMPORTANT:** If you later restore configuration data to a different Vision[Ai]ry Control computer, the destination computer must have the same IP address as the source computer. Otherwise, you must edit the Vision[Ai]ry configuration on the destination computer accordingly.

**To create a backup copy of MultiChannel page layout data and View Options for individual channels from a Vision[Ai]ry workstation:**

1. On the Vision[Ai]ry workstation computer, navigate to the following folder:  
**c:\Dashboard\workspace\  
Note:** The preceding directory path assumes the default installation path, **c:\Dashboard\**.
2. Copy the **SavedChoices** folder and paste it into a new folder.  
**Tip:** Assign the new folder a meaningful name, to help you later identify the nature of the data it contains.
3. If you have multiple Vision[Ai]ry workstations, repeat these steps on each Vision[Ai]ry workstation computer.

### To restore archived Vision[Ai]ry configuration data:

1. On the Vision[Ai]ry Control computer, stop the **Ross Vision[Ai]ry Control** service, as follows:
  - a. From the Windows **Start** menu, open the **Services** application ([Figure 109](#)).



**Figure 109** - Windows Services Application, with the Ross Vision[Ai]ry Ft Control Service Selected

- b. In the list of services, click the **Ross Vision[Ai]ry Control** service.  
Links to **Stop**, **Pause**, and **Restart** the service appear.
  - c. Click the **Stop** link.  
The service stops.  
Leave the **Services** application open.
2. Paste the archived content into the appropriate folder:
    - If restoring a copy of **ALL** Vision[Ai]ry configuration data including license data, paste the archived **.plugins** folder into the **c:\Program Files\Ross Video\VisionAiryControl\workspace\metadata\** folder, permanently overwriting the current folder and files.
    - If restoring a copy of Vision[Ai]ry configuration data excluding license data, paste the archived **com.rossvideo.snowyowl.control** folder into the **c:\Program Files\Ross Video\VisionAiryControl\workspace\metadata\plugins\** folder, permanently overwriting the current folder and files.
    - If restoring a copy of only the framing templates, paste the archived **VisionAiry-templates.json** file and the **VisionAiry-links.json** file into the **c:\Program Files\Ross Video\VisionAiryControl\workspace\metadata\plugins\com.rossvideo.snowyowl.control** folder, permanently overwriting the current file.

**Note:** The preceding directory paths assumes the default installation path, **c:\Program Files\Ross Video\**. If the Vision[Ai]ry Control service was installed to a different folder, adjust the preceding paths accordingly.

**Note:** If restoring data stored for v1.3.1 or earlier to a v2.0 install, some file names are going to need editing to remove the "Ft".
  3. In the **Services** application, click the **Start** link to start the **Ross Vision[Ai]ry Control** service.

### To restore MultiChannel page layout data to a Vision[Ai]ry workstation:

1. On the Vision[Ai]ry workstation computer, navigate to the following folder:  
**c:\Dashboard\workspace\**  
**Note:** The preceding directory path assumes the default installation path, **c:\Dashboard\**.
2. Delete the **SavedChoices** folder.
3. Paste the archived **SavedChoices** folder.

4. Close and restart DashBoard.
5. If you have multiple Vision[Ai]ry workstations, repeat these steps on each Vision[Ai]ry workstation computer.

# Appendix

This appendix provides guidance on the following procedures:

- “**Adding a USB Controller for Framing**” on [page 156](#)
- “**License Errors Troubleshooting**” on [page 165](#)

## Adding a USB Controller for Framing

You can add a USB controller to control framing operations performed in the **Channel Control** page, such as resizing and repositioning the framing target, enabling and disabling axes, and changing the **Subject Selection** mode, **Target** mode, and **Active Tracking** mode.

This section describes how to set up a USB controller to control framing.

**IMPORTANT:** If you are using DashBoard PT Head Control to control cameras, and camera selection between Vision[Ai]ry and PT Head Control is linked, you cannot use a USB joystick for camera selection or for framing. For this scenario, this section does not apply.

The main steps are as follows:

- “**Add a USB Controller in DashBoard**” on [page 156](#)
- “**Add the Framing Device Class, and Map Controls to Parameters**” on [page 158](#)
- “**Map the framing Device Class to a Controller**” on [page 162](#)
- “**Configure the Effect of UI Selection on USB Control of Framing**” on [page 162](#)

### Add a USB Controller in DashBoard

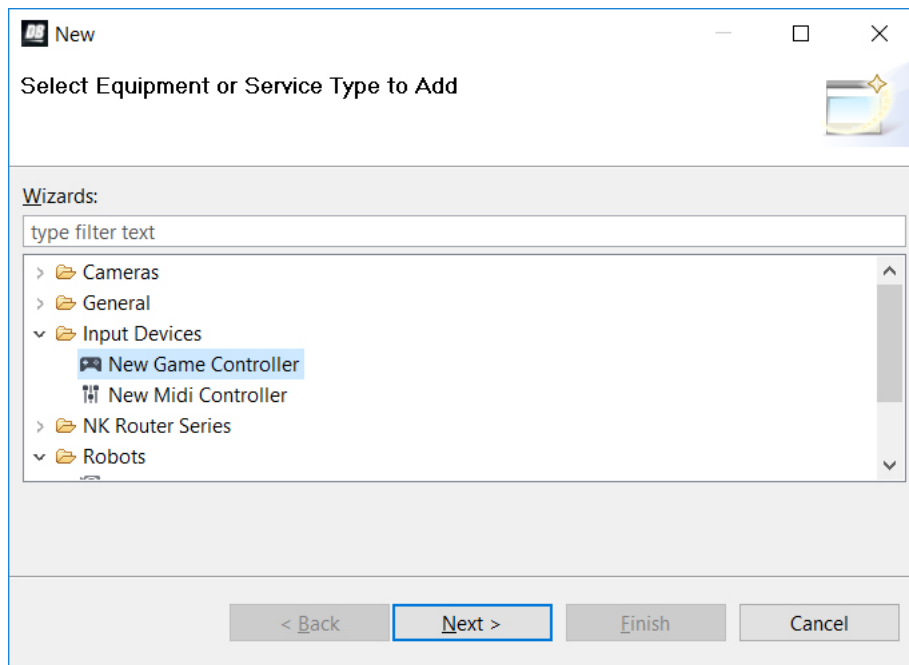
To add a USB controller:

1. Close DashBoard.
2. Plug the USB controller into a USB port on the Vision[Ai]ry control workstation.
3. Start DashBoard.

When DashBoard starts, it detects the controller.

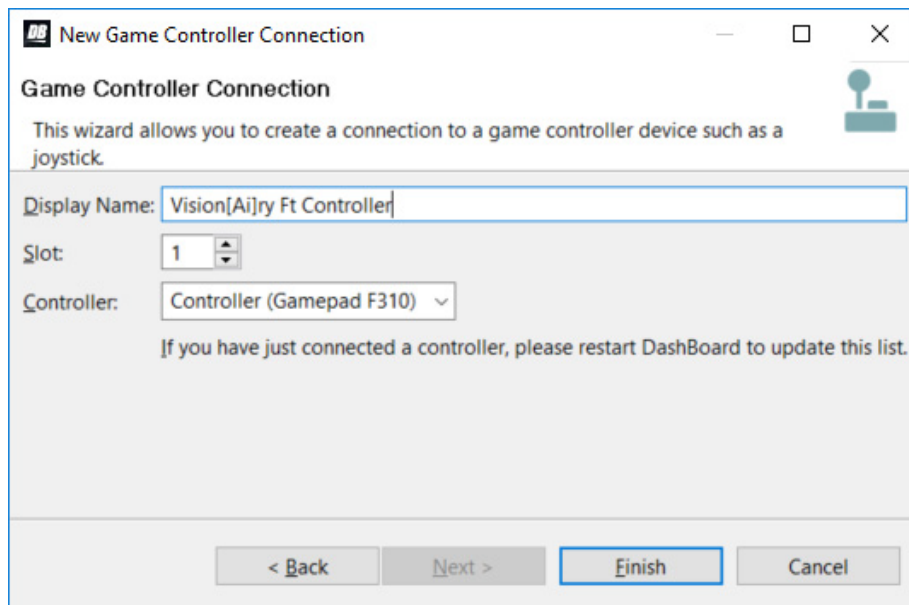
**Tip:** DashBoard can detect the controller only if the controller is already plugged in when DashBoard starts.

4. In DashBoard, on the **File** menu, select **New**, and then select **Other**.  
The **New** dialog box appears ([Figure 110](#)).



**Figure 110** - Adding a USB controller

5. In the **Wizards** list, expand **Input Devices**, select **New Game Controller**, and then click **Next**. The **New Game Controller Connection** dialog box appears ([Figure 111](#)).



**Figure 111** - Connecting to a USB controller

6. In the **Display Name** box, type a name for the controller.
7. In the **Controller** list, select the type of USB controller you plugged in.  
**Note:** If the controller type is not on the list, either it was not detected or it is already registered in DashBoard.
8. Click **Finish**.  
 A node for the controller appears within the **Game Controllers** node in the DashBoard tree. The node has the name you specified.

## Add the Framing Device Class, and Map Controls to Parameters

A USB controller typically has buttons and axis controls. A button is either on or off, and therefore returns one of two data values. An axis control, such as a joystick, can return any value within a range of data values, based on how far the joystick is moved in one direction or the other.

You can configure controls and buttons on the USB controller to control framing. For example, a joystick can be configured to control the position of the framing target, and buttons can be configured to enable/disable axes.

This section describes how to add the **framing** device class to DashBoard, and how to map physical controls to framing parameters that the class provides.

### To add the framing device class and map controls to framing parameters (OIDs):

1. In the DashBoard tree, expand the **Game Controllers** node, and then double-click the controller node you added.

The configuration interface for the controller appears ([Figure 112](#)).

**Axis Controls**

ID	Name	Min	Max	Sensitivity	Speed %	Invert	Value	Mapped OID
x	horizontal	-255	255	255	10	<input type="checkbox"/>		0framing.vel.target.percent.width
y	height	-255	255	255	10	<input type="checkbox"/>		0framing.vel.target.percent.y
rx	width	-255	255	255	10	<input type="checkbox"/>		0framing.vel.target.percent.x
z	deadband	-255	255	255	100	<input type="checkbox"/>		0framing.vel.axis.combined.deadband
pov.x	damping	-255	255	255	100	<input type="checkbox"/>		0framing.vel.axis.combined.damping
pov.y		-255	255	255	100	<input type="checkbox"/>		0framing.vel.axis.pan.deadband

**Buttons**

ID	Name	Action	Value (Off)	Value (On)	Min	Max	Hold	Value	Mapped OID
0	frame target	Stateless	-1	1	-255	255	<input type="checkbox"/>		0framing.action.targetselected
1	sel on off	Toggle	0	1	-255	255	<input type="checkbox"/>		0framing.control.selectmode
2	track on off	Toggle	0	1	-255	255	<input type="checkbox"/>		0framing.control.trackmode
3	track one-shot	Stateless	0	2	-255	255	<input type="checkbox"/>		0framing.control.trackmode
4	pan enable	Toggle	0	1	-255	255	<input type="checkbox"/>		0framing.axis.pan.enable
5	tilt enable	Toggle	0	1	-255	255	<input type="checkbox"/>		0framing.axis.tilt.enable
6	zoom enable	Toggle	0	1	-255	255	<input type="checkbox"/>		0framing.axis.zoom.enable
7	ratio lock	Toggle	0	1	-255	255	<input type="checkbox"/>		0framing.target.lockratio

**Figure 112** - Mapping USB Controller Inputs (shown with framing device class added, and controls mapped to OIDs)

The number and types of axis controls and buttons vary between different models of USB controllers.

2. In the **Device Classes** list, add a new device class and name it **framing**.
3. In the **Axis Controls** table, create mappings for the velocity parameters that you want the USB controller's axis controls (such as joysticks) to operate.

When you create mappings, you link data items reported by the controller to parameters (OIDs) used by Vision[Ai]ry.

**Tip:** To determine which **Axis Controls** and **Buttons** correspond to physical controls on the controller, move the controller's joystick and push its buttons while observing changes in the **Value** column.

For an example showing **Axis Controls** mapped to framing parameters, see [Figure 112](#) on **page 158**. The following table lists framing parameters that are available for mapping to axis controls.

Parameter (Mapped OID)	Description
framing.vel.target.percent.x	Moves framing target horizontally
framing.vel.target.percent.y	Moves framing target vertically
framing.vel.target.percent.width	Increases/decreases the width of the framing target
framing.vel.target.percent.height	Increases/decreases the height of the framing target
framing.vel.axis.combined.deadband	Increases/decreases the magnitude (size) of the deadband zone for all axes (pan, tilt, zoom)
framing.vel.axis.pan.deadband.magnitude	Increases/decreases the width of the deadband zone
framing.vel.axis.pan.deadband.offset	Moves the deadband zone right or left, relative to the framing target. Negative values move the deadband zone to the left and positive values move it to the right.
framing.vel.axis.tilt.deadband	Increases/decreases the height of the deadband zone
framing.vel.axis.tilt.deadband.offset	Moves the deadband zone up or down, relative to the framing target. Negative values move the deadband zone upwards, and positive values move it downwards.
framing.vel.axis.zoom.deadband.magnitude	Increases/decreases the depth of the deadband zone.
framing.vel.axis.zoom.deadband.offset	Moves the deadband zone forward or back, relative to the zoom position of the lens. Negative values move the deadband zone farther from the camera, and positive values move it closer to the camera.
framing.vel.axis.combined.damping	Increases/decreases damping value for all axes (pan, tilt, zoom)
framing.vel.axis.pan.damping	Increases/decreases damping value for the pan axis only
framing.vel.axis.tilt.damping	Increases/decreases damping value for the tilt axis only
framing.vel.axis.zoom.damping	Increases/decreases damping value for the zoom axis only

Relevant columns in the **Axis Controls** mapping table are as follows:

- **ID** - The ID of the control, as reported by the controller. This is not configurable.
- **Name** - You can name each control for future reference (optional).
- **Min** and **Max** - Defines the range of data values sent to the Dashboard parameter. When the control is in a neutral position, the data value is halfway between **Min** and **Max**. For example, if **Min** is **-100** and **Max** is **200**, the neutral value is **50**.

**Tip:** Dashboard automatically scales the data value to suit the data range of the associated parameter. You do not need to match **Min** and **Max** to the lowest and highest parameter values.

For mapping of Vision[Ai]ry framing parameters, adjusting **Min** and **Max** is normally unnecessary.

- **Speed%** — Scales the data values, to make them change more or less gradually. For example, if you use a joystick to control the parameter that positions the target horizontally (**framing.vel.target.percent.x**), and you find that the target moves too quickly, you might reduce **Speed %** to **20**.

- **Sensitivity** — Defines the number of steps between each end of the data range and the controller's neutral position. For example, if **Min** is **-100**, **Max** is **100**, and **Sensitivity** is **20**, then the value changes by increments of **5**. The range of values starts at **-100** (**-100**, **-95**, **-90**, etc.) and continues to **100**.

For mapping of Vision[Ai]ry framing parameters, adjusting **Sensitivity** is normally unnecessary.

- **Invert** - When selected, reverses the direction of motion required to move the axis. For example, if you find that pushing a joystick to the right moves the framing target to the left, invert the control mapped to the **framing.target.vel.percent.x** parameter to make the framing target and the joystick move in the same direction.
  - **Value** - Shows the current data value reported by the controller. This is useful for testing.
  - **Mapped OID** - Specify the parameter OID to be mapped to the control.
4. In the **Buttons** table, create mappings for the framing parameters that you want the USB controller's buttons to operate.

When you create mappings, you link data items reported by the controller to parameters (OIDs) used by Vision[Ai]ry.

**Tip:** To determine which **Axis Controls** and **Buttons** correspond to physical controls on the controller, move the controller's joystick and push its buttons while observing changes in the **Value** column.

For an example showing **Buttons** mapped to framing parameters, see [Figure 112](#) on **page 158**.

The following table lists framing parameters that are available to be mapped to button controls.

Parameter (Mapped OID)	Description
framing.target.lockratio	<p>Toggles to lock and unlock the aspect ratio of the framing target. If you increase or decrease the height or width of the framing target while the aspect ratio is locked, the target grows or shrinks but retains its shape.</p> <p>To map <b>framing.target.lockratio</b>:</p> <ul style="list-style-type: none"> <li>• Set <b>Action</b> to <b>Toggle</b>.</li> <li>• Set <b>Value (Off)</b> to <b>0</b>.</li> <li>• Set <b>Value (On)</b> to <b>1</b>.</li> </ul>
framing.action.targetselected	<p>When the button is pressed, the framing target is resized and repositioned to fit the selected subject.</p> <p>To map <b>framing.action.targetselected</b>:</p> <ul style="list-style-type: none"> <li>• Set <b>Action</b> to <b>Stateless</b>.</li> <li>• Set <b>Value (Off)</b> to <b>0</b>.</li> <li>• Set <b>Value (On)</b> to <b>1</b>.</li> </ul>
framing.axis.pan.enable	<p>Enables and disables the pan axis. When the button is pressed, the enable/disable state of the pan axis toggles.</p> <p>To map <b>framing.axis.pan.enable</b>:</p> <ul style="list-style-type: none"> <li>• Set <b>Action</b> to <b>Toggle</b>.</li> <li>• Set <b>Value (Off)</b> to <b>0</b>. (disable)</li> <li>• Set <b>Value (On)</b> to <b>1</b>. (enable)</li> </ul>
framing.axis.tilt.enable	<p>Enables and disables the tilt axis. When the button is pressed, the enable/disable state of the tilt axis toggles.</p> <p>To map <b>framing.axis.tilt.enable</b>:</p> <ul style="list-style-type: none"> <li>• Set <b>Action</b> to <b>Toggle</b>.</li> <li>• Set <b>Value (Off)</b> to <b>0</b>. (disable)</li> <li>• Set <b>Value (On)</b> to <b>1</b>. (enable)</li> </ul>

Parameter (Mapped OID)	Description
framing.axis.zoom.enable	<p>Enables and disables the zoom axis. When the button is pressed, the enable/disable state of the zoom axis toggles.</p> <p>To map <b>framing.axis.zoom.enable</b>:</p> <ul style="list-style-type: none"> <li>• Set <b>Action</b> to <b>Toggle</b>.</li> <li>• Set <b>Value (Off)</b> to <b>0</b>. (disable)</li> <li>• Set <b>Value (On)</b> to <b>1</b>. (enable)</li> </ul>
framing.control.selectmode	<p>Changes the <b>Subject Selection</b> mode. select mode toggles between <b>Manual</b> and <b>Auto</b>.</p> <p>To map <b>framing.control.selectmode</b>:</p> <ul style="list-style-type: none"> <li>• Set <b>Action</b> to <b>Toggle</b>.</li> <li>• Set <b>Value (Off)</b> to <b>0</b>. (manual)</li> <li>• Set <b>Value (On)</b> to <b>1</b>. (auto)</li> </ul>
framing.control.trackmode	<p>Active tracking mode has three options: <b>Off</b>, <b>On</b>, and <b>One-shot</b>. To map active tracking mode options to buttons, you can assign one button to each mode. Alternatively, you can assign one button to toggle between two of the modes, and assign a second button for the third mode. For example, you can assign one button to switch between <b>Off</b> and <b>On</b>, and a second button to perform a <b>One-shot</b> operation.</p> <p>To map <b>framing.control.trackmode</b> to three buttons:</p> <ul style="list-style-type: none"> <li>• For each button, set <b>Action</b> to <b>Stateless</b>.</li> <li>• For the button that you want to use to turn active tracking mode <b>off</b>, set <b>Value (Off)</b> to <b>-1</b> and set <b>Value (On)</b> to <b>0</b>.</li> <li>• For the button that you want to use to turn active tracking mode <b>on</b>, set <b>Value (Off)</b> to <b>-1</b> and set <b>Value (On)</b> to <b>1</b>.</li> <li>• For the button that you want to use to perform a <b>one-shot</b>, set <b>Value (Off)</b> to <b>-1</b> and set <b>Value (On)</b> to <b>2</b>.</li> </ul> <p>To map <b>framing.control.trackmode</b> to two buttons; one for Active tracking mode On/Off, and one for One-shot:</p> <ul style="list-style-type: none"> <li>• For the button that you want to use to turn active tracking mode <b>on</b> and <b>off</b>, set <b>Action</b> to <b>Toggle</b>, set <b>Value (Off)</b> to <b>0</b>, and set <b>Value (On)</b> to <b>1</b>.</li> <li>• For the button that you want to use to perform a <b>one-shot</b>, set <b>Action</b> to <b>Stateless</b>, set <b>Value (Off)</b> to <b>-1</b>, and set <b>Value (On)</b> to <b>2</b>.</li> </ul>

Relevant columns in the **Buttons** mapping table are as follows:

- **ID** - The ID of the control, as reported by the controller. This is not configurable.
- **Name** - You can name each control for future reference (optional).
- **Action** - The type of action to be performed when the button is pressed.
- **Value (Off)** - The value assigned to the parameter, under the following conditions:
  - › If **Action** is set to **Toggle**, each time the button is pressed the parameter value switches (toggles) between **Value (Off)** and **Value (On)**.
  - › If **Action** is set to **Stateless**, **Value (Off)** is the value of the parameter when the button is released.
  - › If **Action** is set to **Set Value**, **Value (Off)** is ignored.
  - › For all other **Action** settings, **Value (Off)** is not applicable.
- **Value (On)** - The value assigned to the parameter, under the following conditions:
  - › If **Action** is set to **Toggle**, each time the button is pressed the parameter value switches (toggles) between **Value (Off)** and **Value (On)**.

- › If **Action** is set to **Stateless**, **Value (On)** is the value of the parameter while the button is depressed.
  - › If **Action** is set to **Set Value**, **Value (On)** is the value assigned to the parameter each time the button is pressed.
  - › For all other **Action** settings, **Value (On)** is not applicable.
  - **Value** - Shows the current data value reported by the controller. This is useful for testing.
  - **Mapped OID** - Specify the parameter OID from to be mapped to the control.
- Tip:** If you are configuring multiple controllers and dividing the control functions among them, the controls within each device class must be assigned to a single controller. The name of each parameter OID starts with the name of its device class (**selector**, **ptzjoystick**, **shotcontrol**, or **paintbox**).
5. If you want to save the mappings in a file that can be loaded onto other Dashboard computers, click the **SAVE** button and specify a file name and path.
- Note:** The mappings are specific to the controller(s) you configured. You can use the mappings on other Dashboard computers only if their controllers are the same model, or report the exact same controls.

## Map the framing Device Class to a Controller

The framing device class provides access to the parameters that control framing.

This section describes how to link the framing device class to a USB controller.

**To map the framing device class to a controller:**

1. In the Dashboard tree, within the **Dashboard Services** node, double-click **Device Class Mappings**. The **Device Class Mappings** interface appears ([Figure 113](#)).

Class	Selected Device	Status	Clear Selection
		● Unassigned	Clear Selection
db.uiselector		● Unassigned	Clear Selection
framing	Vision[Ai]ry Ft Controller on Game Controllers	● OK	Clear Selection
ptzjoystick		● Unassigned	Clear Selection
selector		● Unassigned	Clear Selection

**Figure 113** - Device Class Mappings, showing the framing Device Class Mapped to a USB Controller

2. In the **framing** row, in the **Selected Device** column, select the name of the USB controller.
- Tip:** In the **Selected Device** box, click the down arrow to open a list of available devices.

## Configure the Effect of UI Selection on USB Control of Framing

This section describes how to configure Selector UI Mappings and Device Control Mappings to facilitate framing control by a USB controller.

For multi-channel or single-channel Vision[Ai]ry systems, you can configure UI selection settings so the USB device can control framing for the Channel Control page that is currently active in Dashboard.

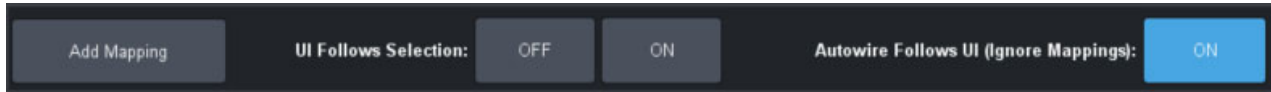
For single-channel systems, you can instead opt to control framing for the channel regardless of what application is currently active in Dashboard.

**To configure the effect of UI selection on USB control of framing:**

1. In the DashBoard tree, expand the **DashBoard Services** node, and then double-click **Selector UI Mappings**.

The **Selection Mapping** interface appears.

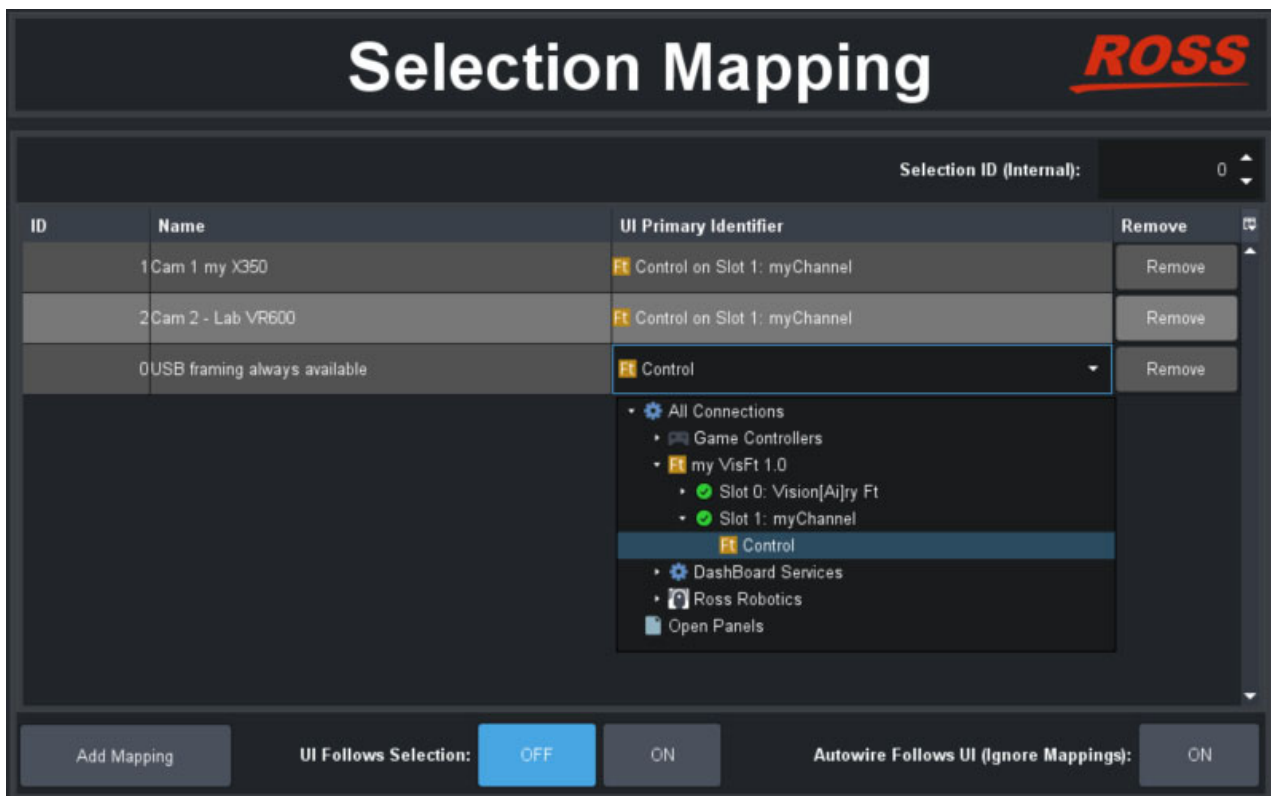
2. If your Vision[Ai]ry system has multiple channels, or if you want the USB controller to be able to adjust framing only when the **Channel Control** page is currently active in DashBoard, click the **Autowire Follows UI** button (Figure 114), and then skip the remaining steps.



**Figure 114 - Autowire Follows UI — ON**

3. If your Vision[Ai]ry system has only one channel and you want the USB controller to be able to adjust framing at all times, regardless of whether the **Channel Control** page is the currently-active application in DashBoard, do the following:

- a. Above the list of mappings, set **Selection ID (Internal)** to **0** (Figure 115).
- b. Below the list of mappings, click the **Add Mapping** button, and then specify the following values for the new mapping:
  - Set **ID** to **0**.
  - Specify a meaningful **Name** for the mapping (optional).  
For example, in Figure 115, the name is **USB framing always available**.
  - Set the **UI Primary Identifier** to the **Control** node for the Vision[Ai]ry channel, as shown in Figure 115.



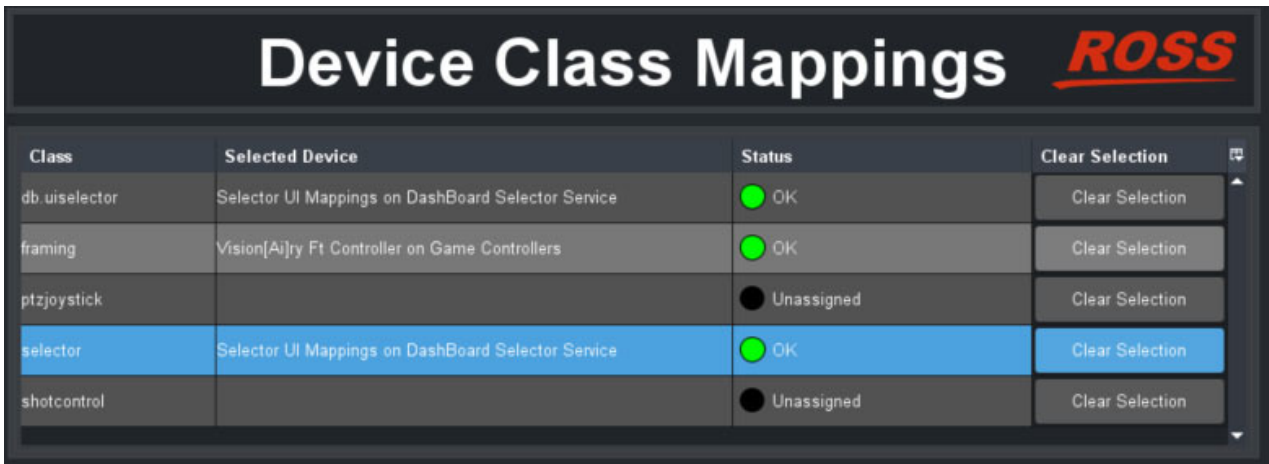
**Figure 115 - Selection Mapping to make USB Control of Framing Always Available**

- c. Set **UI Follows Selection** to **OFF**.

- d. In the DashBoard tree, expand the **DashBoard Services** node, and then double-click **Device Class Mappings**.

The **Device Class Mapping** interface appears.

- e. In the **selector** row, set the **Selected Device** to **Selector UI Mappings on DashBoard Selector Service** ([Figure 116](#)).



Class	Selected Device	Status	Clear Selection
db_uiselect	Selector UI Mappings on DashBoard Selector Service	OK	Clear Selection
framing	Vision[Ai]ry Ft Controller on Game Controllers	OK	Clear Selection
ptzjoystick		Unassigned	Clear Selection
selector	Selector UI Mappings on DashBoard Selector Service	OK	Clear Selection
shotcontrol		Unassigned	Clear Selection

**Figure 116** - Device Class Mapping to make USB Control of Framing Always Available

# License Errors Troubleshooting

Refer to [Table 8](#) for a list of the possible Licensing Errors encountered by Vision[Ai]ry and the way to correct them.

When encountering licensing issues with Vision[Ai]ry, it is essential to check the licensing status in the licensing dialog. Typically, the status will display as **ERROR** for most issues, including expired licenses or server communication problems. For more detailed diagnostics, such as identifying the reason for a failure to check out a license, refer to the log files. Below is a list of possible licensing errors, their descriptions, and suggested solutions

**Note:** Setup instructions are also available. Refer to “**License Vision[Ai]ry Workstations for Channel Control**” on [page 44](#) for more information.

**Table 8 - License Errors Solutions**

Error	Solution
Failed to set product key	<ul style="list-style-type: none"><li>• Ensure that the product key entered is correct and matches the one provided by Ross Video. Double-check for any typos or incorrect entries.</li><li>• Verify that the Ross Platform Manager (RPM) is properly connected and configured. The server type, hostname, and port must be correctly entered.</li><li>• If the issue persists, try reconnecting to the Ross Activation Server or RPM Licensing Server by re-entering the server details.</li></ul>
No license or feature available	<ul style="list-style-type: none"><li>• Check if the specific feature license (e.g., body tracking) is correctly activated in the Ross Platform Manager. Ensure that the corresponding product key includes the necessary feature.</li><li>• Verify that the correct license type has been selected for the channel (e.g., Head vs. Body + Head).</li><li>• If the feature license is missing, contact Ross Video to purchase the necessary license.</li></ul>
All licenses are in use	<ul style="list-style-type: none"><li>• Review the current usage of licenses to ensure they are not all occupied. Check the status of each Vision[Ai]ry workstation to see which ones are using licenses.</li><li>• If additional licenses are needed, consider purchasing more licenses from Ross Video.</li><li>• To free up a license, disconnect a workstation, or disable a channel that is not in use.</li></ul>
License expired	<ul style="list-style-type: none"><li>• Contact Ross Video to renew or extend the license if it has expired.</li></ul>
Cannot connect to RPM	<ul style="list-style-type: none"><li>• Check the network connection between the Vision[Ai]ry workstation and the RPM server. Ensure the correct IP address and port number are configured.</li><li>• Use the <b>Test connection</b> feature in DashBoard to verify the connection.</li><li>• If there's a firewall, ensure it's not blocking the required ports.</li></ul>
RPM Licensing Server Not Responding	<ul style="list-style-type: none"><li>• Ensure the RPM Licensing Server is powered on and accessible on the network.</li><li>• Restart the RPM server if needed and verify the network configuration.</li><li>• If the problem persists, contact your IT department or Ross Video Technical Support.</li></ul>