Tally Maps

Setup Guide for Tally System Console 2

Overview

A tally map assignment provides a matrix-like interface for associating an input with an output. One axis of the grid represents the input and the other axis represents the output. Clicking on the pin-grid will link an input with an output. The behavior that occurs to the input and output when they are associated can be customized using tally map styles.

In the past, objects were assigned by dragging items from the left-tree view and dropping it into the Description field in the right-window table. Tally maps provide the ability to do exactly the same thing but with greater flexibility and with an intuitive interface.

Initially when the tally map layout is first created, the behavior between inputs and outputs will remain unchanged. The current tally configuration can only be overridden when a crosspoint is assigned in the tally map. Clicking on an already associated I/O crosspoint will remove the association. The behaviors for the input and output will revert back to the way they were originally.

Generally, the two axis of a tally map will represent an input and output. In some scenarios, they can be different (e.g. external GPI input, and source).

Some of the different types of tally maps that can be created:

- External GPI Input to Source
- Source/Destination to GPI Output
- Source/Destination to UMD Display
- Source to Control Room (Camera delegation)
- GPI Input to GPI Output (GPIO map)
- Router control

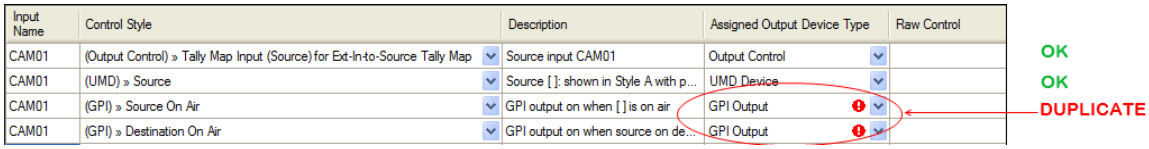
General Setup Procedure

1. Create a new tally map layout (Plant **Layout > Tally Maps**)

2. Open new tally map input table for the newly created tally map (**Plant Layout > Tally Map Inputs**)

3. Define all the inputs for the tally map. Input names do not have to be unique but the associated Output Device Type must be unique.

   For example,

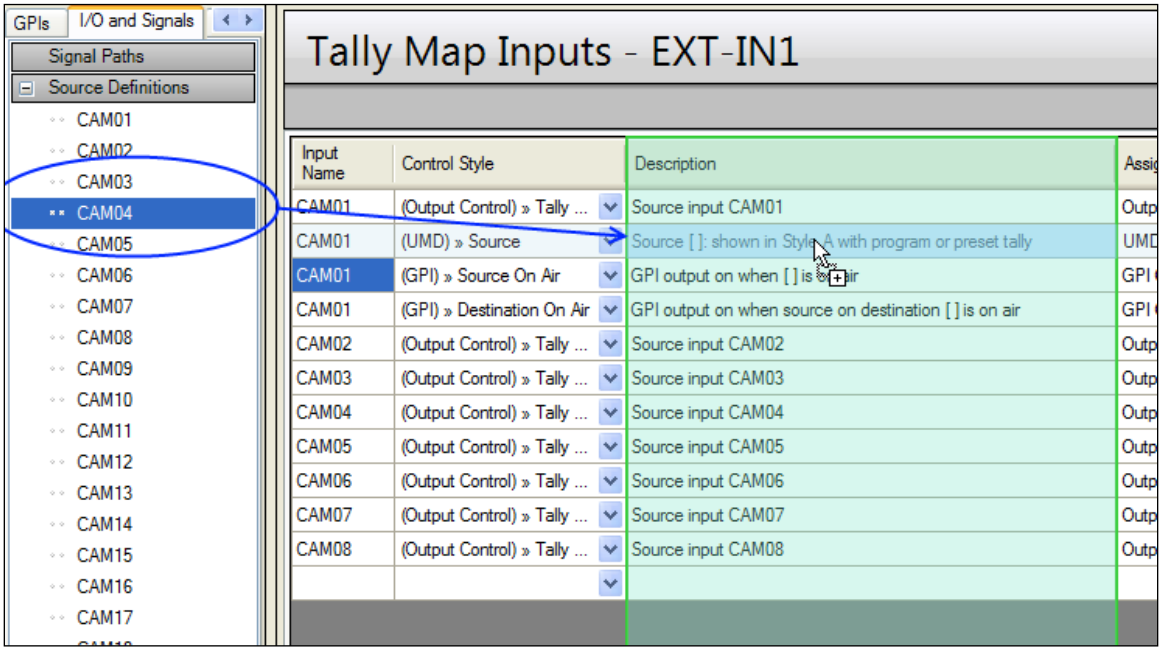


   What this represents is that input CAM-1 can be associated with one or more different output device. Each tally map input entry can be assigned different behaviors/styles for the input parameter and output device.

4. Assign an appropriate output device type from the drop down. Make sure there are no duplicate device types for the same input name.

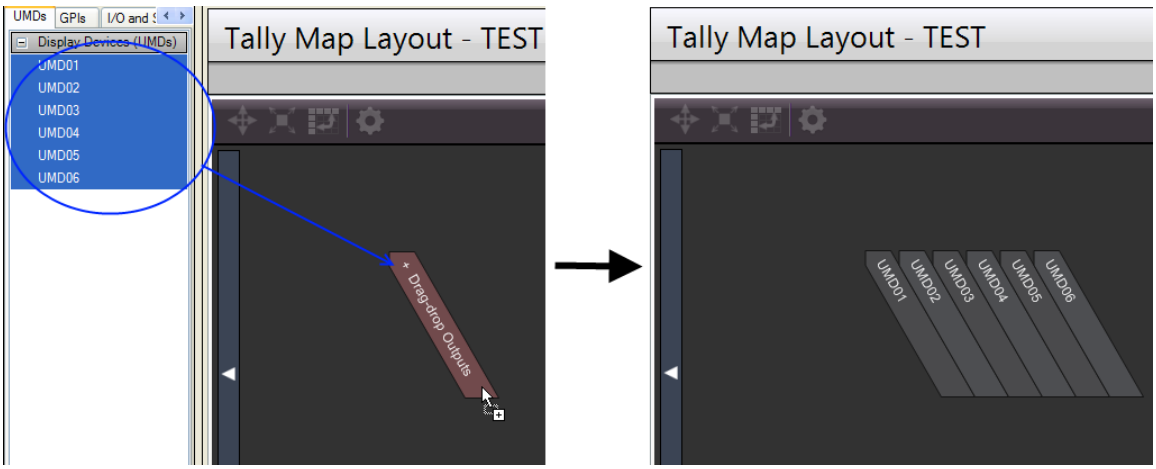
5. Assign the input control style you wish to use.

6. If necessary (depending on the control style), you may need to drag-and-drop an item from the left-tree view to the Description field of the tally map input.



7. Once the tally map input table is complete, view the tally map (Plant **Layout > Tally Maps > View**). All inputs that were created in the tally map input table should be visible.

8. Assign the corresponding output devices into the tally map by dragging-and-dropping from the left-tree view to the "+ Drag-drop Outputs" marker. The selected outputs should now appear in the tally map.



9. Expand the Tally Map Profile slider by clicking on the slim rectangle to the left of the tally map. Set the tally map output style that will be used in accordance to each of the output device types that are in the tally map. Minimize the slider when complete.

10. Some output device entries may need to have the Tally Areas selected first for the tally map assignment to correctly work. The Tally Areas can be set in the UMD Display Devices, GPI Outputs, RCP LED Outputs, and Destination Definitions editor tables.

Create Tally Map Layout:
External GPI Inputs to Sources

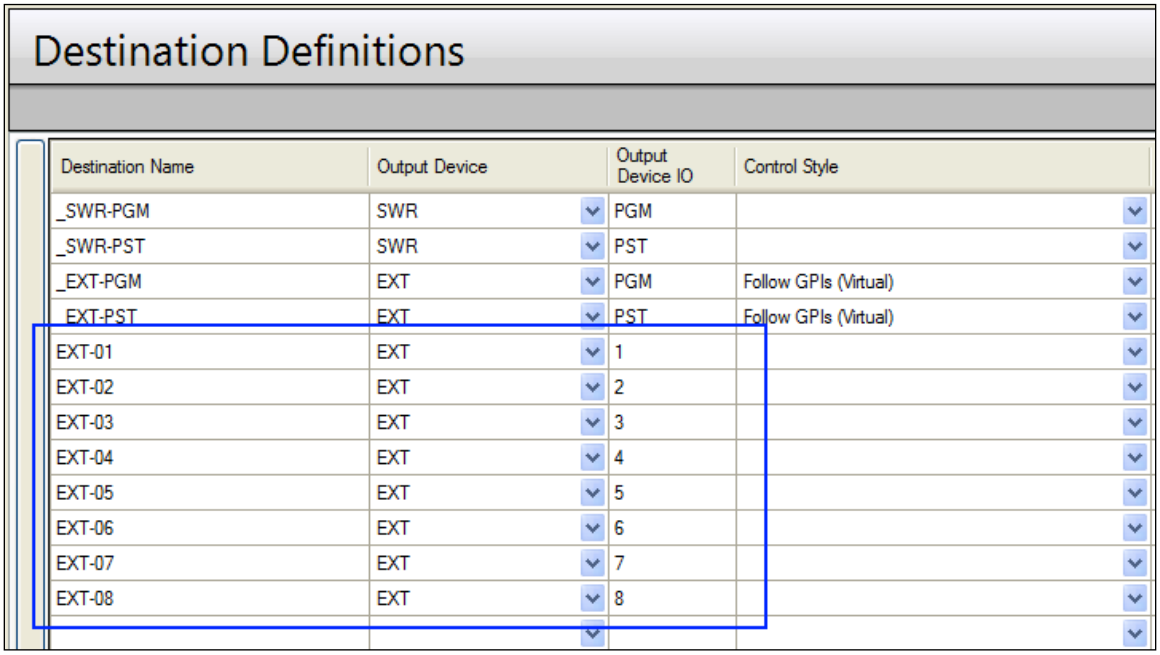
Assigns a set of GPI inputs to individual sources (e.g. cameras).

Pre-requisites

- Routers / Switches must already be defined. One or more sources in I/O and Signals > Source Definitions should exist.
- GPIO ports should be defined under Hardware > Parallel Interface Ports.
- Individual GPIO devices should be defined under GPIs > Parallel Interface Devices.

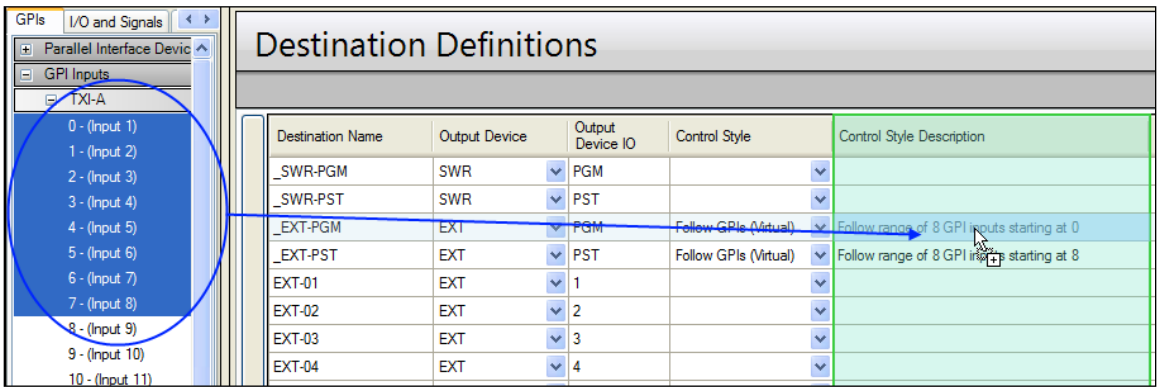
Tally Map Layout Setup Procedure

- Under **Hardware > Comm Port Setup > Production & M/C Switchers**, create a port name for an external switcher (e.g. EXT). Select "External Virtual Switcher" in the Protocol dropdown.
- Under **I/O and Signals > Destination Definitions**, create a destination for each external GPI input. The name assigned can be associated with the GPI input (e.g. EXT-01). Set the output device to the external switcher and the output device IO. Note that the device IO should start from 1 for the first external GPI input and increment by 1 for each GPI input thereafter. GPI Inputs must be in consecutive order for this to work.



- The Destination Definitions table should already contain the entries _EXT-PGM and _EXT-PST (or _[*your switcher device name*]-PGM/PST).

  To monitor sources for on-air tallies, set the Control Style for _EXT-PGM to "Follow GPIs (Virtual)". In the left-tree view, select GPIs tab and click on the '+' beside GPI Inputs to expand the list – the available parallel I/O units should be visible. Then click on the '+' beside the parallel I/O unit which will be monitoring the external GPI inputs to expand the GPI inputs list. Select one or more GPI inputs in the left-tree view. Drag-and-drop the selection into the Control Style Description area for _EXT-PGM. Choose "Assign as parameters to single row only" when the sub-menu appears.



Similarly for monitoring sources for next-to-air tallies, set the Control Style for _EXT-PST to "Follow GPIs (Virtual)". Repeat the steps as described for monitoring sources for on-air tallies except drag-and-drop the GPI Inputs selection into the Control Style Description area for _EXT-PST. Also choose

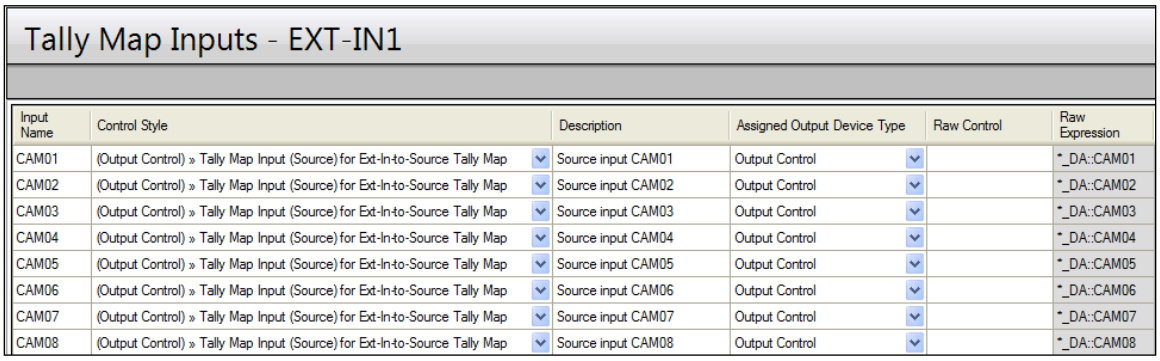
"Assign as parameters to single row only" when the sub-menu appears.

Note the change to the description field once the GPI inputs have been dragged-and-dropped.

- Under **Plant Layout > Tally Maps**, create a new tally map layout.

- Click on the '+' beside **Plant Layout > Tally Map Inputs**. The tally map that was just created should be visible. Click on the tally map name to view the Tally Map Inputs table in the editor window.

- In the Tally Map Inputs table, create an entry for each source. Set the Control Style to "(Output Control) >> Tally Map Input (Source) for Ext-In-to-Source Tally Map"



Tally Map Inputs - EXT-IN1

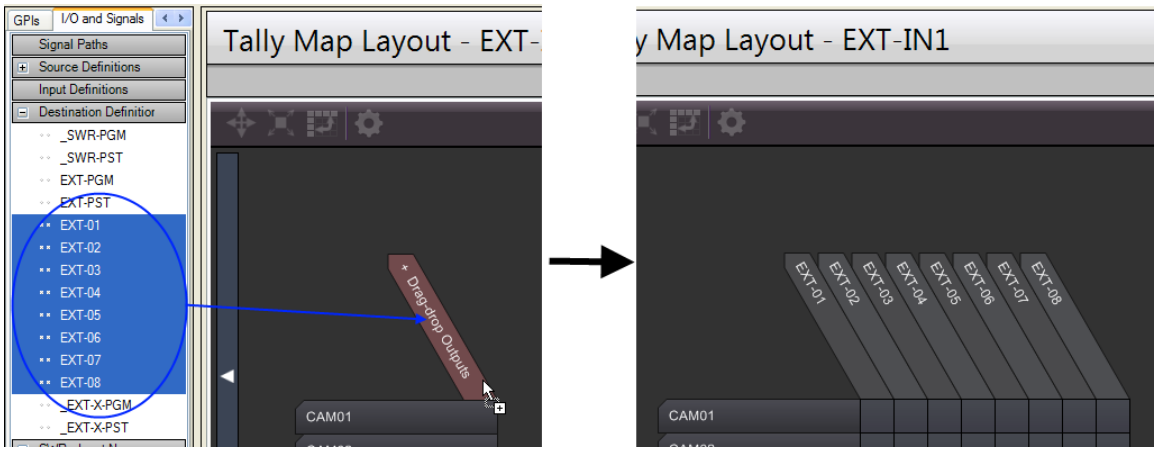
Input Name	Control Style	Description	Assigned Output Device Type	Raw Control	Raw Expression
CAM01	(Output Control) » Tally Map Input (Source) for Ext-In-to-Source Tally Map	Source input CAM01	Output Control		*_DA::CAM01
CAM02	(Output Control) » Tally Map Input (Source) for Ext-In-to-Source Tally Map	Source input CAM02	Output Control		*_DA::CAM02
CAM03	(Output Control) » Tally Map Input (Source) for Ext-In-to-Source Tally Map	Source input CAM03	Output Control		*_DA::CAM03
CAM04	(Output Control) » Tally Map Input (Source) for Ext-In-to-Source Tally Map	Source input CAM04	Output Control		*_DA::CAM04
CAM05	(Output Control) » Tally Map Input (Source) for Ext-In-to-Source Tally Map	Source input CAM05	Output Control		*_DA::CAM05
CAM06	(Output Control) » Tally Map Input (Source) for Ext-In-to-Source Tally Map	Source input CAM06	Output Control		*_DA::CAM06
CAM07	(Output Control) » Tally Map Input (Source) for Ext-In-to-Source Tally Map	Source input CAM07	Output Control		*_DA::CAM07
CAM08	(Output Control) » Tally Map Input (Source) for Ext-In-to-Source Tally Map	Source input CAM08	Output Control		*_DA::CAM08

- In the left-tree view, select I/O and Signals and click on the '+' beside Source Definitions to reveal the list of available sources. Drag-and-drop a source from the list into the Description field within the Tally Map Inputs table. Note the change to the Description field which should now show the dropped in source name.

- Ensure that "Output Control" is selected under Assigned Output Device Type.

- View the tally map layout by going to Plant Layouts > Tally Maps and clicking on the tally map entry. All inputs that were created in the tally map input table should be visible.

- In the left-tree view, select I/O and Signals and click on the '+' beside Destination Definitions to reveal the list of available external GPI inputs. Select the external GPI inputs from the left-tree and drag-and-drop them onto the "+ Drag-drop Outputs" marker in the tally map layout. The selected outputs should now appear in the tally map.



- Click on the rectangular button on the left of the layout to set the Tally Map Profile settings.

Tally Map Profile Settings

Output Controls: (Tally Map) External GPI to Source Assignment

Create Tally Map Layout:
Source/Destination to GPI Output

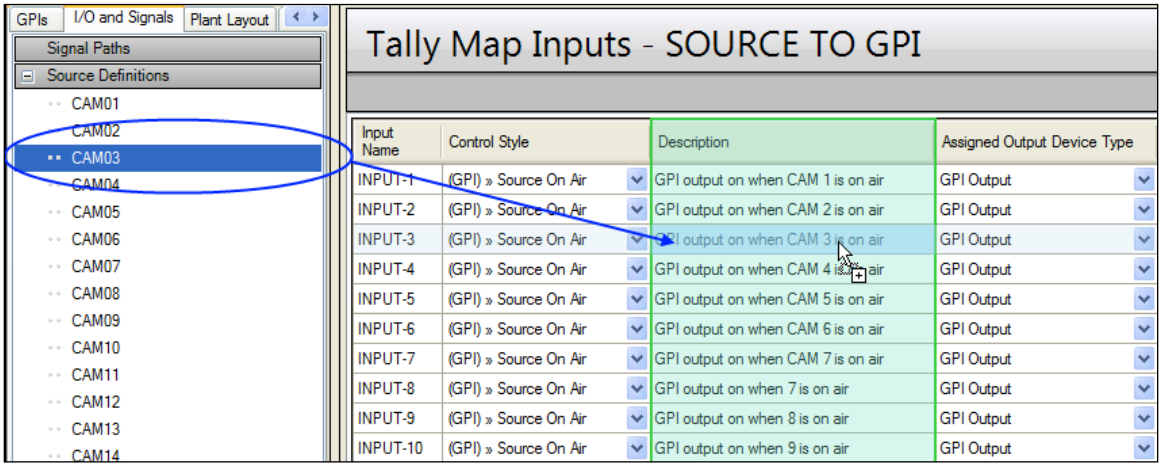
Assign sources or destinations to GPI outputs. GPI outputs can be triggered when certain conditions for sources/destinations are met (source goes on-air, next-to-air, etc…).

Pre-requisites

- Routers / Switches must already be defined. One or more sources in **I/O and Signals > Source Definitions** or destinations in **I/O and Signals > Destination Definitions** should exist.
- GPIO ports should be defined under **Hardware > Parallel Interface Ports**.
- Individual GPIO devices should be defined under **GPIs > Parallel Interface Devices**.

Tally Map Layout Setup Procedure

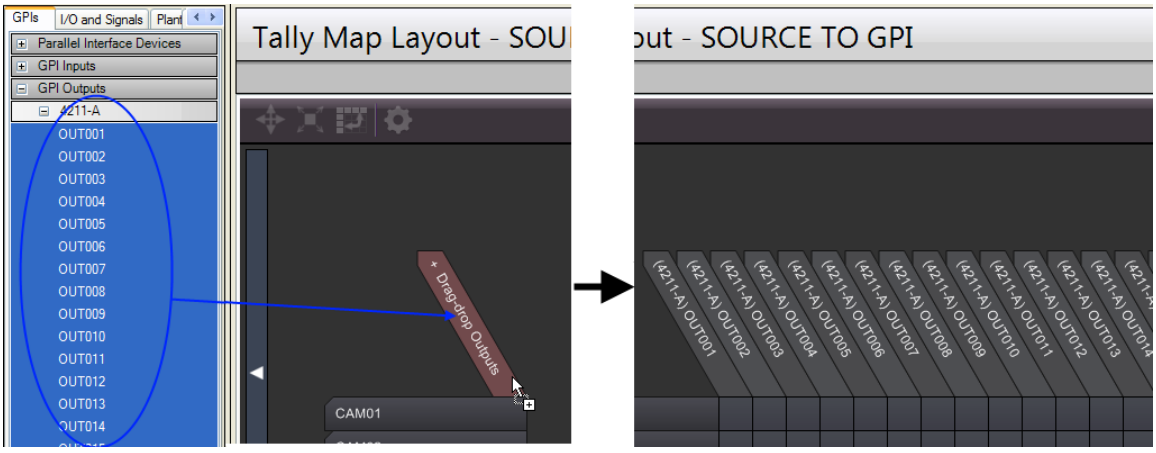
- Under **Plant Layout > Tally Maps**, create a new tally map layout.
- Click on the '+' beside Plant **Layout > Tally Map Inputs**. The tally map that was just created should be visible. Click on the tally map name to view the Tally Map Inputs table in the editor window.
- In the Tally Map Inputs table, create an entry for each source/destination. Set the Control Style to "(GPI) >> Source On Air". Other possible control styles can be set according to requirements (e.g. (GPI) >> Destination On Air, (GPI) >> Source Next to Air…etc…). Ensure that the Assigned Output Device Type is set for "GPI Output"
- Drag and drop the required source/destination into the Description field to complete the tally map input entry. This can be done by clicking on I/O and Signals and then clicking on the '+' beside Source Definitions (or Destination Definitions) in the left-tree view to expand the tree list. Select the sources/destinations in the left-tree and drag-and-drop them into the Description field in the editor view.



- View the tally map layout by going to **Plant Layouts > Tally Maps** and clicking on the tally map entry. All inputs that were created in the tally map input table should be visible.

- In the left-tree view, select GPIs and click on the '+' beside GPI Outputs to expand the list of available GPI output devices.

- Click on the '+' beside the GPI output device that contains the GPI outputs that will be associated with the source/destination. A list of GPI outputs should be visible in the left-tree view. Select one or more GPI outputs from the left-tree and drag-and-drop them onto the "+ Drag-drop Outputs" marker in the tally map layout. The selected outputs should now appear in the tally map.



- Click on the rectangular button on the left of the layout to set the Tally Map Profile settings.

Tally Map Profile Settings

GPI Outputs: (Tally Map) GPI Single

Use when checking a single source/destination to determine if GPI output should be triggered. (e.g. GPI output on when CAM-01 is on-air)

GPI Outputs: (Tally Map) GPI OR

Use when checking OR condition of sources/destinations to determine if GPI output should be triggered. Up to 10 sources/destinations can be assigned to a single GPI output. (e.g. GPI output on when CAM-01 OR CAM-02 OR CAM-03 are on-air)

GPI Outputs: (Tally Map) GPI AND

Use when checking AND condition of sources/destinations to determine if GPI output should be triggered. Up to 10 sources/destinations can be assigned to a single GPI output. (e.g. GPI output on when CAM-01 AND CAM-02 AND CAM-03 are on-air)

Create Tally Map Layout:
Source/Destination to UMD Display

Assign sources or destinations to UMD display. A UMD display can tally a source/destination when certain conditions for sources/destinations are met (source goes on-air, next-to-air, etc…).

Pre-requisites

- Routers / Switches must already be defined. One or more sources **in I/O and Signals > Source Definitions** or destinations in **I/O and Signals > Destination Definitions** should exist.

- UMD ports should be defined under **Hardware > Comm Port Setup > Displays**.

- Individual UMD displays should be defined under UMDs **> Display Devices**.

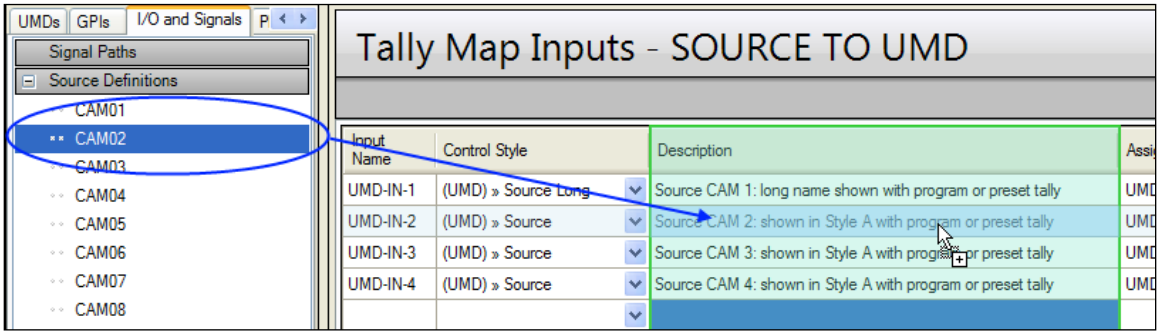
Tally Map Layout Setup Procedure

- Under **Plant Layout > Tally Maps**, create a new tally map layout.

- Click on the '+' beside **Plant Layout > Tally Map Inputs**. The tally map that was just created should be visible. Click on the tally map name to view the Tally Map Inputs table in the editor window.

- In the Tally Map Inputs table, create an entry for each source/destination. Set the Control Style to "(UMD) >> Source". Other possible control styles can be set according to requirements (e.g. (UMD) >> Destination, (UMD) >> Dest:Source …etc…). Ensure that the Assigned Output Device Type is set for "UMD Device"

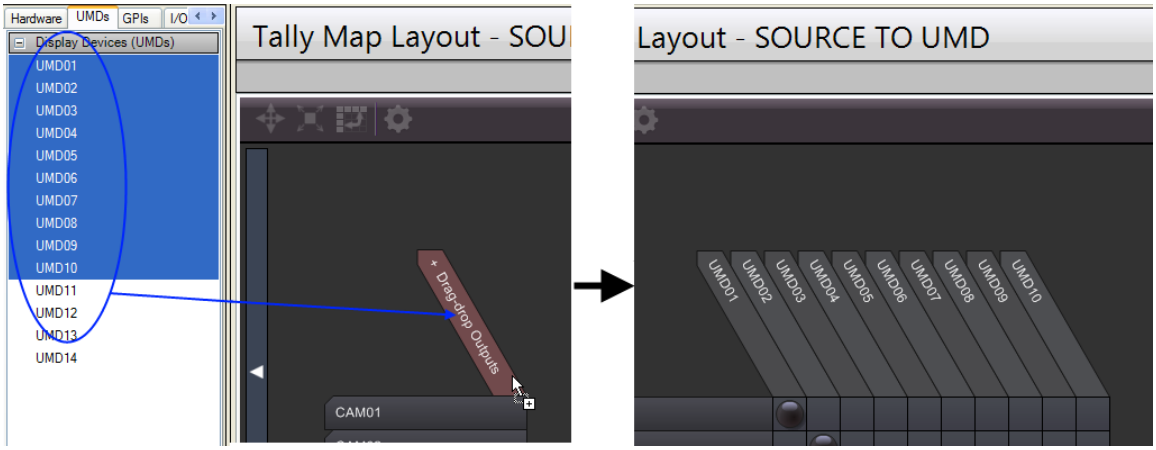
- Drag and drop the required source/destination into the Description field to complete the tally map input entry. This can be done by clicking on I/O and Signals and then clicking on the '+' beside Source Definitions (or Destination Definitions) in the left-tree view to expand the tree list. Select the sources/destinations in the left-tree and drag-and-drop them into the Description field in the editor view.



- View the tally map layout by going to **Plant Layouts > Tally Maps** and clicking on the tally map entry. All inputs that were created in the tally map input table should be visible.

- In the left-tree view, select UMDs and click on the '+' beside Display Devices (UMDs) to expand the list of available UMD output devices.

- Select one or more UMD display from the left-tree and drag-and-drop them onto the "+ Drag-drop Outputs" marker in the tally map layout. The selected outputs should now appear in the tally map.



- Click on the rectangular button on the left of the layout to set the Tally Map Profile settings.

Tally Map Profile Settings

UMDs: (Tally Map) UMD Single

Tally a single source/destination on the UMD display.

UMDs: (Tally Map) UMD Dual

Tally up to two sources/destinations on the UMD display.

UMDs: (Tally Map) UMD Triple

Tally up to three sources/destinations on the UMD display.

Create Tally Map Layout:
GPI Input/Output Map

Maps GPI inputs to GPI outputs or RCP LED outputs.

Pre-requisites

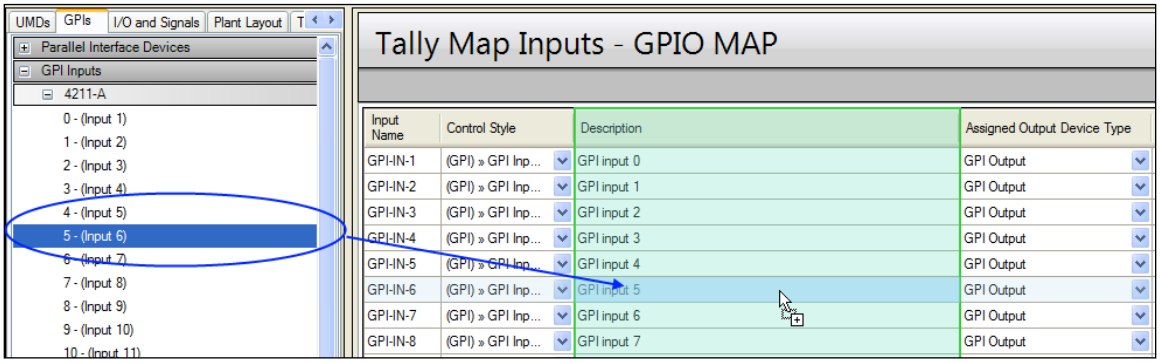
- GPIO ports should be defined under **Hardware > Parallel Interface Ports**.
- Individual GPIO devices should be defined under **GPIs > Parallel Interface Devices**.

Tally Map Layout Setup Procedure

- Under **Plant Layout > Tally Maps**, create a new tally map layout.
- Click on the '+' beside **Plant Layout > Tally Map Inputs**. The tally map that was just created should be visible. Click on the tally map name to view the Tally Map Inputs table in the editor window.
- In the Tally Map Inputs table, create an entry for each GPI input.

  If the output is a GPI output, set the Control Style to "(GPI) >> GPI Input Number for GPO Tally Map" and Assigned Output Device Type to "GPI Output".

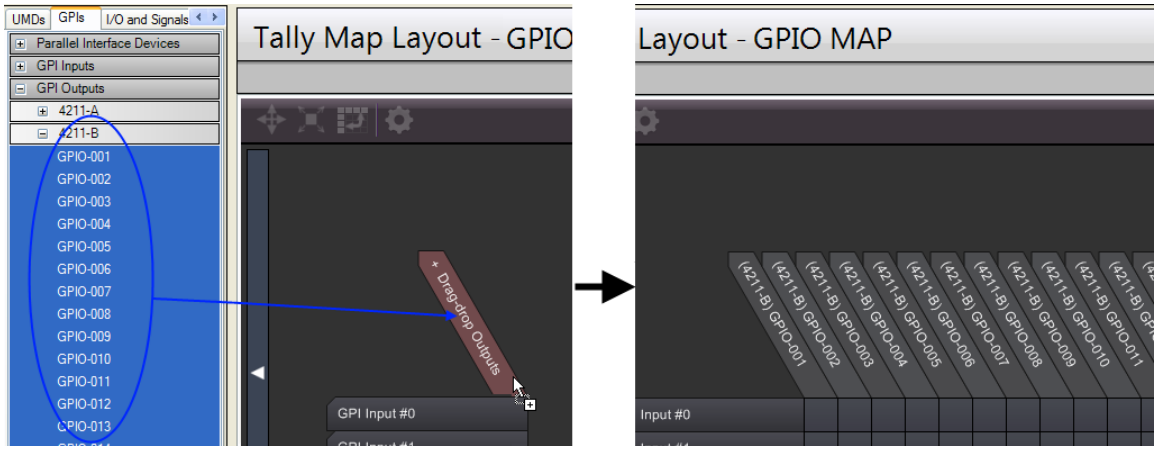
  If the output is an RCP LED output, set the Control Style to "(RCP LED) >> GPI Input Number for RCP LED Tally Map" and Assigned Output Device Type to "RCP LED Output".
- Drag and drop the required GPI input into the Description field to complete the tally map input entry. This can be done by clicking on the '+' beside **GPIs > GPI Inputs**. An expanded list of GPI inputs will be visible after clicking on the '+' beside the corresponding GPIO device shown in the left-tree view. Select the GPI inputs in the left-tree and drag-and-drop them into the Description field in the editor view.



- View the tally map layout by going to **Plant Layouts > Tally Maps** and clicking on the tally map entry. All inputs that were created in the tally map input table should be visible.

- In the left-tree view, select GPIs. Click on the '+' beside GPI Outputs to expand list of available GPI output devices. Click on the '+' beside the corresponding GPIO device containing the GPI/RCP LED outputs.

- Select one or more outputs from the left-tree and drag-and-drop them onto the "+ Drag-drop Outputs" marker in the tally map layout. The selected outputs should now appear in the tally map.



- Click on the rectangular button on the left of the layout to set the Tally Map Profile settings.

Tally Map Profile Settings

GPI Outputs: (Tally Map) GPI Single

GPI output will be triggered when a single GPI input is on.

GPI Outputs: (Tally Map) GPI OR

Use when checking OR condition of GPI inputs to determine if GPI output should be triggered. Up to 10 GPI inputs can be assigned to a single GPI output. (e.g. GPI output on when GPI inputs 1, 2, or 5 are on)

GPI Outputs: (Tally Map) GPI AND

Use when checking AND condition of GPI inputs to determine if GPI output should be triggered. Up to 10 GPI inputs can be assigned to a single GPI output. (e.g. GPI output on when GPI inputs 1, 3, AND 4 are on)

Create Tally Map Layout:
Camera Delegation

Assign sources (cameras) to control rooms.

Pre-requisites

- RCP-CamDlg library must be loaded into the configuration. Virtual router DLG_CAM should then be defined by the library.

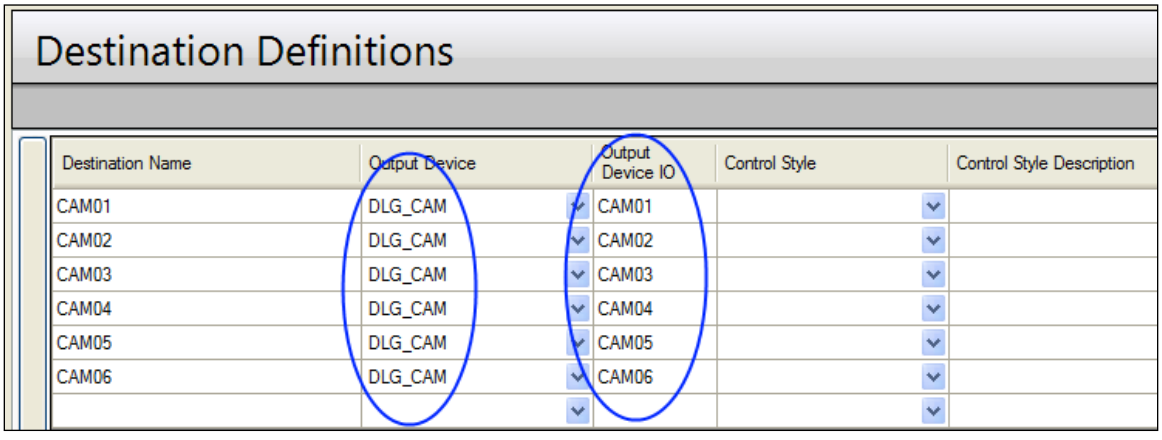
- Routers / Switches must already be defined. One or more camera sources in **I/O and Signals > Source Definitions** should exist.

- Control rooms should be defined as tally areas under **Tally Areas > Multiple Control Rooms**. A PGM and PST tally type entry should exist for each tally area.

Tally Map Layout Setup Procedure

- Select **I/O and Signals > Destination Definitions**. Destination entries where the Output Device is DLG_CAM and the Output Device IO is the source name should be created if they do not already exist.

  If they do not exist, create a destination name having the same name as the source. Set the Output Device to DLG_CAM. Set the Output Device IO to have the same name as the source.

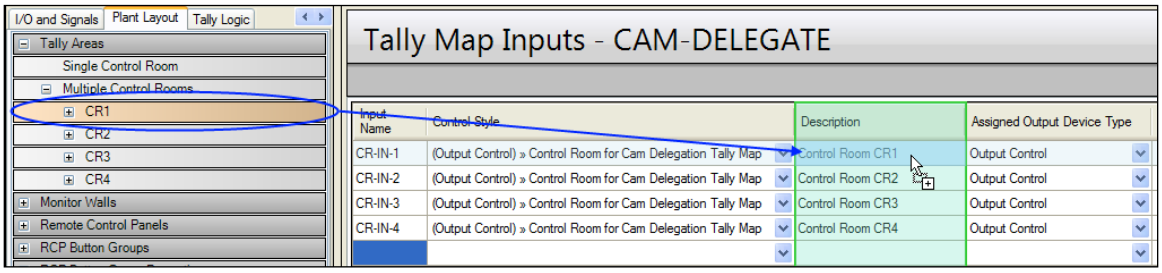


- Under **Plant Layout > Tally Maps**, create a new tally map layout.

- Click on the '+' beside **Plant Layout > Tally Map Inputs**. The tally map that was just created should be visible. Click on the tally map name to view the Tally Map Inputs table in the editor window.

- In the Tally Map Inputs table, create an entry for each control room. Set the Control Style to "(Output Control) >> Control Room for Cam Delegation Tally Map". Ensure that the Assigned Output Device Type is set for "Output Control"

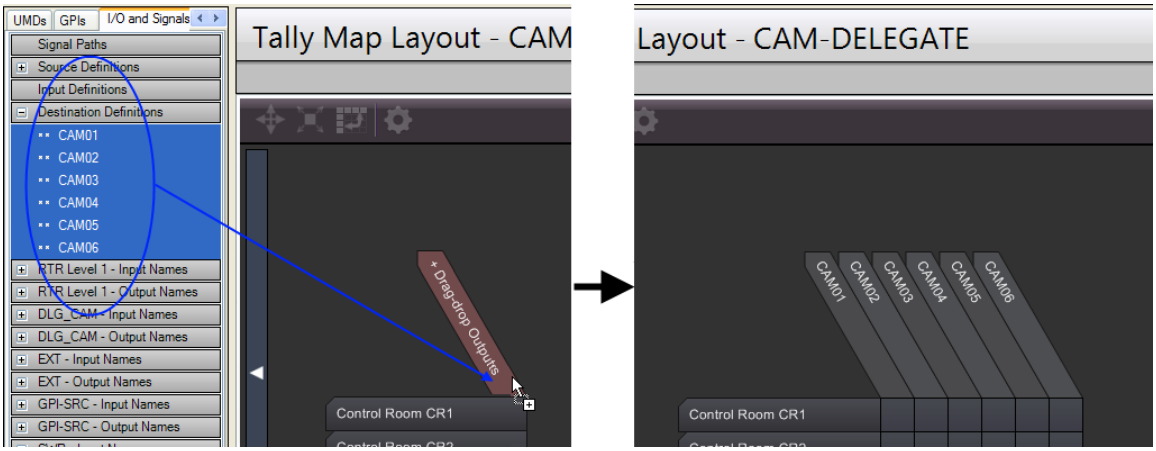
- Drag and drop the required control room into the Description field to complete the tally map input entry. This can be done by clicking on Plant Layout > Tally Areas and then clicking on the '+' beside Multiple Control Rooms in the left-tree view to expand the tree list. Select each control room in the left-tree and drag-and-drop them into the Description field in the editor view.



- View the tally map layout by going to **Plant Layouts > Tally Maps** and clicking on the tally map entry. All inputs that were created in the tally map input table should be visible.

- In the left-tree view, select I/O and Signals. Click on the '+' beside Destination Definitions to expand list of available destinations.

- Select one or more destinations from the left-tree and drag-and-drop them onto the "+ Drag-drop Outputs" marker in the tally map layout. The selected outputs should now appear in the tally map.



- Click on the rectangular button on the left of the layout to set the Tally Map Profile settings.

Tally Map Profile Settings

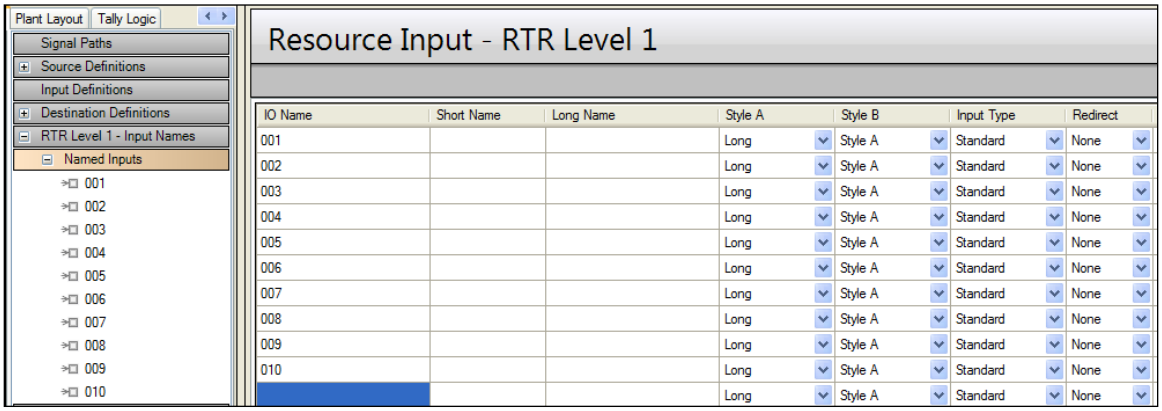
Output Controls: (Tally Map) Cam Delegation

Create Tally Map Layout:
Router Control

Perform a TAKE on a router.

Pre-requisites

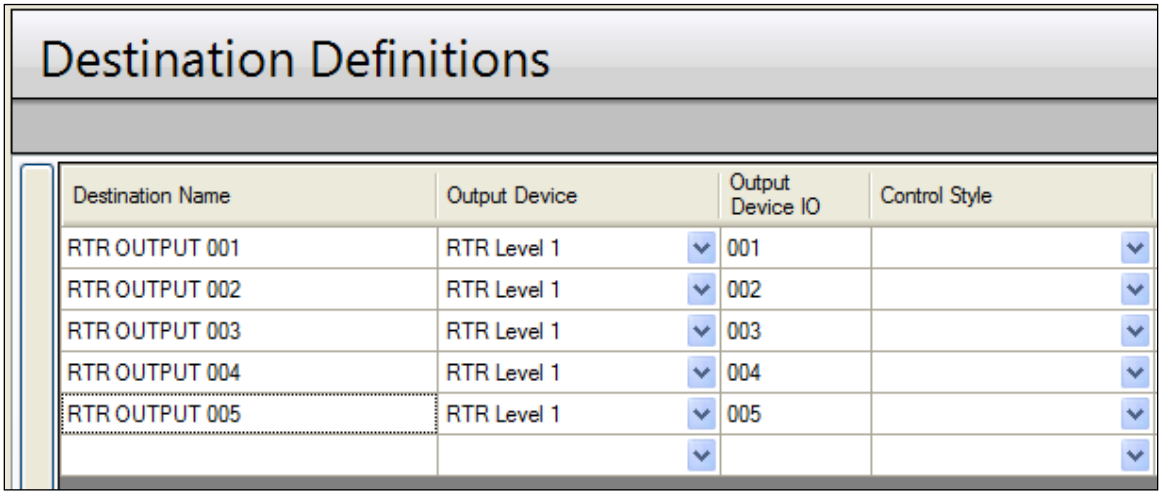
- Router must already be defined. One or more router inputs should be defined in under **I/O and Signals > (*Router Name*) – Input Names > Named Inputs**. Short/Long names can be assigned in the Named Inputs table which will later on be visible in the tally map layout



Tally Map Layout Setup Procedure

- Select **I/O and Signals > Destination Definitions**. Destination entries where the Output Device is the router name (usually RTR) and the Output Device IO is the router output should be created if they do not already exist.

  If they do not exist, create a destination name for the router output. Set the Output Device to the router name (usually RTR). Set the Output Device IO to be the router output.

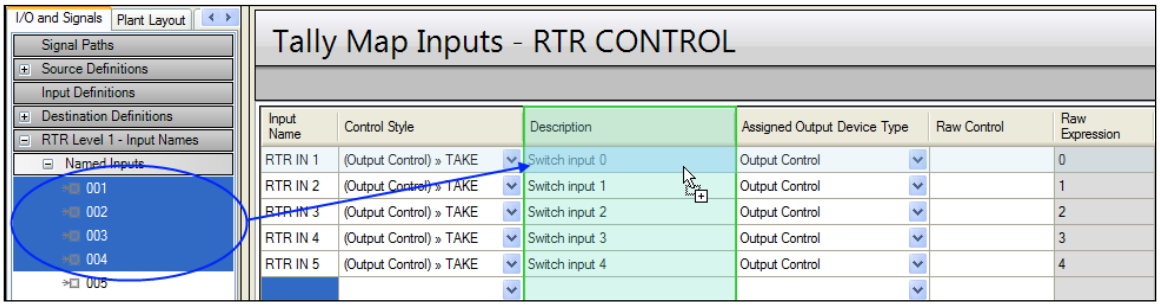


- Under **Plant Layout > Tally Maps**, create a new tally map layout.

- Click on the '+' beside **Plant Layout > Tally Map Inputs**. The tally map that was just created should be visible. Click on the tally map name to view the Tally Map Inputs table in the editor window.

- In the Tally Map Inputs table, create an entry for each router input. Set the Control Style to "(Output Control) >> TAKE". Ensure that the Assigned Output Device Type is set for "Output Control"

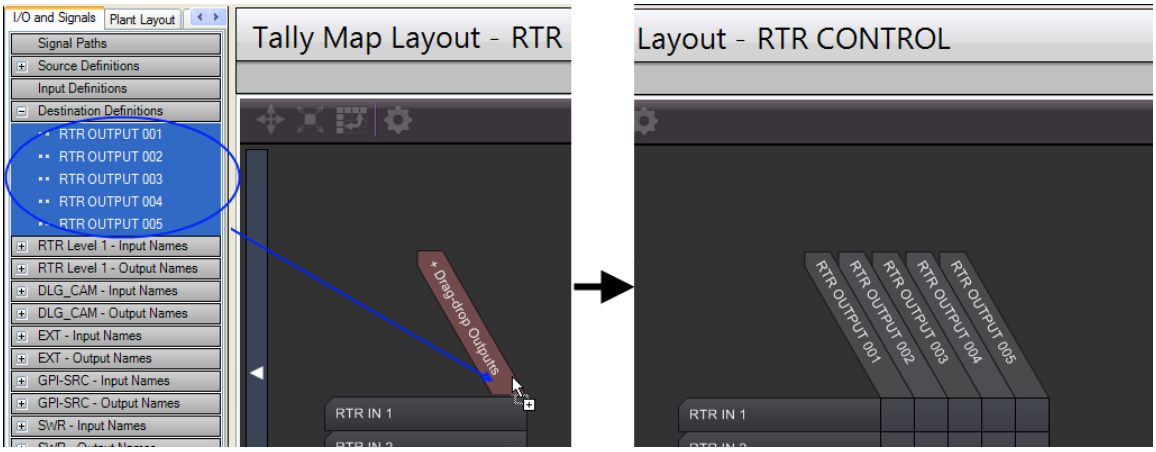
- Click on the '+' for **I/O and Signals > (*Router Name*) – Input Names > Named Inputs** to expand the list of available router inputs. Select each router input in the left-tree and drag-and-drop them into the Description field in the editor view.



- View the tally map layout by going to **Plant Layouts > Tally Maps** and clicking on the tally map entry. All inputs that were created in the tally map input table should be visible.

- In the left-tree view, select I/O and Signals. Click on the '+' beside Destination Definitions to expand list of available destinations.

- Select one or more destinations from the left-tree and drag-and-drop them onto the "+ Drag-drop Outputs" marker in the tally map layout. The selected outputs should now appear in the tally map.



- Click on the rectangular button on the left of the layout to set the Tally Map Profile settings.

Tally Map Profile Settings

Output Controls: (Tally Map) TAKE Single In

Allow only one router input to be selected for a router output.

Output Controls: (Tally Map) TAKE Multiple In

Allow one or more router inputs to be selected for a router output. Up to 10 router inputs can be assigned to a single router output.

Changing Tally Map Axis Labels

The output axis labeling reflects the name of each output device. To change the name shown in the output axis label, the output device name must also be modified.

Items on the input axis (the tally map inputs) can display 4 different possible labels:

- **Input Name (default)** – Use the name specified in the Tally Map Inputs table
- **User-Defined Label for UMDs** – Use the labeling style defined for UMDs. The labeling style is defined in **Tally Logic > UMD Control Expressions** under the Tally Mapper Input Label column
- **User-Defined Label for GPI Outputs** – Use the labeling style defined for GPI outputs. The labeling style is defined in **Tally Logic > GPI Control Expressions** under the Tally Mapper Input Label column
- **User-Defined Label for RCP LED Outputs** – Use the labeling style defined for LED outputs. The labeling style is defined in **Tally Logic > LED Control Expressions** under the Tally Mapper Input Label column
- **User-Defined Label for Output Controls** – Use the labeling style defined for output controls (e.g. Destinations). The labeling style is defined in Tally **Logic > Crosspoint Control Expressions** under the Tally Mapper Input Label column

By default the Input Name type is used when the tally map is first created but a custom user-defined label can be selected. Each of the 4 main output types: UMDs, GPI Outputs, RCP LED Outputs, and Output Controls can have their own unique labeling style.

Custom Labeling Styles

Under the UMD Control Expression, GPI Control Expressions, LED Control Expressions, and Output Control Expressions tables, a custom tally map input labeling style can be assigned.

An input labeling style can make use of the internal drag-and-drop parameter tags to display dynamic information. Refer to Drag-and-Drop Parameters for further information.

Examples of valid labels:

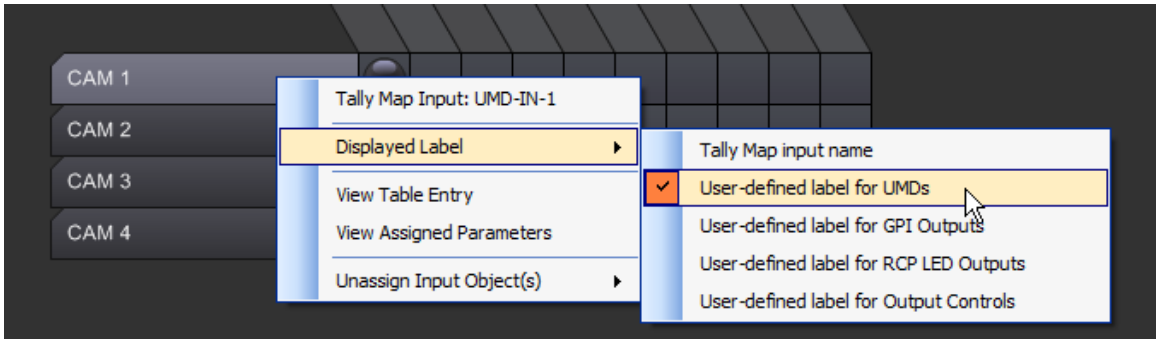
Custom Label	Displayed on Tally Map Axis
Source is <P1.ioname>	Source is CAM01
Control Room <P1.name,,?>	Control Room CR-1

In the examples, parameter P1 is used as a placeholder for the objects used in the tally map input table. A custom label can only use parameters that have been defined by a tally map input. In general parameter placeholders are prefixed with a leading 'P' followed by a number (incrementing by one for each new parameter).

Changing the Displayed Label

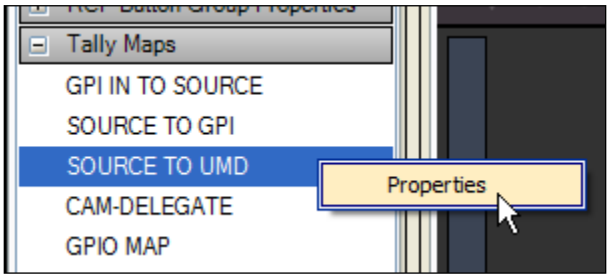
Modifying the Input Label for a Single Input Item

In the Tally Map Layout view, right-click the input that you want to change. In the sub-menu, select Displayed Label, followed by the labeling style that you want.



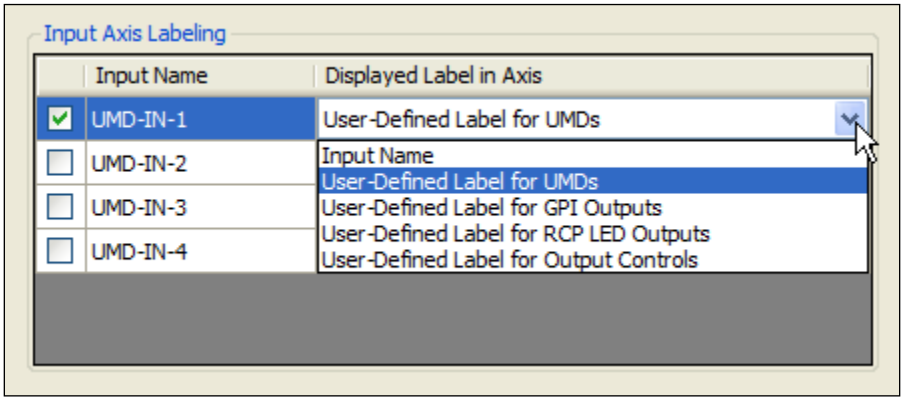
Modifying the Input Label for Many Input Items

A faster method to change the labels for many input items can be done through the Tally Map Properties window. In the left-tree view, expand the list of available tally maps by clicking on the '+' beside **Plant Layout > Tally Maps**. Right-click the tally map layout name in the left-tree view and select Properties.

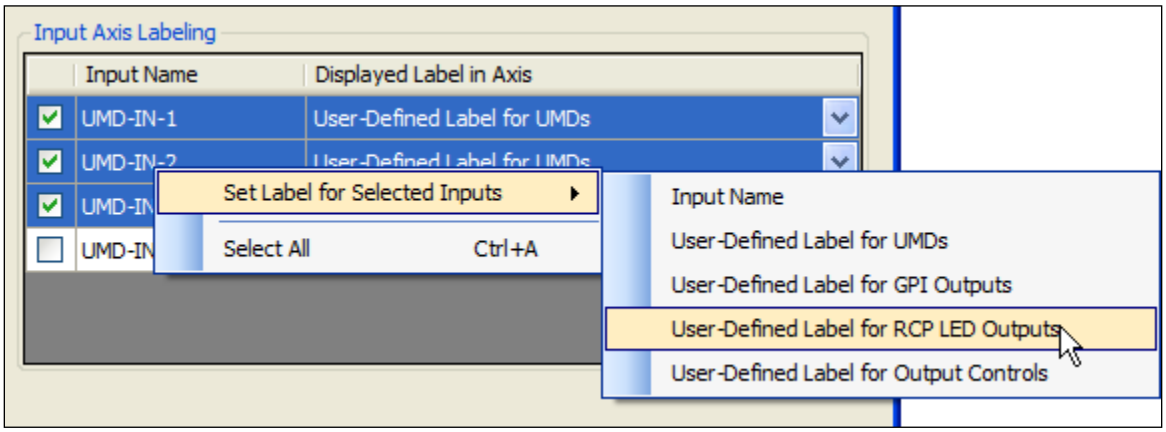


The Tally Map Properties window should appear. In this window you will have the ability to change the input and output axis font, flip the axis, and selectively assign the input labeling style for each input.

Each individual input item can have its Displayed Label in Axis style modified by clicking on the drop-down and selecting a new style as follows:



The input labeling style for more than one input item can be applied altogether. This is done by first selecting one or more input items. Afterwards, right-click the selection and choose Set Label for Selected Inputs. Select which labeling style to apply.



Appendix: Parameter Assignment Information

Each tally map input entry is associated with an input style. The generated input style expression will then be used as a parameter passed into the output device style when an input-output assignment is made in the tally map layout.

For example:

Creating this tally map input:

INPUT NAME	Style	Output Device	Raw Expression
CAM-1	UMD > Source	UMD Device	sv(!S,"*_DA::CAM01")sv(!FMT,FMTA)fn([ ]SRC)
CAM-1	GPI > Source On Air	GPI Output	tlya("*_DA::CAM01",[ ],[ ])

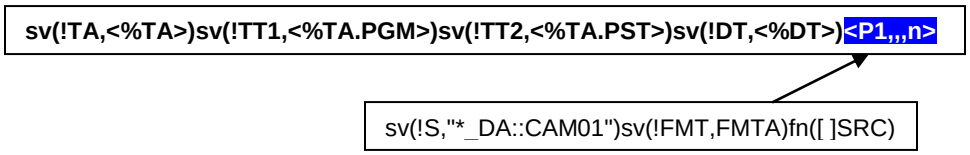
With the assigned tally map profile:

Output Device: UMDs
Style: (Tally Map) UMD Single
Style Expression: **sv(!TA,<%TA>)sv(!TT1,<%TA.PGM>)sv(!TT2,<%TA.PST>)sv(!DT,<%DT>)<P1,,,n>**

Output Device: GPI Outputs
Style: (Tally Map) GPI OR Style
Style Expression:
sv(!X,<P1,,,n><P2,,,n><P3,,,n><P4,,,n><P5,,,n><P6,,,n><P7,,,n><P8,,,n><P9,,,n><P10,,,n>)if(len(v(!X)),if(pos(1,v(!X),1),1,0),0)

Will generate an output expression that combines the evaluated result from the input expression. The input expression will be assigned to the output expression parameters:

Output Style for UMDs:



Output Style for GPI Outputs: