

Lorby “Axis And Ohs” VRI MCP Combo II Bridge

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<http://axisandohs.weebly.com>

This bridge program can be used in two modes:

1. Plugin mode

Copy the exe and dll to

\Documents\LorbyAxisAndOhs Files\Plugins\VriBridge

AAO will detect the Bridge and start it automatically when you connect to the sim. The bridge GUI can be accessed by clicking on the icon in the Windows task bar.

2. WebAPI mode

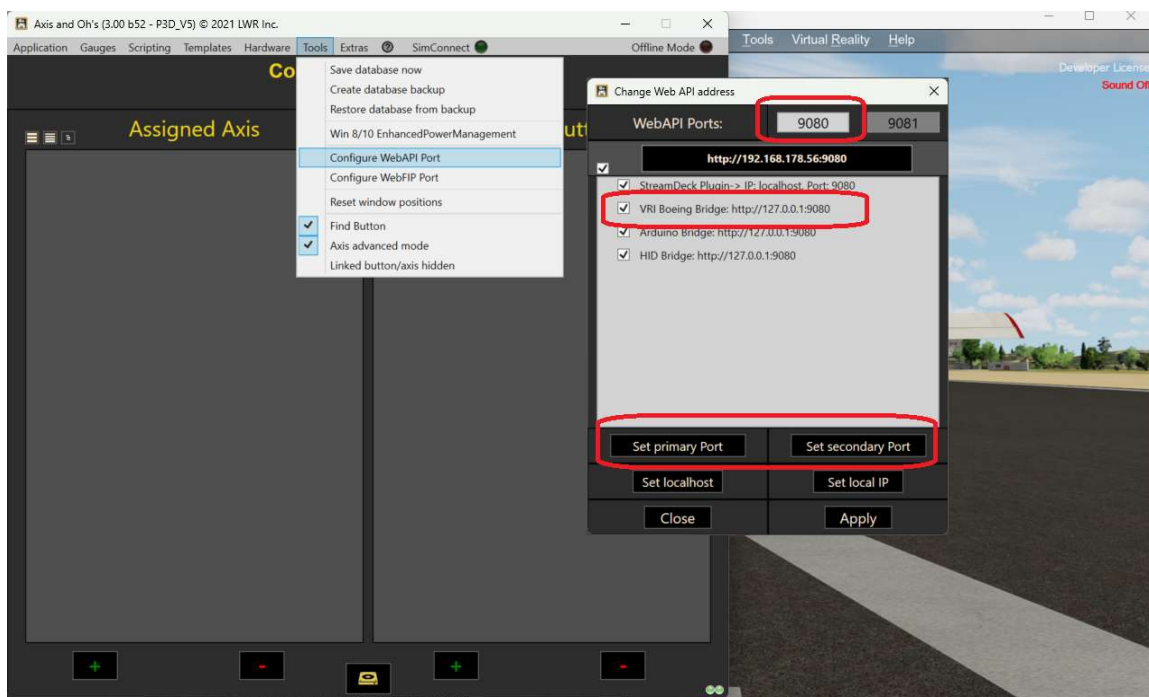
Copy the exe and dll to a location of your choosing. Doubleclick the exe to start the Bridge.

Make sure to activate the WebAPI first:

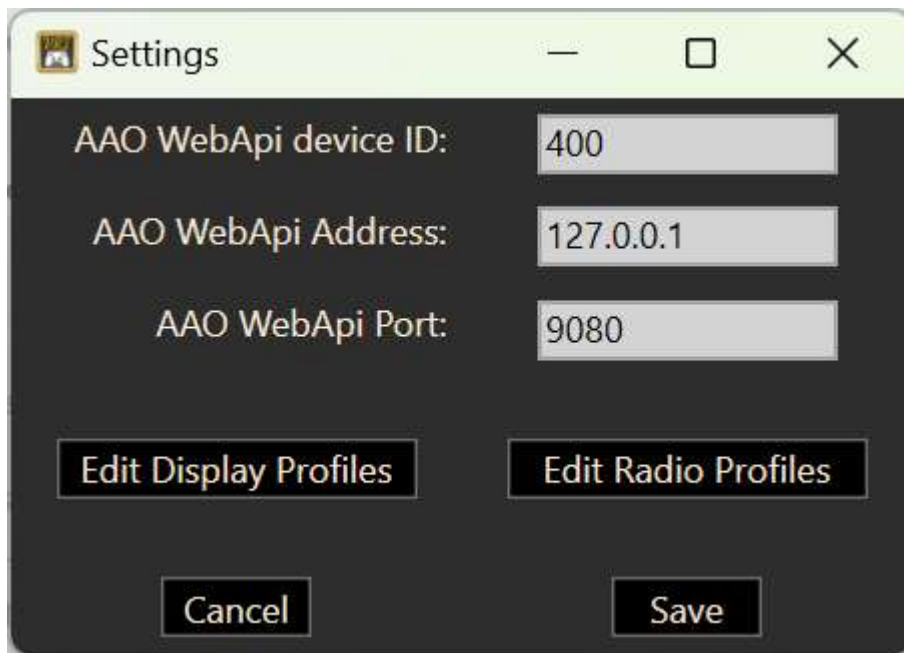
- AAO must be started “As Administrator”

You may have to open/allow access to the port in your local firewall. The port number can be changed with “Tools->Port settings for Web” in case there is a conflict with another app on your computer.

If you have another app on your computer that is already using the same port, it must be changed in the AAO Tools menu. You can choose either the primary or the secondary API port, to distribute the load depending on how many WebAPI clients you have running at the same time.



and in the settings dialog of the bridge (cogwheel button on the main dialog)



A screenshot of a 'Settings' dialog box. The window has a title bar with a small icon, the word 'Settings', and standard window controls (minimize, maximize, close). The main area has a dark background. It contains three text input fields: 'AAO WebApi device ID:' with the value '400', 'AAO WebApi Address:' with the value '127.0.0.1', and 'AAO WebApi Port:' with the value '9080'. Below these fields are two buttons: 'Edit Display Profiles' and 'Edit Radio Profiles'. At the bottom are two buttons: 'Cancel' and 'Save'.

AAO WebApi device ID:	400
AAO WebApi Address:	127.0.0.1
AAO WebApi Port:	9080

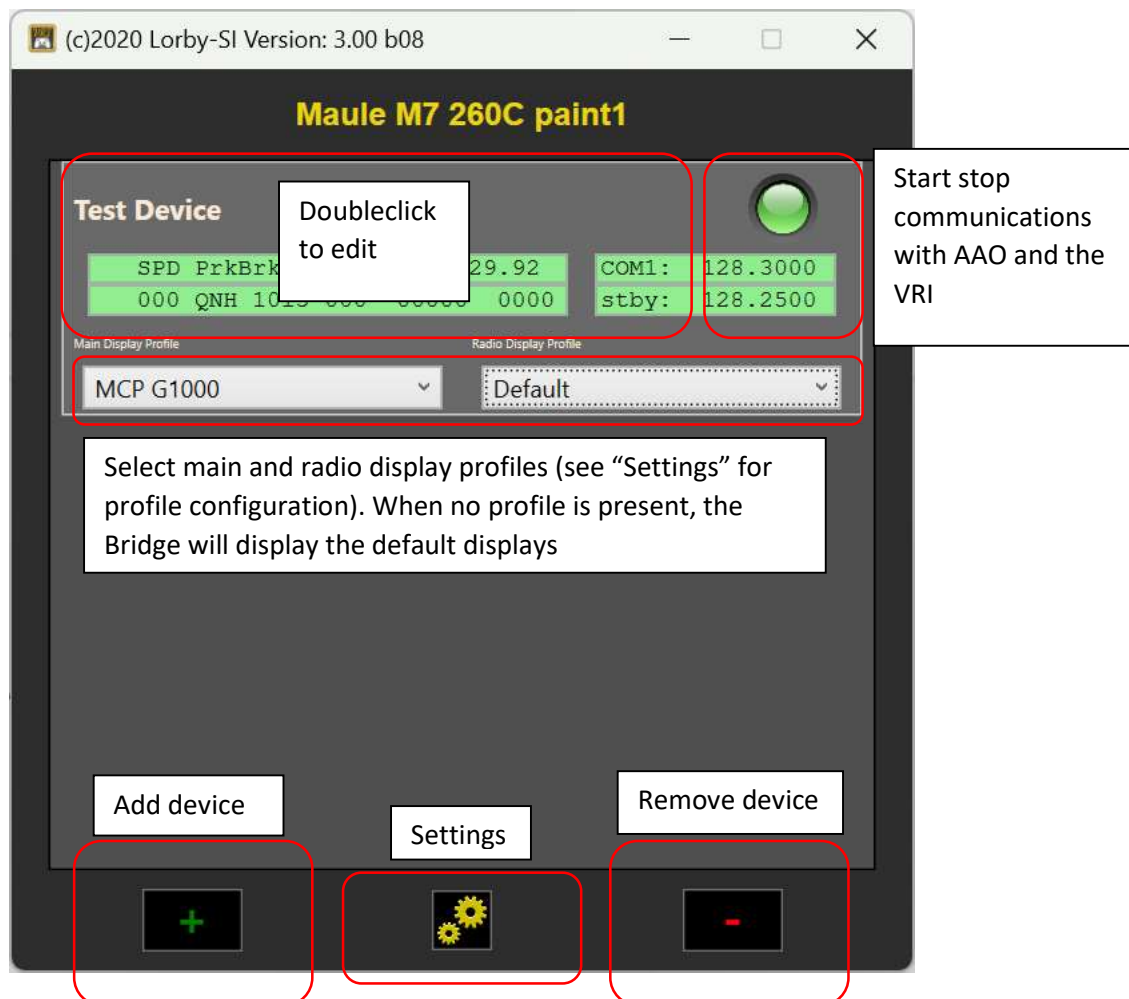
Edit Display Profiles Edit Radio Profiles

Cancel Save

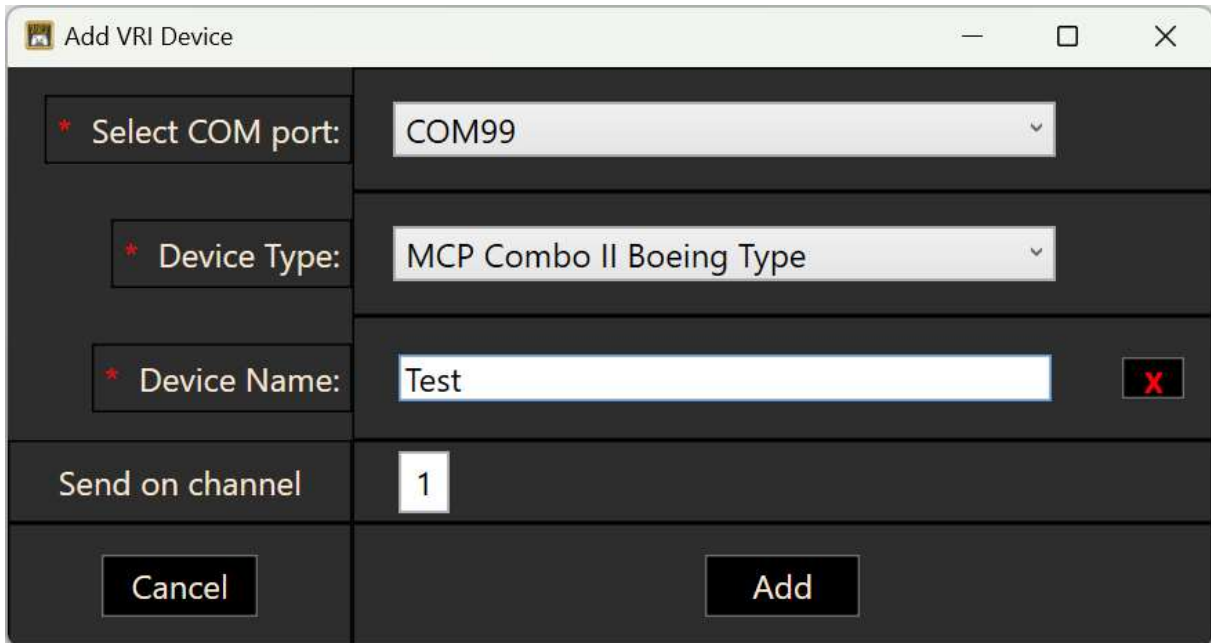
This Bridge has been programmed to handle the VRI MCP Combo II (Boeing).

VRI does not reveal their communication protocols, so no other hardware is officially supported at the moment. The Airbus variant of the MCP II should be largely compatible, but it hasn't been tested.

Main Window



To add a device, click on the green “+”:

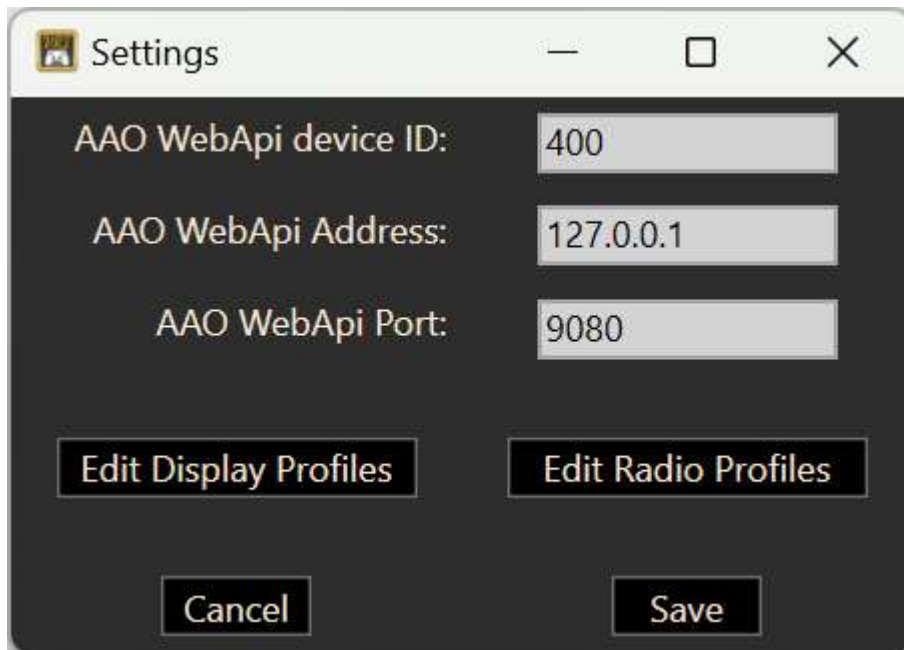


Add VRI Device	
* Select COM port:	COM99
* Device Type:	MCP Combo II Boeing Type
* Device Name:	Test X
Send on channel	1
Cancel	Add

- Select the COM port that the VRI is connected to
- Enter a name of your choosing so you know what it is
- Select the model
The bridge currently only supports the MCP Combo II Boeing
- Select a channel on which this device is sending button inputs to AAO. This number must be different for every device.

To edit the settings of a device, doubleclick it in the main list

Settings



On the settings dialog you can change the WebAPI parameters (but you can also do that in AAO itself). This is only required when you are using the WebAPI mode. In Plugin Mode these parameters don't matter.

You can change the data that is displayed on the VRI profiles.

- “Edit Display Profiles” will open the dialog for creating and editing custom profiles for the main display on the VRI.
- “Edit Radio Profiles” will open the dialog for creating and editing custom profiles for the radio frequency display on the VRI.

The displays use a subset of the standard simulator RPN string syntax. Check out the chapter labelled “Strings” in the MSFS SDK spec for details:

[Reverse Polish Notation \(flightsimulator.com\)](https://flightsimulator.com)

Of the options listed in the RPN specification, only the following are supported:

- The format strings !n.mf!, !nd! and !ns!
- Conditional formatting with {if} {else} {end}
- Conditional formatting with {case} {:0} {:1}... {end}

Display profiles can be exported to XML files and transferred to other computers where you can import them. Main display and radio profiles are always exported together, there is only one single file as a result.

Configuring Main Display Profiles

SPD	HDG	ALT	V/S
000 QNH	0000	000	000000
000	0000	000	0000

%(A:AUTOPILOT MASTER, Bool) 1 ==%(if)AP{else} {end} SPD %(A:BRAKE PARKING POSITION, Bool) 1 ==%(if)PrkBrk!{else} {end} HDG ALT V/S

%(A:AUTOPILOT FLIGHT DIRECTOR ACTIVE, Bool) 1 ==%(if)FD{else} {end} %(A:AUTOPILOT AIRSPEED HOLD VAR, knots)%!03d! QNH %(A:Kohlsman setting mb, Millibars)%!04d! %(A:AUTOPILOT HEADING LOCK DIR, degrees)%!03d! %(A:AUTOPILOT ALTITUDE LOCK VAR, feet)%!05d! %(A:AUTOPILOT VERTICAL HOLD VAR, feet/minute)%!+04d!

Manage additional pages

Save changes Delete profile

Save as new profile: Add

Export Display Profiles Import Display Profiles

The checkbox “Test with AAO” will connect to the AAO program and populate the display with the actual data. AAO must be running and connected to the sim.

Pages

If you made or imported multiple profiles, you can call other profiles as a “Page”. This means that you can browse through multiple profiles on the Bridge, using an AAO button definition of your choice.

To access the pages you can either use

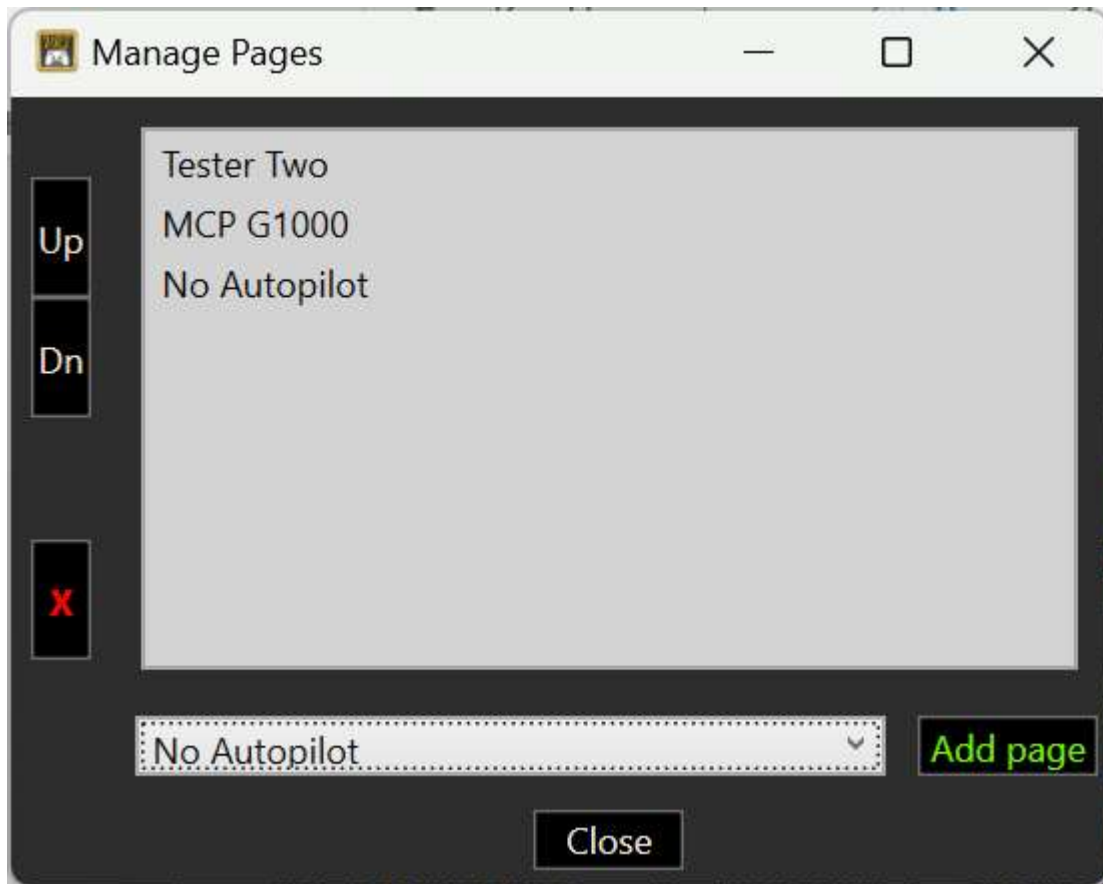
- The AAO event “AAO_VRI_TOGGLE_PAGE”
- Or the following LVars:

m (>L:VriBridgeDeviceSelect) Selects the device. Not required if you only have one VRI device connected

n (>L:VriBridgePageSelect) Select page number n (0 to number of pages)

1 (>L:VriBridgePageToggle) Toggle from one page to the next.

To add pages to your profile, use the “Manage Additional Pages” button:



- To add a page, select it in the dropdown box and press “Add page”
- To delete a page, select it in the list and press the red “X”.
- The order in which the pages are toggles can be changed with the “Up”/”Dn” buttons

Configuring Radio Display Profiles

Default

Test with AAO

Mode selection

COM1

COM1: 128.3000

stby: 128.2500

COM1: %(A:COM ACTIVE FREQUENCY:1,seconds) 1000000 /%!0.4f!

stby: %(A:COM STANDBY FREQUENCY:1,seconds) 1000000 /%!0.4f!

Swap Event: (>K:COM_STBY_RADIO_S

Aux Event:

INC Event:

Fast INC Event:

DEC Event:

Fast DEC Event:

Add Cursor Events

Clear Cursor Events

Save changes

Save as new profile: Default Add

Delete profile

Export Display Profiles

Import Display Profiles

Radio display profiles use the same syntax as the main display.

Radio profiles always have 10 “pages” that can be selected with the mode buttons below the display (COM, NAV etc.). Each button can be pressed twice to toggle between the first and the second display in that category (COM1 / COM2) etc.

The mode that the current display strings are for is selected with the drop down box “Mode selection” to the left of the display.

Make sure to press “Save changes” to store your display strings.

The checkbox “Test with AAO” will connect to the AAO program and populate the display with the actual data. AAO must be running and connected to the sim.

To access the radio display you can either use

- The AAO event “AAO_VRI_TOGGLE_RADIO”
- Or the following LVars:

`n (>L:VriBridgeRadioSelect) Select mode number n (0 to 9)`

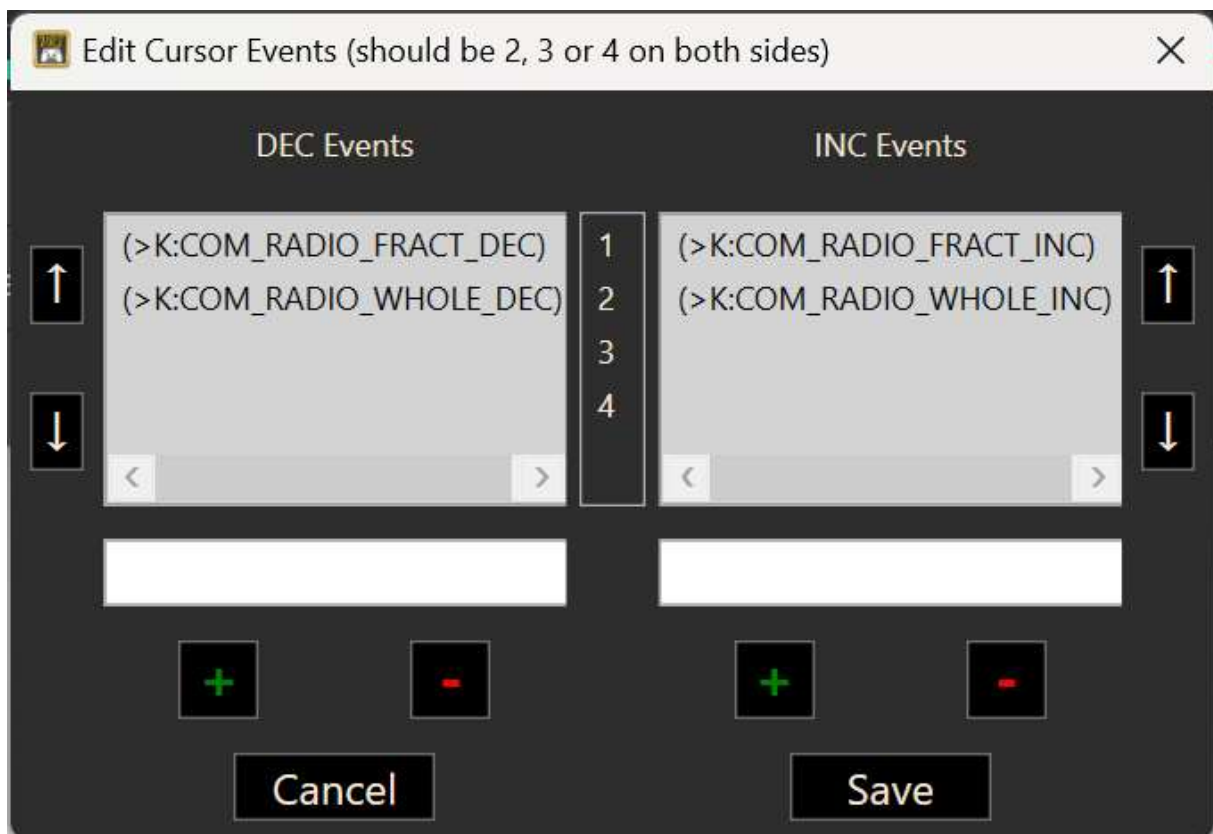
`1 (>L:VriBridgeRadioToggle) Toggle from one mode to the next.`

Input configuration

Below the text boxes for the display strings you can configure what the **rotary encoder** and the “**swap**” and “**aux**” buttons do in each mode.

You have two options to use these inputs:

1. Display doesn't have a cursor:
Enter your desired events into the boxes on the main dialog (“Swap Event”, ...”Fast DEC Event”).
You can only use the (>K: syntax to call simulator events or AAO scripts
2. Display shall have a cursor (for example for the transponder digits)
Enter the events for the swap and aux buttons
Then use “Add Cursor Events” to add the appropriate event for every cursor position on the display. The Cursor will jump to as many positions as you provide events for (2, 3 or 4)



Use “+” and “-” to add or remove events

Use the arrow keys to change the order of the events

There must be the same number of events on both sides.