

Lorby “Axis And Ohs” Documentation

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1. Overview

The Lorby-SI “AxisAndOhs” app is designed to manage your joysticks and other controllers individually and automatically for each aircraft that you fly in your simulator. AxisAndOhs will remember each joystick assignment for each aircraft *livery*. If you already have an assignment for another aircraft of that type in the database, AxisAndOhs will assume and apply the same assignments.

All joystick movements are then routed through the app and control your aircraft in the simulator directly. No other control assignments are required, neither in-sim nor from an external module.

Lorby “Axis And Ohs” is compatible with

FSX boxed with Acceleration

FSX:SE

P3D 2.5

P3D 3.x

P3D 4.x

2. Installation

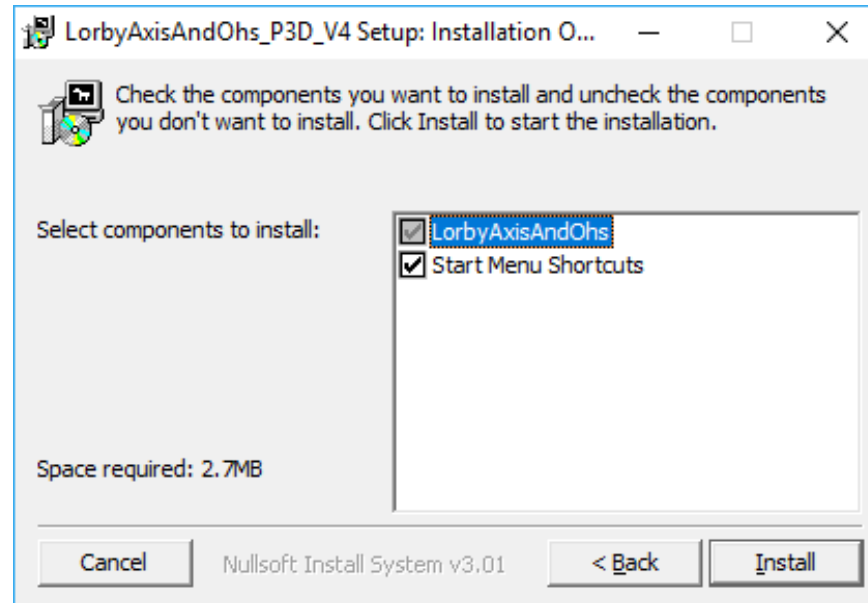
2.1 Distribution

Lorby AxisAndOhs is distributed as a self-extracting installer package.

2.2 Installation

- Please use the installer intended for your sim:
- Please use the installer intended for your sim:
 - FSX Acceleration boxed or dual install with SE: *LorbyAxisAndOhs_Install.exe*
 - FSX SE stand alone: *LorbyAxisAndOhs_SE_Install.exe*
 - Prepar3D V2.5: *LorbyAxisAndOhs_P3D_Install.exe*
 - Prepar3D V3.x: *LorbyAxisAndOhs_P3D_V3_Install.exe*
 - Prepar3D V4.x: *LorbyAxisAndOhs_P3D_V4_Install.exe*

Running the installer:

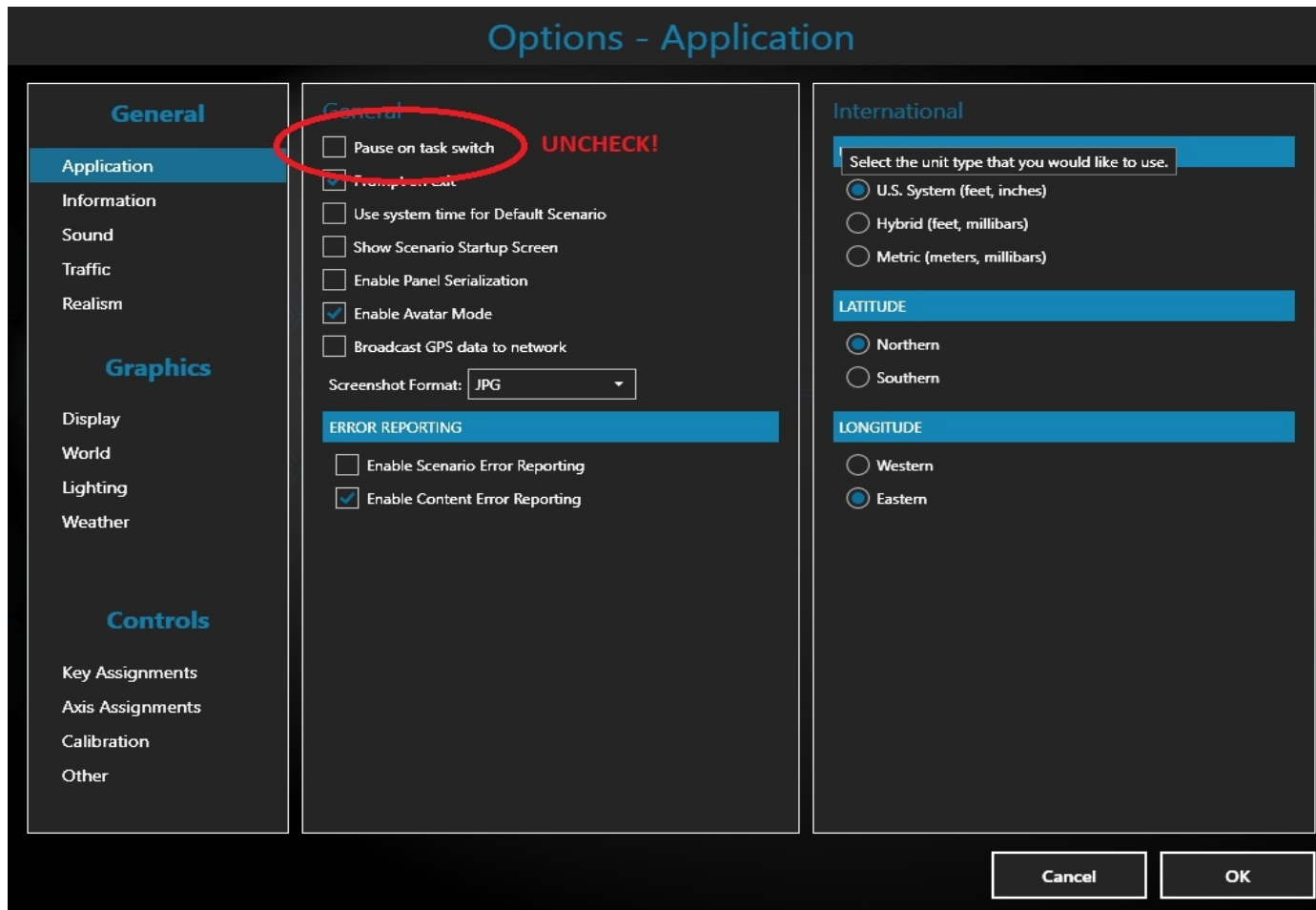


On the first page you may select optional installation targets:

- "Start Menu Shortcuts": Lorby AxisAndOhs will be added to your Start Menu (advised)
- Selecting "Install" will begin the installation

2.3 Pause on task switch

Lorby AxisAndOhs is an external process. When you want to operate it from its own GUI, you must disable “Pause on task switch” in the simulator.



2.4 SimConnect

Lorby AxisAndOhs relies on SimConnect being installed correctly on your computer. SimConnect is a part of your simulator and it is set up automatically when you first install the simulator. No further installations are required.

FSX only: In case SimConnect is not installed, and Lorby AxisAndOhs does not start up, giving you an error message instead, you will have to install SimConnect manually:

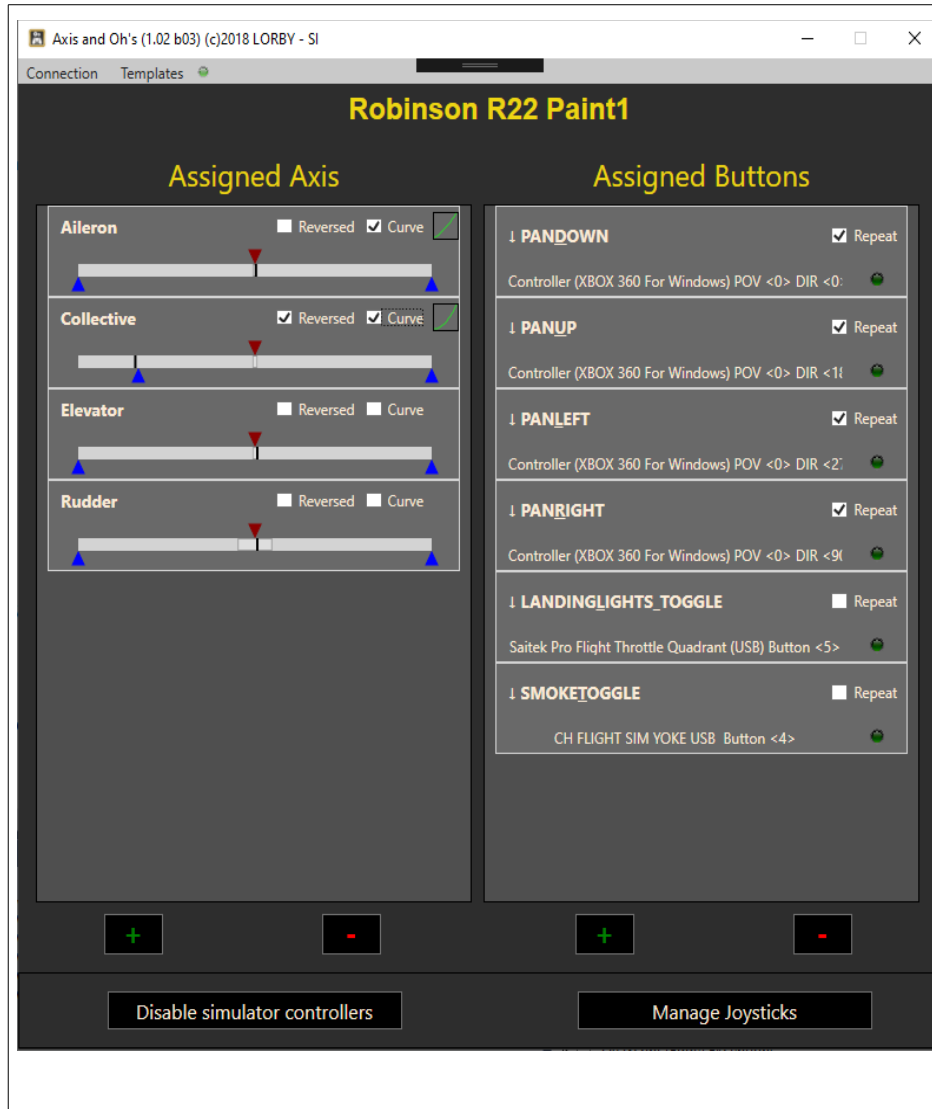
- FSX boxed users can find the “SimConnect.msi” installation file either online or in the FSX SDK folder “..\Microsoft Flight Simulator X SDK\SDK\Core Utilities Kit\SimConnect SDK\lib”
- FSX SE users find it here: “..\Steam\steamapps\common\FSX\SDK\Core Utilities Kit\SimConnect SDK\LegacyInterfaces\FSX-SP1\SimConnect.msi “

3. Operations

3.1 Starting the application

- Start your simulator
- Start the Lorby AxisAndOhs app
- Click on the green LED in the top menu bar
or open the “Connection” menu and select “Connect”
or set the app to “Connect automatically” in the same menu
- As soon as your aircraft has been detected and the simulation is running, you can start adding axis controls and buttons.
The LAAO app will remember these settings for each aircraft
- To avoid conflicts with the controller settings in the simulator, the app has features to disable controllers in the sim. You can also disable all controllers in the Controls settings of the sim, but that will also disable mouse look and other mechanisms

3.2 Main Window



- **Assigned Axis:** list of all joystick axis that you have assigned to this aircraft

+/-: to **add** or **remove** an axis assignment.

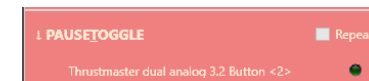
- **Assigned Buttons:** All or your button assignments (Joystick, MIDI and keyboard). that you added to this aircraft

+/-: to **add** or **remove** a button assignment.

- **Disable simulator controllers:** to disable or reset individual controllers in the simulator (requires restart)

- **Manage Joysticks:** special dialog to handle changes to your physical controllers (replacing joystick etc.)

Assignments for controllers that are not attached will be highlighted in red



3.3 Handling joystick axis assignments

3.3.1. Assign a new axis

To assign a new axis to your aircraft, click on the green “+” below the axis list on the left. This will open the assignment dialog



The screenshot shows the 'Add Axis Assignment' dialog box with three main sections: 'Select simulator axis:' (containing 'Aileron'), 'Select simulator event:' (empty), and 'Move Joystick axis:' (containing 'Controller (XBOX 360 For Windows) X'). A purple oval highlights the 'Aileron' dropdown, a green oval highlights the 'Select simulator event:' dropdown, and a red oval highlights the 'Controller (XBOX 360 For Windows) X' text box. A green arrow points from the purple oval to the text 'Select either one of the pre-configured axis OR any assignable simulator event'. A red arrow points from the red oval to the text 'Move the desired joystick axis until it shows up in the text box'. The dialog has 'Cancel' and 'Add' buttons at the bottom.

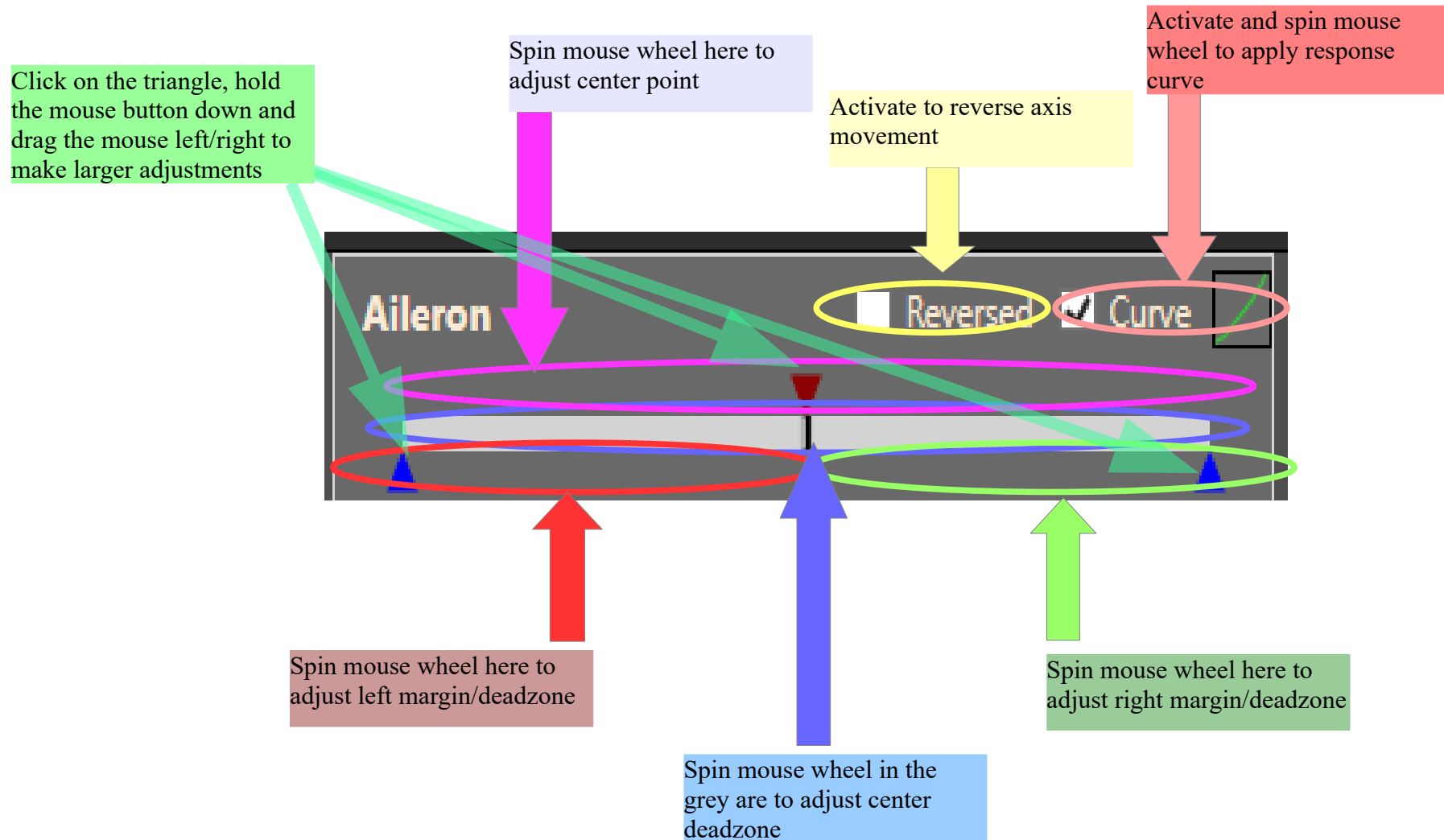
Select either
one of the pre-configured axis
OR
any assignable simulator event

Move the desired joystick axis
until it shows up in the text box

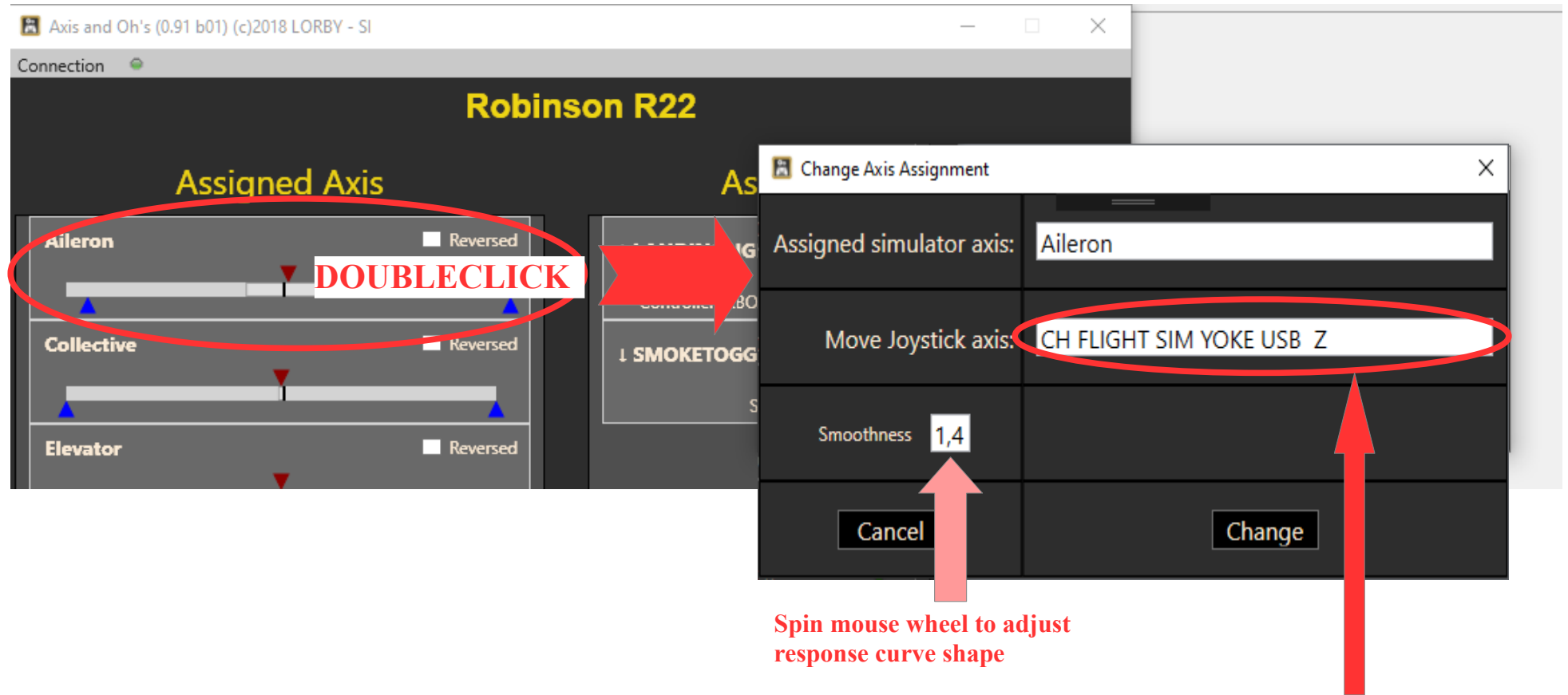
Press “Add” to save this assignment or “Cancel” to discard it.

3.3.2. Calibrate an axis

Every assigned axis is calibrated directly on the main dialog, by hovering your mouse cursor over the various controls and turning your mouse wheel.



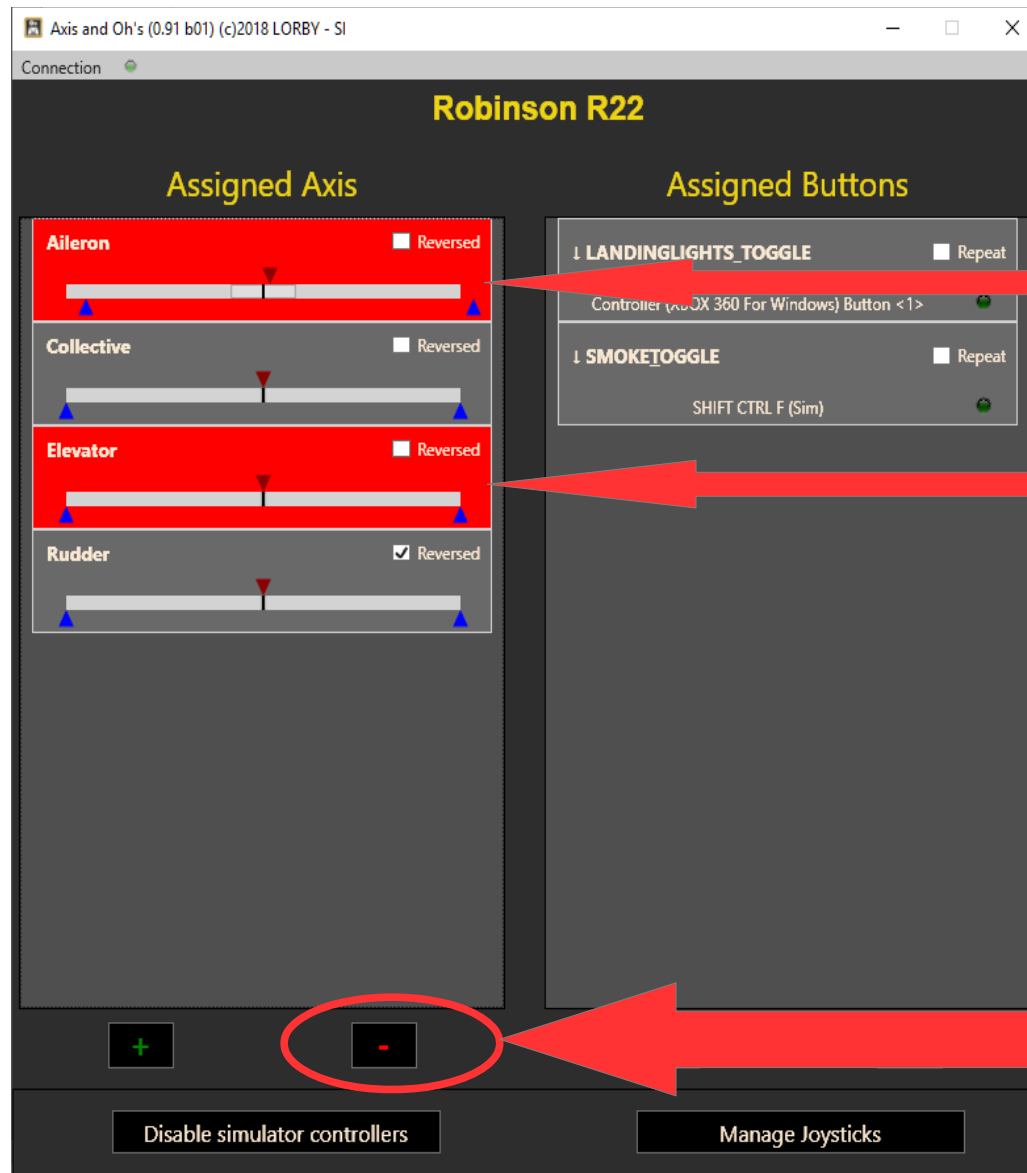
3.3.3. Change an axis assignment



Press "Change" to save this assignment or "Cancel" to discard it.

Move the desired joystick axis until it shows up in the textbox

3.3.4. Remove axis



Click on the control to select it

Hold "Ctrl" while clicking to select more than one axis at the same time

Click "-" to remove the selected controls

3.4 Handling button, MIDI and keyboard assignments

3.4.1. Assign a new button

To assign a new button to your aircraft, click on the green “+” below the Button list on the right.

The screenshot shows the 'Add Button Assignment' dialog box with the following fields and controls:

- Key Down Event:** A dropdown menu showing 'ADF_1_INC (Increments ADF by 1 KHz)'. A blue arrow points to it with the callout: 'Select the event that is to be sent when the button is **pressed**'.
- Key Up Event:** An empty dropdown menu. A blue arrow points to it with the callout: 'Select the event that is to be sent when the button is **released**'.
- Virtual key:** A text box containing 'None'. A yellow arrow points to it with the callout: 'Assign a virtual key sequence to be sent when the button is pressed'. To the right of this field are 'Assign' and 'Clear' buttons.
- Assigned button/key:** A text box containing 'Controller (XBOX 360 For Windows) Button <0>'. A red arrow points to it with the callout: 'Press the desired joystick button until it shows up in the textbox'. Below this field are three radio buttons: 'Fast', 'Med', and 'Slow'. A blue arrow points to these radio buttons with the callout: 'Select if the event is to be repeated while the button is held down and set the desired speed'.
- Simulator Key:** A checkbox that is checked. A green arrow points to it with the callout: 'This is only relevant for keyboard controls. Activate this if the simulator is overriding your keyboard combo'.
- Repeat:** A checkbox that is unchecked, located above the 'Fast', 'Med', and 'Slow' radio buttons.
- Buttons:** 'Cancel' and 'Add' buttons at the bottom.

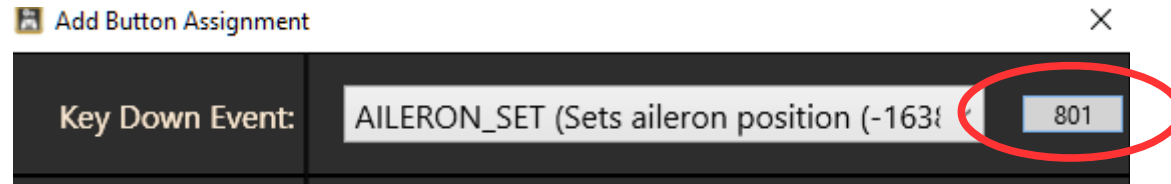
Additional instructions on the right side of the dialog:

- OR
- move the desired control sending MIDI notes
- OR
- Type keyboard keys a-z, 0-9, shift, ctrl, alt
- Keyboard combinations must be input in sequence, do not press all keys at the same time.
- Example; For “Shift&Ctrl&F” you would press “Shift”, release it, then press “Ctrl”, release that and finally press “F”

Press “Add” to save this assignment or “Cancel” to discard it.

3.4.2. Sending values to events

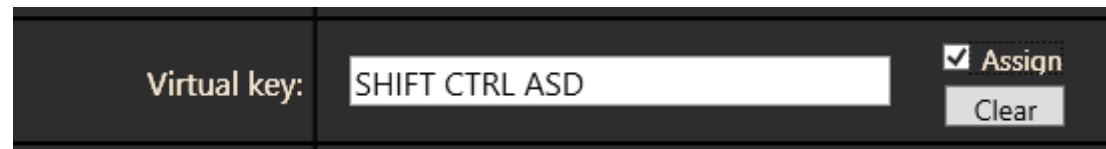
With some events you can send specific values when the button is pressed. Spin the mouse wheel over the numerical control to the right of the selection box to set that value:



3.4.3. Virtual keys

If you assign a virtual key sequence to the button, the app will send those keys when the button is pressed, simulating a keyboard input of those characters and keys. You can assign a sequence of keys too.

In this example, the app would send Shift&Ctrl, keep them active and then send A – S – D in sequence, releasing Shift&Ctrl after the last character.



To assign a virtual key, activate the “Assign” checkbox. Your keyboard input will then be redirected to the textbox on the left. Deactivate “Assign” to return to normal operations. Use “Clear” to remove the assignment and clear the textbox.

3.4.4. The button assignment control on the main list

The image shows a screenshot of a button assignment control interface. The interface is divided into three sections, each with a downward arrow on the left and a 'Repeat' checkbox on the right. The first section is for 'EYEPOINT_FORWARD' and 'EYEPOINT_BACK', with 'Controller (XBOX 360 For Windows) Button <2>' assigned. The second section is for 'LANDINGLIGHTS_TOGGLE' and 'Controller (XBOX 360 For Windows) Button <1>'. The third section is for 'SMOKE_TOGGLE' and 'SHIFT CTRL F (Sim)'. Annotations include: a blue arrow pointing to the first section labeled 'Event when button is pressed'; a blue arrow pointing to the second section labeled 'Event when button is released'; a red oval around the assigned control text in the first section labeled 'Assigned control'; a red oval around the 'Repeat' checkbox in the first section labeled 'Repeat setting'; and a red oval around the activity indicator in the first section labeled 'Activity indicator'.

Control	Assigned Control	Repeat Setting	Activity Indicator
↓ EYEPOINT_FORWARD ↑ EYEPOINT_BACK	Controller (XBOX 360 For Windows) Button <2>	<input type="checkbox"/> Repeat	●
↓ LANDINGLIGHTS_TOGGLE	Controller (XBOX 360 For Windows) Button <1>	<input type="checkbox"/> Repeat	●
↓ SMOKE_TOGGLE	SHIFT CTRL F (Sim)	<input type="checkbox"/> Repeat	●

Event when button is pressed

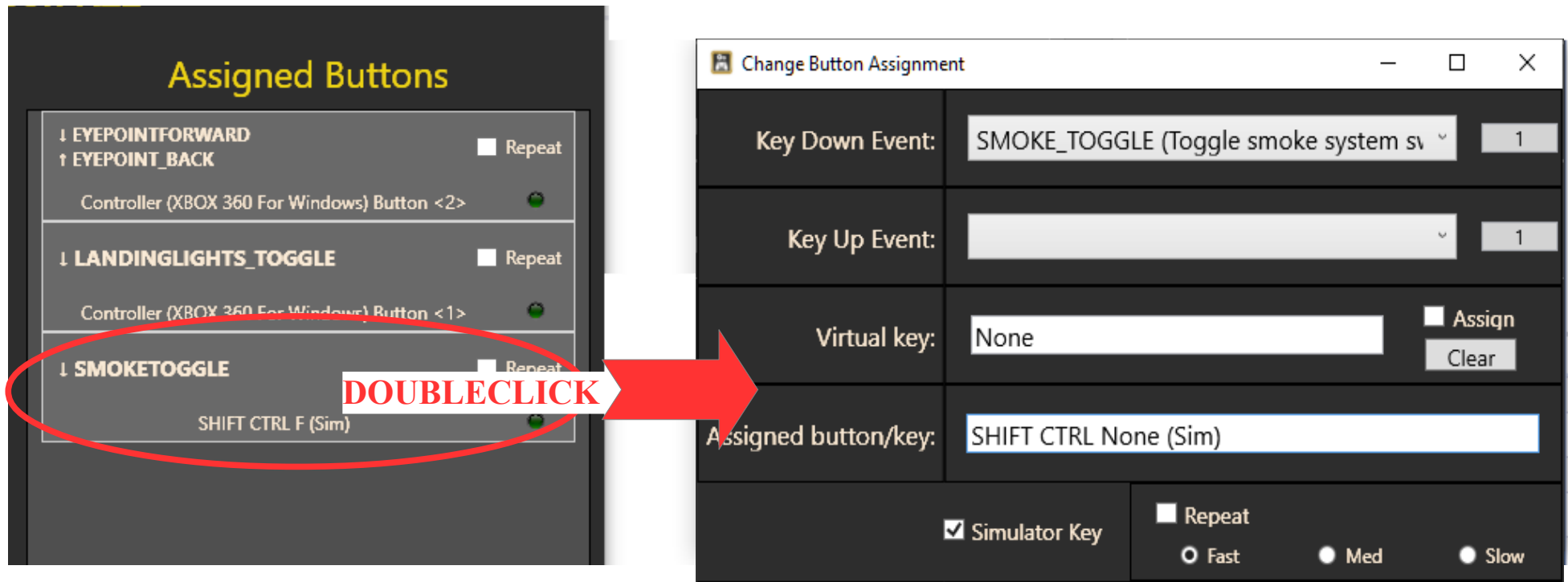
Event when button is released

Repeat setting

Assigned control

Activity indicator

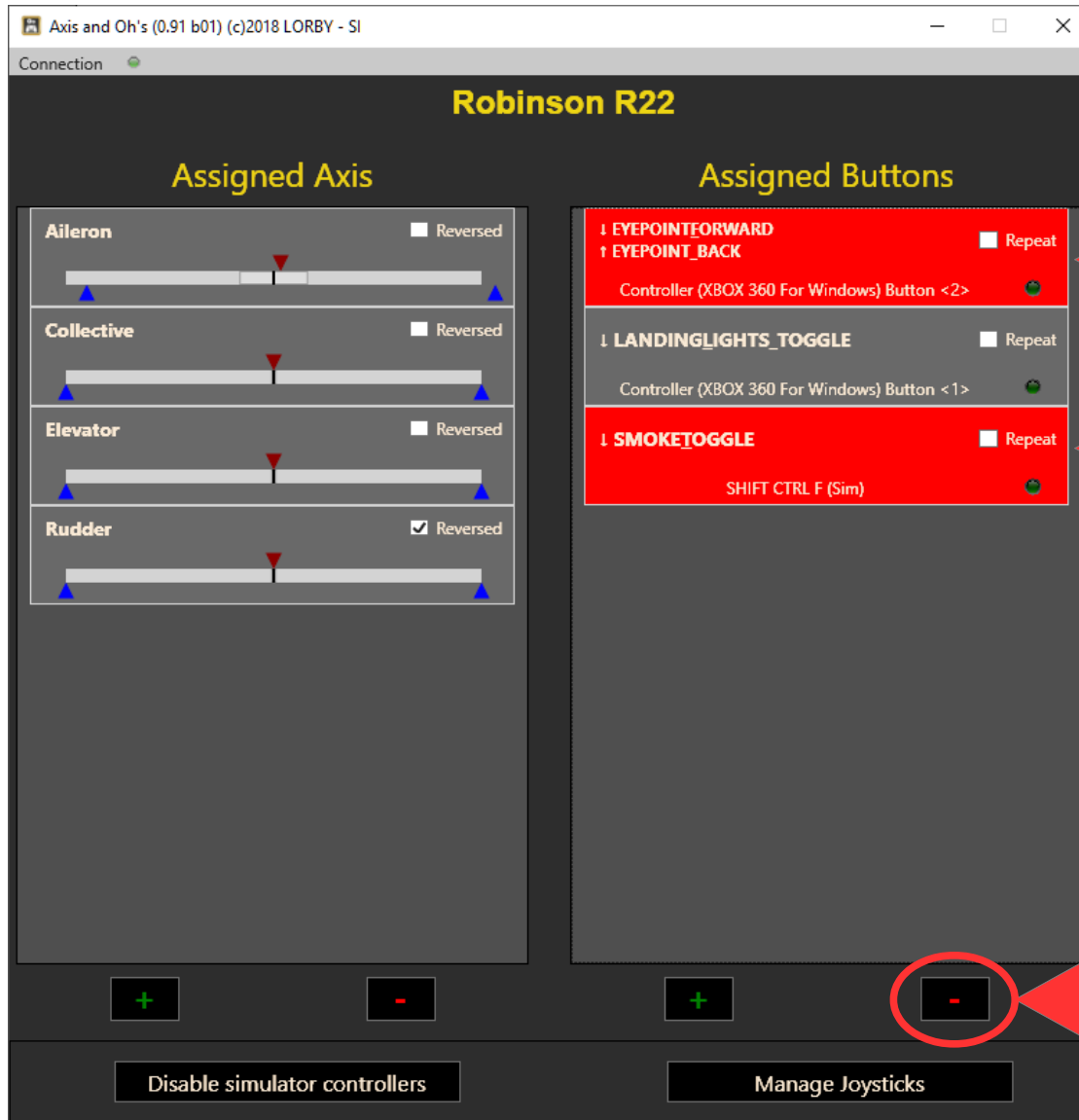
3.4.5. Change a button assignment



The “Change Button Assignment” dialog works the same way as the “Add” dialog (see chapter 3.4.1).

Press “Change” to save this assignment or “Cancel” to discard it.

3.4.6. Remove button assignments

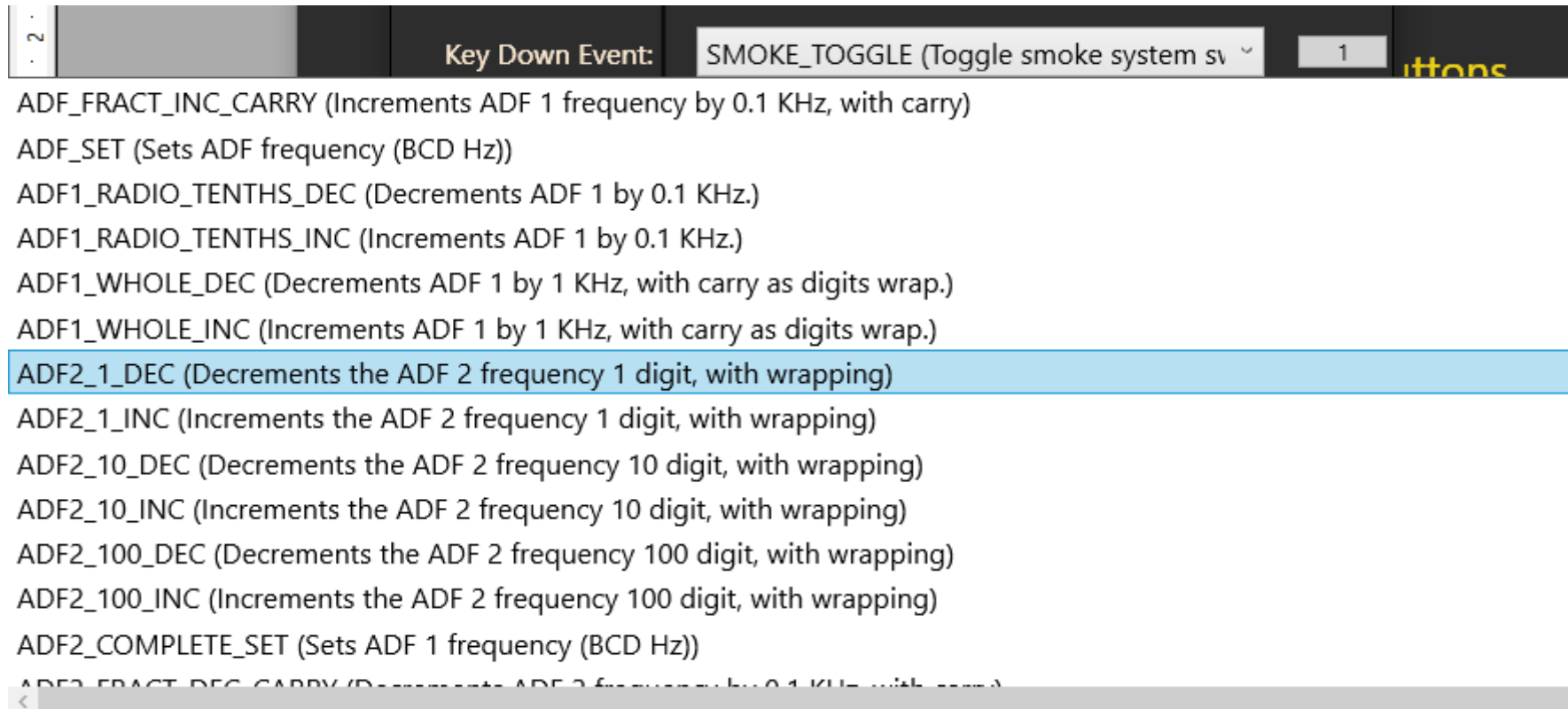


Click on the control to select it

Hold "Ctrl" while clicking to select more than one button at the same time

Click "-" to remove the selected controls

3.5 Using the event selection boxes



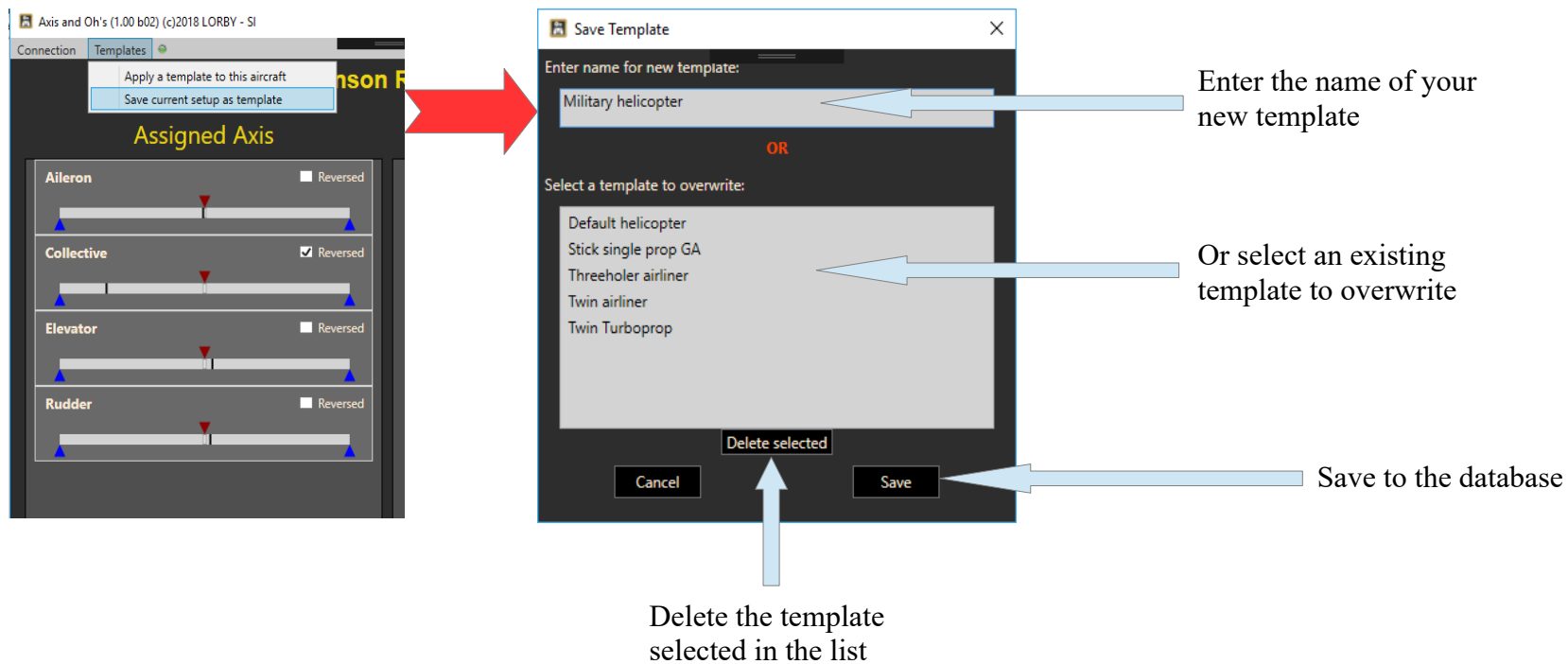
There are more than 1000 simulator events that could theoretically be triggered with a button press. The combobox just lists all of them, please refer to the SDK documentations for the exact usage of the “Event-IDs”. To make finding a specific event easier, you can just start typing the name of the event on your keyboard, the list will try to scroll to those events that match your input.

3.6 Using Templates

You can save a joystick configuration as a “Template”, so you can apply them quickly to new aircraft.

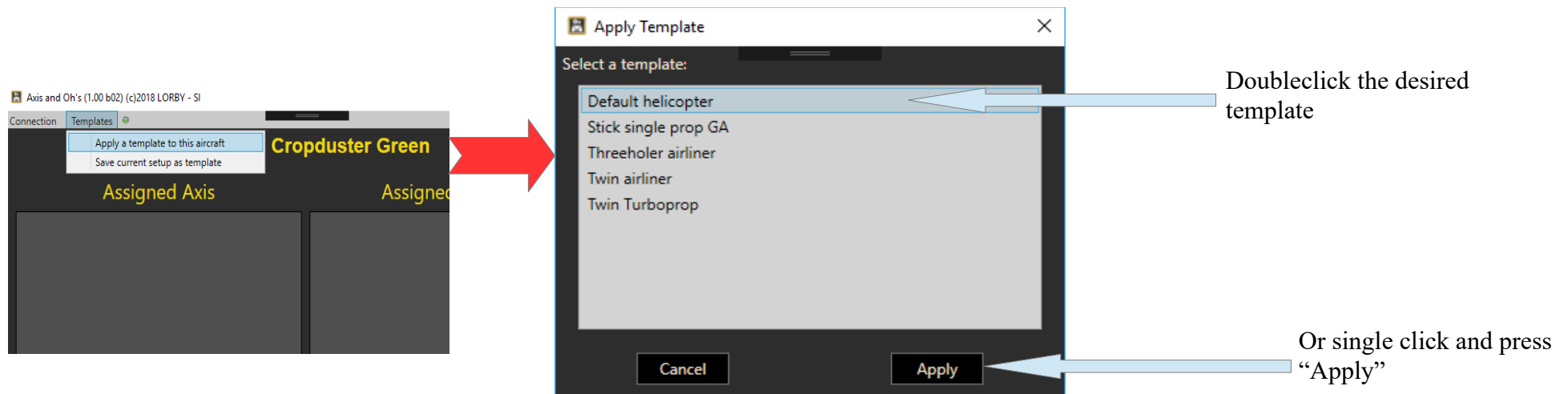
Saving a configuration as a Template

Once you have finished setting up your controls, use the top menu “Templates → Save current setup as template”



Applying a Template to your current aircraft

When your aircraft has been recognized, use the top menu “Templates → Apply a template to this aircraft”



Important note

Joystick assignments in AxisAndOhs are always individual assignments for each aircraft. A change in the template will NOT update all aircraft configurations that were built with it.

Applying an existing configuration to your current aircraft

When your aircraft has been recognized, use the top menu “Templates → Apply other config to this aircraft”

The image shows a screenshot of a flight simulator interface with a 'Templates' menu open. A red arrow points from the 'Apply other config to this aircraft' option to a dialog box titled 'Apply other configuration'. The dialog box contains a list of configurations: 'Beech King Air 350 Paint1', 'Bell47G Cropduster Green' (highlighted with a blue dashed border), 'Bell47G Cropduster Yellow', 'LWR_Drone', and 'Robinson R22 Paint1'. Below the list are three buttons: 'Delete selected', 'Cancel', and 'Apply'. Annotations with arrows point to these elements: 'Doubleclick the source aircraft' points to the selected item in the list; 'Delete the configuration selected in the list' points to the 'Delete selected' button; and 'Or single click and press "Apply"' points to the 'Apply' button.

4. Enhanced Power Management (Win 8.1 and later)

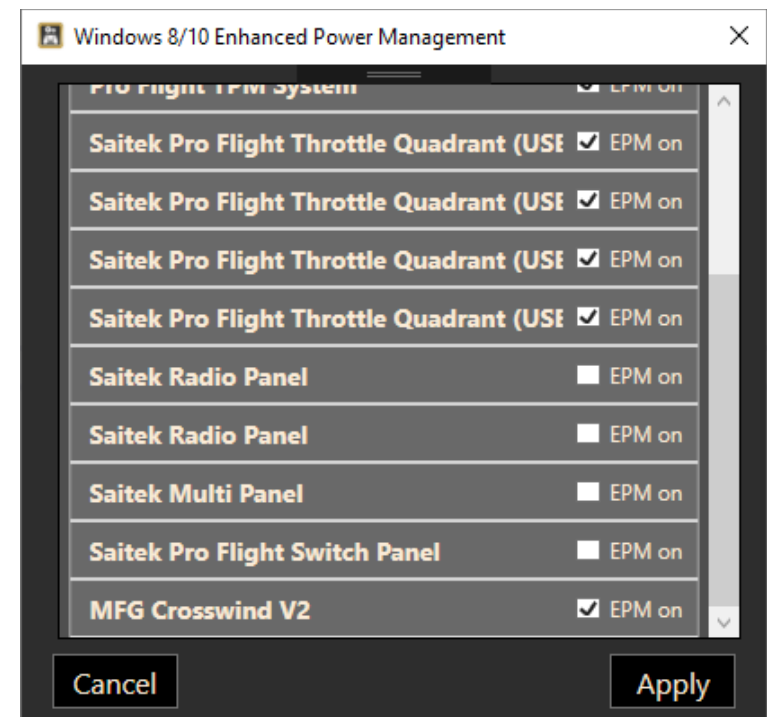
The older USB devices will have issues when they are used with a computer that is running Windows 8 or later, because of the “Enhanced Power Management” feature built into these operating systems. The most notable case is the Saitek Multi Panel, where the display would light up, but not show any text on it.

To help with this, you can disable the EPM using the “Win 8/10 Enhanced Power Management” feature in the “Tools” menu.

On this dialog you will see all devices that LAAO recognized and their current EPM status.

Turn EPM off if you experience issues with devices, like missing functionality or the device constantly connecting and disconnecting.

Note: to use this dialog it is necessary to run the app “As Administrator”.



5. Saitek Panels (Radio, Multi, Switch)

Lorby AxisAndOhs can manage the Saitek Radio-, Multi- and Switchpanel devices. When you select “Enable Saitek” from the “Tools” menu, the app will search for attached devices and connect them to the appropriate simulator events.

Radio panel special functionality:

- When in “DME” mode, the button switches between DME1 and DME2
- the “ADF” setting shows ADF1 on the left and ADF2 on the right. Use the button on the device to switch between the rotary controller altering ADF1 or ADF2.
- In the XPDR setting, the device shows the transponder code on the left and the current QNH on the right. Use the button to switch between editing the transponder code and adjusting the Kohlsmann setting
 - Editing the transponder code: the inner dial changes the numbers, the outer dial select the digit to be altered
 - Changing the Kohlsmann: the inner dial changes the value, the outer dial switches between mb and inHg.

Note: it is not recommended to use special drivers or other Saitek tools at the same time. LAAO accesses the

devices at a very low operating level, so the default installation of the devices should suffice in most cases.

6. Disable simulator controllers

The simulator has a “database” of many controllers. When you plug in a new joystick or similar device, the simulator will try to match control assignments to this device based on the database. The result is saved to the file “Standard.xml” in the simulators configuration directory (AppData\Roaming\...). This is the same for all simulators from FSX boxed to P3D V4.x.

These assignments will get into conflict with what Lorby AxisAndOhs is trying to do, so they must be disabled when they are triggering the same controls. There are several ways to do that:

- You can disable the conflicting axis or buttons in the Control assignment dialog of the simulator.
- You can disable all external controllers in the simulator (there is a checkbox for that in the control assignments dialogs of the sim). This has the drawback of disabling all controllers, even the mouse (so mouse-look will no longer work)

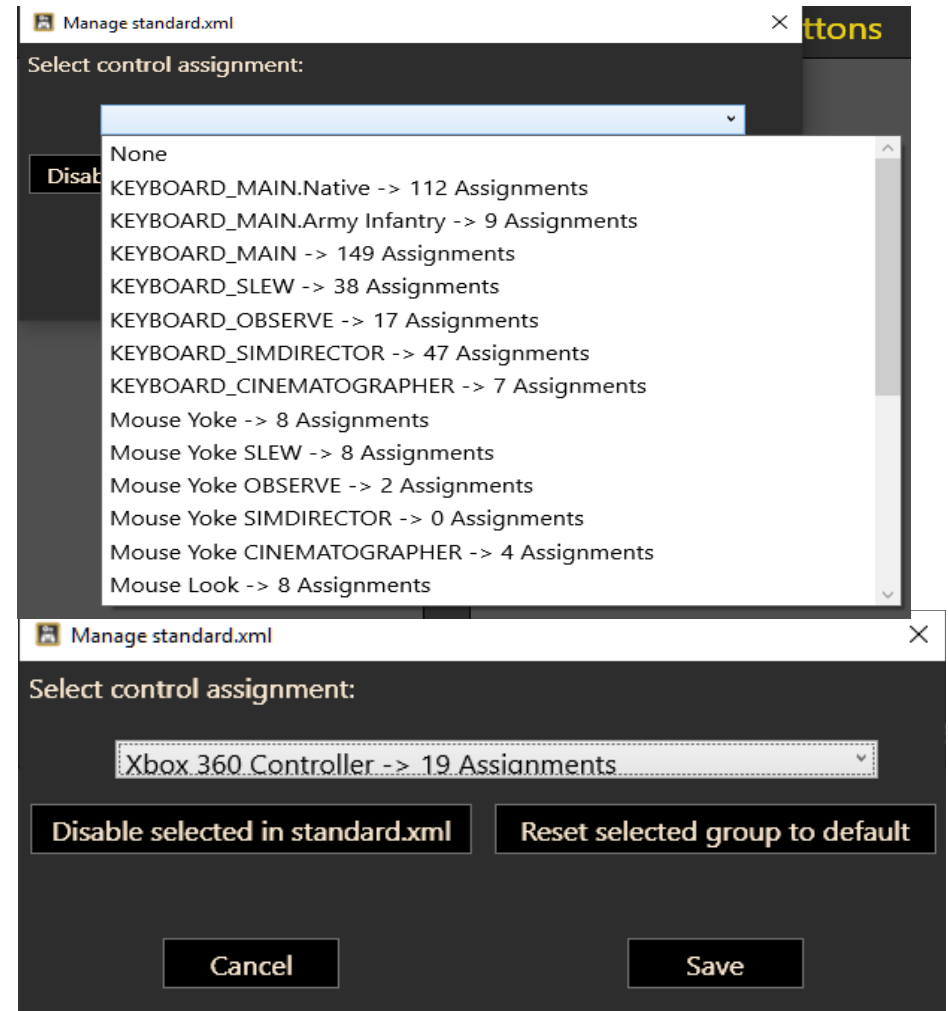
Alternatively you can use the Lorby AxisAndOhs “Disable simulator controllers” feature:

This action is only possible when your simulator is not running!

Opening the combobox will show you all controller assignments that the simulator is currently using.

After having selected one of them you can choose to

- Disable selected in standard.xml:
this will remove all assignments to this controller from the standard.xml file, but keep the definition itself intact – so the sim will not restore the assignments on its own
- Reset selected group to default:
this will remove all references to the selected controller from the standard.xml. When you next start and stop the simulator it will treat the controller as if it was a new one and restore the default settings.

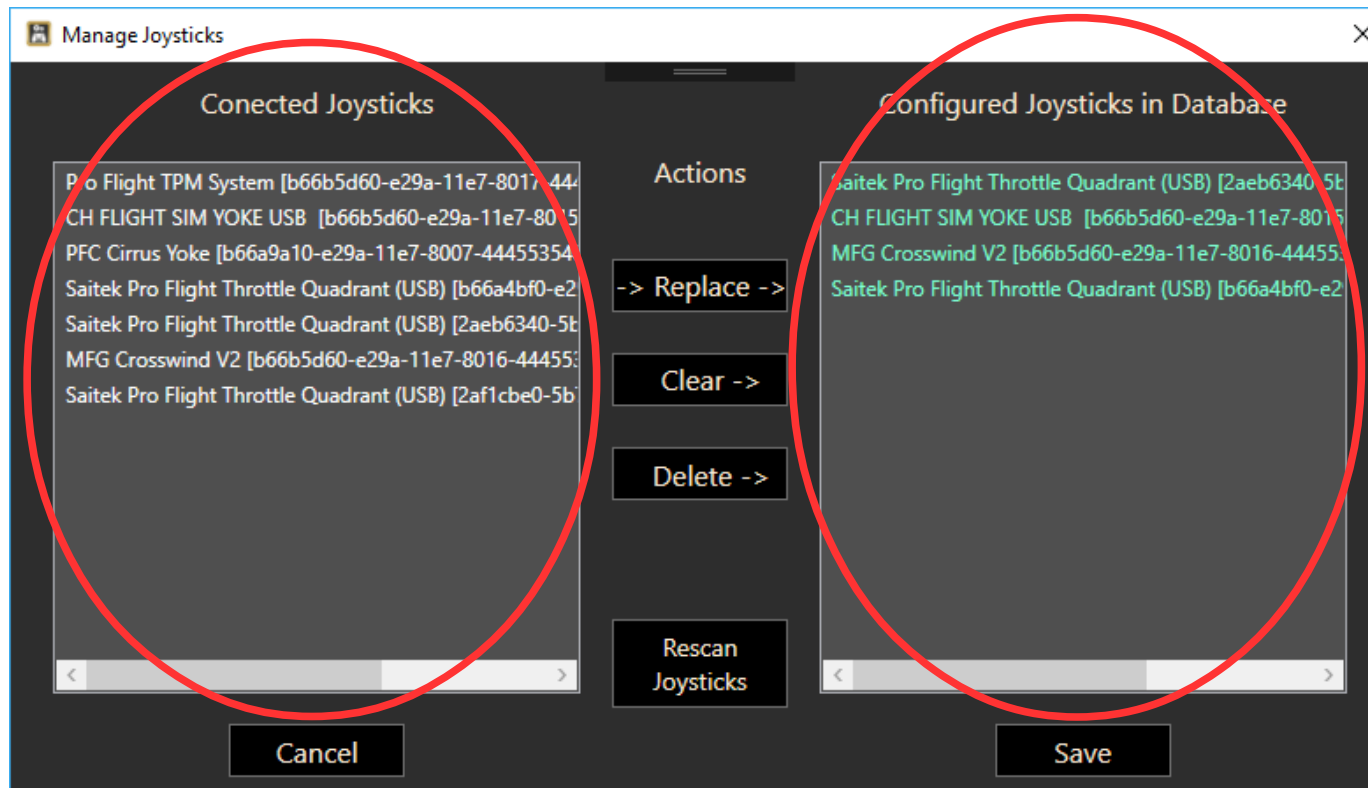


7. Manage joysticks

If you make changes to your controller setup, for example replace a joystick with a new one, replace an USB hub etc., theoretically you would have to reassign all your controls.

To help with that, Lorby AxisAndOhs has a dialog that allows you to manually reassign or delete controllers from the AxisAndOhs database. **Changes aren't permanent until you press "Save"!**

The list on the left shows all joystick devices that are currently connected to your computer



The list on the right shows all joystick devices that are present in the AxisAndOhs database.

Devices that match with a connected joystick are shown in **green**, devices that are no longer present are shown in **red**

Doubleclick on a line to get details about where the controller is assigned exactly

-> Replace ->

With this button you can replace a joystick device in the database with a different (connected) one. The typical use case would be that you have replaced a joystick or if Windows has decided to rearrange the USB devices representing the joysticks (and your assignments no longer match the controller they were made for).

- Select the new device in the left list
- Select the device that is to be replaced in the right list
- Press “- > Replace - >”
- After a safety dialog, the app will replace the old joystick with the new one.
- Press “Save” if you are happy with the changes.

Clear ->

With this button you can set a certain joystick device to represent an “empty” joystick. This is useful if you have to make a replacement but already have the new device in the database, or if you want to disable a certain controller.

- Select the device that is to be cleared in the right list
- Press “Clear - >”
- After a safety dialog, the app will replace the old joystick with an empty device.
- Press “Save” if you are happy with the changes.

Delete ->

This will completely remove the selected entry from the right list. Use this if you have assignments in the database that are obsolete or that you are not using any more.

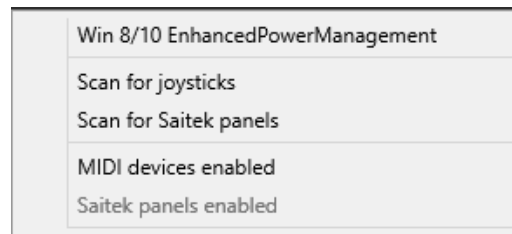
- Select the device that is to be cleared in the right list
- Press “Delete - >”
- After a safety dialog, the app will delete the selected device from the database.
- Press “Save” if you are happy with the changes.

Disconnecting and reconnecting joysticks

A device that is disconnected while the app is running is being ignored. When you reconnect it, you must direct AxisAndOhs to scan for joystick devices (or just restart the app).

To scan for devices you can use the “Rescan Joysticks” button on the “Manage Joysticks” dialog.

Alternatively there is a shortcut in the “Tools” menu: click on “Scan for joysticks” to re-initialize.



8. File handling

Database

Lorby AxisAndOhs is using a simple XML file to store all your joystick assignments. The file is named differently for each simulator that you installed the app for, and it is located here:

“C:\Users\...\Documents\LorbyAxisAndOhs Files\”

The file is saved in 4 “generations”, so if something goes wrong you can return to an earlier state of the file by renaming the n-th backup “ConfigDatabase_(sim-ID)_n.xml” to “ConfigDatabase_(sim-ID).xml”

Standard.xml

If you decide to disable components of the Standard.xml file (see chapter 4), AxisAndOhs will keep the original file and an additional backup. You will find both these backups at the same location where your “Standard.xml” is.

Examples:

“C:\Users\...\AppData\Roaming\Microsoft\FSX\Controls”

“C:\Users\...\AppData\Roaming\Lockheed Martin\Prepar3D v4\Controls”

9. Make the app start automatically with your sim

For Prepar3D V4.x the installer is taking care of this. When you start your simulator after the installation of AxisAndOhs is complete, you will be asked to activate the addon.

For all 32bit simulators you can either add the app to your exe.xml or add it to a third party management and startup tool.

The exe.xml is located in “\AppData\Roaming\...” too, and the entry would look something like this:

```
<?xml version="1.0" encoding="Windows-1252"?>
<SimBase.Document Type="Launch" version="1,0">
...
  <Launch.Addon>
    <Disabled>False</Disabled>
    <ManualLoad>False</ManualLoad>
    <Name>LorbyAxisAndOhs</Name>
    <Path>C:\Program Files (x86)\LorbyAxisAndOhs_SE\LorbyAxisAndOhs_SE.exe</Path>
    <CommandLine></CommandLine>
    <NewConsole>False</NewConsole>
  </Launch.Addon>
</SimBase.Document>
```

These are the <Path> tags for the various simulators:

— FSX boxed:

```
<Path>C:\Program Files (x86)\LorbyAxisAndOhs\LorbyAxisAndOhs.exe</Path>
```


— **FSX SteamEdition**

<Path>C:\Program Files (x86)\LorbyAxisAndOhs_SE\LorbyAxisAndOhs_SE.exe</Path>

— **P3D V2.5**

<Path>C:\Program Files (x86)\LorbyAxisAndOhs_P3D\LorbyAxisAndOhs_P3D.exe</Path>

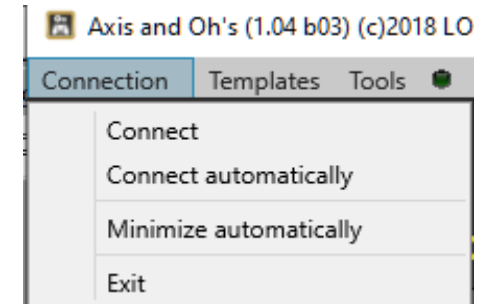
— **P3D V3.x**

<Path>C:\Program Files (x86)\LorbyAxisAndOhs_P3D_V3\LorbyAxisAndOhs_P3D_V3 .exe</Path>

10. Settings and Tools

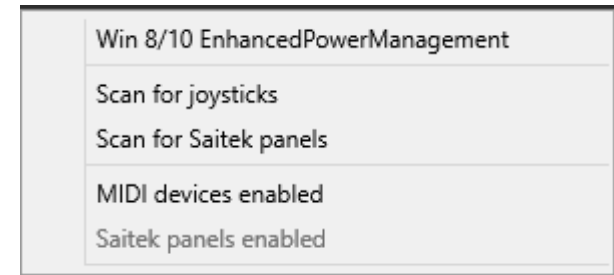
The settings that can be selected for the app can be accessed in the top menu:

- “Connect” connects to the sim.
- “Connect automatically” does that when the app is started.
- “Minimize automatically” minimized the app to the task bar.



The “Tools” menu contains additional features

- “Win 8/10 EnhancedPowerManagement” see chapter 4
- “Scan for joysticks” is only required when you attach a new joystick while the app is running.
- “Scan for Saitek Panels” will reset the current configuration and scan for new panels
- “MIDI devices enabled” controls if the app should use your MIDI devices
- “Saitek panels enabled” controls if the app should use your Saitek Radio-, Multi- and Switchpanels



11. Disclaimer

Lorby AxisAndOhs is provided free of charge, for private use only. All property rights remain with the author. You may not distribute this package or parts of it. Disassembling, refactoring or changes of any kind are prohibited.

Disclaimer of Warranties. The author disclaims to the fullest extent authorized by law any and all other warranties, whether express or implied, including, without limitation, any implied warranties of title, non-infringement, merchantability or fitness for a particular purpose. Without limitation of the foregoing, the author expressly does not warrant that:

- the software will meet your requirements or expectations;
- the software or the software content will be free of bugs, errors, viruses or other defects;
- any results, output, or data provided through or generated by the software will be accurate, up-to-date, complete or reliable;
- the software will be compatible with third party software;
- any errors in the software will be corrected or that any further development will take place;
- the software will not cause errors or damage to the computer system it is installed on.

(c) 2018 Lorby-SI

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<http://www.lorby-si.com>