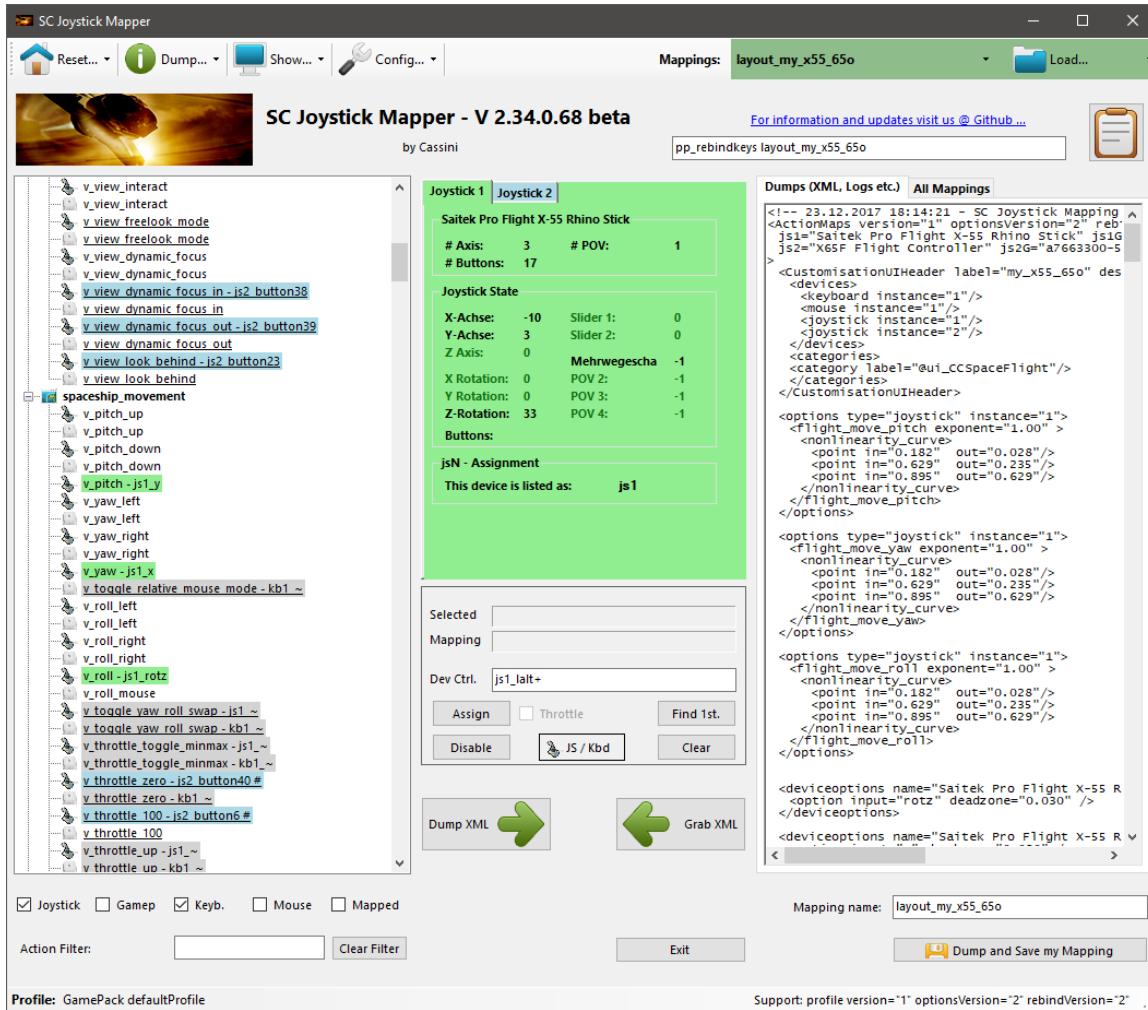


SC JOYSTICK MAPPER

QUICK REFERENCE GUIDE V 2.34

20171226 – Cassini

- <https://github.com/SCToolsfactory/SCJMapper-V2/releases>
- Change Log: see ReadMe.txt



*Disclaimer: Usual stuff – no warranty whatsoever..
Freeware – made for the SC community
Hope it helps and does not suck.
Have fun in the verse ...*



General Information

- Connect the game control devices to the PC
- Start from scratch (see Hints section) or load an existing map from a file
- Make or refine mappings
- Save the new map as an XML file
- Use it in the game: e.g. pp_rebindkeys layout_my_joystick
- You may load and save the map directly from your game folders so next time you just use pp_rebindkeys layout_my_joystick
- pp_rebindkeys without a name will reset the maps but only after you close the console window
- **It is a good idea** to always first pp_rebindkeys and then close the console to reset what the game holds from your previous attempt and then only open the console again and load the new or changed map

Note: the predefined actions are the ones found in the SC game default profile

– it is likely that some of them will not work at all as the game is not finished.

There is no proper description for which one does what – you may get help in SC Forums.

Console .. Opens with the top left key usually right below the “Esc” key - depends on your kbd

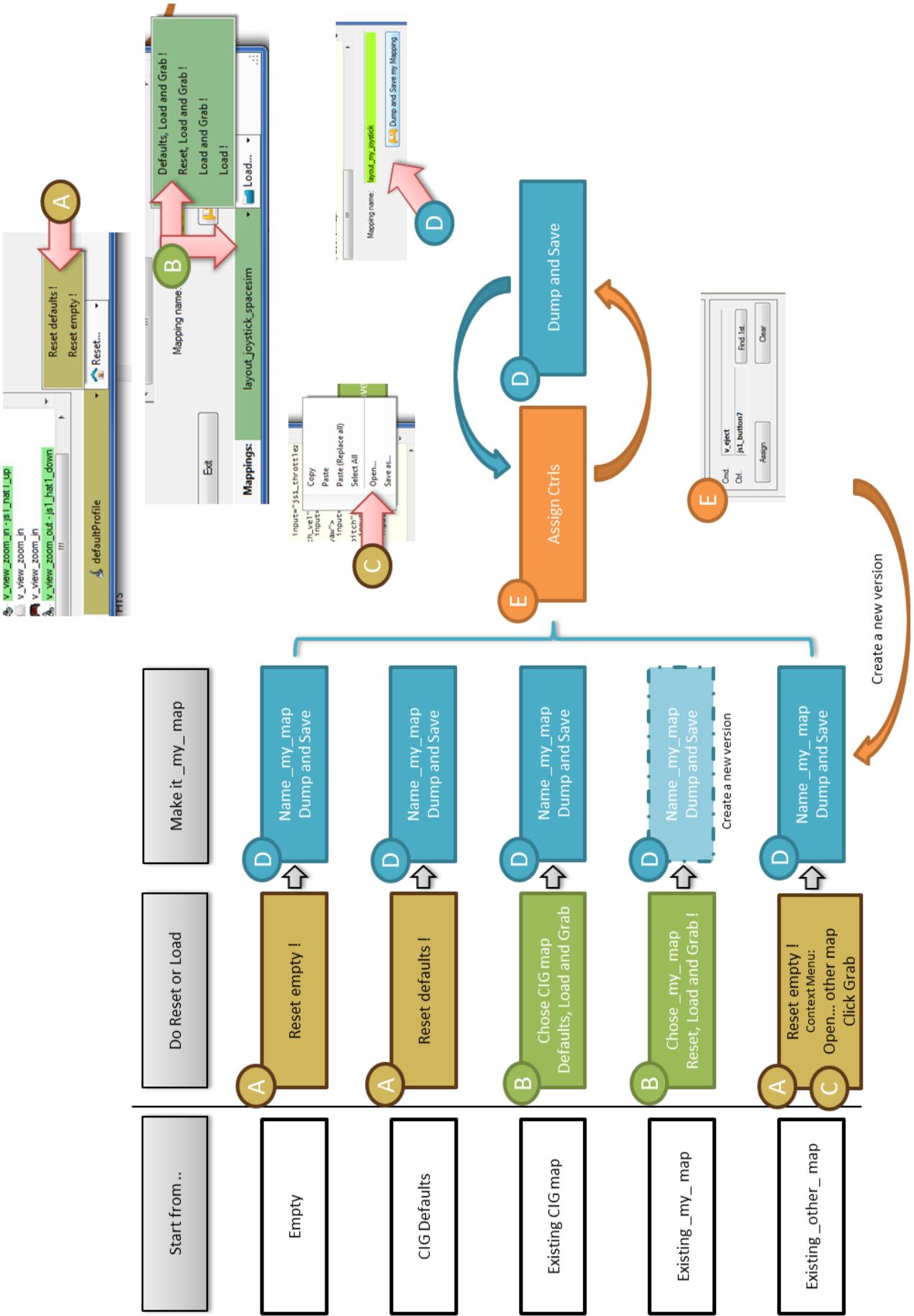
With every “Dump and Save”- the program creates a backup copy in the My Documents\SCJMapper folder, in addition the last one is moved to filename.backup so you have the last two saved versions if the USER folder of the game gets unavailable.

If you encounter an error or crash then read on...

- ◆ You will find ‘log4net.config.OFF’ in the distribution zip.
- ◆ Rename it to ‘log4net.config’ and run the program.
- ◆ Then look for a file named ‘trace.log’ in the program folder and
- ◆ send this via Git or to cassini@burri-web.org along with a description of the problem and your system i.e. OS, CPU, Graphics card, Joystick(s) we may then finally solve the issue ...

SCJMapper V 2 – Common Workflows

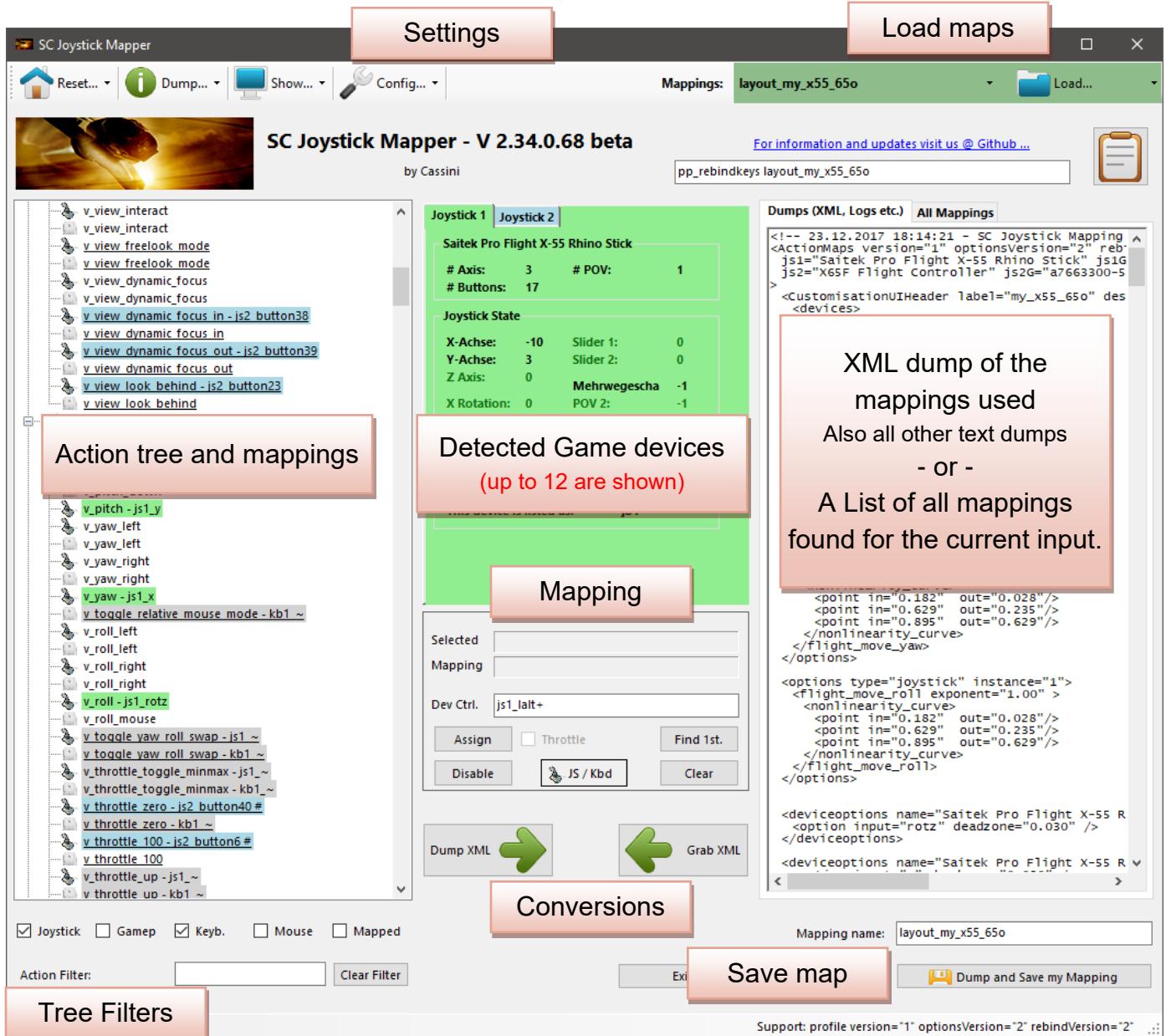
The Workflow



The GUI

Update for V 2.34

The user interface is all laid out for direct access — there are no menus



- ⇒ Action tree and mappings - shows the tree of action maps and actions derived from the defaultProfile directly from the game folders
- ⇒ There are some filters where you can limit the items shown in the tree
- ⇒ The program detects game devices - each one has its own tab
- ⇒ The XML area shows the outcome of the mapping and is what can be imported in the game directly
- ⇒ The Mapping area is where profile actions can be mapped individually to create the action mapping YOU want to use in the game

Game Devices



This screenshot shows the 'Joystick State' tab for the 'Saitek Pro Flight X-55 Rhino Stick'. The tab header also includes 'Joystick 1' and 'Joystick 2'. The device details are: '# Axis: 3', '# Buttons: 17', and '# POV: 1'. The 'Joystick State' section lists various axis and button assignments. For example, X-Achse is -16, Y-Achse is -28, Z Axis is 0, and Buttons are 15. The 'jsN - Assignment' section shows 'This device is listed as: js2'. A dark bar at the bottom indicates this is the 'Device Tab for the "blue" Joystick'.

The tabs represent the game devices found connected to the PC.

The program can show up to 12 devices.

The sequence 1..12 shows the order the PC reports them which is crucial to the mapping as this will result in the default js1_, js2_ .. Names used to build the command name.

A summary of the capabilities is show in the top area.

A tooltip indicates the real name of the device - move and point the mouse to any Tab to show the indicator.

The elements shown in 'Joystick State' are the ones the device seems to support – greyed ones are not available for this device.

You will see the actual jsN assignment - or 'not assigned'.

The SC-Device to Joystick Mapping is a separate window accessed by hitting the 'Js Reassign' button.

Just hit any button, Axis of the device and see how things are changing.

Note: the range for Axis is set to -1000 .. +1000 by the program and is not what other applications may show you.

Action Tree and mappings

Action Tree

The action tree is initially built from the game's defaultProfile - so these are the known actions which are grouped along 'action maps' e.g. 'spaceship_movement'. Each action is predefined for a specific device.

There are joystick, keyboard, mouse, and gamepad actions indicated by the icon.
– This is given by the SC default profile and cannot be changed. An action may e.g. not be available for the joystick.

Rebinding:

By 'rebinding' or mapping an action with a different control one does replace the default one.

Overwriting a keyboard action will result in having it available with a different command in the game.

You can only map actions using the same device as in the profile i.e. a keyboard action cannot be mapped with a joystick control.

If actions are mapped (as shown) the color indicates which device is mapped.

The device tab colors match the entries, keyboard and mouse have distinct colors. If the background is white - there is no current mapping given.

Unmapped actions are ignored.

Underlined items indicate an ActionModifier is applied in defaultProfile

Selecting an Action:

Click on any action to make it the used action in the mapping area. Once selected it is marked with the green arrow



A regular action tree

Joystick Gamep Keyb. Mouse Mapped

Action Filter: Clear Filter

Action Tree Filters

The screenshot shows a hierarchical tree view of action items. Several items under the 'spaceship_movement' category are highlighted in yellow, specifically 'v_throttle_zero - js3_button40 #', 'v_throttle_100 - js3_button6 #', and 'v_throttle_abs - js3_throttlez'. Below the tree is a toolbar with checkboxes for Joystick, Gamepad, Keyb., Mouse, and Mapped, all of which are checked. A text input field labeled 'Action Filter:' contains the text 'thro' and a 'Clear Filter' button. A status bar at the bottom says 'Filtered action tree - showing mapped joystick items with "thro"'.

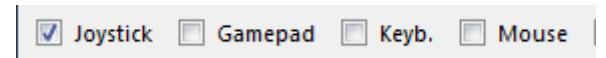
NOTE: Filters only restrict the items shown in the tree

Action Tree Filters

The action tree has a vast number of entries. So for convenience you may filter the shown items to the one you are interested in.

Device Filter

With the checkboxes at the bottom you may restrict the shown item to a particular category.



Check categories you want to see

Mapped Only

Restricts to show only mapped items

Action Filter Mapped

Accepts text entry to match parts of the action name

Clear Filter



To empty the 'Action Filter' field

Collapse / Expand

Use this context menu to unclutter the tree view.

Select an entry and 'Collapse to selected' to only show the actionmap items where the selected item belongs to.

Select 'Expand..' to ... expand the complete tree again.

Note: Using filters or loading a profile will expand the tree again.

The screenshot shows a tree view with several items under 'spaceship_view' highlighted in orange. A context menu is open over one of these items, showing options: 'Collapse to selected', 'Expand all Mappings', and 'Assign: js4_button15'. The 'Collapse to selected' option is highlighted.

Working with Profiles

Working with profiles

The program gets the actions from the real game asset – so you are always up to the actual values.

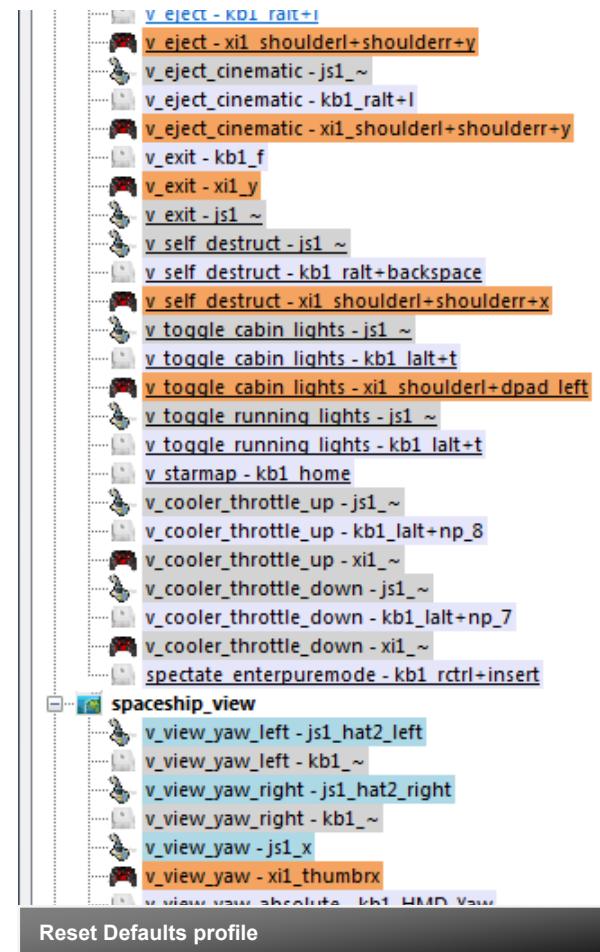
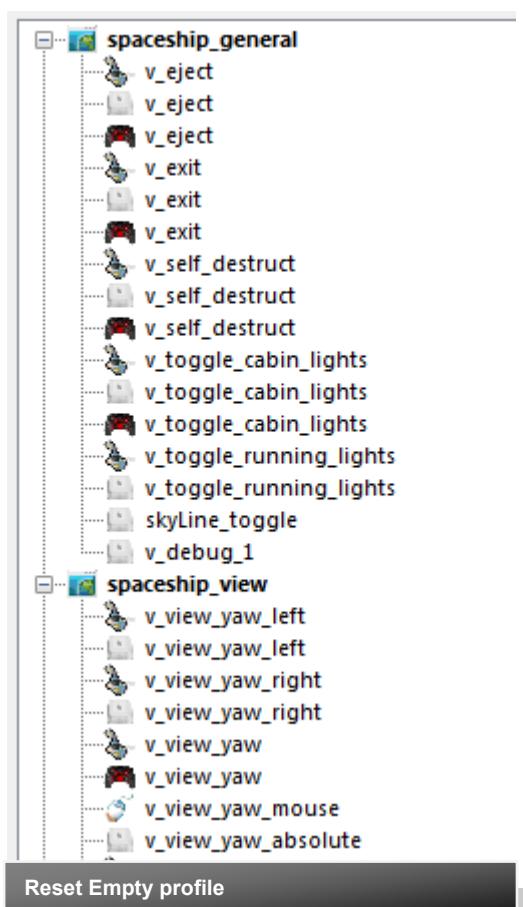
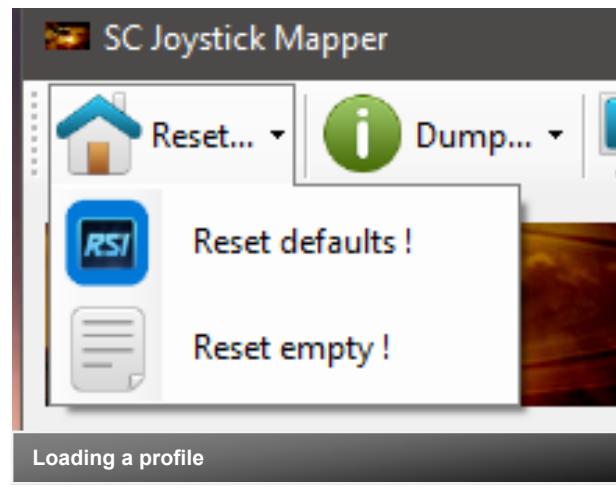
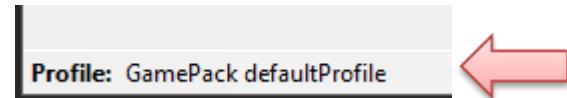
The in-game asset is used if

GamePack defaultProfile is shown

From here you may Reset the action list to the following

-RESET DEFAULTS loads the Joystick actions mapped with what CIG is providing in defaultProfile

-RESET EMPTY reverts to just an action list without any mappings



Mapping

Selected: v_pitch
Mapping: js3_y
Dev Ctrl.: js3_x

Assign Throttle Find 1st.
Disable  JS / Kbd Clear

Device Mode

Selected: v_pitch_down
Mapping:
Dev Ctrl.: np_5

Assign Throttle Find 1st.
Disable  JS / Kbd Clear

Keyboard and Mouse Mode

Joystick 1 Joystick 2 Joystick 3

Saitek Pro Flight X-55 Rhino Stick

# Axis:	3	# POV:	1
# Buttons:	17		

Joystick State

X-Achse:	-16	Slider 1:	0
Y-Achse:	-28	Slider 2:	0
Z Axis:	0	Mehrwegescl	-1
X Rotation:	0	POV 2:	-1
Y Rotation:	0	POV 3:	-1
Z-Rotation:	-1	POV 4:	-1
Buttons:	15		

jsN - Assignment

This device is listed as: js2

Device Tab for the 'blue' Joystick

Whenever you click on an action in the Action Tree it is copied into **Mapping** and can be mapped to a Control.

Dev Ctrl. is the last item you activated on the currently shown device tab.

You may also map keyboard and mouse actions.

Devices vs. Keyboard/Mouse

To switch between game devices and keyboard/mouse us the 'JS/Kbd' toggle. Note: keyboard entries are accepted when the Ctrl. Field has the focus

Select the device

To map a device control first select the device tab i.e. if you want to map a control of the second joystick you have to select the 'Joystick 2' Tab first.

Assign

Once you have a mapping that should be used, hit the "Assign" button.

The new mapping will be shown in the Action Tree – where it gets the back color of the device it is assigned to.

Throttles

To make any axis a Throttle axis – check the 'Throttle' box ! It is often the Z-Axis. A throttle gets a name like js2_throttlez.

Clear Actions

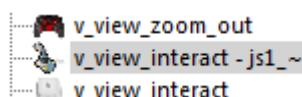
To clear a mapping – select it in the ActionTree and Click "Clear" - it gets a neutral color and no control in the ActionTree – it is now unmapped.

Find a mapping

You may use "Find 1st" to find the first action where the currently shown Ctrl.

Disabling

If you wish to disable a single item from the defaultProfile i.e. hide it from use select an item and then hit the 'Disable' button.



Advanced Mapping

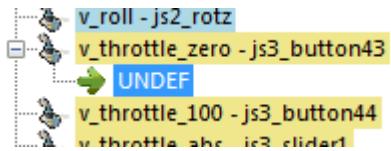
Context Menu

Right click an action opens a context menu giving a choice of functions that are possible right now.

Assign, Disable, Clear behave like the buttons in the main GUI

Add Mapping (see also Mouse Mapping)

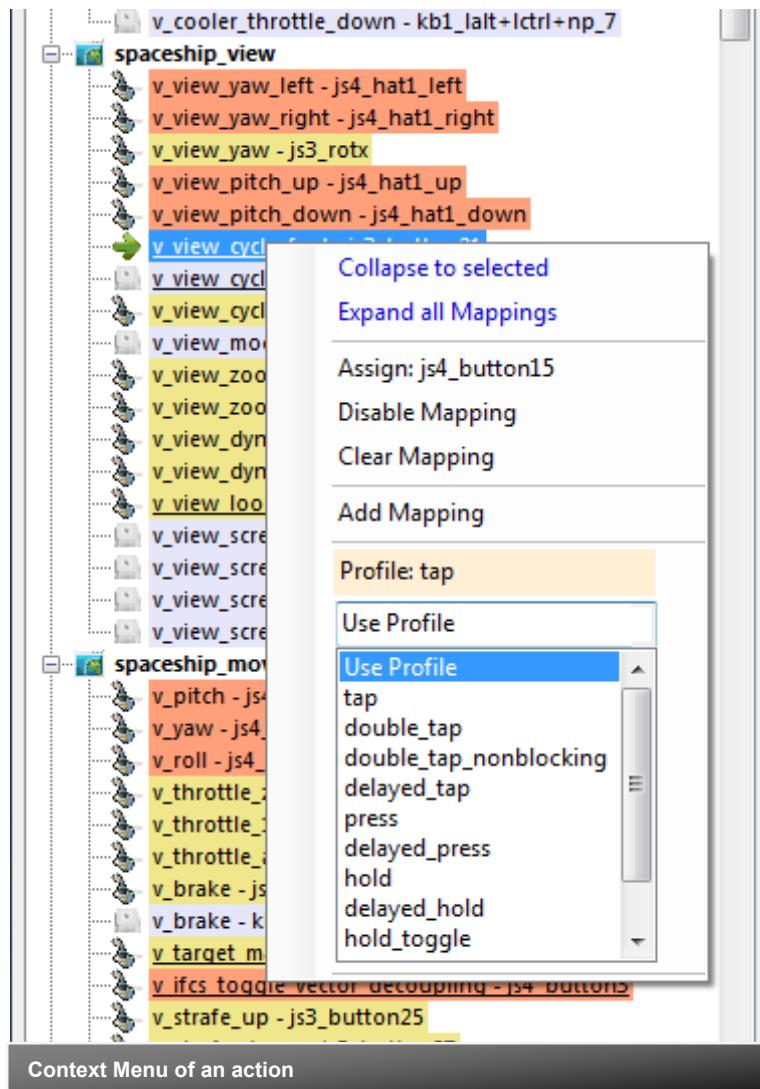
Will add a binding to the selected item to use a second control for this item. Such an addition can be mapped like the main entry - also deleted to remove it.



(Note: this may work partly in SC3.0)

Activation Modes Starting Profile: are activation modes. Profile indicates what is in the profile as default or 'no ActivationMode' if the profile does not apply one

```
<actionmap name="spaceship_view">
<action name="v_view_cycle_headlook_mode">
  <rebind input="js3_button21" ActivationMode="double_tap"
  />
<action name="v_view_toggle_headlook_mode">
  <rebind input="js3_rctrl+button21" />
```



You may choose a new activation mode for this mapping which is

Joystick mapping with Modifiers

The screenshot shows two configurations in a joystick mapping application:

Device modifier:

- Selected: v_toggle_cabin_lights
- Mapping: kb1_lalt+t
- Dev Ctrl.: js3_x
- Buttons: Assign, Throttle, Find 1st., Disable, JS / Kbd, Clear

Combined modifiers:

- Selected: v_toggle_cabin_lights
- Mapping: kb1_lalt+t
- Dev Ctrl.: lctrl+np_5
- Buttons: Assign, Throttle, Find 1st., Disable, JS / Kbd, Clear

Keyboard Modifiers

Controls can be extended with a Modifier.

Right now only keyboard modifiers can be used for joysticks.

Modifiers are preset:

Left/right Shift / Alt / Ctrl keys

Modifiers can be combined.

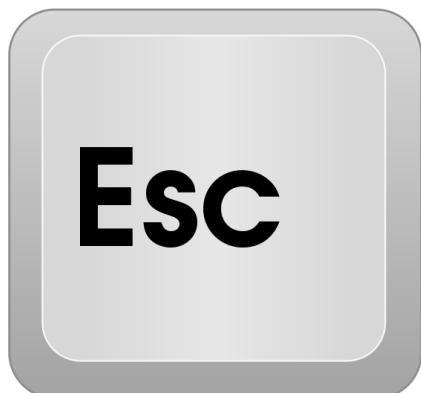
If you press a modifier it will show up like 'lshift+lctrl+key'

For devices the notation is different - it is prepended by the device tag

E.g. js2_lalt+y (js2_y is the control that is modified here)

For keyboard input press all keys and release them at once.

Sometimes a second attempt is needed to create the proper key sequence.



Clear Modifiers

To clear all modifiers from the input

Press the **ESC** key for a moment.

it will be cleared after ~3-4 seconds

Mouse Mapping

Adding Mouse Commands

Switch to Kbd Mode

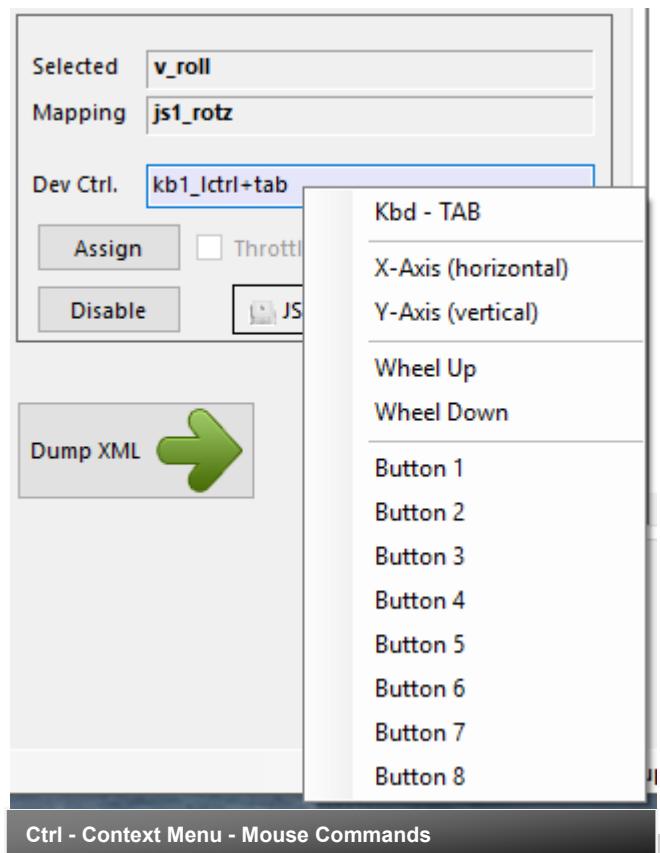


Context Menu

Right clicking the 'Ctrl' entry field opens a context menu giving a choice of mouse commands that are possible right now.

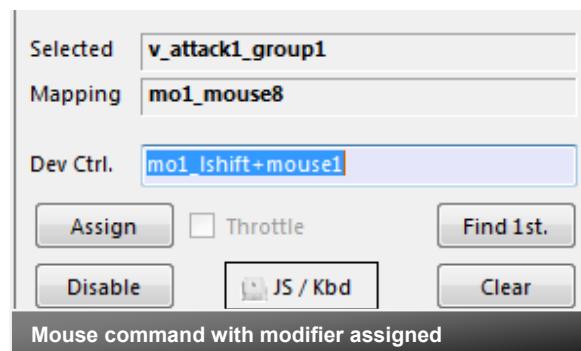
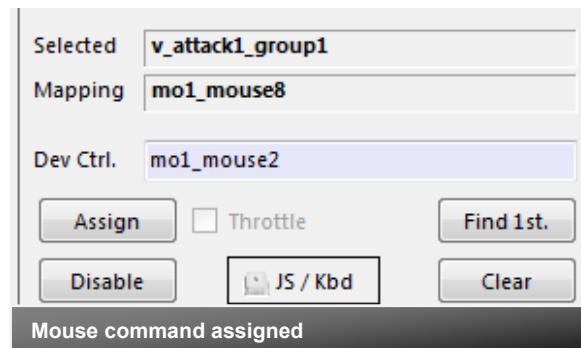
The number of buttons is taken from the current mouse input setting - you may need to find out which one is 1,2 ...

Keyboard Tab is here as well as it cannot be entered (navigates the GUI).



Modifiers from keyboard

Can be used to extend mouse commands



Mouse Mapping cont'd

Mouse mapped for keyboard action

It seems that for some actions CIG allows to map the mouse in addition to the keyboard. This may be intentional or not and may change in the future...

In order to add a mouse button to a keyboard action "Add Mapping" and assign a mouse input to it.

Example is with 'use' in the 'player' actionmap.

- To use "Add Mapping" one has to map the basic action - here to the already default key f.
- Then rightclick and select Add Mapping.
- Select the new UNDEF entry.

- Rightclick and select the mouse button in "Dev Ctrl."

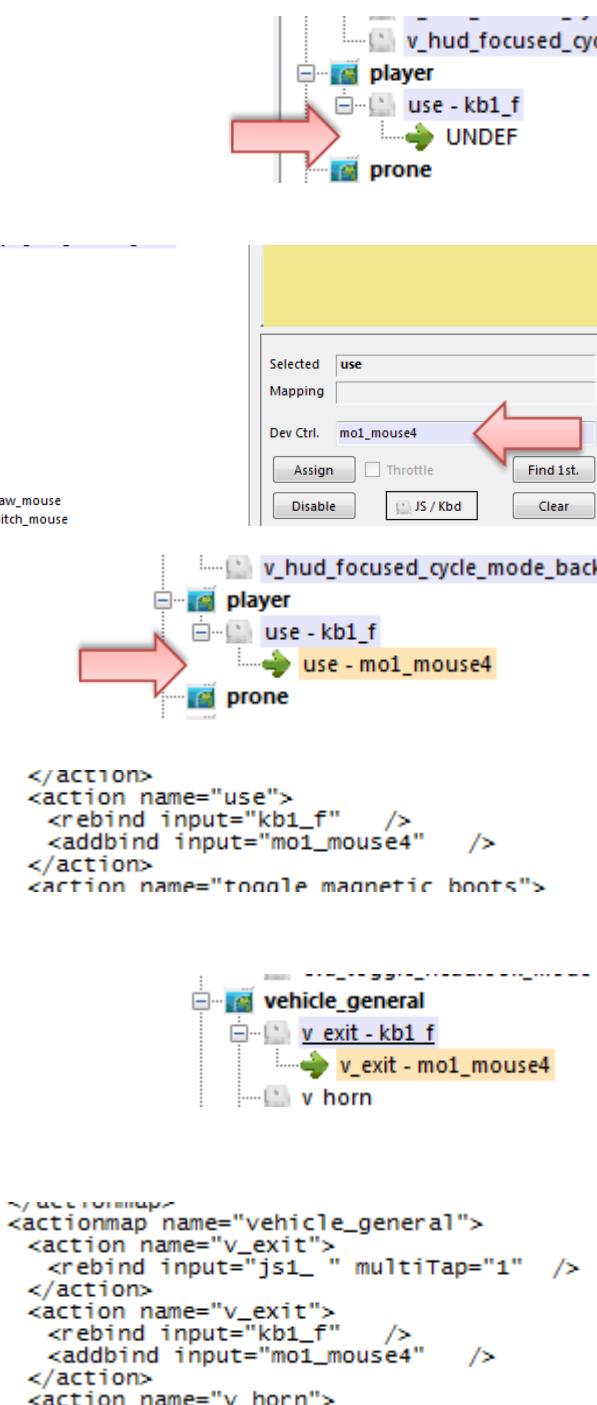
- Assign

Resulting XML
Seems to work in the Game (at least hangar it did)

Don't forget that for e.g. Use and Leave the buggy you would need to extend the vehicle - exit action as well.
It is tied to f as delayed press activation in the default profile.

For keyboard f there are many more mappings you want to check.

Note: this is rather experimental and may not always work as expected, also due to the many actions a mouse can be already be bound to.



XML Dump

XML Format

Mappings are sent to the game using XML formatted files.

The XML Area is where you may find the



mapping after hitting the 'Dump' button.

The Context Menu

Right click opens a menu where you may choose from:

Copy, Paste, PasteAll, Select All, Open..., Save As...

The usage is rather common here. Once you dumped the mapping you want to "Save" it as "filename.xml" somewhere.

To refine any mapping "Open" the file – the content is shown in the XML Area, then "Grab" it into the ActionTree. Once the refinement is finished – again Save it to a file.

Note: only use properly formatted ActionMaps here. The program may just break if it encounters something unexpected!

A screenshot of a software interface titled "Dumps (XML, Logs etc.)". A red arrow points to the "Dumps (XML, Logs etc.)" tab. The main area displays XML code representing an action map. The XML code includes sections for options (nonlinearity curves for yaw and roll), device options for Saitek Pro Flight X-55 R, and an actionmap named "spaceship_general" with various actions like "v_eject" and "v_exit". At the bottom of the XML area, a dark bar reads "XML Dump of an action map".

```
<point in="0.895" out="0.629" />
</nonlinearity_curve>
</flight_move_yaw>
</options>

<options type="joystick" instance="3">
<flight_move_roll exponent="1.00" >
<nonlinearity_curve>
<point in="0.182" out="0.028" />
<point in="0.629" out="0.235" />
<point in="0.895" out="0.629" />
</nonlinearity_curve>
</flight_move_roll>
</options>

<deviceoptions name="Saitek Pro Flight X-55 R">
<option input="rotz" deadzone="0.030" />
</deviceoptions>

<deviceoptions name="Saitek Pro Flight X-55 R">
<option input="x" deadzone="0.030" />
</deviceoptions>

<deviceoptions name="Saitek Pro Flight X-55 R">
<option input="y" deadzone="0.030" />
</deviceoptions>

<actionmap name="spaceship_general">
<action name="v_eject">
<rebind input="js2_button46" ActivationMo
</action>
<action name="v_eject">
<rebind input="kb1_ralt+1" />
</action>
<action name="v_exit">
<rebind input="kb1_f" />
</action>
<action name="v_exit">
<rebind input="js1_ " multiTap="1" />
</action>
<action name="v_self_destruct">
<rebind input="is1_ " multiTap="1" />
</action>
```

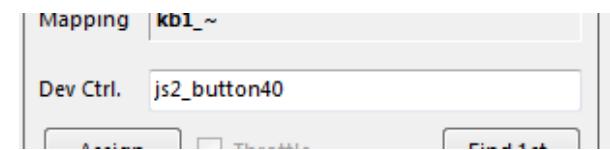
All Mappings

All Mappings - Tab

Dumps and this new mapping list are sharing the same space in a tabbed area.

You may switch at any time - nothing is lost here.

The Mappings are derived from the “Dev Ctrl.” and is updated whenever it *changes*.



Mappings are listed as either ‘profile’ which is an entry from the defaultProfile or ‘mapped’ which is one from the currently loaded user mapping.

The last part is the activation mode with multi tap number. Sometimes it is good to know if a command is delayed etc.

Note: sometimes you might need to toggle keyboard entries when previously a mouse entry was done - cannot be avoided..

To get the program to switch the tabs automatically - i.e. when an input changes to “All Mappings” and when a ‘Dump..’ button is pressed to “Dump (XML..)”. Check the corresponding box. Also available in Settings.



Action maps

Update for V 2.34

Working with action maps

(Maps, Mapping etc..)

The program gets the action maps from the USERS game asset – so you are always up to the actual values.

In addition it provides the in game mappings from RSI for review and modification (you have to save them with a custom name)

(...\\StarCitizen\\LIVE\\USER\\Controls\\Mappings)

From here you may first chose a map, then ‘Load’ the action map – this will overwrite your XML window in any case

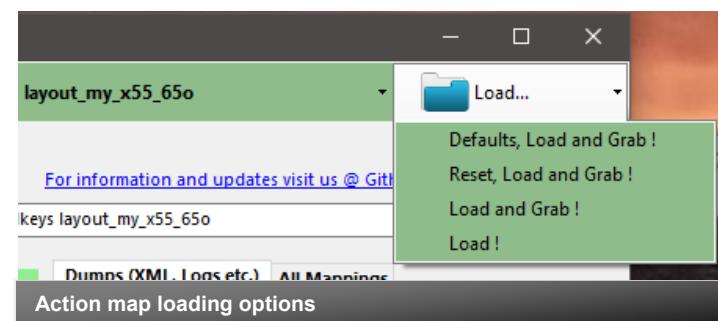
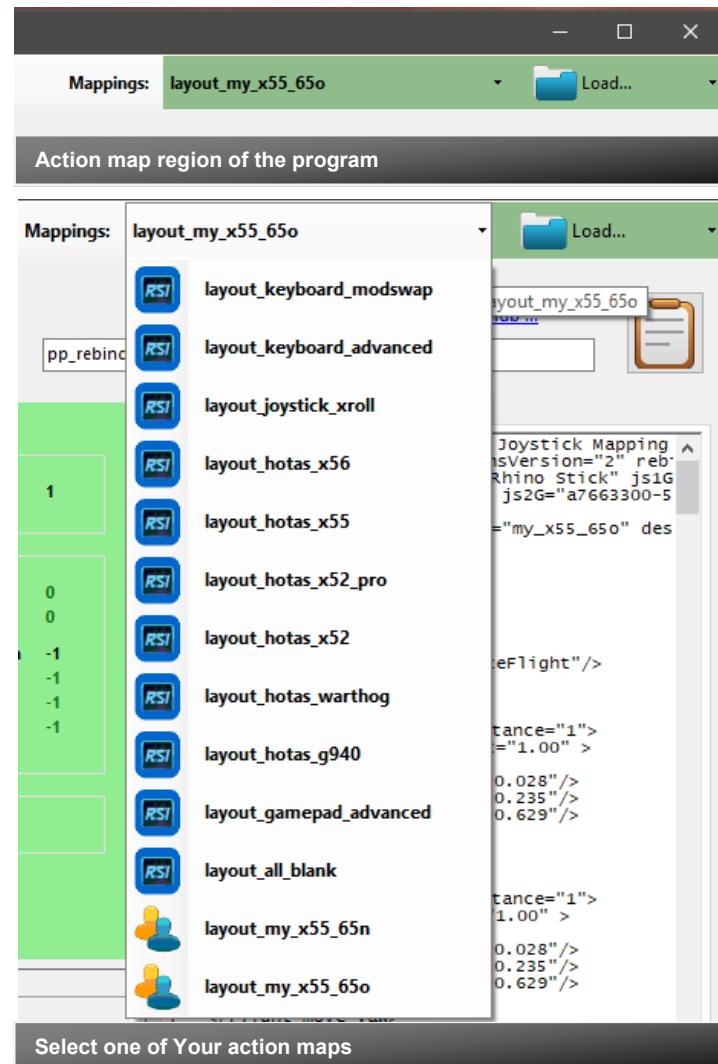
-DEFAULT, LOAD and GRAB first Reset (defaults) the action list then it loads and grabs the new map and merges them with the defaults

-RESET, LOAD and GRAB first Reset (empty) the action list (all mappings cleared) then it loads and grabs the new map

-LOAD and GRAB loads the map into the XML window and clicks Grab i.e. **merges** the existing mapping with the one loaded

-LOAD loads the map into the XML window only

See page 3 for some common workflows And how to handle them easily.

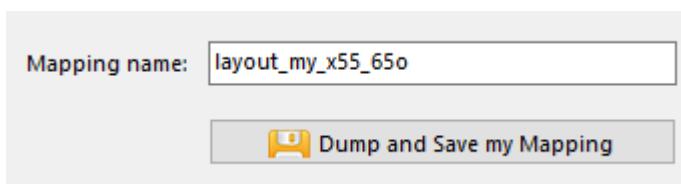


Your Actionmaps

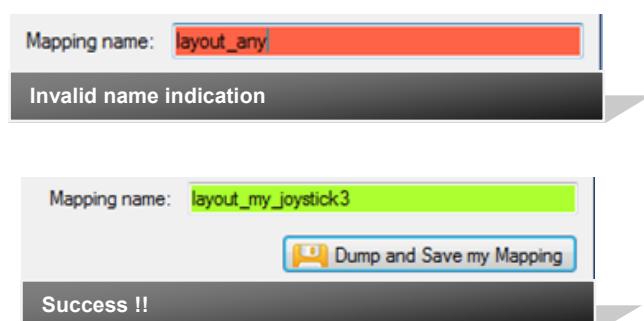
Working with your own actionmaps

The program not only gets the actionsmaps from the real game asset – but also can save your maps there.

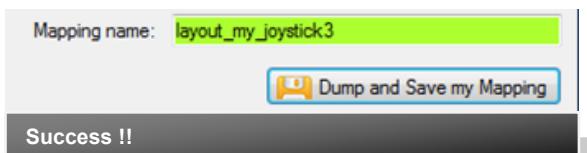
(...\\StarCitizen\\LIVE\\USER\\Controls\\Mappings)



- 1.Type a name
- 2.Hit the button – it will then Dump and Save your map into the game folder (asking you to overwrite it if it exists)



Remark: your map name has always to start with '**layout_my_**' to prevent conflicts with CIGs own actionmaps
Lowercase only, no spaces, tabs allowed else you see the red flag ..



A successful Save will show the green flag

Your own maps will then show up like the game provided maps
pp_rebindkeys layout_my_joystick

should load it into the game

Note: For your convenience each Save also makes a copy of into your personal "My Documents\\SCJMapper" folder – no work is lost if there is an update that cleans the Mappings folder.

Actiontree as table

The screenshot shows a table titled "Actiontree as Table" with columns for REF_ActionMap, ActionName, Device, Def_Binding, Def_Modifier, AddBind, Usr_Binding, Usr_Modifier, and Disabled. The table lists numerous entries for actions like v_eject, v_exit, v_self_destruct, etc., mapped to joysticks and keyboards with specific key combinations. A toolbar at the top right includes filters for Action Filter, Def Bind Filter, and Usr Bind Filter, along with buttons for Clear, Edit Disable, Disable all Unmapped, Accept Edits, and Undo Edits.

Actiontree can be show as table

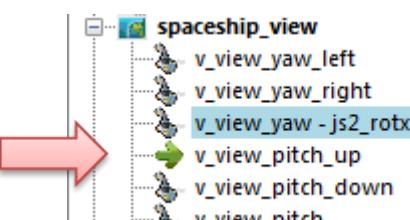
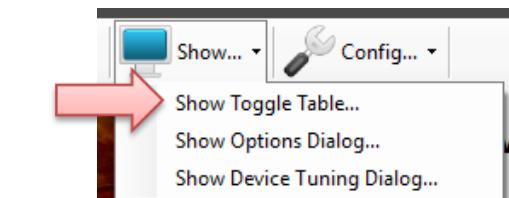
Actiontree as table

“Toggle Table...” will show and hide the Table window (above)

Double clicking a row or clicking the row header will select this item in the Main Windows Action Tree (green arrow).

The table can be filtered with either text and/or the checkboxes

(Note: those filters are not linked with the ones for the main action tree)



The table can be sorted by clicking any active column header.

The table shows rows for 20-player, 18-default, 18-default, and 20-player, with columns for REF_ActionMap, ActionName, Device, and Def_Bind. A red arrow points from the table above to this sorted table.

Clicking the leftmost (empty) column sorts the table along the initial Actiontree order.

The list shows two entries: 01-spaceship_general and 01-spaceship_general, with a red arrow pointing from the table above to this list.

Fast Disabling with a table

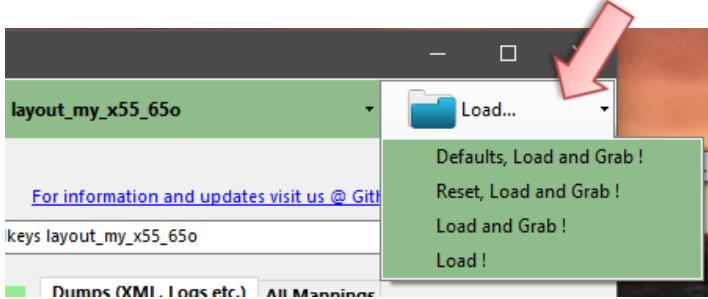


Edit Disabling

The only editable item in this table is “Disabled”. First enable edit with the checkbox. Then click on any of the checkboxes in the ‘Disabled’ column. **Undo** will revert, **Accept** carries all the changes to the main tree but they are not saved yet.

Read about Disabling also later in this document..

Hints - What about commands you really don't want to be mapped in game ?



Disable all Unmapped

Will disable all **unmapped** entries that are currently visible in the action tree.
I.e. use the checkboxes / filters to limit the visible items in the action tree.

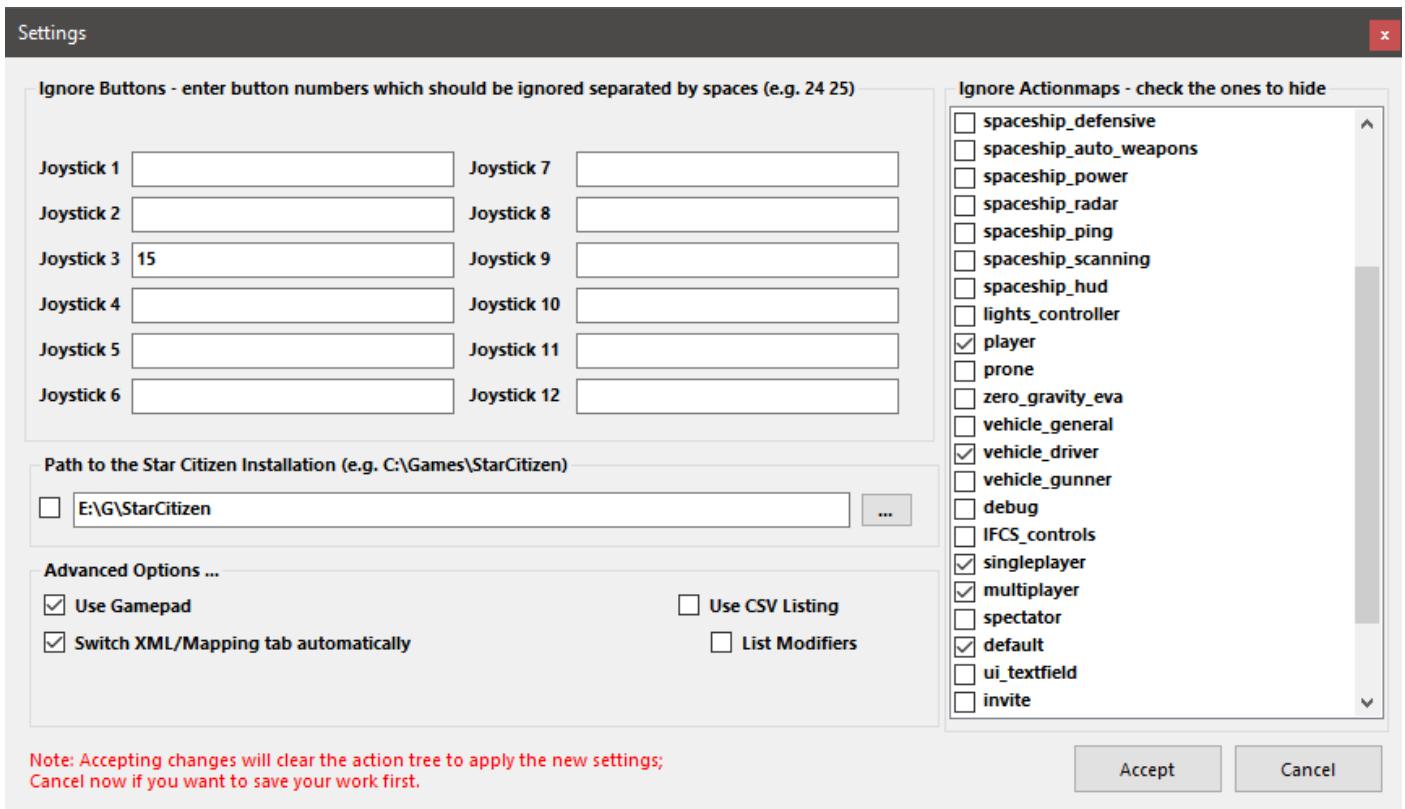
(Note: if you want to discard those changes after “Accept Edits” — “Load..” the map again)

Note: there is an oddity when changing ‘Disabled’ and the table is sorted by ‘Usr_Binding’. As it immediately resorts the table after accepting the edit the changed entry is moved somewhere else. If you click another one below it may then have moved already and the click goes wrong. This is intrinsic and cannot be changed.

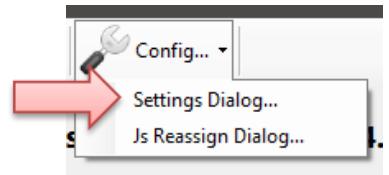
So if you want to fast apply disabling by clicking one after the other item either do NOT sort by ‘Usr_Binding’ OR if you must - start checking against the sort order i.e. if sorted ascending start checking from bottom to top.

Space for future use ...

Settings



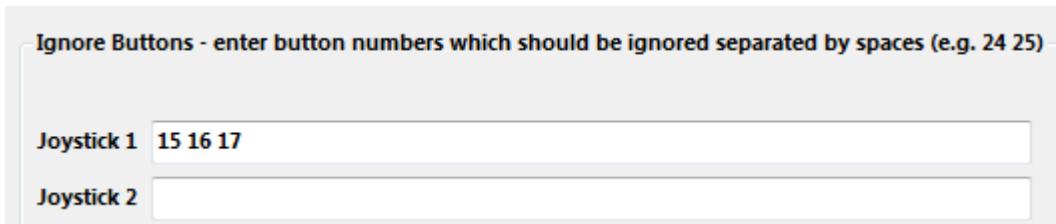
There are a number of settings you may need to do for efficient working..



Ignore Buttons

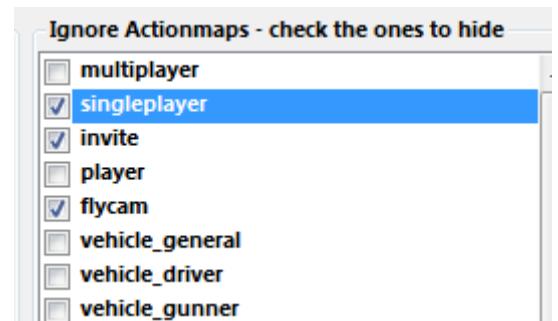
Some devices have buttons pressed to switch modes. I may be needed to 'ignore' them to get proper readouts for mapping.

Enter the numbers with a space between - like in the example below



Ignore Action maps

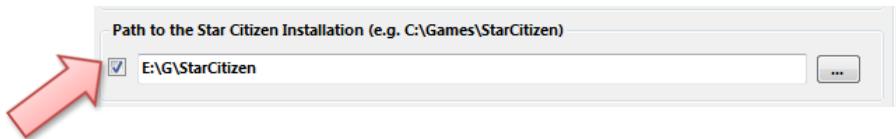
You may not want to deal with all the maps provided by the game - check the ones you want to ignore those maps are hidden from you and will not be processed once ignored.



Settings (2)

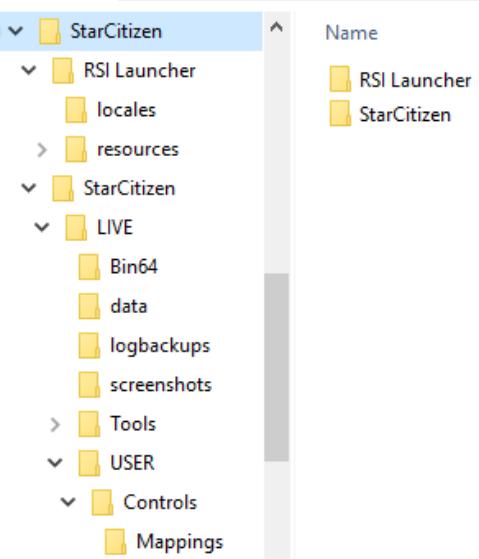
Providing a path to the game

In general the program finds the path to the game on its own, however if not, you may direct it to use a given path



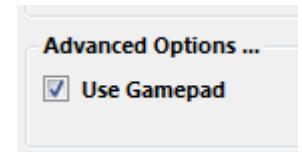
The path should be the top folder of the SC installation

Make sure to check the left box to use the path



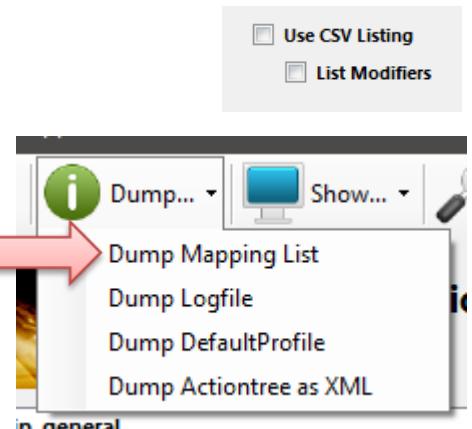
Use Gamepad

The gamepad needs special treatment - if you want to use a gamepad you have to check the box.

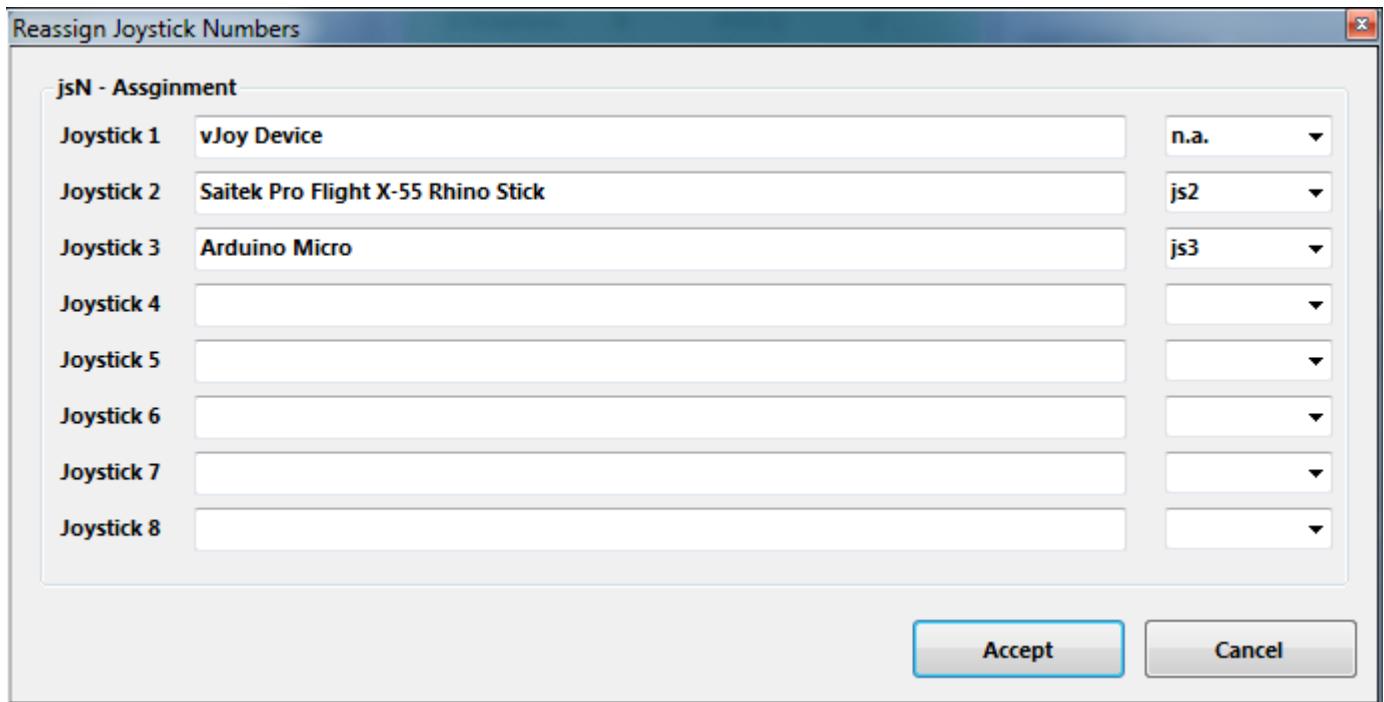


Listing Actiontrees as CSV list

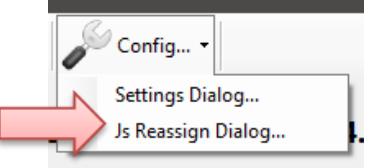
The actiontree can be listed in CSV format and with copy/paste or Save then used in a spreadsheet or database program. Optional the modifiers are listed. The list is created with "Dump List". Note: use the various options to e.g. create a list from the default profile or your map with or without the CIG standard layout. See also Hints on page 24 !!



Joystick Assignment



(re) assign the joystick devices to the wanted js - number



Go here if you wish to assign a device to a particular js – number or to re-assign the devices to other numbers.

Per default the devices found are assigned along the sequence 1..8 but SC may remap them so here is the place to fix this without having to go through all commands and reassign them.

Notes: The color of the assigned items will not change as it is still the same device but js1 will become js2 for example.

You can leave this dialog with “Accept” only if each device is either assigned to a unique number or to n.a. (not assigned) otherwise an error pops to ask you to fix it or Cancel.

Related SC console commands are:

`i_DumpDeviceInformation`

`pp_ResortDevices joystick 1 2`

`pp_rebindkeys export joystick`
`pp_rebindkeys export xboxpad`

Device Tuning 1/3

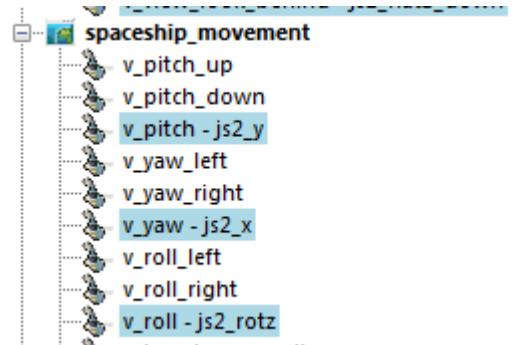
There are options provided to tune the reaction of a game device

Use 'Device Tuning' to optimize it, it supports:

- Deadzone
- Sensitivity
- Invert
- either Exponent or NonLinearCurve

independently for the Yaw-, Pitch-, and Roll- axes
or the Strafe axes

Note: Tuning will only recognize mapped controls



Hit the 'Device Tuning' button to open the tuning window



Joystick Tuning

Actual mapping for the axis

Tuning parameters of the axis

Tuning parameters of the active axis

Joystick IN-> OUT map

Live IN – OUT values scaled 0 .. 1

Turnspeed [seconds per full turn]

Damping - how fast will a movement stop (1=fast)

Changing Skies

Done

Activate an axis

Switch group

Deadzone Saturation

Exponent: 1.000

IN(x) OUT(y)

Point 1: 0.182 0.028

Point 2: 0.629 0.235

Point 3: 0.895 0.629

Yaw -->

Pitch -->

Roll -->

Tune YPR

Tune Strafe

Live View of the joystick movement

sec per 360° turn

damping

Out there 1 Canyon Highway

Out there 3 Shiodome Big Sight

Skybox.dds LA Helipad Sunset

The screenshot shows the Joystick Tuning window for a spaceship. It displays three sets of tuning parameters for Yaw, Pitch, and Roll axes. Each set includes checkboxes for Invert, Deadzone, Saturation, and Exponent, along with specific numerical values for Pt1, Pt2, and Pt3. Below these are dropdown menus for 'Activate an axis' (set to Yaw), 'Switch group' (set to YPR), and a 'Joystick IN-> OUT map' section. This map is a grid where users can define non-linear mappings between joystick input (IN) and game output (OUT). A preview graph shows the current mapping. To the right, there's a 'Live View' of the ship in space, a 'Turnspeed' slider (set to 6), a 'Damping' slider (set to 6), and a 'Changing Skies' section with various skybox options. At the bottom right is a 'Done' button.

Device Tuning 2/3

How to...

There is one active axis – the color frame of the chart indicates the active one (here blue = Yaw)

Parameters can be manipulated for the active axis only.

Switch the active one by clicking the Yaw, Pitch, Roll Option (bottom, left) 1

Or change the group to and from Strafe to YPR 2

Activating a tuning parameter will activate too 2a

Parameters must be 'checked' to be used 3

e.g. Deadzone and NonLinearCurve (Pt1..3) are checked for Yaw

Each axis has its own set of parameters

Active and Checked (Enabled) parameters can be changed. 3

Deadzone is a simple slider from 0.0 to 0.15 (try it out in the live view) 4

All other parameters are handled by first choosing it (e.g. Point 1) 4

Changing the value by first left click and hold into the chart area, then moving the mouse up-down and left-right to adjust – then release the mouse button. 5

Point 1 is usually the leftmost orange marker 5

If you wish to copy the Curve Points to all other axis – click the Copy button 6

Sensitivity and Exponent will only go with up-down movement of the mouse 6

The screenshot shows the Joystick Tuning interface. On the left, there are three sections for Yaw, Pitch, and Roll, each with various tuning parameters like Deadzone, Saturation, and Exponent. Below these are buttons for 'Tune YPR' and 'Tune Strafe'. In the center, a graph titled 'v_yaw - js3_x' shows a curve with points labeled Point 1, Point 2, and Point 3. A 'Copy to all axis' button is visible. At the bottom, there's a 'Live' section showing current values for Yaw, Pitch, and Roll. To the right, there are sliders for 'sec per 360° turn' and 'damping', and a list of environments: Out there 1, Canyon, Highway, etc. A 'Done' button is at the bottom right.

Here Roll (Green) is active and Exponent is chosen to be changed. 1

By click, hold and moving down – the exponent was changed from 1.47 to 2.83

The curve represents IN vs OUT of the joystick 2

If you move the joystick the 'Live' fields will report what's going on: 2

Sometimes it is helpful to just disable one direction of the movement 3

Check OFF for any axis (it just disables it for the Live View) 3

This screenshot shows the same interface as above, but with the Roll section active (indicated by a green background). The graph shows a curve with points. A '1' points to the 'Exponent' field which has been changed from 1.00 to 2.83. A '2' points to the 'Live' section at the bottom showing current axis values. A '3' points to the 'Y-Axis' checkbox in the 'Live' section, which is unchecked, indicating it's disabled.

Device Tuning 3/3

Once back from Tuning...

With "Dump" or "Dump and Save" you will get the new Tuning values into the XML area – if you don't want to apply the new settings, just hit "Grab" to restart with the settings from the XML area.

With "Dump" the prog will maintain the parameters using the following 2 XML tags

- <options ...>
- <deviceoptions ...> (Deadzone only)

One set for each axis

Note: the program will automatically apply Exponent="1" if the Exponent is not used – if not set to 1 the game will use something like 2.3 and reshape any setting to an unexpected outcome...

*If you have a 2 monitor setup – you may want to try to have the tuning window open while running AC – the joystick input is then applied to both applications – getting into the console will let you the mouse to interact with the tuning window, create a new tuned map and you may apply it immediately via console rebind to try it out
(You may need a fast computer – but then AC needs this anyhow...)*

```
For information and updates visit us @ Github ...
File layout_my_x55_65test

<!-- 22.12.2014 17:59:09 - SC Joystick Mapping --&gt;
&lt;ActionMaps ignoreversion="1"
  id="Saitek Pro Flight X-55 Rhino STICK" js3G="60"&gt;
&lt;CustomisationUIHeader device="joystick" label="Saitek Pro Flight X-55 Rhino STICK" /&gt;
&lt;options type="joystick" instance="3"&gt;
&lt;flight_move_pitch exponent="1.00"&gt;
&lt;nonlinearity_curve&gt;
&lt;point in="0.182" out="0.028"/&gt;
&lt;point in="0.629" out="0.235"/&gt;
&lt;point in="0.895" out="0.629"/&gt;
&lt;/nonlinearity_curve&gt;
&lt;/flight_move_pitch&gt;
&lt;/options&gt;

&lt;options type="joystick" instance="3"&gt;
&lt;flight_move_yaw exponent="1.00" /&gt;
&lt;nonlinearity_curve&gt;
&lt;point in="0.182" out="0.028"/&gt;
&lt;point in="0.629" out="0.235"/&gt;
&lt;point in="0.895" out="0.629"/&gt;
&lt;/nonlinearity_curve&gt;
&lt;/flight_move_yaw&gt;
&lt;/options&gt;

&lt;options type="joystick" instance="3"&gt;
&lt;flight_move_roll exponent="1.00" /&gt;
&lt;nonlinearity_curve&gt;
&lt;point in="0.182" out="0.028"/&gt;
&lt;point in="0.629" out="0.235"/&gt;
&lt;point in="0.895" out="0.629"/&gt;
&lt;/nonlinearity_curve&gt;
&lt;/flight_move_roll&gt;
&lt;/options&gt;

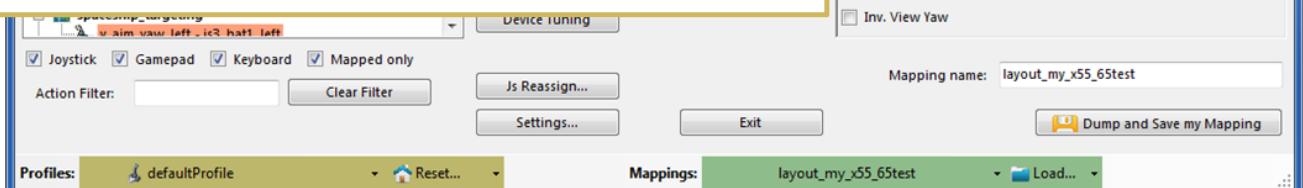
&lt;options type="joystick" instance="2"&gt;
&lt;flight_throttle invert="1" /&gt;
&lt;/options&gt;

&lt;deviceoptions name="Saitek Pro Flight X-55 Rhino STICK" /&gt;
&lt;option input="x" deadzone="0.025" /&gt;
&lt;/deviceoptions&gt;</pre>
```



<input type="checkbox"/> Inv. Flight Pitch	<input type="checkbox"/> Inv. Flight Roll
<input type="checkbox"/> Inv. Aim Pitch	<input checked="" type="checkbox"/> Inv. Throttle
<input type="checkbox"/> Inv. View Pitch	<input type="checkbox"/> Inv. Strafe vertical
<input type="checkbox"/> Inv. Flight Yaw	<input type="checkbox"/> Inv. Strafe lateral
<input type="checkbox"/> Inv. Aim Yaw	<input type="checkbox"/> Inv. Strafe longitudinal
<input type="checkbox"/> Inv. View Yaw	

Mapping name: layout_my_x55_65test

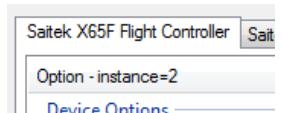
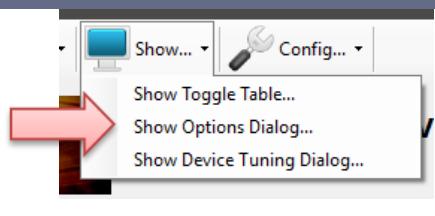


Device & Action Options 1/2

Open the **Options ...** window to access this feature

Device Options are the ones tied to a certain device e.g. a joystick axis.

Action Options are grouped into different kind of actions e.g. `flight_move` group similar to the actionmap grouping (but not exactly the same..) AND they are tied to a device and “instance” i.e. the jsN number for joysticks. (The X65F is js2 in this example).



The dialog will also track which control is assigned to which action and show it in the rows accordingly

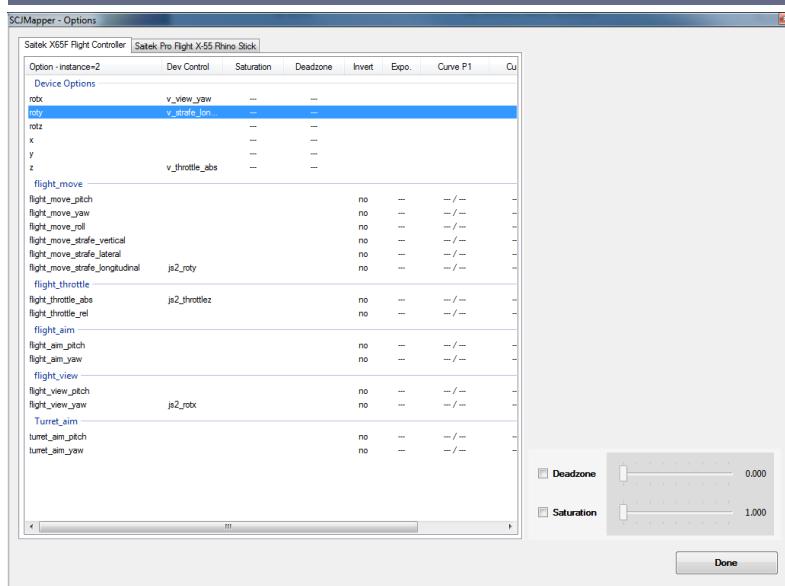
- There is one tab for each device that is used - here we have the two joysticks.
- You click into a row to edit the settings.

There are only Saturation and Deadzone available for *Device Options*.

For *Action Options* there are tuning parameters available and if an action is mapped both kind of edits are made available for convenience.

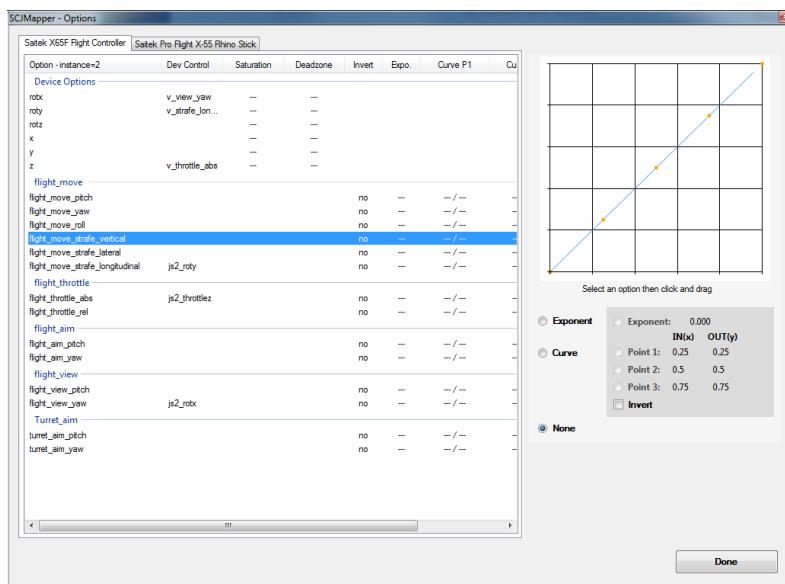
A screenshot of the JMapper software showing the "Device Options" tab for the "Saitek X65F Flight Controller" device, specifically for instance 3. The table lists various action mappings. To the right, a tuning graph for the "v_yaw - js3_x" mapping is shown. The graph has three points: (0.182, 0.028), (0.629, 0.235), and (0.895, 0.629). A blue curve connects these points. Below the graph, parameters for the mapping are displayed: Exponent: 0.000, IN(x): 0.182, OUT(y): 0.028, Point 1: 0.182, 0.235, Point 2: 0.629, Point 3: 0.895, and Invert checked. Sliders for Deadzone (0.028) and Saturation (1.000) are also present. A red arrow points from the text "For Action Options there are tuning parameters available and if an action is mapped both kind of edits are made available for convenience." to the tuning graph area.

Device & Action Options 2/2



Device Options

Enable /Disable Deadzone and Saturation with the checkboxes, use the slider to control the value of an enabled item.



Action Options

Use the radio buttons to select one of the tuning kinds (Exponent, Curve or None)

Click and drag the curve or points in the grid.

Check Invert to invert this action

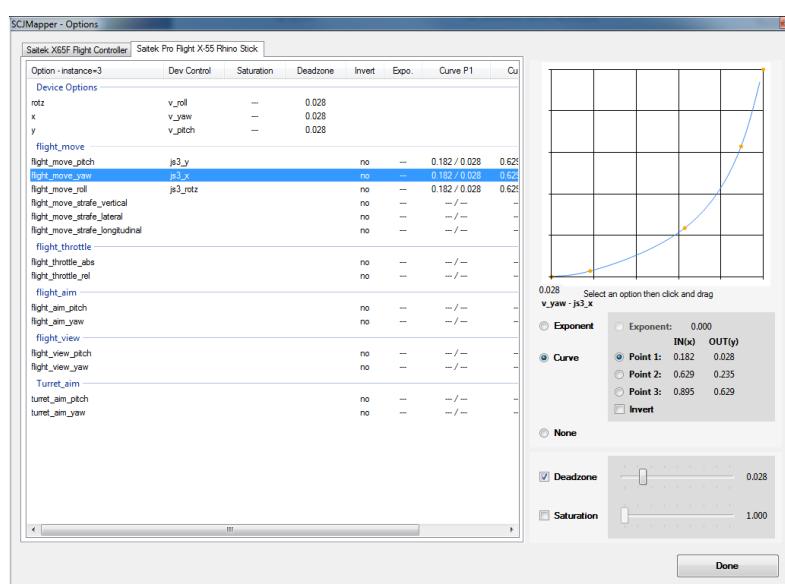
None will disable the tuning but not Invert

Here is a mapped action selected.

This enables the tuning items but also the related device options of the mapped control

Note: tuning of unmapped items will not make a lot of sense but you may later assign a control to the action and then the tuning becomes active in the mapping.

Also note that this is how CIG treats the Options - the program is just following the rules..



Hints ...

How to get a list of all game commands when using a map file?

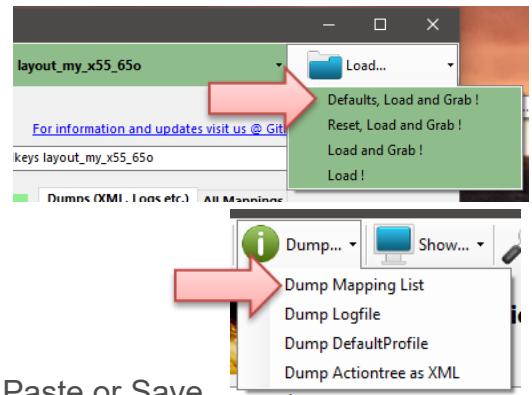
- Load a map using ‘Defaults’

- Hit ‘Dump Mapping List’

... Gets you the complete list of commands in use
if you load that map in game

- Right click in the listing to get a context menu to Copy / Paste or Save As..

- The mapping filter checkboxes can be used



. kb1 _ slash

+ js3 _ button4
. kb1 _ 1
+ js3 _ button3
. kb1 _ 2
+ js3 _ button2
. kb1 _ 3
+ js3 _ button1
. kb1 _ 0
+ js3 _ button6
. kb1 _ np_add
+ js3 _ rctrl+button6
. kb1 _ np_subtract
+ js3 _ buttons5
. kb1 _ np_add
+ js3 _ rctrl+button5
. kb1 _ np_subtract
+ js3 _ rctrl+button4
. kb1 _ 4
+ js3 _ rctrl+button3
. kb1 _ 5
+ js3 _ rctrl+button4
. kb1 _ 6

+ js3 _ button16

- . [1] Use Profile

For bindings and activation:

- . indicates a profile entry i.e. a default setting
 - + indicates a user mapping
 - # indicates a user ActivationMode setting

Hints ...

How to use pp_rebindkeys easy in the game ?



- Clicking the Notepad icon top right copies the pp_rebindkeys command into the Clipboard – from there just Ctrl-V it into the SC console..

Note: if you want to be sure to apply only your new map first type pp_rebindkeys without a file and then Enter - the response of the game should be - loaded factory defaults ...

Then use the command with your mapname (without the .xml extension)

How to apply keyboard commands and modifiers ?

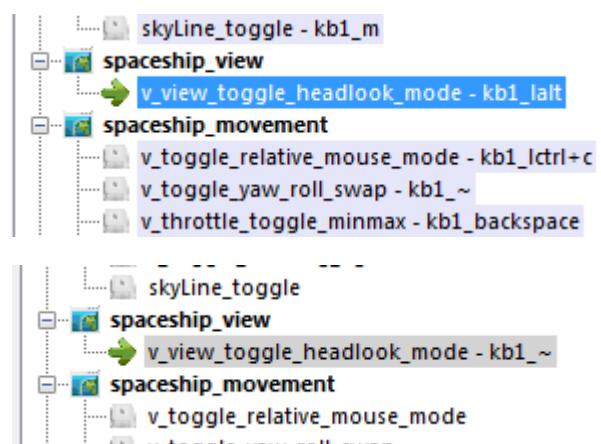
Sometimes your command is not recognized with the first try

Check the Ctrl field each time and if it does not yet capture what you want – try once more. Also releasing all controls currently pressed **together** helps to get successful Ctrl. Entries.

What about commands you really don't want to be mapped in game ?

Sometimes default commands from CIG annoyingly interfere with your game style

- Load a Profile with defaults and filter if needed to find the problematic action
- If you find that this single kbd leftalt command is disturbing your use of the left alt modifier
- Reload your own map and '**Disable**' that action for the keyboard to ignore it in the game



Hints ...

How to Calibrate a gamepad?

Sometimes the gamepad axes are rather off and will overwrite commands.

E.g. there is always `xi_thumbly` shown and one cannot get any other ctrl. mapped and the readout is high.

GamePad State		
DPad:		
TStick Left:	192	3072
TStick Right:	0	0

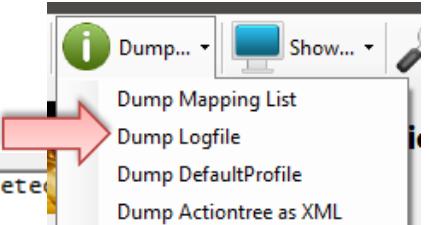
To calibrate the gamepad press all 4 ABXY buttons together and wait about 2 sec. then the reading should be 0 or close to 0 for all axes (the detection limit is about 500).



GamePad State		
DPad:		
TStick Left:	0	52
TStick Right:	0	0

How to find out which controllers (Joysticks) are available in game ?

- Run the game and then go back to SCJMapper
- Use 'Dump Logfile' to read parts of the CIG gamelog.



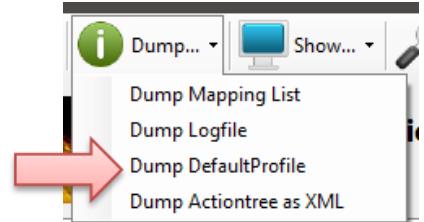
```
-- 06.05.2017 02:42:01 - SC Joystick AC Log Controller Detection
Log started on 05/06/17 00:13:20
Running 64 bit version
Executable: E:\G\StarCitizen\StarCitizen\Public\Bin64\StarCitizen.exe
ProductVersion: 2.6.7.65236
Windows 7 64 bit SP 1 (build 6.1.7601)
32717MB physical memory installed, 24698MB available, 8388607MB virtual memory in use
Current display mode is 2560x1600x32
IBM enhanced (101/102-key) keyboard and 16+ button mouse installed
- Connected joystick0: vJoy Device {BEAD1234-0000-0000-0000-504944564944}
- Connected joystick1: Saitek X65F Flight Controller {0B6A06A3-0000-0000-0000-504944564944}
- Connected joystick2: Saitek Pro Flight X-55 Rhino Stick {22150738-0000-0000-0000-504944564944}
- Connected xinput0
```

You may see which devices are recognized by the game - joystick0 must be mapped as js1 etc. xinput0 is the gamepad here (this is then xi1)

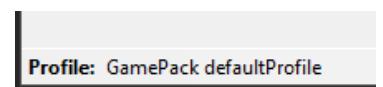
Hints ...

How to get the defaultProfile.xml now that it is no longer a text file?

- Use 'Dump DefaultProfile'



... Gets you the complete used defaultProfile in the right window



The in-game asset is used if **GamePack defaultProfile** is shown

- Right click in the listing to get a context menu to Copy / Paste or Save As..

```
<profile version="1" optionsVersion="2" rebindVersion="2" >
<platforms>
<PC keyboard="1" mouse="1" xboxpad="1" ps3pad="0" joystick="1" />
<Xbox keyboard="1" xboxpad="1" ps3pad="0" />
<PS3 keyboard="1" xboxpad="0" ps3pad="1" />
</platforms>

<actiongroup action="v_attack1" >
<action name="v_attack1_group1" />
<action name="v_attack1_group2" />
<action name="v_attack1_group3" />
</actiongroup>

<ActivationModes >
<ActivationMode name="tap" onPress="0" onHold="0" onRelease="1" multiTap="1" multiTapBlock="1" pressTime="100" releaseTime="100" >
<ActivationMode name="double_tap" onPress="1" onHold="0" onRelease="0" multiTap="2" multiTapBlock="1" >
<ActivationMode name="double_tap_nonblocking" onPress="1" onHold="0" onRelease="0" multiTap="2" multiTapBlock="0" >
<ActivationMode name="press" onPress="1" onHold="0" onRelease="0" multiTap="1" multiTapBlock="1" pressTime="100" releaseTime="100" >
<ActivationMode name="delayed_press" onPress="1" onHold="0" onRelease="0" multiTap="1" multiTapBlock="1" >
<ActivationMode name="hold" onPress="1" onHold="0" onRelease="1" multiTap="1" multiTapBlock="1" >
<ActivationMode name="delayed_hold" onPress="1" onHold="0" onRelease="1" multiTap="1" multiTapBlock="1" >
<ActivationMode name="smart_toggle" onPress="1" onHold="0" onRelease="1" multiTap="1" multiTapBlock="1" >
</ActivationModes>

<CustomisationUIHeader >
<Keyboard label="@ui_ResetToDefaults" description="@ui_KeyboardDefaultDesc" image="KeyboardDefault" />
<xboxpad label="@ui_ResetToDefaults" description="@ui_GamepadDefaultDesc" image="GamePadDefault" />
<joystick label="@ui_ResetToDefaults" description="@ui_JoystickDefaultDesc" image="JoystickDefault" />
</CustomisationUIHeader>

<optiontree type="keyboard" name="root" UIShowInvert="-1" UISensitivity="-1" UISensitivityMin="0.01" >
<optiongroup name="master" UILabel="@ui_COMasterSensitivity" UIShowSensitivity="1" UIShowInvert="0" >
<optiongroup name="inversion" UILabel="@COMastersensitivityCurvesMouse" UIshowCurve="-1" UIShowSensitivity="1" >
<optiongroup name="inversion" UILabel="@ui_COInversionSettings" UIShowSensitivity="0" UIShowInvert="-1" >
<optiongroup name="fps" UILabel="@ui_COFPS" UIShowSensitivity="1" UIShowInvert="0" >
<optiongroup name="fps_view" >
<optiongroup name="fps_view_pitch" UILabel="@ui_COFPSViewPitch" invert_cvar="cl_invertMouse" >
<optiongroup name="fps_view_yaw" UILabel="@ui_COFPSViewYaw" UIShowSensitivity="1" UIShowInvert="1" >
</optiongroup>
</optiongroup>
<optiongroup name="flight" UILabel="@ui_COFlight" UIShowSensitivity="0" UIShowInvert="0" >
<optiongroup name="flight_move" UILabel="@ui_COFlightMove" UIshowSensitivity="1" >
<optiongroup name="flight_move_pitch" UILabel="@ui_COFlightPitch" UIShowSensitivity="1" UIshowCurve="1" >
<optiongroup name="flight_move_yaw" UILabel="@ui_COFlightYaw" UIShowSensitivity="1" UIShowInvert="1" >
</optiongroup>
<optiongroup name="flight_view" UILabel="@ui_COFreeLook" UIShowSensitivity="1" >
</optiongroup>
```

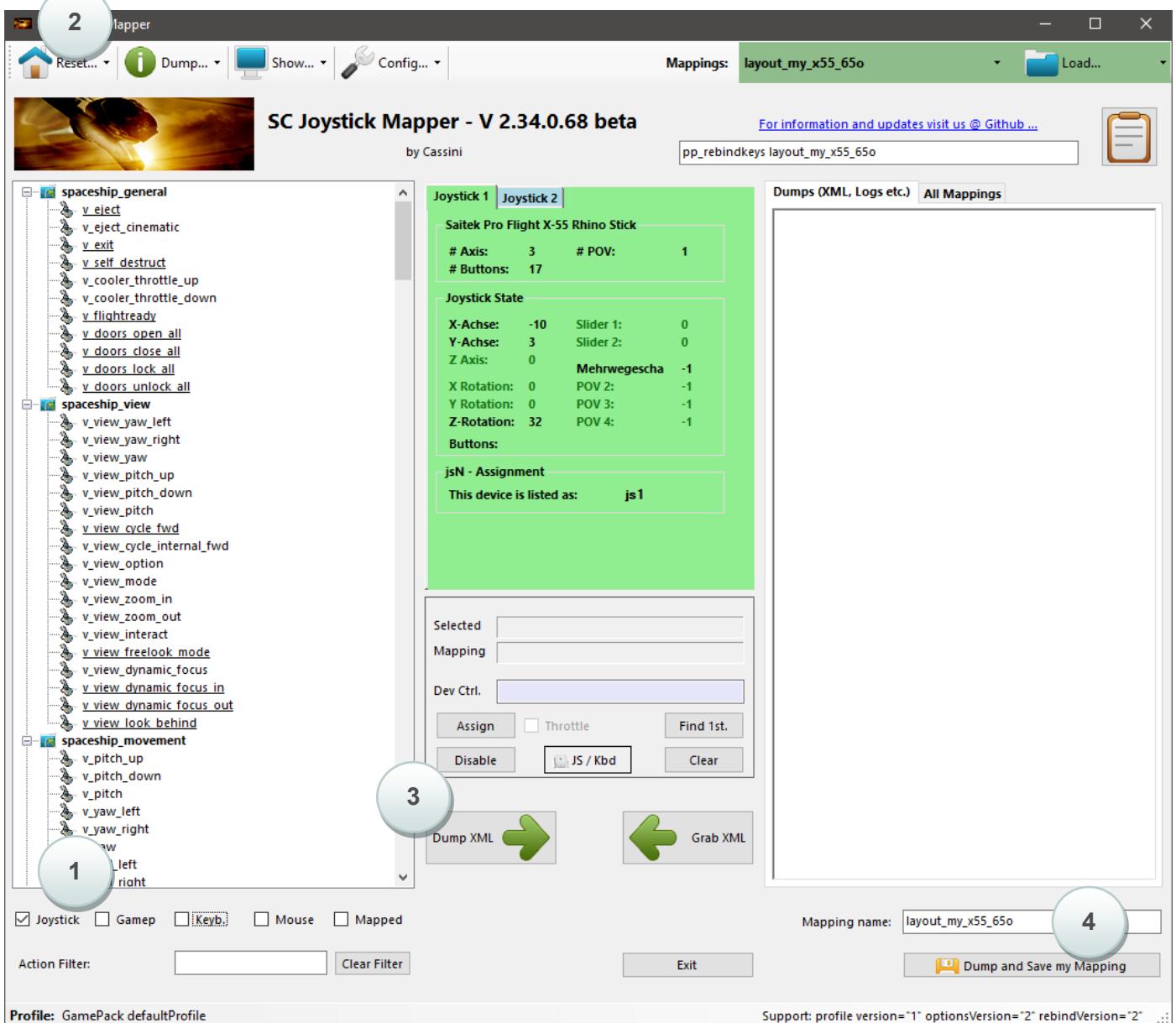
Hints ...

Intentionally left blank for future hints -
OR your hint if you send it to me ...

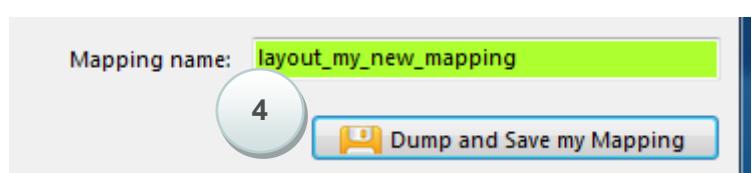
Hints ...

How to start with a mapping ?

- 1 Check all device types to be assigned (here only Joystick)
- 2 Use “Reset” – “Reset empty” - should look like below
- 3 “Dump XML ->” – just to see what this looks like – pretty empty...



- 4 Now it would be a good idea to *Dump and Save* the empty map with a name not yet used



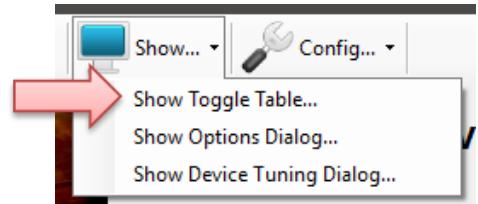
Now you are ready to map ...

Hints ...

How to start with a complete disabled map ? 1/2

Start with an empty map as shown in the previous page

Use Toggle Table.. – this is the Fast Disable trick



1 Check e.g. Mouse, Joystick and Gamepad – to edit and disable only those

2 Check “Edit Disable” – we want to edit the Disabled fields

3 Click “Disable all Unmapped”

REF_ActionMap	ActionName	Device	Def_Binding	Def_Modifier	AddBind	Usr_Binding	Usr_Modifier	Disabled
01-spaceship_general	v_eject	joystick	js1_ctrl+button6	double_tap	<input type="checkbox"/>		Use Profile	<input checked="" type="checkbox"/>
01-spaceship_general	v_eject	xboxpad	x1l_shoulder+..._y	double_tap	<input type="checkbox"/>		Use Profile	<input checked="" type="checkbox"/>
01-spaceship_general	v_exit	xboxpad	x1l_y	Use Profile	<input type="checkbox"/>		Use Profile	<input checked="" type="checkbox"/>
01-spaceship_general	v_exit	joystick	js1_~	press	<input type="checkbox"/>		Use Profile	<input checked="" type="checkbox"/>
01-spaceship_general	v_self_destruct	joystick	js1_~	delayed_press	<input type="checkbox"/>		Use Profile	<input checked="" type="checkbox"/>
01-spaceship_general	v_self_destruct	xboxpad	x1l_shoulder+..._y	delayed_press	<input type="checkbox"/>		Use Profile	<input checked="" type="checkbox"/>
01-spaceship_general	v_toggle_cabin_lights	joystick	js1_~	smart_toggle	<input type="checkbox"/>		Use Profile	<input checked="" type="checkbox"/>
01-spaceship_general	v_toggle_cabin_lights	xboxpad	x1l_shoulder+..._y	smart_toggle	<input type="checkbox"/>		Use Profile	<input checked="" type="checkbox"/>
01-spaceship_general	v_toggle_running_lights	joystick	js1_~	smart_toggle	<input type="checkbox"/>		Use Profile	<input checked="" type="checkbox"/>
01-spaceship_general	v_cooler_throttle_up	joystick	js1_~	Use Profile	<input type="checkbox"/>		Use Profile	<input checked="" type="checkbox"/>
01-spaceship_general	v_cooler_throttle_up	xboxpad	x1l_~	Use Profile	<input type="checkbox"/>		Use Profile	<input checked="" type="checkbox"/>
01-spaceship_general	v_cooler_throttle_down	joystick	js1_~	Use Profile	<input type="checkbox"/>		Use Profile	<input checked="" type="checkbox"/>
01-spaceship_general	v_cooler_throttle_down	xboxpad	x1l_~	Use Profile	<input type="checkbox"/>		Use Profile	<input checked="" type="checkbox"/>
02-spaceship_view	v_view_yaw_left	joystick	js1_hat2_left	Use Profile	<input type="checkbox"/>		Use Profile	<input checked="" type="checkbox"/>
02-spaceship_view	v_view_yaw_right	joystick	js1_hat2_right	Use Profile	<input type="checkbox"/>		Use Profile	<input checked="" type="checkbox"/>
02-spaceship_view	v_view_yaw	joystick	js1_x	Use Profile	<input type="checkbox"/>		Use Profile	<input checked="" type="checkbox"/>
02-spaceship_view	v_view_yaw	xboxpad	x1l_thumbrx	Use Profile	<input type="checkbox"/>		Use Profile	<input checked="" type="checkbox"/>
02-spaceship_view	v_view_yaw_mouse	mouse	mo1_maxis_x	Use Profile	<input type="checkbox"/>		Use Profile	<input checked="" type="checkbox"/>
02-spaceship_view	v_view_pitch_up	joystick	js1_hat2_down	Use Profile	<input type="checkbox"/>		Use Profile	<input checked="" type="checkbox"/>
02-spaceship_view	v_view_pitch_down	joystick	js1_hat2_up	Use Profile	<input type="checkbox"/>		Use Profile	<input checked="" type="checkbox"/>
02-spaceship_view	v_view_pitch	joystick	js1_~	Use Profile	<input type="checkbox"/>		Use Profile	<input checked="" type="checkbox"/>
02-spaceship_view	v_view_pitch	xboxpad	x1l_thumbrx	Use Profile	<input type="checkbox"/>		Use Profile	<input checked="" type="checkbox"/>
02-spaceship_view	v_view_pitch_mouse	mouse	mo1_maxis_y	Use Profile	<input type="checkbox"/>		Use Profile	<input checked="" type="checkbox"/>
02-spaceship_view	v_view_cycle_fwd	joystick	js1_~	tap	<input type="checkbox"/>		Use Profile	<input checked="" type="checkbox"/>
02-spaceship_view	v_view_cycle_fwd	xboxpad	x1l_shoulder+..._y	tap	<input type="checkbox"/>		Use Profile	<input checked="" type="checkbox"/>
02-spaceship_view	v_view_cycle_internal_fwd	joystick	js1_~	Use Profile	<input type="checkbox"/>		Use Profile	<input checked="" type="checkbox"/>

Now you see all entries of Mouse, Joystick and Gamepad have been disabled

4 “Accept Edits” – the main window of SCJmapper is updated now

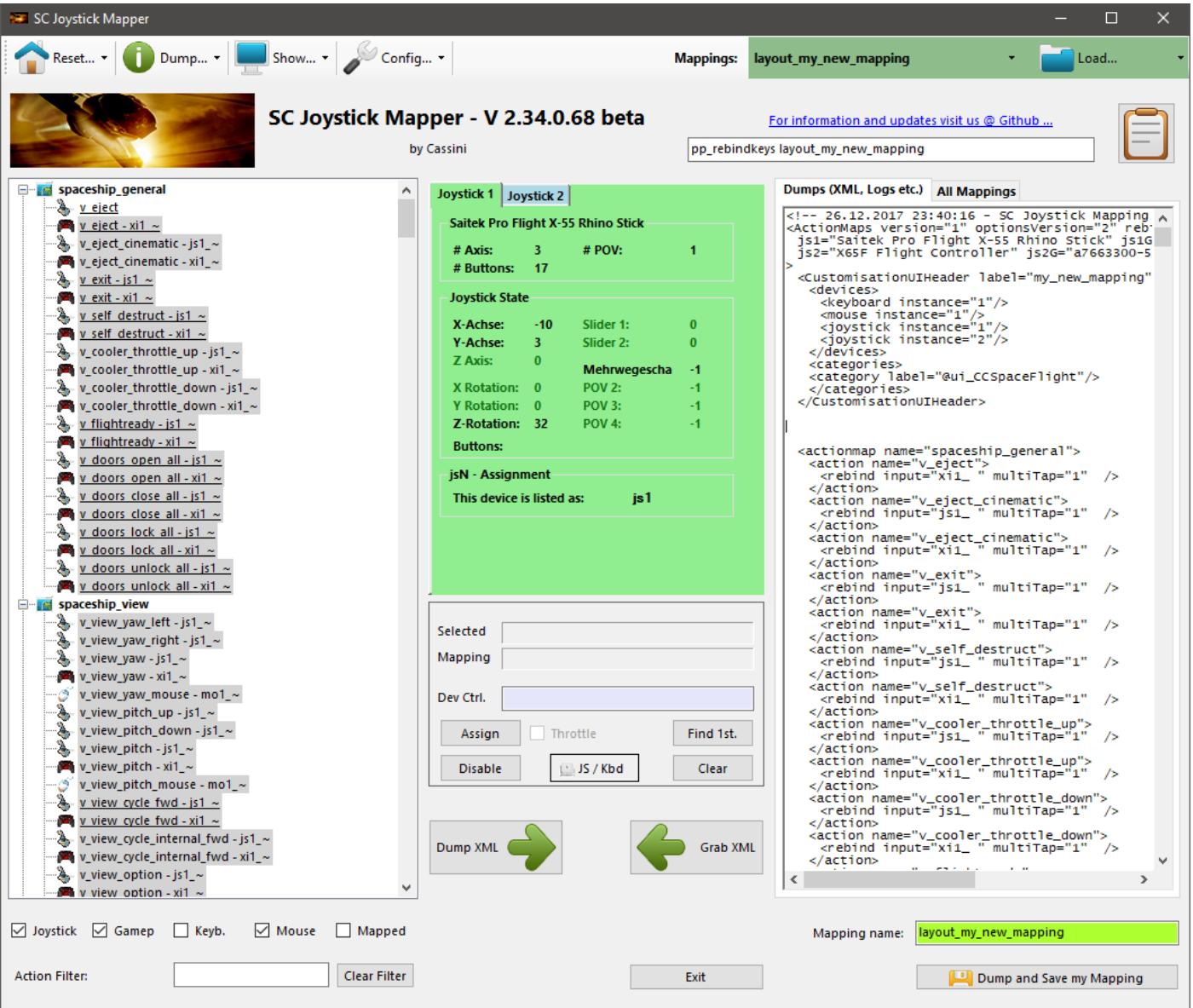
5 Close this window

Back in the Main Window – “Dump XML” is now red – Click it to see the XML



Hints ...

How to start with a complete disabled map ? 2/2



Profile: GamePack defaultProfile

Support: profile version='1' optionsVersion='2' rebindVersion='2' ...

Dump and Save to have a baseline.

In case you do have devices not to be used (like in the example my Joystick 1 - vJoy device) you would now first use Js Reassign and map the ones used and n.a. the ones not used.



Now you are ready to map and what is not mapped is disabled in the game ...



Brought to you by Cassini 2017
Data and RSI spacecraft are derived work from the RSI homepage

Changelog:

- V2.18 - update Hints - List Commands - add description for + and =, add joystick modifier timeout description, add mouse commands
- V2.21 - update Mouse context menu and new screenshots where the version is shown
- V2.22 - add Underlined ActivationModes, DumpProfile button and new screenshots where the version is shown
- V2.23 - add Actiontree as table description and new screenshots where the version is shown
- V2.25 - add CSV list option, add BlendAll to table view
- V2.27 - add extended Context Menu in Mapping tree (Collapse/Expand), Rename 'Blend' to 'Disable', some editorial changes
- V2.28 - add "Device & Action Options", changed GUI elements, and Tuning for Strafe and the Hints section with "How to start..."
- V2.29 - add Gamepad Calibration, changed GUI elements, some more Hints
- V2.30 - add Tabbed AllMappings, Addbind Mouse to Keyboard actions, changed GUI elements
- V2.34 - add changed GUI elements, CIG actionmaps