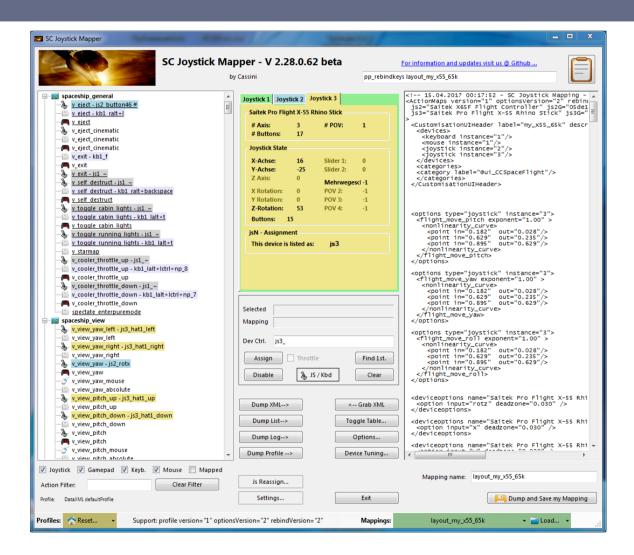
# SC JOYSTICK MAPPER QUICK REFERENCE GUIDE V 2.28

#### 20170428 - 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 he 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.

BTW: if you copy e.g. "pp\_rebindkeys layout\_my\_joystick" from notepad you may use Ctrl-V to paste it ingame into the console – saves you some typing...

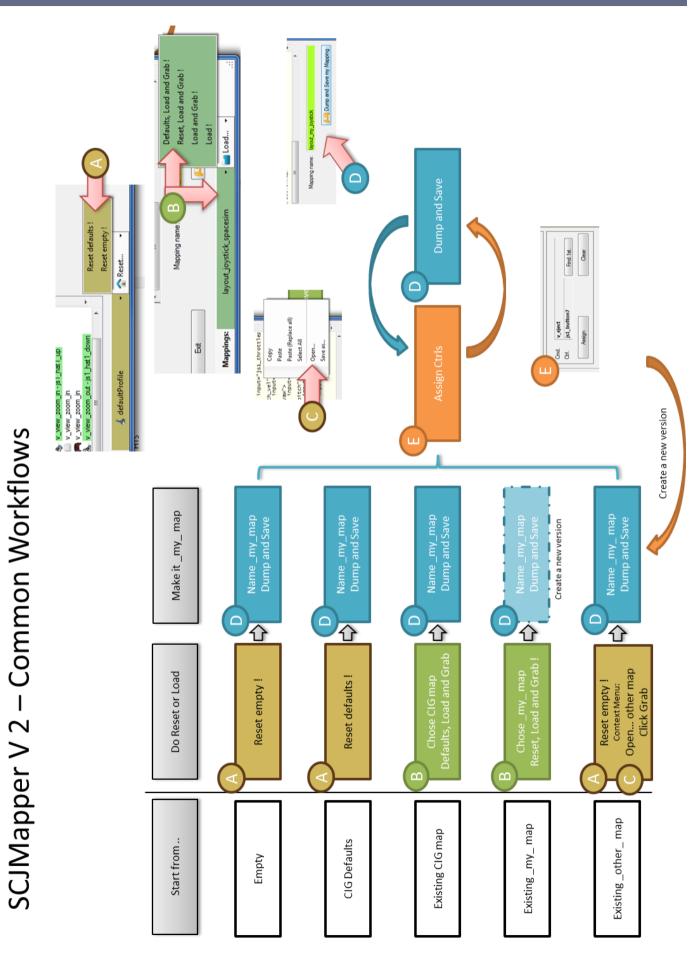
Console .. Opens with the top left key usually right below the "Esc" key

- depends on your keyboard

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

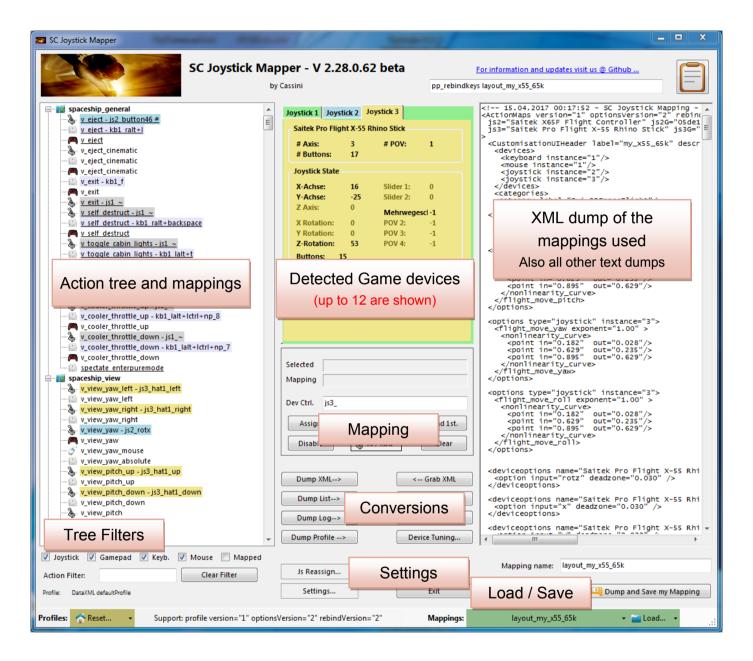
- You will find 'log4net.config.OFF' in the distribution zip.
- Rename it to 'log4net.config' and run the program.
- Then look for a file named 'trace.log' in the program folder and
- send this to cassini@burri-web.org along with a description of the problem and your system i.e. OS, CPU, Graphics card,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

### The Workflow



### The GUI

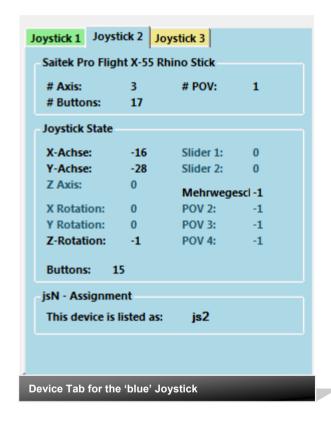
The user interface is all laid out for direct access — there are no menus



- ⇒ 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**





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 games 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 and 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.

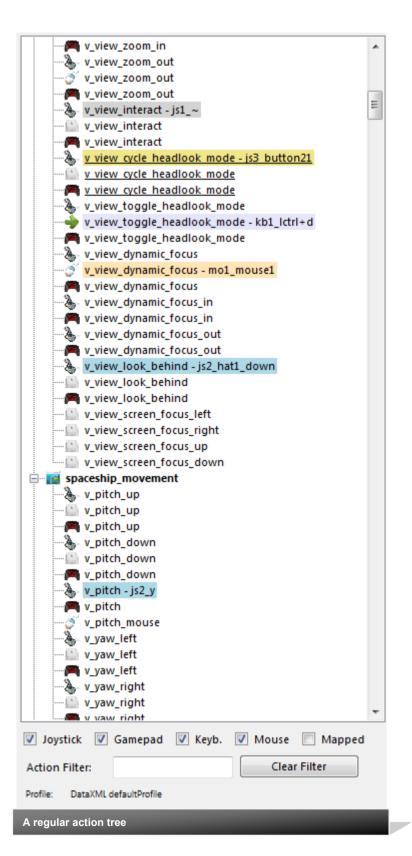
Unmapped actions are ignored.

<u>Underlined</u> items indicate an ActionModifier is applied in defaultProfile

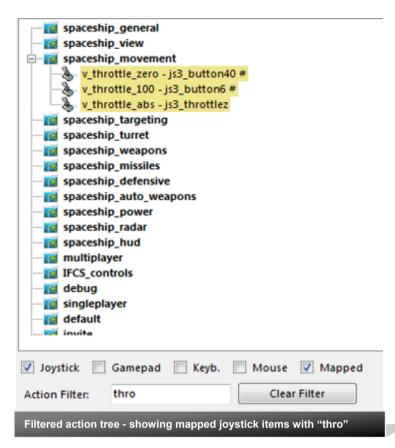
### **Selecting an Action:**

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

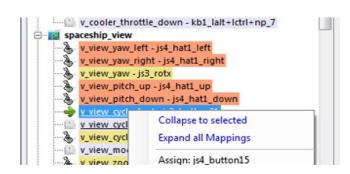




### **Action Tree Filters**



NOTE: Filters only restrict the items shown in the tree

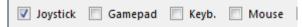


### **Action Tree Filters**

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

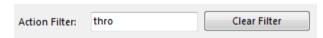
### **Mapped Only**

Restricts to show only mapped items



#### **Action Filter**

Accepts text entry to match parts of the action name



#### Clear Filter

To empty the 'Action Filter' field

#### V2.27 added

#### 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.

### Working with Profiles

### Working with profiles

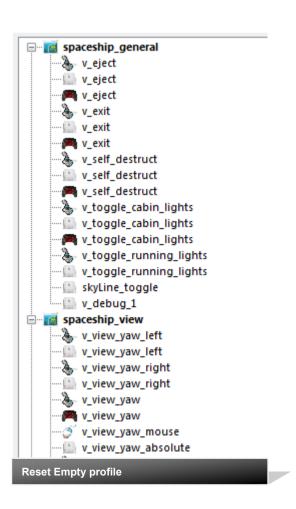
The program gets the actions from the real game asset – so you are always up to the actual values.

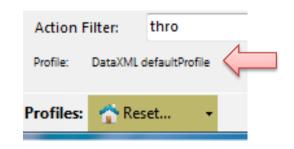
The in-game asset is used if DataXML defaultProfile is shown

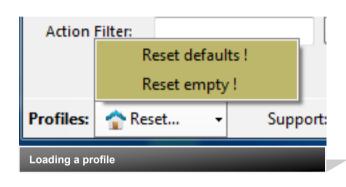


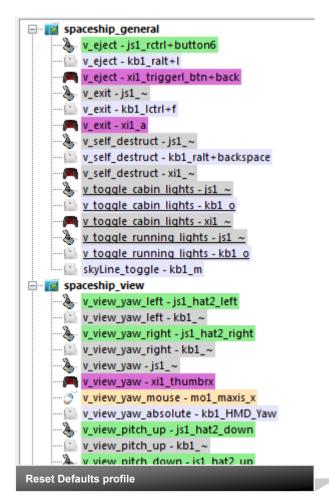
From here you may Reset the action list to the following

- -RESET EMPTY reverts to just an action list without any mappings
- -RESET DEFAULTS loads the Joystick actions mapped with what CIG is providing in defaultProfile





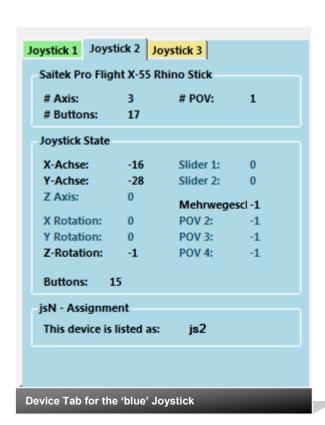




### Mapping

#### V2.28 updated





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**

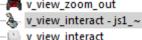
To clear a mapping – select it in the ActionTree and Click "Clear" - it gets a neutral color and no control in the ActionTree – it is now unmapped.

### 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**

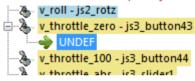
Right click an action opens a context menu giving a choice of functions that are possible right now.

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

### **Add Mapping**

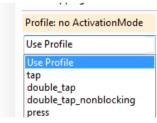
Will add a binding to the selected item to use a second control for this item. Such an addition can be mapped like the main entry - also deleted to remove it.

(Note: this does work partly in SC2.6)



### **Activation Modes**

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

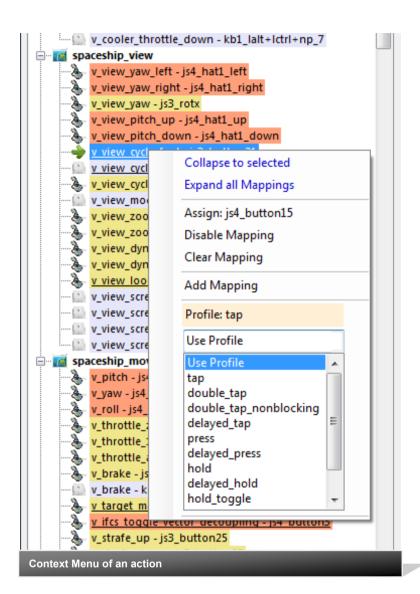


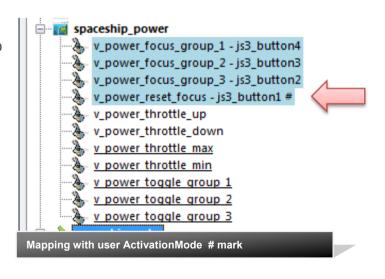
You may choose a new activation mode for this mapping which is then carried into the XML.

Most notable are double\_taps which may be applied by CIG in the profile sometimes and are then carried into the mapping if not changed here.

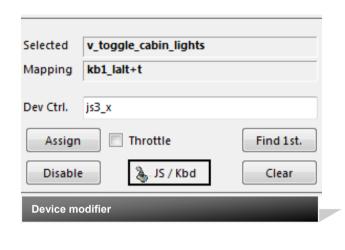
Mappings with ActivationMode changes are marked with "#"

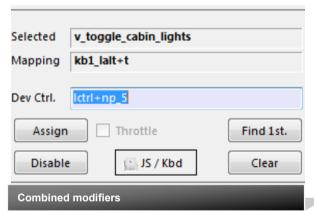






# Joystick mapping with Modifiers





### **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

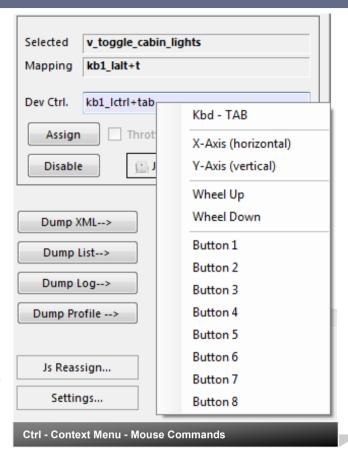
JS / Kbd

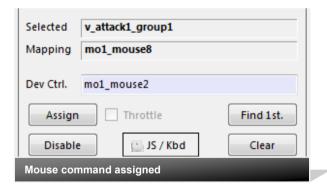
#### **Context Menu**

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 ...

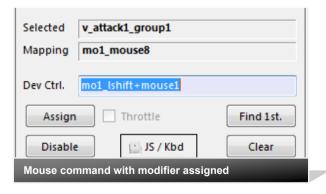
Keyboard Tab is here as well as it cannot be entered (navigates the GUI).





### Modifiers from keyboard

Can be used to extend mouse commands



### XML Dump

### <options type="joystick" instance="2"> <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 Rhine</pre> <option input="x" deadzone="0.025"</pre> </deviceoptions> <deviceoptions name="Saitek Pro Flight X-55 Rhine</pre> <option input="y" deadzone="0.025' </deviceoptions> <deviceoptions name="Saitek Pro Flight X-55 Rhing <option input="rotz" deadzone="0.025" /> </deviceoptions> <actionmap name="spaceship\_general"> action name="v\_eject"> <rebind input="js3\_ralt+button24" /> </action> <action name="v\_exit"> <rebind input="js3\_button23" /> </action> <action name="v\_toggle\_cabin\_lights"> <rebind input="js3\_button18" /> <action name="v\_toggle\_running\_lights"> <rebind input="js3\_button22" /> </action> </actionmap> <actionmap name="spaceship\_view"> <action name="v\_view\_cycle\_fwd"> <rebind input="js3\_button13" /> </action> <action name="v\_view\_mode"> <rebind input="js3\_button17" /> </action> XML Dump of an action map

#### **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!

### Action maps

### 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.

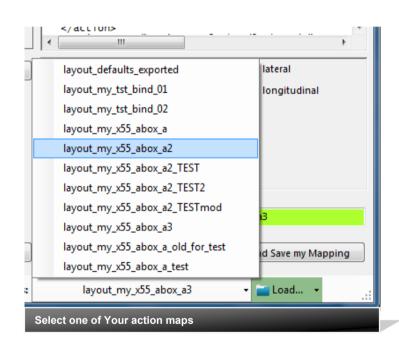
(...\StarCitizen\Public\USER\Controls\Mappings)

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

- -LOAD loads the map into the XML window only
- -LOAD and GRAB loads the map into the XML window and clicks Grab i.e. merges the existing mapping with the one loaded
- -RESET, LOAD and GRAB first Reset (empty) the action list (all mappings cleared) then it loads and grabs the new map
- -DEFAULT, LOAD and GRAB first Reset (defaults) the action list then it loads and grabs the new map and merges them with the defaults

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





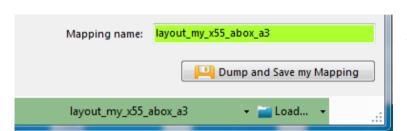


### Your Actionmaps

### 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\Public\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 ..

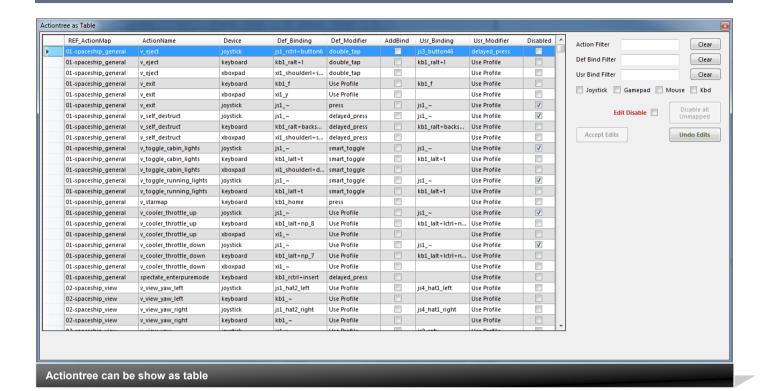
A successful Save will show the green flag

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



### Actiontree as table

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

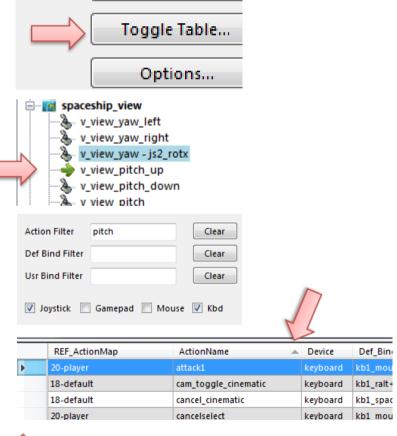
Double clicking a row or clicking the row header will select this item in the Main Windows Action Tree (green arrow).

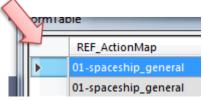
The table can be filtered with either text and/or the checkboxes

(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.

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





# Fast Disabling with a table



Read about Disabling also later in this document...

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

### **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.

### Disable all Unmapped

checking from bottom to top.

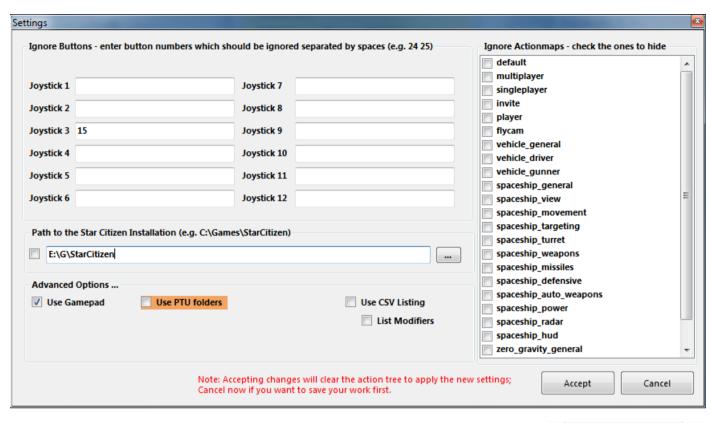
Will disable all **unmapped** entries that are currently visible in the action tree. I.e. use the checkboxes / filters to limit the visible items in the action tree.

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

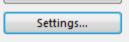
Note: there is an oddity when changing 'Disabled' and the table is sorted by 'Usr\_Binding'. As it immediately resorts the table after accepting the edit the changed entry is moved somewhere else. If you click another one below it may then have moved already and the click goes wrong. This is intrinsic 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

Space for future use ...

### Settings



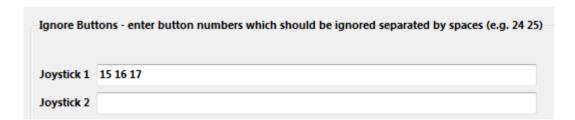
There are a number of setting you may need to do for efficient working..



### **Ignore Buttons**

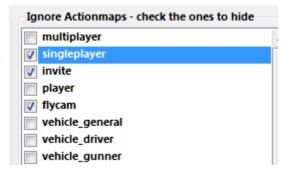
Some devices have buttons pressed to switch modes. I may be needed to 'ignore' them to get proper readouts for mapping.

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



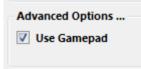
The path should be the top folder of the SC installation

Make sure to check the left box to use the path

#### StarCitizen Name Client Client ▶ Mauncher Launcher Datcher Patcher Patcher ■ StarCitizen StarCitizen ■ Public TiGLauncher.exe Bin64 LauncherState Data 📗 Data ■ loginData.json Engine PatcherInstall.zip LogBackups uninst.exe ▶ M mods minstall.exe ScreenShots

### **Use Gamepad**

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



### **Using PTU Folders**

In general the program finds its files in the Public subfolder of the Game installation path. If you are running PTU and want to work with the Test environment - check this box



Changing to and from PTU requires a restart!

Once in PTU mode the program indicates this as shown below



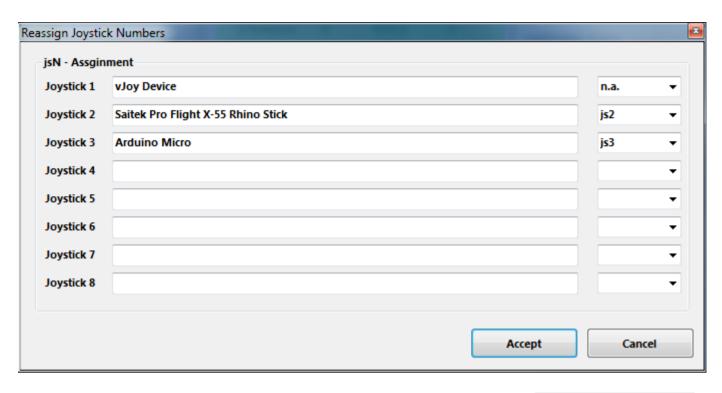
### Listing Actiontrees as CSV list

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

Js Reassign...

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

#### V2.28 added Strafe axes

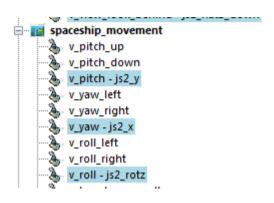
### There are options provided to tune the reaction of a game device

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

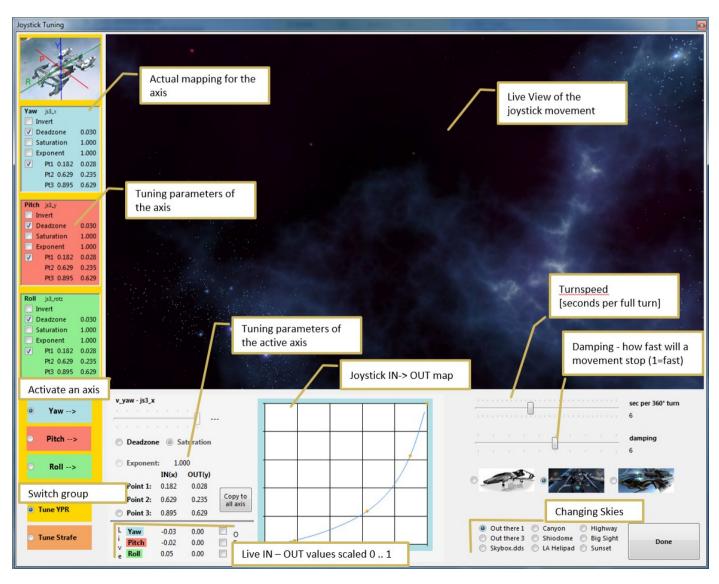
- Deadzone
- Sensitivity
- Invert
- either Exponent or NonLinearCurve independently for the Yaw-, Pitch-, and Roll- axes or the Strafe axes

Note: Tuning will only recognize mapped controls

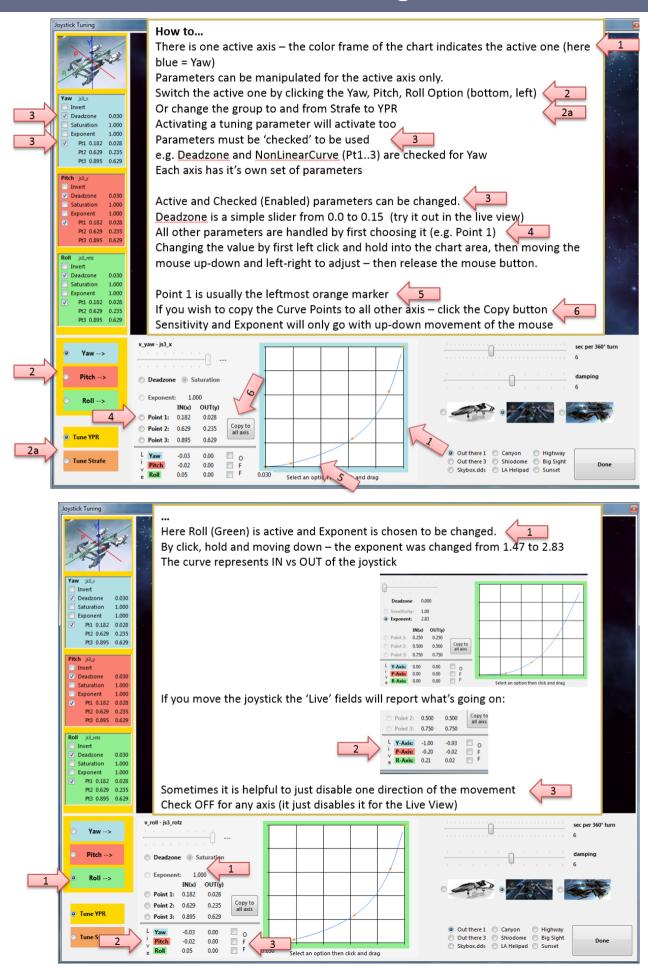
Hit the 'Device Tuning' button to open the tuning window



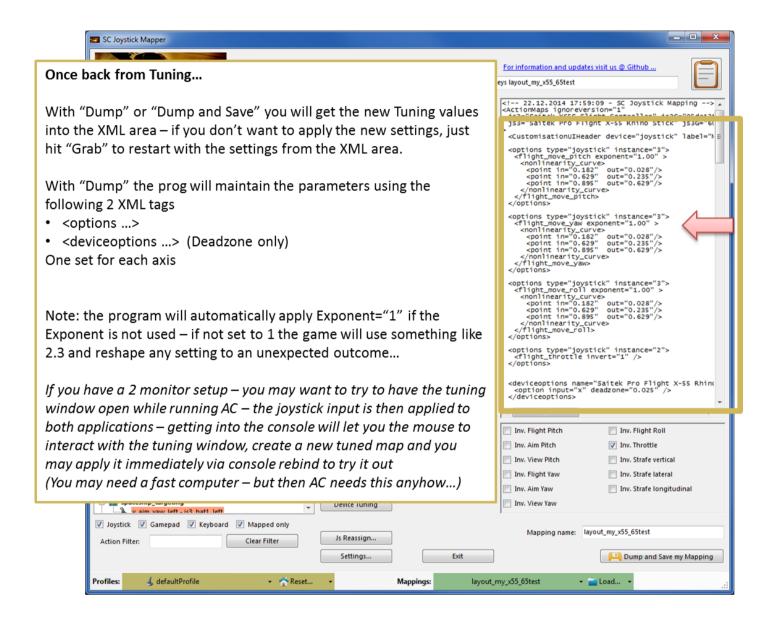
Device Tuning



# Device Tuning 2/3



# Device Tuning 3/3



# Device & Action Options 1/2

#### V2.28 added

Open the Options ... window to access this feature



Option - instance=2

Device Options

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).



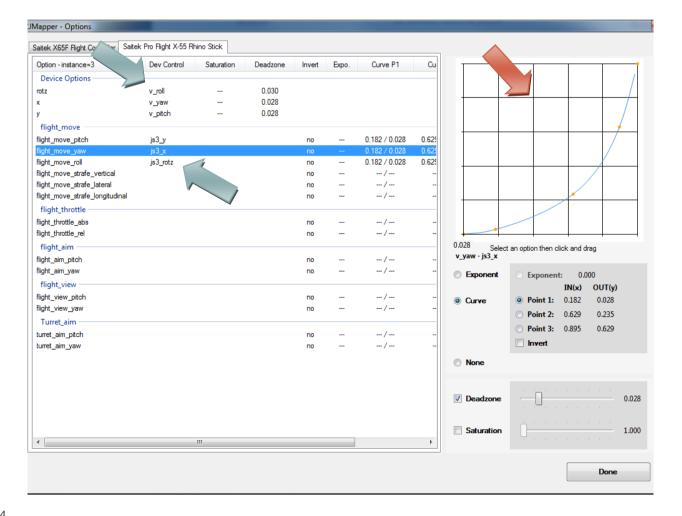
The dialog will also track which control is assigned to which action and show it in the rows accordingly

- 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.

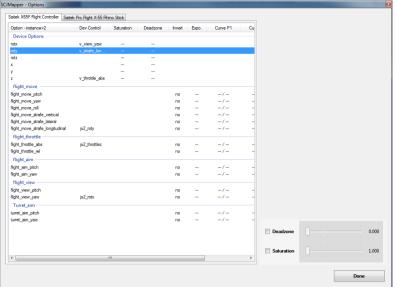
There are only Saturation and Deadzone available for Device Options.

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

Note: Editing is the same as described in the previous chapter for Device Tuning.

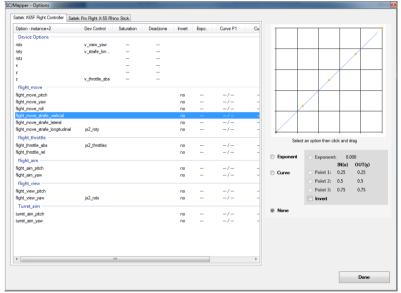


# Device & Action Options 2/2



### **Device Options**

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



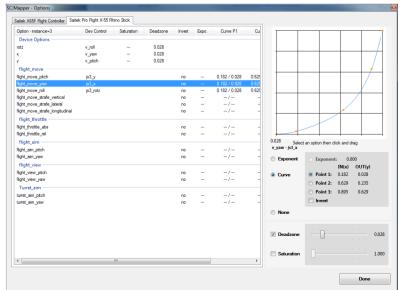
### **Action Options**

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.

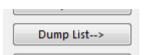
This enables the tuning items but also the related device options of the mapped control

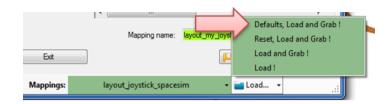
Note: tuning of unmapped items will not make a lot of sense but you may later assign a control to the action and then the tuning becomes active in the mapping.

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

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

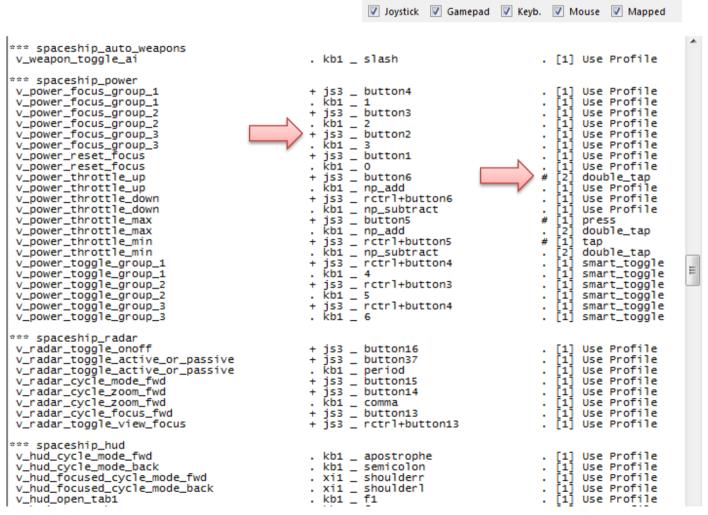
- Load a map using 'Defaults'
- Hit 'Dump List'





... 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 to limit the listed items



### V2.18 added:

For bindings and activation:

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

### 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?

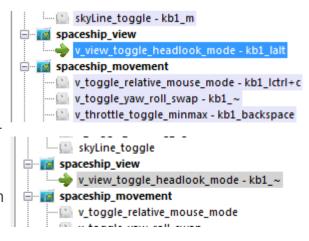
### Sometimes your command is not recognized with the first try

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?

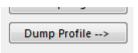
### Sometimes default commands from CIG annoyingly interfere with your game style

- 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



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

Hit 'Dump Profile'



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

### The in-game asset is used if <code>DataXML</code> defaultProfile is shown



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

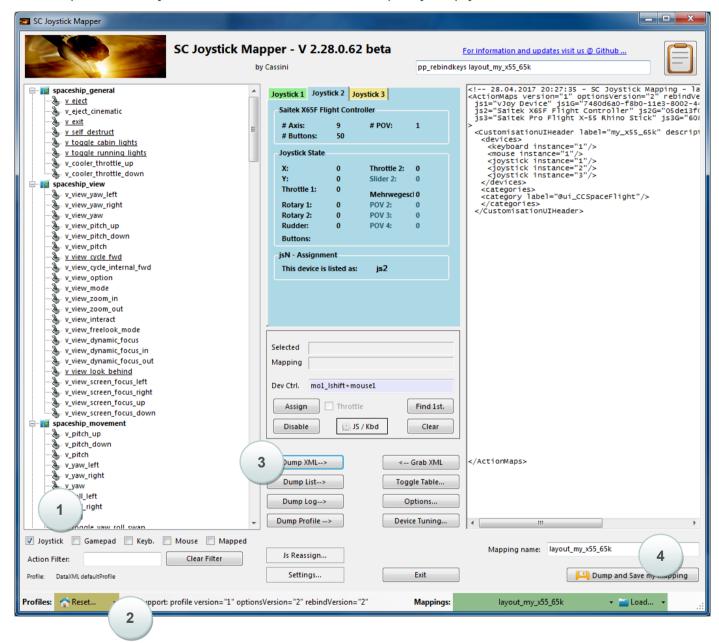
```
<profile version="1" optionsVersion="2" rebindVersion="2" >
 <platforms >
  <PC keyboard="1" mouse="1" xboxpad="1" |
<Xbox keyboard="1" xboxpad="1" ps3pad="0"
<PS3 keyboard="1" xboxpad="0" ps3pad="1"</pre>
                                xboxpad="1" ps3pad="0" joystick="1" />
"1" ps3pad="0" />
                                                                                                                  </platforms>
 name="v_attack1_group3"
   <action
 </actiongroup>
<CustomisationUIHeader
  customrsactoriorneader

<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>
    UTShowSensitiv
                                                                                                    UIShowInver1
        </optiongroup>
      </optiongroup>
      ensitivity="1" >
ch" UIShowSensitivity="1"
UIShowSensitivity="1" UIS
                                                                                                           UIShov
                                                                                                      UIShowInve
        </optionaroup>
        <optiongroup name="flight_view" UILabel="@ui_COFreeLook" UIShowSensitivity="1"</pre>
```

### 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 ...

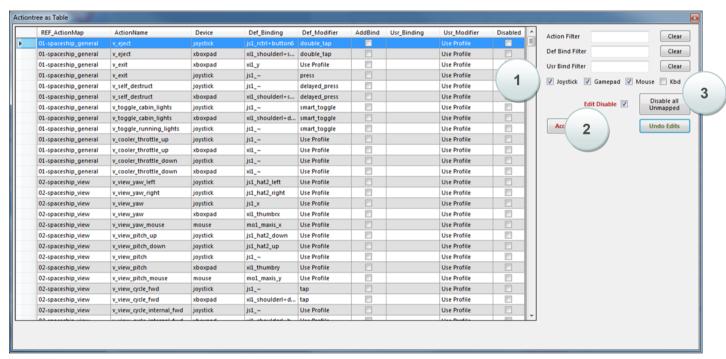
### How to start with a complete disabled map? 1/2

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"

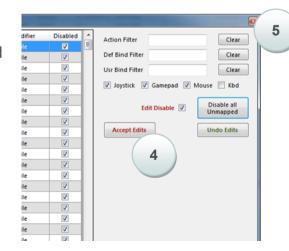


Now you see all entries of Mouse, Joystick and Gamepad have been disabled

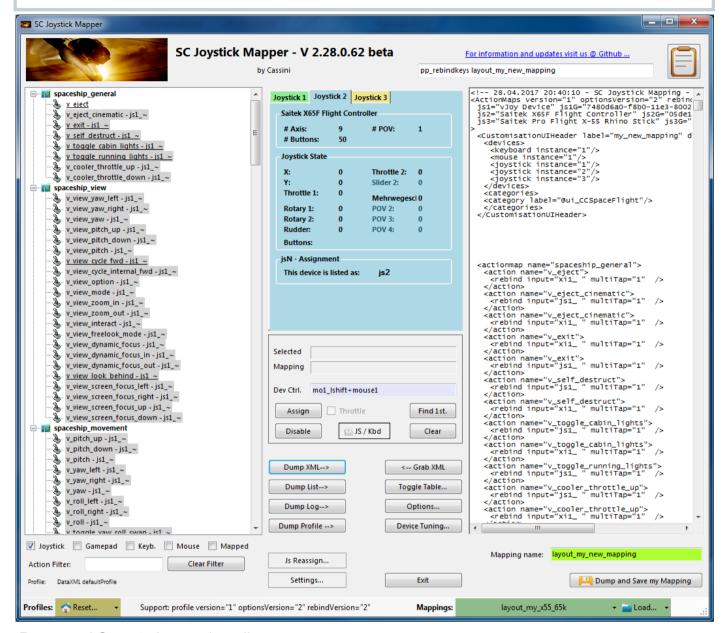
- 4 "Accept Edits" the main window of SCJmapper is updated now
- 5 Close this window

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





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



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 ...



#### 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..."