FSUIPC 3.999z9b changes since 3.999

Additional facilities

1 A new Lua library, 'mouse', has been added. This provides ways of moving the mouse pointer and clicking its buttons, and even turning its wheels. It is documented in the update Lua documentation package available separately. This addition also applies to FSUIPC3, but not to WideClient.

2 A new FSUIPC control is provided:

1130 Mousebutton swap

This, when executed, makes the next Left Mouse Button press and release operate as a Right mouse button press and release. This is a one-off action, only applying to the next left mouse button action.

This is primarily aimed at users of toch screens with aircraft panels like those from PMDG where the left button decreases a setting and the right one increases it. Touch screen 'touches' are usually only left mouse clicks.

3 There's now a built-in facility for tracing the operation of Lua plug-ins, both with line numbers within the files and with changing local and global variables being logged. This effectively makes the "LuaDebug" control redundant, but it has been left in just in case folks would rather use their own souped-up version of the ipcDebug.lua plug-in.

The debug/trace mode is enabled and disabled in the Logging tab. The tracing and variable records go to either individual Lua logs or the main FSUIPC log, depending on the Lua log files option chosen (also in the Logging tab). So that log lines can be differentiated when more than one Lua plug-in is running, the first few characters or each line are "LUA.n" where n is an arbitrary ID number (0-255).

The state of the option is recorded in the FSUIPC.INI file as DebugLua=Yes or No.

4 Added new Lua function lua.setowndisplay, which enables the ipc.linedisplay and ipc.display functions to have their own private Window entitled, positioned and sized as needed. Full details are provided in the updated Lua plug-ins documentation published separately.

5 The Lua gfd library is improved for the GoFlight RP48 "mouse edition", which appears to have a firmware error which prevents the indicator status being read. FSUIPC compensates for this by remembering the settings made by itself.

6 An additional Lua gfd library function, gfd.ReadLights, is added which returns the current indicator settings for those GoFlight modules which support it. [Note that this value is whatever is returned by the module itself, so units with faulty implementations of the indicator reading function -- some LGT2's and the "mouse edition" of the RP48 -- will only return zero.

7 The Lua event library is extended with the addition of the event.Lvar function. This allows a named local gauge variable ("L:Var") to be monitored at regular intervals (minimum 100 mSecs) and a given function called when the value is found to have changed.

Full details are included in the updated Lua documentation, released already.

8 The facility to 'blend' FSUIPC's steering tiller control into rudder control as speed whilst on the ground increases has been improved for airliners with a set of facilities to restrict the rudder effect in different groundspeed ranges.

The simplest of these facilities keeps the rudder at 10% of its input until half way to the full threshold speed, then increase linearly to 100% This is intended to make reasonably easy to check the rudder pedals whilst taxiing without causing bad swerves, and also allows some use of rudder even at very slow speeds at the end of the landing ground roll. The value of 10% minimum comes from the 737NG where at taxi speeds the rudder deflection is a maximum of 7 degrees compared with 67 degrees fully.

To make FSUIPC do this blending instead of the normal 0-100% linear method simply change the MaxSteerSpeed parameter in the relevant [JoystickCalibration] section of the INI file to a negative value, eg -60 for the default 60 knot threshold.

A more complex specification can be provided which allows the user even more scope. The MaxSteerSpeed parameter can be given as

```
MaxSteerSpeed = Qn1,n2,n3,n4
```

where n1 to n4 are numbers used as follows:

- If n1 is not zero, then rudder effect is 0% (ie eliminated) until a groundspeed of n1 knots. Then the effect rises linearly from 0% at n1 knots to 10% at n2 knots.
- If n1 is zero, then rudder effect is 10% until the groundspeed reaches n2 knots. n2 is not allowed to be zero.
- If n3 is not zero, then rudder effect rises linearly from 10% at n2 knots to 30% at n3 knots, then linearly again from 30% at n3 knots to 100% at n4 knots.
- If n3 is zero, then rudder effect rises linearly from 10% at n2 knots to 100% at n4 knots. n4 is not allowed to be zero.

Note that apart from the option for n1 and n3 to be zero, n4 > n3 > n2 > n1. You should see that the option:

```
MaxSteerSpeed=-60
```

is in fact the same as specifying

```
MaxSteerSpeed=Q0,30,0,60
```

There is one shortcut. MaxSteerSpeed=Q is the same as specifying

```
MaxSteerSpeed=Q10,20,30,60
```

Note that both tiller and rudder need to be assigned in FSUIPC by the "direct to FSUIPC calibration" method, and both be properly calibrated, for any blending to be active in any case.

Improvements

1. Local joystick buttons used only for conditional testing and not assigned explicitly as well were originally not scanned and therefore the conditions were inoperative. This is now changed-- such joysticks are now included in the regular scan.

Bug Fixes

1 An error in the ipc.exit function, which could in some circumstances cause subsequent Lua executions to hang FS, has been fixed. This applies also to FSUIPC and WideClient.

2 The FSUIPC options assignment and calibration tabs could be fooled into making a Profile assignment to a Profile with no name, if the INI file had somehow been corrupted and ended up with a [Profile.] section and accompanying [Axes.] etc sections. To avoid the latter corruption in future, such bad sections are deleted automatically when FS is started.

3 An error which can cause spurious generation of phantom Profile assignments, and unwanted additional sections in the INI file such as [Buttons.] and [Keys.], has been found and fixed.

4 Errors in the Calibration "sync pos" facility could result is poor alignment despite the positions synchronised, and when using the "No reverse zone" option could produce entirely the wrong range.

Note that, as part of the fix, the reverse range part of the axis, if any, is not subject to synchronised positioning, and any positions defined there are discarded.

Users already with Sync Pos usage may wish to re-do this with this version for better accuracy.

5 Fixed an error which could cause FS to hang when any [Axes] assignments section in the INI file includes a scaling entry in an incorrect format.

6 Avoided changing the main Windows DLL search path so that RealityXP addons do not fail to find a needed DLL. The Lua DLLs can still be found when needed because the Modules\DLL path is now added to the 'PATH' environment variable.

7 Fixed a problem with the LVar macro format "L:<name>=DEC,0", to decrement the named L:Var value down to 0. The "0" was taken as omission and so did not limit the decrementing process.

8 Fixed an error in the Lua event.key function. This caused it to fail to act upon any subsequent shifted keys (Ctrl, Shift, or Alt plus a keypress) after the first such event. It was recording the key down but not the key up, so did not see any more key downs.

9 Fixed an error which could cause some Lua plug-ins to crash FS when being repeatedly killed and restarted (as in the case of assignment to a rotary encoder).

10 The Lua sound.playloop function now works, correctly looping, even when the option is set for not playing when FS doesn't have the focus (i.e with a negative volume value).

11 A newly introduced bug causing L:VAR SET macros to fail when called with parameter = 0 is fixed.

12 The Lua function ipc.setdisplay now succeeds in not only setting the size and position of an existing Lua Display window, but also of presetting those parameters for one about to be created.

13 A problem with accessing the KEY file of registered users when FS is being run in Windows 7 or Windows Vista without being set to run in XP Compatibility mode is fixed.

Note that in Windows 7 or Vista modes the FSUIPC INI, KEY and LOG files are placed in and used from the Flight Simulator Files folder in your "Documents" folder. This is to avoid write permission problems. It is best, though, to run FS in XP compatibility Mode, for many other reasons too.

14 Any Lua control type other than the basic Lua <name> control (to load and execute the named lua plug-in) assigned to Axis ranges on the right-hand side of the Axis assignments tab reverted to that basic Lua function, because in error they were saved incorrectly. This long-standing error is now fixed.

15 The use of LuaValue controls to set the ipcPARAM value for a currently running Lua plug-in was actually changing that parameter on the plug-in's stack immediately. This could very occasionally cause a crash, depending where in the Lua interpreter the plug-in was currently engaged.

To remove this cause of crashes, FSUIPC now *only* changes the parameter when either an ipc.sleep function is being executed, or any event function is actioned to call its target function.

Note that the ipcPARAM variable should never be used by the plug-in for its own values as it is liable to be changed in both of the above circumstances even *without* the use of the LuaValue control.

16 FSUIPC3 had a built-in expiry date of 31st December 2012, so registrations later that that looked wrong. Seems that I never expected it to be still being purchased after all of 8 years! Fixed in version 3.999y5.

17 The scanned joystick button states recorded in offsets 03C0 to 03FF were being set incorrectly, the joystick numbers being mixed up and results placed in the wrong offsets. This bug applies to FSUIPC3 and FSUIPC4, and is now fixed. Evidently few people ever used the facility.

18. A very long-standing bug is fixed which can, in very unusual circumstances, crash FS during initialisation whilst FSUIPC is processing the INI file.

19. Version 3.999zb extends the new Registration period to the end of 2025 (it was end 2015!).