SMARTFLYING

FORMATION FLIGHT EXTENSION FOR SMARTCOPILOT

INSTALLATION

SmartFlying needs **SmartCopilot v3.1.4** or greater and **FlyWithLua 2.7.28**.
You can get your copy of **SmartCopilot** here: https://sky4crew.com/smartcopilot/
FlyWithLua can be downloaded here: FlyWithLua NG

Download the latest ZIP clone from the official repository on GitHub.
In the ZIP package, along with SmartFlying, you'll find **AMS**.
AMS is an advanced library package for **FlyWithLua** and it's required by **SmartFlying**.

INSTALL AMS

Move the entire directory **'ams'** to **'Resources/plugins/FlyWithLua/Modules'**.
Make sure it's in the **'Modules'** directory, not in 'Scripts'.

INSTALL SMARTFLYING

Just move the file **'SmartFlying.lua'** that you find in **'SmartFlying/Scripts'** of the ZIP package to **'Resources/plugins/FlyWithLua/Scripts'**, as you usually do for FlyWithLua's scripts.

SMARTCOPILOT CONFIGURATION

In order to make formation flight, SmartCopilot must load the special **'smartcopilot.cfg'** file that you'll find in the **'SmartFlying'** directory in the ZIP package.
Just copy this file in the root directory of the aircraft you intend to use, before starting SmartCopilot.

USAGE

In X-Plane, make sure you have configured at least one AI-Aircraft (*see next chapter*), using the same aircraft model that the remote partner will fly.

Load the aircraft in which you copied the **'smartcopilot.cfg'** file and establish the connection with your remote partner.
Once the connection is established, make sure that the **'slave'** has the control (he has to issue the request to the master through the SmartCopilot window).
As soon as he gets the controls, the master will see the slave's plane on the map and, if it's close enough, even from the outside view.

All the external lights of the remote plane will be visible once the partner switches them on.
You'll also be able to see the controlling surfaces as well as the retractable gears.

With the connection ongoing, you and your partner can change the aircraft in use and the model for the AI-Aircraft, without having to stop SmartCopilot and restart the connection.
You can also change airports and ramps as you wish.

X-Plane's **smoke system** works independently for each user. If you turn it on, typically hitting the 'X' key, it will be visible for your plane and for the AI-Aircraft, but it will not be visible by the remote user.
This means that each user can activate and deactivate the smoke depending on their needs, without affecting the other.

The position of the **Aircraft Carrier** and the **Frigate** is shared with the remote user. This means that you'll both see those ships in the exact same position and you can land on them.

KNOWN ISSUE

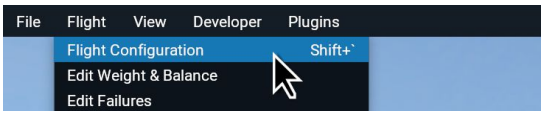
There is a tiny jitter on the AI Plane. This effect has been reduced to the minimum possible, but it can't be completely removed.

The smoke on the AI plane seems to come out from the left side. We are investigating this problem.

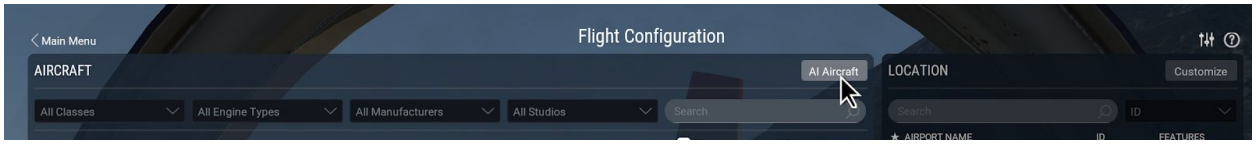
The AI plane's propeller can't be controlled with the datarefs provided by Laminar. It's rotation is totally random and does not match the real rotation of the partner's plane propeller.

CONFIGURE THE AI-AIRCRAFT

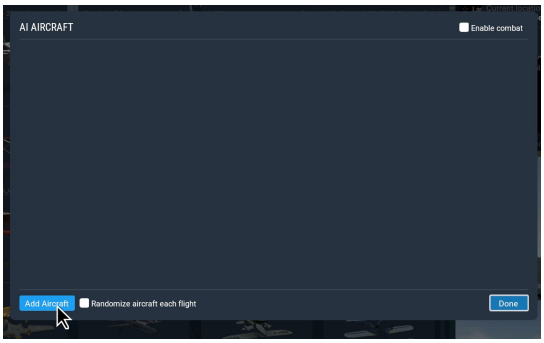
To configure the AI-Aircraft, go to X-Plane's menubar and from the menu **'Flight'** choose **'Flight Configuration'**.



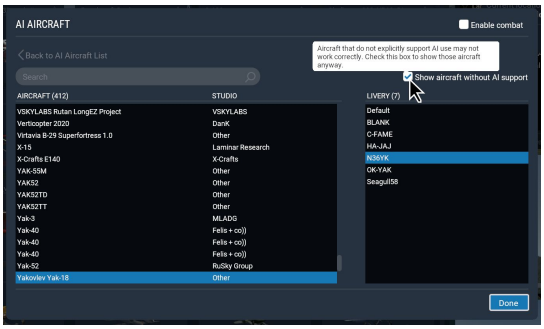
Go to the uppermost part of the **'Flight Configuration'** window and hit the button **'AI Aircraft'**.



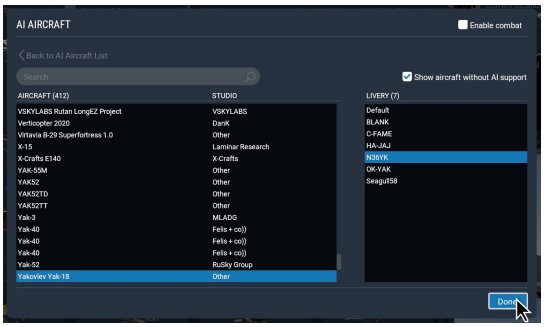
Go to the bottom left corner of the **'AI Aircraft Window'** and hit the button **'Add Aircraft'**.



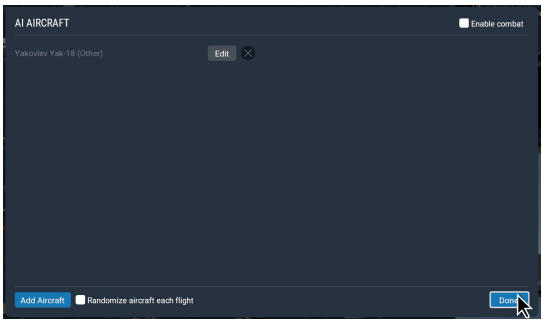
Not all the aircraft can be controlled by XPlane's AI logic, but they can still be used for formation flight. In order to see all the aircraft installed, make sure that the checkbox **'Show aircraft without AI support'** is active.



Then, choose the aircraft you want and hit the button **'Done'**.



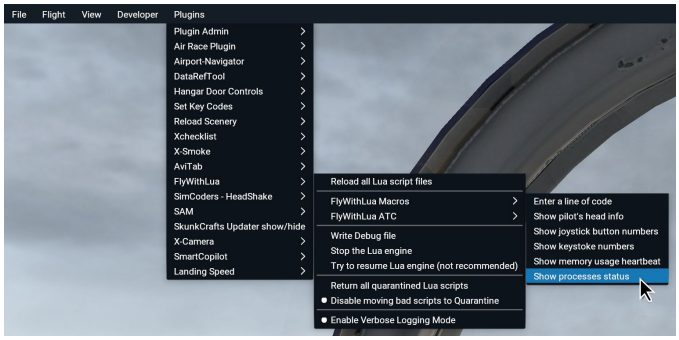
Hit the button **'Done'** another time, to close the **'AI Aircraft Window'**.



You are now ready to go.
Enjoy your formation flight.

AMS MONITOR

You can monitor the processes handled by **AMS** by opening the **‘Processes Status’** window from the **‘FlyWithLua Macros’** menu.



Once the window is open, you’ll see the status of the active processes and the general usage of resources.
The **‘Kernel Core Process’** is AMS’ main process, that handles all the tasks.
The open window itself is a process running that appears in the list.

In this window you’ll find SmartFlying’s processes. If it hasn’t been started, you’ll find an idle process that is waiting for SmartCopilot to establish a valid connection.
Once the connection is active the idle process will end and you’ll see a process running in the FRAME cycle that is taking care of synchronizing the data.
You can use this window to monitor how SmartFlying is performing on your CPU.

SPECIAL THANKS

To **Roman**, the developer of SmartCopilot, for the help and the assistance provided.
To **Janek** for all the testing done needed for the development and the debugging.
To **Roger** for the technical help for the organization and the code portability.
To **Loborco** for for the help on testing.

BUGS

Probably this code has plenty of bugs, but they are unknown to us. Please help us find them.
If you experience a crash or a problem, please open an issue, including your Log.txt file, here.

GET INVOLVED

Do you have experience in programming languages and a basic knowledge of Lua?
Do you want to get involved in the development of SmartFlying, AMS and tools for X-Plane?

Please contact Pacrox (a.k.a. Captain Spaulding) on X-Pilot.org Forum.

LICENSE