X-Plane Plugin

System description

The plugin only supports the Windows version of X-Plane.

The X-Plane Plugin SDK2 and X-Plane SDK3 provide access to commands and data references. Plugins allow to send commands to the flight simulator X-Plane with external hardware and to set variables.

The X-Plane plugin communicates directly with the Arduino hardware via the UDP network protocol.

System requirements

To use the X-Plane plugins, an X-Plane version higher than 10.0 is required. A configured network with automatic address assignment (DHCP) is required to assign a valid IP address to the Arduino. This is done, for example, via the router that implements the Internet connection.

Location of the X-Plane plugins:
The plugins `*.xpl` must be manually copied from the installation folder to the X-Plane plugins folder, this `\Ressources\plugins` folder is located below the X-Plane installation folder.

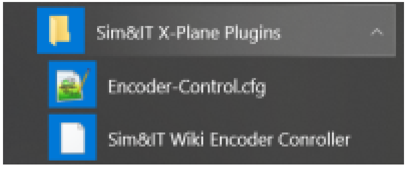
The location of the **configuration files** of the X-Plane plugins is:
Win7 ff: `C:\Users\username\AppData\Roaming\Sim&IT\X-Plane-Plugins`

These folders are hidden by default.

The configuration file can be displayed and edited with the editor (Programs → Accessories), for example. A corresponding link to the configuration file is created in the program folder during installation.

Software Installation

After starting the setup, you can change the destination folder of the installation and the menu folder of the program group. With „Finish“ the client installation is completed.



After installation, you will find the links to the installation folder of the plugins and to the configuration file for changing the configuration variables of the plugins in the program group `Sim&IT X-Plane Plugins`, which was preferably specified during installation.

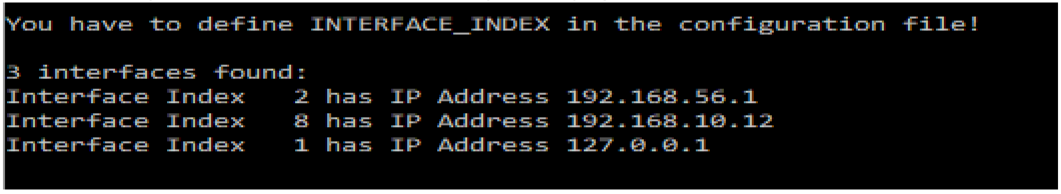
Plugin Configuration

After starting X-Plane, you will find a menu item in the **Plugins** menu with two sub-items for information and for entering license information. The plugin works without a license for about 10 minutes.

The info area displays either the connection to the Arduino panel and the license information.

If **more than one network adapter** was found, they are displayed with the index assigned by the operating system. The index of the network adapter to which the Arduino hardware is connected must be specified in the configuration file
`.\AppData\Roaming\Sim&IT\X-Plane-Plugins\Encoder-Control.cfg`
with the Configuration Variables `INTERFACE_INDEX`, to establish a connection.

The program `Show NetIndex` can also be used to determine the index. This program also shows the installed network adapters and their index in the operating system.



```
You have to define INTERFACE_INDEX in the configuration file!

3 interfaces found:
Interface Index    2 has IP Address 192.168.56.1
Interface Index    8 has IP Address 192.168.10.12
Interface Index    1 has IP Address 127.0.0.1
```

In Windows you can detect the index also with:
`wmic path win32_networkadapter get name, index, interfaceindex`

Configuration Variables

The configuration variables are followed by a = and then the value to be set.

For all modules there is the section `[NET]` with the configuration variable

- `INTERFACE_INDEX` for defining the network adapter if there are several in the system

Configuration of Encoder Controller

For the encoder controller there is the section `[ENC1]`

- `ARDU_PORT` to define the port of the receiving device if standard port can not be used
- `RECV_PORT` to define the port on the PC, if standard port can not be used

The changed ports must also be defined in the Arduino sketch.

For each encoder (1 to 6) there are configuration settings to define variables or commands in accordance with the files `Commands.txt` or `DataRefs.txt` (exemplary for Encoder1):

- `ROTARY1_CMD_OR_VALUE` 0 means that commands are defined, 1 means that a variable to be defined is increased or decreased.
- `ROTARY1_VALUE` defines a variable to be changed, prerequisite is the definition of `ROTARY1_CMD_OR_VALUE=1`
- `ROTARY1_INVERSE` changes the direction of rotation when changing variables
- `ROTARY1_CMD_RIGHT` Command for clockwise direction
- `ROTARY1_CMD_LEFT` Command for counterclockwise direction
- `ROTARY1_CMD_PB` command when pressing the encoder axis (Push Button)
- `ROTARY1_CMD_PB_HOLD` command when pressing the encoder axis for a longer time

There is an additional function for the encoder6. If the option

- `ROTARY6_PUSH_TO_ACTIVATE`

is set to 1, then the encoder is only activated after pressing once.

There are also two individual keys 7 and 8 with the configuration variables (exemplary for key7).

- `KEY7_CMD` command when pressing the key

- `KEY7_CMD_HOLD` command when pressing the key for a longer time

Tests have shown that calling a command several times during a loop pass has no effect, the command seems to be executed only once, unlike incrementing and decrementing. If there are several identical encoder events in the transmission buffer, changing a variable works better than executing a command.

Configuration of Port Extention for Switches

The configuration of the switches is described in the section Extensions.

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