OpusFSI

Flight Simulator Interface for FSX & Prepar3D Getting Started - Single PC

January 9, 2022

Contents

System Requirements

- Microsoft Simulator X (with SP2 or Acceleration Pack), or FSX Steam Edition, or Lockheed Martin Prepar3D simulator.
- Windows 10/8/7/XP/Vista (32 or 64-bit version) operating systems.
- Microsoft .NET Framework v2 (for FSX/Steam and P3D up to and including v3.3) or .NET Framework v4 for P3Dv3.4 onwards.
- FSUIPC (see note below).
- 90 MB hard disk space.

You need FSX/P3D, Microsoft .NET v2 (v4 for P3Dv3.4 onwards) and SimConnect to be installed on your server (and optional client) systems for OpusFSI to work.

Microsoft.NET

You can check what versions of .NET you have installed in Control Panel by selecting Settings, System, Apps and features, then search for .NET and a list of installed versions will be displayed. For older operating systems check your c:\Windows\Microsoft.NET\Framework or Framework64 folders. You should see a v2.0.xxxxx folder in addition to the v4.0.xxxxx folder etc..

FSUIPC

FSUIPC is required on the SERVER system. FSUIPC is required on Live View clients that are used to display camera views.

You can download a free copy from http://www.schiratti.com/dowson.html

SimConnect

In the case of SimConnect, first make sure you have installed FSX or P3D along with its SP2, or installed the FSX Acceleration version, SimConnect is installed automatically with it.

If you have mislaid or corrupted your SimConnect then you can try re-installing it.

For FSX/Steam and P3D up to P3Dv3.3 inclusive

Run the Microsoft.FlightSimulator.SimConnect.msi file within your OpusFSI_v5 folder. This msi is the former standard dotNet 2 variety which can be used with all dotNet2 sim types and versions. This is used in our v5 software whenever you run the software selecting the dotNet 2 SlimDX and SimConnect mode ...

FSISERVER.EXE FSX
FSISERVER.EXE STEAM

FSISERVER.EXE P3D2
FSISERVER.EXE P3D30
FSISERVER.EXE P3D31
FSISERVER.EXE P3D32
FSISERVER.EXE P3D33

For P3Dv3.4 onwards

The FSISERVER and FSICLIENT startup programs will copy and rename the supplied
LockheedMartin.Prepar3D.SimConnect_v3.4.dll into the required LockheedMartin.Prepar3D.SimConnect.dll (in
OpusFSI_v5) whenever appropriate and the LM SimConnect dll does not exist.

The following will select the dotNet 4 SlimDX and SimConnect modes ...

FSISERVER.EXE P3D
FSISERVER.EXE P3D3
FSISERVER.EXE P3D34
FSISERVER.EXE P3D4
FSISERVER.EXE P3D45

There is a distinction between the latest Prepar3D v4.5 mode and earlier Prepar3D v4.x modes (refer to OpusFSI_Release_Notes.txt) so you should specify P3D41 through to P3D44 explicitly when using these versions. Note, specifying any combination of P3D, P3D4 or P3D45 and above will select the latest Prepar3D v4.5 mode of operation.

If for any reason Opus is blocked from automatically copying these dlls then you can do it manually. We supply SimConnect_v3.4 dll. You should copy (to OpusFSI_v5) and rename (to LockheedMartin.Prepar3D.SimConnect.dll).

Similarly for **SlimDX** we supply SlimDX2.dll and SlimDX4.dll which may be copied manually to OpusFSI_v5\SlimDX.dll if Opus is blocked from doing so.

Any other argument will assume the last saved operating mode for the FSISERVER and FSICLIENT programs.

Windows problem running msi files fix ...

To run a msi that doesn't have a valid Digital signature follow one of the methods mentioned below.

Method 1:
1. Right click on the file or program that you are not able to access.
2. Go to properties and click "Unblock".
3. Try to run the application again.

Method 2:
1. Click on start button.
2. Type "Internet Explorer" in the "Start Search Box" and select it from the menu.
3. Click on "Tools" in the menu bar and select "Internet Options".
4. Click on "Advanced tab" and locate "Allow software to run or install even if the signature is invalid" under the "Security" category and check the box.
5. Click Apply and then Ok.
6. Close the Internet Explorer and restart Internet Explorer.

Method 3:
1. Turn UAC OFF. Just type UAC into the start menu or Control Panel search box. Drag the slider to the bottom, never notify.
2. Run the Command Prompt in Admin Mode (not the same as you being an Admin user).
3. Type: bcdedit /set testsigning off
4. Reboot. Windows will power up in a test mode and will allow you to run any msi file.
5. Install the msi file. After installing the software ...
6. Run the Command Prompt in Admin Mode (not the same as you being an Admin user).
7. Type: bcdedit /set testsigning on
8. Reboot
After rebooting you should still be able to run msi files but may need to answer 'More Info' and 'Yes' to a Windows 10 user query.

Software Installation

Ensure Microsoft .NET v2 (if using FSX/Steam or up to P3Dv3.3), Microsoft .NET v4 (if using P3Dv3.4 onwards), SimConnect and FSUIPC are installed on your PC.

Installing the Demo version of OpusFSI

1. Click on the **OpusFSI_v5 Demo or Upgrade** button on our downloads webpage and download (save) the **OpusFSI_v5.msi** file.

2. Double click on the downloaded OpusFSI_v5.msi file and follow the instructions to install the software into the standard **OpusFSI_v5** directory. You may install the software onto any drive provided its folder name is OpusFSI_v5 with the exception that you must not install OpusFSI in the **Opus Software, FSX, Prepar3D** or **Program Files** folders, and don't install in more than one folder on your PC.

Note that in Demo mode the Live Weather Engine is restricted to 160km (100 miles) in all directions and weather updating only whilst your aircraft is on the ground. Also World Weather Themes are not accessible in demo mode. Demonstration mode will run for 15 minutes with a minimum 2 minute interval required between runs.

Purchasing OpusFSI

1. Click on the **Purchase OpusFSI_v5** button on our downloads webpage and download (save) the **OpusFSI_v5_Flight1_Purchase.exe** file.

If you get a warning the signature is invalid then right click on the msi and select **Run Anyway**.

You may get some warning messages from your virus checker at this point which is quite normal for this file type and as a result the installation window may be hidden behind your browser window. You may need to stop your virus checker if it automatically deletes the msi or the exe files.

If you see the following screen then click on the **More info** button to run the software. Next select **Run Anyway**.
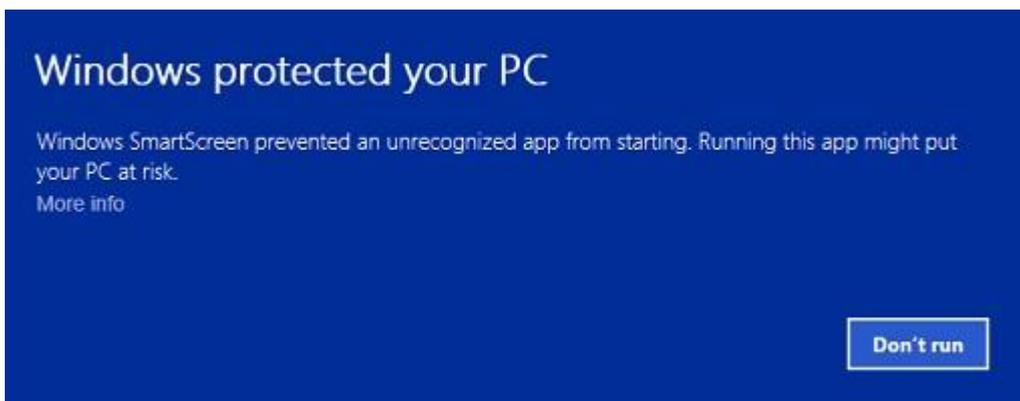
Using Windows Explorer navigate to the location of the downloaded file and run the software. If you have a problem running the software then right click on the file and click "Unblock".

2. If you have previously installed the Demo then uninstall it via Control Panel, Uninstall a program. Do not delete your OpusFSI_v5 folder containing your camera and system configuration files.

3. Run the **OpusFSI_v5_Flight1_Purchase.exe** file. A Flight1 form with 3 buttons will be displayed. If you already have a Flight1 account click button 1 to log in (this is optional and if you get any Flight1 login error messages don't use it). Click on buttons 2 and 3 to fill in your purchase details and then the Purchase button will appear, click on this button to complete purchase.

4. You will now find the OpusFSI_v5.msi installation file in your 'unwrapped' C:\Opus Software folder. N.B. You need to keep your Flight1 key and licence files on drive C in the **C:\Opus Software** folder but can move the msi file to another drive.

Double click on the OpusFSI_v5.msi file and follow the instructions to install the software into the **OpusFSI_v5** directory. You may install the software onto any drive provided its folder name is OpusFSI_v5 with the exception that <u>you must not install OpusFSI in the **Opus Software**, **FSX** or **Program Files** folders, and don't install in more than one folder on your PC.</u>

Upgrading OpusFSI

Release Upgrade

If you have previously purchased OpusFSI_v5 and want to upgrade to the latest Release version then click on the **OpusFSI v5 Demo/Upgrade** link in the **Download Demo or Upgrade** column (or click <u>here</u>) and download the **msi** file. If you have a problem running the msi then right click on the file and select "Unblock".

To upgrade the older OpusFSI_v4 click on the relevant **Former Software Upgrades** hyperlink (or click <u>here</u>), or for OpusFSX_v3 click on the appropriate hyperlink (or click <u>here</u>).

Uninstall the old software before installing the upgrade via Control Panel, Uninstall a Program, do not delete your **OpusFSI_v5** folder. Double click on the Opus msi file and follow the instructions to install the software upgrade.

All your original configuration (DAT and CMD) and camera definition (CAM, LIM and CDF) files will remain intact in the **OpusFSI_v5** folder but it is a good idea to take a backup of your camera files anyway in case they get corrupted (this may happen when you revert to a previous version with a different CAM format).

OpusFSI Beta Upgrade

Click on the **OpusFSI Beta** hyperlink in the **Beta Development** column and download the **OpusFSI_v5 Beta msi** file.

Install as per the Release upgrade above.

Create Desktop Shortcuts

After installing the software we recommend you create a shortcut on your desktop for the server program. This shortcut will allow you to manually start your FSX/P3D system without too much fuss.

1. In Windows Explorer, navigate to your installation folder (OpusFSI_v5) and right-click on the FSISERVER.EXE program.
2. Select the **Send to - Desktop (create shortcut)** option.

3. Right-click on the new desktop icon, select Properties, in the Shortcut tab check the program is configured to **Start In:** your installation folder (OpusFSI_v5). Select the compatibility tab (if available) and tick the checkbox to **Run this program as an Administrator**. Click **OK**.

4. Left click on the icon once to select it and then left click again to select the icon name, type in **OpusFSI_v5 SERVER** to rename the icon.

You will find alternative program icons in the OpusFSI_v5 installation folder should you wish to change the existing icon.

Automatically Selecting the Simulator Type

The FSISERVER program will accept an optional argument to automatically select the simulator type when it runs.

FSISERVER.EXE FSX
FSISERVER.EXE STEAM
FSISERVER.EXE P3D
FSISERVER.EXE P3D2
FSISERVER.EXE P3D3 (or P3D30, P3D31, P3D32, P3D33, P3D3, P3D34)
FSISERVER.EXE P3D4 (or P3D41, P3D42, P3D43, P3D44, P3D45)

So if you have FSX, FSX Steam Edition and/or P3D you can create desktop shortcuts, one running 'c:\OpusFSI_v5\FSISERVER.EXE FSX' for Microsoft FSX, one running 'c:\OpusFSI_v5\FSISERVER.EXE STEAM' for FSX Steam Edition, and the other running 'c:\OpusFSI_v5\FSISERVER.EXE P3D' for the latest version of Lockheed Martin Prepar3D (use the other arguments listed above for specific versions of P3D).

Note, specifying any combination of P3D, P3D4 or P3D45 and above will select the latest Prepar3D v4.5 mode of operation.

The FSICLIENT program will accept an optional argument NONE to select a **No Connection To Simulator** type for the FSICLIENT and activate the dotNet 4 client program.

Automatically Selecting an Optional User Configuration File

The FSISERVER.EXE and FSICLIENT.EXE start up programs accept an optional User CFG Filename as a program argument. This argument can be specified before or after the sim type argument. When specified the User CFG File will replace the current FSISERVER.CFG or FSICLIENT.CFG file. This option allows you to create various OpusFSI server and client configurations. The configurations can be specific to different sim versions for example, or different flight modes (e.g. the preferred weather options for VFR flying etc.).

To create a new configuration simply edit the options in OpusFSI, quit OpusFSI, then copy/rename the current CFG file as appropriate, finally append the name of your CFG file to the start up program. You can create various Desktop Shortcuts which utilise your various User CFG Filenames.

Sharing and Security

Firewall

You may need to allow OpusFSI through your firewall. In **Control Panel** select **System and Security**, **Windows Firewall, Allow a Program or feature through Windows Firewall**. Click on **Allow another program** and browse to FSXSERVER/P3DSERVER (or FSXCLIENT/P3DCLIENT on a client PC) in the OpusFSI_v5 installation folder.

Sharing

You may need to set sharing **and** security permissions on both your OpusFSI_v5 and your FSX (or Prepar3D) folder in order for OpusFSI to write the necessary weather files into the FSX\Weather\themes (or Prepar3D\Weather\themes) folder. This is usually necessary if you have installed the simulator in the Program Files folder, for this reason it is advisable to install FSX in a folder outside Program Files. If this does not work then set sharing and security permissions on your whole drive. Be aware that if you set permissions and sharing on the whole drive then you may have different permissions and sharing on subfolders so make sure you check the OpusFSI_v5 and FSX\Weather\themes (or Prepar3D\Weather\themes) folders. Also ensure the folders are not set to 'read only'.

Absolute worst case, just install FSX or Prepar3D in its own folder (e.g. d:\Prepar3D), moving outside the secured Program Files folder. If OpusFSI still doesn't work correctly after setting sharing and security permissions a re-install may be necessary.

To set up *Sharing* on a folder/drive run Windows Explorer, right click on the folder/drive you wish to share, select **Properties**, select the **Sharing** tab, select **Advanced Sharing**, tick the checkbox to share the drive and enter a share name, make sure you use the single letter code, e.g. C, not 'Drive C' for instance. Click on **Permissions**, enter **Everyone** in **the Group or user names** box and tick the checkboxes to allow **Full Control** for **Everyone**.
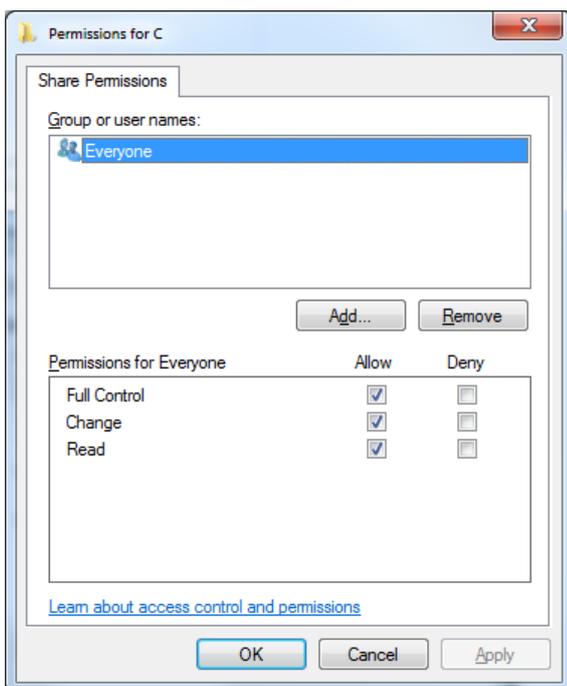
Security

To set *up Security Permissions* run Windows Explorer, right click on the folder/drive you wish to set Security settings for, select **Properties**, select the **Security** tab, select **Everyone** in the **Group or user names** box and ensure the Permissions are **Full Control**, if not click on the **Edit** button and tick the Permissions checkboxes to allow **Full Control** for **Everyone**. If **Everyone** does not exist click **Advanced**, click **Change Permissions**, click **Add**, type in the name Everyone and click OK. Then specify Full Control for your newly created Everyone group. Click OK.
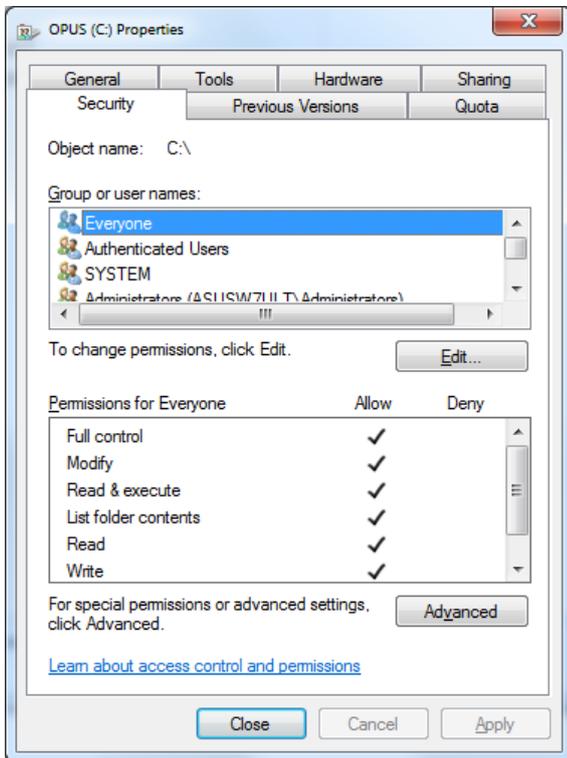
Also select **Authenticated Users** in the **Group or user names** box and tick the checkboxes to allow **Full Control**.

Installation Log File

The SERVER program will create a **FSISERVER.log** file in the OpusFSI_v5 installation folder which will be automatically displayed if any installation errors are detected.

The log file is used to log the installation details along with any installation errors that are detected when the program is activated. Refer to this file and send it to Opus Software if there are any problems encountered when running the software.

Example content of the \OpusFSI_v5\FSISERVER.log file …

```
OpusFSI Flight Simulator Interface

Log Generated 09 May 2019, 09:39 Hrs
```

```
Installed Folder: C:\OPUSFSI_V5

FSICONFIG Sim Folder: E:\Prepar3D v4
FSICONFIG Sim Folder: OK
FSITHEMES Initialise: C:\OPUSFSI_V5\Weather\OpusWeather.WTB
FSIGENCOM Initialise: OK
FSIGENCOM Validation: OK

Data Download ...
Data Download Initiated
Data Download Completed
Data Download Checked
Data Download Validated

Invoking DLL Checks ...

No DLL Errors Detected.

Licence Files:

OpusFSI v5 : 28 April 2019

Installed Files:

FSISERVER.EXE Version: 5.2.6.0  , 09 May 2019, 08:53 Hrs
P3DSERVER.EXE Version: 5.2.6.0  , 09 May 2019, 08:53 Hrs
FSXSERVER.EXE Version: 5.2.6.0  , 09 May 2019, 08:53 Hrs
FSDECODER.EXE Version: 5.2.6.0  , 09 May 2019, 08:53 Hrs
FSISYSTEM.DLL Version: 5.2.6.0  , 09 May 2019, 08:53 Hrs
OPUSFSI.DLL   Version: 5.2.6.0  , 09 May 2019, 08:53 Hrs
OPUS.DLL      Version: Correct  , 29 October 2012, 18:24 Hrs
```

Error Messages

OpusFSI tries to copy the OpusWeather.WT weather file into the FSX\Weather\themes (or Prepar3D\Weather\themes) folder and will display this error message if it cannot do this.
If you see the above error message then it is essential that you check your installation folder is specified correctly in the Configuration dialog. Try reconfiguring the sim location again. If the dialog to enter the sim location does not appear then check it is not hidden behind another window and also ensure OpusFSI is set to **Run as Administrator**.

Also check your sharing and permissions, it is important to set permissions as well as sharing as described in the section above.

System.TypeInitialisationException error

You need .NET version 4 for P3Dv3.4 onwards (or .NET version 2 for FSX and up to P3Dv3.4) and SimConnect to be installed for OpusFSI and its SimConnect links to work.

You can check what versions of .NET you have installed in Control Panel by selecting Settings, System, Apps and features, then search for .NET and a list of installed versions will be displayed. For older operating systems you can check what versions of .NET you have installed by checking your c:\Windows\Microsoft.NET\Framework or Framework64 folders. You should see a v2.0.xxxxx folder in addition to the v4.0.xxxxx folder.

In the case of SimConnect, first make sure you have installed FSX or P3D along with its SP2 or installed the FSX Acceleration version, SimConnect is installed automatically with it. If you have mislaid or corrupted your SimConnect then you can try re-installing it for FSX or P3D (prior to P3Dv3.4) using the Microsoft.FlightSimulator.SimConnect.msi file within your OpusFSI_v5 folder. For P3Dv3.4 onwards we supply SimConnect_v3.4 dll. Copy and rename (to OpusFSI_v5 folder) if that is needed, otherwise the FSI startup program will copy and rename the v3.4 dll automatically when no LM dll exists. Alternatively use the FSISERVER.EXE program argument P3D2 (or P3D30, P3D31, P3D32, P3D33). The FSISERVER program arguments P3D (or P3D4, P3D3, P3D34) select the .NETv4 variant of SimConnect and SlimDX .

SlimDX error

Do not run P3DSERVER.EXE or FSXSERVER.EXE directly, instead run the FSISERVER.EXE program with the correct argument for your sim type.

If you still have problems you must ensure the FSISERVER program ...

> Is starting in the correct c:\OpusFSI_v5 folder.
> Has permissions to copy and rename the relevant SlimDX DLL file.
> Is able to copy the current SlimDX DLL, it's not locked or write protected.
> Is not blocked by AV or Win Defender software.

Otherwise its attempt to copy and rename the SlimDX file will fail. You may also need to install the SlimDX dotNet 2 or 4 runtime using our supplied msi file in the OpusFSI_v5 folder.

OpusFSI won't run in Windows 10

If you have set up the security and sharing permissions as described in the above section, have run as Administrator, and the software still won't run on Windows10 then run the Microsoft **vcredist_x86.exe** VC redistribution package located in the OpusFSI_v5 folder.

Initial Set Up and Configuration

Run the FSISERVER program on your FSX/Prepar3D system.
The SERVER program **MUST** be started in its local installation folder, in other words it MUST be started in **OpusFSI_v5**.

N.B. Do not run the FSICLIENT program on your server PC since it will cause the sim to freeze, it is only used on networked client PCs.

You do not need to run the flight simulator at this time since we are just going to configure the system.

Click on the **Configure** button to display the **OpusFSI Server - Configuration** dialog.


Figure 1 - FSI Server's Main Form
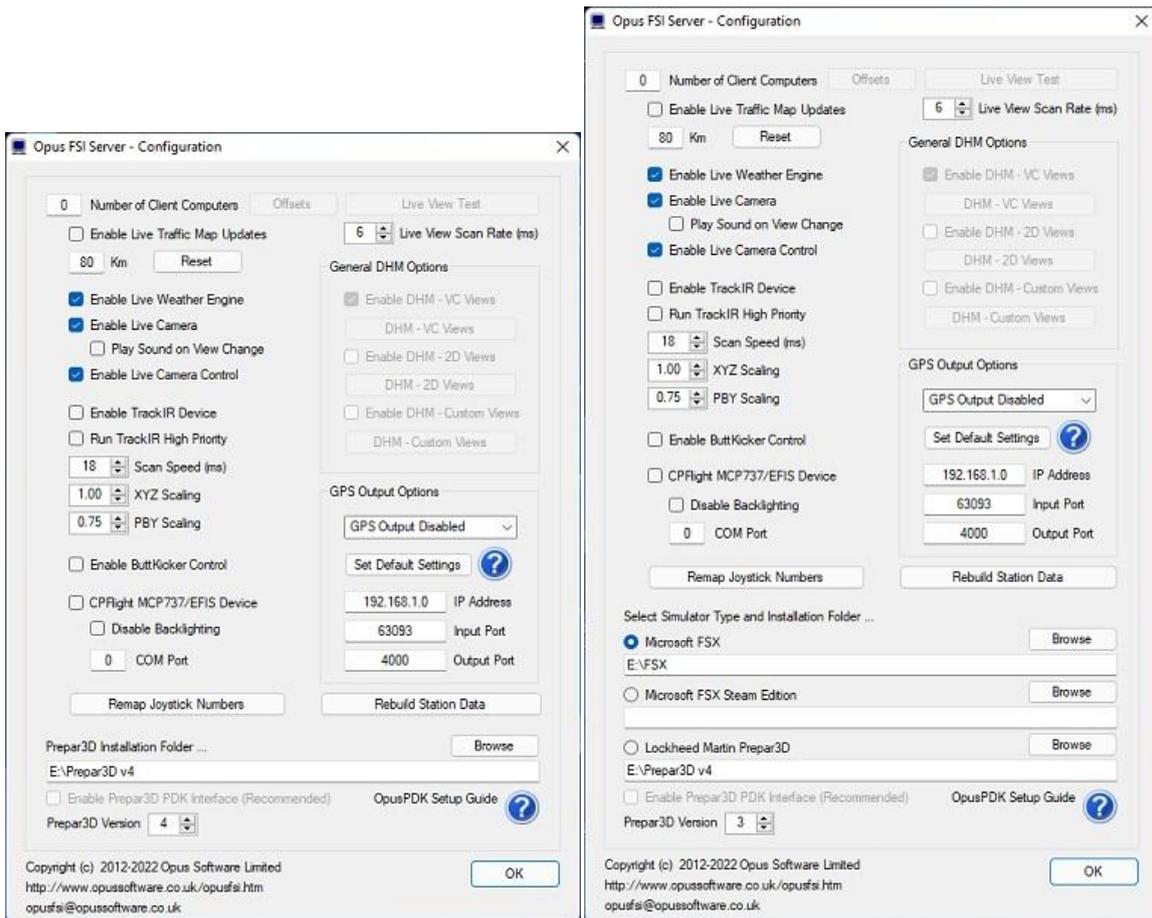
Figure 2 - FSI P3D and FSX/Steam Server Configuration Dialogs

The number of (**Live View)** client computers should be configured to zero.

Live Traffic displays local traffic on the LWA Map and may be configured within 32km (20 miles) to 192km (120 miles) of your aircraft.

Enable **Live Weather Engine** if required.

Enable **Live Camera** unless you want to control the views manually using **Live Camera Control** and use **General DHM Options**.

If you enable TrackIR please refer to the TrackIR section of this document for important initial set up and configuration details.

Enable the **CPFlight** driver if you have a CPFlight MCP737/EFIS panel and specify a COM port.

The **Live View Scan Rate** (0 to 60ms) adjustment is for networked systems and controls the position update rate communicated to the server enabling you to match the preferred rate found using the **Live View Test**.

Click on the **Browse** button and locate your simulator installation folder. N.B. Any time you change this folder location you must restart the SERVER program. *If you fail to do this correctly you will be unable to select and activate any dynamic weather or weather themes.*

If you are using Prepar3D then select the **P3D Version** from the dropdown box and enable the **Prepar3D PDK Interface** to provide a more efficient Live Camera, Live Camera Control, and DHM eye point control. Refer to the OpusFSI_v5/**OpusPDK_Setup** text file to set up the Prepar3D OpusPDK interface. If you encounter problems (errors in the Spy window) then you can disable the PDK. *The PDK is automatically disabled for P3Dv4.*

Close OpusFSI.
Run FSX/P3D.
Run OpusFSI.

Weather

Click the **Weather** button on the server's form and set your **Destination** and **Max Cruise Altitude** if known, no need to set anything else unless you wish to tweak the settings.
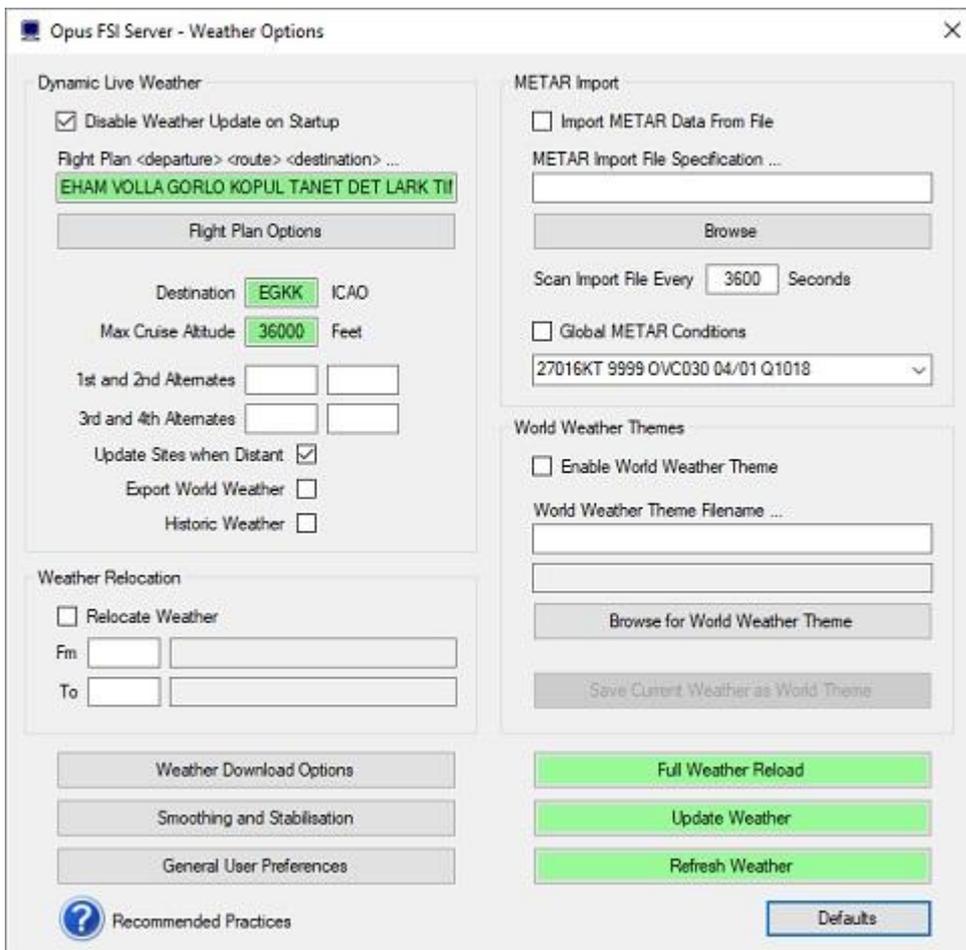
Figure 3 - FSI Server's Weather Options Dialog

Click OK, and you are ready to fly.

For further details please refer to the OpusFSI_v5_Live_Weather pdf guide which can be found in the **OpusFSI_v5** installation folder, also available from our download page.

Cameras

Please refer to the OpusFSI_v5_Live_Camera pdf guide which can be found in the **OpusFSI_v5** installation folder, also available from our download page.

Spy

If you run the simulator in windowed mode you can click on the OpusFSI server program's **Spy** button and monitor its progress. If you have enabled Dynamic Weather then you should witness the server programming initiating the live weather METAR download culminating in creating and updating the Dynamic Weather.

The **Options** button provides the means to specify the form's topmost, opacity, and font settings. The window can be resized.

The Spy window is automatically cleared after ten minutes.
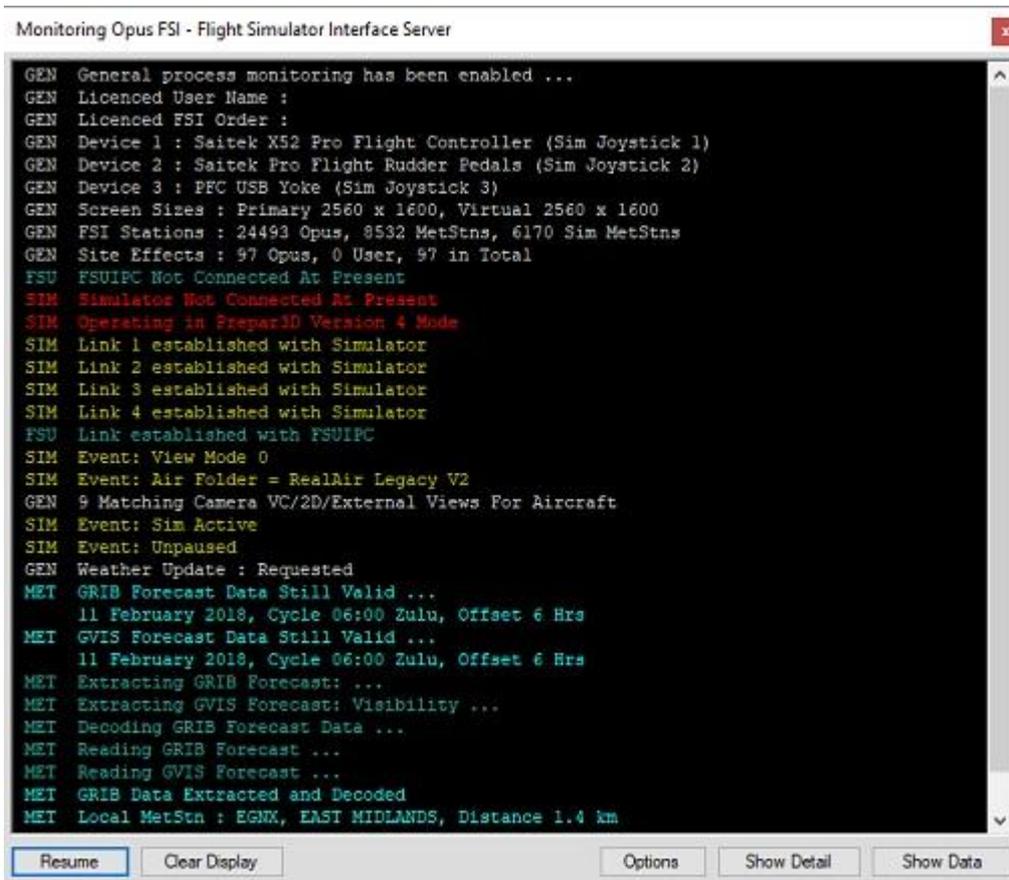
Spy indicates what joystick numbers have been mapped to each controller device. The button events within the Spy window will also indicate what physical device is currently mapped to the simulator's joystick number. The joystick order should match the controller order within the simulator's Controls Settings. If they don't then you can change the order via the **Remap Joystick Numbers** button in the Config dialog.
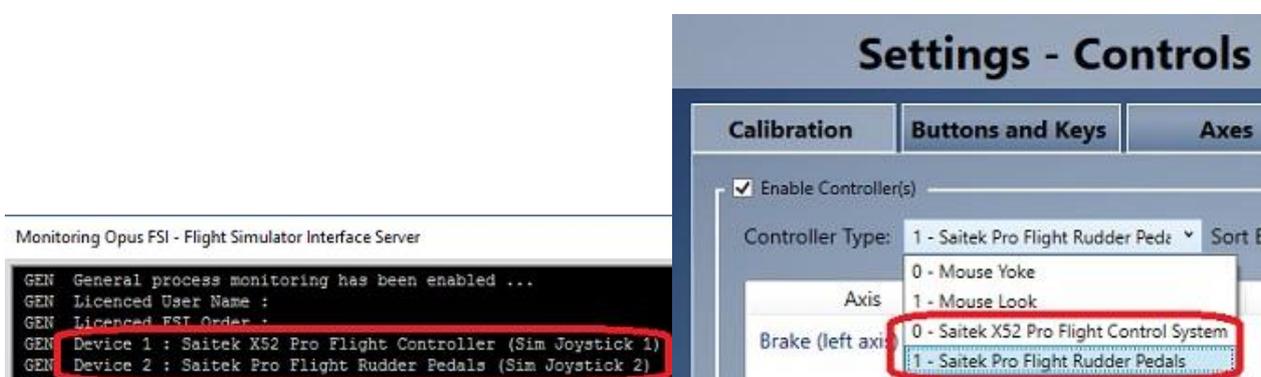
General Operation

If you are using TrackIR then run TrackIR and the sim before running OpusFSI.

If you are not using TrackIR then the SERVER program should be run after FSX/Prepar3D, or you may configure your system to run the server program automatically each time you start FSX/Prepar3D.

When the SERVER program is activated it will resume its previous minimized or visible state, and will be displayed in its last known location on the screen. The SERVER program will automatically abort when the sim is shutdown.

*To ensure optimum performance, the settings within FSX/Prepar3D should be configured in accordance with the instructions in **FSX Computer System Settings** section at the end of this guide.*

Starting the OpusFSI Software Automatically with FSX and P3D

The FSISERVER program can be started automatically each time FSX/P3D is run, simply by editing the content of the standard FSX **exe.xml** file.
The FSX **exe.xml** file can be found within the
c:\Users\username\AppData\Roaming\Microsoft\FSX directory where 'username' identifies your login account name, or for XP in
c:\Documents and Settings\Application Data\Microsoft\FSX
The P3D **exe.xml** file can be found within the **c:\Users\username\AppData\Roaming\Lockheed Martin\ Prepar3D** directory where 'username' identifies your login account name.

If the file doesn't exist then you can create it using Notepad, just remember the xml file extension when saving the file.

Edit the xml file using Notepad. Paste the contents of the **OpusFSI _ExeXml_Server.txt** file at the end of the xml content. You should paste the content in just before the closing </SimBase.Document> statement.

For example, after editing the content of the xml file, the content should look something like this for FSX/Steam/P3D (substitute the program argument P3D2, P3D30, P3D31, P3D32, or P3D33 for earlier versions of P3D).

```
<?xml version='1.0' encoding='Windows-1252'?>
<SimBase.Document Type='Launch' version='1,0'>
<Descr>Launch</Descr>
<Filename>exe.xml</Filename>
<Disabled>False</Disabled>
<Launch.ManualLoad>False</Launch.ManualLoad>
<Launch.Addon>
  <Name>OpusFSI_v5 Flight Simulator Interface Server</Name>
  <Disabled>false</Disabled>
  <Path>c:\OpusFSI_v5\FSISERVER.EXE FSX</Path>
</Launch.Addon>
</SimBase.Document>
```

Of course you may already have several Addons listed in the xml file. In which case you will find each Addon specified within a separate <Launch.Addon> .. </Launch.Addon> block.

You will need to edit the **c:\OpusFSI_v5\FSISERVER.EXE** entry and specify the correct drive location if you have installed it anywhere other than the standard C drive.
The FSISERVER program will accept a delay command line argument in the form **DELAYn** where **n** is the required start delay in milliseconds (e.g. FSISERVER.EXE DELAY2000 will delay the program start by 2 seconds). This argument can be used to delay an auto start within the simulator's EXE.XML file using the <CommandLine>DELAYn</CommandLine> entry, for example,

```
<Launch.Addon>
 <Name>OpusFSI_v5 Flight Simulator Interface Server</Name>
 <Disabled>false</Disabled>
 <Path>c:\OpusFSI_v5\FSISERVER.EXE</Path>
 <CommandLine>DELAY2000</CommandLine>
</Launch.Addon>
```

will delay the SERVER programs start by 2 seconds (2000 mS).

You can also specify more than one command line argument, for example,

```
<Launch.Addon>
 <Name>OpusFSI_v5 Flight Simulator Interface Server</Name>
 <Disabled>false</Disabled>
 <Path>c:\OpusFSI_v5 \FSISERVER.EXE</Path>
 <CommandLine>DELAY2000 FSX</CommandLine>
</Launch.Addon>
```

will delay the FSISERVER programs start by 2 seconds and also automatically select FSX simulator type. The program arguments can be specified in any order. The program arguments are,

DELAYn ... Delays the program start by 'n' milliseconds.
FSX ... Auto selects FSX simulator type.
STEAM ... Auto selects FSE-SE (Steam Edition) simulator type.
P3D ... Auto selects the latest version of the Prepar3D simulator type.
P3D4 ... Auto selects the latest version of the Prepar3D version 4 simulator type.
P3D40 ... Auto selects the Prepar3D version 4.0 simulator type (or use P3D41, P3D42,
        P3D43, P3D44, P3D45 etc)
P3D3 ... Auto selects Prepar3D version 3 simulator type (P3D v3.4 onwards).
P3D30 ... Auto selects the Prepar3D version 3.0 simulator type (or use P3D31, P3D32,
        P3D33, P3D3, P3D34 etc)
P3D2 ... Auto selects Prepar3D version 2 simulator type (P3D v2 or earlier).
NONE ... Auto selects No Connection To Simulator type (CLIENT only).

When you next run the sim if you are prompted to trust OpusFSI then confirm Yes.

In Prepar3D version 2 mode (requiring dotNet v2 SimConnect) the start up programs will activate the FSX server or client program. In all other Prepar3D version 3+ modes (requiring dotNet v4 SimConnect) the usual P3D server or client is activated.

Turn off User Account Control (UAC)

User Account Control (UAC) can prevent OpusFSI from running automatically with FSX and P3D on Windows 7/8 systems. If this happens turn off UAC as follows,

1. Open User Accounts by clicking the **Start** button 🌐, clicking **Control Panel**, clicking **User Accounts and Family Safety** (or clicking **User Accounts**, if you are connected to a network domain), and then clicking **User Accounts**.

2. Click **Change User Account Control settings** (or **Turn User Account Control on or off**). If you are prompted for an administrator password or confirmation, type the password or provide confirmation.

3. Move the slider bar to **Never notify** (or clear the **Use User Account Control (UAC) to help protect your computer** check box) to turn off UAC, and then click **OK**.

Operating System Recommendations

Select the High Performance Power Scheme to ensure optimum performance whilst using the simulator. For Windows7 open Power Options by clicking the Start button 🌐, clicking Control Panel, clicking System and Security, and then clicking Power Options.

PC Performance

We recommend turning off all virus scanners whilst running the sim since they can have a serious effect on performance.

Disable Windows Defender.

Don't have any internet browser windows open, they decrease performance.

Deleting Window's **CompatTelRunner.exe** will also increase performance,

> Microsoft try and prevent this overly demanding 'spy' program from being deleted. However, removing it is quite straight forward once you've done it a few times.
>
> **Step 1 - Locate the program**
>
> Open Windows Explorer, navigate to the **C:\Windows\System32** folder, and locate the **CompatTelRunner.exe** program.
>
> **Step 2 - Take ownership**
>
> Right click on the program, select **Properties** then the **Security** tab. Click on the **Advanced** option. You will see the program's **Owner** is set to **TrustedInstaller**, click on the **Change** option next to it.
>
> In the 'Enter the object name..' text box type **Everyone** and click **OK**. Click OK again to close the Advanced Security dialog.

Now in the CompatTelRunner Properties dialog (Security tab still), click on the **Edit** button followed by the **Add** option. Type **Everyone** in the text box again and click **OK**.

Finally back in the Properties box, highlight **Everyone** in the Group list and then tick the **Full Control** checkbox in the **Allow** options.

Click **Apply** and **Yes** to the prompt.

Click **OK** twice to close all the dialogs.

Step 3 - Delete it

You should now be able to right click on the CompatTelRunner.exe program and select the Delete option. If not, restart the PC and delete the file. With the program deleted Microsoft can no longer spy on you and gather compatibility telemetry data and more important your PC won't work at a snails pace while it does.

Just be aware Microsoft will occasionally reinstall its CompatTelRunner program during certain updates.

Simulator Recommendations

Ideally your simulator should be installed on a dedicated SSD or HDD, at the very least try and install your simulator on a different drive to your Addons, this will ensure the simulator runs more smoothly. Avoid installing the simulator in Program Files since this causes permission problems.

FSX Steam Edition Recommendations

The OpusFSI_SimObjects_Template.txt text file can be copied and/or renamed to OpusFSI_SimObjects_FSXSE.txt, then edited to list the path specifications of any addon SimObject Airplanes and Rotorcraft folders not recognised by the SERVER program.

Prepar3D Recommendations

You will need to install SimConnect if it isn't already installed on your system. For P3D versions prior to v3.4 (.NET v2) either run the Microsoft.FlightSimulator.SimConnect.msi file within your OpusFSI_v5 folder or use the FSISERVER.EXE program argument P3D2 (or P3D30, P3D31, P3D32, P3D33). Running FSISERVER.EXE with the program argument P3D (or P3D4, P3D3, P3D34) will select .NET v4 variants of SimConnect and SlimDX.

You cannot start OpusFSI until P3D has loaded its flight, or a prepared Default flight (remember you can always relocate after the start up). Do NOT run OpusFSI when P3D has its 'Create Flight' dialog on display. This is due to a bug in P3D. We recommend you create a Default flight with nil wind; load the Default flight; update the weather using OpusFSI; use the ATIS over the radio to confirm the active runway after injecting the weather, this ensures the correct runway is allocated.

You can of course start P3D in the setup screen, just make sure you load your flight BEFORE running OpusFSI.

In P3D simulator mode the **Enable Volumetric Fog** option is set automatically using the VolumetricFog setting within the Prepar3D.CFG file. If you change this setting during a P3D session then either change the **Enable Volumetric Fog Effect** in OpusFSI to match P3D or restart OpusFSI. The **Volumetric Fog** option is ignored whenever the Microsoft FSX simulator is used.

It is recommended to use our PDK (**Enable Prepar3D PDK Interface** checkbox and setup help in the Configuration dialog) since this is more efficient than the SimConnect interface. This requires copying a DLL file into the P3D Modules folder as described below.

Prepar3D Version 3.x PDK Bug

The Lockheed Martin PDK Interface does not function correctly if you save a 'Default' flight with a Non VC view on display. In fact it does not function at all and will result in delays each time OpusFSI uses the PDK to adjust the zoom or eye-point in a VC view. Apart from causing serious delays, you will not be able to select or edit VC views nor will you get any DHM. **Solution**, if using the OpusPDK Interface you MUST save a Default flight or start up in VC view mode.

Both the SERVER and CLIENT programs will automatically use SimConnect 6DOF controls for all non-VC views whilst operating in Prepar3D v3 simulator mode. This measure is to overcome current bug in the Lockheed Martin PDK interface which does not allow 6DOF control in any 'Custom' External views.

Opus PDK Interface Setup Guide for P3D

The PDK is automatically disabled for P3Dv4.
The OpusPDK Dynamic Link Libraries (DLLs) provide a direct link into Lockheed Martin's Prepar3D systems via the Prepar3D PDK interface. This interface provides for efficient DOF control for camera transitions, panning sequences, and general eye point positioning. This interface is used where applicable for all Live Camera, Live Camera Control, and DHM eye point movements, including via the TrackIR interface.

There are four simple steps to setting up the Opus PDK interface,

1. Copy and rename the desired OpusPDK_vXX.DLL library file.
2. Copy the OpusPDK_vX.DLL into your <P3D>\Modules folder.
3. Create or edit the Prepar3D simulator's DLL.XML file.
4. Configure the OpusFSI software.

STEP 1 - Copy and Rename the OpusPDK_vXX.DLL file

This step is **ONLY** applicable to Prepar3D Version **3** systems.

Copy & rename **OpusPDK_v32.DLL** to **OpusPDK_v3.DLL** for P3D Version 3.2 systems.
Copy & rename **OpusPDK_v33.DLL** to **OpusPDK_v3.DLL** for P3D Version 3.3 systems.
Copy & rename **OpusPDK_v34.DLL** to **OpusPDK_v3.DLL** for P3D Version 3.4 systems.

On Prepar3D Version **2** systems simply copy, without renaming, the **OpusPDK_v2.DLL** into your
<P3D>\Modules folder.

STEP 2 - Copy the OpusPDK_vX.DLL file

Before the OpusPDK library can be activated within Prepar3D the appropriate DLL must be copied into the
simulator's <P3D>\Modules folder. This procedure must be undertaken on your main 'flying' server and in
the case of Prepar3D Live View, on each of the P3D client systems as well.

a. Open Windows Explorer.
b. Navigate to your x:\OpusFSI_v5 installation folder.
c. Right click on either the OpusPDK_v2.DLL (P3D v2) or OpusPDK_v3.DLL (P3D v3).
d. Select the 'Copy' option.
e. Navigate to your Prepar3D installation folder.
f. Right click on the **Modules** sub-folder and select the 'Paste' option.

N.B. If the **Modules** sub-folder does not exist then create it before copying the DLL.

You should now have a copy of the latest OpusPDK_vX.DLL library file in your <P3D>\Modules folder.

STEP 3 - Create or edit the Prepar3D simulator's DLL.XML file

The Prepar3D **DLL.XML** file is located in the following folders,
  C:\Users\<user_name>\AppData\Roaming\Lockheed Martin\Prepar3D v2
or,
  C:\Users\<user_name>\AppData\Roaming\Lockheed Martin\Prepar3D v3

You must edit this file using Windows Notepad and add the following Launch.Addon section to the XML
file's content. When adding the launch code for the OpusPDK DLL in the Prepar3D DLL.XML file, the launch
code should be inserted **FIRST** in the DLL list. This has been found necessary on systems with many Addon
DLLs launched, the initialisation of the Lockheed Martin Prepar3D PDK interface seems to be quite critical
and may result in crashing the P3D program if delayed until after a long list of non-PDK addons are loaded.

Add the appropriate Launch statements for the **OpusPDK_v2.DLL** for Prepar3D v2 or **OpusPDK_v3.DLL** for
Prepar3D v3 to your sim's DLL.XML file.

For example, for Prepar3D v3 ...

```
<?xml version="1.0" encoding="Windows-1252"?>
<SimBase.Document Type="Launch" version="1,0">
 <Descr>Launch</Descr>
 <Filename>dll.xml</Filename>
 <Disabled>False</Disabled>
```

```
<Launch.ManualLoad>False</Launch.ManualLoad>
<Launch.Addon>
<Name>OpusPDK</Name>
<DLLType>PDK</DLLType>
<Disabled>False</Disabled>
<ManualLoad>False</ManualLoad>
<Path>Modules\OpusPDK_v3.DLL</Path>
</Launch.Addon>
.
. any other DLL launch codes
.
</SimBase.Document>
```

If the sim's DLL.XML file does not exist you can copy and rename the supplied DLL_V2.XML or DLL_V3.XML file from your \OpusFSI_v5 folder. You can also use these example XML files to copy and paste the required Launch statements. Remember to place the OpusPDK Launch statements FIRST in the DLL activation list.

STEP 4 - Configure the OpusFSI software

Before using the OpusPDK Interface you must edit the Configure dialog in the P3DSERVER program and all P3DCLIENT programs on your Live View client systems. Tick the **Enable Prepar3D PDK Interface** checkbox option immediately underneath the Prepar3D folder location box.

FSX Computer System Settings

fsx.cfg File Settings

You must edit your fsx.cfg file, this file can be found in,

c:\Users\<your account name>\AppData\Roaming\Microsoft\FSX

If you can't see the **AppData** folder within Windows Explorer then you will need to change the **View** settings as follows,

Organize - Folder and Search Options - View - Enable the 'Show hidden files, folders, and drives' option.

On all FSX systems we recommend you specify the following fields within in the fsx.cfg file,

```
[GRAPHICS]
HIGHMEMFIX=1
[DISPLAY]
WideViewAspect=True
```

These settings will allow FSX to make better use of the 64-bit memory environment with >2GB memory, and also support modern day wide aspect screens for addons such as PMDG 737NGX.

We also recommend you optimize all of your fsx.cfg files using,
http://www.simforums.com/forums/setting-up-fsx-and-how-to-tune-it_topic29041.html

FSX Settings

FSX menu option - Options, Settings, Weather, set to **Custom** (set slider bar to left).

Click on the *Customize* button. Select the *Weather* tab.
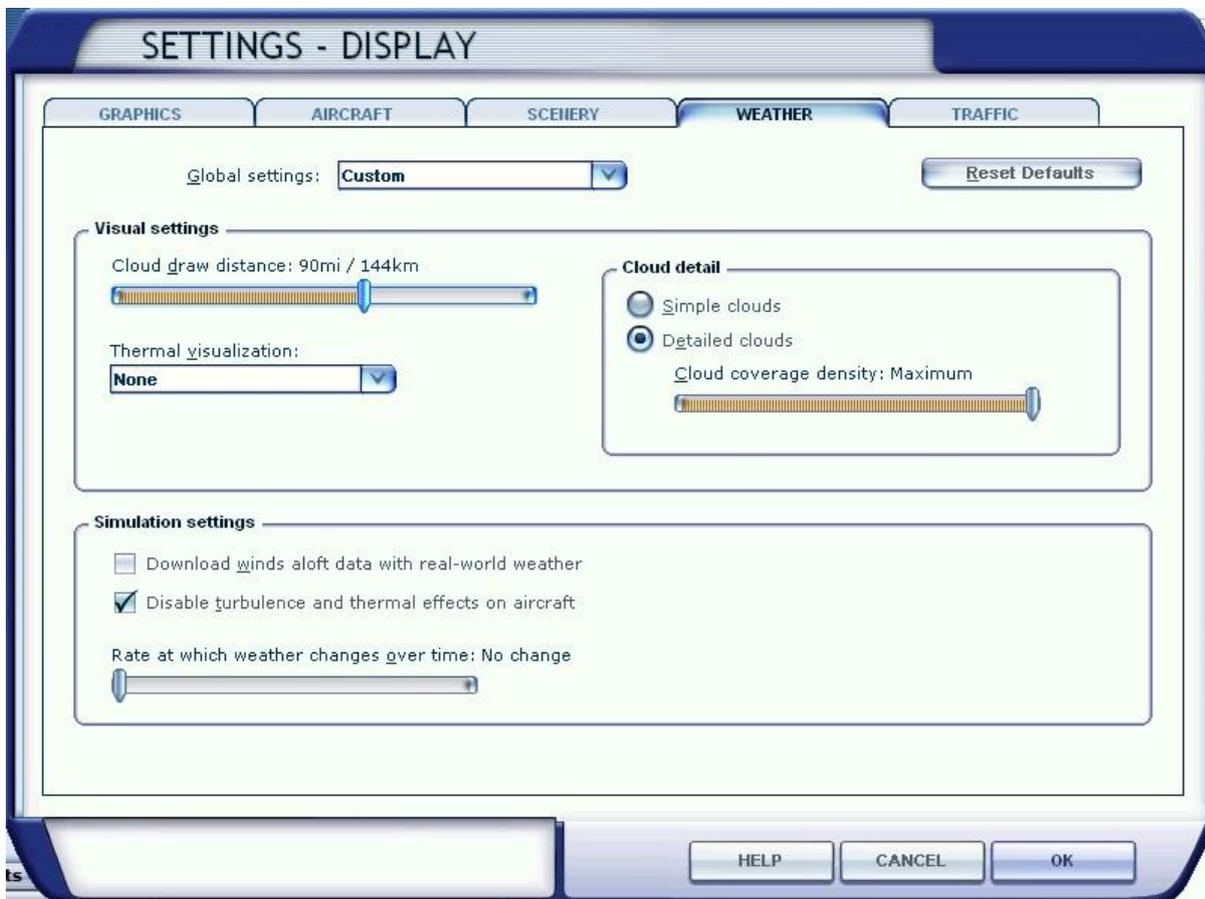
We recommend you set the **Cloud draw distance** to between 80mi/128km and 100mi/160km. If you generally fly at a higher altitudes then the higher setting is preferable but if you fly at lower altitudes then the lower setting is preferable.

Untick **Download winds aloft data with real-world weather**.

Untick **Disable turbulence and thermal effects on the aircraft**. To see wing flex you must also select FSX turbulence and advanced animations which is set via the Graphics tab. For turbulence on the aircraft itself select both the **Bump Aircraft** and Turbulence effects options (**Turbulent Motion** and/or **Turbulent Bump**) within DHM.

FSX menu option - Options, Settings, Display, Graphics
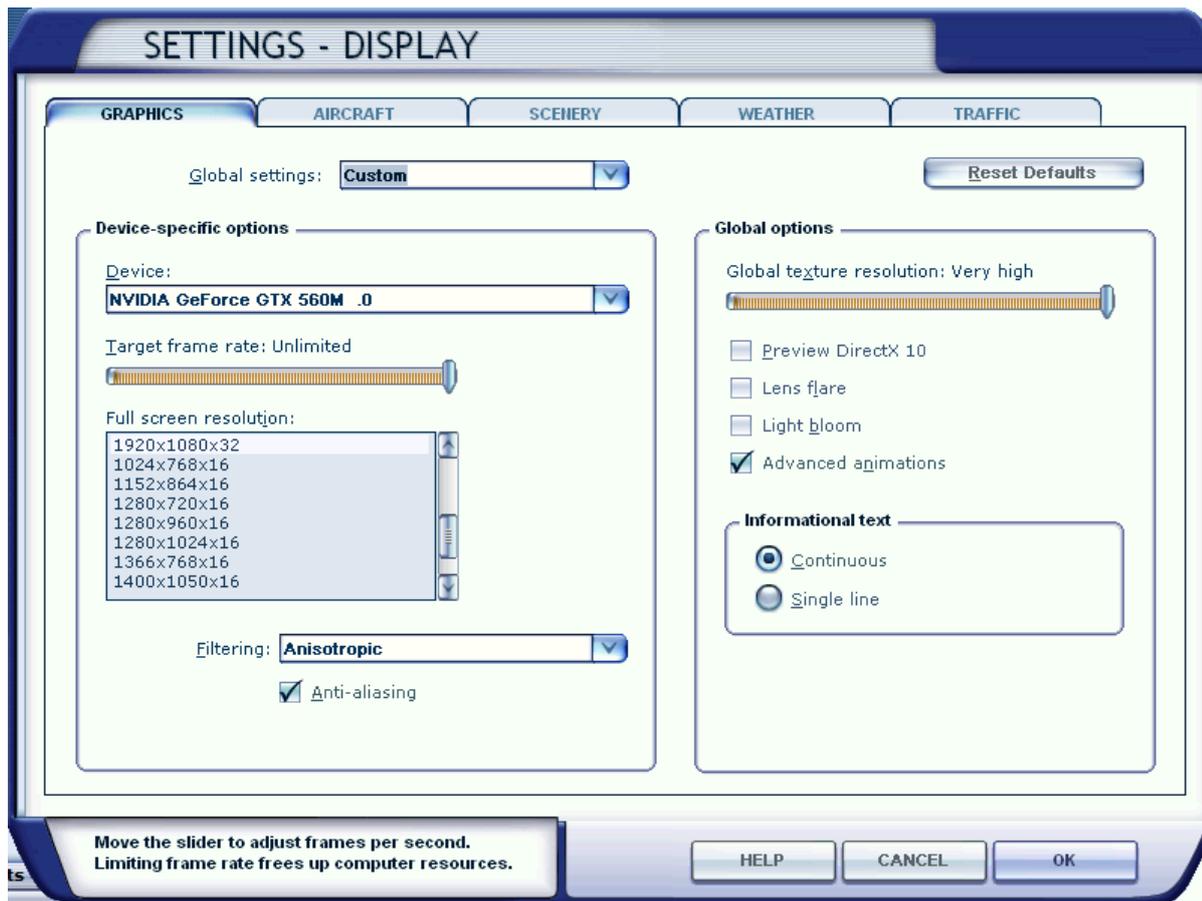
Set the **Target frame rate** on the server PC to **Unlimited**. A word of caution, if you set your target frame rate too high then you may experience problems with the snow and rain effects. That is, you may see some snow and rain falling vertically whilst moving. This is an FSX problem and the only solution we've found so far is to restrict the machine's frame rate. If this is a problem then a setting of **20fps to 60fps** should result in a smooth operation. On slower systems, or systems with slow hard disk drives, you may also notice the occasional screen flicker. Once again lowering the target frame rate should help.

To see wing flex you must select **Advanced Animations** and FSX turbulence (Weather tab).

FSX menu option - Options, Settings, click on the *Realism* button.
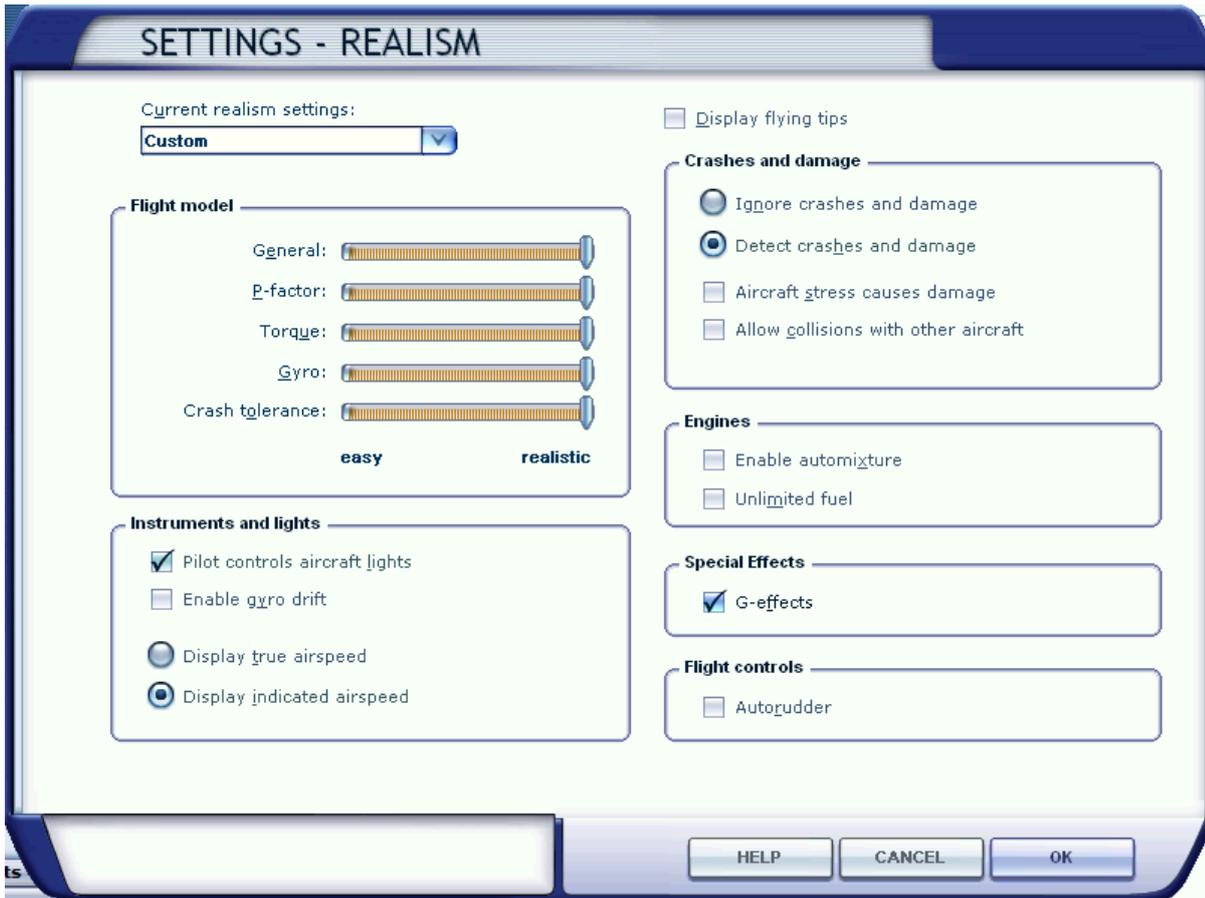
Disable **Aircraft stress causes damage**.

FSX Free Flight, Weather
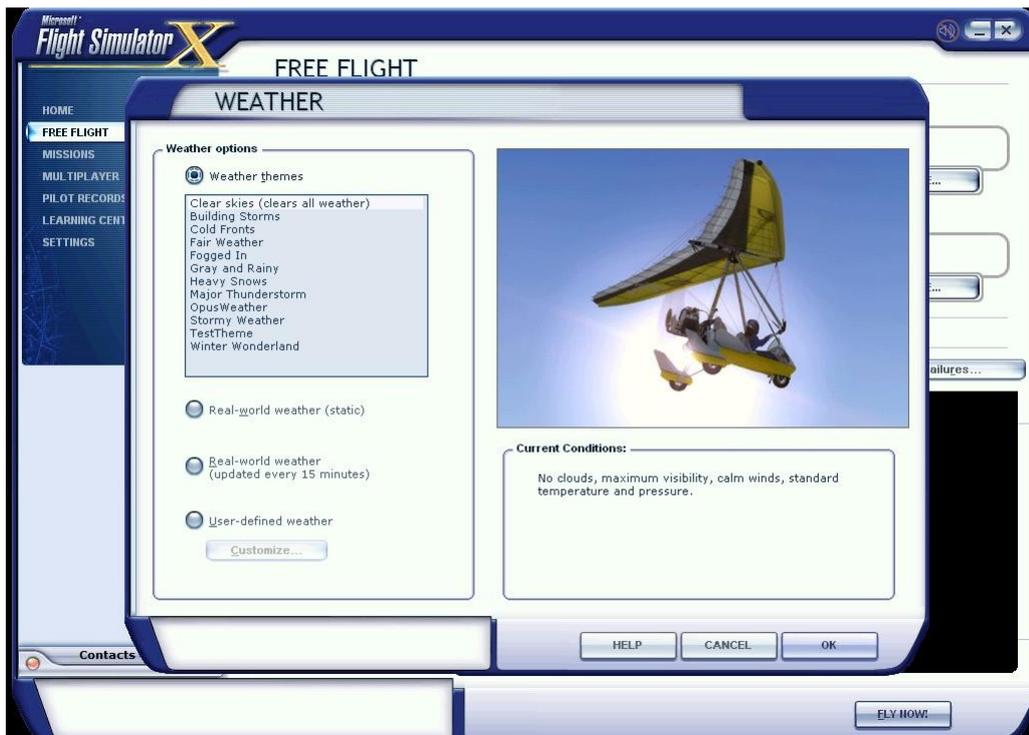
Set your FSX Current Weather to any weather theme, just don't enable the real world weather options unless you are using AI aircraft.

If you are using AI aircraft then select RW Weather in the FSX Weather settings, update the FSX weather and ensure at least the correct wind has been injected. This requires that your point of departure is a met station and has a valid METAR in the Jeppesen database. This procedure will set the wind BEFORE the flight is even loaded. Now you can take your time, process your flight plan, specify your intended destination and cruise altitude and finally instruct Opus to generate and load the weather. The Opus LWE will automatically put the sim back into custom weather mode. Using this simple procedure will always ensure your AI traffic start out using the correct runway.

FSX Fixes

To stop FSX crashing on menu access, download this version of uiautomationcore.dll;
http://gex.flight1.net/UIAutomationCore.zip
Unzip it and copy Uiautomationcore.dll into the main FSX installation folder.

To stop clouds being turned off and back on apply this fix;
http://www.simforums.com/forums/how-to-get-rid-of-annoying-flashing-clouds_topic24830.html
Edit the file FSX\ShadersHLSL\misc\SwarmCloud.fx
Modify the EffectDeclaration entry as follows,

```
    const bool EffectDeclaration
    <
        string Name  = "SwarmCloud";
        string Class    = "Basic";
        bool    NewMaterialUsage = false;
    > = true;
```

Browse to C:\Users\<username>\AppData\Local\Microsoft\FSX\Shaders\Misc
or C:\documents & settings\<username>\Local Settings\Application Data\Microsoft\FSX\Shaders\Misc

Delete the file SwarmCloud.fx_<number>

Recommended Settings and Practice for Dynamic Live Weather

- Upgrade to the latest Version.
- Set all Defaults in all weather dialogs. *
- Specify your Destination.
- Specify your Max Cruise Altitude. **
- Update the Weather. ***
- Check the Weather ****

* This will enable the cloud and visibility smoothing, wind stabilisation and dynamic wind control options in the Weather Smoothing dialog.

** If you specify a **Max Cruise Altitude** of 4000 feet or more the LWE will download and process the GRIB forecast data from NOAA.

*** If you have specified Background GRIB Processing in the Weather Downloads dialog then the GRIB data extraction and lengthy decoding will proceed at a slower pace and can take several minutes. Otherwise the processing will be done as fast as possible at the expense of the sim performance or frame rates. The GRIB data is only downloaded once before flight and the decoded data will be valid all day or at least for nine hours so this is normally not a concern or problem. However, most users need GRIB data for flight planning and preparation.

**** Before flight you should get into the habit of checking the weather. At the very least display and check the Opus Local, Lower, Upper, and Destination Weather reports. You may also like to examine the various Opus text reports accessed via the sim Add-on menu. There are separate reports showing the downloaded METARs, all the GRIB wind and temperature targets from 4000 feet up to FL540, all the en route weather for any specified flight plan including TAFs if you have enabled them, and finally an easy reference to all relevant SIDs and STARs. This report gives a handy direction and bearing for each listed SID and STAR.

The Opus weather reports (e.g. the Destination Weather) should be checked during climb and descent to monitor all wind and temperature targets, compared with the actual sim ambient conditions. This way you will know that your sim is operating as expected.

Never disable weather updates, the sim will NOT cope on its own it simply cannot contain all the necessary data.

Text Weather Reports, located in the OpusFSI_v5\Weather folder and accessed via the sim Add-on menu ...

> OpusWeather.txt ... The downloaded METARs
> OpusWeatherReport.txt ... The GRIB data report
> OpusFlightReport.txt ... The flight plan en route weather report
> OpusSIDSTARReport.txt ... The relevant SIDs and STARs

Live Weather Assistant (LWA) and Weather Map data ...
> Surface Visibility
> Precipitation Levels
> Surface QNH
> Surface Temperatures
> Cruise Level Temperatures
> Upper Level Temperatures
> Surface Winds
> Cruise Level Winds
> Upper Level Winds
> Cruise Level Turbulence
> Upper Level Turbulence
> Lower Level Cloud Cover
> Medium Level Cloud Cover
> Met Station Cover

The LWA and up to six weather maps can be displayed on the server or a networked client.

SimObject Path Additions

The **OpusFSI_SimObjects_Template.txt** file can be used to define a list of SimObject paths not currently identified by OpusFSI, normally addon aircraft that have been installed elsewhere and not defined anywhere that OpusFSI checks.

Copy and rename the supplied OpusFSI_SimObjects_Template.txt file. Rename the file as indicated below. OpusFSI will check and process the following sim typed files for the additional path specifications,

OpusFSI_SimObjects_FSX.txt
OpusFSI_SimObjects_FSXSE.txt
OpusFSI_SimObjects_P3D.txt

For backwards compatibility, the file OpusFSI_SimObjects.txt is also checked for 'FSX Steam' sim types.

N.B.

Prepar3D systems should already include a 'simobjects.cfg' file within their common application data (c:\ProgramData) folder. These files are also checked and decoded by OpusFSI so try not to duplicate additional Simobject paths in the above text file if used. Your specified SimObjects folders should each contain the same Airplanes or Rotorcraft sub-folders as the standard SimObjects folder within the sim. The SERVER and CLIENT programs will accept SimObject Addon paths that end in specific sub-folder names '\Airplanes' or '\Rotorcraft' (with or without a trailing backslash). Previously the standard '\SimObjects' root folder was assumed and the sub-folder names '\Airplanes' or '\Rotorcraft' were appended prior to looking for the additional (addon) SimObjects.

Don't forget to check that any addon folders are shared with adequate sharing and security permissions.

Each path must be entered on a separate line in the form,
    Path = <full_path_specification>

For example,
    Path = E:\3rd Party\Company_XYZ\SimObjects

The SERVER and CLIENT create a log file named SimObjects_FSX.log, SimObjects_FSXSE.log, or SimObjects_P3D.log, depending on the sim type. This log file lists all SimObject Airplane and Rotorcraft paths that are checked along with any errors encountered during the process. The log file helps determine the reason why any aircraft/rotorcraft are not detected by the SERVER program.

Ensuring AI Traffic uses the Correct Runway

Create a Default flight with 0 wind. Load the Default flight. Update the weather using OpusFSI.

Use the ATIS over the radio to confirm the active runway after injecting the weather, this ensures the correct runway is allocated.

Using this simple procedure will always ensure your AI traffic start out using the correct runway.

FSUIPC Settings

FSUIPC is required on the SERVER system. FSUIPC is required on Live View CLIENTs that are connected to the simulator and used to display camera views.

You can download a free copy from http://www.fsuipc.com

We recommend you do not run OpusFSI automatically via FSUIPC since some users have reported problems running it this way.

Turn everything off in FSUIPC, we recommend disabling all settings. We do not use FSUIPC for any weather or turbulence related effects.

If you choose not to install/activate FSUIPC then at the moment OpusFSI will not be able to pause the sim, it is normally paused when opening certain Opus dialogs. Hence you will have to pause and unpause the sim manually.

To disable FSUIPC simply remove the associated <Launch.Addon>...</Launch.Addon> entries within the simulator's dll.xml file.

```
<Launch.Addon>
  <Name>FSUIPC 5</Name>
  <Disabled>False</Disabled>
  <Path>Modules\FSUIPC5.dll</Path>
</Launch.Addon>
```

TrackIR Settings

Before using the interface you MUST 'Check For Game Updates' within your TrackIR5 and ensure OpusFSX is listed in **Titles** under the **Advanced Settings** tab, then **restart** TrackIR.

Prior to using the TrackIR5 device via OpusFSI you must ensure TrackIR5 does not directly connect to the FSX/P3D simulator. To accomplish this you MUST rename the two SimConnect manifest files within the TrackIR5 installation folder. The folder is usually located in either,
        c:\Program Files\NaturalPoint\TrackIR5 (Win 7 32-bit)
        or, c:\Program Files (x86)\NaturalPoint\TrackIR5 (Win 7 64-bit)

BEFORE using the Opus TrackIR interface the files you MUST rename are **simconnect.manifest** and **simconnectSP2.manifest.** We recommend renaming these files to **simconnect_RENAMED.manifest** and **simconnectSP2_RENAMED.manifest**

If you wish to revert back to using TrackIR without the OpusFSI interface then you will have to change these files back to their original names.

Check your TIR manifest files after any TIR update, the TIR software can create new files after the upgrade.

Do not copy SimConnect.dll to your root directory otherwise TrackIR will find it and connect directly to FSX instead of OpusFSI.

Run TrackIR and FSX before running OpusFSI. Minimise the TrackIR program to prevent FPS loss.

Do not run any other program that controls the camera views, creates camera shake effects or interfaces to TrackIR. Make sure no such program or subordinate task is running, do not allow any other program to connect to TrackIR prior to OpusFSI.

TrackIR Tuning

TrackIR effects must be tuned using the TrackIR program. TrackIR can be used with the default TrackClip, or it can be used with TrackClipPro. The latter has its own LED emitters and its setup is very different from TrackClip, refer to the TrackClipPro and TrackClipPro sections below.

Make sure you have **Video Processing Mode** set to **Precision** or **Standard** with a Precision Mode Smoothing of **100**. It has been brought to our attention that on some systems TrackIR can become very jerky if 'precision' is disabled, its default key assignment is F7 so it's possible to inadvertently change its setting if you use F7 to increase flaps.

TrackClip

We would advise initially setting the Speed to 1 and the Smoothness to 50. You should experiment on your system and set values your PC is happy with to avoid any jerky DHM movements. Use the test options within the DHM dialog to see what the DHM should look like on your system, then try taxiing up and down in windowed mode and adjust your TrackIR smoothness to give you the optimum effect.

Make sure your **Light Filter Threshold** isn't set too high, try setting **70**, and adjusting from there, with a max setting of **12** for your IR Brightness. Light pollution and an incorrect **Light Filter Threshold** setting are the number one main causes of flicker.

TrackClipPro

It has been reported that for TrackClipPro the Camera IR brightness should be zero and Light Filter Threshold should be set to a high value. The easiest way to get the correct settings is to click the TrackClipPro button in the TrackIR window and it will reset the Camera settings automatically.

Troubleshooting

TrackIR Flickering or Erratic Movement

Problems arise when the light threshold is wrong. If it is too low, extraneous lightsources in the room will falsely trigger TIR into seeing that other lightsource as one of the TrackClipPro's beams. This causes all kinds of false head-rotation issues, which show up as flickering.
The easiest way to solve the problem is to go into the TrackIR main view, right-click on the head-graph window, and choose Camera View, and then tweak the Light Threshold to a point where there is NO red 'false light sources' visible anywhere during the full range of head movement. This can even change during the course of a day (depending on the intensity of reflected light from windows, eye glasses, items in the room etc.).

Your IR brightness levels should be zero. Try selecting the old Trackclip momentarily and then re-select TrackClipPro, and this should clear the IR settings back to zero (off). The TrackClipPro does NOT require the camera to send out IR signals (which are normally reflected off the front of the old Trackclip for the camera to pick up). Instead, the TrackClipPro generates its own light beams

directly (that's why it's connected by wire and powered) - but of course, the camera can still get confused if there are large alternate light sources in the room competing with it.

Here is a handy little tip for fixing TrackIR jerkiness, http://airdailyx.blogspot.co.uk/2012/09/spf100-track-ir-adx-tutorial.html

Make sure you don't have any monitoring programs (e.g. FSUIPC autosave) running since they can cause TrackIR to become jerky.

Try enabling the **Run TrackIR High Priority** option in the Server Configuration dialog if TrackIR is not operating smoothly. You may need to try different versions of the TrackIR drivers to get it working smoothly on your system.

TrackIR will not Connect to OpusFSI

If you update the TrackIR software remember to rename the two SimConnect manifest files within the TrackIR5 installation folder.

Search your system and make sure there are no more manifest files located anywhere. Check your root directory and in fact search the entire PC for them. If TIR finds any manifest file it will not attempt to connect to Opus or anything else apart from the sim direct.

Try running everything manually and don't use any automated method. Run TrackIR manually after FSX, then finally run FSISERVER, in other words do not run TrackIR and FSISERVER automatically via FSX or FSUIPC.

OpusFSI TrackIR Settings

Within OpusFSI set the TrackIR scan speed to 25 initially, the XYZ scaling to 1 and PBY scaling to 0.75. These can be adjusted on the fly from within the Configuration dialog.

The TrackIR scan speed can be altered from 6ms to 60ms. If TrackIR is jerky then adjust this setting (try 25-30) in conjunction with your TIR device Speed and Smoothness settings to reach an optimum effect. If you set the scan rate too high it stutters, if you set it too low it jumps.

The PBY setting should be adjusted in conjunction with the TIR device speed settings to determine the range of head movement and how far you can see behind you.

You may need to try different versions of the TrackIR drivers to get it working smoothly on your system**.**

If you are still having problems with jerkiness after setting the TIR light levels then you can try enabling **Run TrackIR High Priority** in the Server Configuration dialog.

TrackIR Operation

TrackIR can be enabled or disabled for each camera view within Live Camera, this is useful for instance when you want to adjust the GPS via a small click spot, if TrackIR (and DHM) movement is frozen you can operate the click spot no matter how unsteady your head is.

The TrackIR interface can be toggled on/off within the Cameras dialog (Toggle TrackIR On/Off button), allowing camera configuration and editing with the TrackIR device either on or off.

TrackIR Cockpit Limits

To set up TrackIR cockpit limits refer to the **OpusFSI_Live_Camera.pdf** document.

TrackIR Updates

Check your TIR manifest files after any TIR update, the TIR software can create new files after the upgrade which you will need to rename again (see above for details).

Using FS2Crew with OpusFSI

There can be an issue using FS2Crew since it relies on the 2D Panel initially being loaded. You can work around this by creating a 2D default camera view for your aircraft and follow the procedure below. Note this example procedure uses the NGX aircraft.

1. Start OpusFSI, enter Destination, Cruise level and any Alternates.
2. Start FSX, select Free Flight, setup flight then fly now.
3. Wait for NGX to initialize in 2D mode (20 second countdown).
4. Switch to 3D VC
5. Start FS2Crew.
6. Commence Preflight.

Using ActiveSky with OpusFSI

The OpusFSI Live Weather Engine provides the most detailed, accurate, and realistic weather available within the simulator. However, we have added an OpusAS Interface for those wishing to use ActiveSky weather. This interface can be used to factor in the ActiveSky 'AmbientTurbulence' and 'InCloud' Bootstrap DLL variables within the OpusFSI DHM (Dynamic Head Movements) at times when the OpusFSI Live Weather Engine is disabled and the ActiveSky Bootstrap DLL (as_btstrp.dll) is active. See the description below or the 'OpusAS_Setup.txt' file for details of how to enable and remove the OpusAS Interface.

Setting up the OpusAS Interface

1. Turn off the OpusFSI 'Enable Live Weather' option in the server program's Configure dialog.

2. Copy the OpusAS.DLL into the folder where your as_btstrp.dll file is located, normally this is in the simulator's as_srv sub-folder.

3. Edit the simulator's DLL.XML file and add the Launch statements for the OpusAS.DLL to the end of the file, usually immediately before the as_btstrp.dll Launch statements. The simulator's DLL.XML file can be found in your AppData Roaming folder. For example,

       C:\Users\<User Name>\AppData\Roaming\Lockheed Martin\Prepar3D v3
       C:\Users\<User Name>\AppData\Roaming\Microsoft\FSX

Please refer to the example DLL.XML file contents and the OpusAS Interface operating guide below.

Example DLL.XML file content for Prepar3D:

```
<?xml version="1.0" encoding="Windows-1252"?>
<SimBase.Document Type="Launch" version="1,0">
 <Descr>Launch</Descr>
 <Filename>dll.xml</Filename>
 <Disabled>False</Disabled>
 <Launch.ManualLoad>False</Launch.ManualLoad>
 <Launch.Addon>
  <Name>OpusPDK</Name>
  <DLLType>PDK</DLLType>
  <Disabled>False</Disabled>
  <ManualLoad>False</ManualLoad>
  <Path>Modules\OpusPDK_v3.DLL</Path>
 </Launch.Addon>
 <Launch.Addon>
  <Name>FSUIPC 4</Name>
  <Disabled>False</Disabled>
  <Path>Modules\FSUIPC5.dll</Path>
 </Launch.Addon>
 <Launch.Addon>
  <Name>OpusAS</Name>
  <Disabled>False</Disabled>
  <Path>as_srv\OpusAS.DLL</Path>
 </Launch.Addon>
 <Launch.Addon>
  <Name>ASN</Name>
  <Disabled>False</Disabled>
  <Path>as_srv\as_btstrp.dll</Path>
 </Launch.Addon>
</SimBase.Document>
```

FSX and FSX Steam would be similar without the OpusPDK launch statements at the top.

OpusAS Interface Operating Guide

The status of the OpusAS Interface is always displayed when you open the FSISERVER program's Spy window. If you open the program's Spy window before FSISERVER has had time to connect you should see messages such as,

> SIM Link Established with OpusAS (5.00.9)
> SIM OpusAS Library Version Validated

At all other times after opening the Spy window you should see the message,

> SIM Connected to OpusAS Interface (5.00.9)

All changes to the current DHM turbulence strength and frequency are reported in the Spy window. If AS is active and providing AmbientTurbulence and InCloud data values then the AS data will be displayed in brackets at the end of the line.

> MET DHM Turbulence: x/8 Freq y at Elev z ft (AS n, Cloud c)

Where, x = Turbulence Strength (0 to 8), y = Turbulence Frequency (0 to 5), z = current elevation in feet, and n = Enhanced AS AmbientTurbulence (0 to 2), c = AS InCloud flag (0 or 1).

N.B. ActiveSky is an invasive program and appears to interfere with or corrupt all SimConnect METAR request data, this data may not represent the true weather conditions at the aircraft's location. In most cases the surface wind, precipitation and cloud layer METAR data will be missing and no longer available to other addons. OpusFSI attempts to compensate for this by extrapolating other ambient data that is not affected by the AS DLL.

Re-Enabling OpusFSI Live Weather

The OpusFSI Live Weather Engine provides the most detailed, accurate, and realistic weather available within the simulator. Whenever you want to re-enable the OpusFSI Live Weather Engine simply remove the Launch statements for both our OpusAS.DLL and the ActiveSky as_btstrp.dll from the simulator's DLL.XML file.

Note, even if you use the ActiveSky tool for disabling the AS weather engine, the OpusAS.DLL Launch statements will still have to be removed manually. Hence, it's probably simpler to remove both Launch statements manually. Finally tick the 'Enable Live Weather' option in the OpusFSI server program's Configure dialog.

Uninstalling OpusFSI

If you wish to uninstall OpusFSI prior to an upgrade then uninstall via Control Panel, Uninstall a Program. Do not delete your OpusFSI_v5 folder (containing your configuration files) or Opus Software folder (containing your licence files).

Can't uninstall OpusFSI/FSX

If you are having problems uninstalling Opus due to a misssing msi or registry corruption then use the following Microsoft utility, https://support.microsoft.com/en-gb/help/17588/fix-problems-that-block-programs-from-being-installed-or-removed

Alternatively if you wish to remove OpusFSI completely from your system and have used Live Camera then first restore your aircraft.cfg files by disabling Live Camera in the Configuration dialog. A message box informs you that Live Camera is removing the Camera Definitions from all aircraft.cfg files for you. These changes will NOT be noticeable until you either restart FSX/P3D, or reload a completely different aircraft type forcing FSX/P3D to reload the modified cfg file. Uninstall OpusFSI via Control Panel, Uninstall a Program.

FAQ and Troubleshooting

Can I use other software packages with OpusFSI?

We strongly recommend the use of 3rd party packages such as FEX for their sky and cloud textures, or HDEv2 (freeware) for clouds with the sky upgraded by Danny Glover. You will really see the benefit of using the OpusFSI Live Weather Engine with these textures loaded. We do not include or load any sky and cloud textures, we just create and load the most detailed and realistic weather. However, if you rely on the default sky and cloud textures within FSX/P3D then no matter how detailed the weather is it will not look very impressive. Disable the weather update in 3rd party packages to prevent conflict with the OpusFSI weather engine.

If your aircraft doesn't include sounds then we would also recommend the use of packages such as Accu-Feel for the sound effects but with the Accu-Feel global turbulence, chop, gusts, and clear air turbulence aircraft movement options disabled since they conflict with OpusFSI.

TrackIR can be used with OpusFSI but Automatic Head Movement will be automatically disabled. You must follow the set up instructions in the OpusFSI_v5 Getting Started guide.

ButtKicker and ButtKicker compatible devices can be used with Opus.

How to Purchase

Follow the link from our home web page or display our downloads page and click on the **OpusFSI v5** link in the **Purchase or Reinstall** column. Alternatively use this link, http://www.opussoftware.co.uk/opusfsi/OpusFSI_v5_Flight1_Purchase.exe

Download the Opus Flight1 Purchase exe onto your main 'flying' server (sim) system to purchase the product. If you have previously installed the OpusFSI demo then uninstall it.

When you run the purchase file a Flight1 form with 3 buttons will be displayed. If you already have a Flight1 account click button 1 to log in (this is optional and if you get any Flight1 login error

messages don't use it). Click on buttons 2 and 3 to fill in your purchase details and then the Purchase button will appear, click on this button to complete purchase.

After purchase, the Opus msi installation file will be unwrapped into c:\Opus Software along with your license key and you will receive an email confirmation of your order. Run the msi to install Opus and follow the instructions in our Getting Started guide.

I can't download Opus (or signature is invalid or corrupt)

If you get a warning the signature is invalid then right click on the msi and select **Run Anyway**.

If you see the following screen then click on the **More info** button to run the software. Next select **Run Anyway.**
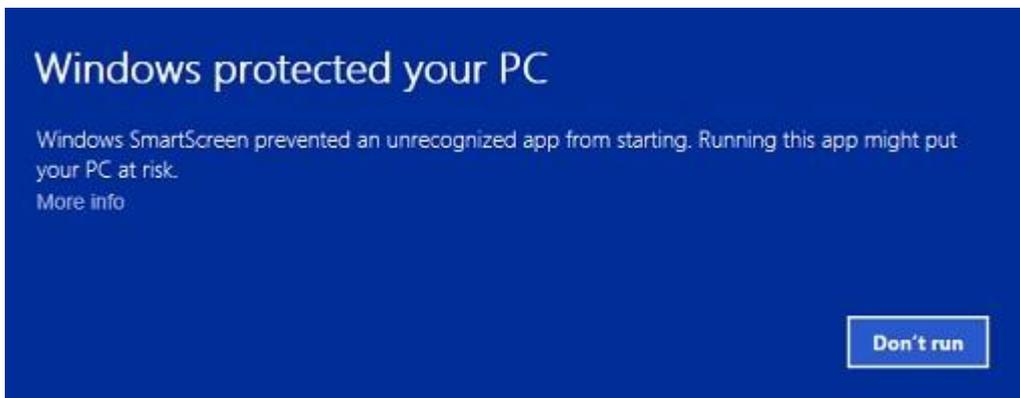
Using Windows Explorer navigate to the location of the downloaded file and run the software. If you have a problem running the software then right click on the file and click "Unblock" or follow one of the other methods in Can't run the msi in Windows.

Internet Explorer seems to be the most reliable browser for downloads. Try downloading on a different computer if possible. If you are downloading the purchase file on another computer, make sure it runs, and then move it to your flight sim computer using the Flight1 licence transfer tool.

If you are having problems downloading then make sure your anti-virus software is disabled, anti-virus software may also delete our software after it has been downloaded or installed unless you make the Opus exe programs trusted applications.

I can't start my Flight1 downloaded application (it never runs), so I can't purchase the software

You need to make sure Data Execution Protection (DEP) allows the EXE to run. You can check your DEP settings by selecting Control Panel, System and Security, System, System Protection, Advanced tab, Performance Settings, Data Execution Prevention tab. Select "Turn on DEP for essential Windows programs and services only" option, or try to add the EXE you downloaded to the exception list.

Also, ensure that you have full Administrator access to the computer and you may need to disable any virus scanner or spyware program that is running.

If you still have problems refer to the Flight1 website troubleshooting.

If all else fails then download it on another computer, make sure it runs, and then move it to your flight sim computer using the Flight1 licence transfer tool.

My payment was not accepted by PayPal

Email us for further assistance.

My virus scanner gives me a warning for the Flight1 downloaded application

Unfortunately, one of the most common issues when people can't get software to run is interference from a Virus or Spyware scanner. Although they do good things, in many cases they can interrupt programs you may want to run. If you get an error message that does not appear to be from the downloaded EXE, you need to make sure your virus or spyware scanner is disabled prior to running the EXE. If you are concerned about this, you can scan the file prior to running it, and then after your purchase, if you are prompted to automatically run the setup application, select No, then manually scan the setup application. This is usually extracted right after your purchase is made.
False-Positive reports with software is common.

'The cabinet file is corrupt' error message

If you see the error message,

The cabinet file '_xxx' required for this installation is corrupt and cannot be used. This could indicate a network error, an error reading from the CD-ROM, or a problem with this package

then it is most probably a corrupted msi file so just download it again. If you are using Chrome then try another browser.

'There is a problem with the windows installer package. A DLL required for this install to complete could not be run... ' error message

The installer doesn't have permissions to access the folder C:\Users\<name>\AppData\Local\Temp.

Go to Properties > Security on the folder and give Everyone the Full control permission.

Can't uninstall OpusFSI/FSX

If you are having problems uninstalling Opus due to a misssing msi or registry corruption then use the following Microsoft utility, https://support.microsoft.com/en-gb/help/17588/fix-problems-that-block-programs-from-being-installed-or-removed

Can't run the msi in Windows

Method 1:
1. Right click on the file or program that you are not able to access.
2. Go to properties and click "Unblock".
3. Try to run the application again.

Method 2:
1. Click on start button.
2. Type "Internet Explorer" in the "Start Search Box" and select it from the menu.
3. Click on "Tools" in the menu bar and select "Internet Options".
4. Click on "Advanced tab" and locate "Allow software to run or install even if the signature is invalid" under the "Security" category and check the box.
5. Click Apply and then Ok.
6. Close the Internet Explorer and restart Internet Explorer.

Method 3:
1. Turn UAC OFF. Just type UAC into the start menu or Control Panel search box. Drag the slider to the bottom, never notify.
2. Run the Command Prompt in Admin Mode (not the same as you being an Admin user).
3. Type: bcdedit /set testsigning off
4. Reboot. Windows will power up in a test mode and will allow you to run any msi file.
5. Install the msi file. After installing the software ...
6. Run the Command Prompt in Admin Mode (not the same as you being an Admin user).
7. Type: bcdedit /set testsigning on
8. Reboot
After rebooting you should still be able to run msi files but may need to answer 'More Info' and 'Yes' to a Windows 10 user query.

System.TypeInitialisationException error

You need .NET version 4 for P3Dv3.4 onwards (or .NET version 2 for FSX and before P3Dv3.4 systems) and SimConnect to be installed for OpusFSI and its SimConnect links to work.

You can check what versions of .NET you have installed in Control Panel by selecting Settings, System, Apps and features, then search for .NET and a list of installed versions will be displayed. For older operating systems you can check what versions of .NET you have installed by checking your c:\Windows\Microsoft.NET\Framework or Framework64 folders. You should see a v2.0.xxxxx folder in addition to the v4.0.xxxxx folder.

In the case of SimConnect, first make sure you have installed FSX or P3D along with its SP2 or installed the FSX Acceleration version, SimConnect is installed automatically with it. If you have mislaid or corrupted your SimConnect then you can try re-installing it for FSX or P3D (prior to P3Dv3.4) using the Microsoft.FlightSimulator.SimConnect.msi file within your OpusFSI_v5 folder. For P3D we supply SimConnect_v3.4 dll. Copy and rename (to OpusFSI_v5 folder) if that is needed, otherwise the FSI startup program will copy and rename the v3.4 dll automatically when no LM dll exists.

Alternatively use the FSISERVER.EXE program argument P3D2 (or P3D30, P3D31, etc).

The FSISERVER program arguments P3D (or P3D4, P3D3, P3D34 onwards) select the .NETv4 variant of SimConnect and SlimDX .

SlimDX error

Do not run P3DSERVER.EXE or FSXSERVER.EXE directly, instead run the FSISERVER.EXE program with the correct argument for your sim type.

If you still have problems you must ensure the FSISERVER program ...

> Is starting in the correct c:\OpusFSI_v5 folder.
> Has permissions to copy and rename the relevant SlimDX DLL file.
> Is able to copy the current SlimDX DLL, it's not locked or write protected.
> Is not blocked by AV or Win Defender software.

Otherwise its attempt to copy and rename the SlimDX file will fail. You may also need to install the SlimDX dotNet 2 or 4 runtime using our supplied msi file in the OpusFSI_v5 folder.

Opus won't run or aborts

If Opus won't run or immediately aborts then make sure it is installed in the OpusFSI_v5 folder in the root directory and not a sub-folder of the drive. Otherwise reboot your PC, this problem may be due to a windows update which needs a reboot of your PC.

If this doesn't work then for FSX or P3D (prior to P3Dv3.3 inclusive) reinstall SimConnect by running the Microsoft.FlightSimulator.SimConnect.msi file within your OpusFSI_v5 folder and then reboot your PC.

For P3D we supply both SimConnect_v3.4 dll. Copy and rename (to OpusFSI_v5 folder) if that is needed, otherwise the FSI startup program will copy and rename the v3.4 dll automatically when no LM dll exists.

Alternatively use the FSISERVER.EXE program argument P3D2 (or P3D30, P3D31, etc). The FSISERVER program arguments P3D (or P3D4, P3D3, P3D34 onwards) select the .NETv4 variant of SimConnect and SlimDX .

OpusFSI won't run in Windows 10

If you have set up the security and sharing permissions as described in the above section, have run as Administrator, and the software still won't run on Windows10 then run the Microsoft **vcredist_x86.exe** VC redistribution package located in the OpusFSI_v5 folder.

When I install and run FSISERVER it runs in demonstration mode

You must install the Flight1 purchase file on your C drive. You can move the msi to another location but must leave the OpusFSI_v5 and/or OpusFSI licence and key files on drive C in the C:\Opus Software folder.

Opus can only be installed on one drive in one folder. Uninstall any old versions of Opus using Control Panel, Uninstall a Program. Do not delete your OpusFSI_v5 folder though since your configuration (DAT and CMD) and camera (CAM, LIM and CDF) files are stored there, assuming you want to keep them.

Check your OpusFSI_v5\FSISERVER.log for errors.

If your Name and Order Number are blank in the Spy window then your licence file cannot be accessed due to either file permission problems or a corrupt licence file.

If you try and edit the licence file it will become corrupt, you should not open the licence file. If this has happened download and reinstall either,

- the **Purchase OpusFSI_v5** file if you purchased the full OpusFSI_v5 version or,
- the **Upgrade OpusFSI to OpusFSI_v5** file if you purchased the OpusFSI to OpusFSI_v5 upgrade

Refer to Reinstalling Opus on a new or reformatted PC.

Your system will require a valid OpusFSI licence, internet access and the computer clock must have the correct time.

Simulator's Installation Folder, Unable to access the installation folder...

Opus tries to copy the OpusWeather.WT weather file into the FSX\Weather\themes (or Prepar3D\Weather\themes) folder and will display this error message if it cannot do this.

If you see the above error message then it is essential that you check your installation folder is specified correctly in the Configuration dialog. Try reconfiguring the sim location again.

Also check your sharing and permissions, it is important to set permissions as well as sharing as described in the OpusFSI Getting Started guide.

Spy Error Messages

FSX Failed to establish link 1 with FSX
Error HRESULT E_FAIL has been returned from a call to a COM component.

This usually does not indicate a serious error, it usually means FSX is not running and hence, the software cannot connect to SimConnect. If you are running FSX it could mean you do not have SimConnect installed, or SimConnect is not functioning correctly.

You must have FSX installed on the main 'flying' server and each client computer system. You should also install the same scenery and aircraft addon packages. The aircraft addon packages need only be installed however if you want to use external 'aircraft' views on the client system. If this happens to be one particular client PC or laptop then install the aircraft addon just on that machine.

Note, you do not need to run FSX if you just wish to test the network connections or set up the SERVER and CLIENT programs.

Failed to establish link with FSUIPC
Error code 8

Error code 8 means you have the wrong Flight Simulator system for FSUIPC. Have you selected the correct simulator (FSX or P3D) in the OpusFSI configuration dialog and located its installation folder? If you have not then OpusFSI will be trying to connect to the wrong sim type!

Opus stops working

Make sure you only have one copy of Opus installed in Windows Control Panel using the Uninstall Programs option (not some Cleaner type package).
All the FS... EXE and DLL files in the OpusFSI_v5 folder should have the same date, if they don't then uninstall Opus and reinstall.
The software looks for the licence and key files on drive C in your c:\Opus Software folder.
Don't install Opus in the Opus Software, sim, or Program Files folders, and don't install in more than one folder on your PC.

FSX freezes or my aircraft will not move

The problem is caused by running both the Opus SERVER and CLIENT programs on the same PC. If you have a standalone system you must only run the FSISERVER program, do not run the client program that will freeze your sim (it is only intended to be run on networked client machines).

Don't run OpusFSI automatically via FSUIPC.

Before disabling 3rd party camera packages their configuration utility must be run and the "Restore" function selected to restore all camera views to FSX default, otherwise 3rd party camera definitions are not removed from the aircraft config files and can cause problems.

The master battery and parking brake indications aren't correct

You need to install FSUIPC on the OpusFSI client PCs. You can download a free copy from http://www.schiratti.com/dowson.html. FSUIPC is used for the following functions; setting the sim clock, master battery and parking brake, and pausing the sim.

Overspeed and Underspeed Warnings

If you are flying with the sim rate speeded up, especially above x6 then it is possible to get overspeeds or underspeeds. Even at x6 speed, your auto pilot or FSX may oscillate the air speed repeatedly causing repeated overspeeds. You should disable the FSX 'stress causes damage' option.

Reinstalling OpusFSI on a new or reformatted PC

Download and run either,
- the Purchase OpusFSI_v5 file if you purchased the full OpusFSI_v5 version or,
- the Upgrade OpusFSI to OpusFSI_v5 file if you purchased the OpusFSI_v4 to OpusFSI_v5 upgrade

reinstall using your Flight1 account, you will need your email and account password. You can request your account password from Flight1 if you have forgotten it. If you don't have a Flight1 account then you can create one.

If you still can't reinstall then request a new key file from Flight1.

You may install the software onto any drive provided its folder name is OpusFSI_v5 with the exception that you must not install OpusFSI in the **Opus Software, FSX, Prepar3D** or **Program Files** folders, and don't install in more than one folder on your PC.

CPFlight MCP/EFIS 737PRO/EL (Device Driver No.1)

TOGA button

The TOGA button has been added to the CPFlight MCP737 panel driver on auxiliary input K121.

A/T Arm switch

The A/T Arm switch on the CPFlight MCP737 is automatically disengaged 2 to 3 seconds after landing.

Unable to Open COMn serial port !

Have you configured the wrong serial port number or forgot to connect power to the panel?

CPFlight MCP controls have stopped working with PMDG 737 NGX

There is a problem with PMDG's FSXPMDG.EXE software when you open an FSX dialog. If you have paused the sim then you must unpause it before any MCP changes will be effective.

Also if you stop OpusFSI and restart it, then after the panel is initialised you must make a change on the sim's MCP to kick the PMDG connection back into life.

Additional FAQs regarding weather, camera and network issues can be found in the relevant Weather, Camera and Getting Started Networking user guides.