OpusFSX

Flight Simulator Interface for FSX & Prepar3D

Overview

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OpusFSX The ultimate Flight Simulator Interface for FSX and Prepar3D includes,
Live Weather Engine for real world live weather updates,
Live Camera for view control and dynamic head movements, and
Live View for synchronized multi-screen networked displays.

OpusFSX helps take reality to the next level by combining three excellent programs into one user friendly interface, setting new standards of performance and realism throughout its novel design. The **OpusFSX** interface is ideally suited to both standalone and networked FSX systems making it the ideal addon for cockpit builders and general users alike. In addition OpusFSX includes **Opus Weather Themes**, and device drivers for the CPFlight MCP737/EFIS737 PRO/EL panels with full interface for the PMDG 737NGX aircraft simulator.

The *OpusFSX* interface is ideally suited for both *standalone* (single PC) and *networked* (multi-PC/laptop) systems.

* Combines three or more programs into one user friendly interface.
* Sets new standards of performance and realism.
* Ideal addon for cockpit builders and general users alike.
* Ideal addon for both standalone and networked simulator systems.
* **Live Weather** engine for live detailed weather as far as the eye can see, instant weather updates and perfect weather synchronization across all systems.
* Opus pioneered the use of Dynamic Weather Themes making it possible to give you detailed real world weather horizon to horizon for the very first time.
* **Accurate Weather throughout your flight.**
* **Accurate Destination Weather when over 200km away**, with perfect weather reports at any distance to any point en-route.
* **Live Weather Assistant** displays dynamic weather maps including visibility, temperature, precipitation levels, winds, cloud cover and Met station coverage.
* **Flight Planning Assistant** provides dynamic in-flight weather reports and more.
* **Client Side Weather Control** enables you to edit flight parameters and display weather data on a networked client PC.
* **Site Effects** for additional turbulence and wind shear effects within 80 km of the airfield resulting from local features such as terrain or obstacles on approaches.
* **Live Camera Control** enables you to adjust to the eye point for any VC, 2D, or Custom view using either a GamePad, the arrow keys within the LCC dialog, or any assigned button/key.
* **Dynamic head movements** or virtual cockpit camera shake based on actual real-life captured 3D accelerometer data.
* **Dynamic aircraft movements** or 2D cockpit camera shake based on actual real-life captured 3D accelerometer data.
* **Automated head movement** to assist taxiing and banking in a turn.
* User friendly **Live Camera** control, configuration and docking interface for virtual cockpit, 2D cockpit, and external aircraft views.
* Additional support for windowed views for systems equipped with multi- screened computer systems.
* Synchronized networked views, aircraft status, weather and cloud formations.
* Ultra high performance IPC communications between networked systems.
* **TrackIR®** real-time 3D view control full compatibility.
* **GPS output** for navigation packages such as SkyDemon®.
* **ButtKicker®** Gamer 2 interface for added vibrational feedback.

Product Overview

On standalone systems **OpusFSX** incorporates two superb functions through its **Live Weather Engine** and **Live Camera** options.

The **Live Weather Engine** makes use of our unique **Dynamic Weather** update to provide the most advanced weather updating software in the marketplace. The **Live Weather Engine** has set new standards for weather updating for the FSX and Prepar3D flight simulators. **OpusFSX** provides the most detailed, realistic and efficient weather updating service. The **Live Weather Engine** is responsible for supervising both the turbulence and ultra-realistic **Dynamic Head Movement** utilising actual real-life captured **3D accelerometer data. Automatic Head Movements** assist the pilot whilst taxiing and banking in a turn.

The Live Weather Engine allows you to create and name your own themes based on the current dynamic theme created from the live ultra-realistic METAR reports. In addition you can load historic weather for the previous 24 hour period, and also import your own custom METARs.

Live Camera provides excellent camera creation, control and docking facilities through its user friendly interface, totally eliminating the need to alter any of the simulator's controls. You can create many useful views that are not included as standard in your sim and also control the transition speed between these different views. This can be coupled with **Live Camera Control** and a dedicated 6-axis GamePad controller to wander or float around the cockpit or exterior to your heart's content. The **Live Camera** interface also includes support for **Windowed Views** which are ideally suited to computer systems equipped with either multiple screens or single large screens.

In addition,

On networked systems irrespective of the size and complexity of your system, whether your system consists of a main 'flying' PC with a single networked laptop client, or a more elaborate multi-computer networked system; the **Live View** interface, with its **ultra high-performance IPC communications**, unique **Client Side Smoothing** software, and perfect synchronization of aircraft status, weather and cloud formations, will provide you with the highest possible networking performance. Whether you simply want an additional display to control flight parameters and monitor flight and weather reports, or provide further scenic or external view options, or wish to create a multi-screened panorama for your FSX or Prepar3D experience, **Live View** offers you the ideal hassle free user-friendly solution.

Your main 'flying' **OpusFSX** server is the machine through which you control the aircraft. The networked client **OpusFSX** systems are synchronised to the server through multiple ultra high-performance IPC links, the client systems are used primarily as view controllers. The networked systems allow you to create a multi-screened simulator system without placing the full workload and burden on your main system.

From this set up it therefore follows that all in-cockpit or instrument panel views used to control the aircraft must be displayed on the main server. All other views (scenic or external) can be offloaded onto the client systems. You can create wide panoramic vistas this way, or additional external aircraft views, without draining the resources on your main system or degrading its performance.

N.B. In order to see the full synchronized effects of Live View you must save a default flight with all engines running on each client system to ensure the aircraft is powered up and ready to fly.

On networked systems, you must install FSX and the **OpusFSX** software on each of your client computer systems (laptops or PCs), along with any scenery and airport addon packages you wish to use. If you wish to display external aircraft views on the client computers you will need to install all relevant aircraft addons. The **OpusFSX** software does not need to be licensed on the client systems, the purchased license is only required on your main 'flying' server system. Therefore, you may either copy or install the **OpusFSX** software on any number of client systems, the **FSXCLIENT** program that you will run on the client computers does not check for any licensing information. It simply connects to and receives all necessary data from your main 'flying' server system.
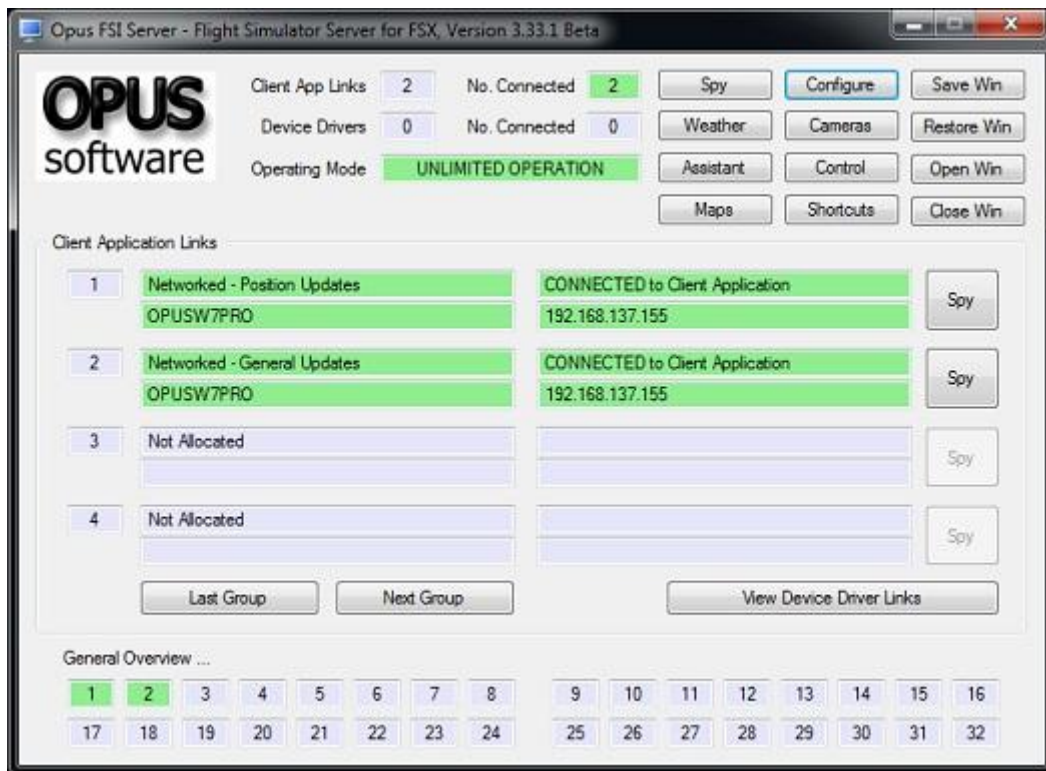
Figure 1 - OpusFSX Server for Standalone or Networked FSX Systems

Live Weather

The **Live Weather Engine** requires internet access to obtain the latest live weather (METAR) reports for the area you are flying in. Data is downloaded from the NOAA, VATSIM or IVAO servers. These live reports are used to construct Dynamic Weather and synchronize the weather on all networked **OpusFSX** systems.

*The **Live Weather Engine** does not include any sky and cloud textures. For optimum effect we strongly recommend you install the sky and cloud textures from packages such as Flight Environment X and HDEv2 (freeware), and use the **OpusFSX Live Weather Engine** for the actual weather updates.*

Live Weather Features

- **Live Weather** constructs **Dynamic Live Weather** from current live (or historic) METAR data.
- Accurate detailed weather as far as the eye can see throughout your flight. No more unrealistic globalized weather from horizon to horizon, with OpusFSX you can see distant weather patterns all around you. See the changing weather patterns en route as you fly.
- **Live Weather** provides instant weather updates. No more unrealistic clearing of the weather prior to updating. No more annoying screen flicker as METARs are slowly loaded into the sim.
- No more METAR voids or unrealistic METAR data morphing.
- No more inconsistencies with distant ATC and ATIS reports. Accurate Destination Weather when over 200km away, with perfect weather reports at any distance to any point en-route.
- OpusFSX weather reports can be used instead of ATIS, and at non-ATIS airstrips.
- **Live Weather** allows you to see low lying mist and fog patches.

- **Live Weather** creates very realistic cloud, visibility layering and an overcast effect.
- **Live Weather** lets you turn on, off, or automatically generate the cirrus cloud effect.
- The **Live Weather Engine** supervises both the turbulence and ultra-realistic **Dynamic Head Movement** utilising actual real-life captured 3D accelerometer data.
- Create your own named weather themes from the current weather.
- Load your own custom weather using a simple METAR import file.
- Load historic weather from within the last 24 hours.
- Dynamic Weather reports displayed during flight for your local area, destination, alternates, en route, lower and upper atmosphere weather.
- Standard and user configurable **Site Effects** for additional turbulence and wind shear effects within 80 km of the airfield resulting from local features such as terrain or obstacles on approaches.
- **Live Weather Assistant** provides maps of Surface QNH, Surface Winds, Surface Visibility, Surface Temperature, Precipitation Levels, Low Cloud Cover and Met Station Cover for the current 800 x 800 mile weather map.
- **Flight Plan Assistant** imports activated flight plans and provides dynamic flight plan weather reports together with detailed reports on METARs, GRIB lower and upper atmosphere weather, flight plan waypoint weather and SIDs/STARs ordered according to direction and distance.
- **Client Side Weather Control** enables you to edit flight parameters and display weather data on a networked client PC.
- **Live Weather** allows perfect synchronisation of dynamic weather and cloud formations on networked systems.
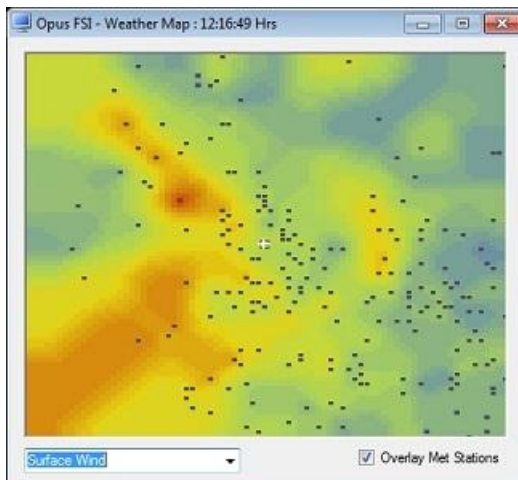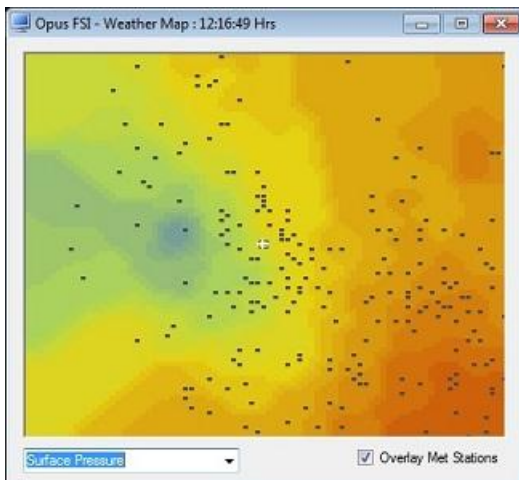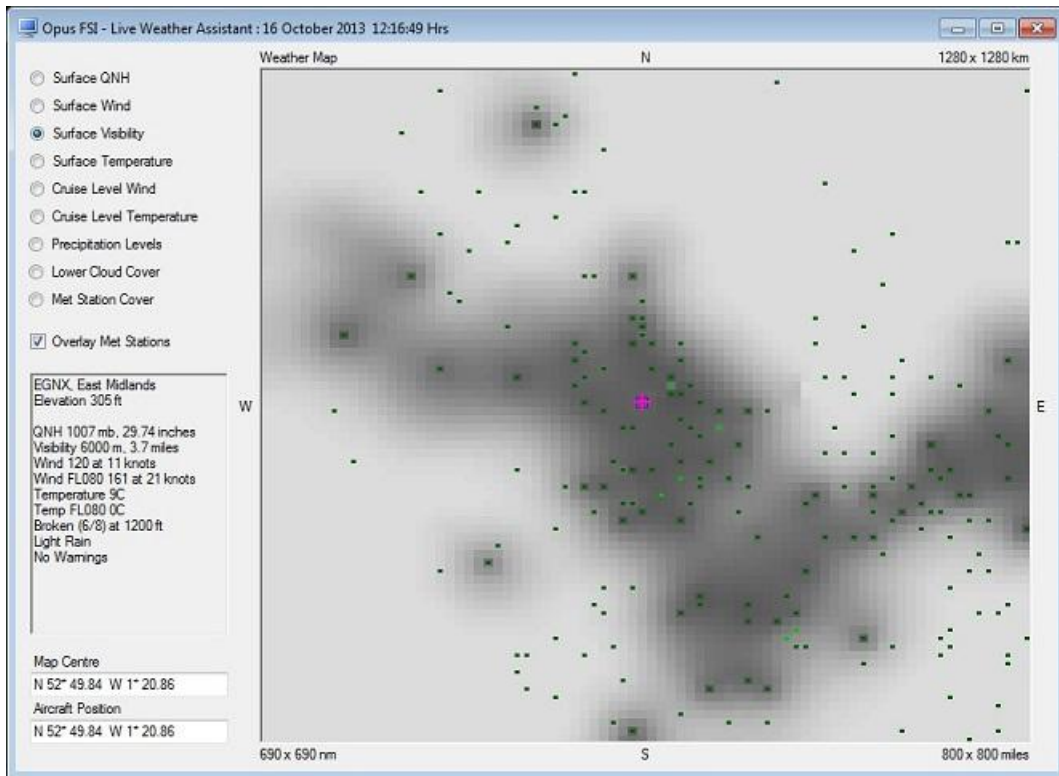
Figure 2 - Weather dialog

Figure 3 - Weather Report Menu

Weather Report at [39,39] Updated 14:54 Hrs - Live

EGNX (m) East Midlands, 1.4 km, 0.8 nm, E 087

1 - 111350Z, QNH 1011 mb, 29.86 inches
2 - Wind 170 at 13 knots, Static 170/13, Cruise 182/28 -51C
3 - Temp 18 Dew Point 13, Visibility 9000 metres, 5.6 miles
4 - Few at 1900 feet
5 - Scattered at 2400 feet
6 - FL200 Target Temp -18, Wind 182 at 21 knots
7 - FL040 Target Temp 11, Wind 172 at 14 knots
8 - Ambient Temp 17 TAT 17
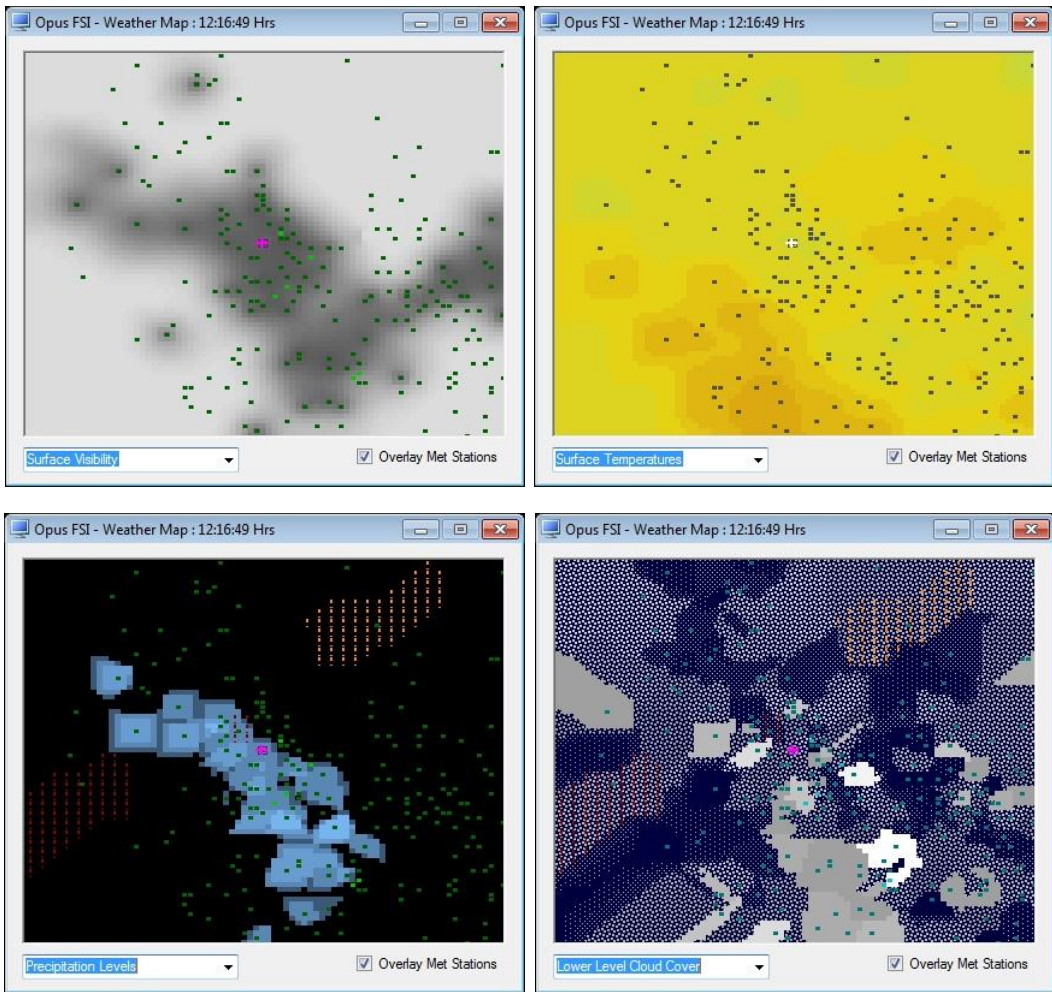9 - Click for Main Menu

Figure 4 - Local Weather Report

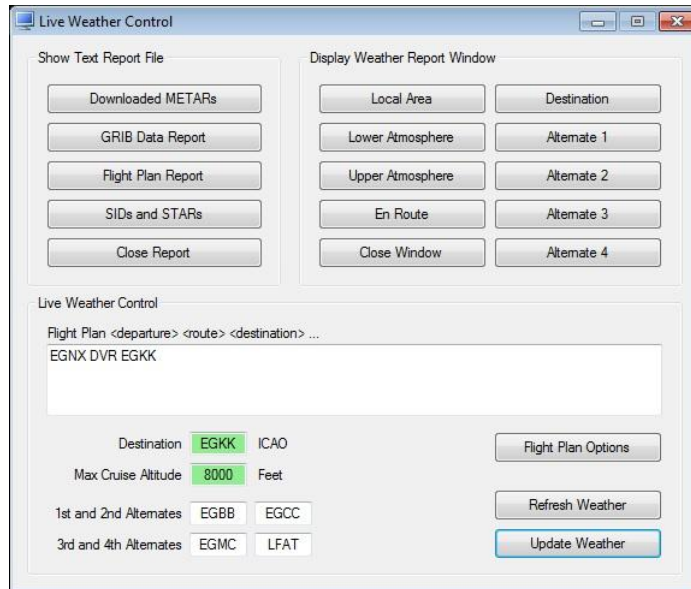Figure 5 - Live Weather Assistant large and small maps

Figure 6 - Client Side Live Weather Engine Control

Live Camera

Live Camera is a standard feature within the **OpusFSX** Flight Simulator Interface for the Microsoft's Flight Simulator X and Lockheed Martin Prepar3D simulators. **Live Camera** provides you with a user-friendly interface for creating, controlling and managing any number of virtual cockpit, 2D cockpit and external aircraft views for your flight simulator system. **Live Camera** allows you to create multiple **Windowed Views** on your server and client systems. Camera views can greatly enhance your flight simulator experience on both standalone and networked systems by providing easy view control with the press of a joystick button or the use of an assigned keyboard key sequence. On networked systems **Live Camera** provides you with the means to create a multitude of display options including wide sweeping panoramic views of the outside world.

All camera views are created, controlled and managed from the main 'flying' server system, with live view adjustment for each of the client system camera views. Joystick buttons and keyboard sequences can be assigned to individual views or multiple camera views spanning the networked system. Duplicated button or key assignments permit simple and fast coordinated changes to your multi-screened display with a single button press or key stroke.
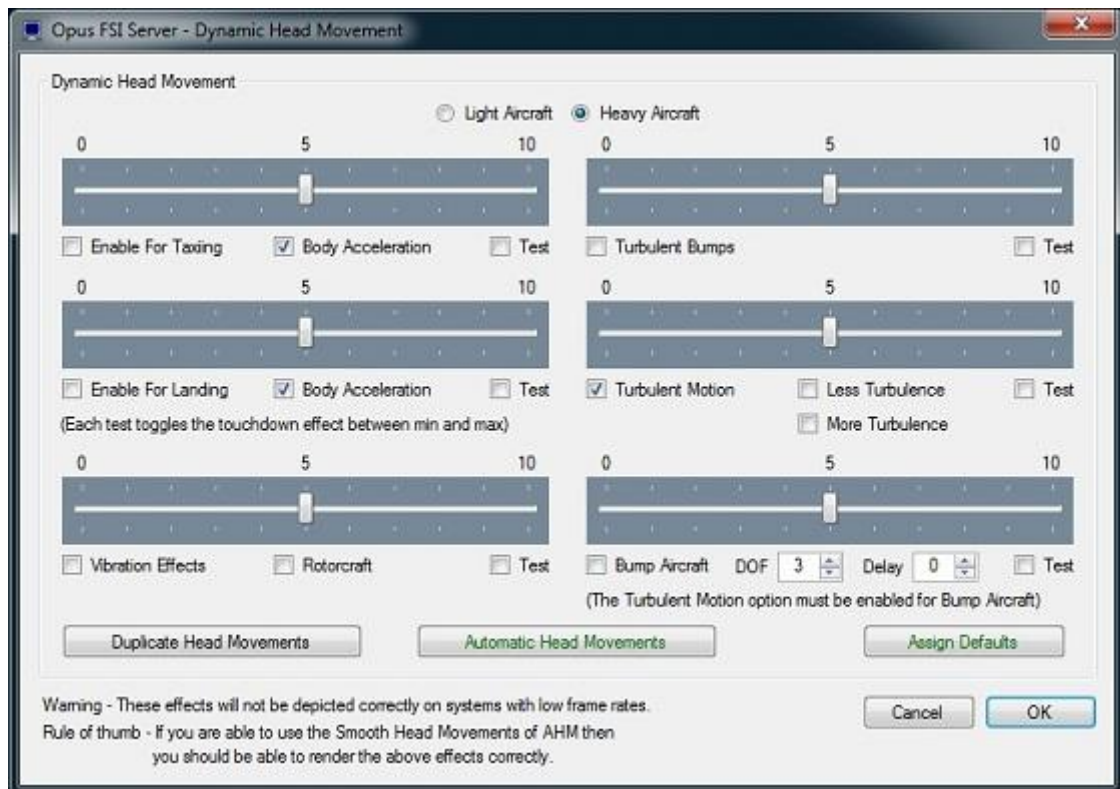

Figure 7 - Live Camera Management

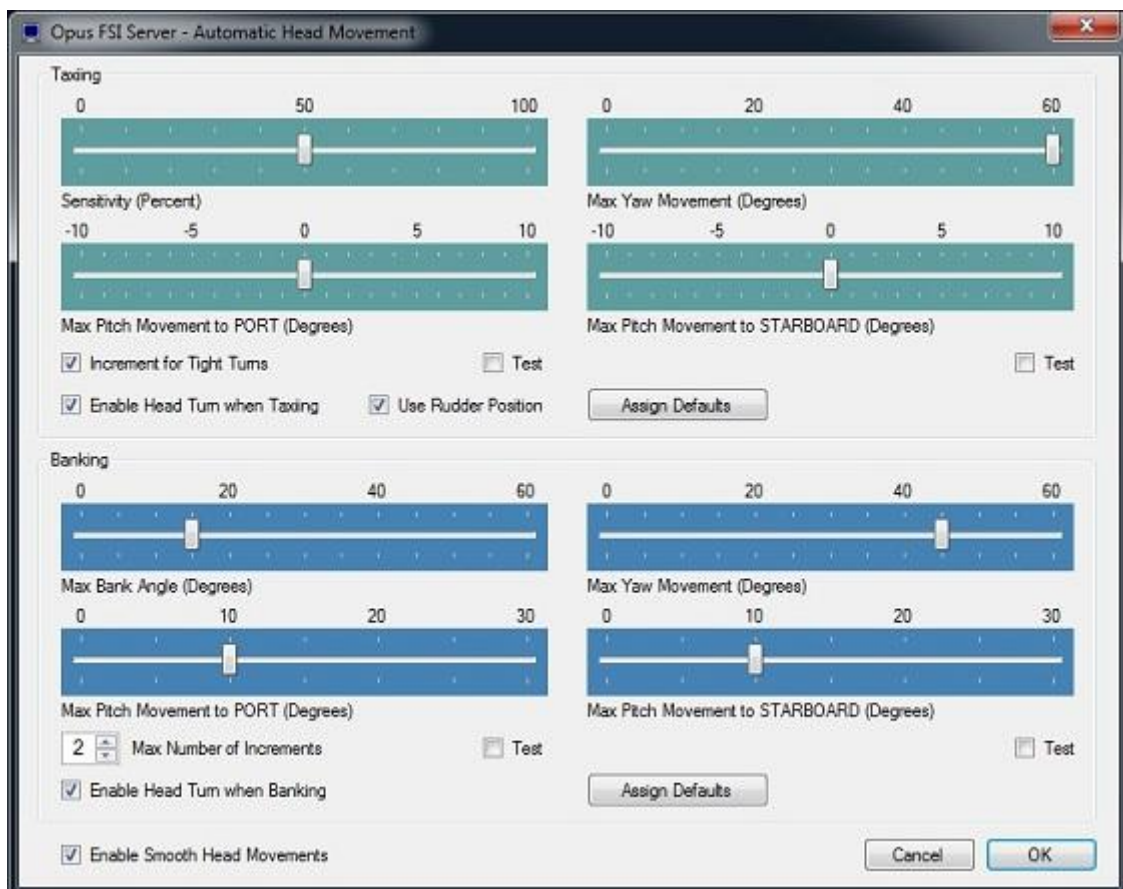**Figure 8 - Dynamic Head Movement Options**

Figure 9 - Automatic Head Movement Options

- **Live Camera** provides a user-friendly interface for creating, controlling and managing any number of virtual cockpit, 2D cockpit and external aircraft views.
- **Live Camera** creates, controls and manages all views from the 'flying' server system, with live view adjustment for each of your client system cameras.
- **Live Camera** allows joystick buttons and keyboard key sequences to be assigned to individual or multiple views.
- **Live Camera** does not require you to make any changes to the control assignments.
- **Live Camera** enables default views to be specified facilitating the use of multiple screens or the creation of panoramic views over networked systems.
- **Live Camera** includes support for both standard non-windowed and windowed views. Windowed views provide greater flexibility and support to cockpit builders and all systems equipped with multi-screened computers.
- **Live Camera** stores separate sizes and positions for all docked and undocked Windowed views, allowing the user to save different preferred window position and sizes.
- **Live Camera** provides both coarse and fine zoom control for all camera view types.
- **Live Camera** provides ultra-realistic **Dynamic Head Movement**, or virtual cockpit camera shake, based on actual real-life captured **3D accelerometer data**.
- **Live Camera** supports **Automated Head Movement** to assist the pilot whilst taxiing and banking in a turn (disabled when using TrackIR).
- Camera **Import** and **Export** options are included. User Camera Definition Files (CDFs) are available on our Downloads page for import.
- **Live Camera Control** for adjusting the eyepoint in VC, 2D, or Custom views using a GamePad, arrow keys within the LCC dialog, or key/button Shortcut controls.

Live View

With **Live View**, Opus Software have used their 25 year experience of developing high-performance real-time networked telemetry and data acquisition systems, to provide the networking software you need to create your multi-screened experience for FSX. No matter what complexity of system you intend to create, **Live View** will provide the optimum and smoothest solution.
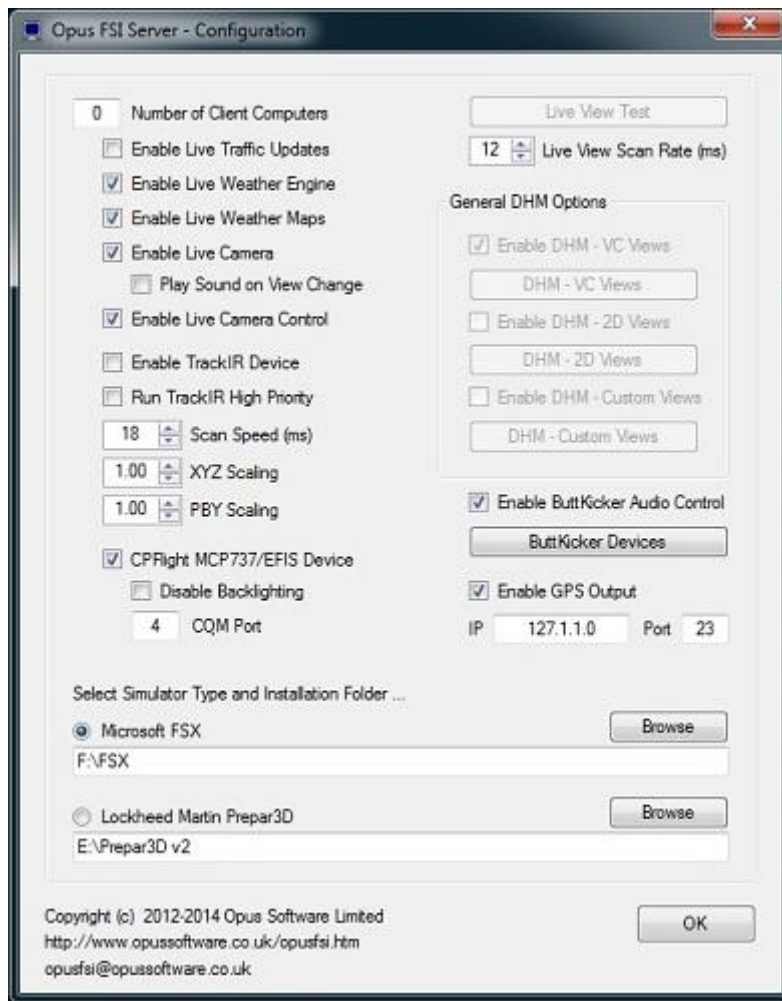
The configuration of the **Live View** system is simple to the extreme, just tell the main 'flying' server how many **Live View** clients you wish to support, and configure the server's computer name or IP address into each of the client systems, and away you go. You can sit back and watch your client systems connect and start communicating with the server.

Spy buttons help you monitor the activity over all the networked links, or monitor the overall activity and operation of the **FSXSERVER** and **FSXCLIENT** programs.

- **Live View** synchronizes the aircraft's current position, attitude, landing gear, wheel movement, lighting, ailerons, elevator, rudder, flaps, spoilers (speed brakes), engine throttles and reversers**.**
- **Live View** synchronizes the simulator's date and time, with either weather themes or full METAR weather updates for the aircraft's surrounding area.
- **Live View** employs and optimizes multiple dedicated ultra high-performance network IPC communication links to provide the highest level of performance and the smoothest possible operation.
- **Live View** requires minimal set up and configuration to get up and running.
- **Live View** on the demo version of **OpusFSX** will run for 15 minutes allowing you to evaluate the software and ensure full compatibility with your system.

Figure 11 - Live View Multi-Screen Networked Displays with CPFlight MCP and EFIS Panels

With **Live View** you can easily create that multi-screened display experience for your FSX system or manage your multi-screened cockpit. The system can be as simple or complex as you desire. The multiple screens can be used to display any variety of cockpit 'out of the window' or external views, including the creation of panoramic displays. The set up and configuration of your system is further simplified using the in-built **Live Camera** interface.

Device Drivers

The **OpusFSX** software also includes device drivers for the **CPFlight MCP737/EFIS737 PRO/EL** panels interfacing to the standard FSX aircraft and the **PMDG 737NGX** aircraft simulator.

Figure 12- Drivers Included for CPFlight MCP737 and EFIS737 Panels

OpusFSX uses both Microsoft's SimConnect and FSUIPC4 to interface with FSX. SimConnect is installed automatically with FSX, and FSUIPC4 is a free to download from **http://www.schiratti.com/dowson.html**

Demonstration Software

Please download our demonstration software. The unlicensed version of the FSXSERVER program will operate in a **Demonstration Mode** for **15 minutes** allowing you to evaluate the software and ensure full compatibility with your system. A minimum of a **2 minute interval** is required between

demonstration runs. Demonstration mode also restricts the LWE to 160km (100 miles) in all directions and weather updating only whilst your aircraft is on the ground. You can download the unlicensed version of the product directly from the **OpusFSX** website.

Please read the **OpusFSX_Getting_Started.pdf** document for details of how to set up your system and network.

System Requirements

- Microsoft Flight Simulator X with SP2 or Acceleration Pack,
   or Lockheed Martin Prepar3D simulator.
- Windows 8, Windows 7, Windows XP, or Windows Vista operating systems.
- Microsoft .NET Framework Version 2.
- FSUIPC4 (free version).
- 90 MB hard disk space.