AivlaSoft

Electronic Flight Bag

Add-on for Microsoft Flight Simulator FSX

Installation and Configuration Manual

Mai 2011

Revisions

No.	Revision Date	Software Version	Comment
1.0	November 2nd, 2009	1.0.0	First edition
1.1	February 4th, 2010	1.0.3	Update
1.2	May 9th, 2010	1.1.0	New program version
1.3	November 12th, 2010	1.2.0	New program version
1.4	December 11th, 2010	1.2.1	Update
1.5	March 11th, 2011	1.3.0	New program version
1.6	March 31st, 2011	1.3.1	Update
1.7	May 21st, 2011	1.3.1 SP2	Service Pack 2

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Section 1 - Installation

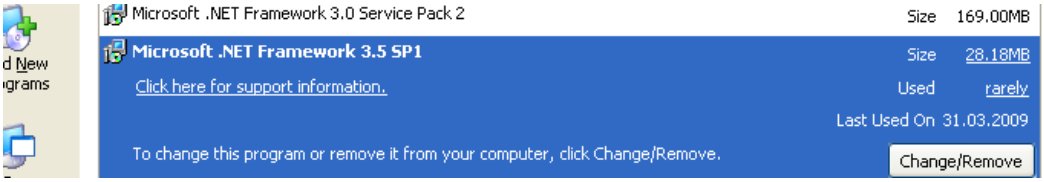
Requirements

The Electronic Flight Bag is developed to run on the Microsoft .NET Framework 3.5.

If you are not sure whether the .NET Framework is already installed on your computer, please go to the control panel and have a look which programs are installed.

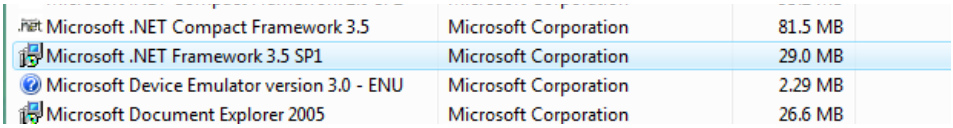
Windows XP

Start Menu → Control Panel → Add or remove programs



Windows Vista:

Start Menu → Control Panel → Programs → Programs and features



Windows 7:

On Windows 7 the .NET Framework 3.5 is already installed by default. You won't see any information about it if you have a look into the list of installed programs.

Download .NET Framework

If you need to download the .NET framework 3.5, please refer to the official download site from Microsoft.

The link provided herein might have changed after this documentation was written, so please be careful to download a file that is named "**dotnetfx35.exe**":

http://go.microsoft.com/fwlink/?LinkId=76617

System Requirements for the .NET-framework 3.5:

These requirements were taken from the above mentioned website

- **Supported Operating Systems:** Windows Server 2003; Windows Server 2008; Windows 7, Windows Vista, Windows XP
- **Processor:** 400 MHz Pentium processor or equivalent (Minimum); 1GHz Pentium processor or equivalent (Recommended)
- **RAM:** 96 MB (Minimum); 256 MB (Recommended)
- **Hard Disk:** Up to 500 MB of available space may be required

System Requirements for the EFB application

The following requirements must be fulfilled on your target system(s):

- Microsoft Flight Simulator X, ***Service Pack 2 or Acceleration Package***, installed on the computer which hosts the DataProvider component.
- Network Interface Card (NIC).
- Connection to the Internet during the installation procedure.
- Permanent Internet connection if you like to fly online on either the IVAO or VATSIM network.
- During the time that you have installed **a DEMO license** …
  - … you need a connection to the Internet whenever starting up the DataProvider (Port 13 and Port 80 must be open in your firewall for outgoing traffic). Please refer to your firewall manufacturer's documentation on how to open ports in your firewall.
  - as soon as you have installed **a valid license** on your computer, you will no longer need a connection to the Internet when starting up the DataProvider.

- Memory:
  - **Single Installation** (see "Installation-Types" next chapter in this section):
    FSX, EFB DataProvider, EFB DisplayUnit on the same machine:
    at least 2 GB
  - **Distributed Installation** (see 'Installation-Types' next chapter in this section):
    Computer 1: with FSX, EFB DataProvider:
    at least 2 GB

    Computer 2: with a separate DisplayUnit:
    at least 1 GB

- 50 MB available space on hard disk.
- CPU: at least Pentium 4, 3.0 GHz, best performance with Dual or Quad Core Processor.
- Screen resolution:
  To have all the information displayed in a human readable size, it's recommended that the screen **which is used for the DisplayUnit** should have a resolution of **at least 1280 x 1024**.

Components

It's important to know the components of the EFB-system before you start the installation.

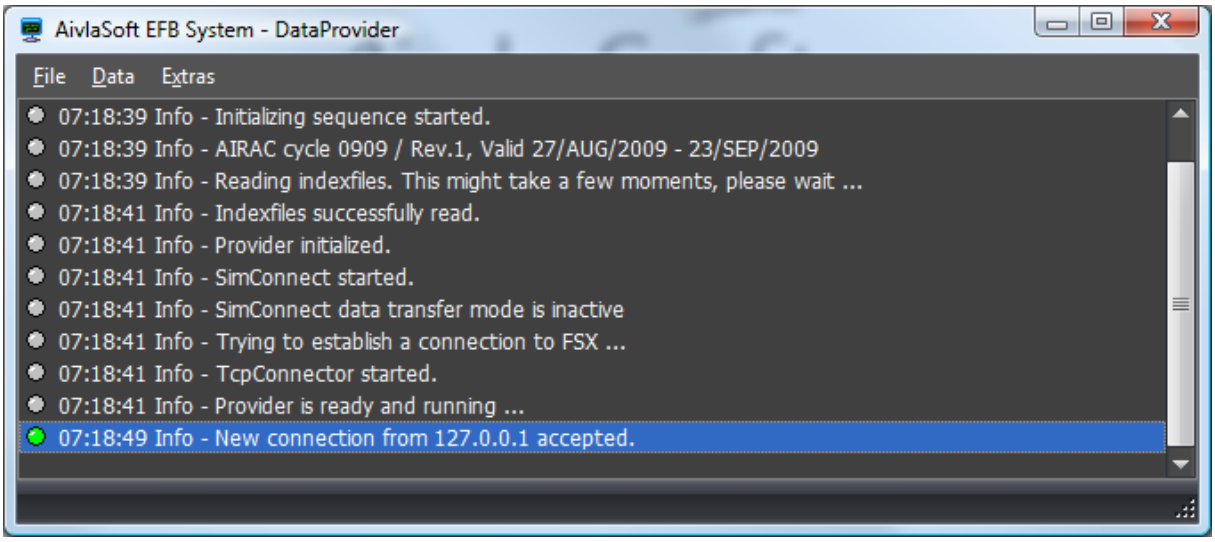
The Electronic Flight Bag System (EFB-system) consists of two components:

- The DataProvider
- The DisplayUnit

These components may all run on the same machine where the Microsoft Flight Simulator X is running or (depending on your environment) on different computers within a local area network (see next chapter "Installation-types" for more details on this topic).

DataProvider

The DataProvider is the heart of the EFB-system. It reads data from FSX and writes data to FSX. The DataProvider automatically connects to a TCP/IP based network (if available) and provides all the needed data to the DisplayUnit(s) within the same network and/or on the same computer.

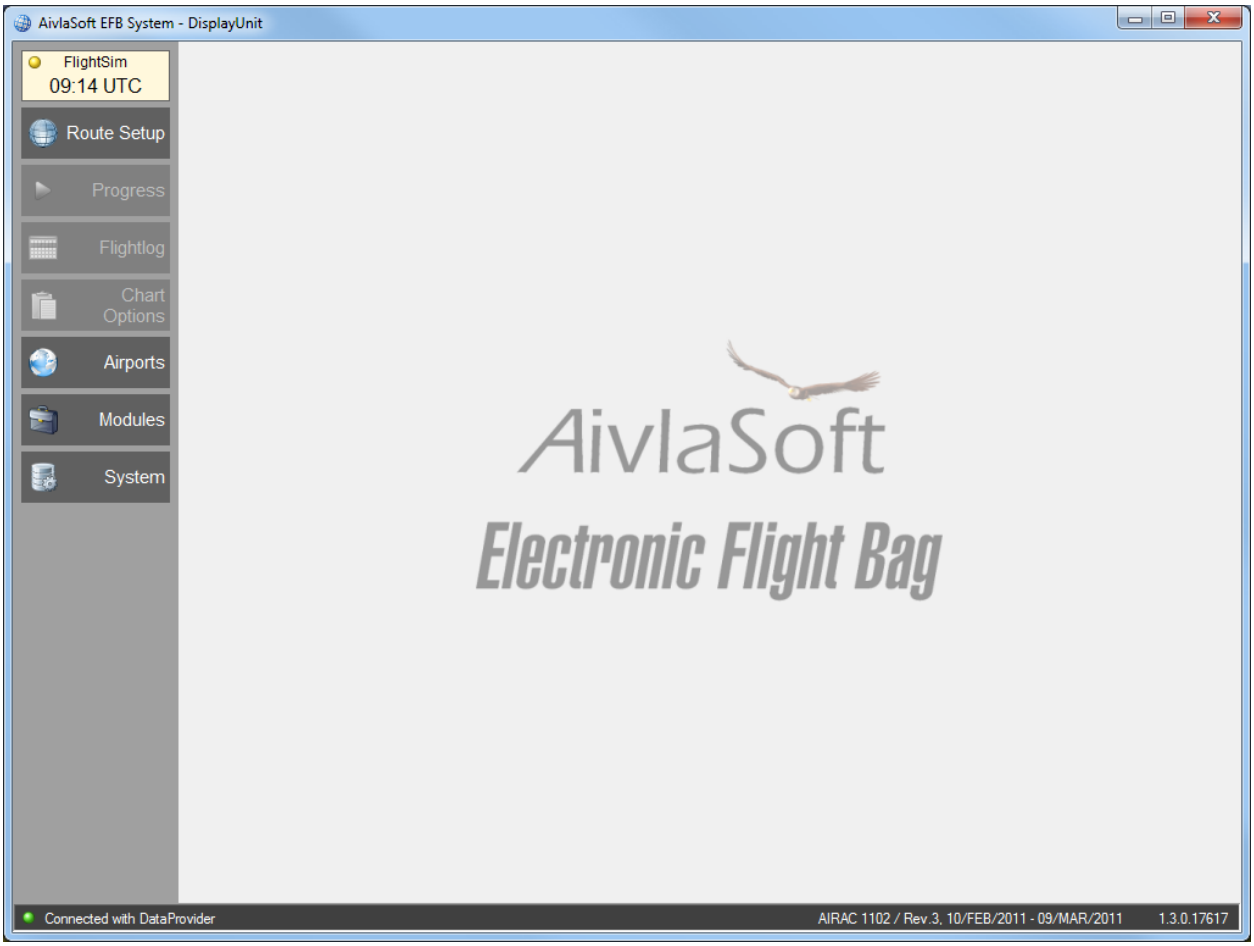


The DataProvider is a component that runs more or less 'silently' and only shows information about its current condition.

The DataProvider component **must** be installed on the **same** computer where the Microsoft Flight Simulator X is running.

DisplayUnit

The DisplayUnit is the interface between the pilot and the EFB-system. It is the component that shows you the aeronautical charts, checklists and documents.



If the DisplayUnit is installed and running on the same computer than the DataProvider, you obviously don't need a TCP/IP based **network**. In this situation the communication between these two components will be handled internally via the host computer's TCP/IP stack.

If the DisplayUnit is installed within a local area network, there is no limit on how many DisplayUnits can be connected to the DataProvider; it's only a matter of performance of the computer on which the DataProvider is running and also a matter of performance of your local area network.

Each DisplayUnit automatically connects to a TCP/IP based network (if available) and communicates with the sole DataProvider.

Software Architecture

The EFB-system is **operable within various environments** and serves requirements from different pilots. From the pilot who uses **a single desktop** for flight simulation to the experienced flight simulator enthusiast who uses a **network based installation** with a **multi-computer or multi-monitor equipment**.

All the needed software components to operate the EFB within a network are **included**. There is no need to install several additional add-ons from different manufacturers.

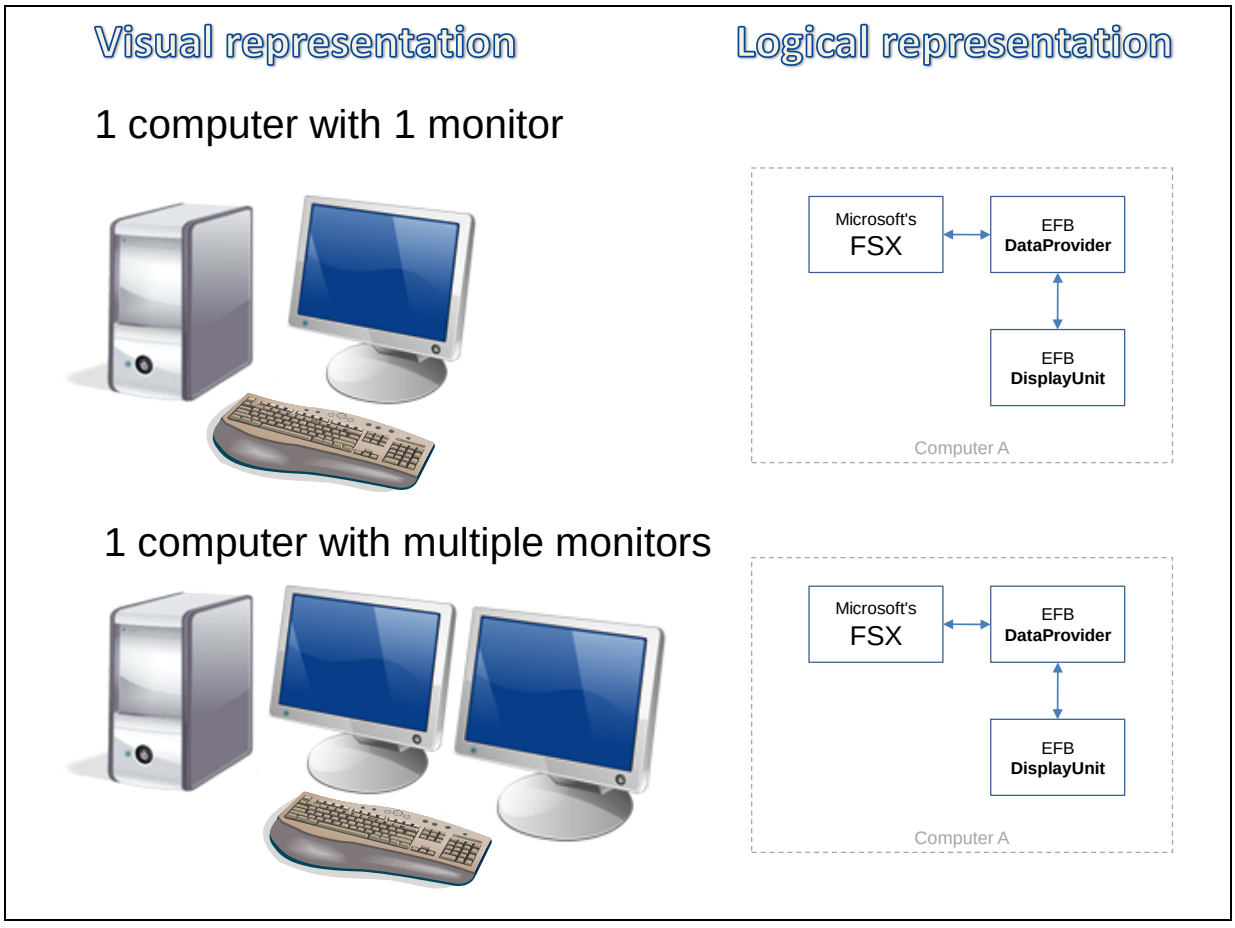
Installation types

Basically there are two different types of installation:

- Single Installation: **All components** will be installed **on a single computer** which could have a single monitor or several monitors.
- Distributed installation: The DisplayUnit(s) are installed **on separate computers within a local area network** (TCP/IP).

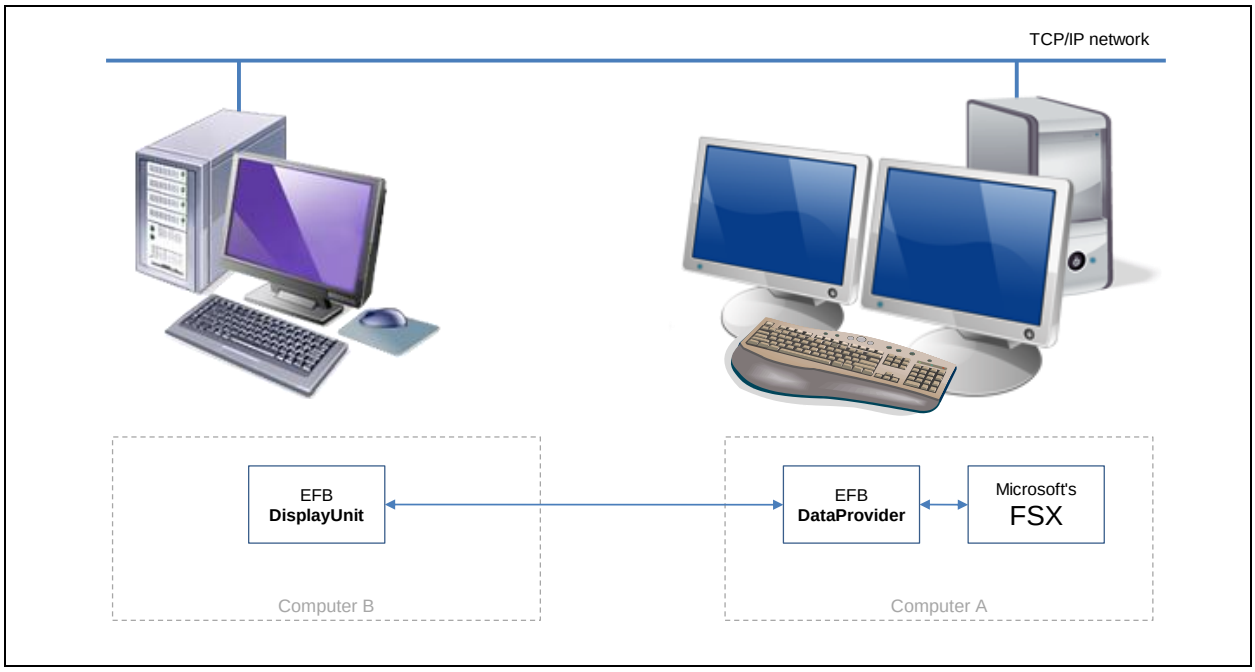
Single Installation

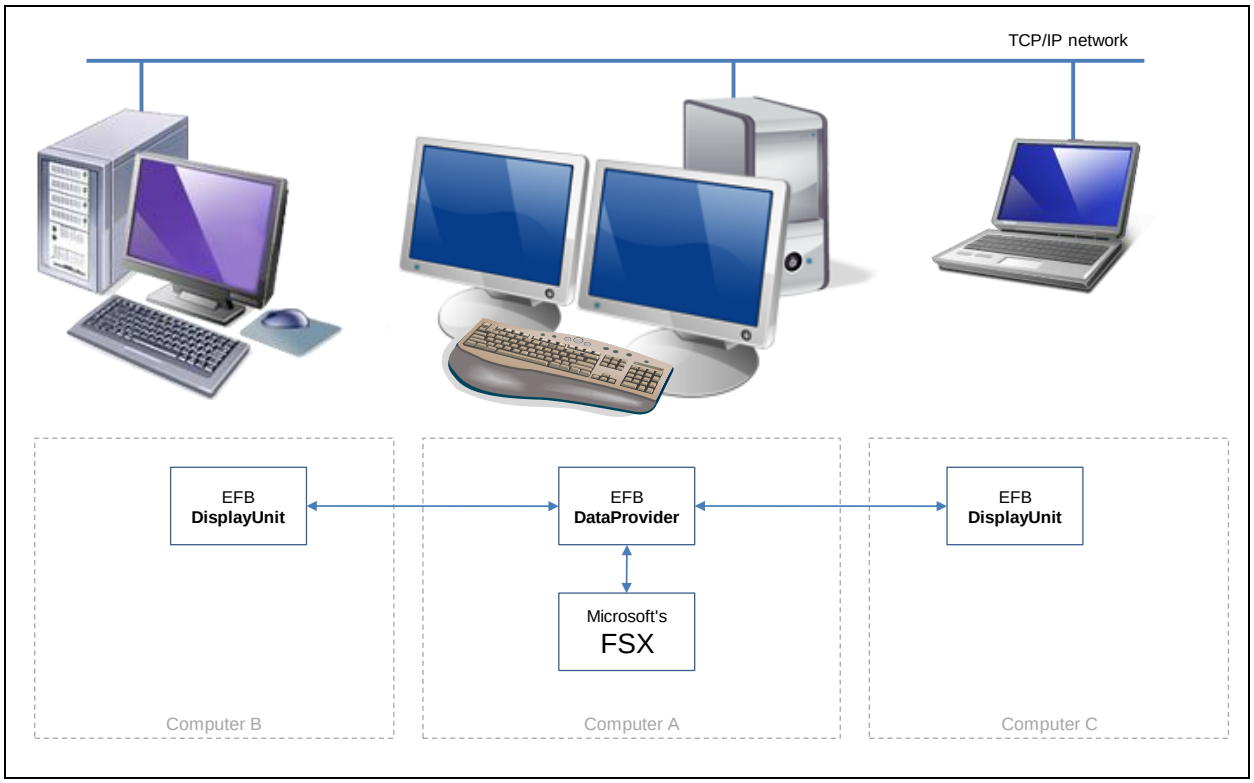
A single computer with one or more monitors. All EFB components will be installed on the same computer.



Distributed Installation

Two or more computers with one or more monitors installed in a local network. In such a configuration the EFB DataProvider has to be installed on the computer where FSX is running whereas the EFB DisplayUnit is installed on another computer.





Doing the installation

- ☐ Make sure all prerequisites are fulfilled (as described in "Requirements").
- ☐ Make sure you have administrator rights to do this installation.

Download version

- ☐ Unzip the file "**AivlaSoft.Efb.Setup_v131.zip**" to a temporary folder on your computer.
- ☐ After the file has been unzipped the folder should contain the following files:
  - **EFBSetup_v131.exe** (Installation software)
  - EFB Installation and Configuration 2011.03.pdf (this document)
- ☐ Run **EFBSetup_v131.exe** and follow the instructions shown by the installation program, as described in "Step by step installation"

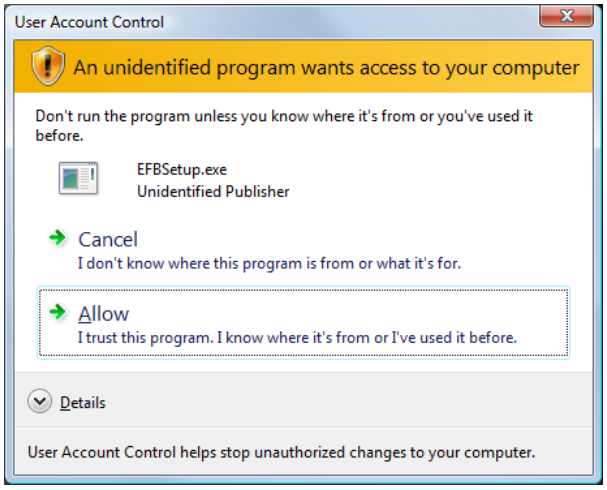
Boxed version (CD)

- ☐ Insert the CD in the computers CD/DVD-Device. The setup program should be started automatically.
- ☐ If the setup program doesn't start automatically, please click on the 'Windows Start Menu' button and open the 'Run …'-dialog.
- ☐ Enter '**D:\ EFBSetup_v131.exe**' and press 'OK' and follow the instructions shown by the installation program.

Note: 'D' stands for the letter of the CD/DVD device of your computer. If the CD/DVD device on your computer has another letter than 'D' please substitute the letter of that drive for 'D'.

Step by step installation (both versions)

Starting

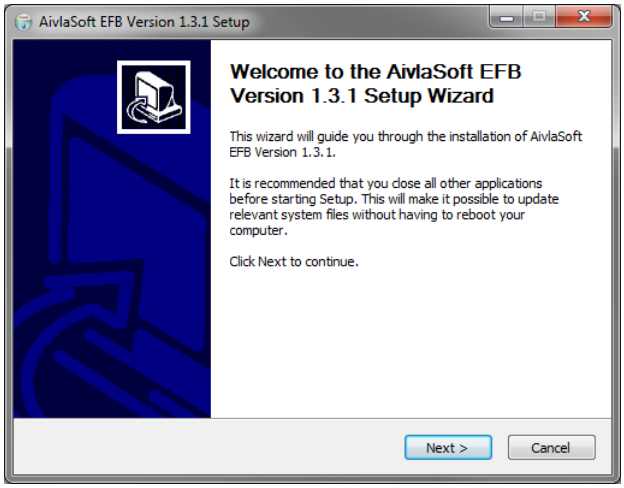


This is the first screen that might appear (depending on the operating system of the computer). The picture on the left was taken from a computer running Windows Vista.

This screen tells you that the file "EFBSetup.exe" is not signed with a digital signature and therefore the publisher (AivlaSoft) cannot be verified.

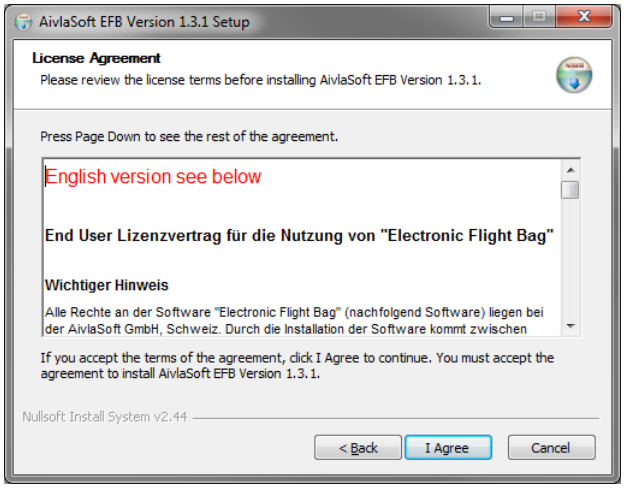
Please press **"Allow"** to start the setup.

Step 1



This is the Welcome screen. Please press "Next" to continue.

Step 2

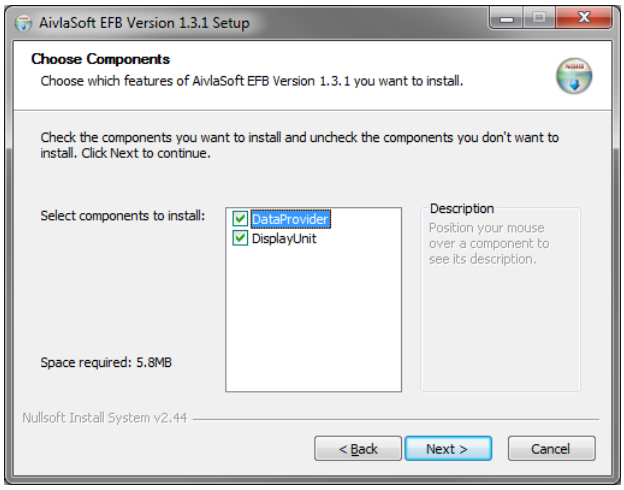


This is the License Agreement screen. Please read carefully.

On the top you will find the German text. To see the English text, please scroll down.

To continue, press "I Agree."

Step 3



Depending on the installation type (single or distributed) you must check or uncheck the components you want to be installed.

For a **single installation** leave both components checked.

For a **distributed installation** proceed as follows:

1) On the computer where FSX is installed:

For a distributed installation you **must** install the DataProvider on the computer where FSX is running.

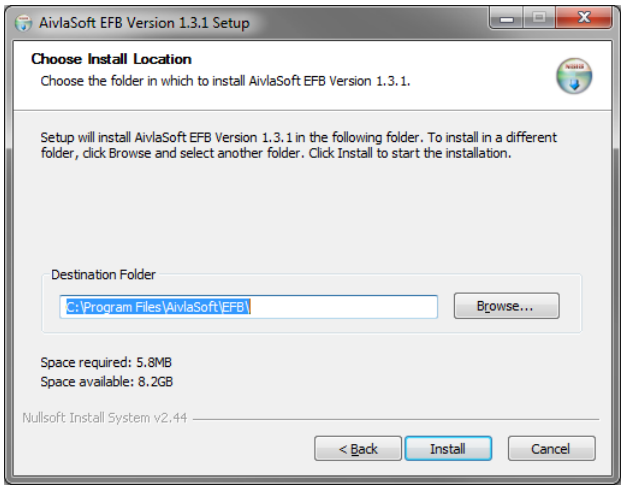
It's up to you whether you want to install a DisplayUnit on the same computer on which the FSX and the DataProvider is running. Just uncheck the DisplayUnit box when you don't need a DisplayUnit on this computer.

2) On each separate computer:

On a separate computer the DataProvider box is disabled and cannot be checked (unless you have an FSX installation on that computer too. In this case the DataProvider box would also be enabled).

Leave the DisplayUnit box checked to install a DisplayUnit on a separate computer

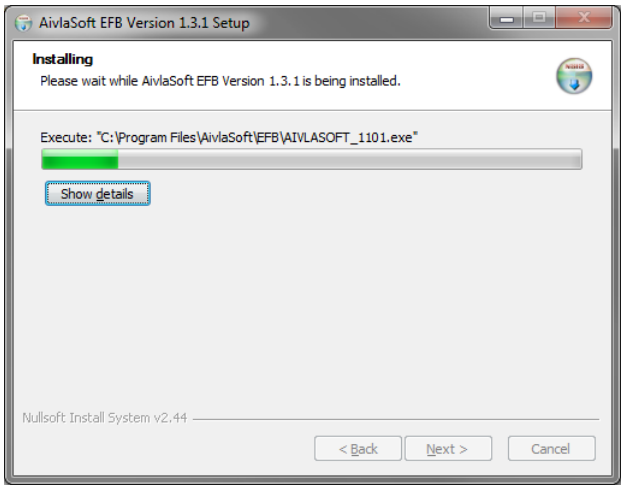
Step 4



Choose the location where you want to have the software installed. To select another location than the default, please press **"Browse …"**.

To continue press **"Install."**

Step 5



Installing …

The components of the EFB system will be installed.

If you are installing the DataProvider, after some seconds, the installer for the Navigraph data will start (see next screen).

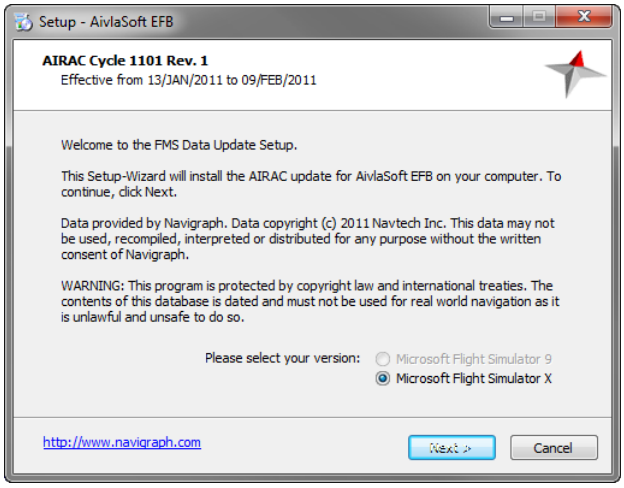
IMPORTANT:

Beginning with the AIRAC cycle 1103, Navigraph will publish Transition, Final Approach Fix and Missed Approach Point data in a new format for AivlaSoft customers.

With this 1.3.1 software update an enhanced version of AIRAC 1101 (which already uses the new data format) is provided for free with EFB, courtesy of Navigraph. If you like to update to this free 1101 cycle, press "**Next**" on the following screen. If you already installed a newer cycle and **you don't like to downgrade** to the 1101 cycle, press "**Cancel**" on the following screen.

Pre 1.3.0 versions of EFB will not be able to read future Navigraph updates published in the “AivlaSoft” format.

Step 6

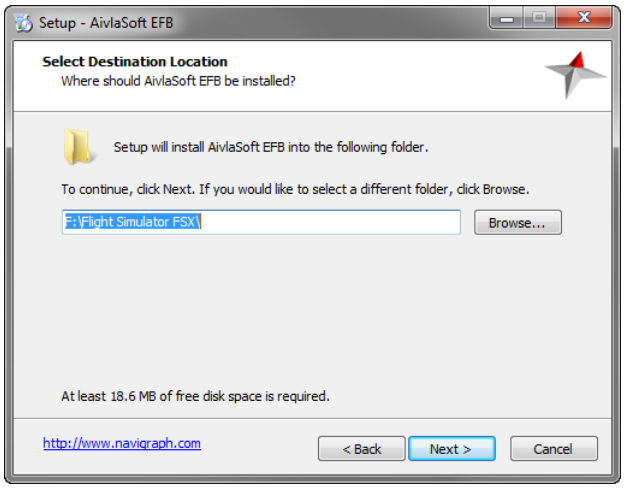


This is the Welcome screen of the Navigraph installer.

Press '**Next**' to continue, or press "**Cancel**", if you don't like to install the free 1101 cycle.

If you press "Cancel" you will be asked by a next dialog whether you really like to cancel. Please press then "**YES**".

Step 7

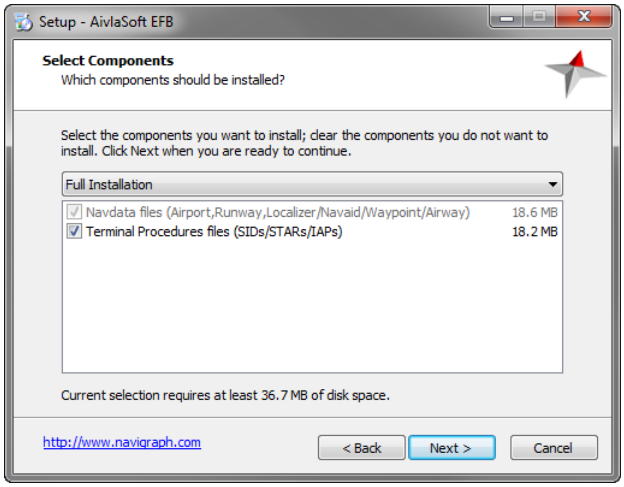


Choose the location of the Flight Simulator.

On this screen you might select the location of the FSX installation. Normally the installer will find the location by itself, therefore you only have to verify whether the path is correct.

To continue press **"Next."**

Step 8

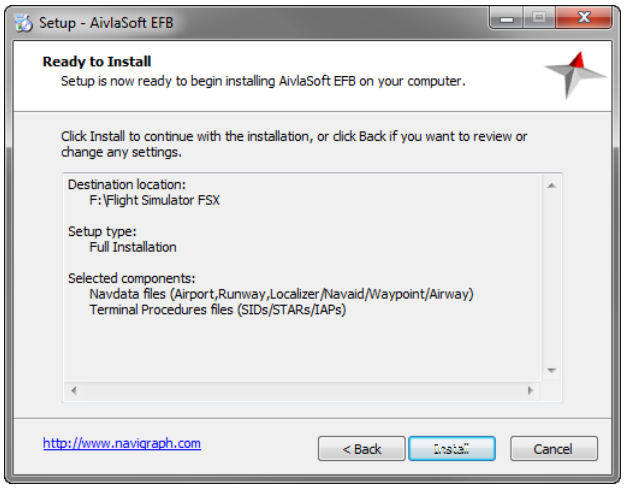


Select whether you want to install the procedures data.

Please leave this options checked. Otherwise the EFB system might not run properly.

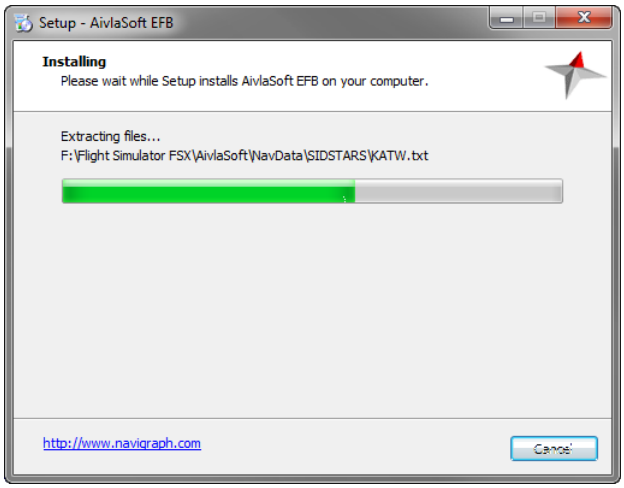
To continue press **"Next."**

Step 9



This screen shows you again the settings you made on the screens before. If you agree with these settings, press "**Install**" to start the installation, or press "**Back**" to change the settings.

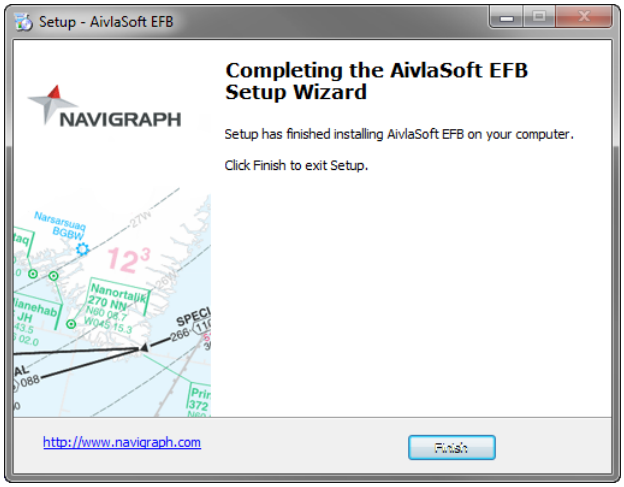
Step 10



This is the Progress screen of the Navigraph data installation …

The progress bar is indicating that the procedure might take some time.

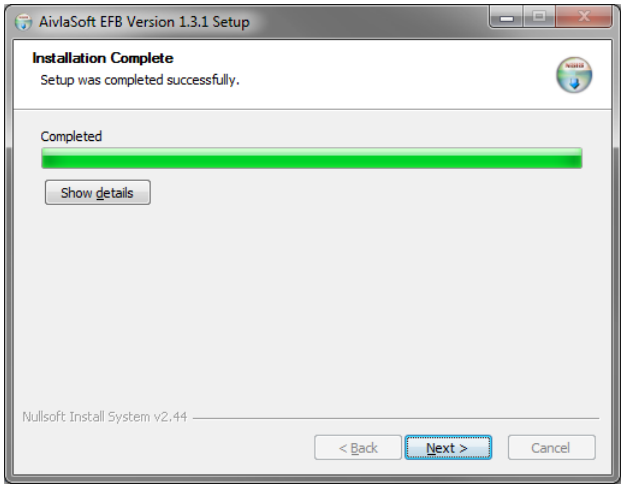
Step 11



This is the Completion screen of the Navigraph data setup.

Please press **"Finish"** to return to the EFB installation.

Step 12



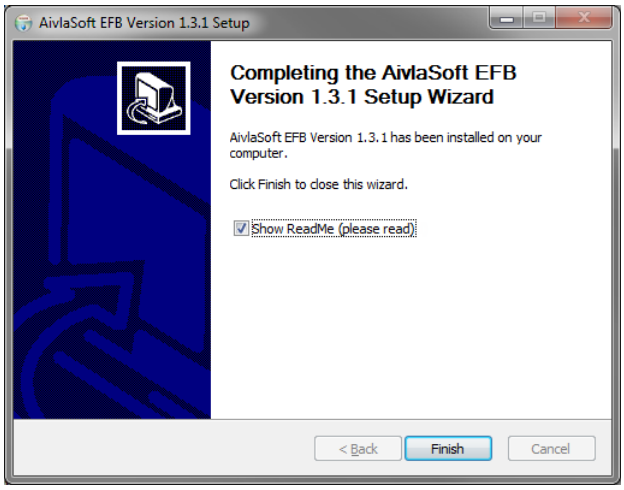
After returning from the Navigraph data setup, the EFB setup will proceed with the installation.

As soon as the green bar reaches the end on the right side, the **"Next"** button will be enabled.

If you want to have a look which components were installed, press **"Show details."**

To continue with the setup, press **"Next."**

Step 13



This is the Completion screen of the EFB system setup.

The Readme file will show you the next steps, which you also find in this documentation (Section 2 - First run).

Press **"Finish"** to finish the installation.

After the installer has been finished the installation procedure is completed and the **system is ready to run for the first time**.

Section 2 - First run

First run

For the first use of your EFB-system, it's *recommended* that you start the DataProvider **before** the DisplayUnit because the DataProvider has to analyze and prepare the FSX data before it can be used by itself and the DisplayUnit.

Once the DataProvider has been run for the first time, it's a matter of your personal preferences which one of the components you start first. Both components (DisplayUnit and DataProvider) are developed to establish a connection to each other automatically.

The "first run sequence" is as follows:

- Start DataProvider
- Install Demo License / Enter Product Key
- Check/Change DataProvider Settings
  - *DataProvider will analyze FSX data*
  - *DataProvider will restart automatically*
  - *DataProvider is ready*
- Check/Change FSX settings

(for every DisplayUnit …)

- Start DisplayUnit
- Check/Change DisplayUnit Settings
  - *DisplayUnit is ready*

Install Demo License or enter Product Key

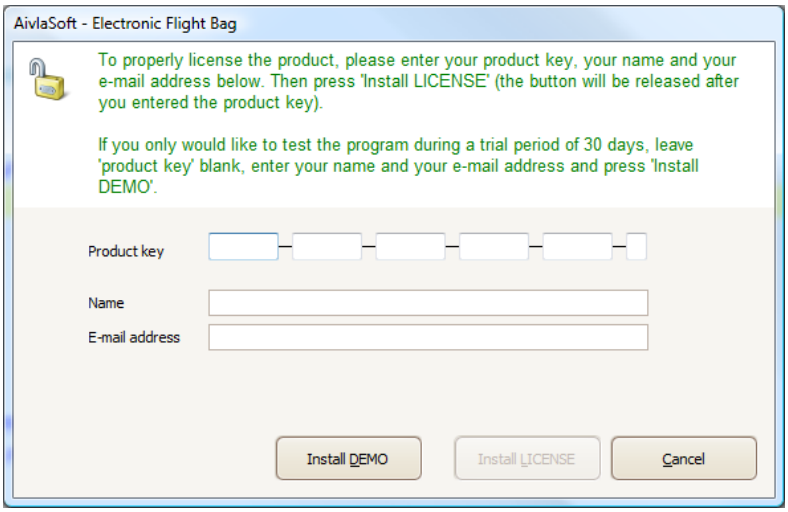
As soon as the DataProvider has been started for the first time you either have to install a demo license, or if you already have your own product key you will install this product key.

Important to know: To install either your personal license **or** a demo license your computer **must be connected to the Internet**.

Important to know: If you have a demo license installed, the DataProvider needs to connect to the Internet **at every startup** to check how many days are remaining until the end of the trial period. Please make sure you have your computer connected to the Internet while starting up the DataProvider (Port 13 on your firewall must be open for outgoing traffic). This is only needed as long as you have a demo license installed on your computer. This behavior might be strange to you but it's unfortunately required due to security considerations.

Once you have installed your personal license you will no longer need an Internet connection at every startup. (You will need an Internet connection however if you want to receive NOAA Weather data, to make use of the NOTAMs linking feature, or to make use of one of the online route-generation services.)

Whenever the DataProvider is starting up it checks whether it has a valid license installed on the computer. At this point obviously a license is not yet installed. Therefore the DataProvider will show you the following screen:



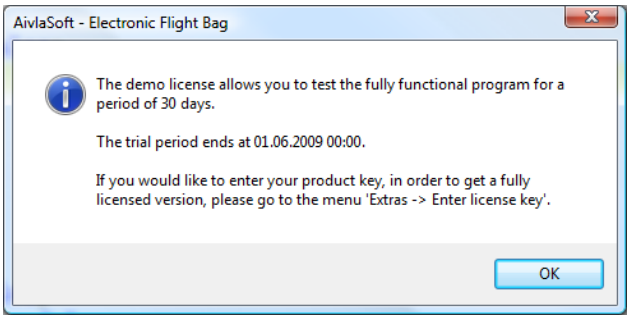
You may choose whether you want to test the EFB-system during **a trial period of 30 days** - or - if you have already purchased a license **you may enter your product key**, your **name** and your **e-mail address** in order to install your license on your computer.

If you want to install **a demo license**, you must enter your **name** and your **e-mail address** too, and then press '**Install DEMO.**' After a few seconds you will get a demo-license from our server. This license allows you to test the **fully functional** software within a trial period of 30 days.

Depending on the current user rights that you have, it might happen that you encounter an error message when the DataProvider is trying to save the license information to the hard disk. In such a situation please exit the program and try to run the DataProvider with "Run as administrator". To do that, please do a right mouse click on the DataProvider icon (either on the desktop or from the Start Menu) and select "Run as administrator". This allows the program to write the license information to the hard disk.

If you press "**Cancel**" the program will terminate.

During the evaluation period you will be informed at every startup how many days are remaining until the demo expires (see the following screenshot).



After the trial period has expired you have to enter **a valid product key** in order to continue using the EFB-system. Please see http://www.aivlasoft.com to get more information about how to purchase a valid product key.

If you no longer want to use the EFB-system you may uninstall it at any time using the Windows uninstaller (via the Windows Control Panel).

Section 3 - Configuration

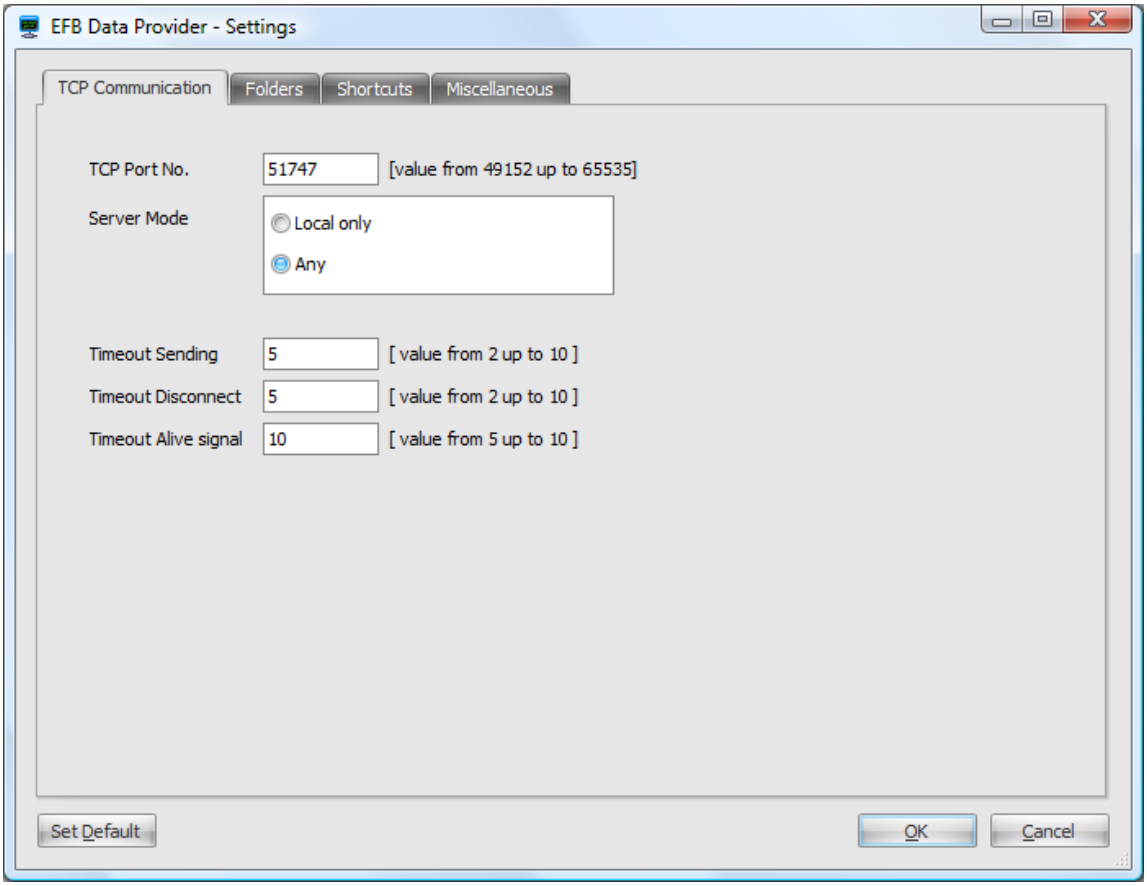
DataProvider Settings

As soon as you have installed the license, the DataProvider will start and check for the current settings. Because this is the first run, the settings aren't yet available.

The DataProvider will show you the settings dialog automatically since at this point the settings are not yet defined. You may change all of these settings also at a later time.

The settings are subdivided in several topics. If you press **"Cancel"** the dialog will disappear and the program (if it's the first time use) will terminate. If you press **"OK"** the current settings will be saved and the program starts. If you press **"Set Default,"** all values will be reset to their default values.

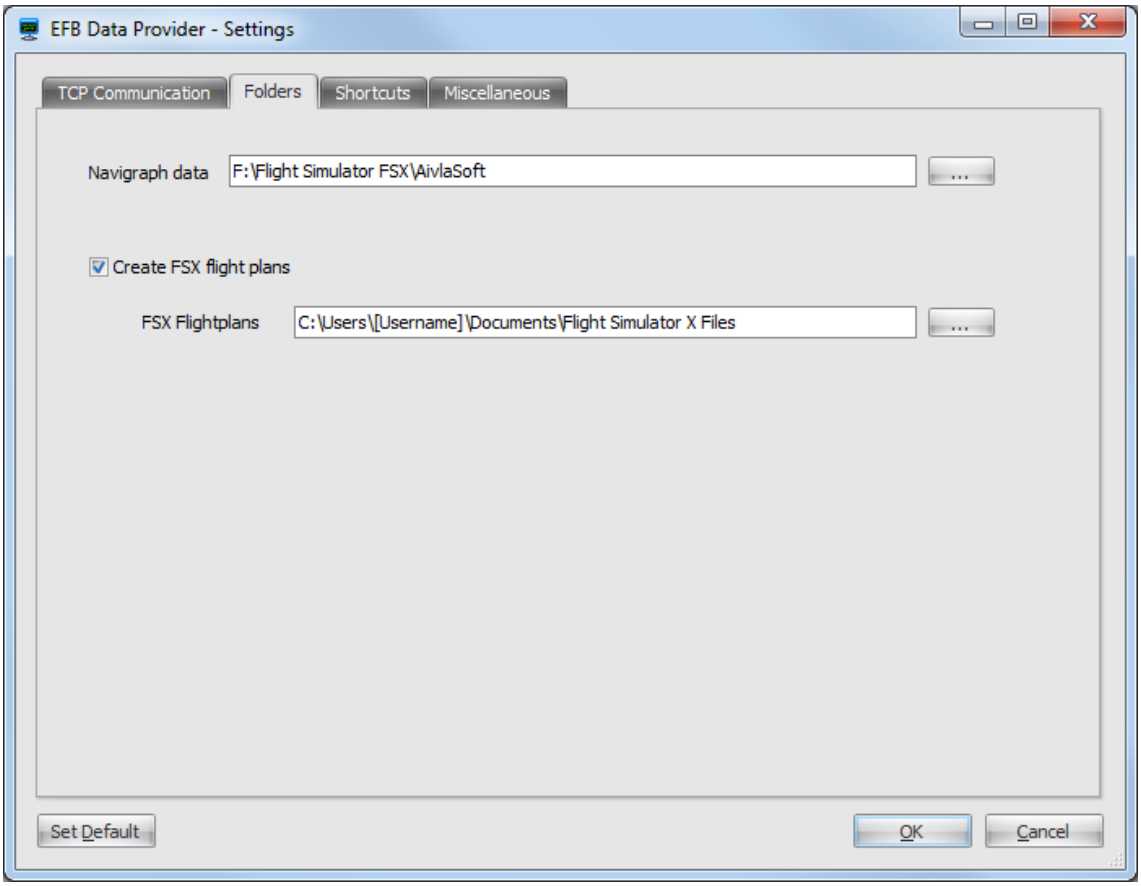
TCP Communication (Tab 1)



Setting	*Value / Description*
TCP Port No.	Communication over a TCP/IP based network is hard to explain to people who are not involved in the IT-business or in developing software. We did a lot of work to keep things as easy as possible for you. Nevertheless one single parameter must be entered from you: it's the so called 'port-number'. What is a port-number? It's part of the address when sending data between two programs over a TCP/IP based network. The first part of the address is the IP-address of a computer and the second part is the port-number. Try to imagine your computer as an apartment house wherein many people are living. All of them are living in the same house but in different flats.

Setting	*Value / Description*
	The house has a house-number and every apartment inside the house has its own apartment-number. To send you a letter the sender has to know the house-number and also the apartment-number. The number of the house is like the IP-address and the apartment-number is like the port-number. The port number defines which program is listening to certain data. For the EFB-system you may use a port number from 49152 up to 65535. For more information about port numbers see: http://www.iana.org/assignments/port-numbers It is important that you set this port number to **the same value for all components** within the EFB-system. The port number is also needed if you don't use a local area network since the internal communication between the DataProvider and the DisplayUnit is handled through the TCP/IP communication.
Server mode	Local only: the DataProvider will only accept communication from the same computer on which it is installed. Any: The DataProvider accepts incoming connections from every computer within your local area network (default).
Timeout sending	Every data packet that will be sent from the DataProvider to a DisplayUnit will be observed. If the DisplayUnit doesn't acknowledge the receiving of the data within the amount of seconds which you may set herein, the DataProvider has to assume that the connection to the DisplayUnit has been lost. Therefore it will disconnect the connection to this DisplayUnit. If you encounter problems such as the DataProvider always disconnects a DisplayUnit caused by timeout, please try to increase this value.
Timeout disconnect	Whenever the DataProvider is shutting down it will inform all DisplayUnits before by sending a disconnect-message to them. As mentioned above also this kind of data will be observed. When shutting down, the DataProvider will wait to get an acknowledgement from every DisplayUnit so it knows that every DisplayUnit is informed about the intentions of the DataProvider.
Timeout Alive signal	If no data is sent to a DisplayUnit for a certain amount of time, the DataProvider will send a so-called keep-alive signal to the DisplayUnits. This is to check whether all DisplayUnits are still available. If a DisplayUnit doesn't respond to a keep-alive signal within that time set herein, the DataProvider will disconnect the connection to such a DisplayUnit.

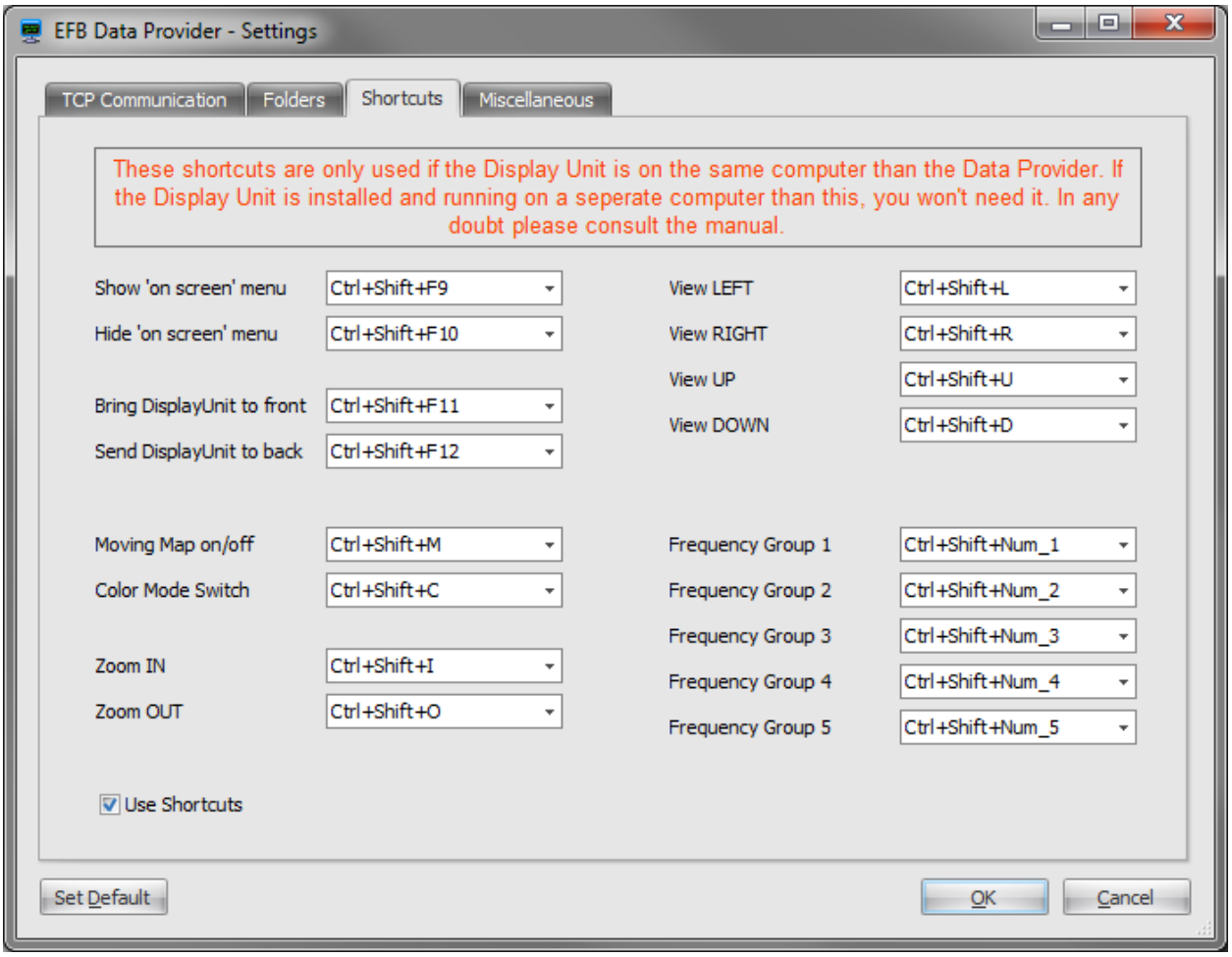
Folders (Tab 2)



Setting	*Value / Description*
Navigraph data	Select the data folder wherein the Navigraph data has been installed. Default is …Microsoft Games\Microsoft Flight Simulator X\AivlaSoft.
Create FSX flight plans	If you select this option the DataProvider will write a *.pln file into the folder which you define in the textbox below. A flight plan will be created whenever you press the "Activate" button from within the Route Setup module.

FSX Flightplans	Select the folder where the FSX flight plans are saved. This folder is usually located in
	`VISTA/W7`
	`C:\Users\`*`[User Name]`*`\`**`Documents`**`\`
	`WinXP`
	`C:\Documents and Settings\`*`[User Name]`*`\`**`My Documents`**`\`
	
	The name of the folder 'Flight Simulator X Files' depends on the language which has been installed on your computer.
	In order to provide proper Garmin GPS flight plan loading, the Flight Plan folder settings must be the default FSX flight plan folder. Please see the “EFB Operations Manual” section **Route Setup (5)** for more information.

Shortcuts (Tab 3)



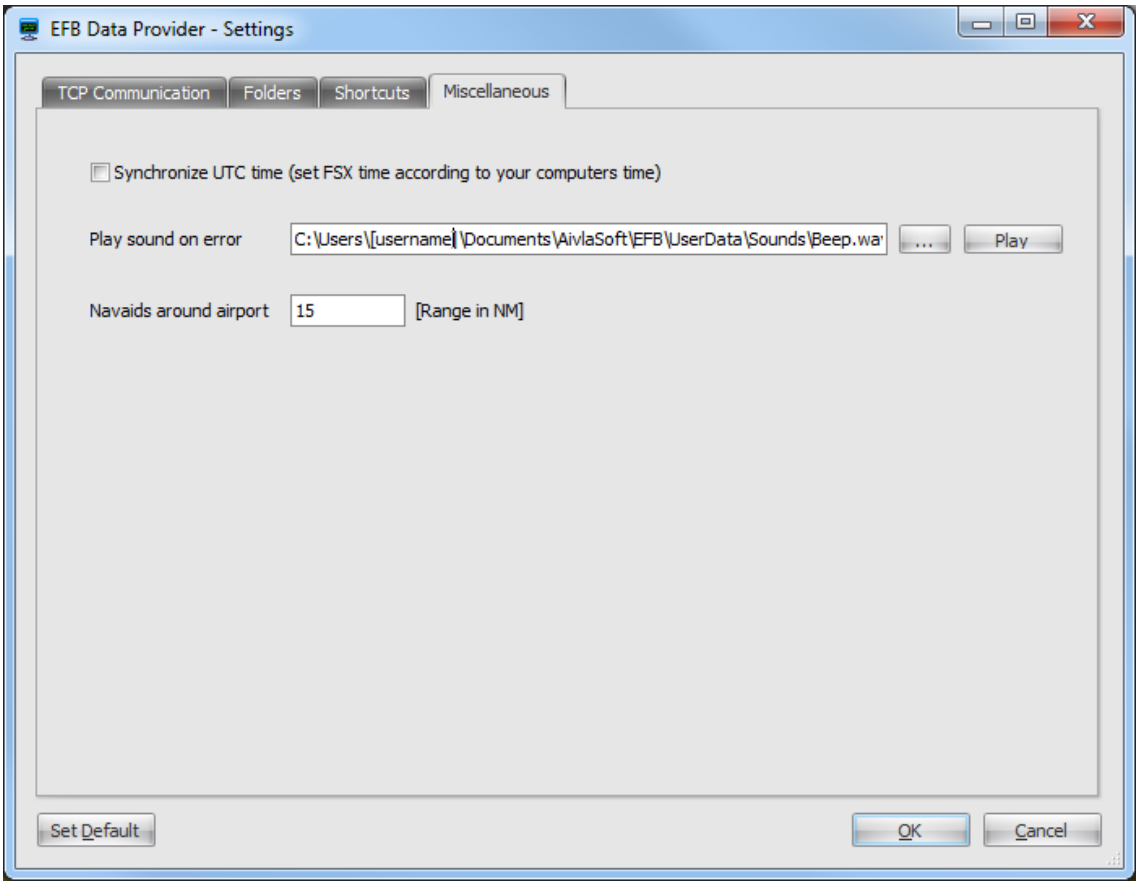
As described on the screen, these settings are only relevant if you have at least one DisplayUnit installed on the same machine with the DataProvider itself (and Microsoft Flight Simulator X) .

ATTENTION: Please make sure that the shortcuts set here don't conflict with any of your current FSX shortcuts. If you have any doubt please consult the FSX documentation as well as your settings.

Setting	***Value / Description***
Show 'on screen' menu	Shows the on-screen menu within FSX.
Hide 'on screen' menu	Hides the on-screen menu.
Bring DisplayUnit to front	Brings the DisplayUnit in front of all windows. This might be helpful if you must look at your DisplayUnit without leaving the FSX window.
Send DisplayUnit to back	The DisplayUnit will be set 'behind' the FSX window, which means that the FSX window is the front window again.
Moving Map on/off	If the DisplayUnit is showing a chart you may set the moving map mode. If the mode is “on,” then the chart center-position will follow the current aircraft position and a symbol will be presented in the center of the chart.

Setting	***Value / Description***
Color Mode Switch	This changes the color mode of a chart from daylight to nighttime and vice versa.
Zoom IN	If the DisplayUnit is presenting a chart you may zoom in to get a more detailed view from a smaller area.
Zoom OUT	If the DisplayUnit is presenting a chart you may zoom out to get an overview of a wider area.
View LEFT, RIGHT, UP, DOWN	Moves the center position of a chart view in small steps.
Frequency Group 1 to 5	If a chart is displayed on the DisplayUnit you may change the indicated frequency group.
Use Shortcuts	If you uncheck this option EFB will no longer listen for these shortcuts.

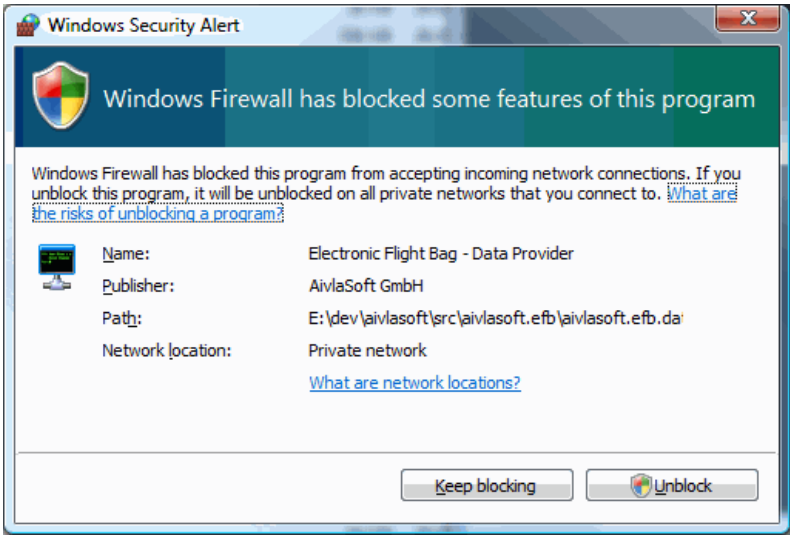
Miscellaneous (Tab 4)



Setting	*Value / Description*
Synchronize UTC time	As you might have experienced, after a certain time the FSX clock is no longer synchronized to your computer's clock. If you check this option the EFB system will synchronize the time in FSX according to your computer's time as soon as the difference between the FSX time and the computer's time is more than 1 minute.
Play sound on error	Because the DataProvider is most often running in the background you may define a sound file which will be played whenever the DataProvider is recognizing an error situation. By default this is the 'beep.wav'-file which is located in the user data path.
Navaids around airport	Define the range in nautical miles (from 5 to 50) for the navaids to be listed in the airport information view.

Windows Firewall

Since the DataProvider uses the TCP/IP communication infrastructure of your computer it will be blocked by the Windows Firewall by default.



Please press "Unblock" to allow the DataProvider to communicate with the DisplayUnit(s). There is NO outgoing hidden connection except the connection to the AivlaSoft authentication server which will be connected during the demo validation and license authentication procedures (please refer to the chapter "Install Demo License or enter Product Key").

Analyzing and collecting FSX data

After you have configured the settings as described above, the DataProvider starts analyzing and collecting the FSX data on your computer. This might take some time (depending on the power of your computer and the number of extra scenery files you have installed into FSX). While the analyzer is running you cannot do any other things with EFB; the DataProvider is locked for user interaction.

Restart of the DataProvider

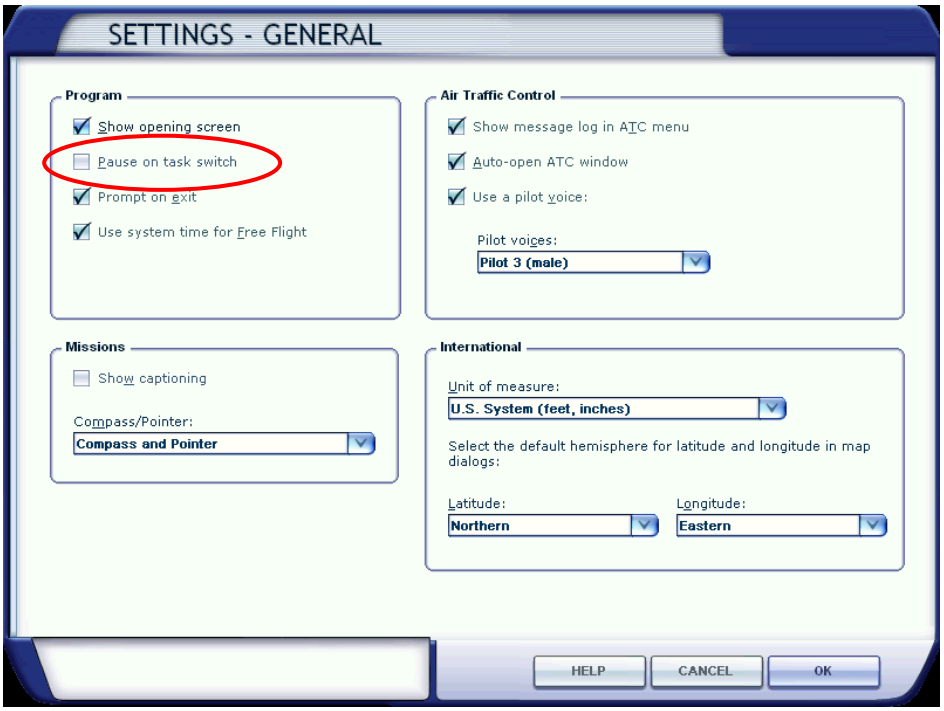
To release no longer used memory, the DataProvider will be restarted after the analyzer has finished its work. You will be informed by a message box where you must press the OK button.

After the restart has been performed, the DataProvider is ready to accept incoming connection attempts from the DisplayUnit(s).

FSX settings

There is one setting in FSX you must check: Go to the "General settings" and verify whether the option "**Pause on task switch**" is **unchecked** or disabled.

If you leave this option checked, FSX will go into paused-state whenever you change the focus to the EFB-system. That behavior can be prevented by un-checking this option in FSX.



FSX - full screen mode

The "full screen mode" of FSX may NOT be used in cooperation with the EFB-system if the DisplayUnit is running on the same computer than FSX is running.

Why? It's a fundamental concept of the Microsoft Windows operating system that Windows “multitasks” – that it may run several programs (each of them in its own window) at the same time. All of these running programs are shown in the taskbar at the bottom of your display. But only one of them can be the program that is in the foreground (also known as “having the focus”).

As long as the foreground window doesn't use the whole area of your screen, you may see the other windows behind or beside of the foreground window. But still only one program is in the foreground.

However in full screen mode, FSX does not function as a multitasking Windows’ window. The "FSX full screen mode" is a special graphic mode which bypasses this standard XP/Vista/Win7-windowed mode and therefore the above described features of a windowed operating system are no longer available. You will then have a single-window operating system wherein FSX is the one and only visible program.

The only way to use FSX in "Full-Screen-Mode" while **simultaneously running the EFB-system** is to use a **network based environment** where you would run EFB DisplayUnit(s) on a different computer than the computer which FSX and the EFB DataProvider are running on.

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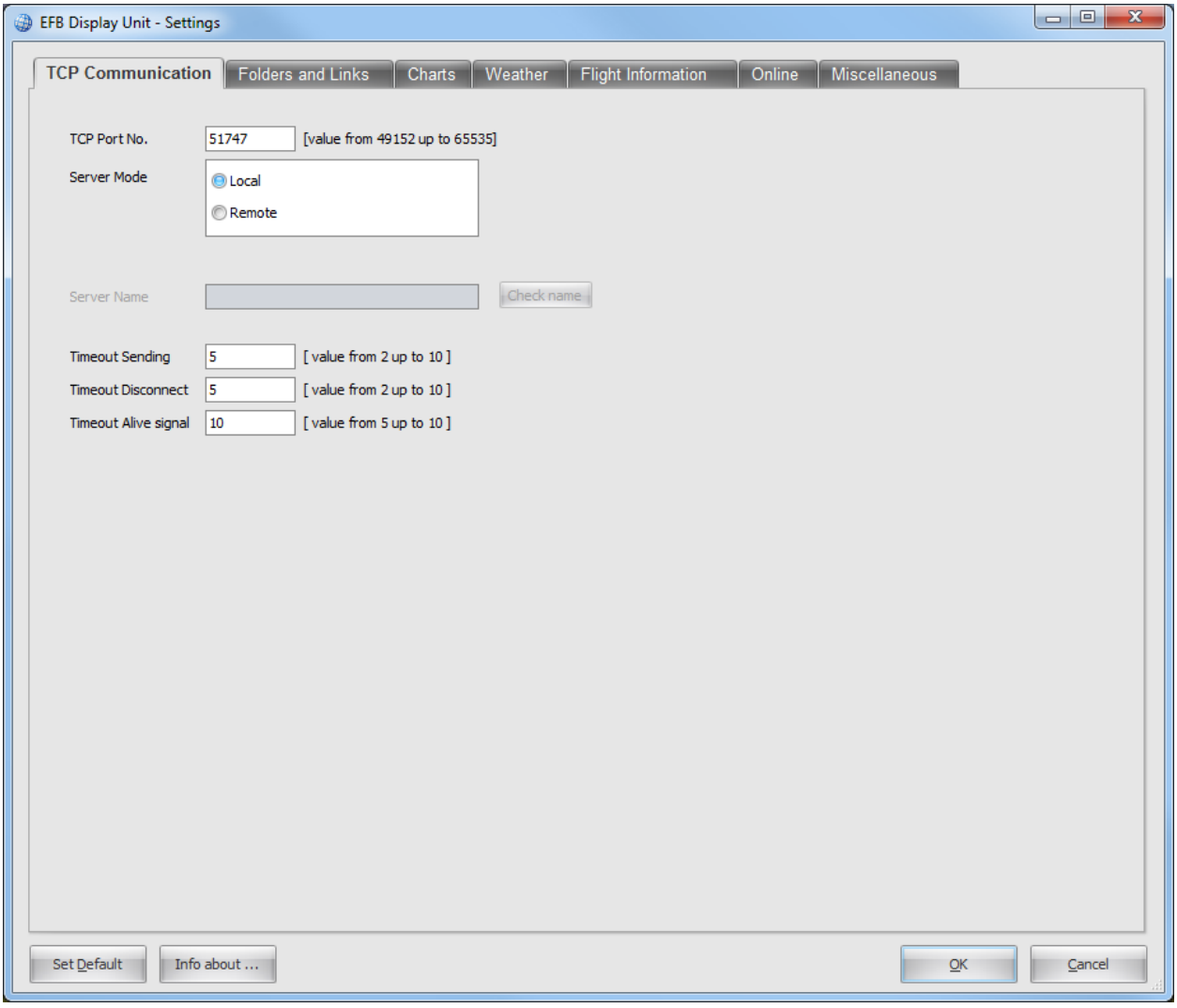
DisplayUnit Settings

The first time when the DisplayUnit is started it checks whether the settings are available. It will show you the settings dialog automatically since at this point the settings are not yet defined. You may change all of these settings also at a later time.

TCP Communication (Tab 1)



Setting	*Value / Description*
TCP Port No.	**It is important** that you set this port number **to the same value for all components** within the EFB-system. The port number is also needed if you don't use a local area network since the internal communication between the DataProvider and the DisplayUnit is handled through the TCP/IP communication.

Setting	*Value / Description*
Server mode	Local: the DataProvider must be installed on the same machine than the DisplayUnit is. Otherwise you won't get a connection to the DataProvider. Remote: The DataProvider is not installed on the same machine than the DisplayUnit is. You must enter the computer **name** of that machine where the DataProvider is installed on (Do **not** enter a TCP-IP number here!). If you enter the name of the computer please press the button **"Check Name."** This will search for this computer within your local network. If the machine can be found you will be informed by a message box. If EFB cannot find the computer you will be informed by an error message box.
Timeout sending	All data sent from the DisplayUnit to DataProvider will be observed. If the DataProvider doesn't acknowledge the reception of the data within the amount of seconds which are set here, the DisplayUnit assumes that the connection to the DataProvider has been lost. Therefore the DisplayUnit will disconnect the connection to this DataProvider and start trying to reconnect automatically. If you encounter problems such as the DisplayUnit always disconnects the connection to the DataProvider because of timeouts, please try to increase this value.
Timeout disconnect	Whenever the DisplayUnit shuts down it will inform its DataProvider before by sending a disconnect-message to the DataProvider. As mentioned above, this kind of data will also be observed. When shutting down, the DisplayUnit will wait to get an acknowledgement from the DataProvider so it knows that the DataProvider is informed about the disconnect. Therefore the DataProvider will no longer send any data to this DisplayUnit.
Timeout Alive signal	If no data is sent to the DataProvider for a certain amount of time, the DisplayUnit will send a so-called keep-alive signal to the DataProvider. This is to check whether the DataProvider is still available. If the DataProvider doesn't respond to a keep-alive signal within that time set herein, the DisplayUnit will disconnect the current connection to the DataProvider and start trying to reconnect automatically.

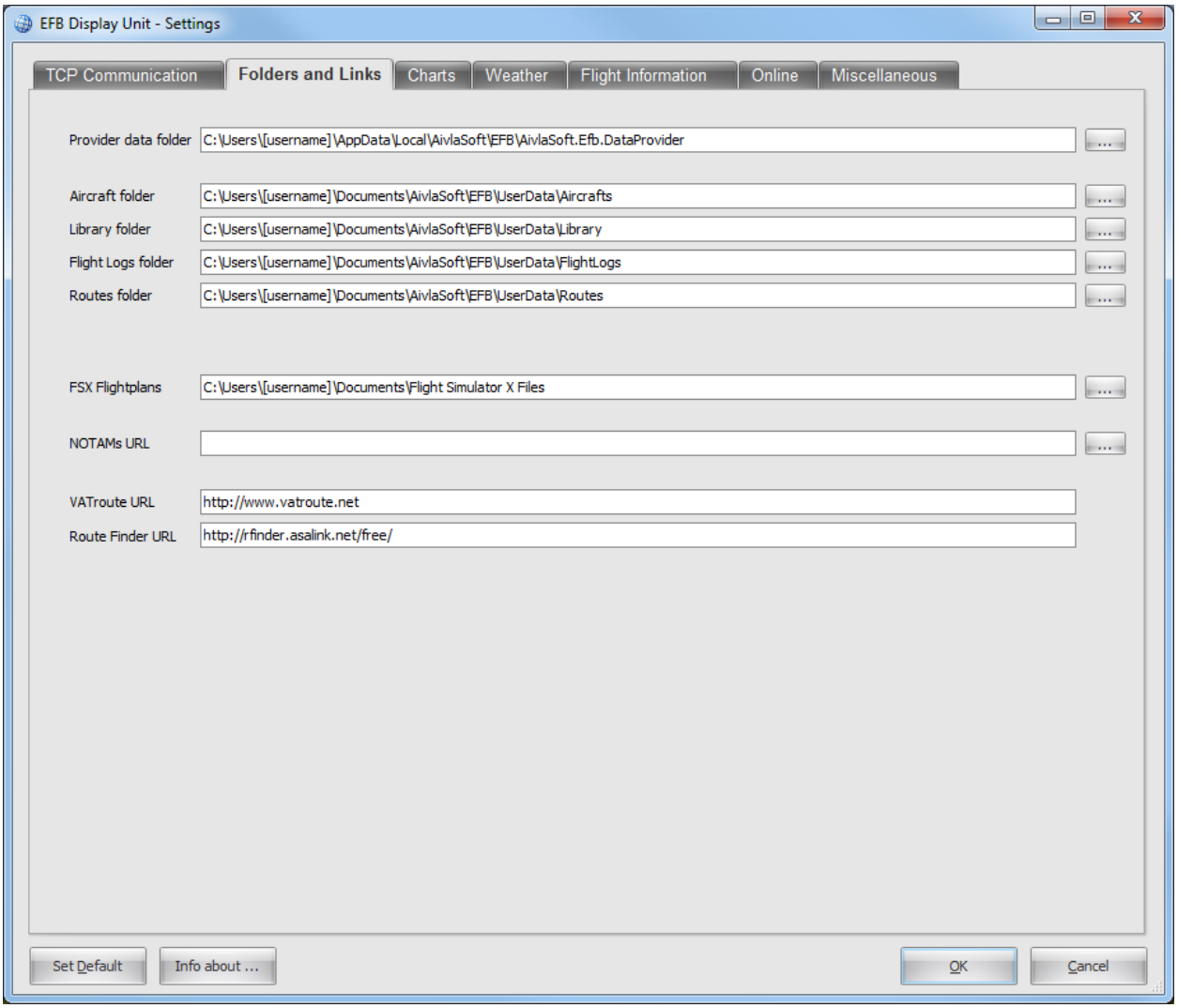
If you press "**Cancel**," the dialog will disappear and the program (if it's the first time in use) will terminate. If it's not the first time in use, the dialog will also disappear and no changes will be applied.

If you press "**OK**," the current settings will be saved and the dialog will disappear.

If you press "**Set Default**," all values will be reset to their default values.

Press "**Info about …**" to see some information about the current program version.

Folders (Tab 2)



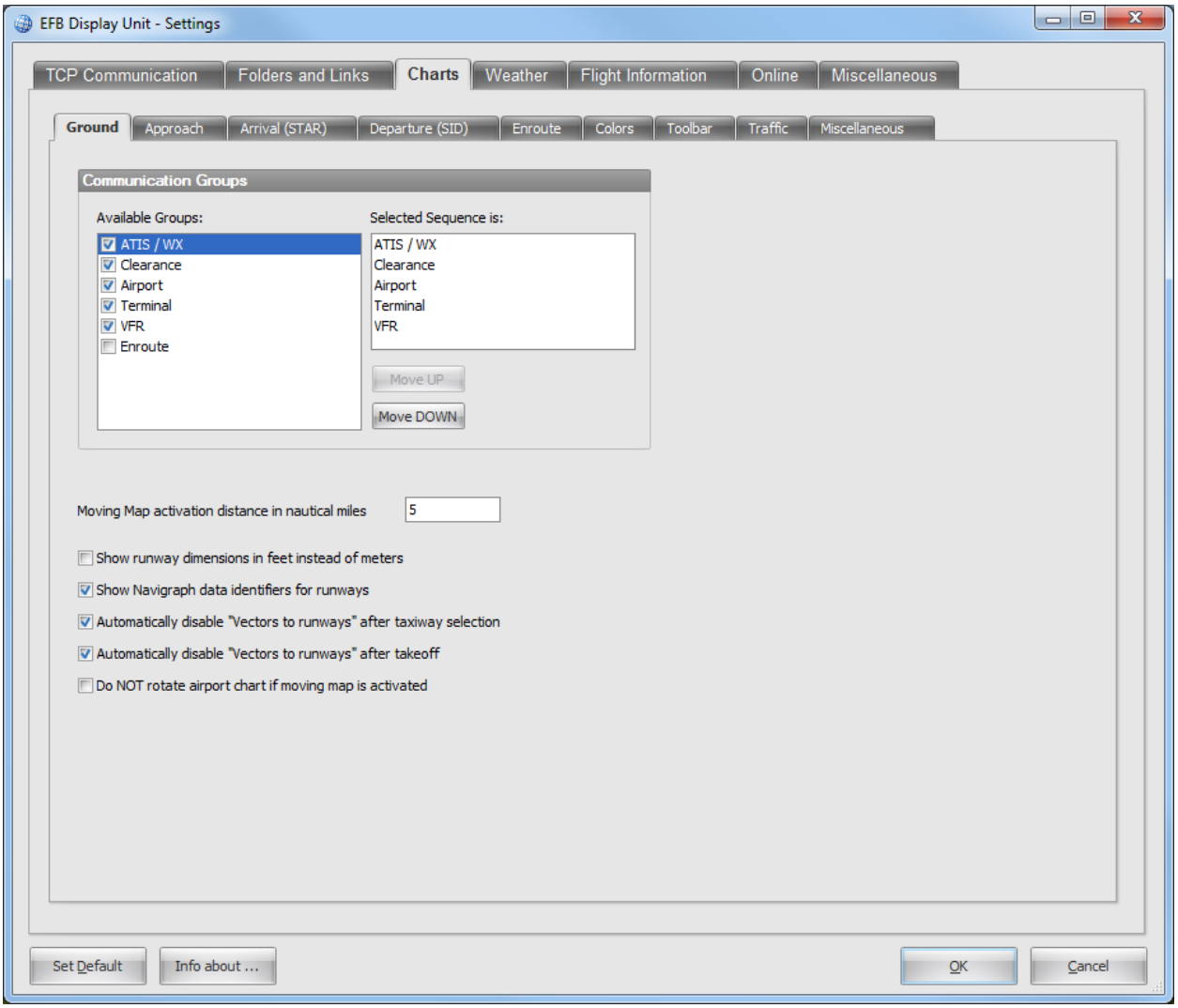
Setting	*Value / Description*
Provider data folder	Select the folder where the DataProvider has saved its files. If you have installed the DisplayUnit on the same machine than the DataProvider is installed (installation type 1) than you should leave this folder as it is. The folder name will be set to the default value when starting up the DisplayUnit for the first time. If you have installed the DisplayUnit on a separate machine **you must first share the 'Provider data folder' on the DataProvider machine**. Please refer to the Microsoft Windows documentation on how to share data folders. After you have successfully shared the DataProvider folder, navigate to this shared folder on the DataProvider's computer and select it.

NOTAMs URL	If you fly for a virtual airline and this airline possibly maintains a NOTAMs webpage, you may enter this website URL herein. If you leave this textbox blank, you won't be able to select the NOTAMs button on the DisplayUnit. You are free to enter any URL or also a local path, as long as there is an HTML page available. For example if you fly using real-time weather, you may wish to add a website that provides current weather information.
Aircraft folder	This is the folder where all the aircraft data is located. The structure of this folder and subfolders cannot be changed.
Library folder	This is the folder where you may save your personal documents. Currently the following file formats will be supported: *.pdf, *.rtf, *.txt, *.htm, *.html
Flight Logs folder	If you successfully performed a flight from A to B, the DisplayUnit will automatically save the flight log in this folder. The flight log is a PDF file which you may send to your fleet commander in order the get some more stripes on your shoulder. ;-)
Routes folder	The DisplayUnit is able to read Flight Plans from several sources. Whenever you use the SAVE-function in the Route Setup, the current route will be saved in an internal data format. These files will have the ".EFBR" file extension, which means "**EFB**-**R**oute."

FSX Flight plans	Select the folder where the FSX flight plans are saved. This folder is usually located in
	`VISTA/W7`
	`C:\Users\`*`[User Name]`*`\`**`Documents`**`\`
	`WinXP`
	`C:\Documents and Settings\`*`[User Name]`*`\`**`My Documents`**`\`
	
	The name of the folder 'Flight Simulator X Files' depends on the language which has been installed on your computer.
	
	In order to provide proper Garmin GPS flight plan loading, the Flight Plan folder settings must be the default FSX flight plan folder. Please see the "EFB Operations Manual" section **Route Setup (5)** for more information.

VATroute	URL to the VATroute website.
RouteFinder	URL to the RouteFinder website.

Charts (Tab 3)



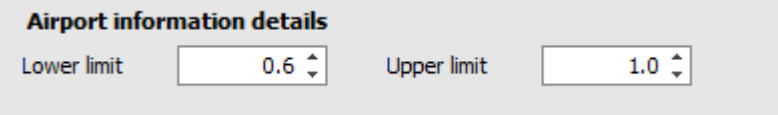
The Charts section is subdivided in the following parts: **Ground** - **Approach** - **Arrival (STAR)** - **Departure (SID)** - **Enroute, Colors, Toolbar, Traffic** and **Miscellaneous**. The first five tabs are more or less identical; they refer to their corresponding chart type. The other tabs hold the settings for the colors, the toolbar, traffic and miscellaneous but chart relevant items.

Setting	***Value / Description***
Communication Groups	In the left pane are all the available communication groups. These groups hold the several FSX specific communication types as follows: ▪ **ATIS / WX**: ATIS, ASOS, AWOS ▪ **Clearance**: Clearance, Clearance Pre-Taxi, Remote Clearance Delivery ▪ **Airport**: Tower, Ground ▪ **Terminal**: Approach, Departure ▪ **VFR**: CTAF, UNICOM, Multicom, FSS ▪ **Enroute**: Center

Setting	*Value / Description*
	At the top of the charts you will find communication information which you may define herein. You won't need the same communication groups on every chart type. (For example you might not need "Clearance" information while looking at your Departure Chart.) Select from the left pane which communication group you want to have available on the corresponding chart type. You may select up to 5 groups per chart. In the right pane you define the sequence of the different communication groups. Just click on a type to select it and press the buttons below to move it up or down. The top communication type will be represented on the top left of the chart with the others appearing in order to its right. The changes made here will be activated after the next restart of the EFB-system.
Moving Map activation distance	This setting is only relevant for the so called "selected charts". These are the charts which you access directly via the Airport Selector and not via the Progress Module. If the moving map is activated and you switch from one chart type to another chart (e.g. Arrival to Departure), this distance determines whether the moving map will remain activated or not. The distance is meant as the distance between the current aircraft position and the airport position. If a route has been activated and you're in one of the charts inside the progress module, then it is determined automatically whether the moving map remains active or not (please see the Operations Manual for details on the automatic determination).
Show runway dimensions in feet instead of meters	Select this option to show the runway dimensions on the Airport Ground Chart in feet instead of meters.
Show Navigraph data identifiers	On some airports the runway identifiers may have changed since the time when FSX has been developed. Navigraph data represents data that's more current, whereas FSX shows the data which has been gathered approx. 5 years before. If you check this option, the DisplayUnit will indicate the current Navigraph identifiers which might differ from the FSX identifiers.
Automatically disable "Vectors to runways" …	With version 1.2.0 there is a new feature called "Vectors to runways" which may be activated by pressing the corresponding button from within the ground chart (blue) menu. With this option you may set whether the functionality shall remain in active status or whether it shall be de-activated automatically after the aircraft has been airborne, or (still on the ground) after a taxiway selection has been made.
Do NOT rotate airport chart	Set whether you want to have the airport chart directed according to the aircraft's heading (rotate ON) or according to true north (rotate OFF) when moving map is activated.

Airport information details

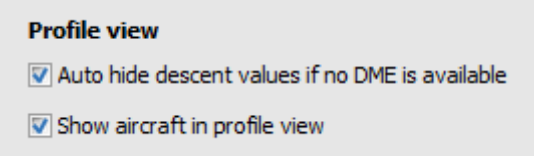
(available on "Approach", "Arrival (STAR)", "Departure (SID)", "Enroute")



On the Approach, Arrival, Departure and Enroute tabs you can define the different zoom levels for the airport information details which are presented on the corresponding chart type. The upper level always must be greater than the lower limit.

Profile View

(available on "Approach" only)

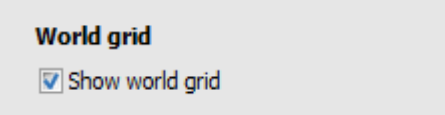


To save space on the chart you might set that the descent values will be hidden automatically if there is no DME source available for a certain approach procedure.

The profile view can show you an aircraft symbol which represents the current altitude and position of your aircraft. You may set whether this symbol should be depicted or not.

World grid

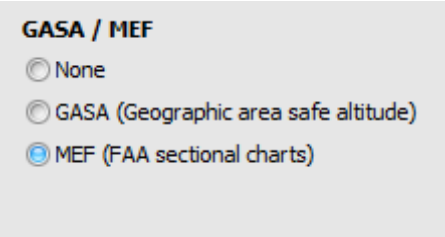
(available on "Approach", "Arrival (STAR)", "Departure (SID", "Enroute")



Select whether you want to have shown a grid (1° Latitude by 1° Longitude) on the charts.

GASA / MEF

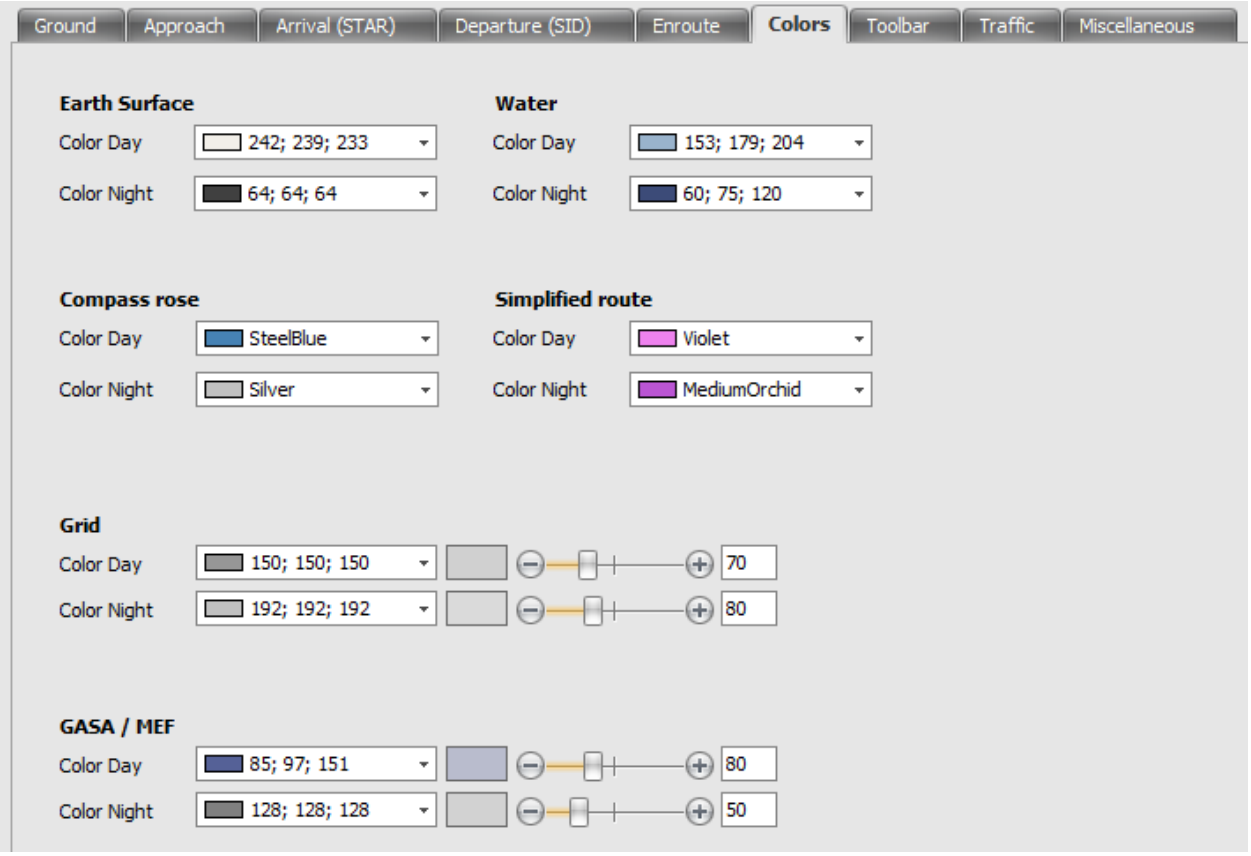
(available on "Approach", "Arrival (STAR)", "Departure (SID", "Enroute")



GASA = Geographic Area Safe Altitude:
- highest elevation within a square of 1° Latitude by 1° Longitude, rounded up to the next hundred, then
- if result <= 6000 ft, then a 1000 ft safety altitude buffer is added
- if result > 6000 ft, then a 2000 ft safety altitude buffer is added
- if result < 2000 ft, then 2000 ft as a minimum altitude is set

MEF = Maximum Elevation Figure, according to FAA sectional charts:
- The highest elevation within a square of 0.5° Latitude by 0.5° Longitude, rounded up to the next hundred => then a 300 feet safety altitude buffer is added.

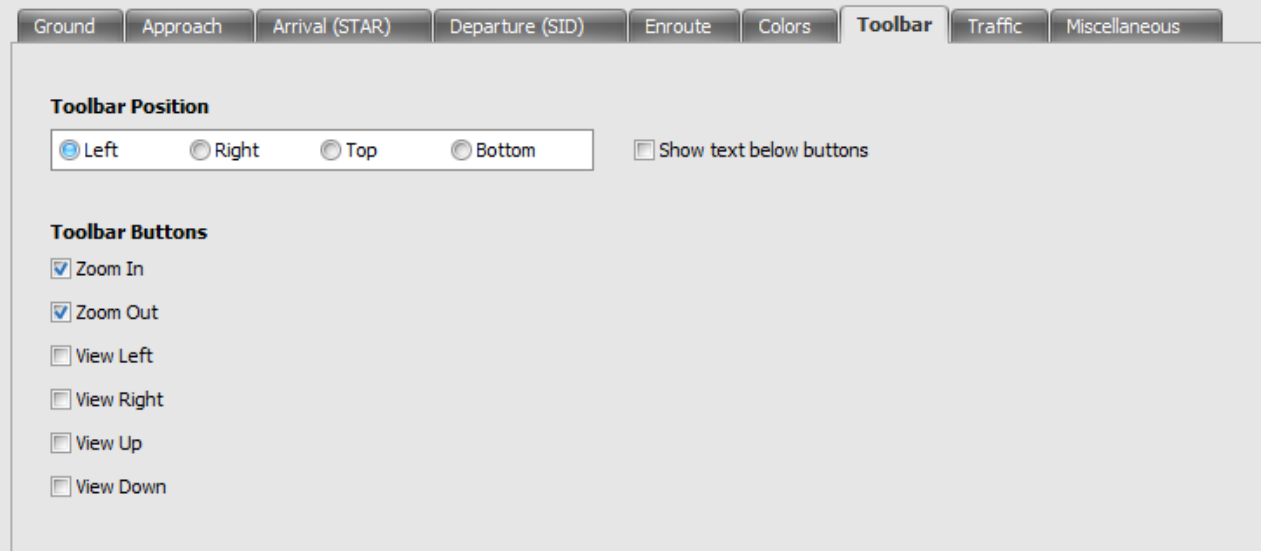
Colors



From this panel day and night colors may be defined by the user for “Earth surface,” “water,” the optional “Compass rose,” and the “Simplified route.”

If the option "World grid" and/or "GASA / MEF" has been selected, the color settings herein take effect when the charts are shown. Using the drop down menu you select the base color, whereas with the slider on the right side you define the opacity of the base color. An opacity value of 0 means that the color is not visible, a value of 255 means that the color is used without transparency. A value in between means that the color has a certain degree of transparency.

Toolbar



Setting	***Value / Description***
Toolbar Position	Set the edge position on screen where the toolbar will be placed. If you check the **"Show text below buttons"** option, the buttons on the toolbar will be shown with text. If not checked, the button will be shown only with the icon.
Toolbar Buttons	Select the buttons which are available on the toolbar.

Traffic

FSX can show other aircraft either generated by AI or "injected" by a multiplayer session or online “pilot client software.“

If you don't fly online (VATSIM or IVAO) then you may select from the option "Show AI / Multiplayer traffic" whether you want to see other aircraft on the charts.

If you fly online – either on the IVAO or VATSIM network – and you want to see other traffic that is injected into FSX by your pilot client software (VATSIM: Squawkbox, FSInn – IVAO: IvAp), then select the option "Show 'online' traffic".

For your convenience you don't have to set these options always before you start your offline or online flight. You may only select them once. But please bear in mind (if you fly online) that as soon as your pilot client software is connected the FSX AI traffic will no longer be shown because the pilot client software is now injecting possible other aircraft.

Some pilot client software provides the aircraft's groundspeed in Km/h. Because EFB shows the speed values in knots (nautical miles / h) it needs to know this information to correctly calculate and show these values.

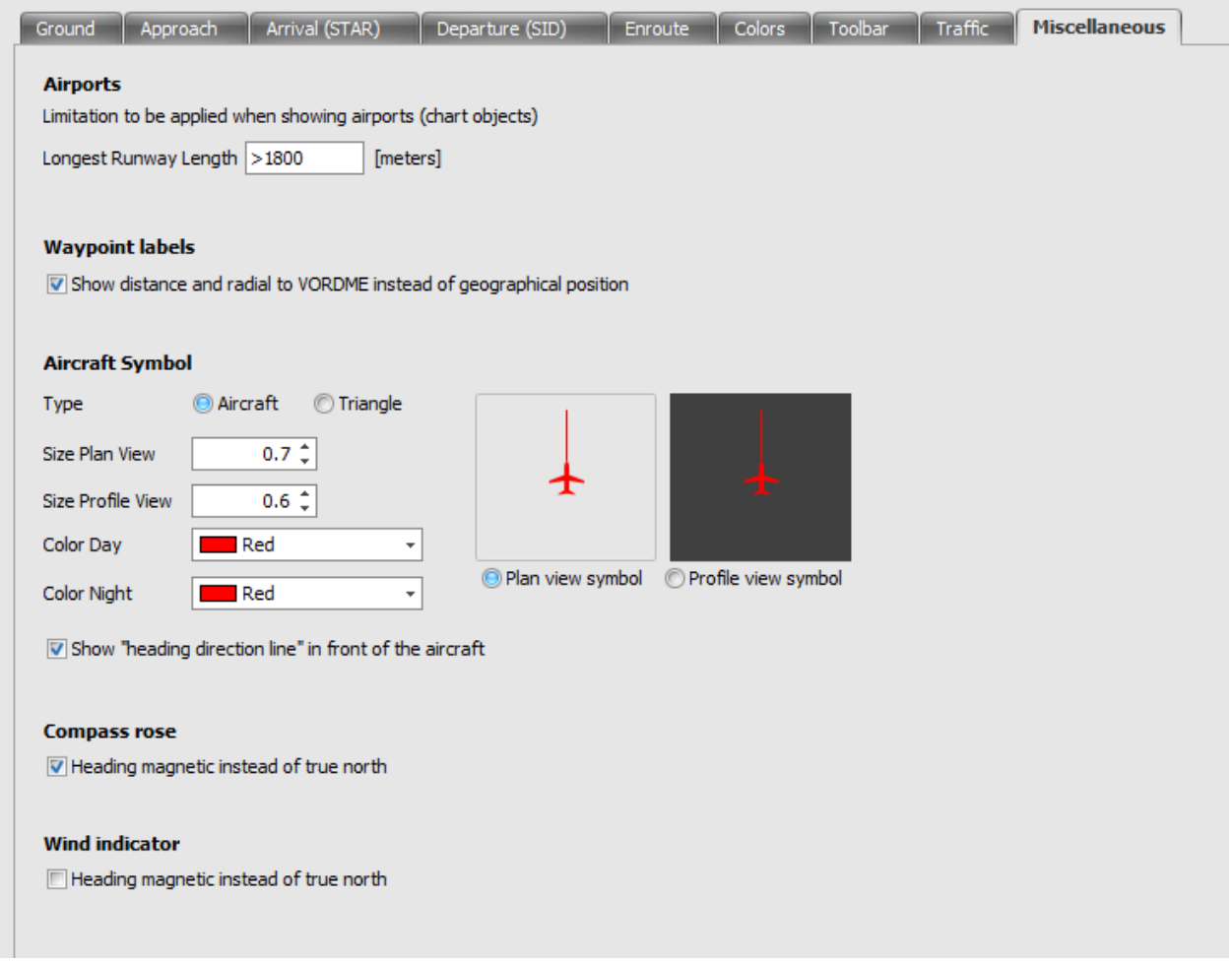
Select a horizontal range and/or a vertical range if you would like to reduce the amount of aircraft to be shown on the charts. “0“ means a maximum of 100 miles horizontally or no vertical limit respectively.

On ground charts you will see by default only the aircraft which are not yet airborne. If you select the option "Show aircraft that are airborne" you will also see the airborne aircraft on the ground chart. If you'd like to define a range enter a value in the textbox.

Select the colors you would like to have applied when EFB shows the other aircraft. You can define different colors for day and night and also different colors for the ground chart und the other charts.

If one of the other aircraft is closer to you than 5 nautical miles and in a vertical range of +/- 500 feet then the "alert" color is used to show the other aircraft.

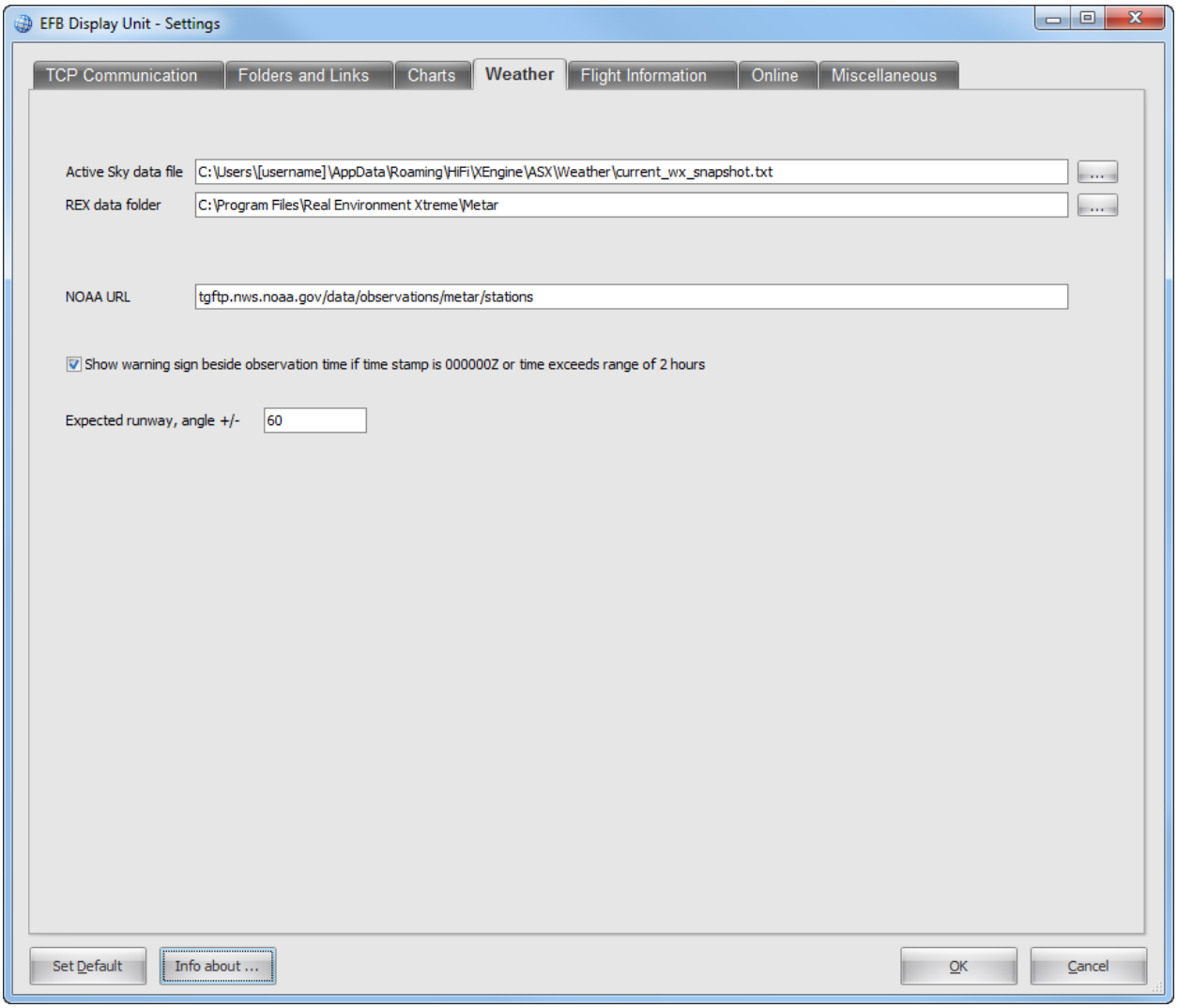
Miscellaneous



Setting	***Value / Description***
Airports	When selecting objects to be drawn in several chart types you might not want to see all airports overcrowding your screen. Probably most of them are not suitable for your current aircraft type. Herein you may define a maximum or minimum limitation on the length of the longest runway at an airport. Example: ▪ **0** (zero) means, there is no limitation => all airports within the chart range will be drawn. ▪ **>1500** means, I only want to see airports where the longest runway is at least 1500 meters. ▪ **<1500** means, I only want to see airports where the longest runway is lower than 1500 meters.
Waypoint labels	Select this option to show the distance and radial to a VOR DME below the waypoint's name instead of the geographical Lat/Long position.

Setting	*Value / Description*
Aircraft Symbol	Select the shape for the aircraft's representation – either an aircraft symbol or a triangle. Below this selection you may set the size of the symbol for the plan view and for the profile view separately. You may also choose different colors for daytime and nighttime mode. On the right side you see two boxes which present the current settings. To see the plan view symbol just press the corresponding radio button below the two squares.
Heading direction line	Set this option if you want to have a line shown at the front of the aircraft representing the current heading.
Compass rose	On each chart type (except airport ground charts) a compass rose can be shown. Here you may select whether the compass rose considers the current magnetic variation or not.
Wind indicator	Here you may select whether the wind heading shall be shown as "magnetic" or as "true north" value.

Weather (Tab 4)

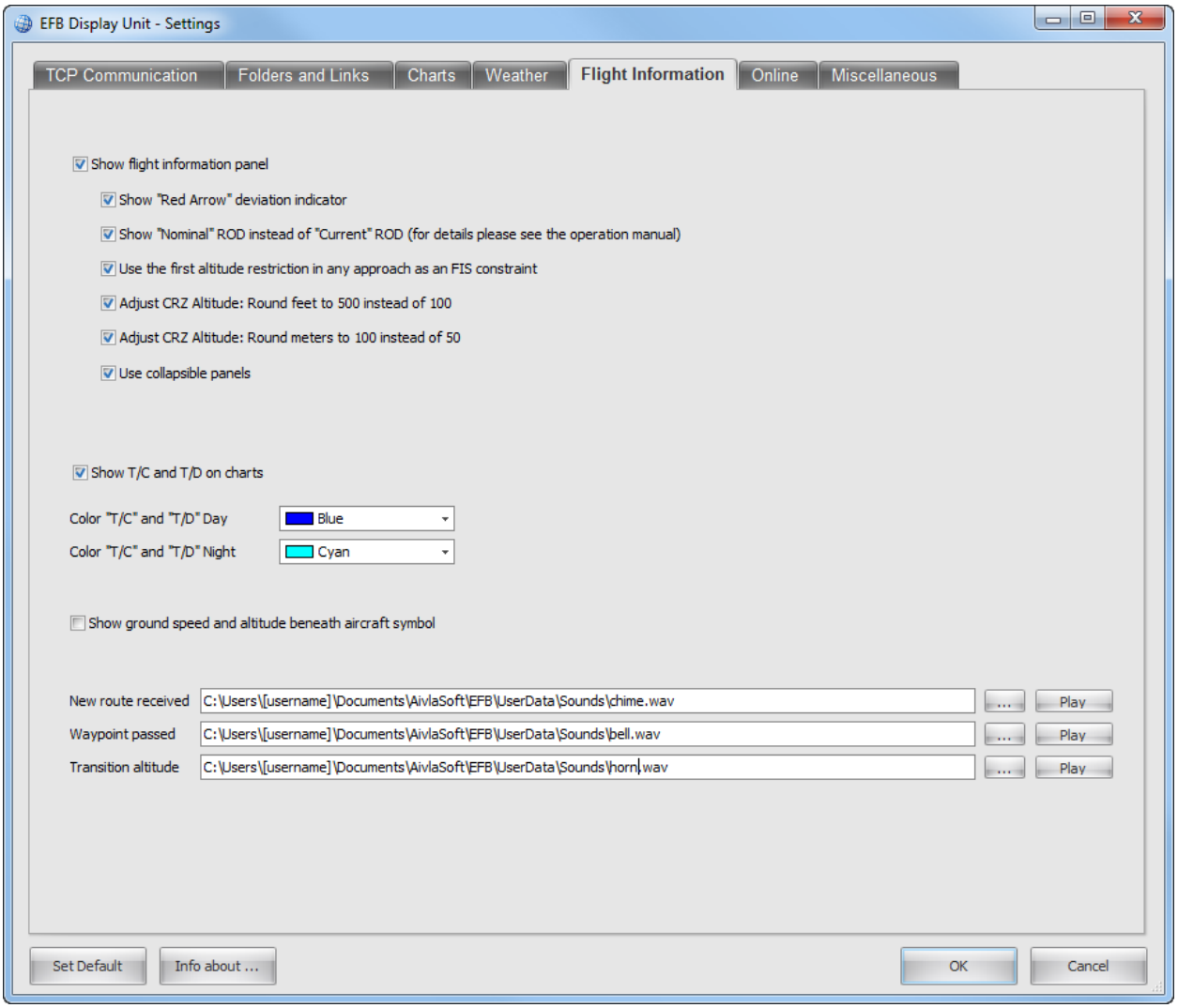


EFB can read METAR data from three types of sources: from FSX when the simulator is running, from the American National Weather Service – part of the government's *National Oceanic and Atmospheric Administration* – and also from certain FSX add-on weather engines.

FSX weather data has the advantage of precisely representing the weather conditions that are currently being simulated in the area of – and in the areas surrounding – the user's aircraft. However under different conditions, FSX only sets weather for a distance around the user, so if you're planning a transcontinental or transoceanic route, FSX may not be able to provide the weather for your destination. And if you're pre-planning a flight and haven't yet launched FSX, then FSX weather will obviously not be available. In those cases EFB would need to get weather data from another source.

Setting	*Value / Description*
Active Sky data file REX data folder	Here are folder / file selection fields for two of the most popular FSX weather add-on engines. If you use one or both of them, you would enter the filepath to the appropriate weather file, or to the METAR folder. Because both weather engines can be run remotely from the FSX computer, it seems logical that the EFB DisplayUnit should connect directly to the weather engine folders rather than using the EFB DataProvider as a buffer. So to allow for this, your Remote DisplayUnit will need to map a network drive to your weather engine PC - **which will require you to first share the folder on the Weather Engine machine**. Please refer to the Microsoft Windows documentation on how to share data folders. After you have successfully shared your weather engine folder(s), navigate to there from your DisplayUnit's Settings dialog and select the folder(s).
NOAA URL	This is a text field with the current URL for the online weather service from NOAA. (Should this URL change, AivlaSoft will post the replacement on www.aivlasoft.com)
Show warning sign beside observation time …	If you are using predefined weather situations from within FSX it might happen that the date and time for the METAR data is not from "today." It could also be that sometime "current" weather data is not as current as might be expected. If you select this option, you will see a yellow warning sign beside the time whenever the weather reporting time is more than 2 hours older than your clock's time.
Expected runway, angle +/-	If weather data is available for a certain airport and you select a procedure (Departure, Arrival or Approach), EFB will propose the expected runways due to the current wind. Herein you can define how long a certain runway shall be considered if the wind is not coming exactly towards the runway. Example: Wind is 045° (north-east), the runway is 36, so your heading will be "north". In this situation the wind has an offset of 45° from the runway direction. If the angle is set to at least 45° or more, then the runway will be considered. If the angle is less than 45° the runway will not be considered.

Flight Information (Tab 5)



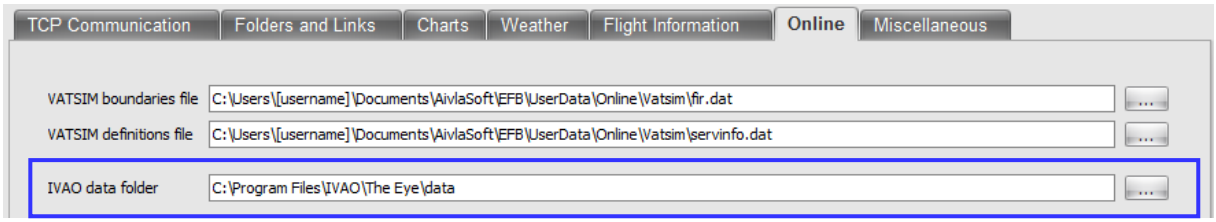
Setting	***Value / Description***
Show flight information panel	At the top of this settings tab, you may select whether you want to have the "Flight Information Panel" shown when flying along a route. If this option is unselected the options below are not available.
Show "Red Arrow" …	The "Flight Information Panel (FIP)" shows a deviation value when you have passed the Top of Descent point and your aircraft is above or below the calculated descent path. To give you a visual aid in which direction (up/down) the correction must be applied EFB can show you a **red arrow**. Whether this arrow is shown or not may be selected here.
Show "Nominal" ROD …	Select whether you want to see the **nominal** or the **current** rate of descent. For a description of these two different values please see the "Operations Manual".
Use the first altitude …	If this is selected, the Flight Information System will use an “at or above” altitude restriction in an approach. For a detailed description of this setting, please see the “Operations Manual.”

Setting	*Value / Description*
Adjust CRZ Altitude	With the two options "Round feet to 500…" or "Round meters to 100…" you may determine how EFB rounds the current aircraft altitude at the moment when pressing the button "Adjust CRZ Alt". For details on this button please see the "Operations Manual".
Use collapsible panels	The FIP is available in two different ways. Select which one you prefer, the one with collapsible panels or the one without. More or less this is only a matter of personal liking.
Show T/C and T/D on charts	The "Top of Climb" and "Top of Descent" markers are only shown on the charts if the corresponding option is selected. Below this checkbox you may select the colors which shall be applied to depict the markers.
Show ground speed …	If you select the option "Show ground speed and altitude …" you will see a label beneath the aircraft symbol which shows the current groundspeed and the current altitude of the aircraft. The label is only visible if moving map mode is ON.
New route received	A route is an item that is unique throughout the EFB-system. It does not matter which DisplayUnit within an EFB-system creates a new route (or activates a route). The route will be sent to the DataProvider and the DataProvider will broadcast this route to all other DisplayUnits. If you have a single computer installation (type 1) than this feature is not relevant to you). Whenever a DisplayUnit gets a new route the sound file will be played. Select a soundfile (*.wav) and test it by pressing the "Play" button.
Waypoint passed	If you fly a route you will be informed by the playing of this sound file whenever a waypoint in the flightlog has been passed. "Passed" means that you must fly over a waypoint or flyby within a range of approx. 2.5 nautical miles.
Transition altitude	As soon as the aircraft has passed the transition altitude from the departure airport the sound file selected herein will be played.

Online (Tab 6)

IVAO

Download the latest version of the program called "IvAe (The Eye)" from this webpage – http://www.ivao.aero/softdev/ivae/download.htm – and install it. After installation the folder (by default, C:\Program Files\IVAO\The Eye\data) must be referenced from within the EFB DisplayUnit settings.



After these settings have been done/changed and the settings dialog has been closed, the DisplayUnit will restart automatically.

VATSIM

Download the latest "ServInfo" data files here:

http://www.aivlasoft.com/download/vatsim.zip

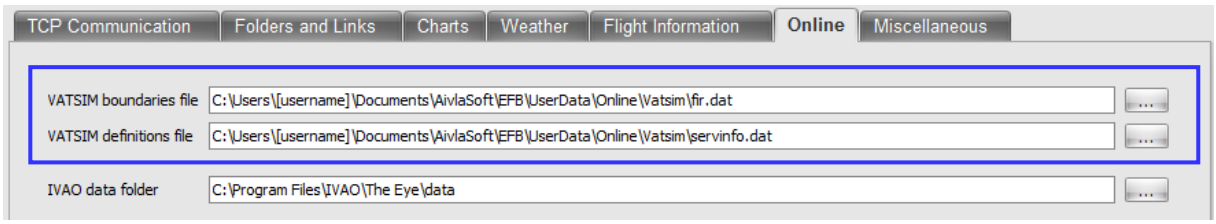
You must scroll down on the page to see the download link. Once downloaded you must uncompress the "rar-file". To uncompress you may use the freeware "7-zip" which can be downloaded here:

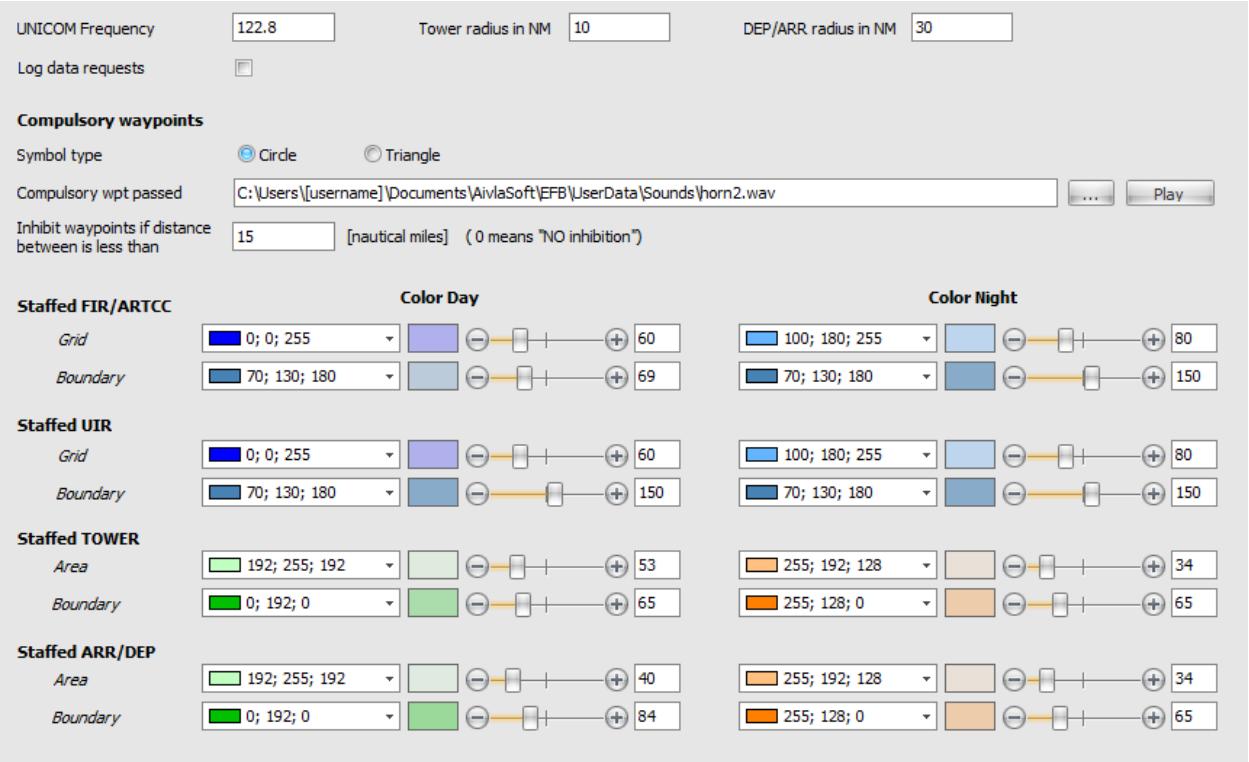
http://www.7-zip.org/download.html

The rar-file contains (among others) the following two files:

- **fir**.dat (boundaries)
- **servinfo**.dat (definitions)

These two files must be referenced from within the EFB DisplayUnit settings.





Normally the UNICOM frequency is defined as 122.8. Should this frequency be changed in the future don't forget to update this value too.

A staffed tower will be indicated on the charts with a circle around the tower position. A staffed approach or departure service is also indicated with a circle around the position of the tower. Herein you may define the radius for these circles.

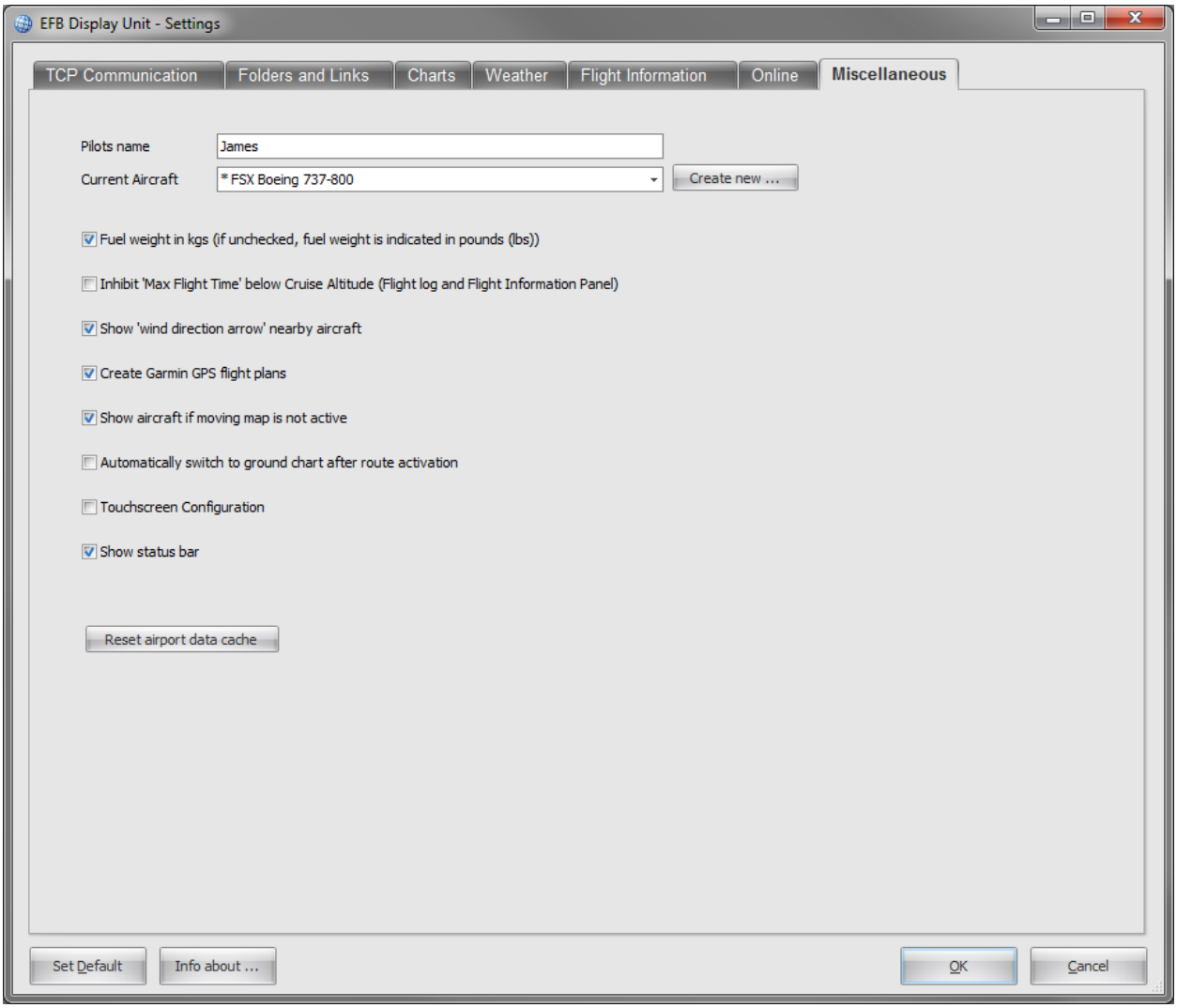
If you encounter some problems when downloading online data you might be asked from the AivlaSoft support to activate the option "Log data requests". Please do not activate this option without the explicit order from AivlaSoft support. Thank you.

Select the symbol for the depiction of the "compulsory waypoints." Whenever the aircraft passes a compulsory waypoint the soundfile that is selected here will be played.

If the route goes along the borderline of two FIRs/ARTCCs it might happen that EFB encounters too many frequency changes between these two ATC services. To avoid such changes you can define a minimum distance between two compulsory waypoints. If the distance is less than the value defined herein, no frequency change is shown.

To define your own color schema you may change the colors for certain items like a staffed FIR/ARTCC or a staffed approach/departure service or any other item. It's your choice ;-).

Miscellaneous (Tab 7)



Setting	***Value / Description***
Pilot's name	Here you may enter your name. This name will appear on every saved flight log.
Current aircraft	Select your preferred aircraft type. This has several effects: ▪ The name of the aircraft is indicated on every saved flight log. ▪ Every checklist (normal and abnormal) is taken from the corresponding aircraft folder. This way you can select which checklists you want to have shown in your DisplayUnit.
Create new…	If you want/have to create a new aircraft folder, press "Create new" and enter the manufacturers name and the aircraft type. Then press **"OK."** To create your own checklists, see "Creating checklists."
Fuel weight in kgs	If checked, the fuel weight in a flight log is shown in kilograms, if unchecked, in pounds.

Setting	*Value / Description*
Inhibit "Max Flight Time"	Inhibits the indication of the "Max Flight Time" on the top of the Flightlog and on the Flight Information Panel too. During climb the fuel flow might be high and therefore the maximum flight time would be relatively short. It's up to you whether you want to see the indication or not.
Show wind direction nearby aircraft	On every chart type the wind indicator on the top left edge can be selected or not. If the indicator itself is selected another wind-arrow will be presented nearby the airplane symbol. With this option you can select whether this additional arrow shall be shown. On the airport ground chart this additional wind-arrow is not available.
Create Garmin GPS flight plans	Select this option if you would like to have the route loaded into the FSX Garmin GPS (This option includes also changes while in flight). IMPORTANT: If you select this option make sure that you also select the option "Create FSX Flight plans" from the DataProvider's settings.
Show aircraft if moving map …	Normally the aircraft symbol is shown when the moving map is activated and if the moving map is not activated the aircraft symbol is not shown. With this option you may select whether the aircraft symbol is also shown if the moving map is not active.
Automatically switch to ground chart …	If you select this option and a you activate or change a route, the Progress Module will automatically switch to the origin airport's ground chart if the following items are fulfilled: ▪ FSX is running ▪ Aircraft is (still) on ground
Touchscreen Configuration	Set this option if you run the DisplayUnit on a touchscreen-capable computer.
Show status bar	Select whether the status bar is visible or not
Reset airport data cache	When getting airport data from a request sent to the DataProvider, the airport data is cached locally. This is for performance reasons so as to not request the same data again and again. The main reason to press this button is if there is a change in the "Runways.txt" file. Please see the "EFB Operations Manual", section **DataProvider (2)** - "The Runways.txt file" for further instructions on how to use it.

Files and Folders

The installation routine and the "first run" create several files and folders on your computer. Herein it's explained what every folder contains. Not all of these files are available on every computer if you have a distributed installation. Some files are dependent on the DataProvider whereas other files are depending on the DisplayUnit.

If your installation is a "single installation" you will find all these files on your computer.

Note:

If the operating system on your computer is installed on another drive than drive 'C' please substitute the letter of that drive for 'C' in the following paths.

Program data

VISTA/W7 C:\Users*[User Name]***AppData\Local**\AivlaSoft\EFB

WinXP C:\Documents and Settings*[User Name]***Local Settings\...**
...Application Data\AivlaSoft\EFB

Filename or Folder	***Description***
AivlaSoft_Efb_V1.dlsc	This is your personal LicenseKey-File. Don't delete, move or change this file! You may backup this file for re-installing on the same computer.
…**\AivlaSoft.Efb.DataProvider**	**IMPORTANT:** If the DisplayUnit is running on a separate computer then **this is the folder that must be shared** for access over the network.
[a - m].efb [n - o].bin FafAndDmeLimits.txt ta.txt	All these files contain FSX relevant data such as indexes, or EFB internal data.
…**\AivlaSoft.Efb.DisplayUnit**	
g1 … 3.bin r1 … 3.bin s1 … 4.bin	These files contain DisplayUnit internal data.
FormSettings.bin	This file contains information about the DisplayUnit's last position on the screen.

User Data

VISTA/W7 C:\Users*[User Name]***Documents**\AivlaSoft\EFB

WinXP C:\Documents and Settings*[User Name]***My Documents**\AivlaSoft\EFB

Filename or Folder	***Description***
UserDatapath.ini	Contains the information about the absolute path where the user data folder can be found. This gives you the opportunity to move the user data folder to another location (only the '…\UserData'-folder! If you do so, the UserDatapath.ini file must remain within the folder: C:\Users*[User Name]*\... ...Documents\AivlaSoft\EFB and it must contain the absolute path to the new location. If you change the location, please close the application before.
…**\Docs**	
*.pdf	Program Documentation.
…**\Logfiles**	
*_log.txt *_log.txt.1 *_log.txt.2	These are the logfiles. Both components (DataProvider and DisplayUnit) create such files. If one file reaches a size of 100 KB another (new) file will be created automatically. The DataProvider creates a maximum of10 files, whereas the DisplayUnit creates a maximum of 5 files. If all files are created and used, the component will overwrite the oldest one.
…**\Settings**	
DataProviderSettings.bin	This file contains the user settings for the DataProvider.
DisplayUnitSettings.bin	This file contains the user settings for the DisplayUnit.
…**\UserData**	
Runways.txt	Contains the additional assignments between (older) FSX runway data and (newer) Navigraph runway data. Please see the EFB Operations Manual - Section 2, DataProvider' for further details on this topic.
…**\Aircrafts**	Every aircraft you might create will get its own folder herein.
…**\FlightLogs**	This is the folder where the flightlogs will be saved as pdf-files.
…**\Library**	This is the folder wherein you may save your personal folders and documents. All these documents are then available in the EFB-library.
…**\Routes**	This is the folder where the routes will be saved.
…**\Sounds**	On a computer with a DisplayUnit only, this folder is empty after installation. You may save your own sound files in this folder.
Beep.wav	Default sound file to be played if the DataProvider recognizes an error situation. This file is only available on computers where the DataProvider has been installed.