



Client

AivlaSoft EFBv2
User Guide

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Please address any comments, questions and proposals to:

Apprimus Informatik GmbH
In der Gass 19
8627 Grüningen
Schweiz

info@aivlasoft.com

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1 Basic concepts

It is very important to know the basic principles of EFBv2, in order to understand the behaviour of EFBv2 in various situations, and why some functions (or their availability) are situation dependent.

Take your time to read this chapter carefully to learn about the concept and principles of EFBv2, as most of it cannot simply be explored by clicking around in the User Interface.

1.1 Map types

Charts in EFBv2 are being calculated in real time and are based on various data sources. EFBv2 differentiates between the two chart types "Ground" and "World". One of these is always displayed. The switch-over between these types is automatic, however you can always also select the desired chart type manually.

Preparation of the charts

Charts are being **calculated** from

1. Simulator Data
2. Navigation Data /the so-called AIRAC Cycles)

and then **processed** for graphic display. EFBv2 **does not use** any pre-processed PDF sheets from any database.

Navigation Data, which are used for those calculations are supplied by either

- **Aerosoft**, product name „**NavDataPro**“, (Data from Lufthansa/LIDO), or
- **Navigraph**, product name „**FMS Data**“ (Data from Jeppesen)

Please don't mistake those databases for Charting Products with complete charts traded under similar names (Aerosoft „NavDataCharts“, or „Navigraph Charts“).

1.2 Aircraft Profiles

In EFBv2 various information and data for various aircraft models can be on display. All necessary adjustments in EFBv2's configuration will be derived from so-called Aircraft Profiles.

Aircraft Profiles contain many individual parameters for a specific aircraft model. EFBv2's characteristics will therefore be different for each aircraft model, whether you fly a Cessna C172 or a Boeing B777.

EFBv2 automatically recognizes the aircraft model being used in the Simulator, whether it is loaded initially or changed during the simulator session. If a profile for the respective aircraft model is present, it will be loaded automatically. In case no such profile is present yet, you will get an information window telling you that EFBv2 is using a Standard Profile (similar to a C172). More than 110 profile of most current aircraft models are supplied with the basic installation of EFBv2.

The Profile Editor allows you to change all parameters to your liking and preferences, or to build a completely new profile. More about that see in chapter "Profile Editor".

X-Plane

At the moment it is unfortunately not possible to automatically detect every aircraft type which is running in X-Plane. In the situation where the aircraft cannot be detected automatically, the user has to manually load the required aircraft profile in EFB.

A request has been sent to Laminar Research, to facilitate the detection of every aircraft type which is running in X-Plane.

1.3 Aircraft Position

Position information is always available in EFBv2, even when it is not connected to the Simulator. "Position" in that context means geographical coordinates (Latitude and Longitude) as well as the additional information whether the aircraft is on ground or airborne. This information is used for accurate chart positioning and for determination of the displayed chart type (detailed Airport Ground Layout or Overview Map for the actual position). The position of the aircraft is defined as follows:

- At first start of EFBv2 (after installation) if no connection to the Simulator was established yet, an EFBv2 hard coded standard position will be in use. This will be a gate position at LSZH Zurich International Airport.
- As soon as EFBv2 is connected to the Simulator, the actual position of the aircraft will be used.
- As soon as EFBv2 is no longer connected to the Simulator (either because the latter is paused or shut down), the last known position will be used, until a new connection to the Simulator is established.

1.4 Active Airport

As long as EFBv2 is running, one airport is always declared the "Active Airport". All functions related to an airport, such as

- Selection of Departure or Arrival Procedures
- Weather Data
- Performance Data
- Selection and Display of Taxiway Data
- General Airport Information

are **always** related to the "Active Airport".

ICAO Code, Name and associated city as well as the country of the "Active Airport" are being displayed on the Client's header. If the airport name and the associated city are identical, only name and country are displayed to avoid unnecessary duplication.

1.5 Procedure Mode

EFBv2 is differentiating between procedure display for "Arrival" and "Departure". Depending on the selected mode, the respective procedures are being displayed.

In "Arrival" mode "Standard Arrival Routes" (STAR) as well as arrival procedures and transitions for the Active Airport are displayed. In "Departure" mode all "Standard Instrument Departures" (SID) and transitions are displayed. You will therefore never see both SID and STAR displayed at the same time.

You can however select both SID and STAR for the Active Airport and then have them displayed alternatively by switching between the modes.

1.6 Flight Phases

EFBv2 features automatic Flight Phase Detection, depending on the aircraft's state "on Ground" or "Airborne", whether a Flight Plan is in use or the Aircraft is in "Free Flight", which means airborne without an active Flight Plan.

Flight Phases are mainly being used for Information Display in the Sidebar.

If a Flight Plan is active, EFBv2 recognizes the following Flight Phases:

- On Ground
- Departure
- Enroute
- Arrival
- Landed

Flight Phase "Arrival" is only available if a Flight Plan is followed.

1.7 Moving Map

Whenever the Moving Map is active, it can still be dragged by the mouse (hold down left button), e.g. in order to look ahead of a Flight Plan route or to retrieve information from the map ahead.

The Moving Map remains active during such operations, the respective button will start flashing, and after a predefined time the map will snap back to its previous position.

1.8 Autozoom

EFBv2 features a so-called Autozoom function. It adjusts the zoom factor of the map display depending on aircraft specific data. Those data are stored in the Aircraft Profile and can of course be adjusted any time by the user.

If the map is in "World" mode, the respective parameters are altitude dependent. The higher the aircraft's flight altitude, the wider the displayed map range.

If the map is in "Ground" mode, Autozoom is dependent on taxi speed. Keeping the taxi speed within a defined range, the map is zoomed in to have a more detailed sight of the taxiway arrangement. As soon as the aircraft is coming to a standstill, the map zoom changes to a total overview range, in order to give a better overview of the whole airport layout. This is becoming more and more important, the larger and more complex an airport and its taxiway system is. Zooming in too much would prevent the necessary oversight to the whole airport layout.

1.9 Master / Sync

If you have a network configuration with more than one Client operating, the first Client being registered with the Server automatically becomes the "Master-Client". Such prioritization of one Client within a network is necessary, as certain tasks and functions cannot be executed simultaneously by numerous Clients.

A good example for this is the Weather Source: it wouldn't make sense to have different weather sources active for different Clients. Thus only the Master-Client can determine which weather source is used by all Clients, or in other words, which weather is displayed on each Client.

The "Master" can be identified by a blue display of the word "Master" in the Status Line. On all other Clients the respective space in the Status Line is empty.

1.10 Data Synchronisation

In contrast to Version 1 of EFB for a network installation there is no need any more to unlock certain data paths. Data synchronization between Server and Client is automatically done at the Client's start up, no matter how many Clients are connected to the network.

2 Restrictions

2.1 Real World vs. Simulator

We should be aware all the time that we are running our hobby in a simulated world and that this simulated world (our Simulator) shows a few remarkable differences to the Real World.

The biggest differences show up in the navigation data (so-called AIRAC Cycles), which are also used in Real World Aviation, and which must be matched in one way or another to the Simulator data. Navigation data used for Simulator Airports are often out of date by a considerable number of years and are thus differing significantly from the actual state of Real World Data. This is especially true for the the following:

- Runway Designators
- Position of Runways
- nonexistent Runways (new or decommissioned)
- LOC inbound courses
- Magnetic Variation
- Elevation data for Runways
- New or decommissioned nav aids like VOR, DME, NDB, including frequency changes

Problems

For the abovementioned reasons procedure depictions can show remarkable differences in departure and arrival paths, which are impossible to correct by EFBv2's means. In a few rare cases a depiction of a specific procedure may even become impossible.

The "Localizer Feather" may show a different track compared to its Real World counterpart. Furthermore new Navigation Aids may be used as references for procedures. Those Navigation Aids did however not exist at the time of compiling the BGL Files for your Simulator.

The depiction of Procedures may show remarkable differences caused by changes in Magnetic Variation. The Earth's Magnetic Field is undergoing constant changes, depending on the region the magnitude of those changes can be quite large. Read more about Magnetic Variation at Wikipedia https://en.wikipedia.org/wiki/Magnetic_declination

Today's Navigation Data (AIRAC Cycles) contain magnetic track information, always based on Real World's Magnetic Field. In the Simulator the Magnetic Field is approximated by a specific BGL, which can deviate largely from Real World's data. Thus also in this large field of data compilation quite some differences may be possible between Real World and Simulator.

It is not possible for neither EFBv2 (or other Add-Ons) to automatically correct for these problems. We have to simply face the fact that these differences are existing. But alas, there is hope...

Potential Solutions

Many of the above mentioned problems can however be either solved or corrected to an amount where satisfying results can be achieved.

One approach to a solution is "upgrading" the Simulator by new Add-On Scenery, mainly Airports, which in turn are modelled much closer to the Real World and thus allow matching of (Add-On) Simulator data with AIRAC Cycles to a much greater extent.

There is another real good means to update the Simulator's database, including the Magnetic Variation. This is a solution presented by Hervé Sors, a French pilot and Simulator enthusiast. From his website annual updates to the Magnetic Variation file are available, as well as regular Updates to the Simulator's Navigation data, based on Real World AIRAC Cycles. All this is available for free (Donationware).

- Data for magnetic Variation: <http://www.aero.sors.fr/navaids.html>
- Monthly updates for Navaids: <http://www.aero.sors.fr/navaids3.html>

Another helpful tool to improve airport data is existing as the well known program "Airport Design Editor". This program is available in two versions, a freeware version and a somewhat extended payware version. More about that on the Developer's website: <http://www.scruffyduck.org>

2.2 Microsoft Flight Simulator 2020 / MSFS

There are a few functions that are not or not yet available for MSFS. The main reason being is the still rather incomplete SDK which still consists of too many empty items to allow to fully benefit from all possibilities in MSFS. The following functions are not (yet) available or may work a bit differently to what is described in the current manuals:

- COM-Frequency tuning is not available yet
- Ground layouts are available in the EFB Database for each airport. However we cannot display tarmac layouts (Aprons)
- Detecting of addon-airports is not always possible, therefore the 'circle around the asterisk' on the world map is not 100% reliable.
- Airports purchased via Marketplace Online Store often feature user-specific encrypted files instead of the usually 'open' BGLs. Encrypted files make it impossible to read the required ground layout information and therefore EFB cannot depict the ground chart of such an Add-On airport. If the data files are encrypted, only the default Ground Chart will be available.
- AI Traffic is visible, but the definitions are not yet clear. We display what FSUIPC7 is supplying but there is no specific information available in the SDK.
- Weather cannot be read from the Simulator. To bypass this please select "Real Weather" as the weather provider. This can be done in the Client settings (tab 'Global').
- Flight plan handling is similar to the well known default GPS Flight Plans in FSX/P3D. A flight plan can still be created externally by PFPX, SimBrief or similar. A flight plan can also be created using the EFBv2 functionality. Once an EFBv2 flight plan has been created **DO NOT LOAD THIS FLIGHT PLAN FROM THE MSFS START SCREEN!** The Flight Plan is created within EFB2 and then automatically transferred to the default GPS of the MSFS aircraft. Editing of the Flight Plan and adding SIDs, STARs and APPROACHES is possible in the usual way. it must however be noted that the Flight Plan Display in the default NAV Displays of the MSFS aircraft is rather incomplete. At present no custom waypoints are displayed, as well as no procedures. However the ROUTING AS DISPLAYED IN THE EFB2 CLIENT WILL PROPERLY BE FOLLOWED IN GPS/NAV MODE.

2.3 X-Plane

A few main features of EFB V2.1 are limited when using X-Plane. Please read carefully the limitations described hereafter.

Compatibility

EFB V2.1 is only compatible with Laminar's X-Plane 11.30+. Backwards compatibility is neither possible nor available.

Ground Layout and Taxi

Due to entirely different specifications for airport ground layouts, the ground chart of an X-Plane Airport in EFB will look different in many aspects as you might be used from MS-based Simulators.

Depiction of Taxiways in EFB is dependent on "Taxi Routes" which must be defined in the apt.dat file. Also the "Taxi-Out" and "Taxi-In" functions of EFB are only available if "Taxi Routes" are defined in the apt.dat file on the chosen airport. Especially older Add-Ons sometimes are missing "Taxi Routes".

Weather

Internal weather data directly from the simulator (Client settings: "Weather provider = Simulator") is not available, again due to entirely different specifications.

Traffic

Traffic data is limited to 19 aircraft. Traffic data is also not as detailed as in FSX/P3D. Only latitude, longitude and altitude is available through DataRefs. Groundspeed, track and vertical speed have to be calculated by EFB, derived from available X-Plane DataRefs.

Profile loading

Currently X-Plane does not offer a DataRef which would allow to figure out which aircraft is loaded. To identify the currently loaded aircraft, EFB is therefore using the ICAO code stored in the aircraft's ACF-File. This ICAO code can be specified in the "Airfile" textbox of the corresponding EFB profile (using Profile Editor). Unfortunately not every ACF file provides the information about the ICAO code. If you run the program „PlaneMaker“ you can verify the ICAO code on the 4th line under the menu „Standard“, „Author“. If there is no ICAO code for a certain aircraft, you have to manually load the corresponding aircraft profile in EFB.

Flight plan loading

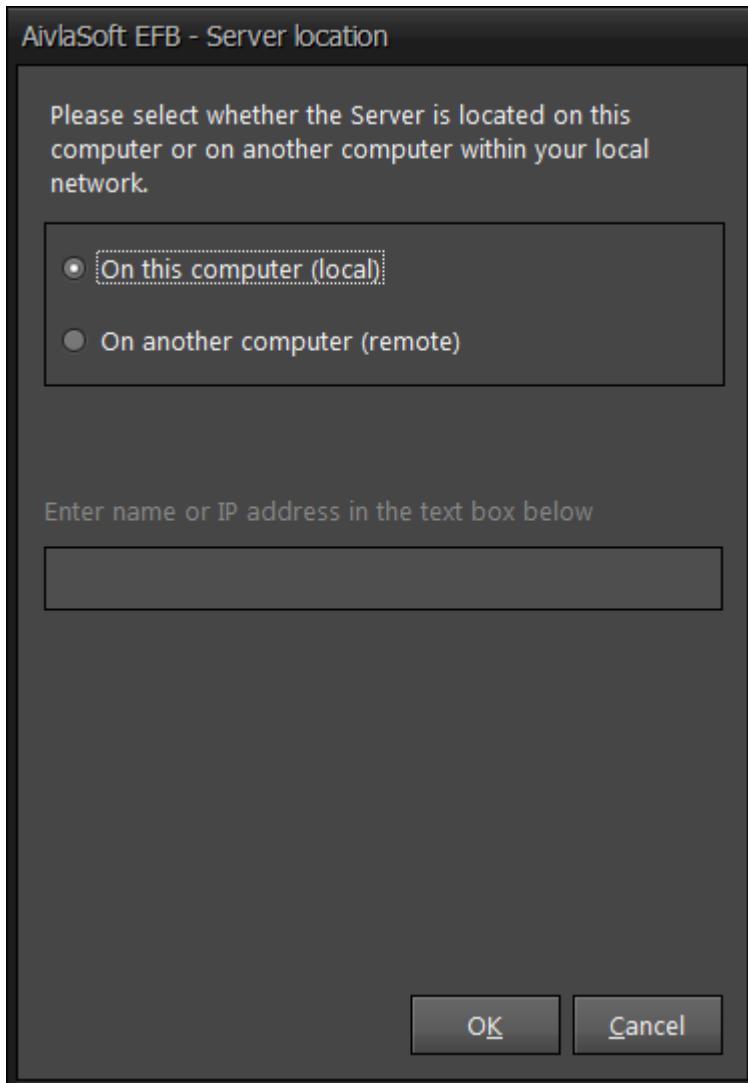
Currently it is not possible to automatically load a GPS flight plan into the X-Plane's GPS/GNS system. However, the GPS flight plan will be created according to the latest specs and it will also be saved into the proper directory where it is expected by X-Plane, named „EFB_current_gps.fms“. Loading must be done manually using the standard functions of the default GPS/GNS device in X-Plane.

Flight plan alterations

For the same reason as described above, altered Flight Plans cannot be transferred automatically into the default X-Plane GPS/GNS system. Nevertheless an altered Flight Plan can be re-loaded from the same directory using the same default name „EFB_current_gps.fms“ as described above. Activation of the new Flight Plan must follow standard X-Plane handling procedures.

3 First Start

At first start the Client is unaware of the Server's Installation and therefore asks for its location. As a consequence this dialogue window is opened:



AivlaSoft EFB - Server location

Please select whether the Server is located on this computer or on another computer within your local network.

☒ On this computer (local)

☐ On another computer (remote)

Enter name or IP address in the text box below

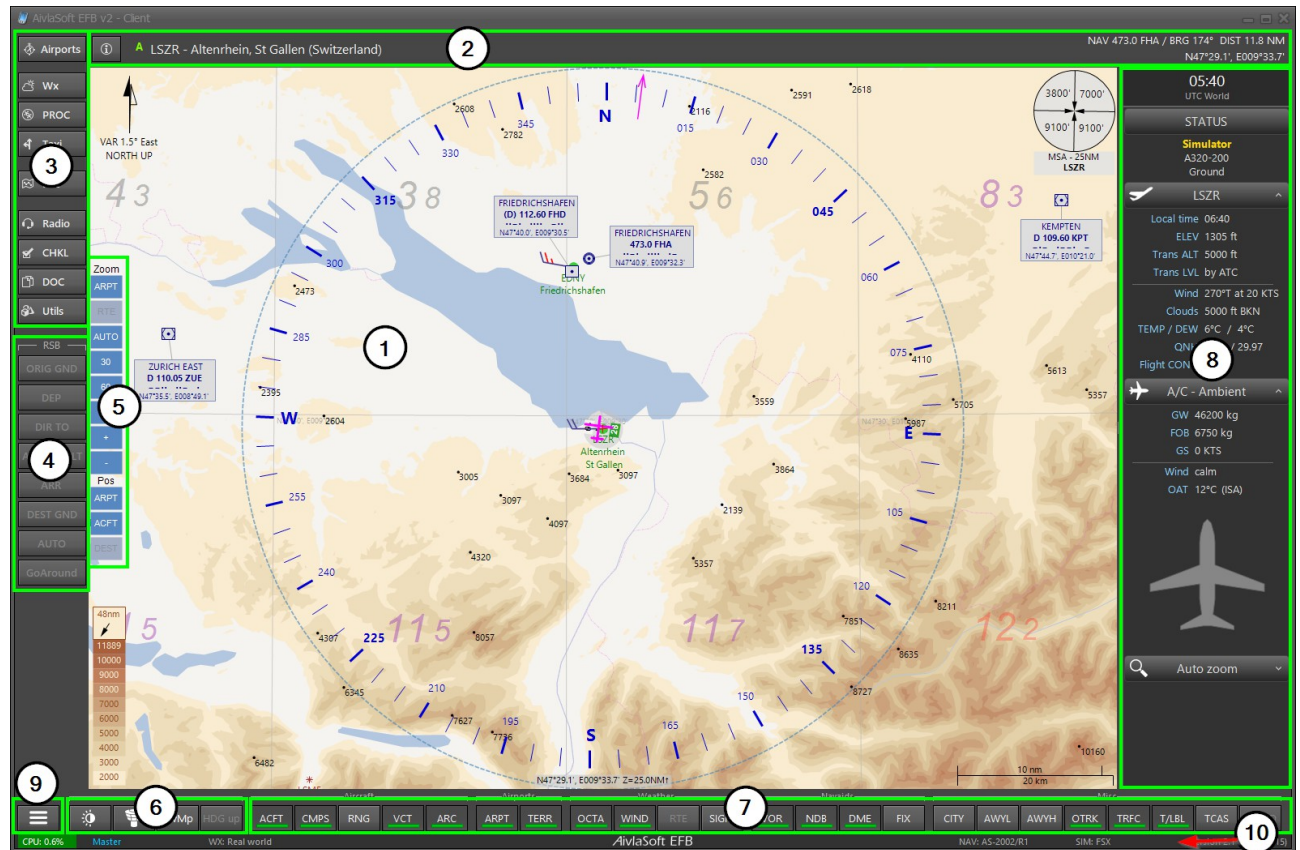
OK Cancel

Select one of the options "on this computer" or "on another computer (remote)".

When selecting the "On another computer (remote)" option, the input field below opens and you can enter either the name of the "Server Computer" or its IP-address.




Thereafter press the "Ok" button.

4 User Interface



1. Chart Window - shows either "Ground" or "World" map, changeover either manually by Chart Function Key (5) or automatic
2. Header - shows the Active Airport
3. EFBv2 Main Functions according to captions on the buttons
4. RSB - Routing Shortcut Bar. A collection of quick-access keys for the routing actually flown
5. Chart Functions – Zoom and Position
6. Chart Functions - Day/Night, Ground/Flight, Moving Map
7. Chart Options - those can be ACTIVE or INACTIVE. Their state is saved for each Map Window individually
8. Sidebar - various panels (most of them collapsible) for Status and many additional information
9. System Menu - Shut down, Settings, Colour Management, Profile Management
10. Status Bar - Additional information about EFBv2 Client Version, Database Version

5 Main Functions

 Airports	Airports:	Manual airport selection
 Wx	Wx:	Display of weather data for the Active Airport
 PROC	PROC:	Selection of Departure and Arrival routes and display of performance data
 Taxi	Taxi:	Dialogue for Help Function "Taxi-In" and "Taxi-Out"
 FPL	FPL:	Creating and editing of Flight Plans
 Radio	Radio:	Frequency Selection for Communication and Navigation
 CHKL	CHKL:	Checklists
 DOC	DOC:	Document Library
 Utils	Utils:	Various Help Functions



Shows information about the Active Airport

To open one of the Main Functions, just click the corresponding button. One more click will close the window again.

5.1 Selecting an Airport

Basically there are two possibilities to select an Airport - either automatically based on the Aircraft's position, or manually by the User.

5.1.1 Automatic selection

At Client start up automatic selection is always active. In automatic mode, the closest airport matching the conditions laid down in the Aircraft's Profile will be selected. A green letter "A" in front of the ICAO code confirms Automatic Mode:

As long as there is no connection to the Simulator (Simulator is not started yet or paused), the last

A LSZH - Zurich - Kloten (Switzerland)

aircraft position is used to determine the Active Airport. As soon as the Simulator is up and running, the actual position of the aircraft is used.

As soon as the aircraft is airborne, every 30 sec a check for the closest airport will be done. In dense airport areas such as New York or others, the check will be sped up to a 15 sec rhythm.

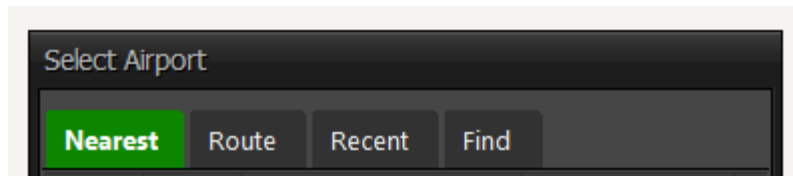
Exceptions / Restrictions / Limitations

It is of course not desirable that very quickly after take-off the automatic airport selection changes the Active Airport to a possibly closer airport. More likely you might want to keep the Departure Airport as the Active Airport on display for a certain time. For this purpose the Aircraft Profile offers the possibility to define for each aircraft a fixed time for Automatic Airport Selection Suppression after lift-off. You will find the value in the Profile Editor, tab "Timers", flight phase "Departure" of the respective aircraft.

If a Flight Plan is active with a selected Departure Procedure, Automatic Airport Selection can be inhibited as long as the aircraft is following the Departure Routing. This option can be found in the Client's Settings dialogue, tab "Miscellaneous" -> "Stick with departure airport..."

5.1.2 Manual selection

By clicking the button "Airports" the dialogue window for manual airport selection opens. Four different selection methods are offered by respective tabs:



1. **Nearest:** Select from a list of closest airports
2. **Route:** Select from a list of all airports contained in the present Flight Plan
3. **Recent:** Select from a list of recently selected airports
4. **Find:** Text search by ICAO code or airport name

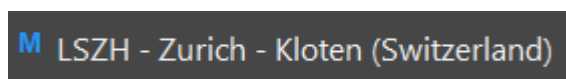
Important

The list for nearest airports always refers to the actual aircraft position and not to the Active Airport.

List of airports

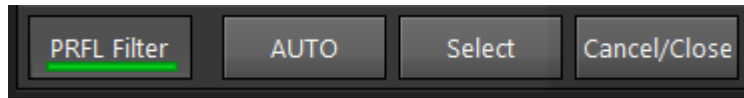
All four registers show an identical layout for the airport listing. The first column shows a weather symbol if METAR data are available for this airport. Otherwise the column remains empty. The second column shows the ICAO code, the third column Name. Bearing and Distance information from the aircraft to the airport is additionally shown on the Nearest tab. The fourth column shows information about instrument procedures available on this airport (APPR = approaches, DEP = Departures)

The "Select" button can be used to select the highlighted airport from the list as the Active Airport. The mode changes to a blue "M".



It is also possible to select an airport from the list by double clicking it.

5.1.3 Function Keys



The Airport Selection Dialogue window also includes Function Keys for:

PRFL Filter

The Profile Filter Key is ACTIVE by default. Therefore only airports are listed which match the selection criteria laid down in the aircraft profile (mainly runway length criteria). The airports shown on the map in "World" view also follow these criteria. Switching the Profile Filter OFF shows all airports and triggers a warning "Airport Filter OFF" on the Sidebar.

AUTO

This key (re-)activates the automatic (nearest) airport display mode. This may become necessary if you have selected a specific airport in manual mode and want to go back to automatic mode

The "AUTO" key is greyed out if automatic mode is already active.

Select

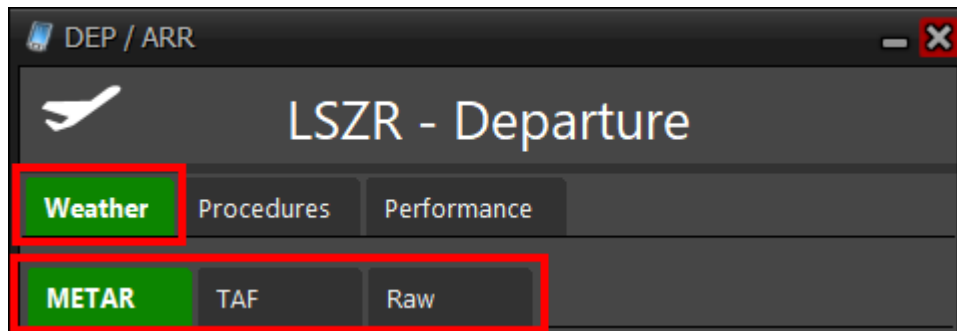
The "Select" key activates the highlighted airport selection and closes the dialogue window.

Cancel/Close

Closes the dialogue window without applying any changes.

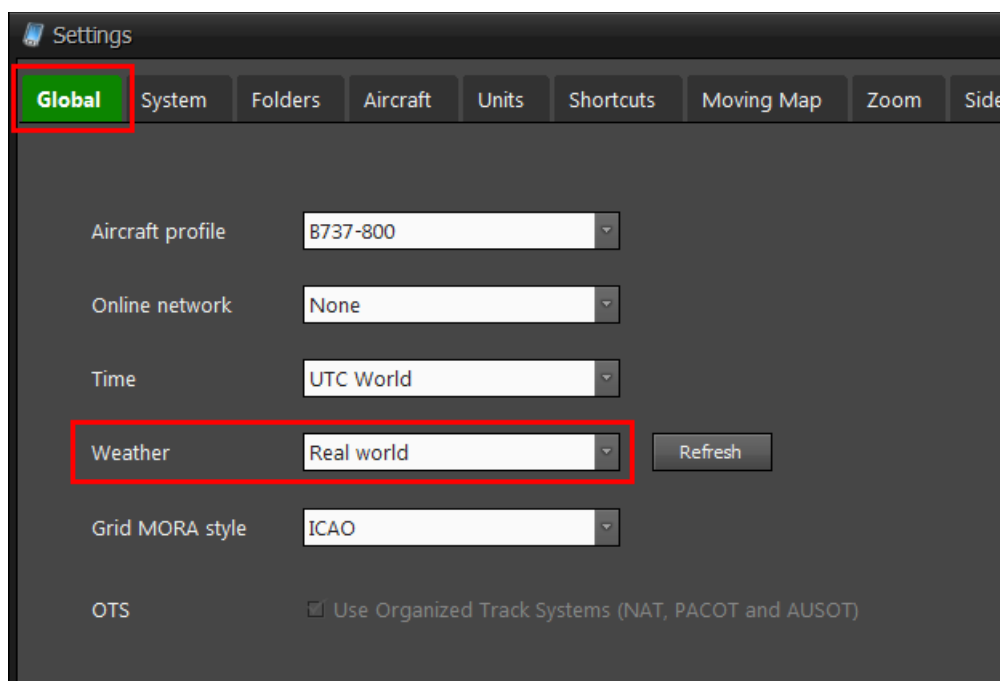
5.2 Weather

Using the main function button **"Wx"** opens the dialogue window for DEP/ARR, and within that window directly the "Weather" register tab. This tab is divided into two more registers, METAR and TAF.



The main requirement for weather depiction is the availability of METAR and/or TAF information. Not all airports are covered with basic weather data, especially not the smaller ones. Apart from that, availability is also dependent of the "weather supplier" of your choice.

The following "weather supplier" types can be selected in the Client's "Settings" dialogue (MASTER only):



Real world

Selecting "Real world" provides worldwide weather data from the United States Weather Service NOAA.

Simulator

Selecting "Simulator" provides Weather Data supplied from the Simulator. Depending on the respective Simulator Settings this usually restricts the available Weather Data to a limited number of airports around the actual aircraft position. More information about that is available in the respective Simulator's User Guide.

X-Plane

X-Plane unfortunately does not provide sufficient data which is required for this function. Therefore „Simulator“ is not available as weather source.

File-based Weather Data

This is the category of Weather Providers who save Weather Data in one or more files on the Simulator's Computer. This concerns products like (to name only the most well known): ActiveSky, FS Global Real Weather, REX, Opus and a few others.

5.2.1 Updating weather data

If weather source = 'Real World' or any other data based weather provider (e.g. ActiveSky, FSGRW etc.) is selected, weather data for all airports worldwide are automatically updated in regular intervals ("Real World" every 15 min, file-based after every change of the files).

These update cycles do not correspond to the update cycles of the real world. It is neither defined nor predictable when these external data sources will be updated. Therefore internal weather data are refreshed using the above mentioned cycles or triggers.

If the weather source is set to "Simulator" it is not possible to retrieve worldwide, as the available interface only allows retrieval of weather data of a specific airport. Furthermore this is only possible if the Simulator is up and running. Therefore with the weather source set to "Simulator" EFBv2 assumes that the Simulator is running and the data connection between EFBv2 and the Simulator is active. In case the Simulator is not running or paused, all weather requests are ignored and no actual weather will be retrieved from the Simulator.

Weather requests for the Active Airport are issued under following conditions:

- at each change of the Active Airport, no matter whether the change was initiated in "Auto", "Destination" or "Manual" mode
- according to the above mentioned cycles and triggers
- after each Simulator "pause" (only if Weather Provider is „Simulator“)
- generally at each change of the Weather Provider

5.2.2 METAR

METAR data (**M**eteorological **A**erodrome **R**eport) are observed weather data at a specific airport.

METAR

TAF

Raw

Observation time:

08:30z

Wind:

290°T at 9 KTS

Surface visibility:

> 10 km

Clouds:

3600 ft FEW
20000 ft SCT

TEMP / DEW:

6°C / 2°C (RH = 75.5%)

QNH:

1028 hPa (30.36 inHg)

Flight COND:

VMC

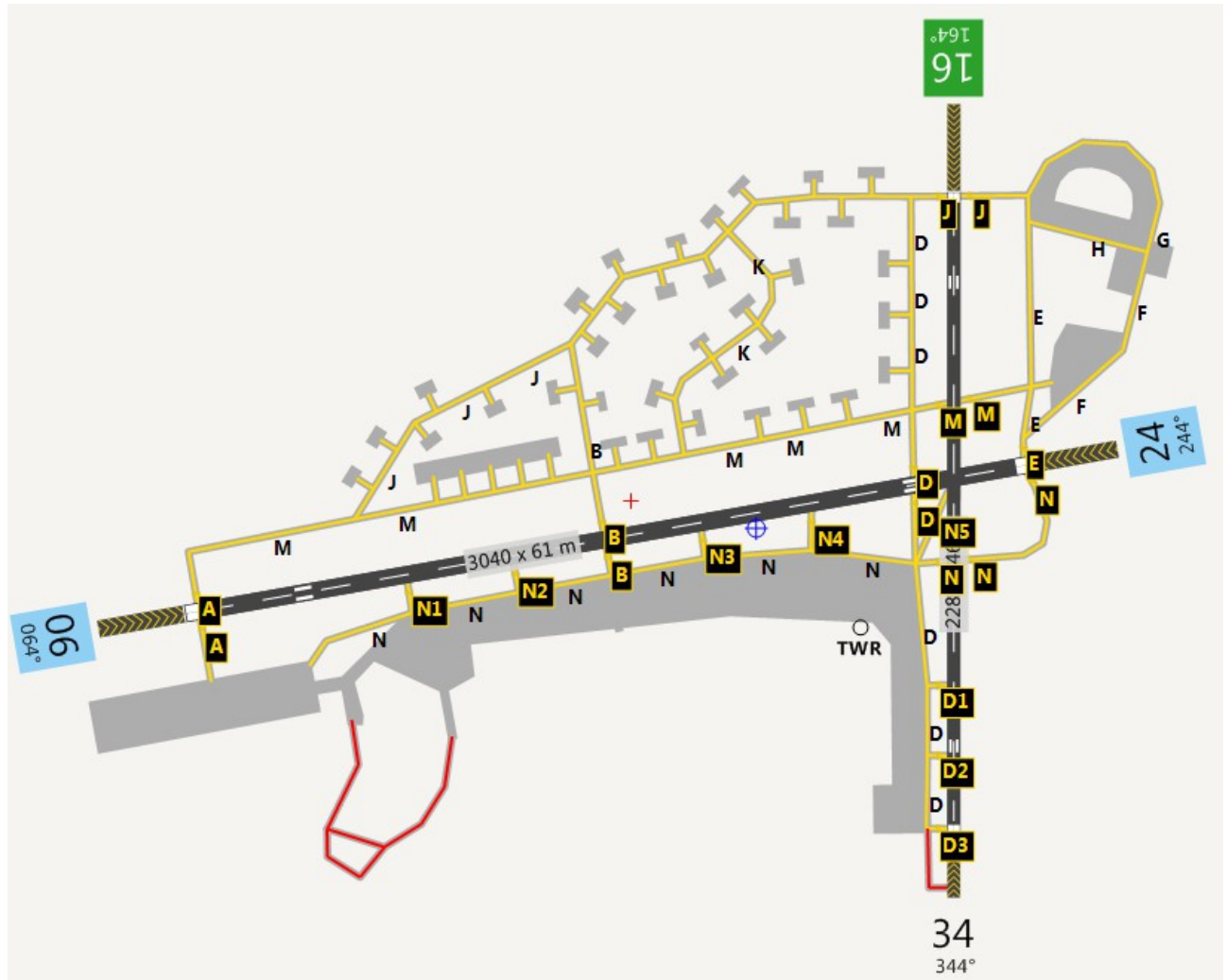
Ident	Length	LS	X-Wind	T/H-Wind	Remarks
06	3193m	ILS	8 KTS L	5 KTS T	Takeoff / Landing
24	3193m	ILS	8 KTS R	5 KTS H	Takeoff / Landing
13	1717m		2 KTS R	9 KTS T	Verify
31	1717m		2 KTS L	9 KTS H	Takeoff / Landing

On the "METAR" tab all observed weather data are shown and in addition to that the wind conditions for each runway.

The "Remarks" column shows recommendations based on the actual aircraft's limitations stored in the profile. X-Wind = Crosswind, T/H-Wind = Tail / Headwind

Runways which are outside of the actual wind limits are greyed out.

These recommendations are also shown on the map type "Ground", with a specific colour coding for the take-off and landing runway designators.



16: This Take-off/landing runway shows optimum conditions

06 and 24: Wind conditions on these runway directions are within the limits stored in the aircraft's profile

34 (white, no background colour): This runway is outside limits for this specific aircraft

The observed wind direction is shown with an arrow in combination with the wind speed on the compass card. Depiction of the arrow is different, depending on whether the simulator is running or not.



Simulator is running, wind data is dynamic



Simulator is not running, wind data is static

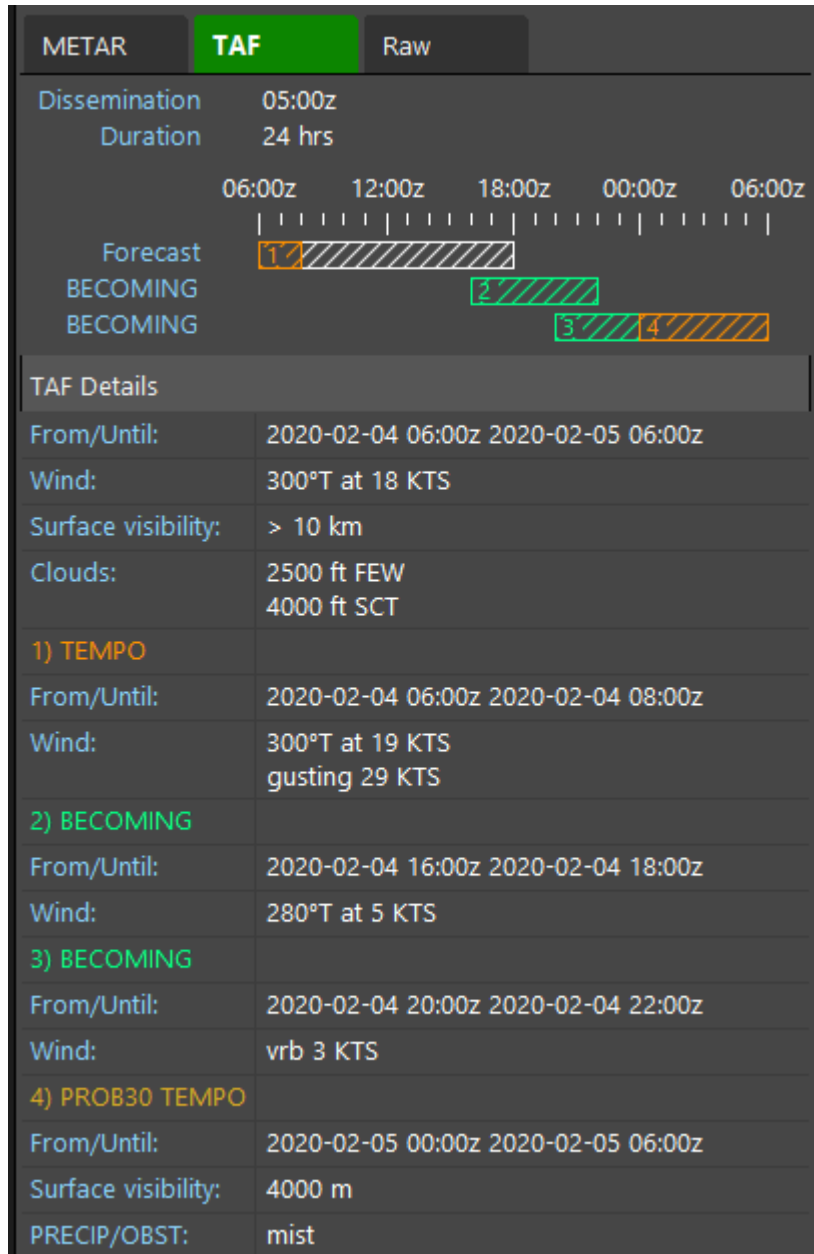
Important

The compass card is connected to the position of the symbol of the aircraft in use. Therefore the compass card can only be shown on the actual aircraft position. This is valid inflight and on ground.

Additional information about METAR and related subjects can easily be found on the Internet (search key "METAR").

5.2.3 TAF

TAF data (**T**erminal **A**rea **F**orecast)



The upper part of the window is a graphic depiction of the weather development on a time scale. Below every change is listed in more detailed, written form.

Additional information about TAF and related subjects can easily be found on the Internet (search key "TAF").

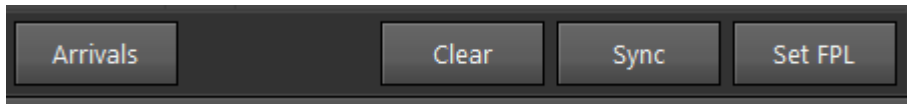
5.2.4 Raw

The third tab provides weather data as raw data.

METAR	TAF	Raw
METAR EINN 040830Z 29009KT 9999 FEW036 SCT200 06/02 Q1028 NOSIG		
TAF EINN 040500Z 0406/0506 30018KT 9999 FEW025 SCT040 TEMPO 0406/0408 30019G29KT BECMG 0416/0418 28005KT BECMG 0420/0422 VRB03KT PROB30 TEMPO 0500/0506 4000 BR		

5.3 Procedures

Using the main functions button "**PROC**" opens the dialogue window for DEP/ARR, and within that window directly the "Procedures" register tab.

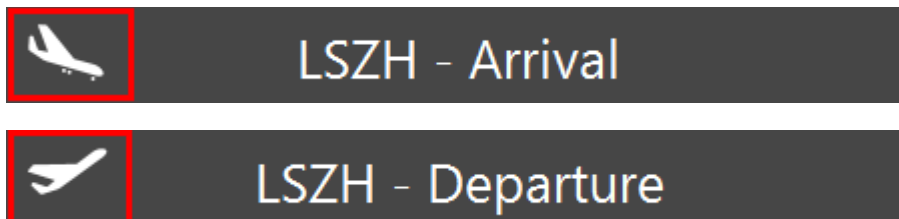


Arrivals: With this button you select or change the so-called "**Procedure Mode**". Whenever you click on "**Arrival**", the button caption changes to "**Departures**" and v.v.. It is one of the means to switch between the two modes.

The **Procedure Mode** determines, which of the two procedures (DEP/ARR) show in the selection window and thus will be displayed on the map.

It is not possible to show SIDs and STARs in one map. You can however select a SID and a STAR for the same airport and switch between the two procedures displayed on the map by changing the Procedure Mode between "Departures" and "Arrival".

as an alternative to the changeover button "Arrivals" or Departures" respectively, yo can change the Procedure Mode also by clicking the "Departing" or "Arriving" aircraft icon on the Procedure Window's header:



Furthermore there are three more buttons in the Procedure Window:

Clear: clears all selections in the window and consequently also on the map

Sync: If you are working with more than one Client in the same Network, by pressing this button you can synchronize and thus display the selected procedures(s) on all other Clients.

Set FPL: This adds the selected procedures to a Flight Plan. More information on creating and extending a Flight Plan are to be found in document "6 Flightplan".

5.3.1 Departure

This register tab lists all available departure runways in the upper part and all available departure procedures (SID) in the lower. In addition to that a third window will open when a Transition to a SID is available.

DEP / ARR

✈

LSZH - Departure

Weather

Procedures

Performance

Runway

Ident	TORA	QFU	Remarks
16	3720m	153°	
34	3720m	333°	
32	3303m	315°	
14	3303m	135°	
10	2504m	093°	
28	2504m	273°	

SID

Ident	→ To	DIR TO	Transitions
ALBI1C	10 → ALBIX	South	
DEGE1D	10 → DEGES	East	
DEGE1E	10 → DEGES	East	
DEGE2H	34 → DEGES	East	
DEGE2N	32 → DEGES	East	
DEGE2R	16 → DEGES	East	
DEGE2S	16 → DEGES	East	
DEGE2W	28 → DEGES	East	


Arrivals

Clear

Sync

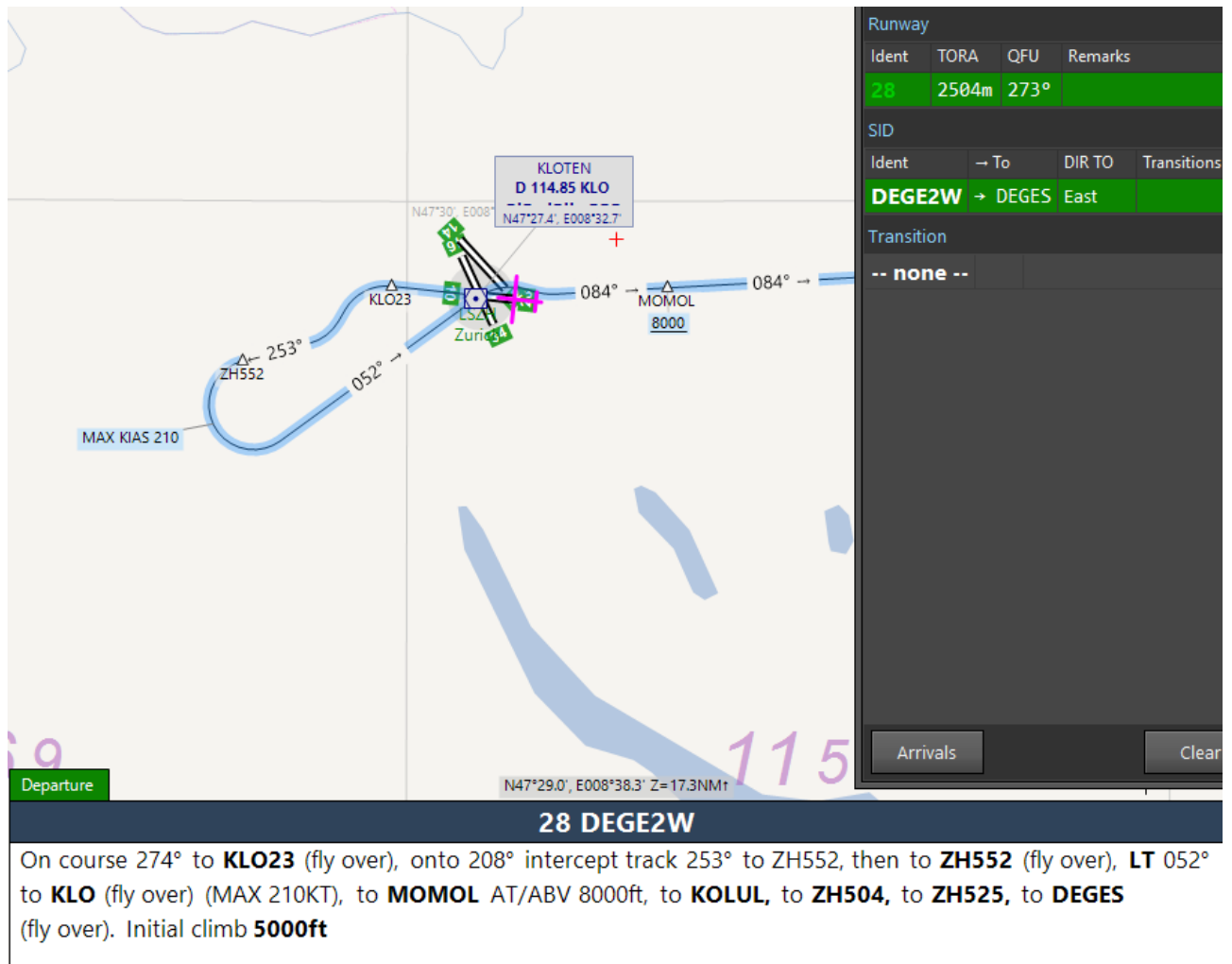
Set FPL

As soon as a departure runway is selected, the lower part is filtered and lists only the SID's available for this selected runway.

DEP / ARR			
 LSZH - Departure			
Weather Procedures Performance			
Runway			
Ident	TORA	QFU	Remarks
28	2504m	273°	
SID			
Ident	→ To	DIR TO	Transitions
DEGE2W	→ DEGES	East	
GERS2W	→ GERSA	South	
VEBI3W	→ VEBIT	Southwest	
WIL3V	→ WIL 116.90	Southwest	
ZUE2V	→ ZUE 110.05	Northeast	
RWY Ext-3	Rwy extn. 3 nm		
RWY Ext-5	Rwy extn. 5 nm		

In addition to the published departure procedures a so-called "Runway Extension" with 3 or 5 NM length will be listed for selection. It can be attached to each departure runway for an initial straight-out departure in case no departure procedure is published for this specific runway. It will be handled exactly the same way as a normal departure procedure.

As soon as a departure procedure (SID) is selected ("DEGES2W" in this example), the procedure will be depicted on the map and an additional window with a short SID description will open at the bottom of the page.



The screenshot displays a flight map with a blue route starting from a green tab labeled "Departure". The route includes waypoints KLO23, ZH552, KLO, MOMOL, and DEGES. A window on the right shows the selected SID "DEGES2W" with its details.

Ident	TORA	QFU	Remarks
28	2504m	273°	

Ident	→ To	DIR TO	Transitions
DEGES2W	→ DEGES	East	

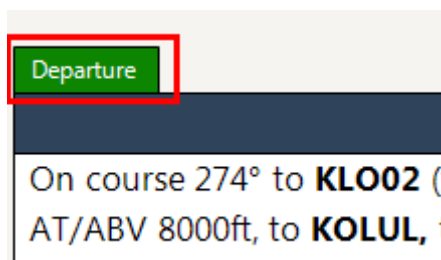
Transition: -- none --

Arrivals: Clear

28 DEGES2W

On course 274° to **KLO23** (fly over), onto 208° intercept track 253° to ZH552, then to **ZH552** (fly over), **LT** 052° to **KLO** (fly over) (MAX 210KT), to **MOMOL** AT/ABV 8000ft, to **KOLUL**, to **ZH504**, to **ZH525**, to **DEGES** (fly over). Initial climb **5000ft**

With a mouseclick on the tab "Departure" the descriptive text window can be hidden and only the green tab "Departure" remains visible at the bottom of the page. Clicking this tab again restores the initial descriptive text window.



The screenshot shows the "Departure" tab highlighted with a red box. Below it, the descriptive text window is visible, showing the start of the SID description.

Departure

On course 274° to **KLO02** (

AT/ABV 8000ft, to **KOLUL**,

Initial climb clearance

Configuration data for „Initial climb clearance“ data are located in the sub-path „Minima“ of the Client's data path. Postfix for these data files is „.inc“. These files can be edited using a simple text editor like „Notepad.exe“. The content of these files is as follows:

```
/** AivlaSoft EFB v2 - www.aivlasoft.com
/** Initial clearance data are provided by App
/** These data are intended for the exclusive
/** Without the written consent of Apprimus In
/** copied, stored, or processed in any electr
/** Copyright 2019 by Apprimus Informatik GmbH

// Altitudes are in feet

Default:4000
MARU2K:FL70
OBOK2K:FL70
TOBA2K:FL70
MARU2W:FL70
OBOK2W:FL70
TOBA2W:FL70
OBOK1H:FL70
TOBA4H:FL70
MARU6M:FL70
OBOK1M:FL70
TOBA6M:FL70
MARU4H:FL70
MARU5E:5000
MARU9D:5000
OBOK1D:5000
OBOK1E:5000
TOBA9D:5000
```


Lines beginning with // are comment and must not be changed. After these comment lines the first line determines the default altitude which is valid for all departure routes which are not explicitly listed below.

The key word „Default“ is followed by a colon and then the altitude in feet or flight level. Below this line you might add some explicit entries for departure routes which have a different altitude than the default altitude.

5.3.2 Arrival

The approach register tab again lists all available runway in the upper part and all approach procedures (finals) as well as the STARs (Standard Terminal Arrival Routes) in the lower.

DEP / ARR



LSZH - Arrival

Weather
Procedures
Performance

Runway

Runway	LDA	QFU	VFR Pattern	Remarks
34	3250m	333°	0 ft Left	
28	2504m	273°	0 ft Left	
16	3720m	153°	0 ft Right	
14	3144m	135°	0 ft Right	
32	3303m	315°	0 ft Right	
10	2504m	093°	0 ft Right	

Approach

Procedure	Freq/Ident/CRS	FAF	Remarks
ILS 14	111.75 IKL 135°	OSNEM	CAT III/GS 3.0°
ILS 16	110.50 IZH 153°	ENUSO	CAT III/GS 3.0°
ILS 28	109.75 IZW 274°	RAMEM	CAT I/GS 3.3°
ILS 34	110.75 IZS 333°	MILNI	CAT I/GS 3.3°
LOC 14	111.75 IKL 135°	OSNEM	
LOC 16	110.50 IZH 153°	ENUSO	
LOC 28	109.75 IZW 274°	RAMEM	
LOC 34	110.75 IZS 333°	MILNI	


STAR

Ident	From → To	DIR FROM	Enroute Transitions
BERS1G	BERSU → GIPOL	Southwest	
BLM2G	BLM → GIPOL	West	
BLM2Z	BLM → GIPOL	West	
DOP1G	DOPIL → GIPOL	Southwest	

Departures
Clear
Sync
Set FPL

As soon as a runway is selected in the upper part, the list of the available approach procedures in the lower part will be filtered and only the approach procedures available for this specific runway are listed.

DEP / ARR



LSZH - Arrival

Weather
Procedures
Performance

Runway

Runway	LDA	QFU	VFR Pattern	Remarks
14	3144m	135°	0 ft Right	

Approach

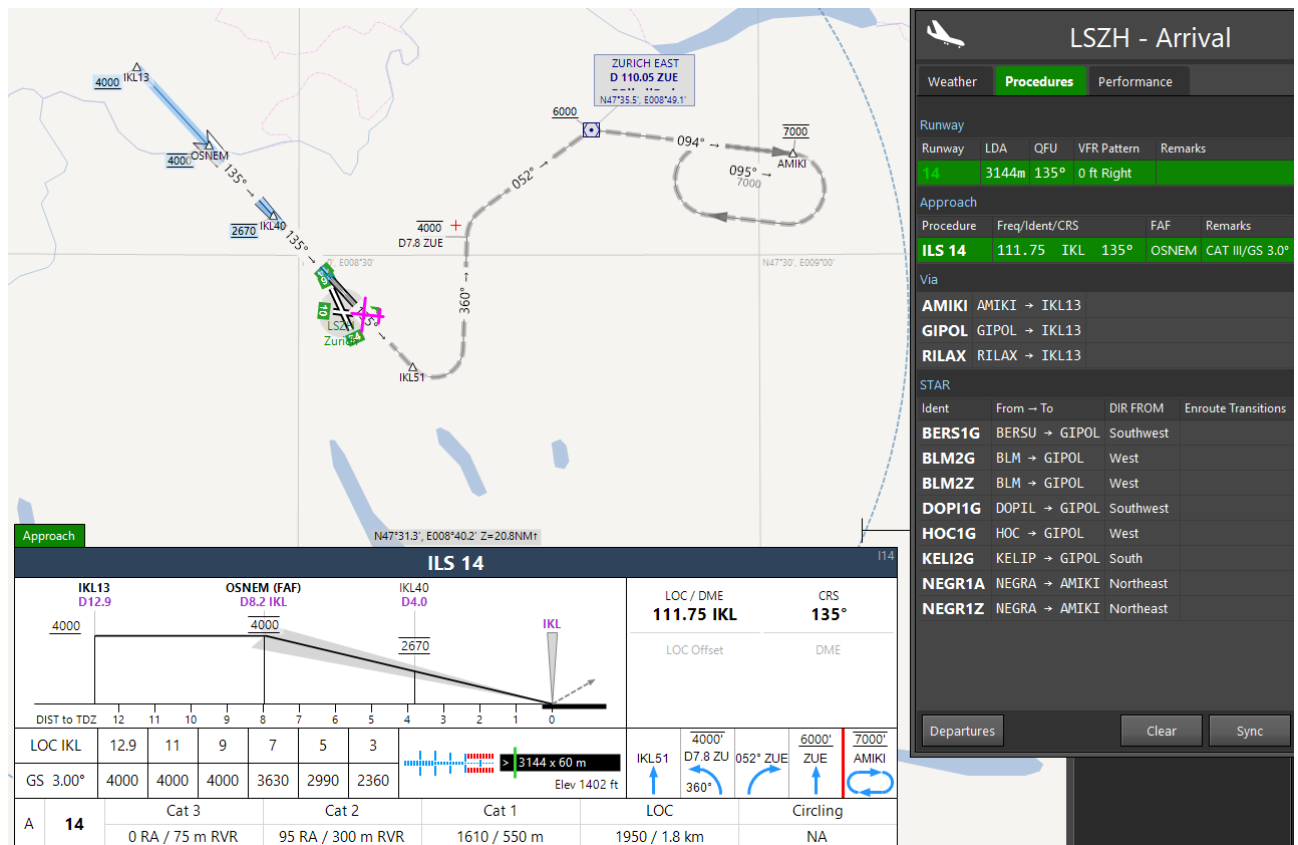
Procedure	Freq/Ident/CRS	FAF	Remarks
ILS 14	111.75 IKL 135°	OSNEM	CAT III/GS 3.0°
LOC 14	111.75 IKL 135°	OSNEM	
RNAV/RNP 14		OSNEM	
GLS 14		OSNEM	
RWY Ext-3	Rwy extn. 3 nm		
RWY Ext-5	Rwy extn. 5 nm		
RWY Ext-8	Rwy extn. 8 nm		

In addition to the published approach procedures so-called Runway Extensions with a length of 3, 5 and 8 NM will be listed. A Runway Extension is a straight line with exactly the same track as the runway centreline. It can be quite helpful to create a final approach if no approach procedure is published.

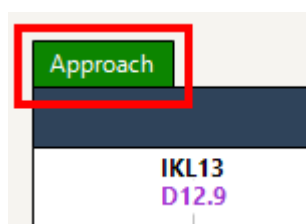
Attention:

A Runway Extension is an automatically generated, "virtual" Approach **Aid**. The approach angle is fixed to 3° and **absolutely no** obstacle clearance whatsoever is provided.

As soon as an approach procedure is selected in the lower part ("ILS14" in this example), the selected procedure will be depicted on the map and a "Procedure Panel" will open on the lower part of the map window. This Procedure Panel contains a lot of information in addition to the lateral depiction of the procedure.

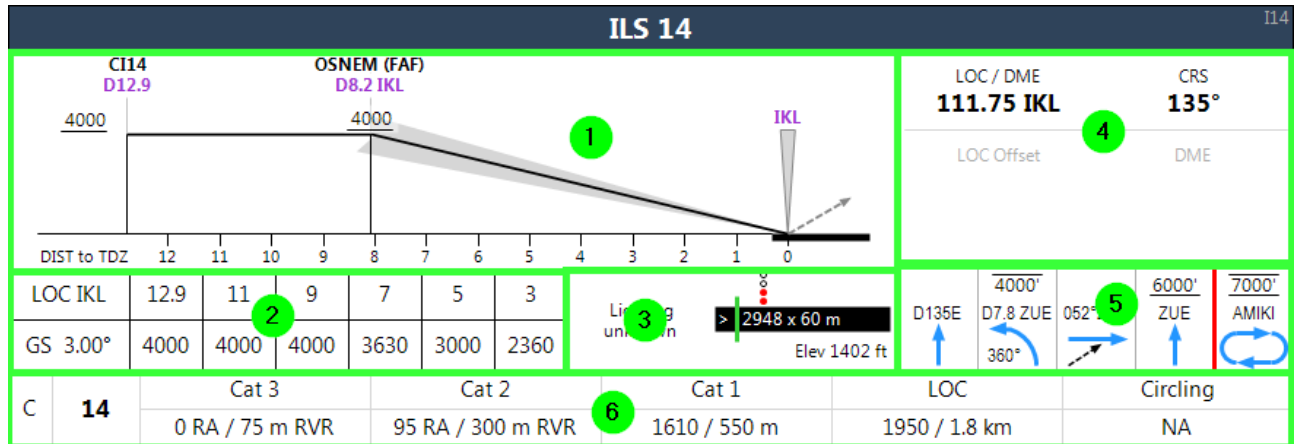


A mouse click to the "Approach" tab moves the Procedure Panel downwards outside of view and only the green tab "Approach" will remain visible. By clicking the green tab again the whole Procedure Panel will instantly be restored.



5.3.3 Procedure Panel

The Procedure Panel is divided into various Information areas:

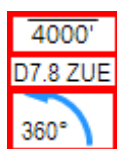


1. Profile View
2. Distance and Reference Altitudes
3. Runway Information
4. Frequencies and Course Information
5. Missed Approach Icons
6. Minimums

We consider the meaning of items 1 to 4 to be self-explanatory. For items 5 and 6 some additional information will be provided below:

Missed approach icons

The "Missed Approach Icons" show the most important segments of a Missed Approach. They are of a standardized design and include the following information (from bottom to top):



The lowest part shows a blue symbol. It depicts the initial heading instruction: Straight ahead, turn left/right, intercept, hold.

The centre contains a direct limit or another criterion to limit the initial instruction.

Topmost you will find a general limit for the instruction(s) below.

Some examples:



Straight ahead until crossing Fix "D135E"



Turn left on course 360°, then to D7.8 KLO. Climb to max. 4000 ft



Intercept Track 052° to navaid "ZUE"



Straight ahead to navaid "ZUE" and cross at 6000 ft or above



Hold at "AMIKI" at 7000 ft

5.3.4 Minimums

The Minimum display is divided into three main areas (left to right):

C	14	Cat 3	Cat 2	Cat 1	LOC	Circling
		0 RA / 75 m RVR	95 RA / 300 m RVR	1610 / 550 m	1950 / 1.8 km	NA

- ICAO Approach Category (according to settings in the actual Aircraft Profile)
- Runway selected for Final approach
- Minima values, in "accuracy" order (Cat 3, 2, 1 etc)

Unfortunately the minimums are not part of the ARINC-424 data set and need (if desired) to be retrieved from the official AIP sources and matched with the respective approach procedures in EFBv2.

At the User Forum from AivlaSoft (Section „Contributions“) you will find Minimum files for approx. 2000 airports worldwide. These files will be updated from time to time and can be copied/pasted over the already available files in the respective data folder.

To avoid creation of individual configuration files for each and every airport, EFBv2 lists standard values for all approaches worldwide.

In case these standard values deviate too much from the actual value for a specific approach (and thus may violate Obstacle Clearance), we recommend to create own configuration files with official values from AIPs (see next paragraph).

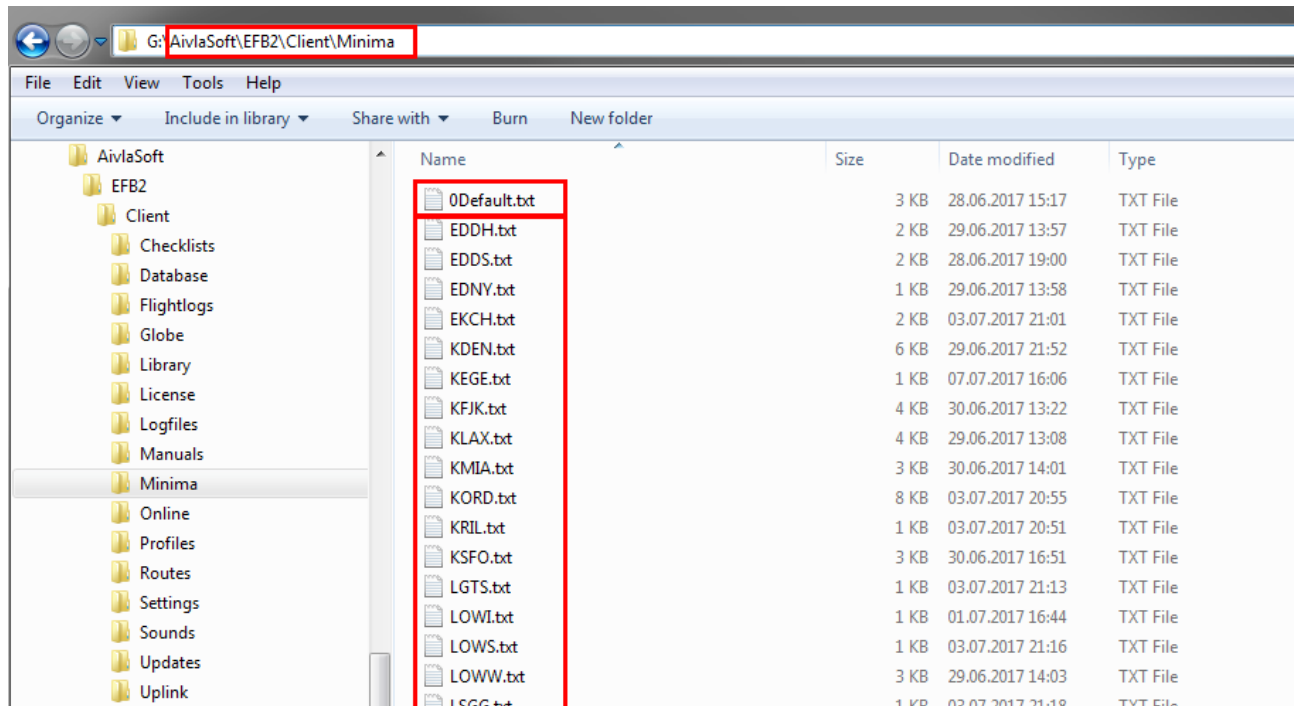
By means of the background colour it is easily distinguishable whether Standard Values or official "Real World" minimum values are depicted. Whenever official "Real World" values are used, the background of the minimum display remains white. For Standard values the background colour will be light yellow:

C	15	Cat 3	Cat 2	Cat 1	LOC	Circling
		0 RA / 75 m RVR	100 RA / 300 m RVR	1070 / 550 m	1120 / 800 m	1890 / 2.2 km

The configuration of all Standard values can be changed as well.

Minimums configuration

Configuration data for Approach Minimums are located in the sub-path „Minima“ of the Client's data path.



One file in this data path is named „**0Default.txt**“.

This file contains Standard values for all approaches for which no specific Minimum files are compiled. The naming convention for this file has deliberately been chosen to include a leading „0“ (Zero) to make it appear on top of the file listing.

Do **NOT** change this File's name!

Composition and content of a Configuration File

The file for Standard Minimums includes its own configuration block for each Approach Type. Each configuration block starts with „**[Approach]**“.

Next is a line with a distinct key, e.g. „**Key=D***“. The asterisk signifies that this minimum is valid for all runways.

Following keys for various approach procedures are possible:

PRECISION (Lateral AND Vertical guidance)

"I": ILS approach

"H": RNAV with RNP

"J": GNSS Landing system (GLS) approach

"M": Microwave (MLS) approach

"W": MLS type A approach

"Y": MLS type B and C approach

NON-PRECISION (Lateral guidance ONLY)

"B": localizer back-course

"C": Circling

"D": VORDME approach

"E": RNAV (GPS)

"F": FMS approach

"G": IGS approach

"L": LOC only approach

"N": NDB approach

"P": GPS approach

"Q": NDB-DME (NDM) approach

"R": RNAV approach

"S": VOR approach using VORDME/VORTAC

"T": TACAN approach

"U": SDF (simplified directional facility) approach

"V": VOR approach

"X": LDA (localizer directional aid) approach

the next line containing the key "**inf**" need not necessarily to be defined. It is used to include additional notes valid for all ICAO Approach Categories (A – E) of this Approach Procedure and will be displayed in the Procedure Panel:

Inf= N of AP only

C	10	Cat 1	LOC			Circling
		1810 / 2.1 km	1810 / 2.1 km			N of AP only 2270 / 2.4 km

Alternatively additional comments for each Approach Category can be included. This is controlled by the field marked "Comment" (see below).

After the lines "Key" and "Inf" respectively, all following lines include values for each ICAO Approach Category. Values within a line are separated by a semicolon.

A;1;H200;550M

Each line holds up to five columns, which contain the following data. The last column "Comment" is not compulsory.

ICAO Approach category	CAT	Vertical limit	Horizontal limit	Comment
------------------------	-----	----------------	------------------	---------

Following data can be inserted:

ICAO Approach Category: Capital Letters **A to E**

CAT: **1, 2, 3 or empty** (empty = Non-Precision Approach)

Vertical Limit: A leading "**H**" of a value indicates that this value means **Height above Ground** (AGL), whereas the letter "**A**" indicates a **Barometric Altitude**. In the Procedure Panel a Vertical Limit of the "H" type will be added to the Airport Elevation (e.g. H200 at an Airport elevation of 1475 ft results in a Minimum of 1700 ft QNH. The calculated value (in this example 1675 ft) is always rounded up to the next 100 ft. **Exception**: For Precision Approaches CAT II and CAT III Vertical Limits of the "H" type are indicated as Radio Altitude (RA).

Horizontal Limit: The Horizontal Limit can be defined by three parameters. A leading **“R”** defines the following numerical value as **RVR** (Runway Visual Range), e.g. R300M. If no leading letter is used, the numerical value is interpreted as “Meteorological Horizontal Visibility”. The value defines the visibility, followed by the Unit of Measurement. The following Units of Measurement can be used: **M** for meters, **KM** for kilometers, **SM** for Statute Miles, **NM** for nautical Miles and **FT** for feet. The numerical values can be entered as decimal values (e.g. 1.8KM), however the use of **full stop** [BRIT] or **period** [US] (.) as decimal marker **is compulsory**.

Comment: A comment is **not** compulsory, it **may or may not** be entered. However if a comment is entered here, it overrules the general comment of the **“Inf”** type. Therefore individual comments in the “minimum” line are only useful, if they are different for each specific Approach Category A – E. As long as only general comments valid for all ICAO Approach Categories are used, the use of the **“Inf”** method (as described above) is recommended. Find below an example for individual comments for each Approach Category:

A;;A2170;2.1KM;Comment · A
B;;A2170;2.1KM;Comment · B
C;;A2270;2.4KM;Comment · C

In case one or more Approach Categories do not have any published values, the wording **“NA”** (not available) must be used.

D;;NA
E;;NA

Examples:

[Approach]	• Approach Minimum for ILS approach RWY 10
Key=I10	• ICAO Approach Categories A – C have one CAT I approach minimum
A;1;A1810;2.1KM	• Minimum Altitude is 1810 ft ALT (QNH) for A – C, CAT I
B;1;A1810;2.1KM	• Minimum Horizontal Visibility 2.1 km for A – C, CAT I
C;1;A1810;2.1KM	• ICAO Approach Categories D and E have no Approach Minimum on this RWY
D;;NA	
E;;NA	

[Approach]
 Key=C*
 Inf= N of AP only
 A;;A2170;2.1KM
 B;;A2170;2.1KM
 C;;A2270;2.4KM
 D;;NA
 E;;NA

- Approach Minimum Definition for Circling to all RWYs
- Non-precision Approach (second column empty)
- Comment "N of AP only" valid for all Approach Categories
- A and B have identical Minimums (2170 ft ALT, 2.1 horizontal visibility)
- C has a different Minimum of 2270 ft ALT at 2.4 km horizontal Visibility
- No Circling Minimums published for ICA Approach Categories D and E

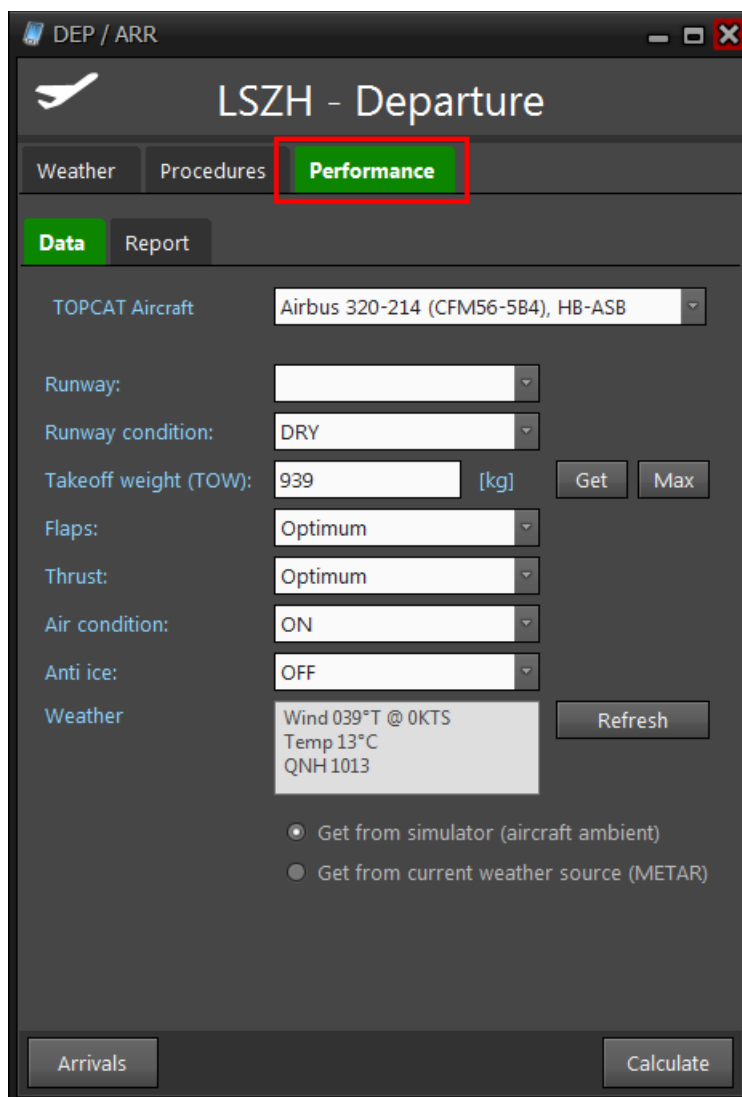
[Approach]
 Key=I07
 A;3;H0;R75M
 A;2;H90;R300M
 A;1;A1420;550M
 B;3;H0;R75M
 B;2;H90;R300M
 B;1;A1430;550M
 C;3;H0;R75M
 C;2;H90;R300M
 C;1;A1470;550M
 D;3;H0;R75M
 D;2;H90;R300M
 D;1;A1470;550M
 E;3;H0;R75M
 E;2;H90;R300M
 E;1;A1470;550M

- Approach Minimum Definition for ILS approach RWY 07
- ICAO Approach Categories A – E each have published minimums for ILS CAT III, CAT II and CAT I
- Minimum RA 0 (CAT III), RA 90 (CAT II) and ALT 1420 to 1470 for CAT I
- Minimum Horizontal Visibility RVR 75 m (CAT III), RVR 300 m (CAT II) and 550 m meteorological visibility for CAT I

5.4 Performance

Use of the "Performance" function of EFBv2 requires that a fully licensed installation of **TOPCAT** is installed on the Client's computer. TOPCAT (Takeoff and Landing Performance Calculator) is a software developed by "FlightSimSoft GmbH", More information about TOPCAT can be found on the company's homepage <http://www.flightsimsoft.com>.

Performance Calculations are executed in the third tab window of the DEP/ARR dialogue. Opening of the DEP/ARR dialogue window can be achieved by using EFBv2's Main Function Buttons "**PROC**" or "**Wx**".



The screenshot shows the "DEP / ARR" window with the "Performance" tab selected. The window title is "LSZH - Departure". The "Performance" tab is highlighted with a red box. Below the tabs, there are two sub-tabs: "Data" (selected) and "Report". The "Data" tab contains the following fields and controls:

- TOPCAT Aircraft:** Airbus 320-214 (CFM56-5B4), HB-ASB
- Runway:** [Dropdown menu]
- Runway condition:** DRY
- Takeoff weight (TOW):** 939 [kg] [Get] [Max]
- Flaps:** Optimum
- Thrust:** Optimum
- Air condition:** ON
- Anti ice:** OFF
- Weather:** Wind 039°T @ 0KTS, Temp 13°C, QNH 1013. [Refresh]
- Radio buttons:**
 - ☒ Get from simulator (aircraft ambient)
 - ☐ Get from current weather source (METAR)
- Buttons:** Arrivals, Calculate

The "Performance" window consists of two more tabs "**Data**" and "**Report**".

The **"Data"** window requires all data necessary for Performance Calculations. Most of the values are automatically filled in by EFBv2.

Input and Selection Fields are identical to TOPCAT. For more information in that respect please refer to the User Guide of TOPCAT.

The Aircraft Type defined within TOPCAT's database must be selected manually. Unfortunately there is no automatic assignment possible between EFBv2's Aircraft Profile and TOPCAT's database.

By pressing the "Calculate" button TOPCAT's calculation process is initiated. After finishing all calculations the display automatically changes to the **"Report"** tab, where all results are displayed in the well known manner of TOPCAT:

Data

Report

----- WEATHER -----

TEMP +22C QNH 1016 WIND 300/06 (05KT HW)

----- CONDITIONS -----

TOW 45896 KG CONF 1+F THRUST FLEX RWY DRY

AIR COND ON ANTI ICE OFF

----- FULL THRUST -----

OAT	Limit (kg)	Code	V1	VR	V2	Margin	N1
+22C	75159	OBS(C)	115-120	120	125	795M	91.7

----- REDUCED THRUST -----

FLEX	Limit (kg)	Code	V1	VR	V2	Margin	N1
+61C	62139	OBS(C)	124	124	126	795M	86.2
+62C	61493	OBS(C)	124	124	127	795M	86.1
+63C	60835	OBS(C)	125	125	127	795M	85.9
+64C	60185	OBS(C)	125	125	127	795M	85.8
//+65C	59535	OBS(C)	125-126	126	127	795M	85.7

----- ENGINE OUT -----

MAINTAIN RUNWAY TRACK UNTIL PASSING 3500'. THEN

TURN RIGHT TO EKRIT CLIMBING TO 6000' AND HOLD

(067°/R). E/O ACCEL. HEIGHT 2000'.

The "Report" is (contrary to e.g. selected Departure or Arrival Procedures) not saved. It is therefore recommended to use this Performance Calculation feature shortly before Departure or Landing. Whenever you change the Airport or the Procedure Mode, the Report is deleted and you will need to initiate it again.

5.5 Taxi

5.5.1 Functions and Limitation

the basic principle of the Taxi function is to find the the shortest way along taxiways and to display it on the Ground Chart. Two variants are available:

- Taxi-OUT: Looks for the shortest way from Parking to Departure Runway
- Taxi-IN: Looks for the shortest way from Landing Runway to Parking Position

The Taxi Function must be regarded as a simplified help funktion, as the result is not always what you may expect.

Why is this? To fully understand, some background knowledge is necessary:

An airport, the way we know and see it in our Simulator, consists - simply put - of two very different parts. On part is the "geometric" data and the other part is the graphic/visual pictures. Geometric data are e.g. dimensions of runways, information on soil conditions of taxiways, width of taxiways, exact geographic location of each such component etc. etc.

"Construction" of an airport in a simulator is based on a layer principle, where the "bottom" layer contains all data and on top of that a layer with pictures is placed. What we finally see is a depiction of various 3D models based on geometric data and pictures - so called bitmaps. The Geometric data and the bitmaps are defined and this constructed by the Add-On developer.

EFBv2 (like many other programs, especially also for AI-traffic) is analysing the "geometric" data stored in so-called BGL-/apt.dat-files. Based on these data (in case of EFBv2 mainly taxiway data) EFBv2 generates a graph containing all taxiway segments and uses the well known Dijkstra algorithm to find the shortest ways between "Start" and "End". More about the Dijkstra algorithm and its developer can be found here: https://en.wikipedia.org/wiki/Dijkstra%27s_algorithm

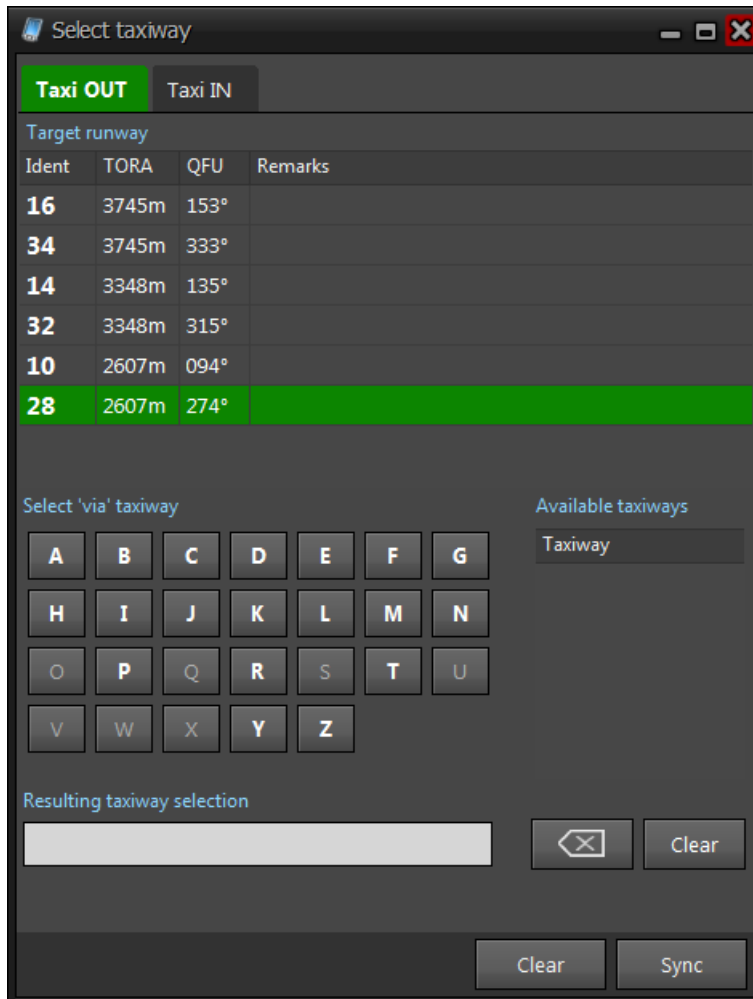
However situations can arise where "geometric" data unfortunately do not correspond to the overlaying bitmaps or in other words: we "see" a taxiway in the simulator, but the underlying "geometric" data of the BGL-/apt.dat-file does not depict a taxiway at that position as this portion of the taxiway is solely "painted" on the ground surface.

One of the reasons why underlying BGL-/apt.dat data are not defining certain (mainly short) segments of a taxiway is to avoid AI traffic making use of these segments. AI traffic works similar to a model railway: it can only find its way if there are railroad tracks. The railroad track in this comparison are the BGL-/apt.dat file data. If there are no railroad tracks, there is no way to go. Distinctive omission of a few taxiway segments is therefore the simplest means to direct and control AI traffic.

It must however also be said that sometimes omission of a taxiway or parts thereof is simply a matter of missing accurateness from the developer(s).

All that said it becomes clear that EFBv2 (like other Add-On using "geometric" data) can only work with data provided by the airport design. Missing taxiway segments will not enable to build an accurate picture of the complete airport layout and therefore does not allow full benefit of the algorithm to find its way in the "airport jungle". This of course means that the Taxi function in EFBv2 is not always able to provide the desired result.

5.5.2 Taxi-OUT



Ident	TORA	QFU	Remarks
16	3745m	153°	
34	3745m	333°	
14	3348m	135°	
32	3348m	315°	
10	2607m	094°	
28	2607m	274°	

Select 'via' taxiway

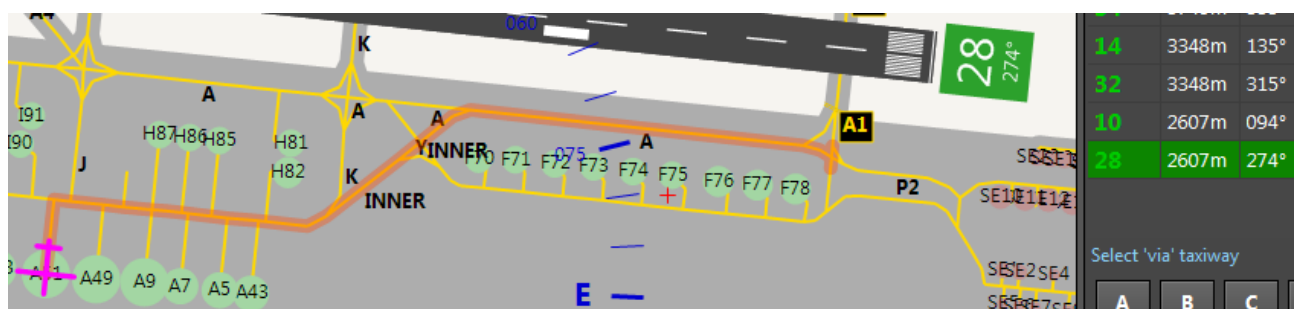
Available taxiways

Taxiway

Resulting taxiway selection

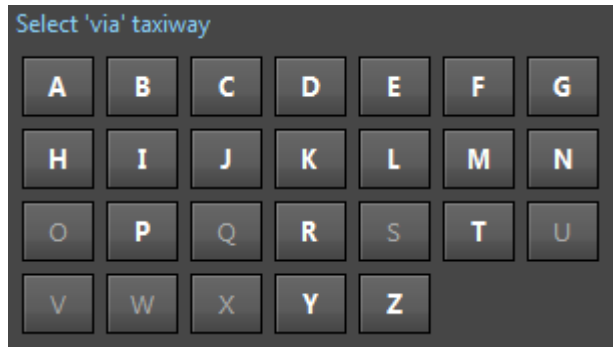
Clear Sync

In the upper part of the dialogue window you select the departure runway for which you wish the shortest way to go. As soon as you click the runway selection, EFBv2 will show you the way to go. This is the shortest way without any restrictions from your actual parking position to the so-called "Start" position of a runway:



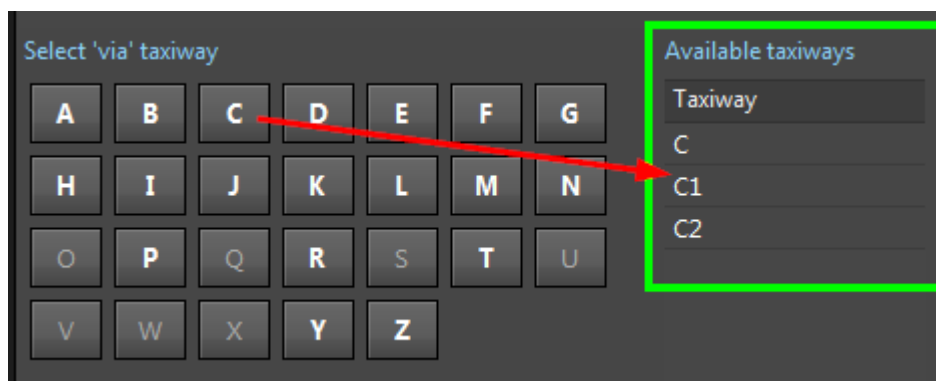
Nevertheless you still have the possibility to restrict the way to your target by selecting a certain order to follow the "named" taxiways.

All letters from A to Z are highlighted if there is a "named" taxiway beginning with one of the letters:



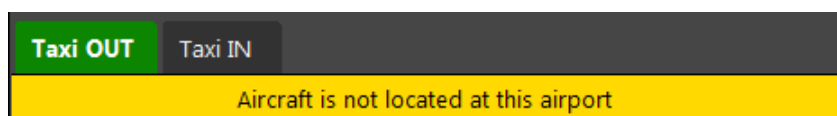
Select now the "restriction" for the taxiways in the correct order.

If there are multiple variants of taxiway names for a specific letter ("C" in this example), they will be listed to the right. Select the desired taxiway from that list.



After each change the taxi route will be recalculated and displayed on the Ground map.

Should you try to use the Taxi-OUT function on an airport which does not correspond to your actual aircraft position (e.g. by manually selecting an airport), the following warning will be displayed:



5.5.3 Taxi-IN

This function allows you to calculate the shortest way from your landing runway to a specific parking position.

The structure of the dialogue window is identical to the Taxi-OUT function. The selection of the Parking position is done in the upper part whereas the lower part offers selection of restrictions to the shortest way.

The Taxi-IN function will only start on ground when you have left the landing runway. This is the only way for EFBv2 to know which runway exit you will be using. Therefore in contrary to the Taxi-OUT function EFBv2 needs a connection to the (running) simulator.

Nevertheless selection of the Parking Position is possible already during flight. If you select your future Parking Position inflight, the following warning will be generated:

Taxi OUT Taxi IN			
Taxiway depiction shortly after runway has been vacated			
Target parking			
Name	Type	Radius	Remarks
15	Fuel	16 m	
16	General Aviation Ramp	10 m	
17	General Aviation Ramp	10 m	
18	General Aviation Ramp	10 m	
19	General Aviation Ramp	10 m	
G 1	Airliners Gate	18 m	Jetway
G 2	Airliners Gate	18 m	Jetway
G 3	Airliners Gate	18 m	Jetway

Function keys for Taxi-IN and Taxi-OUT



Clear: this clears all selections and also clears the displayed Taxi Route on the Ground Map.

Sync: if you are using more than one client in your Local Network, using the "Sync" key synchronises and displays the chosen taxi path to all other Clients.

5.6 Flight Plan

Opening and editing a Flightplan will be done by using the Main Function "FPL".

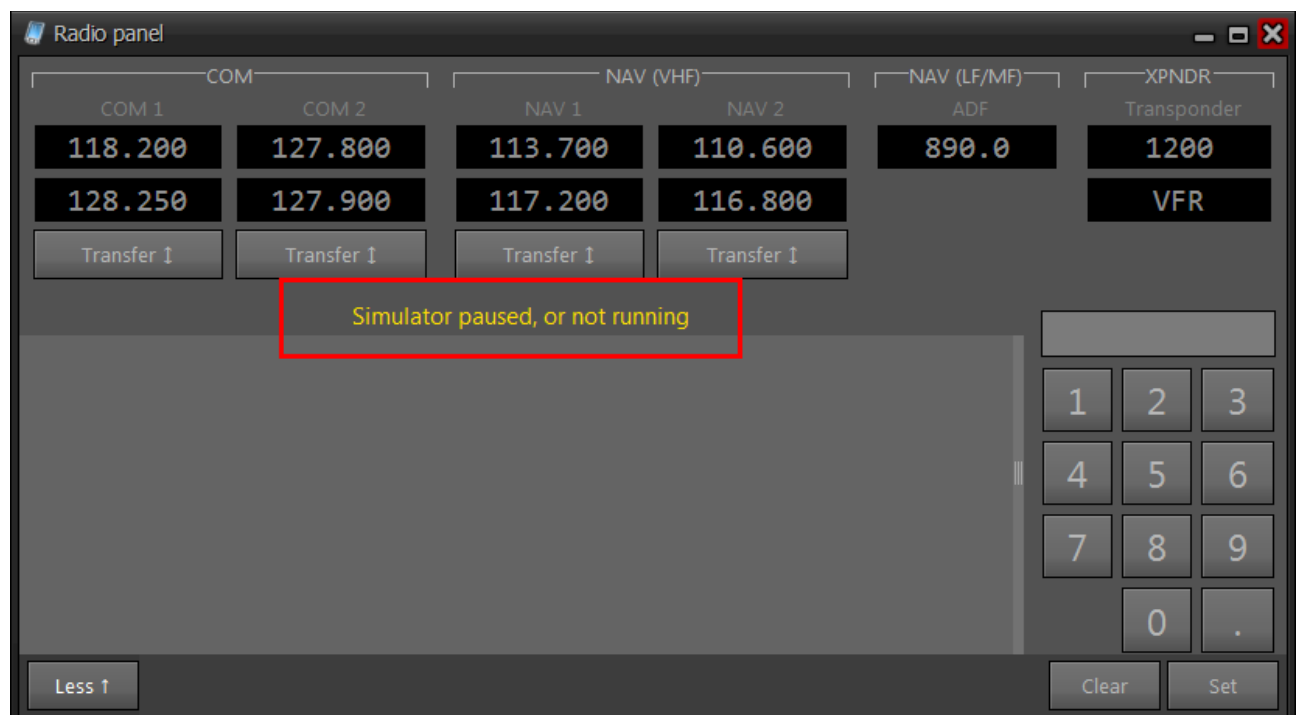
Detailed information about all aspects of the Flightplan as well as of the "Routing Shortcut Bar (RSB)" is available in document "**06 Flightplan**"

5.7 Radio

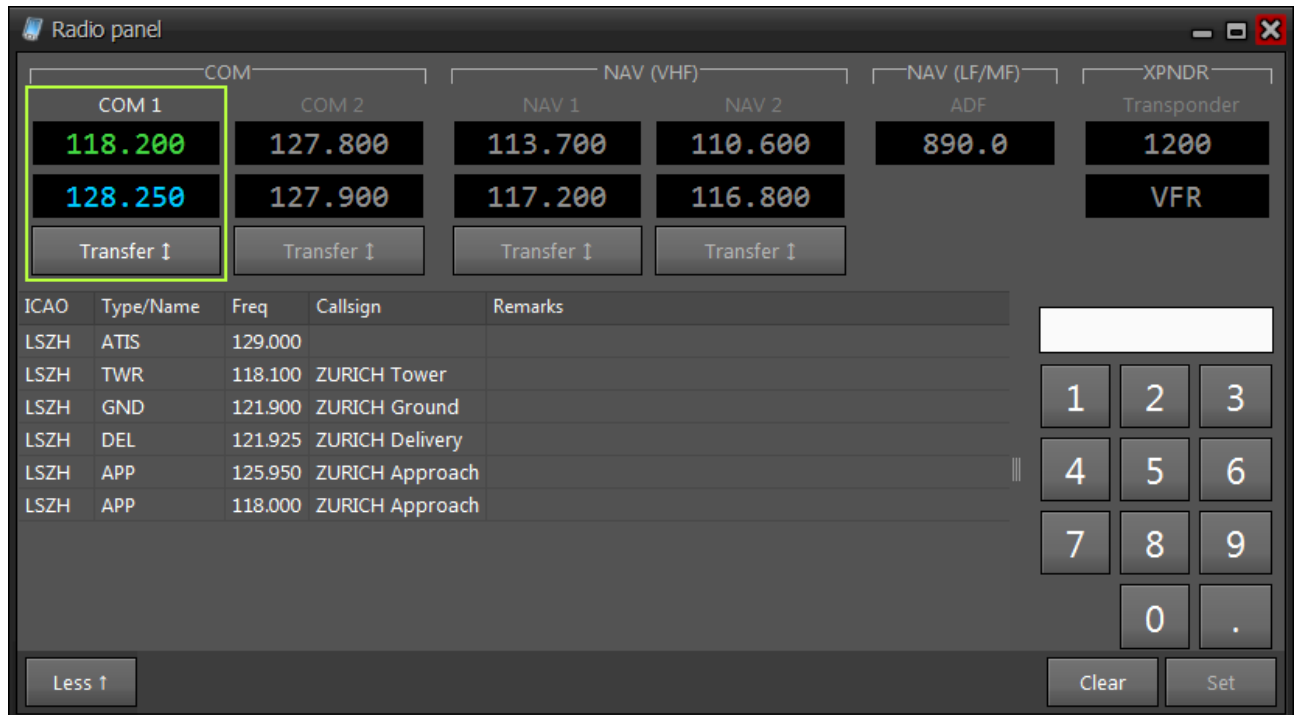
The "Radio-Panel" give you access to all actually set NAV and COM frequencies of your aircraft and comfortably allows selection of any available frequency associated to the actual aircraft position.

Complex aircraft (e.g. FSLabs A320) do often use a few functions which are programmed "outside" the simulator, using own variables and address space. It is not possible to access such external data through the standard interface of the simulator and therefore - if frequencies are concerned - EFBv2 cannot display the correct values.

To make use of the Radio Panel the Simulator must be up and **running**, as this is the necessary condition to read values through either FSUIPC (for FSX/P3D), or UDP (X-Plane). If you open the panel without connection to the Simulator, the following warning will be displayed on the panel.



This is the proper look of the Dialogue Window with a running Simulator:



From left to right all frequencies actually in use in your aircraft are listed for communication (COM1 and COM2) and Navigation (NAV1, NAV2 and ADF). Fully to the right also the Transponder Setting is available.

Choose the frequency box of your choice by clicking it. The active component will be marked by a bright green frame.

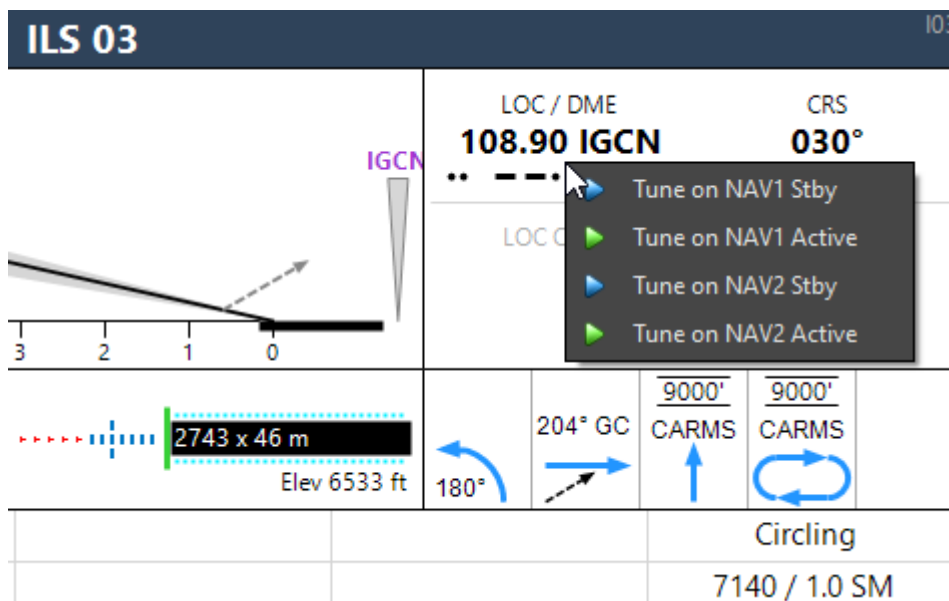
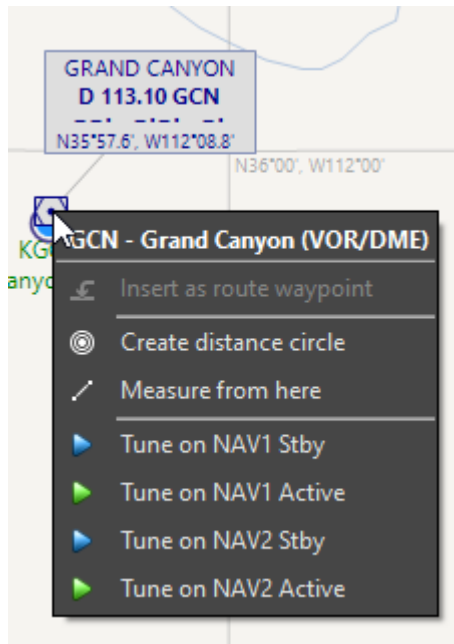
Each component (except for ADF and XPNDR) consists of a "Standby" (blue) and an "Active" (green) frequency. Whenever you choose a frequency from the list underneath, it will be transferred into the "Standby" position. By pressing the "Transfer" button it will become the active frequency.

Frequency input is also possible by using the keyboard on the right hand side. Alternatively you can also place the cursor into the input field and write the frequency with the Computer's keyboard. Manual frequency input must be finished by pressing the **"Set"** button, whereas selection from the list can be achieved by double clicking the desired frequency. **"Clear"** will delete the manual input field. The **"Less"** key reduces the display size of the frequency window to show the frequency boxes only.

There is a file named "xpndr.txt" in the datapath \settings which lists a few of the most commonly used transponder codes. The content of this list will be displayed if you click the XPNDR box. You can easily adjust the list to your liking.

5.7.1 Setting NAV-Frequency via right mouse click

Frequencies of any VOR, NDB, or DME can be tuned directly from the Worldmap using right mouse click. Frequency of the ILS, or VOR, or NDB can also be tuned directly from the procedure panel.

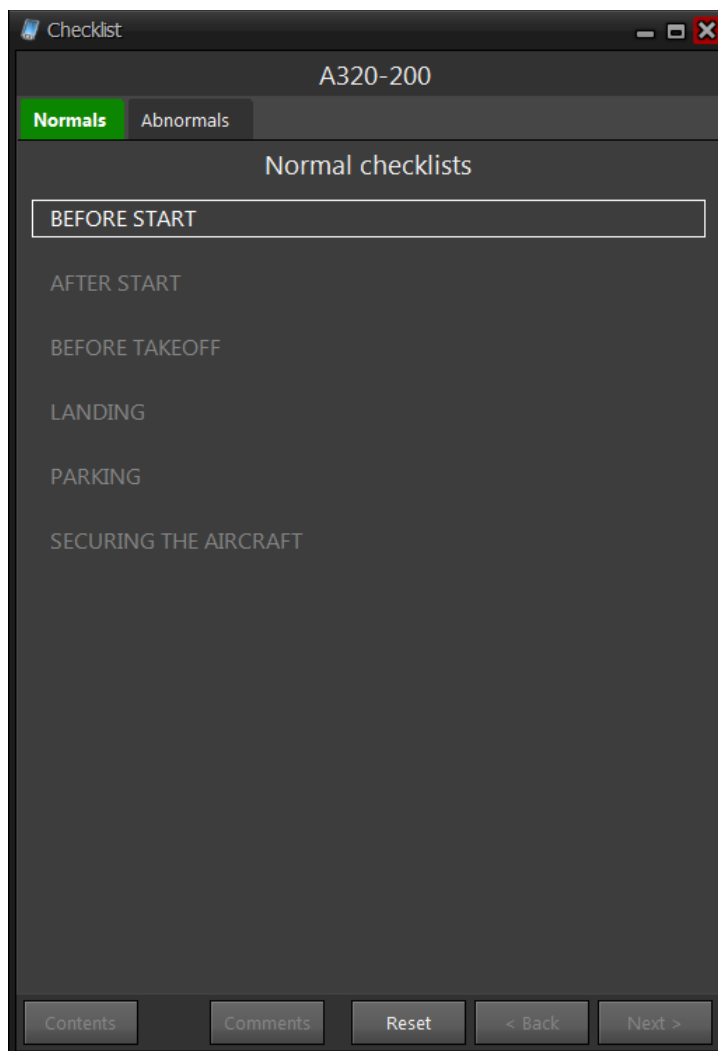


5.8 Checklists

Whenever checklists are available in the actual aircraft's Profile, you have access to these by pressing the Main Function Button "CHKL". If no checklists are available, this button is greyed out. If you chose to import, create or edit a checklist, start the Profile Editor (System Settings) and select the register tab "Checklists". A detailed description of the Profile Editor as well as of the Checklist Editor is available in chapter "Profile Editor" further down in this User Guide.

5.8.1 Overview Page

After opening the "CHKL" dialogue window you will be presented with a list of all available checklists for the selected range. The display is grouped into two ranges "Normals" and "Abnormals" (tabs at the top),



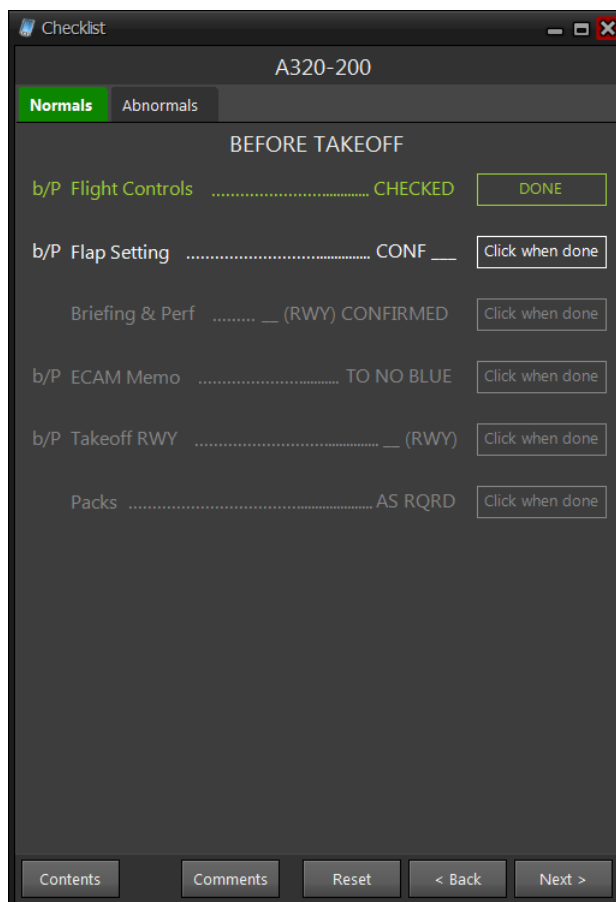
The first active checklist name is highlighted by a white frame. All consecutive, not yet used checklists are greyed out. Whenever a checklist is fully processed, the status will change and as a consequence the title will be displayed in green. Consequently the next active checklist title will be displayed in a white frame again. All colours can be altered to your liking. Find more information on this subject in chapter "Colours" further down in this User Guide.

To select a checklist just click its name. It is not compulsory to work the checklists in the displayed order. Even greyed out checklists are selectable.

Using the **"Reset"** button at the lower end of the dialogue window **all** checklists for this range ("Normals" or "Abnormals") will be reset to the "unfinished" state.

5.8.2 Detailed Checklist

Whenever you open a checklist, it will be displayed in its actual state. The last state of each checklist is stored until it is "reset" by the respective button or until all checklists (on the overview page) are "reset".



Click the respective framed confirmation field to mark a checklist item as "DONE"

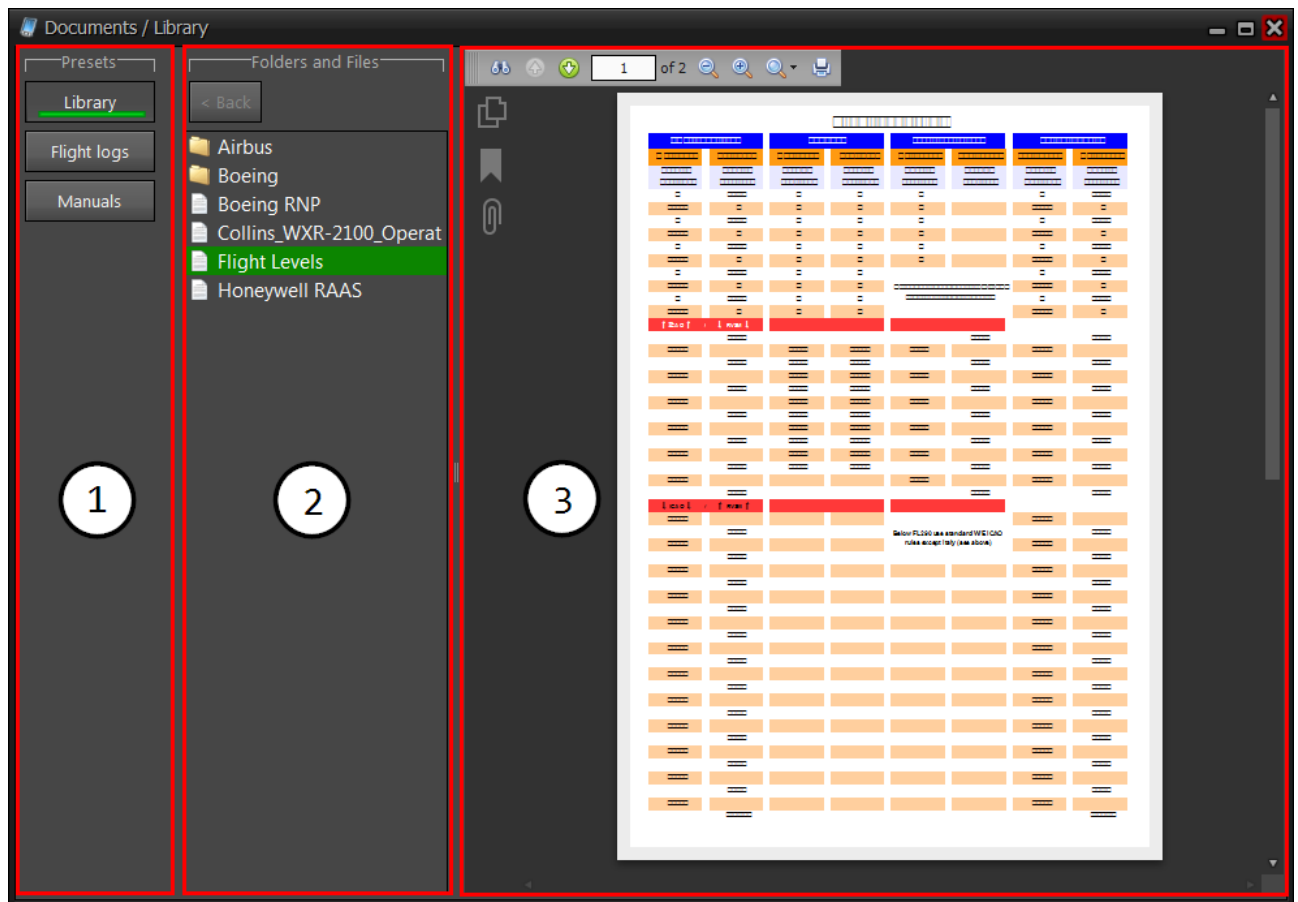
Clicking the "**Contents**" button brings you back to the Overview Page.

The option "**Comments**" opens an additional layer of the checklist with additional comments that might needed to be displayed.

The "**Reset**" Button resets the actual checklist, making all items undone.

The buttons "**Back**" and "**Next**" is used for paging within the actual checklist.

5.9 Documents Library



The Document Library is split into three areas:

1. Quick access to predefined areas
2. Content of the respective area
3. Document display of the selected document

You are free to decide about the content of most areas of the Document Library.

5.9.1 Library

Inside the datapath of the Client you will find a folder named "\Library". Within this folder you are free to open a number of own folders and to place any documents of your choice inside those folders. The folders and document's names will be displayed in the second column (2). Clicking a folder will display the documents within this folder. Clicking a document opens it and displays it to the user (3).

Clicking the "< Back" button moves you back one step.

At the time of editing this User Guide the following data types for documents are available for the integrated document viewer:

- .pdf
- .txt
- .rtf
- .odt
- .docx
- .htm

5.9.2 Flight logs

The button "Flight Logs" opens a list of all available Flight Logs produced to-date, sorted by flight date.

5.9.3 Manuals

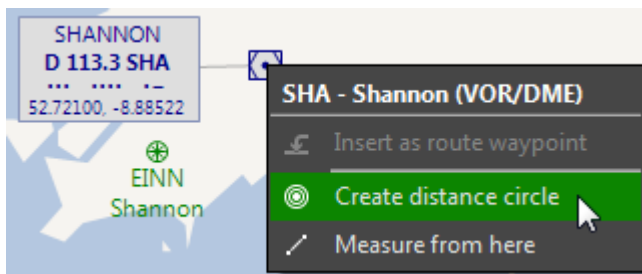
Using the button "Manuals" give you access to the whole set of User Guides of EFBv2. There is a complete set for each Server and Client.

5.10 Utilities

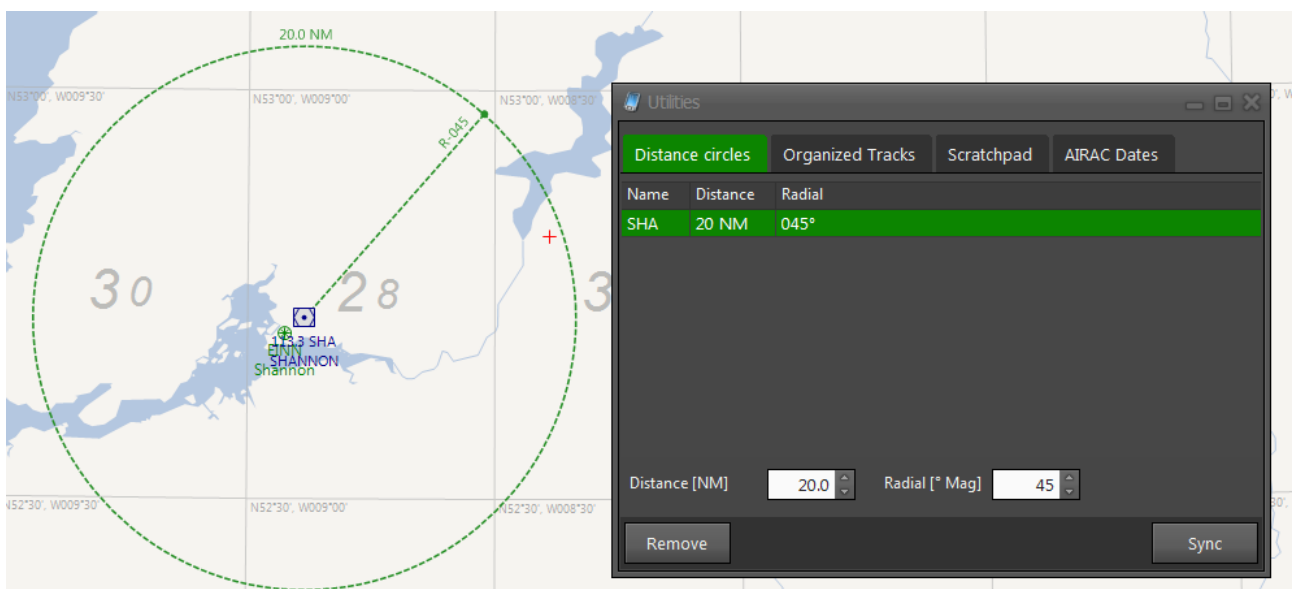
The Dialogue Window for a few utilities will be opened by the Main Function Button "Utils". The tabs on top will guide you to the respective areas.

5.10.1 Distance circles

This utility allow creating and editing of Distance circles on the World Map. Distance circles can be used as navigational reference and can display a certain distance and - if required - also a certain radial. Distance circles will be invoked by a small menu opening by right clicking on any point on the World Map. Here's an example for the "Shannon VOR" in Ireland.



The Distance circle will be drawn at the present position of the Mouse Pointer. if you have selected a specific position (Airport, Navaid, Waypoint) this position will be used. As soon as you have selected the menu item "Create distance circle", the circle will be displayed and the Utility Dialogue Window opens:



If any changes to the default values for distance and radial are required, make your changes and adjust the respective value(s) at your choice. Changes are immediately transferred and displayed. You can clear any item in the list by using the "**Remove**" button.

In case more than one Client is used within your Local Network, you can transfer the Distance circle to the other Clients using the "Sync" button.

You have the possibility to choose whether all Distance circles are removed upon next touchdown or whether they will remain stored. See the option in "Settings" Tab "Miscellaneous".

5.10.2 Organized tracks

<div> <div>NAT</div> <div>PACOT</div> <div>AUSOT</div> </div>		
Validity of WESTBOUND tracks		
Name	Valid from	Valid to
A	2018-06-04 11:30z	2018-06-04 19:00z
B	2018-06-04 11:30z	2018-06-04 19:00z
C	2018-06-04 11:30z	2018-06-04 19:00z
D	2018-06-04 11:30z	2018-06-04 19:00z
E	2018-06-04 11:30z	2018-06-04 19:00z
F	2018-06-04 11:30z	2018-06-04 19:00z
G	2018-06-04 11:30z	2018-06-04 19:00z
H	2018-06-04 11:30z	2018-06-04 19:00z
<div> <div>Westbound</div> <div>Eastbound</div> <div>Map Pos</div> </div>		

The tab "organized Tracks" shows information about the various Track Systems (validity of the tracks) and allows quick positioning of the World Map for the respective Track System. Select the desired Track System (NAT, PACOT, AUSOT) or press the button "Map Position". Thereafter adjust the zoom factor to get a better overview of the extents of the selected track system.

Using the buttons "Westbound" or "Eastbound" respectively switches between all available track of the respective system. Greyed out tracks are not active.

Important

As the "Organized Tracks" are renewed on a daily basis and their endpoints must match the existing airway system, it is essential to have actual navigation data (AIRAC Cycle) by Aerosoft or Navigraph. Without actual data the tracks cannot be displayed.

5.10.3 Scratchpad

The "Scratchpad" is kind of a note pad to keep any kind of information using the keyboard or - using the "Touchscreen" button - even make handwritten notes.

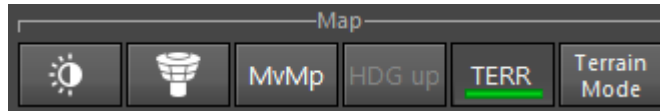
The "**Clear**" button erases all notes.

5.10.4 AIRAC Dates

A listing of the actual and a few following AIRAC dates. For the actual data cycle the remaining days of validity is also displayed.

Distance circles	Organized Tracks	Scratchpad	AIRAC Dates
1806	Mai 24, 2018 - Jun 20, 2018 16 days left		
1807	Jun 21, 2018 - Jul 18, 2018		
1808	Jul 19, 2018 - Aug 15, 2018		
1809	Aug 16, 2018 - Sep 12, 2018		
1810	Sep 13, 2018 - Okt 10, 2018		
1811	Okt 11, 2018 - Nov 07, 2018		
1812	Nov 08, 2018 - Dez 05, 2018		

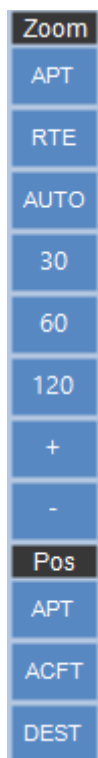
6 Map Functions



At the bottom of the EFBv2 window you find the "Chart Functions" (left to right) for:

- **Day/Night:** Switches between two colour schemes. The schemes can be adjusted and saved individually. More about that in the chapter "Colours".
- Selecting the **May Type:** "Ground Layout" or "World Map"
- **Moving Map:** If the Moving Map is activated, the center of the map is always adjusted to the aircraft position. If the Moving Map is OFF, the map remains static and the aircraft symbol is moving.
- **Heading up:** this is a sub-function of the Moving Map. It is only available if the Moving Map is activated, however only in "Ground Map" view. World Map is always aligned to "North up"
- **TERR:** Displays terrain information as contour lines.
- **Terrain Mode:** Switch between two different modes.
Details about the availability of terrain data and the different modes of terrain presentation can be read in chapter „10. Terrain“.

At the left edge of the map (ground and world) some more chart functions are available for:



• Zoom

The Zooming Function includes a submenu with predefined zoom settings. **Airport** automatically adjusts the zoom level to display the full extents of the airport(Ground Layout). **Auto** adjusts the zoom level to the actual value of the Auto-Zoom function. **Route** adjusts the zoom level to show the entire route on the World Map.

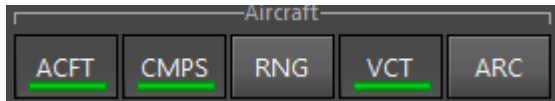
Thereafter three individually adjustable Zoom Values (User Settings) are available, adjusted here to **30 / 60 / 120** NM. The buttons with Magnifying Glass (+) and (-) can be used to adjust the zoom value on touchscreens where no mouse is available.

• Pos

Allows for quick positioning of the map to the Active Airport (**ARPT**), to the position of the aircraft (**ACFT**) or - in case a Flightplan is active - to the position of the Destination Airport (**DEST**).

7 Map Options

7.1.1 Aircraft



ACFT – Aircraft Symbol

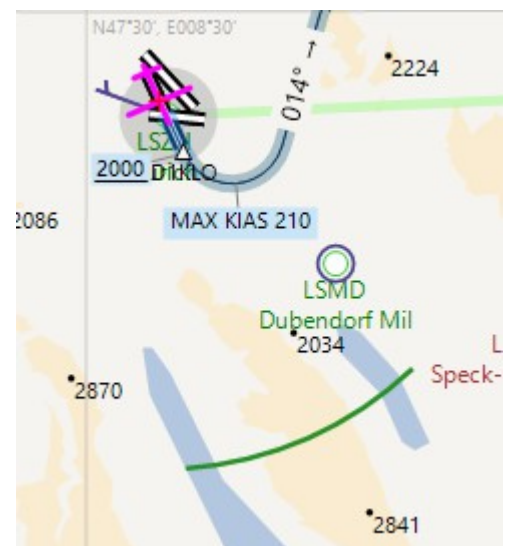
CMPS – Compass card

RNG – Concentric distance circles. The aircraft is always in the centre.

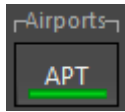
VCT – Heading and Track. shows the vectors for "Heading" and "Ground Track"

ARC - The so-called "Green Banana" depicts the approximate position where a climb or descent to a preset altitude will end. This function needs a few conditions to be fulfilled. Otherwise the "Green Banana" will not display:

- The aircraft must be equipped with an autopilot including Altitude Preselect function
- The aircraft must be airborne
- The autopilot must be ON
- The option ARC must be activated
- At least one adjustment of the Altitude Preselect function must be executed. If the Altitude Preselect is set to a certain altitude already at Simulator startup, the altitude is NOT recognized. A change in Altitude Preselect is required.
- The option "use vertical guidance" in the Aircraft Profile must be selected

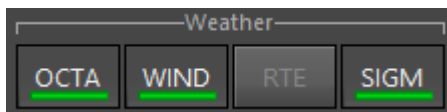


7.1.2 Airports



ARPT – Show and hide airports on the map.

7.1.3 Weather



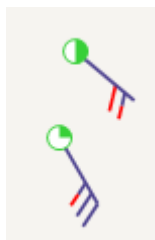
OCTA – Displays the circular weather symbols at airports which provide weather data.



These symbols give a short information about prevailing flight conditions at the respective airport. The colour coding is depicting the general condition mainly regarding visibility (**VMC**, **MVMC**, **IMC** and **LIMC**), whereas the cloud coverage is split into four 90° sectors of the circle.

In this example the general prevailing conditions are **VMC** (Visual Meteorological Conditions), and then - from left to right – 1st symbol no clouds (sky clear), thereafter in quarter steps 1 to 2 octas (=aviation term for one eighth) (few, FEW), 3 to 4 octas (scattered, SCT), 5 to 6 octas (broken, BKN) and finally 7 to 8 octas (overcast, OVC).

WIND – Displays the wind barbs



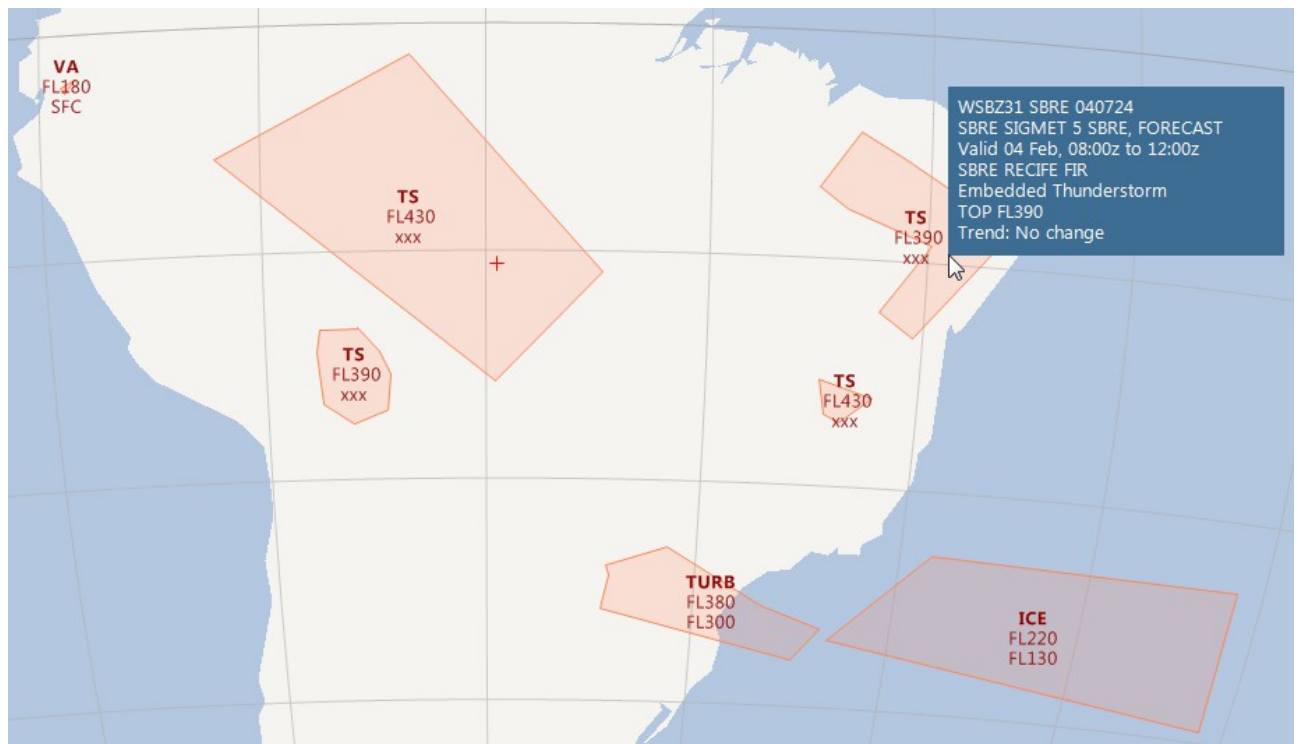
Wind barbs show the direction and strength of the prevailing wind. Red bars mean gusting winds. Black bars (long) represent 10 knots each, short bars 5 knots respectively. Decoding the two examples would mean (upper example): wind from southeast at 5 knots, gusting 20 knots. (lower example): wind from south-southeast at 25 knots, gusting 30 knots



A black circle indicates windspeed less than 3 knots (calm)

RTE – (Currently only available if ActiveSky is weather provider). Displays the current winds as wind barbs at each waypoint of the current route. Moving the mousepointer over a waypoint displays a tooltip with information about the winds at current altitude, as well as 3000 feet above and 3000 feet below.

SIGM – **S**ignificant **M**eteorological Information (SIGMET), displays areas of weather phenomena which may affect the safety of an airplane. If you selected „Real world“ as weather provider, then the SIGMETS around the world will be displayed.

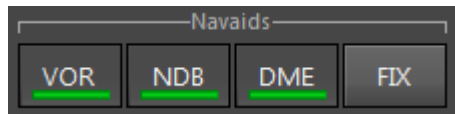


The relevant phenomenon (e.g. TS, TURB etc) is indicated in the geographic center of the area. If available the bottom and the top of the affected area is given in feet or Flight Level. Moving the mousepointer over the text provides a tooltip with a detailed information of the SIGMET.

If „ActiveSky“ is the weather provider, only SIGMETs along the current route will be displayed.

SIGMET areas can be described in several ways. EFB can only depict those which are provided as a polygon, because EFB does not have current data about the worldwide FIR boundaries which might be part of the area definition.

7.1.4 Nav aids



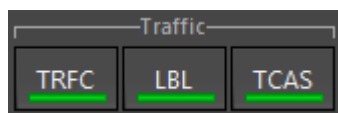
VOR UHF Omni Directional Range

NDB Non Directional Beacon

DME Distance Measuring Equipment

FIX – Defined Geographical Waypoints

7.1.5 Traffic



TRFC, T/LBL - displays AI- and Online Traffic. The display of aircraft symbols and associated labels can be split, to relieve the map display at high traffic density.

AI traffic is only displayed within a certain **radius** and **altitude band**. the radius is defined by FSUIPC, the altitude band can be adjusted in the User Settings (tab "Aircraft"). Default value is 40 NM.

X-Plane

In X-Plane the number of so called Multiplayer traffic aircraft is limited to 19. The aircraft itself does only provide crude information, so not all information is available compared to the data from FSX, P3D.

Labels for the AI traffic can be individually configured or adjusted. Configuration is done within the file „**trafficAssignments.txt**“ in the Client's datapath, folder "**Settings**". The file's structure will be explained in the following description.

```

1 // AivlaSoft EFB v2.x - www.aivlasoft.com
2 // Traffic labels assignments
3 // Caution: Unqualified changes herein can ca
4
5 [Ground]
6 Line1={3}
7 Line2={2}
8 Line3=
9 n
10 [ZoomGround]
11 Value=15
12 Line=3
13
14 [World]
15 Line1={4}{5} {12}
16 Line2=A{10} {13}
17 Line3={2}
18
19 [ZoomWorld]
20 Value=15
21 Line=3
22
23 [Airline]
24 Shorten=True
25 SetBlankPrivateGa=True
26
27 [AirlineShort]
28 Airwave=AW
29 American=AM
30 American Pacific=AP
31 Emerald Harbor Air=EA
32 Global Freightways=GF
33 Kenmore Air=KA
34 Landmark=LK
35 Orbit=OT
36 Pacifica=PC
37 Soar=SR
38 World Travel=WT
39

```

Ground

The Area "Ground" includes two groups of definitions, the definition for the labels **[Ground]** and the definition for display relating to the actual zoom value [ZoomGround].


```
[Ground]
Line1={3}
Line2={2}
Line3=
```

```
[ZoomGround]
Value=15
Line=3
```

The label for an aircraft on ground consists of a maximum of three lines (Line1, Line2, Line3).

After the equal sign a number enclosed in curly brackets will follow. Additional numbers, each in curly brackets, are allowed.

The number within the curly bracket corresponds to the numbering of the columns in brackets in the Traffic Monitor (see next picture, marked red):

 Traffic monitor

Airborne	Type (1)	Model (2)	Tailnumber (3)	Airline (4)	Flight # (5)	ICAO from (6)	ICAO to (7)	Latitude (8)	Longitude (9)	ALT [ft] (10)	HDG
airborne		A321	AAL1489			KEWR	KCLT	39.39457	-76.49466	34405	229
airborne		B772	UAE25			VHHH	OMDB	24.20346	105.29210	37017	285
airborne		B77W	SDM6296			UOSS	UIEE	56.14221	50.16150	38140	271
airborne		A320	AWQ681			WSSS	WADD	-0.67940	106.59340	34816	130
airborne		B74F	UAE88			OMDW	LSZH	28.67240	52.70881	33742	324
airborne		SF34	LOG29A			EGPH	EGPA	58.10407	-2.83688	9943	339
airborne		B738	VCP9AK			EGKK	GCLP	49.02997	-3.34130	39047	213
airborne		B77L	BOX116			EDDP	EBBR	50.79700	6.10603	17465	222

The "Traffic Monitor" can be invoked from EFBv2's **Server** Menu "System" > "Traffic Monitor".

All items right of the equal sign are displayed in the label on the corresponding line. Curly brackets are placeholders for the respective values in the Traffic Monitor.

If you like to have the aircraft model displayed on the first line of the label. write the following instruction:

```
Line1={2}
```

If you like additional information displayed (e.g. manufacturer), change the configuration of line 1 as follows:

```
Line1={1} {2}
```

If you don't want to use all three lines for label display, just leave the space right of the equal sign blank, it is essential however that all three lines are written.

To control the number of details displayed within the label, the definition of the second group **[ZoomGround]** allows to define a zoom value at which the third line is displayed.

The example on the previous page („Value = 15“ and „Line = 3“) shows a definition for displaying the third line from a zoom value of 15 and upwards. For a zoom value below 15 only lines 1 and 2 are displayed.

World

The area "World" consists of similar definition groups [**World**] and [**ZoomWorld**]. The use of definitions is equal to "**Ground**". The following example also shows that more than one value per line can be defined, including additional signs outside the curly brackets (in this example A for Altitude).

```
[World]
Line1={4}{5} {12}
Line2=A{10} {13}
Line3={2}

[ZoomWorld]
Value=15
Line=3
```

Configuration of the Altitude value

The value for the altitude which is provided by the simulator is neither the barometric altitude nor the pressure altitude. The value reflects the **true altitude above MSL** (Mean Sea Level). This value is of no relevance in aviation and therefore this value is only meaningful to a limited extent.

However this value can be configured with additional arguments which allow for an altered depiction. Following the number but separated by a slash the following arguments may be appended: **/r /r- /d /d-** where **r** stands for „round“ and **d** stands for „difference“. After both arguments you may append the minus sign.

Examples for an altitude of 27436 feet, provided by the simulator:

- {10} Value remains unchanged as received from the simulator 27436
- {10/r} Value will be rounded to the next 100 (r = round). 27436 becomes 27400
- {10/r-} Value will be rounded to the next 100, hundreds will be cut. 27436 becomes 274
- {10/d} Difference to the altitude of the own aircraft, rounded to the next 100 (d = difference).
- {10/d-} Difference rounded to the next 100, hundreds will be cut.

In case of the difference a minus or plus sign will put first, depending whether the AI traffic is above (+) or below (-) the own aircraft.

Airline

The area "Airline" mainly serves the purpose to shorten the sometimes lengthy names of Virtual Airlines to save space within the label.

```
[Airline]  
Shorten=True  
SetBlankPrivateGa=True
```

The first parameter "Shorten=True" defines whether names should be shortened or not. Shortening is only applied if the value is set to "true". In this case the abbreviations according the the table (see next picture) are used.

The second parameter can be used to inhibit the standard wording "Private (GA)" which is displayed by default for all General Aviation traffic.

```
[AirlineShort]  
Airwave=AW  
American=AM  
American Pacific=AP  
Emerald Harbor Air=EA  
Global Freightways=GF  
Kenmore Air=KA  
Landmark=LK  
Orbit=OT  
Pacifica=PC  
Soar=SR  
World Travel=WT
```

The list of abbreviations is used to assign a specific abbreviation for a certain airline and can be expanded by the user.

Changes within this list become effective by activating/deactivating the "TRFC" option.

TCAS - EFBv2 also includes a simplified TCAS (Traffic and Collision Avoidance System), which is able to recognize the surrounding traffic and to generate different warnings for different danger levels.

This function is only available if the respective option is enabled in the aircraft profile..

Only aircraft within a radius of 25 NM and within an altitude band of +/- 2800 ft are monitored. Aircraft outside this range are ignored.

Following symbols can be displayed on the world map:



Approximation of a traffic target is displayed by a white diamond. Approximation is recognized as such if the target is within a vertical deviation of less than +/- 850 ft compared to the own flight altitude, however it has not yet reached warning or alert distance.

If the target is higher, the altitude difference is displayed by a figure above the diamond led by a + (plus) sign. If it is lower, it will be displayed below the diamond and led by a - (minus) sign. An arrow will indicate the altitude trend of the target. In this example "+07" indicates the target being 700 ft above and descending.

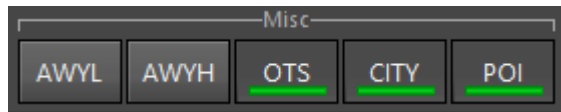


A **warning** will be issued if the target is within +/- 850 ft and the warning distance is below warning limit. The warning limit is calculated considering own speed as well as target speed.



An **Alert** is issued if the target's vertical deviation is within +/- 850 ft and the alert distance is below limit. The alert distance is shorter than the warning distance and is calculated considering own speed as well as target speed.

7.1.6 Miscellaneous



AWYL, AWYH - Airways (low/high)

OTS - Organized Track Systems (NAT, PACOT, AUSOT). See also "Utilities/organized Tracks" in this document.

CITY - displays a number of cities. This file ("worldLargestCities.txt") can be adjusted by the user. See also "Datapaths" in this document.

POI – Points of interest. In the data folder of the Client, under „Globe“ you can find a file named „pointsOfInterest.txt“ which holds the list of POIs. You may alter this list according to your own requirements. The data format is quite simple and can be edited using any text editor like „Notepad.exe“.

```
// AivlaSoft EFBv2 - www.aivlasoft.com
// This file contains points of interest (POI) to depict on
// Each line consists of 4 elements at least. It may be enhanced
// Elements are divided by a comma.

// Elements are as follows (element number in bracket):
// [1] Name of POI
// [2] Category or empty (allowed categories are: Summit, P,
// [3] Latitude (South is -)
// [4] Longitude (West is -)
// [5] Sector from (degrees True North)
// [6] Sector to (degrees True North)

[Version=2]

Cerro El Cóndor,Summit,-26.63112,-68.36095
Cerro Peinado,Summit,-26.62173,-68.11530
Iguazú Water Falls,, -25.695546,-54.436645,310,10
Incahuasi,Summit,-27.03333,-68.29584
Monumento a Cristóbal Colón,, -34.55688,-58.40976
```

Lines which start with **//** are comment lines and must not be changed.

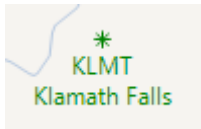
Each subsequent line holds the definitions for one POI which consists of **four** elements at least: **Name** of the POI, **category**, **latitude** and **longitude** of its position. The elements are divided by a **comma**.

←

If a POI is best viewed from a certain sector you may define this sector by two more elements on this line (as seen in the screenshot above, red arrow): Sector from (here 310°), and sector to (10°), both given in **degrees True North**. These two values must be given **clockwise**.

8 Map Display

8.1 Examples



Green: Departure and Arrival Procedures available on this airport.



Blue: Arrival procedures only available on this airport.



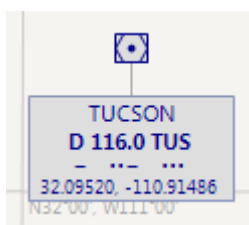
Dark red: no published procedures on this airport.



A circle around the asterisk means that this airport scenery is newer than the respective default scenery. In most cases this is an Add-On scenery.

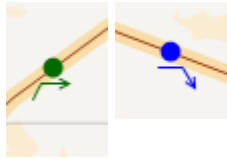


Magnetic variation, valid for the map center.



Navaid labels can be moved by dragging with the mouse. Click and hold the label, then drag. Release the mouse button at the desired position and the label position is saved for this navaid.

We recommend use of this procedure especially in dense areas for Departure and Arrival Procedures, to improve readability of the other map symbols.



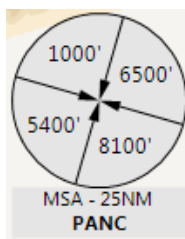
Top of Climb (TOC) in green, Top of Descent (TOD) in blue.

Only available if a flight plan is active and if the currently loaded profile option „Vertical Guidance“ is set to „ON“.



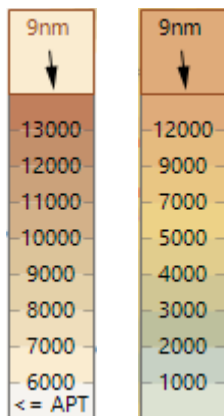
The magenta dot is only available on descents from > 10'000 ft. and depicts passing 10'000 ft on the calculated descent path.

Only available if a flight plan is active and if the currently loaded profile option „Vertical Guidance“ is set to „ON“.



MSA (Minimum Sector Altitude). Shows the Minimum Safe Altitude according to ICAO recommendation of 4 sectors of 90° each (oriented to magnetic north) within a radius of 25 NM around a defined point, usually a Navaid or the ARP. The definition of the centre is indicated in the lower rectangle box.

The Minimum Safe Altitude guarantees obstacle clearance of min. 1000 ft



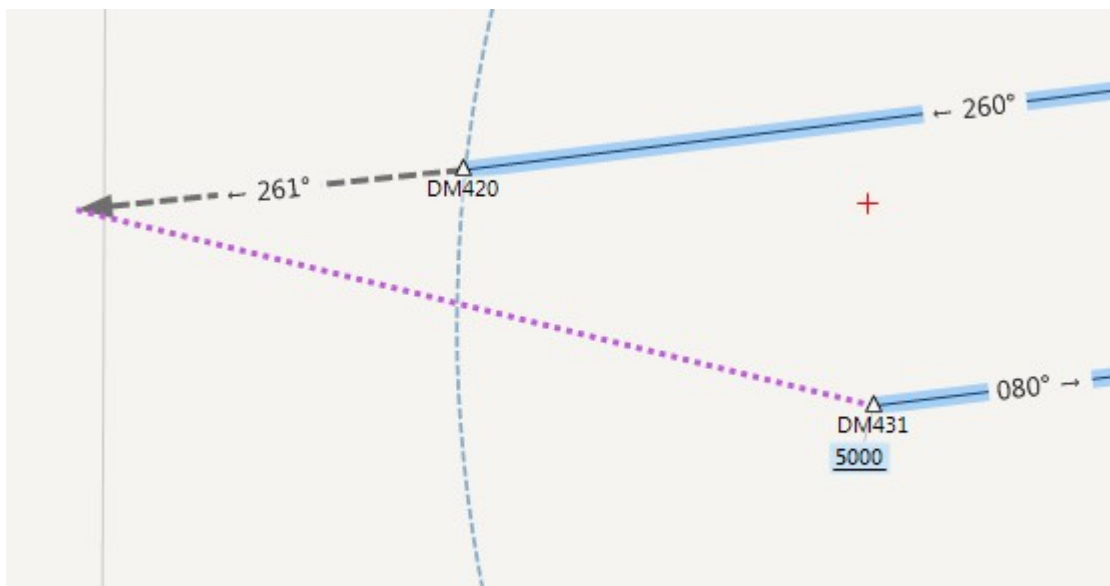
Colour scheme for the contour lines
(left: Terrain Mode A, right: Terrain Mode B).

The arrow in the top square indicates the direction and distance to the highest point. The highest point is always within the displayed terrain information, thus in a radius of approx. 50 NM around the Active Airport.

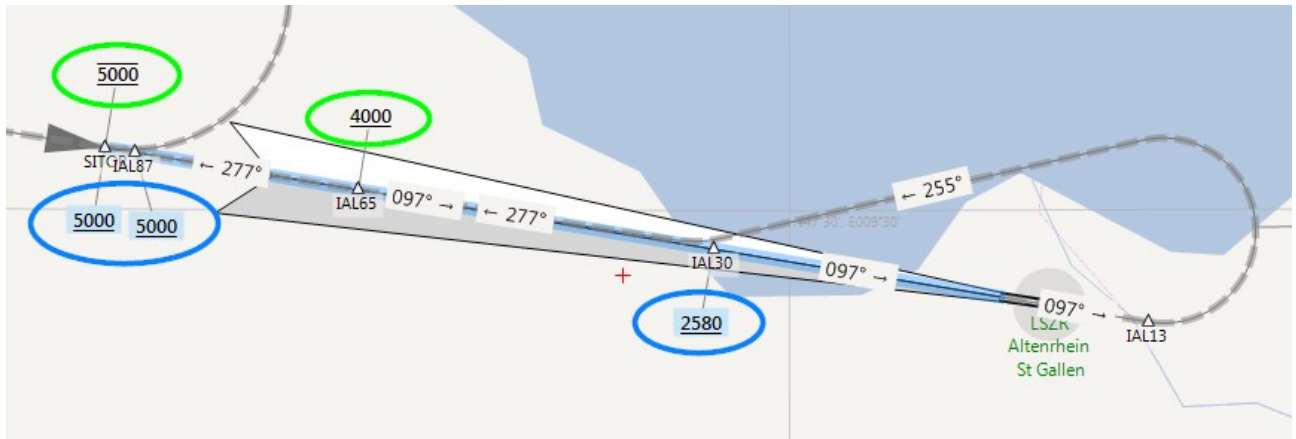
Details about terrain, please see the chapter „10. Terrain“.



Example of a visual initial departure. The SID actually starts at fix "ZG501".



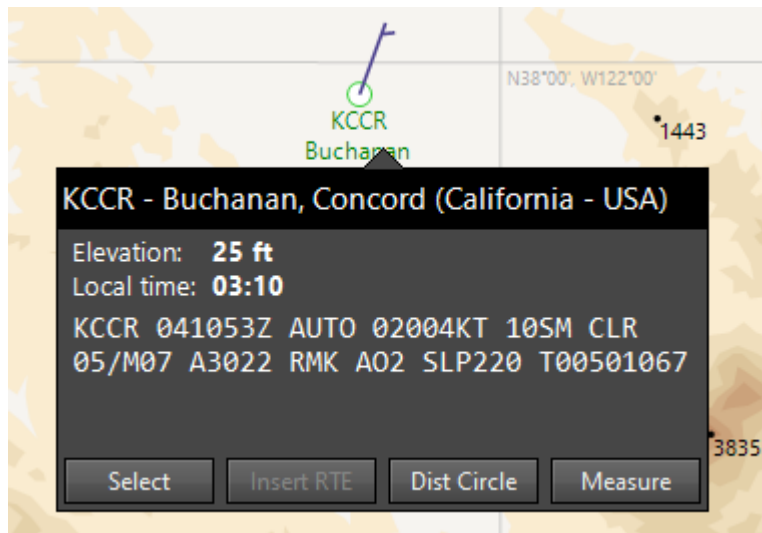
Example of an ARINC-424 coding with vectors. After passing fix "DM420" the aircraft is required to maintain a straight out course of 261° until next instruction from ATC. After that instruction the next waypoint will be DM431. It is unknown in this situation where the vector leg will end, therefore it is not possible to depict a reasonable procedure. As a consequence after the vector a purple dotted line is drawn to the next fix. A dotted line means "unclear" or "unspecified" flight track.



Altitude values of an Approach Procedure have different colour schemes, depending on whether they are part of the final approach or of the missed approach. This allows easier differentiation, especially if final approach and missed approach have common waypoints. In the above example the values for final approach have a light blue background whereas the values for missed approach have a transparent background. You are however free to change the colour scheme in the User Settings.

8.2 Context sensitive menus

A context sensitive menu can be displayed at each random point on the World Map. The menu contains items related to the clicked item. Thus the name "context sensitive". In this example a right click on the airport name opens the following menu:



Displays airport elevation and local time. Right below the current METAR information (if available).

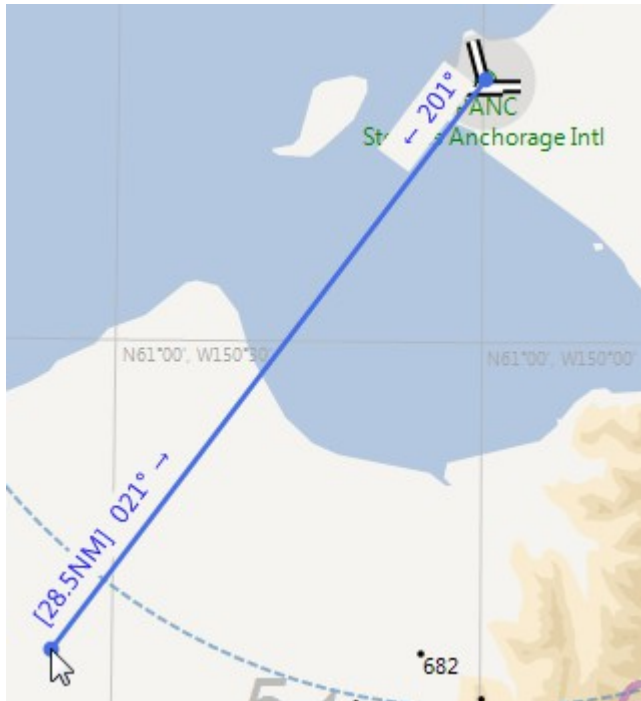
Below are four function buttons:

Select: Allows you to select this airport as the active airport.

Insert RTE: As long as a route is activated, this button is available for inserting this airport into the Flightplan. More on that in the document "6 Flightplan".

Dist Circle: Allows you to draw a distance circle around this airport. This function is described under "Utilities".

Measure: The most right item in the menu offers the function "measuring tape". Selecting this option will draw a blue line from the menu origin to the mouse pointer. You can drag the mouse to any location. On top of the blue line you will read the actual distance and both magnetic courses "from" and "to" continuously updated. The measuring tape will remain "sticky" to the mouse pointer until another mouse key is pressed.



8.3 Vertical Guidance

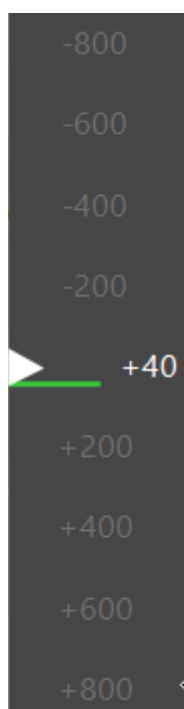
The display for vertical guidance will help you to maintain a pre-calculated descent path and thus provides obstacle clearance and adherence to any descent restrictions throughout the whole descent.

The display appears at the right border of the World Map and becomes visible as soon as the aircraft has reached the TOD (Top of Descent) of a previously calculated descent path.

Following conditions must be fulfilled to make the display available:

- The option "Vertical guidance" must be enabled in the aircraft profile
- A Flightplan must be active

The display for vertical flight guidance can be shown in **two different variants**. A **detailed** and a somewhat more **compact** variant. The compact variant is similar to the glide path display in the primary flight display of an A320. **Switching** the display variant is done by **clicking with the mouse** on the display itself. In the following, the same situation is shown with the detailed variant on the left and the compact variant on the right.



The display for the "Vertical Guidance" is divided into two areas. In the upper area, the deviation from the nominal path is displayed.

The display is designed as a so-called "command instrument", which means that the display tells you in which direction (down or up) you have to correct in order to stay on the target path. You have to "fly by the pointer", so to speak.

If the horizontal line is below the white triangle on the left edge, or the diamond below the white line, you are too high. If the horizontal line is above the white triangle, or the diamond is above the white line, you are too low.

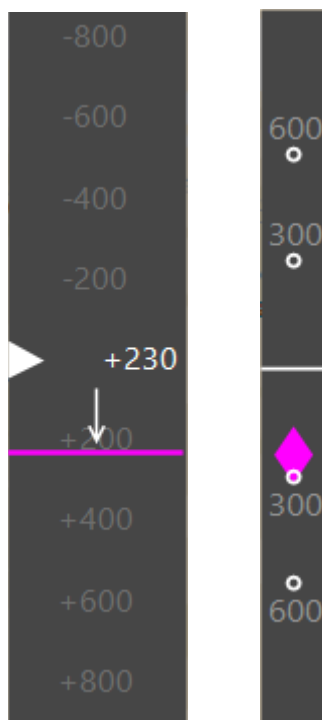
The white triangle or white line symbolizes the position of the aircraft in relation to the precalculated descent path. If the deviation from the **nominal** glide path is within **+/- 50 feet**, the instrument will display a green line or a green diamond.

BELUS
16000 ft
-640 ft/min
after BELUS Level off

The lower part of the display provides information about the **next** waypoint which has an **altitude restriction** and provides a **preview** (in blue) of the part of the route which follows this waypoint.

This example shows the waypoint BELUS in one of the standard approach routes into Geneva (LSGG). To cross the waypoint BELUS at the required altitude maintaining the present ground speed, the required ROD (Rate of Descent) is -640 ft/min. The required ROD is continuously recalculated and considers varying ground speed as well as deviation to the required descent path. After BELUS you continue in level flight.

Here are a few more display examples of the "Vertical Guidance"



The aircraft is too high. The "ideal path" is 230 ft lower. The arrow points to the required correction.



The aircraft is still **too high**. If the deviation is exceeding 500 ft an additional warning "TOO HIGH" will be issued and the color changes to yellow.

If the deviation is more than +300 feet the diamond will be depicted as 'border only'



The aircraft is 350 feet below the path. If the deviation is more than -300 feet the color changes to yellow.

If the deviation is more than -300 feet the diamond will be depicted as 'border only'





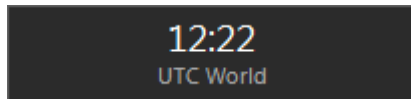
Whenever the vertical deviation exceeds **-700 ft** (700 ft too low), the colour changes to **red**.



If the deviation is more than **+/- 900 feet** the diamond will be depicted with an open side. Additionally, the deviation can be read in **hectofoet**. Here, in this example, the aircraft is flying approximately 1100 feet above the nominal glide path

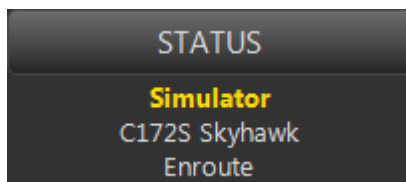
9 Sidebar

The "Sidebar" displays additional information to various themes.



Shows the "actual" UTC. This can either be "Computer Time" (UTC World) or the Simulator's own timer. The definition of which time is to be shown can be set in the User Settings, tab "Global". Setting is only available on the Master.

A mouseclick into the display opens the clock panel. See following chapter "Clock/Flight Time/Countdown/Stopwatch".



Status Display informs about the most important system states. The order and colour of the displayed messages is dependent on the message priority. In addition to possible messages the actual aircraft profile and the Flight Phase is displayed.



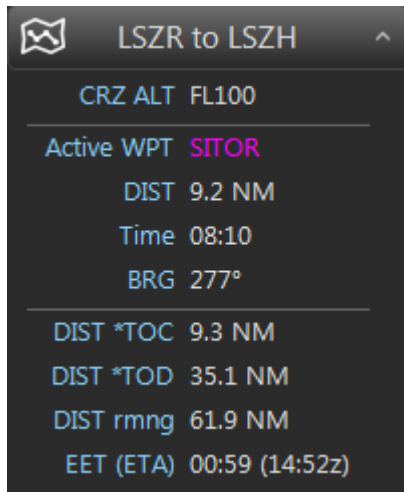
Short information for the Active Airport.

In case the option „Altimeter Calibration Warning“ is selected in the Aircraft Profile, any deviation of the altimeter setting to the actual atmospheric pressure (METAR) will be displayed.

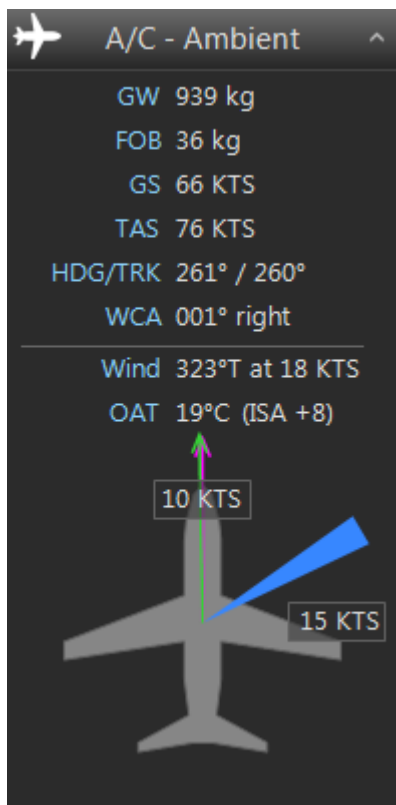
If the deviation is greater than 2 mb a (yellow) "Caution" is used. A deviation of more than 5 mb triggers a (red) "Warning".

To display the „Altimeter Calibration Warning“ following requirements are necessary:

- the option must be selected in the Aircraft Profile
- a Transition Altitude must be declared for the active airport
- METAR data must be available for the Active Airport



This panel is only available if a Flightplan is active. It gives a short overview of important data for the routing actually flown.

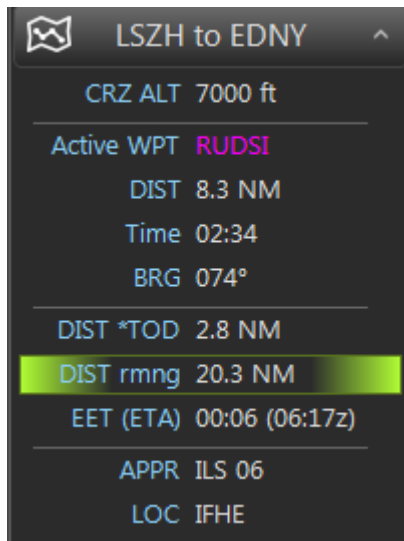


gives an overview on important information regarding the aircraft in use and its close environment.



Information on the actual Auto-Zoom setting.

Settings for Auto-Zoom can be individually done for each Aircraft Profile.



Generally each line in an information panel can be highlighted with a single click, as if it were marked with a marker pen. One more click will extinguish the highlighting.

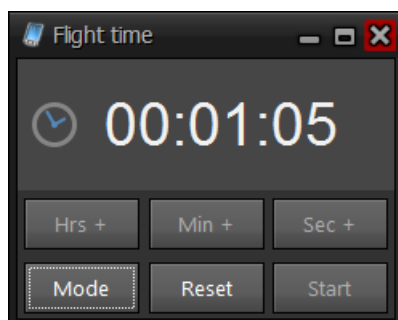
This markings can be very helpful to make a few important values more "eye-catching" within the numerous information lines.

9.1 Clock (Flight time/Countdown/Stopwatch)

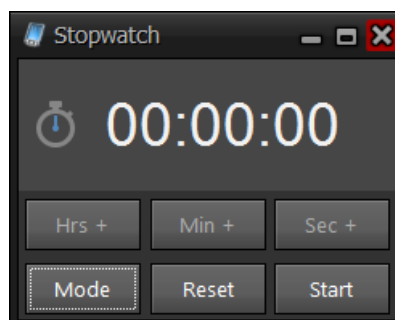
Clicking the display of Actual Time opens the clock. There are 3 different modes of operation::

- Actual Flight Time
- Stopwatch
- Countdown

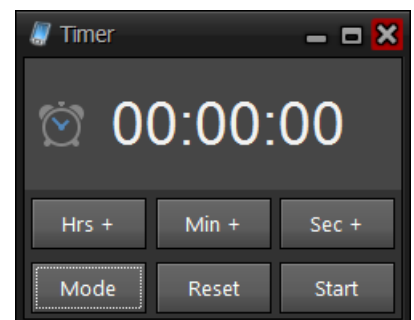
Actual Flight Time is automatically started at "Liftoff" and stopped at "touchdown". Stopwatch and Countdown are self-explanatory.



Actual Flight Time



Stopwatch



Countdown/Timer, with selectable target time.

10 Terrain

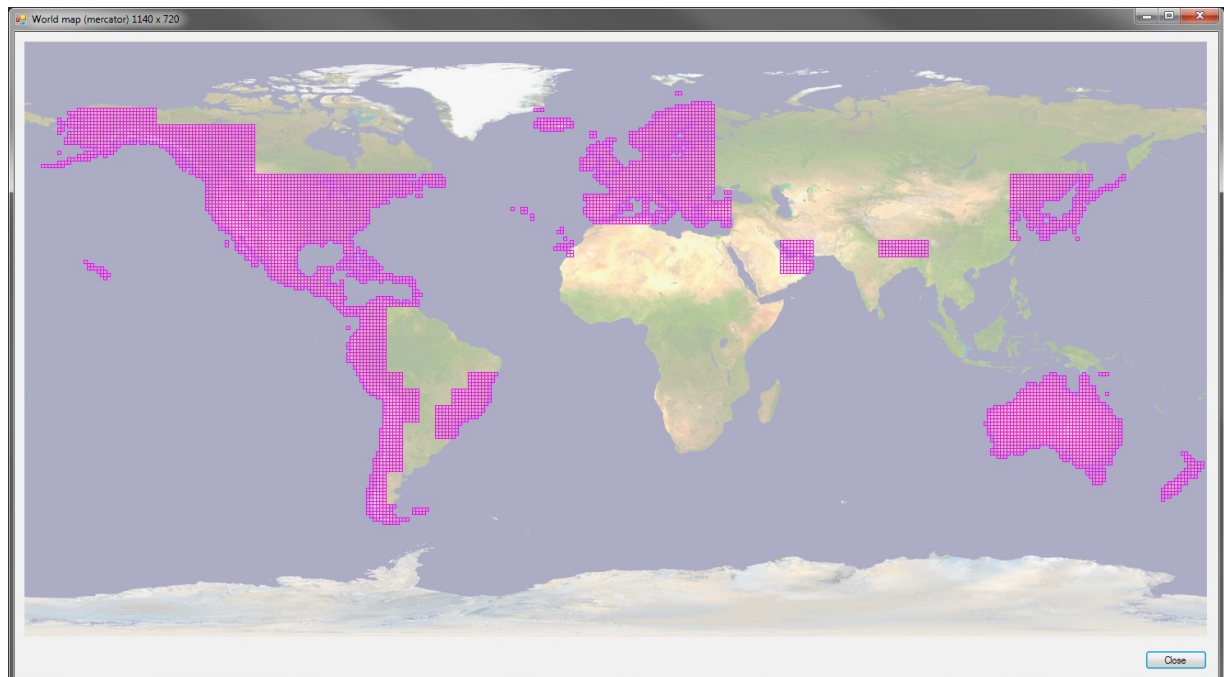
10.1 Altitude model of ASTER GDEM

Terrain data used by EFBv2 are derived from ASTER GDM and are widely identical to most Terrain Mesh data used in the Simulator. ASTER GDEM is a product of METI and NASA.

the mentioned ASTER data are freely available over the Internet. At some points there are however a few inaccuracies or they are not matching Real World. The closer they are to the Poles, the more Inaccuracies are showing up. Such inaccuracies mainly show up in the form of "spikes", i.e. altitude information that are deviating considerably from the actual values. Nevertheless for use in Flight Simulators these deviations are not of too much importance as most of the airports are situated in regions with a low error rate.

10.1.1 Coverage

Basic terrain data are available as Grid points. Calculation of contour lines is a very time consuming process and therefore not all regions on the world are available. Currently (Dec 2020) the following areas are covered:

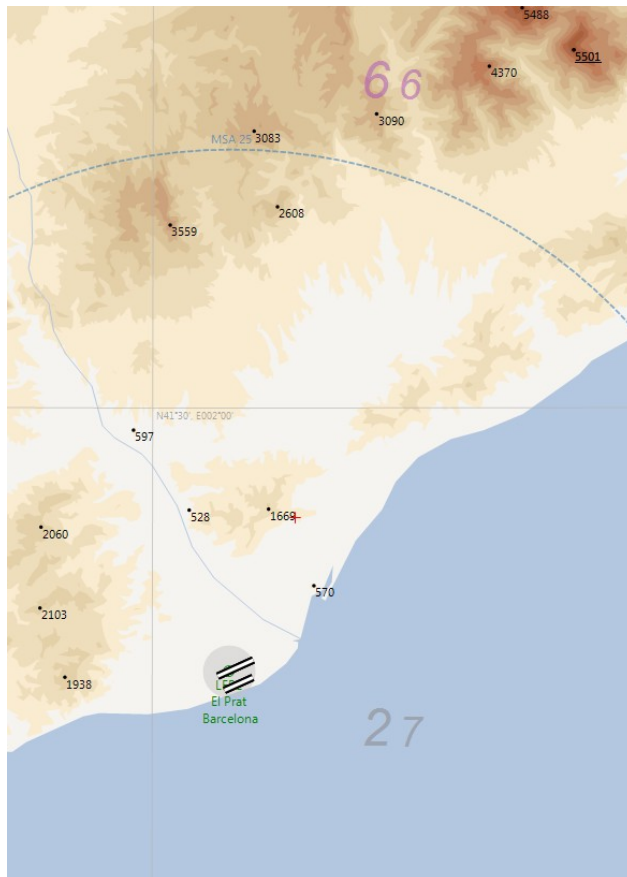


10.2 Display modes

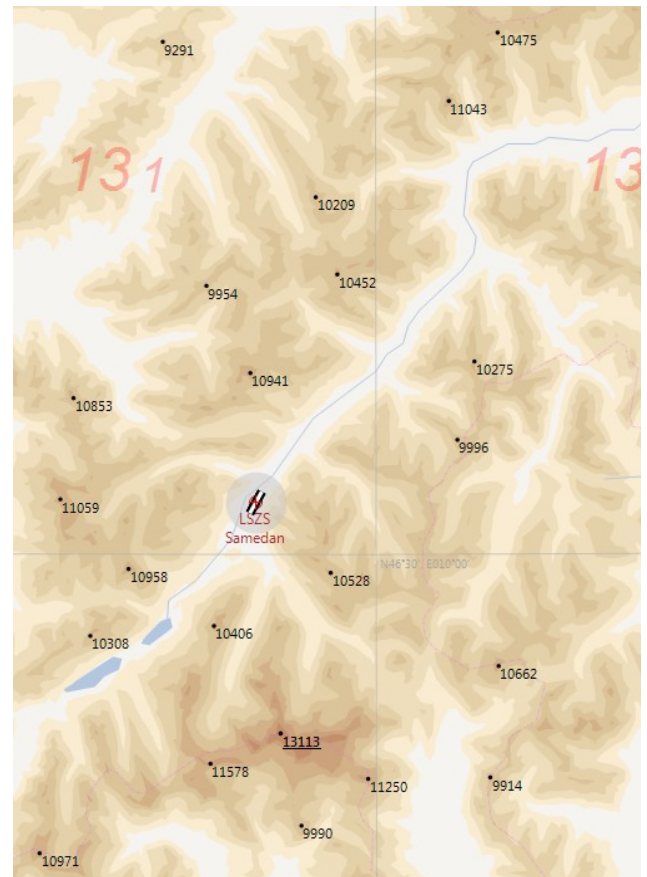
10.2.1 Mode A

The display of the color coded Contour Lines is always **referenced to the airport elevation** thus the airport altitude corresponds to the lowest colour level. Any lower terrain than airport level is not displayed anymore. The center of the displayed area is at the airport reference point (ARP).

See here two differing airports: one at Sea Level and one named the "highest airport in Europe"



LEBL - Barcelona (Elevation 11 ft MSL)



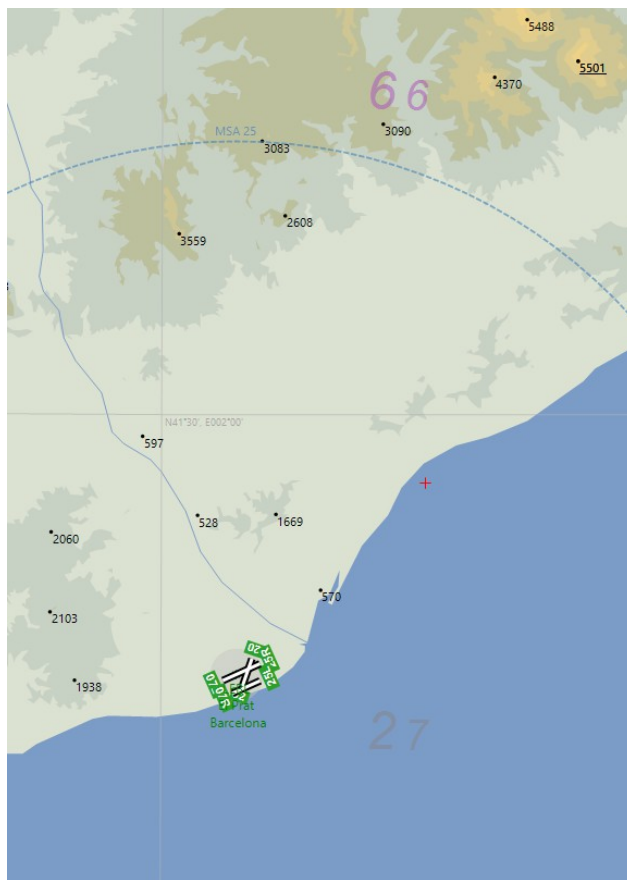
LSZS - Samedan (Elevation 5600 ft MSL)

10.2.2 Mode B

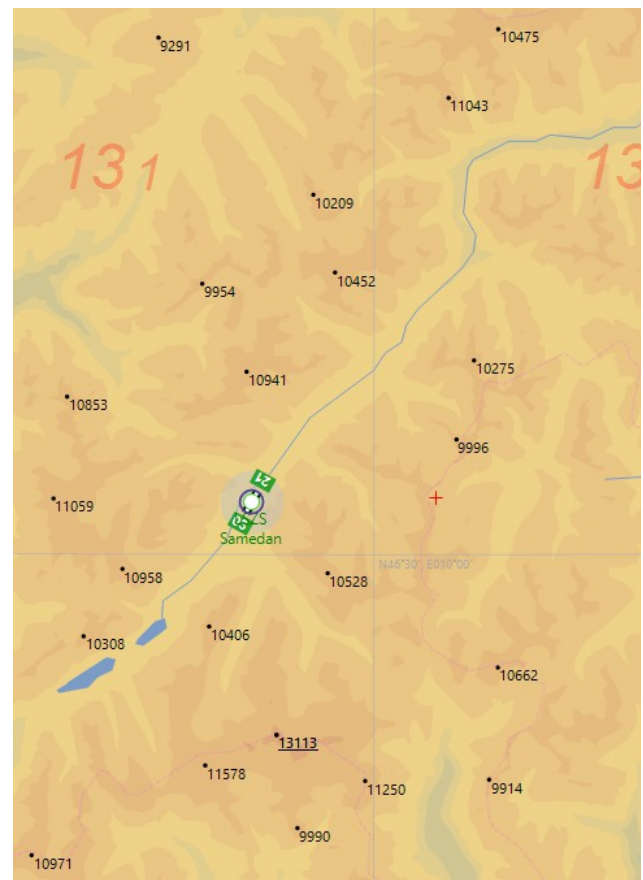
The display of the color coded Contour Lines is always **referenced to MSL** (Mean Sea Level). The center of the displayed area is as follows:

- While the aircraft is **on ground**: Airport Reference Point (ARP)
- While the aircraft is **airborne**: Aircraft position, refreshed every 10 NM. While the aircraft is airborne, and the zoom level allows depiction of terrain, you always see the terrain below your aircraft.

Here you see the same two differing airports as above.



LEBL - Barcelona (Elevation 11 ft MSL)



LSZS - Samedan (Elevation 5600 ft MSL)

11 Status Bar

The status bar at the bottom of the EFBv2 screen shows a few additional information.

Left side (left of the logo „AivlaSoft EFB“):



The **CPU load display** does not show the CPU load of the computer system, but "only" the load of the process "EFB Client". It can be seen as an indicator for the individual load for the system imposed by the EFBv2 Client. If the load indicator permanently shows values in excess of 20%, it would be advisable to deactivate a few map options to reduce overall load.

The "Master" display is only relevant if there are more than one Clients active on the Local Network. If only one Client is active, this one is always called "Master". If more than one Client is active, the first Client connected to the Server receives the "Master" status. If the actual "Master" is disconnected, the status is transferred to the next Client. A few User Settings (tab "Global") can only be handled by the "Master"

WX shows the actual weather source

Right side (right of the logo „AivlaSoft EFB“):



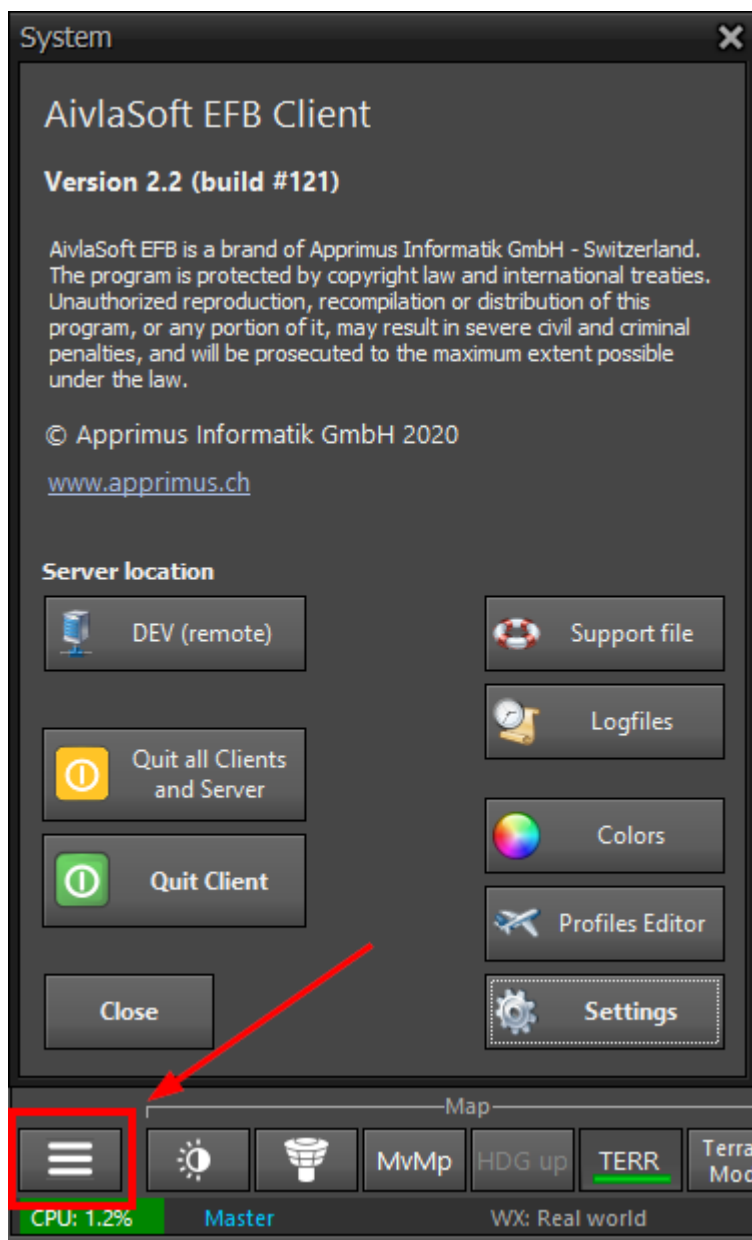
NAV shows the actual navigation data in use (As = Aerosoft, NG = Navigraph)

SIM shows the simulator type connected to the Server

Version shows the actual Program build of the EFB V2 Client

12 System

The dialogue window "System" is opened by the button holding the so called "Hamburger" Symbol, on the lower left of the Client window (red rectangle on the next picture). The system dialogue provides access to various configuration tools and also includes the buttons to **switch OFF** the Client.



Server location

The button "Server location" shows on its caption on which computer the Server (connected to this Client) is installed. If the location of the Server is changed (e.g. because of a fresh install), the same dialogue window can be opened by this button, on which you entered information about the Server's location at the Client's first start.

Support file

The button "Support file" starts the creation process for a datafile containing all important information about EVB v2's Server for bug tracing. The content of the zipped file consists of configuration files and logfiles of EFBv2, as well as Windows event logs of EFBv2.

Important

No personal data are stored in this file.

No automatic file transfer over the Internet is initiated. The zipped "Support file" will be placed on Windows Desktop and can be opened any time by the User, if required. This file must be "manually" forwarded to AivlaSoft's Support Desk (support@aivlasoft.com).

Run this "support file" process only if requested by AivlaSoft's Support Desk.

Logfile

The button "Logfiles" provides direct access to the respective data path in Windows Explorer.

Quit all Clients and Server

A handy means to shut down Client **and** Server at one click. If more than one Client is active on a Local Network, **all Clients** will be shut down.

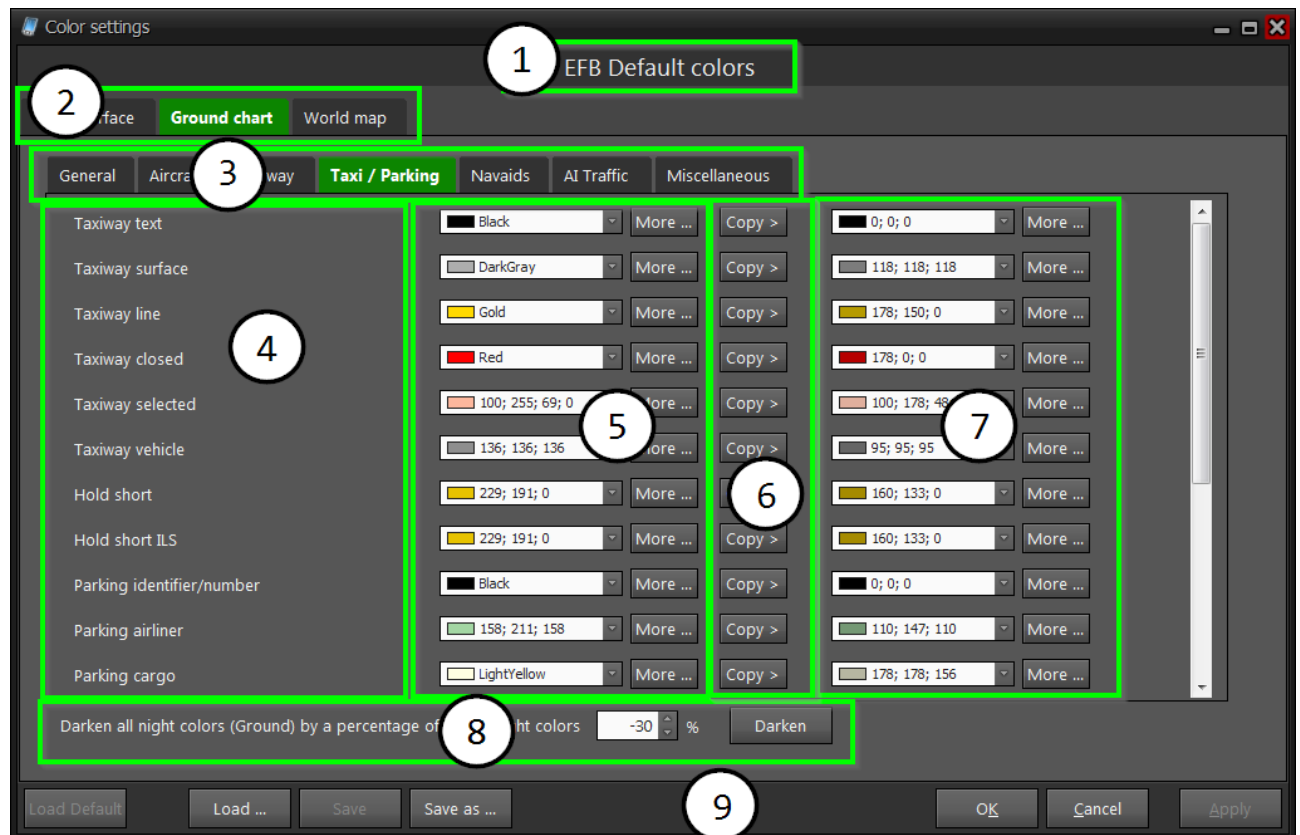
Quit Client

Shuts down this Client only.

Close

Closes the System Window.

12.1 Colours



The dialogue window for colour modifications is split into the following areas:

1. Shows the actual colour settings
2. Division into three main groups "User Interface", "Ground chart" and "World map"
3. Subdivision in each of the main groups
4. description of the respective colour settings
5. column for "bright" (daylight) colours
6. copying of an individual colour setting
7. column for "dark" (night) colours
8. Help function to ease night colouring
9. Function keys

Most elements described above are self-explanatory. We will explain only the few function keys at the bottom of the window and the help function "Darken".

Load Default

This button loads and activates "EFB Default Colours".

Load ...

Opens a dialogue window to load and activate previously created, own colour settings.

Save

Saves the changes made on the actual colour settings.

Save as ...

Saving the actual colour settings under a new name. This allows you to create your personal colour settings.

OK

The actual colour settings are applied and the dialogue window closes.

Cancel

All changes to the present colour settings are discarded.

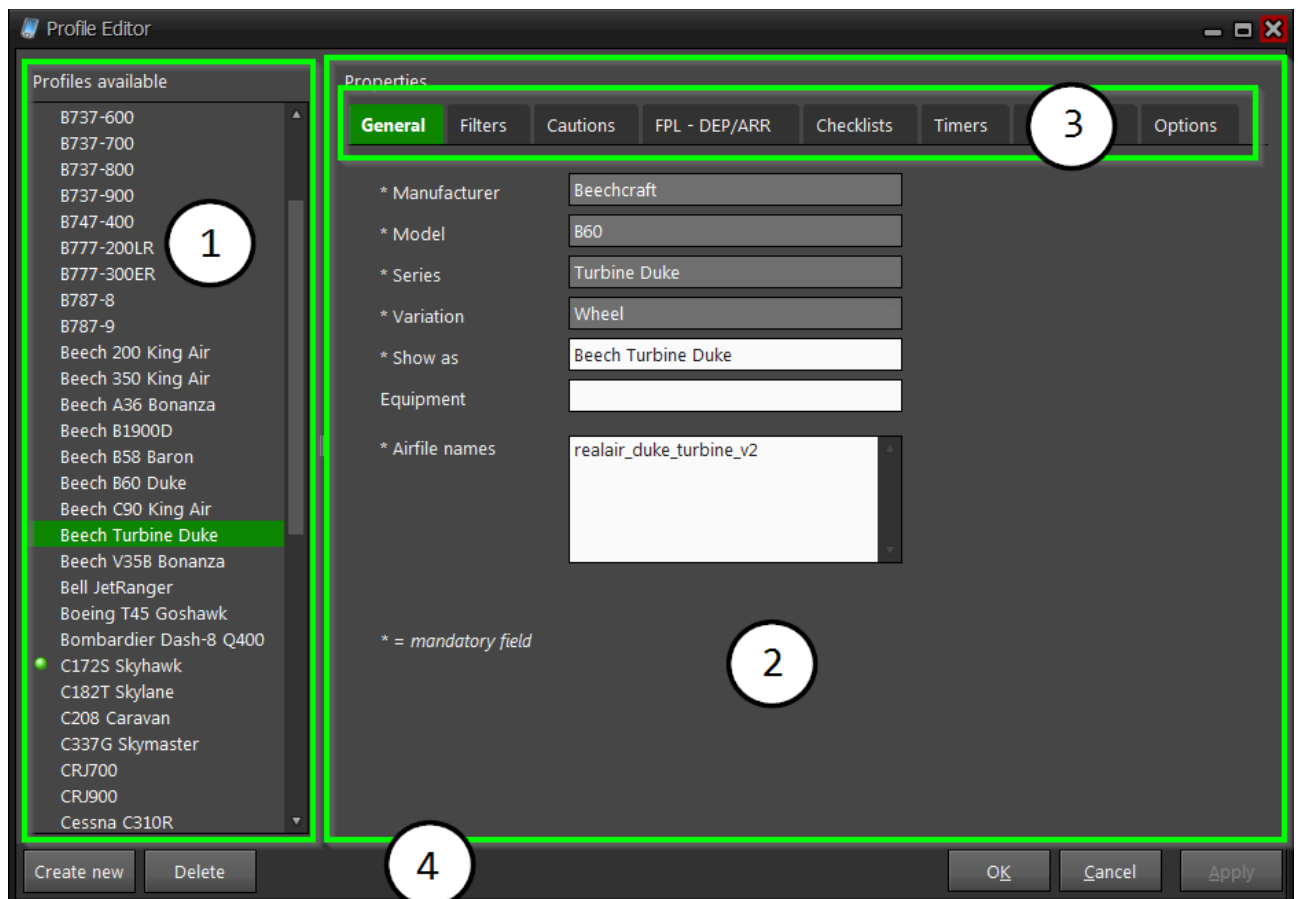
Apply

The actual colour settings are applied and the window remains open.

The help function "**Darken**" is used to darken all colours of the "bright" setting by a defined percentage at one step. This function overwrites all colours of the "dark" column. In the "EFB Standard" colour settings e.g. all dark colours are darkened by 30% from the "bright" values.

12.2 Profiles Editor

The Profile editor is split into the following areas:



1. List of all available profiles
2. Properties of the profile
3. Selection tabs for the various property groups
4. Function keys

List of profiles

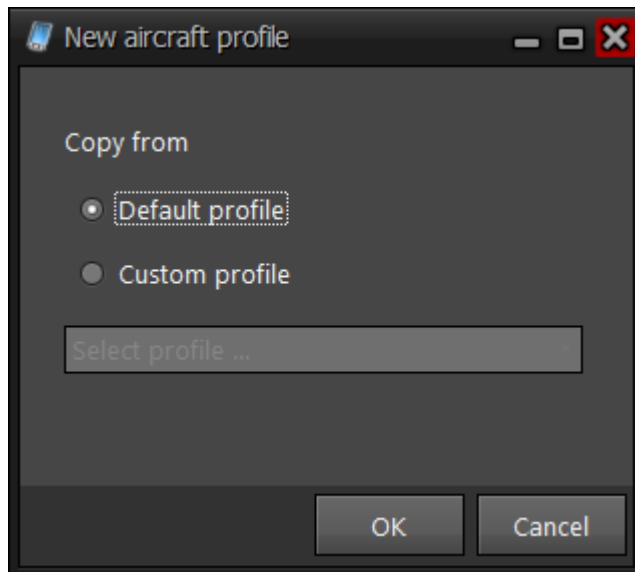
The list to the left of the dialogue window shows all available aircraft profiles. The presently active profile is marked by a green dot ("C172S Skyhawk" in the picture above). You can select each of the profiles by clicking the respective line in the list. The line will be highlighted green and in the right window the properties of the profile are displayed.

Properties/Goups

Each profile holds various properties in groups selectable by the tabs. All of them can be edited in this window.

Function keys

The "**Create new**" button allows you to create a new profile:



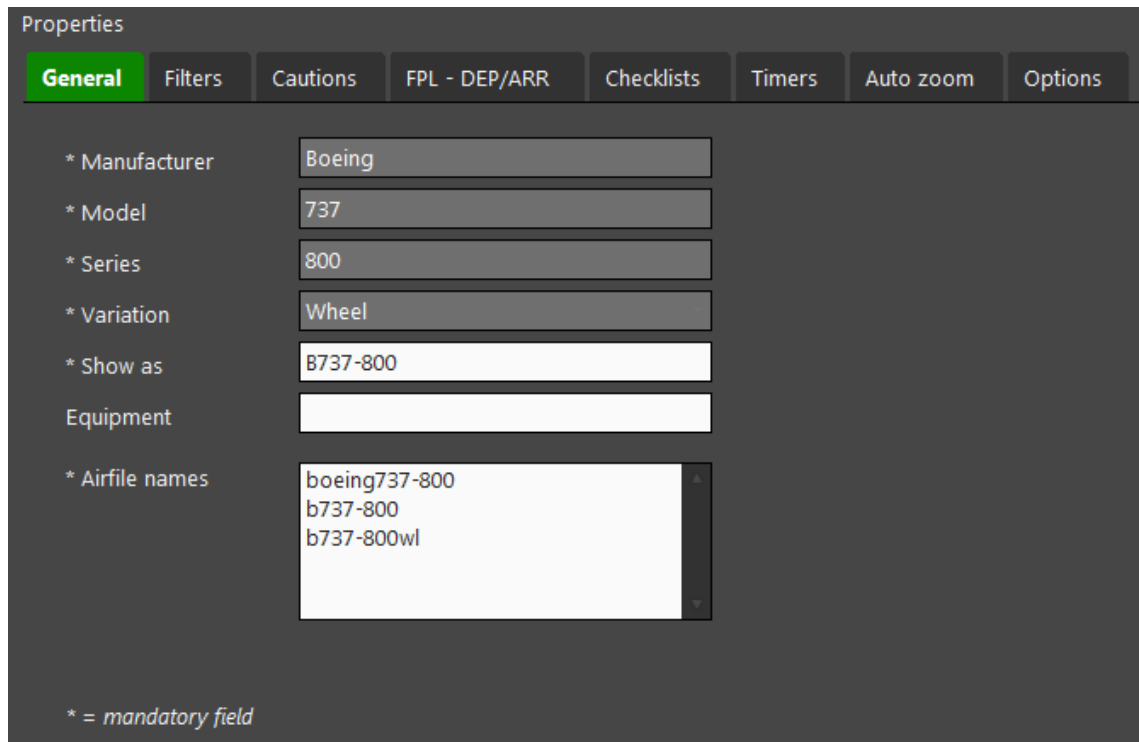
The creation process is facilitated by either selecting the "EFB Standard Profile" (**default profile**) as a template or to copy the entire dataset from an existing (**custom**) profile. Selecting the "custom" option opens a so-called "Combobox" from which you can select any custom profile as your initial template. After selection you either press "**Ok**" to continue the creation process or "**Cancel**" to abort.

If a profile is selected, it will be automatically loaded and you can start editing the properties.

The button "**Delete**" deletes the profile selected from the list.

Once deleted, a profile cannot be recovered any more!

12.2.1 General



Properties

General Filters Cautions FPL - DEP/ARR Checklists Timers Auto zoom Options

* Manufacturer Boeing

* Model 737

* Series 800

* Variation Wheel

* Show as B737-800

Equipment

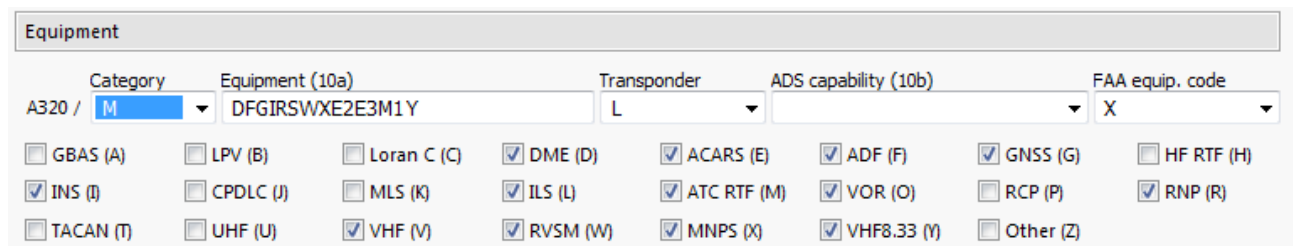
* Airfile names
boeing737-800
b737-800
b737-800wl

** = mandatory field*

The four greyed-out fields can only be altered if a new profile is created. Once a profile is stored, a internal unique identification key is created from these four entries. For that reason these fields remain locked.

The entry in field "**Show as**" defines the presentation of this specific aircraft on the Sidebar.

In the field "**Equipment**" you can enter the ICAO Flightplan definitions of electronic equipment. This equipment code is displayed in each Flightplan and furthermore will be used for Online-Flightplans. A very good means to create such equipment codes is included in the commercial Flight Planning Software "**PFPX**", developed by FlightSimSoft GmbH (www.flightsimsoft.com), from which the following screenshot is taken:



Equipment

Category: A320 / M Equipment (10a): DFGIRSWXE2E3M1Y Transponder: L ADS capability (10b): FAA equip. code: X

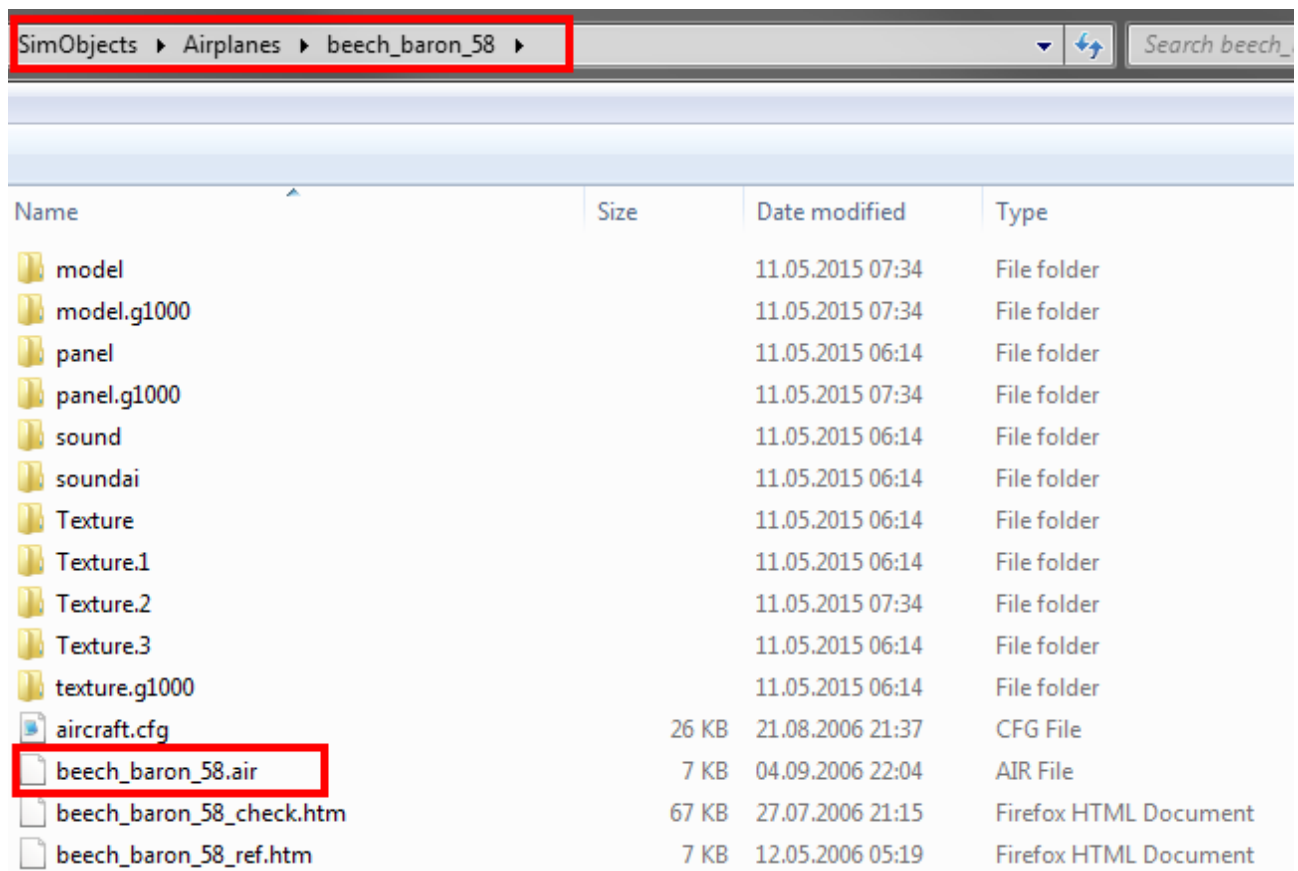
☐ GBAS (A) ☐ LPV (B) ☐ Loran C (C) ☒ DME (D) ☒ ACARS (E) ☒ ADF (F) ☒ GNSS (G) ☐ HF RTF (H)
☒ INS (I) ☐ CPDLC (J) ☐ MLS (K) ☒ ILS (L) ☒ ATC RTF (M) ☒ VOR (O) ☐ RCP (P) ☒ RNP (R)
☐ TACAN (T) ☐ UHF (U) ☒ VHF (V) ☒ RVSM (W) ☒ MNPS (X) ☒ VHF8.33 (Y) ☐ Other (Z)

For pilots not using online flying features, an entry into the "Equipment" field is not necessary.

Airfile names

EFBv2 automatically recognizes the aircraft in use. For the simulators P3D, FSX, FSX:SE this is achieved by reading the name of the Air file. This is a specific file which is unique to each aircraft installation. It can be identified by its extension *.air.

The *.air file for all MS-based Simulators is located inside the installation path of your Simulator: [X]:\[installation path]**SimObjects\Airplanes**\[aircraft model] (in the example below Beech_Baron_58.air)



Insert the name of the *.air file for the aircraft to be assigned to this profile into the input field "airfile names". Multiple entries are possible as the same aircraft model may be installed from various developers.

Use only the leading part of the filename (without extension *.air). In the example above this would be „**beech_baron_58**“.

For many commonly used aircraft in simulation a profile is provided with the basic installation.

If a profile cannot be assigned to your favourite aircraft in use, a warning message will be displayed in the Client window and the default profile will be loaded. The first check would be to compare the entries in this input field of the required profile with your favourite aircraft's Air file.

Important

Any changes within this "**airfile names**" list require a restart of the Client, as the Client needs to read all Aircraft Profiles to build a new index.

MSFS

In MSFS usually the aircrafts ICAO code will be recognized to target the proper aircraft profile. Unfortunately this is not always possible due to encrypted files. In any doubt ask for help at the support forum.

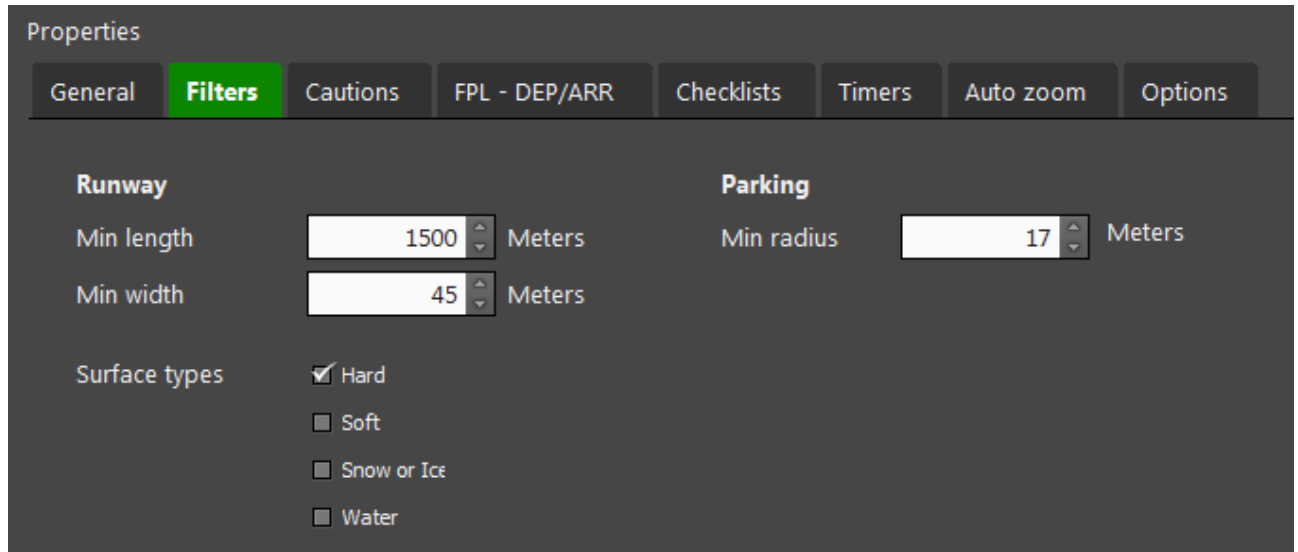
X-Plane

Currently X-Plane does not offer a DataRef which would allow to figure out which aircraft is loaded. To identify the currently loaded aircraft, EFB is therefore using the ICAO code from the aircraft's ACF-File.

This ICAO code can be entered into the text box named „Airfile names“.

Unfortunately not every ACF file provides the information about the ICAO code. If you run the program „PlaneMaker“ you can see the ICAO code on the 4th line under the menu „Standard“, „Author“. If there is no ICAO code for a certain aircraft, you have to manually load the corresponding aircraft profile in EFB.

12.2.2 Filters



Properties

General **Filters** Cautions FPL - DEP/ARR Checklists Timers Auto zoom Options

Runway

Min length 1500 Meters

Min width 45 Meters

Surface types

- ☒ Hard
- ☐ Soft
- ☐ Snow or Ice
- ☐ Water

Parking

Min radius 17 Meters

The "Filters" tab includes a number of variables to restrict the display of airports in respect to their runway length and width as well as to the surface conditions. The airports displayed in the EFBv2 Client will then be limited to those airport with matching criteria. Filtering can temporarily be suspended by the button "PRPL Filter" in the Airport selection window,

Using the minimum radius for parking spots offers additional filtering. Parking spots fulfilling the requirements for the aircraft profile will be shown with specific colour coding.

12.2.3 Cautions

Properties
General
Filters
Cautions
FPL - DEP/ARR
Checklists
Timers
Auto zoom
Options

Wind
Max head wind
80
Knots
Max tail wind
10
Knots
Max cross wind
20
Knots
Caution level
75
%

Air pressure
Max density ALT
8400
Feet
Caution level
80
%

Fuel
Min remaining
1500
kgs

Air temperature
OAT below
10
°C

Weights
Max takeoff weight
79140
kgs
Max landing weight
76500
kgs

The "Cautions" tab contains a number of parameter to generate a number of "Cautions" or "Warnings" if any such limit is violated. Those cautions and warnings are usually displayed on the Sidebar, however they will also be used for other restrictions like runway selection and others.

The "Caution level" is used to define the limit where the display colour on the Sidebar changes from "Caution" (yellow) to "Warning" (red).

In the shown example the wind speed for maximum crosswind is 20 knots. If the wind speed exceeds 75% (≥ 15 knots) a Caution message will be issued. If the wind speed exceeds the maximum allowed value (≥ 20 knots), a Warning message will be issued. No message is issued as long as the wind speed is below the Caution level.

12.2.4 FPL - DEP/ARR

Properties
General
Filters
Cautions
FPL - DEP/ARR
Checklists
Timers
Auto zoom
Options

Cruise altitude
Equal to, or below 150 NM 18000 Feet
Equal to, or below 250 NM 24000 Feet
Else 32000 Feet

Active airport
Auto select destination airport when remaining distance (along track) is less than 120 NM

Descent angle
Above 10000 feet 3.5 Degrees Below 10000 feet 3 Degrees

Standard rate turn
Speed (IAS) 210 Knots

ICAO Approach category
Type C

Cruise altitude

When creating a Flightplan the values defined within the "**FPL - DEP/ARR**" tab will be used to propose a certain cruise altitude, based on the length of the routing. In the example above for a routing length up to 150 NM a cruise altitude of 18'000 ft is suggested. For a length of 151 to 250 NM the proposal will be for 24'000 ft. For longer trips a cruising altitude of 32'000 will be proposed.

Active airport

This value defines the remaining routing distance (along track), where the Destination Airport will become the Active Airport.

Descent angle

These two values are used to calculate the vertical descent profile. However they are only in use if the option "Vertical guidance" is set under the "Options" tab in the aircraft profile.

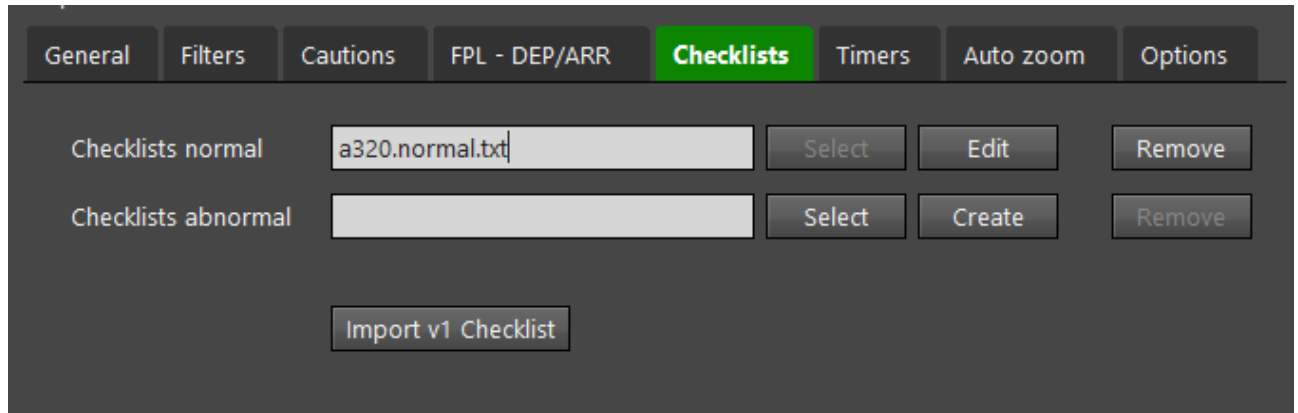
Standard rate turn

Not used at the moment

ICOA Approach category

is used to display approach minimums for the proper category.

12.2.5 Checklists



The tab "Checklists" is used to assign and edit checklists for the aircraft in use. Two different checklists can be defined: "Normals" and "Abnormals."

If the inputs fields are empty, no checklists will be selectable. To enable checklists you can either assign a checklist to the respective aircraft via the "**Select**" button (if available) or create a new one using the "**Create**" button. Once a checklist file is assigned you can edit the checklist using the „**Edit**“ button. The checklist files include all checklists for one of the two groups. For more information about creating and editing checklists see chapter "Checklist Editor".

The "**Remove**" buttons removes the stored assignment, it does however NOT remove the checklist file from the data medium and can be reassigned any time.

In case you still have checklists available from the previous version 1 of EFB, the button "**Import v1 Checklist**" allows you to import them into EFBv2. The old checklists must be of the XML-Format. If you still have maintained the old v1 installation you can export the checklists in XML format using the built-in exporter and then import into EFBv2.

12.2.6 Timers

Properties

General
Filters
Cautions
FPL - DEP/ARR
Checklists
Timers
Auto zoom
Options

Active airport

Auto select is inhibited for

3

Minutes after takeoff

Flight phase

Departure

2

Duration in minutes after lift off

Landed

2

Duration in minutes after touch down

After this time, the flight phase automatically changes to 'Ground'

Active airport

The value set at "Active Airport" defines how many minutes after liftoff the automatic switchover to the nearest airport is suspended. After this time is elapsed, the "nearest airport" will become active and possibly a changeover to a nearer airport will be initiated.

Flight phase

Flight phase timers are presently only in use to display the respective short information field on the Sidebar.

The active flight phase is displayed in the Status Display (second line from top in the Sidebar).

After touchdown the flight phase "Landed" will remain active for the defined time. Thereafter the aircraft will resume the flight phase "Ground".

12.2.7 Auto zoom

Properties
General
Filters
Cautions
FPL - DEP/ARR
Checklists
Timers
Auto zoom
Options

Ground chart

No/High speed	<input type="text" value="0.8"/>	Radius NM	0 - 3 kts, > 30 kts
LOW speed	<input type="text" value="0.25"/>	Radius NM	> 3 - 30 kts
Speed limit	<input type="text" value="30"/>	Knots	

World map

Low	below	<input type="text" value="6000"/>	Feet AAL	<input type="text" value="20"/>	Radius NM
Medium	below	<input type="text" value="10000"/>	Feet AAL	<input type="text" value="40"/>	Radius NM
High	below	<input type="text" value="25000"/>	Feet QNH	<input type="text" value="80"/>	Radius NM
Long range	above 'High'			<input type="text" value="300"/>	Radius NM

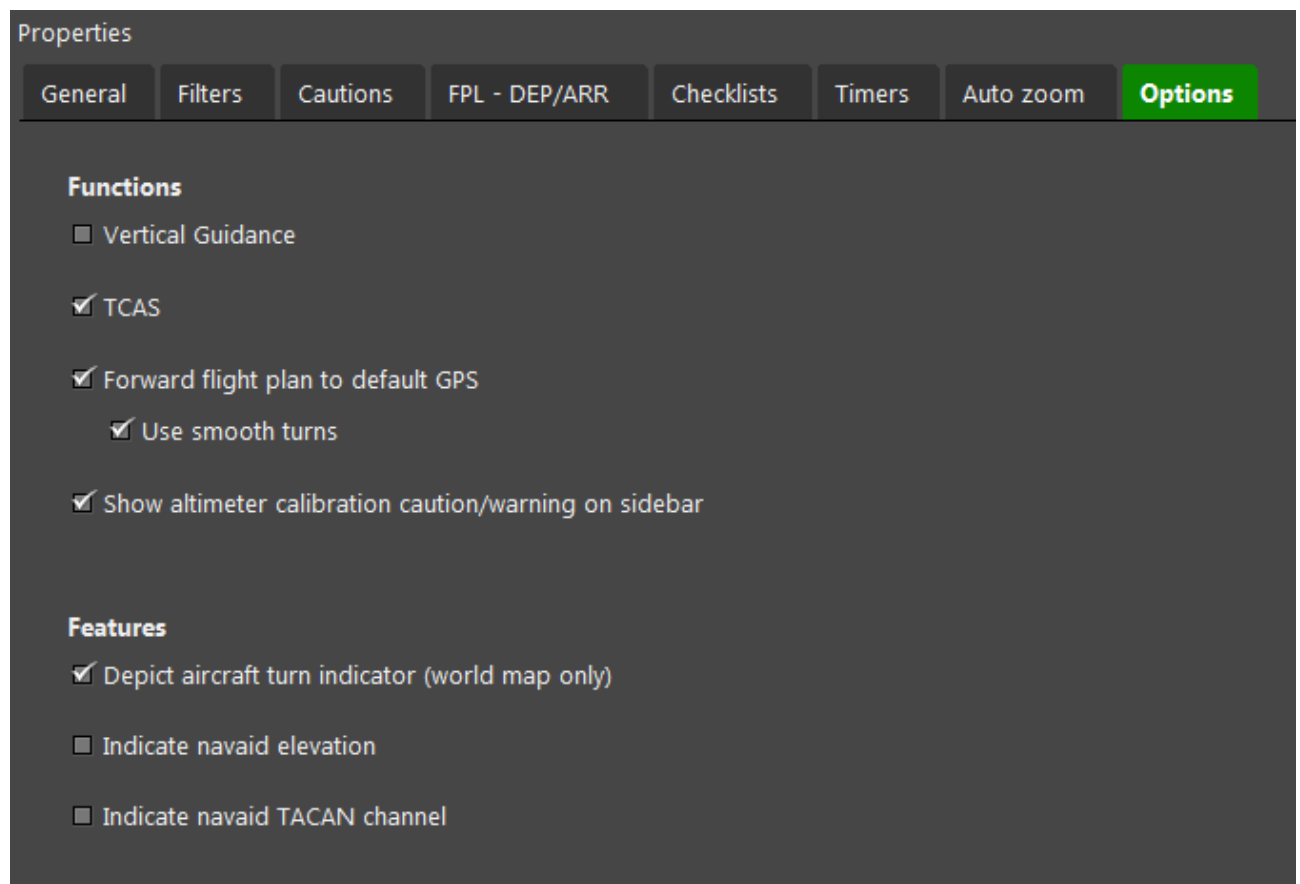
Auto Zoom settings are available for both Ground Charts and World Map.

Settings for the Ground Charts are speed dependent. The display range can be adjusted for different speed segments including standstill.

Auto zoom settings for World Map are based on aircraft altitude. Different definitions of aircraft altitude apply. While for the first three segments altitude above airport level (AAL of the Active Airport) is used, the value in the "Long Range" segment is defined as Standard Pressure Altitude (Flight Level). Generally speaking, the higher you fly, the bigger the display radius will be.

Please take care that no overlapping altitude definitions are used.

12.2.8 Options



The "**Options**" tab is used to control various functions and displays.

Vertical Guidance calculates a descent profile with predefined angles (see tab "FPL - DEP/ARR"). It will guide you to a continuous descent observing all altitude restrictions. The Vertical Guidance Display is only activated if a) this option is activated here and b) a Flightplan is active.

TCAS enables display (See map options) of warning messages regarding dangerous approximation of two or more aircraft.

„**Forward flight plan to default GPS**“ will transfer the actual routing into the default GPS/GNS of MS-based Simulators (FS9, FSX, P3D) for automatic lateral Flightplan guidance. If this option is selected, all manipulations of the actual route will immediately be transferred.

Two legs of a routing may be connected at a certain angle. In the map depiction such angles are usually "rounded by EFBv2, by inserting "virtual" waypoints. If the option "**smooth turns**" is activated, those virtual waypoints are also transferred into the GPS/GNS. Such virtual points are named "*Vnnn" where "nnn" is a sequential number.

EFBv2 can check whether the altimeter setting in your aircraft corresponds to the actual atmospheric pressure. See also comments and explanations to that in chapter "Sidebar". With this option (**Altimeter Calibration**) you can choose whether the result of this check is displayed for the actual aircraft.

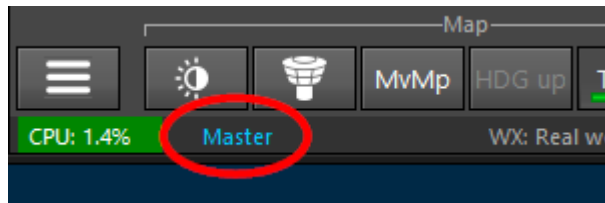
In turns (heading changes) EFBv2 can calculate a trend radius for the aircraft. Select this option "**Depict aircraft turn indicator...**" to show this trend radius on the World Map.

The option „**Indicate navaid elevation**“ and the next option right below „**TACAN channel**“ gives you the possibility to show additional information for navaids of the "VOR" and "VORTAC" type.

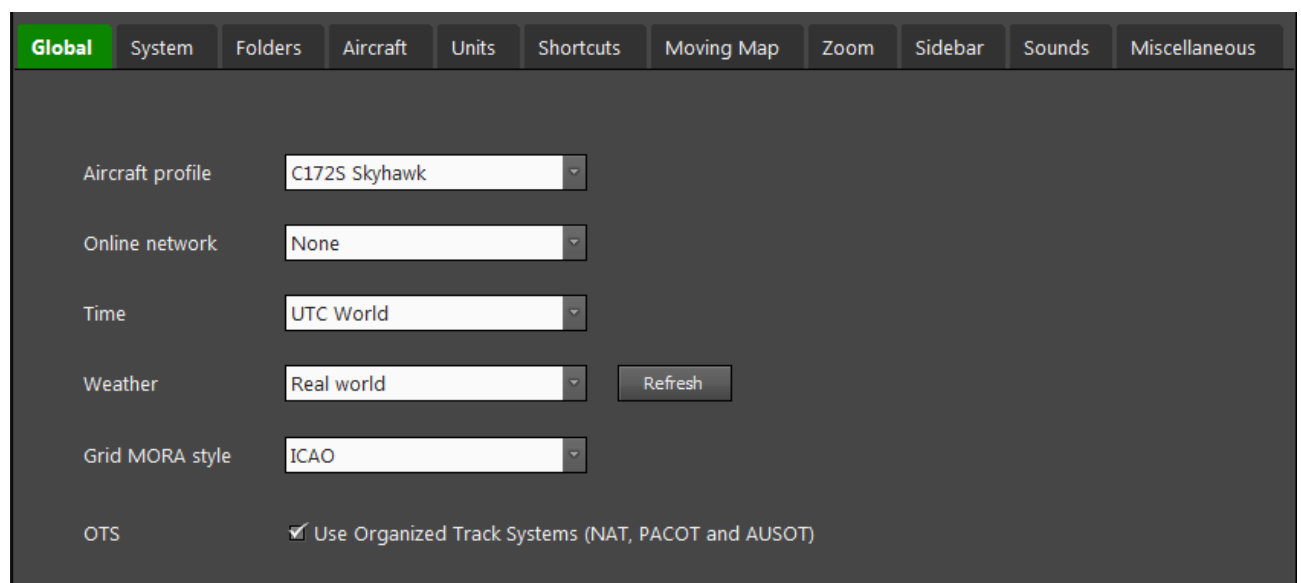
12.3 Settings

12.3.1 Global

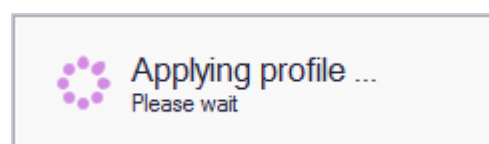
Settings within the tab "**Global**" can only be adjusted in the "**Master**" Client. This is indicated by the label "Master" in the status line. See also chapter "Status bar" for additional information.



Settings in the "**Global**" tab are valid for all Clients, therefore only one client will allow such changes.



If you want to use another profile than the one automatically selected, you can do your selection in the pull down menu „**Aircraft Profile**“. After a profile change the airport database is re-indexed, which leads to a short interruption of a few seconds. The following label is displayed on the screen:



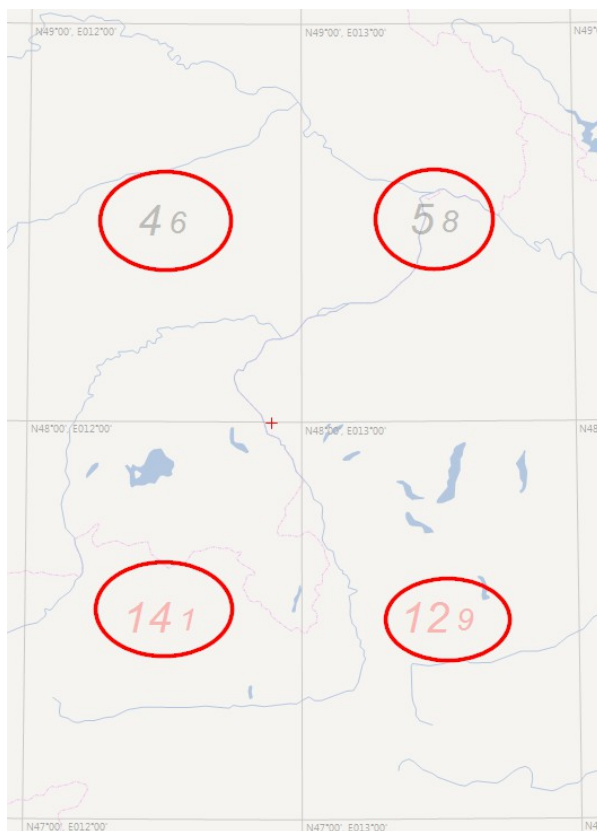
The pull down menu „**Online network**“ lets you choose connection to one of the two major Online-Networks (IVAO or VATSIM). If you have a continuous online connection, the selected network will be displayed in the status panel.

To display Simulator time instead of the actual time of your computer, make the respective selection in the „**Time**“ pull down menu.

The „**Weather**“ menu allows selection of the weather data provider. Should weather data not be refreshed a few seconds after the change, press the adjacent "Refresh" button to initiate a refresh cycle.

For data based weather information (e.g. ActiveSky, FSGRW, Rex etc.) the settings in the Server must be properly done. See also document "3 EN Server" for respective instructions. Without these settings EFBv2 Server lacks information about the weather data provider.

Be aware that certain combinations of time setting and weather provider can lead to unexpected displays in EFBv2's maps.



"grid MORA" style (MORA = minimum off-route altitude) shows altitude information in the World Map. Those figures inform about the safe altitude within one grid rectangle. Two different definitions with slightly differing safety margins can be selected: either FAA or ICAO.

The bottom line of the "Global" dialogue window allows the selection whether EFBv2 should download the **Organized Tracks** (NAT, PACOT, AUSOT) from the Internet. if you do not intend to do Long Range Flights with atlantic or pacific crossings, you can deselect this option without losing any important information required by EFBv2.

If you leave this option ticked, which means that you wish the actual OTS (Organized Track System) to be displayed on your "World Map", make sure that you always have the actual AIRAC Cycle installed. As "Organized Tracks" are altered on a daily basis, the connections to the OTS requires actual AIRAC data. If no actual AIRAC is present, the tracks will not be displayed (even when this option is ticked).

12.3.2 Local

The contents of the remaining tabs of the User Settings can be altered individually in each Client within your Local Network (if used).

System



Global **System** Folders Aircraft Units Shortcuts Moving Map Zoom Sidebar Sounds Miscellaneous

☐ Show message box before 'Quit all Clients and Server'

☐ Prevent form maximize

Function buttons position ☒ Left ☐ Right

Sidebar position ☐ Left ☒ Right

Changes below requires a manual restart of the Client to take effect

TCP port number (49152 - 65535)

Following settings are available in the "System" tab:

„**Show message box ...**“ provides a safety question window before executing the function "Shutdown all Clients and Server"

„**Prevent form maximize**“ inhibits the Windows function to maximize a window by double clicking the Title Bar.

With „**Function buttons position**“ the position of the Main Functions (e.g. Airports, Wx, PROC, Taxi, etc.) can be selected either left or right of the EFBv2 program window.

With „**Sidebar position**“ a similar choice is offered for the Sidebar.

Adjustments to the **TCP Port number** should only be done if you have strong reasons to believe that another program with TCP/IP communication uses the same port number on your computer(by coincidence). The Port number is part of the addressing protocol within a TCP/IP network and can only be used by one member of the network at the same time.

Important

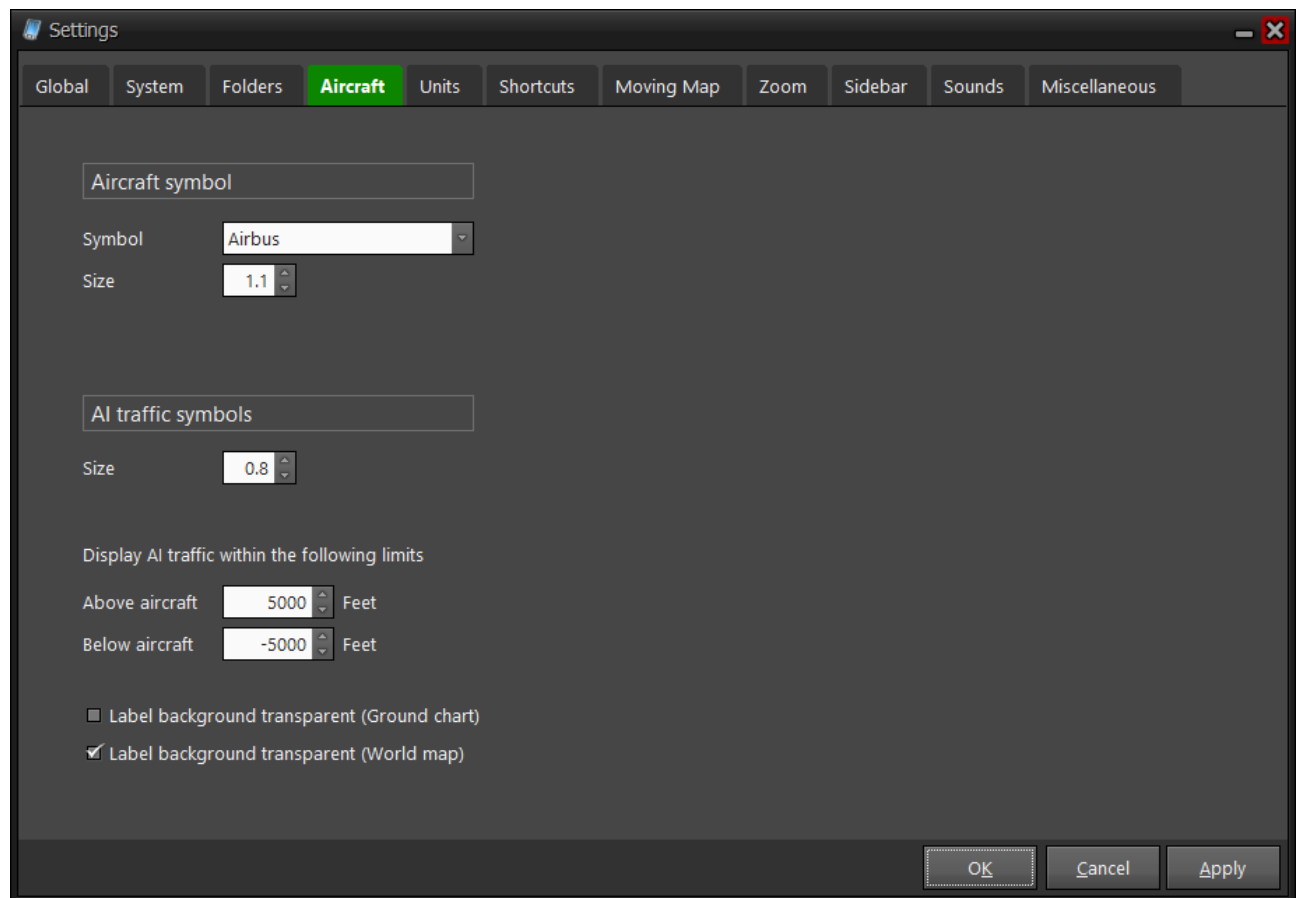
Should you decide to change the Port number, be sure that you also change this number in all other Clients and in the Server. Non compliance to this will result in a communications breakdown within EFBv2.

Folders

Global	System	Folders	Aircraft	Units	Shortcuts	Moving Map	Zoom	Sidebar	Sounds	Miscellaneous
Aircraft profiles			G:\AivlaSoft\EFB2\Client\Profiles						Browse ...	
EFB routes			G:\AivlaSoft\EFB2\Client\Routes						Browse ...	
Flight logs			G:\AivlaSoft\EFB2\Client\Flightlogs						Browse ...	
Documents / Library			G:\AivlaSoft\EFB2\Client\Library						Browse ...	
Minima			G:\AivlaSoft\EFB2\Client\Minima						Browse ...	

These settings are usually only relevant if more than one Client is installed in your Local Network and data access from common directories is required. If you have installed only one Client, leave these settings untouched.

Aircraft



Select the aircraft symbol and size for your aircraft display within EFBv2 maps. Three symbols are available: a symbol "Airbus style", a triangle "Boeing style" or a single cross hair.

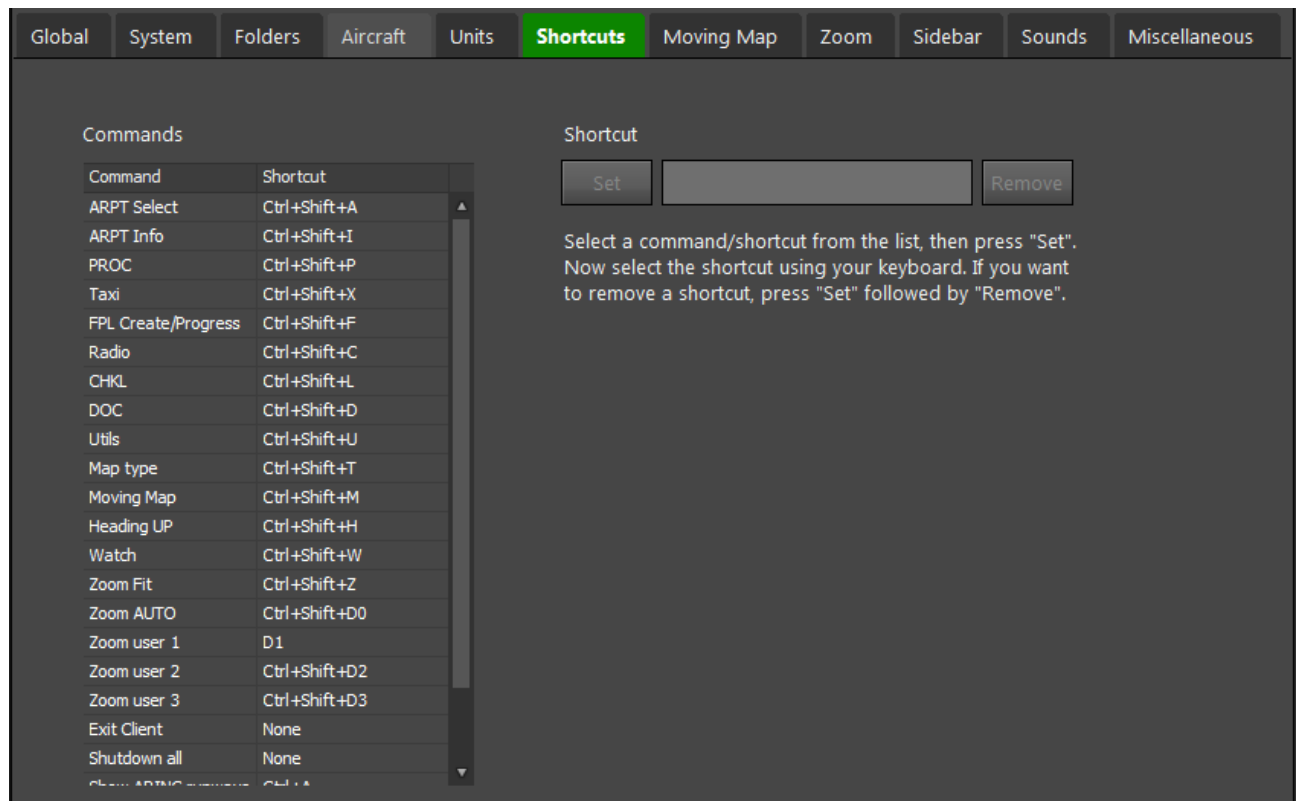
Below that select the size of AI traffic symbols and set filter values for AI traffic display. The altitude values are defining an altitude band in relation to the altitude of the actual aircraft.

Units

Global	System	Folders	Aircraft	Units	Shortcuts	Moving Map	Zoom	Sidebar	Sounds	Miscellaneous
<div> <div>Weather</div> <div> <div>Wind speed</div> <div>Knots (KTS)</div> </div> <div> <div>Pressure</div> <div>Hecto Pascal (hPa)</div> </div> <div> <div>Temperature</div> <div>Celsius (C)</div> </div> <div> <div>Cloud base</div> <div>Feet (ft)</div> </div> <div> <div>Visibility</div> <div>Meters (m)</div> </div> <div> <div>RVR</div> <div>Meters (m)</div> </div> </div> <div> <div>Aircraft</div> <div> <div>Speed</div> <div>Knots (KTS)</div> </div> <div> <div>Altitude</div> <div>Feet (ft)</div> </div> <div> <div>Weight</div> <div>Kilograms (kg)</div> </div> </div> <div> <div>General</div> <div> <div>Distance</div> <div>Nautical Miles (NM)</div> </div> <div> <div>Elevation</div> <div>Feet (ft)</div> </div> </div> <div> <div>Runway</div> <div> <div>Dimensions</div> <div>Meters (m)</div> </div> </div>										

Select the units of measurement of your choice.

Shortcuts



Various functions can also be executed by shortcut keys. You are free to adjust the shortcuts to your liking in case the standard settings do not match your requirements.

Select a function from the list and press the "**Set**" button on the right side. The input box will be activated and you can assign a key or a combination with Ctrl, Alt and Shift.

This combination is recorded and assigned to the selected function. The input field will be automatically cleared afterwards.

If you want to remove an assignment, again select the respective function and press "**Set**". Then press the adjacent "**Remove**" button. This will remove the assignment for this function.

Moving map

Global	System	Folders	Aircraft	Units	Shortcuts	Moving Map	Zoom	Sidebar	Sounds	Miscellaneous
<input checked="" type="checkbox"/> Automatically activate moving map when A/C starts moving (on ground only)										
<input type="checkbox"/> Automatically activate 'Heading UP' when A/C starts moving (on ground only, requires that moving map is OFF then)										
<input checked="" type="checkbox"/> Automatically activate moving map after takeoff										
<input checked="" type="checkbox"/> Automatically activate moving map after touchdown										
<input type="checkbox"/> Automatically select 'Heading UP' after touchdown (requires that moving map is activated then)										
If moving map has been deactivated because of manual chart handling (panning), reactivate it after <input type="text" value="15"/> seconds (1 - 60 sec)										

Following adjustments can be made for Moving Map operations (top to bottom):

1. Automatically activate the Moving Map when the aircraft starts moving (on ground only)
2. Automatically activate 'Heading up' when aircraft starts moving (on ground only, requires that the Moving Map is OFF then)
3. Automatically activate the Moving Map after takeoff
4. Automatically activate the Moving Map after touchdown
5. Automatically select "Heading up" after touchdown (requires the moving map to be activated at touchdown)

If the (activated) Moving Map is moved by mouse dragging, it will return to the aircraft's centred position after a certain time, to be set in this selection field.

Zoom

Global
System
Folders
Aircraft
Units
Shortcuts
Moving Map
Zoom
Sidebar
Sounds
Miscellaneous

Auto zoom (based on profile settings)

☒ Use auto zoom

User presets, for manual zoom

World map

User zoom 1 30 NM

User zoom 2 60 NM

User zoom 3 120 NM

Ground chart

User zoom 1 0.5 NM

User zoom 2 1 NM

User zoom 3 2 NM

The top line allows a general selection whether autozoom will be used or not.

Right below a few settings for manual zooming, split for use on Ground Map or World Map respectively.

Sounds

Global
System
Folders
Aircraft
Units
Shortcuts
Moving Map
Zoom
Sidebar
Sounds
Miscellaneous

☒ Allow sounds to be played

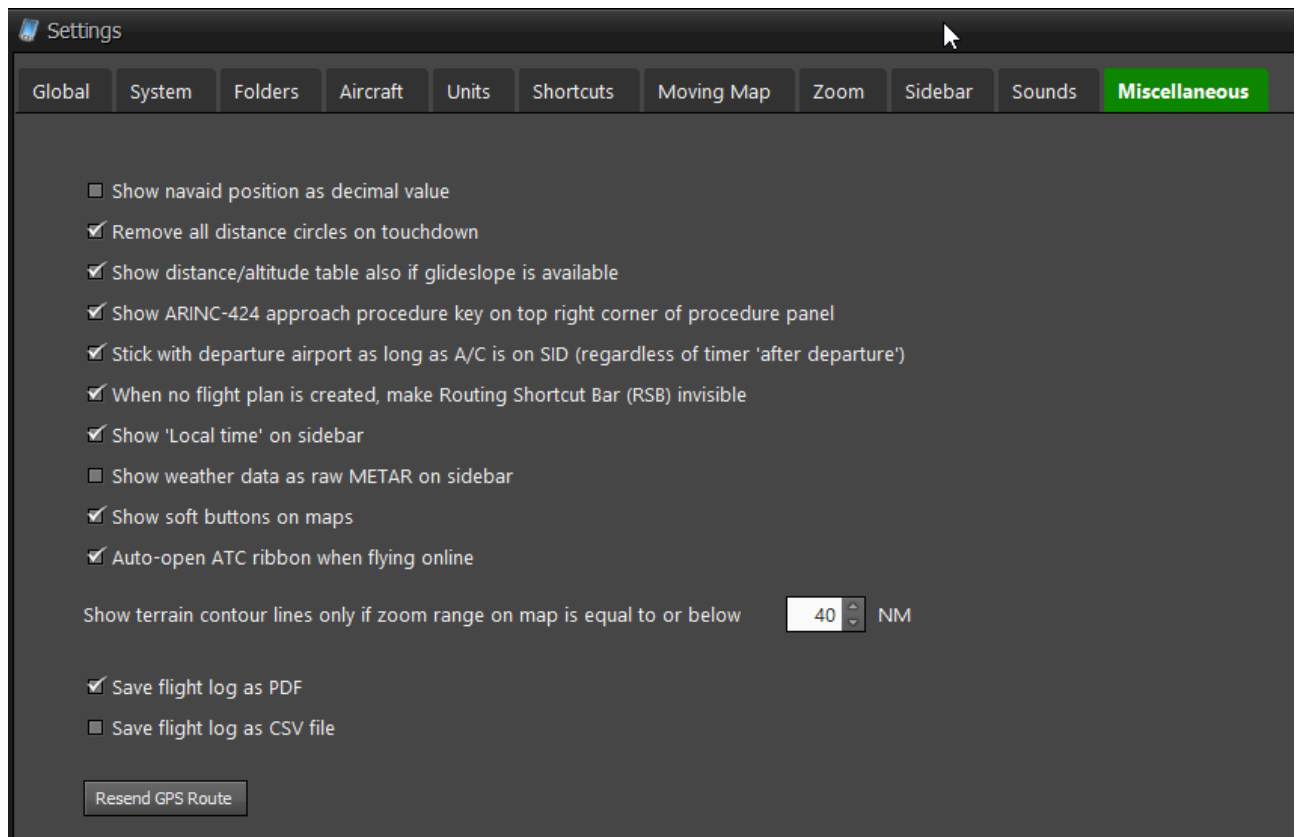
Name	File
Server disconnected	G:\AivlaSoft\EFB2\Client\Sounds\disconnect.wav
Caution/Warning on status panel	G:\AivlaSoft\EFB2\Client\Sounds\cuckooClock.wav
Flightplan changed (remote)	
Flightplan cleared (remote)	G:\AivlaSoft\EFB2\Client\Sounds\bloop.wav
Flightplan closed	
Waypoint passed	G:\AivlaSoft\EFB2\Client\Sounds\beep4.wav
Destination airport activated	G:\AivlaSoft\EFB2\Client\Sounds\beep1.wav
Timer ended	G:\AivlaSoft\EFB2\Client\Sounds\cuckooClock.wav
TCAS traffic	
TCAS clear of conflict	

G:\AivlaSoft\EFB2\Client\Sounds\beep1.wav
Browse ...
Play
Remove

Various events in EFBv2 can be indicated by acoustic signals. A few sound files are supplied with the basic installation from which you can choose. You can also use your own sound files. In any case they need to be of the "WAV" type, as EFBv2 can only play WAV sounds. Sound files are stored in the Client's data path.

If you don't want any sounds to be played at all without removing their assignments, just untick the box at the top.

Miscellaneous



The "Miscellaneous" tab gives access to the following options (top to bottom):

1. Show navaid positions (latitude/longitude) as decimal values
2. Remove all distance circles on touchdown
3. Show the distance/altitude table despite availability of a glideslope (precision approach)
4. Show the original ARINC-424 final approach designator at the top right corner of the procedure panel
5. Inhibit auto selection of the closest airport as long as the aircraft is following a departure procedure. Please note that this selection requires an active Flightplan. If you manually follow a SID without an active route, this function is not activated. Only the time defined in the Aircraft Profile will be used.
6. Don't show the RSB (Route Shortcut Bar) if no Flightplan is active
7. Show local time of the current airport on sidebar
8. Show weather information for active airport on the sidebar as raw METAR code
9. Show the blue „soft buttons“ for zoom and position on the map

10. Automatically open the ATC-Ribbon when flying 'online' and a flight plan has been activated
11. Show terrain contour lines below a zoom value to be defined here
12. Save the Flight Log in one of the offered format(s)

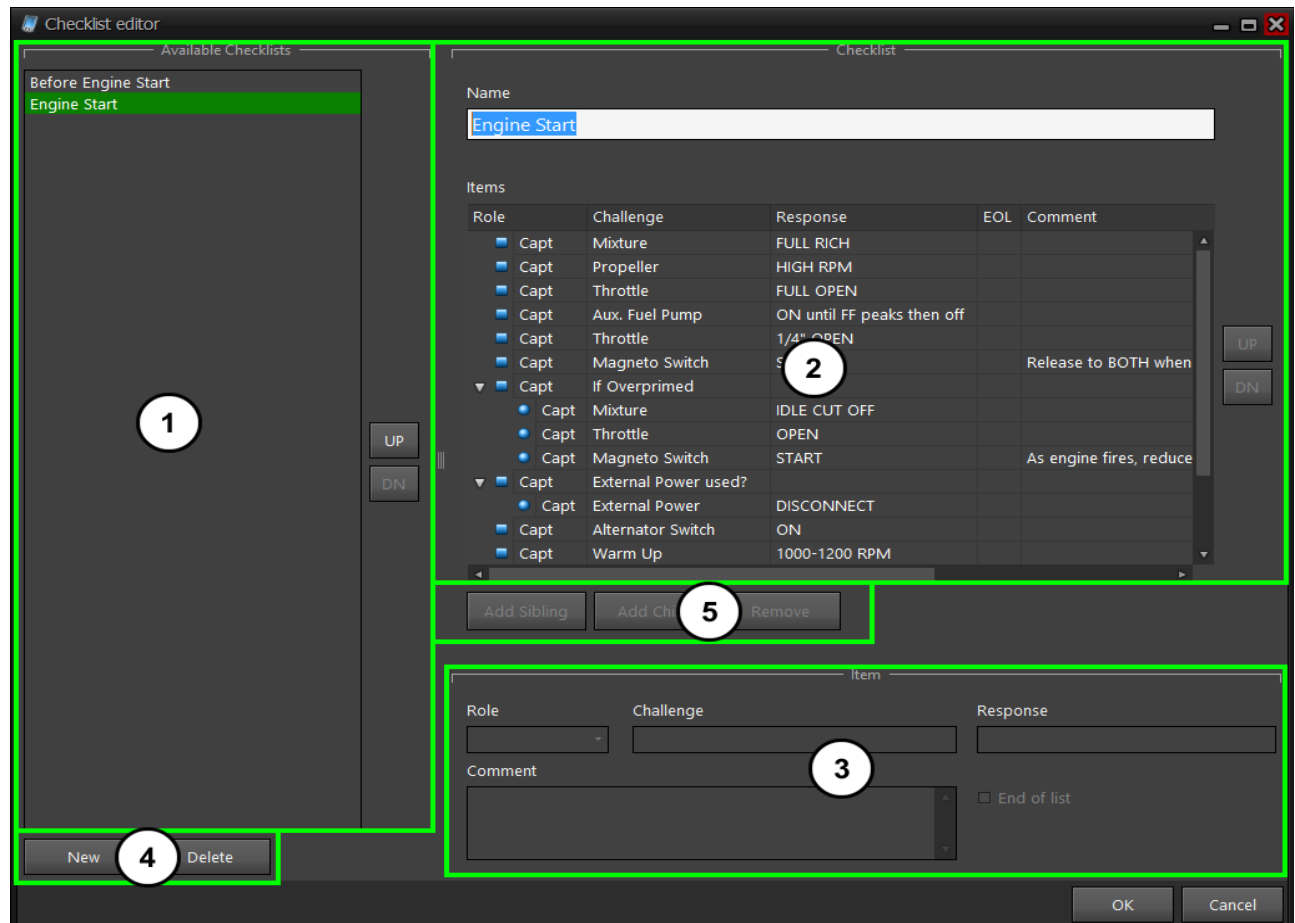
The button "**Resend GPS route**" can be used in case the automatic transfer was inhibited from some unknown reason. Normally a second transfer is not required as the transfer function is fully automatic and tested, There may however situations arise where the transfer is not working, e.g. if the Simulator is started after a complete EFBv2 Flightplan was set up and activated. In this (really rare) case a manual transfer would be required.

X-Plane

The function „Resend GPS route“ has no effect if EFB is connected with X-Plane. For details about flight plans please see the manual „6 EN Flightplan.pdf“.

12.4 Checklist editor

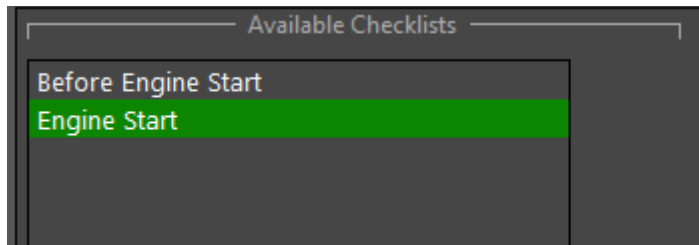
The Checklist Editor is invoked from within the Profile Editor. Start the Profile Editor, select the aircraft required and click the "**Checklists**" tab. Select the "**Edit**" button for the required checklist category (**Normals** or **Abnormals**). The editor is split into the following areas:



1. Selection of the required checklist
2. Elements of the selected checklist
3. Properties of a selected checklist element
4. Function keys for the checklist
5. Function keys for the element

12.4.1 Checklist selection

A checklist can be selected by clicking the respective listing entry.

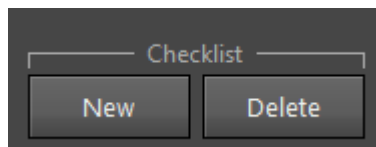


With the two buttons on the right ("**UP**" and "**DN**") an entry can be moved within the listing, because...

...the order in this listing represents the order in the future Checklist display within EEFB v2.

Function keys for the checklist

If there are no entries in the list yet, press the "**New**" button at the lower frame of the dialogue window. This will create a new entry with the default name "new checklist". Enter the required name for the respective checklist. Use the "**Delete**" button to clear a specific entry from the list.



12.4.2 Checklist editing

This listing shows all elements of the selected checklist. The order of the elements can be altered by using the "**Up**" and "**DN**" buttons on the right. the listing order shown in this dialogue window represents the order in the future checklist display within EFBv2. One Command Level is shown **indented**.

Checklist

Name

Items

Role	Challenge	Response	EOL	Comment
<input checked="" type="checkbox"/> Capt	Mixture	FULL RICH		
<input checked="" type="checkbox"/> Capt	Propeller	HIGH RPM		
<input checked="" type="checkbox"/> Capt	Throttle	FULL OPEN		
<input checked="" type="checkbox"/> Capt	Aux. Fuel Pump	ON until FF peaks then off		
<input checked="" type="checkbox"/> Capt	Throttle	1/4" OPEN		
<input checked="" type="checkbox"/> Capt	Magneto Switch	START		Release to BOTH when
▼ <input checked="" type="checkbox"/> Capt	If Overprimed			
<input checked="" type="checkbox"/> Capt	Mixture	IDLE CUT OFF		
<input checked="" type="checkbox"/> Capt	Throttle	OPEN		
<input checked="" type="checkbox"/> Capt	Magneto Switch	START		As engine fires, reduce
▼ <input checked="" type="checkbox"/> Capt	External Power used?			
<input checked="" type="checkbox"/> Capt	External Power	DISCONNECT		
<input checked="" type="checkbox"/> Capt	Alternator Switch	ON		
<input checked="" type="checkbox"/> Capt	Warm Up	1000-1200 RPM		

The selected checklist element will be displayed in the detail area below:

Item

Role

Challenge

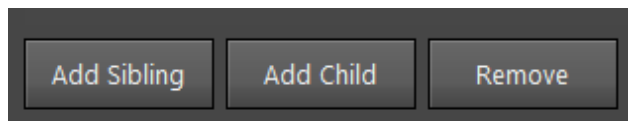
Response

Comment

☐ End of list

Edit the required entries within the data fields. The field "**Comments**" allows for additional, clarifying comments to be added.

Function keys for the element



Within the elements of a list, there are two command levels, the "**Siblings**" and the "**Children**". "Normal" checklists will rarely use the "Children" level, whereas "Abnormals" will often use Sub-Groups (Siblings) to list various options.

"**Add Sibling**" will insert a new "Sibling" element on the same command level as the selected element.

"**Add Child**" adds a new "Child" element, its command level being below the selected element. A "Child" element is placed indented.

The buttons "**Up**" and "**Down**" allow to move each element **within its command level** to be moved to the desired position.

Once set, the Command Level cannot be changed any more. When setting up lists with Command Levels, make sure you have the proper item selected before adding a new item by either using "**Add Sibling**" or "**Add Child**".

As soon as a Sub-Group is created, the "**Response**" field as well as the option "**End Of List**" for the superior group is no longer available, because the main element (Sibling) automatically becomes "**conditional**" and will – in the display within EFBv2 – only allow selection with "**True**" or "**False**". "True" will branch into the Sub-Group (containing children) whereas "False" will not open the Sub-Group and the checklist will continue with the next element (if available).

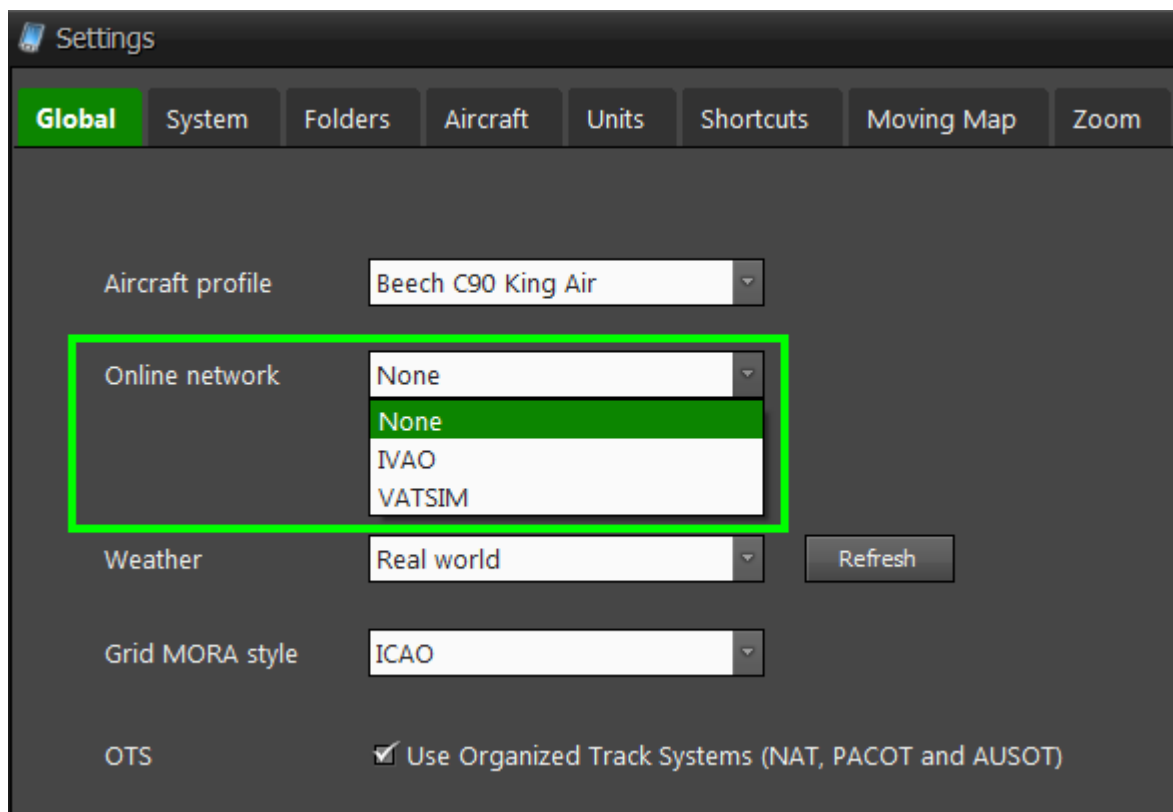
The property "**End Of List**" is used if a checklist ends and no more actions are required after completion of a certain element, even though there would still be more elements to complete.

13 Online with VATSIM or IVAO

EFBv2 can give you support for "online flying".

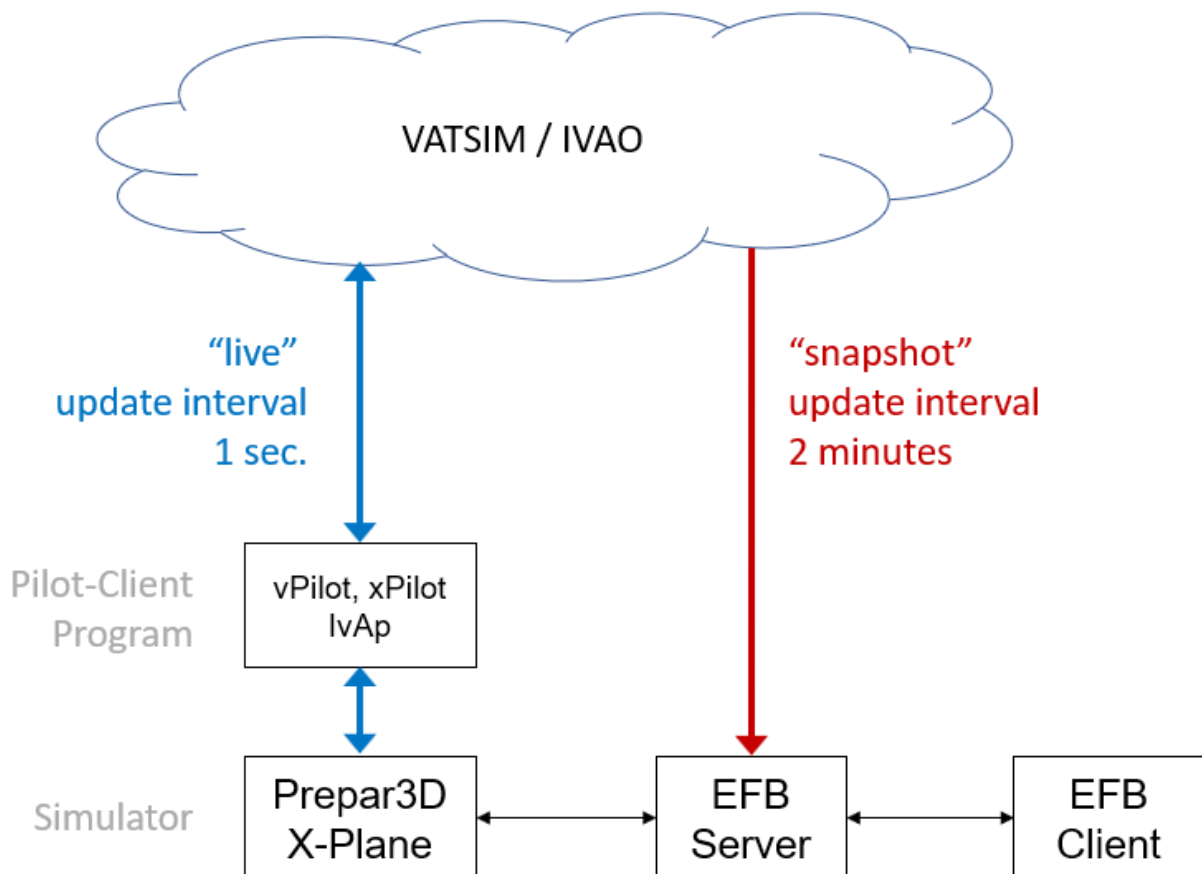
13.1 Online support ON/OFF

If you like support for online flying, open the "System" window, then goto "Settings". On the tab "Global" (only available on Master) under "Online Network" select the desired network and confirm with "Ok". This setting will be stored, i.e. the network connection will be automatically established again at the next start of EFBv2. The status panel will show a line indicating the active Online Network.



13.2 Online data

For a better understanding of the following chapters it might be helpful to know the **two different** ways how EFB is getting Online data from the VATSIM and/or IVAO network.



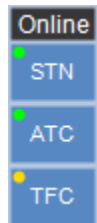
Data from the online networks (VATSIM and/or IVAO) can be received in two different ways. According to the picture above, in this manual it is called the „**blue**“ way or the „**red**“ way.

As soon as the „Pilot-Client“ program is connected with the online network, the „**blue**“ way is established and **pilot data** around your aircraft is updated approximately **every one second**. The „Pilot-Client“ program injects the data into the simulator from where EFB is receiving it.

Worldwide data about **pilots AND controllers** is received over the „**red**“ way, directly from the online network **in a 2 minutes interval**. This 2 minutes interval is a technical condition issued by the online network and **cannot be changed**. The connection over the „red“ way is independent from the „Pilot-Client“ program and it remains established as long as the online network is selected in the Client settings.

13.3 Display options

If you are flying 'online' you will see three „soft buttons“ on the left side of the map. With these buttons you can display or hide certain information on the maps (ground chart and world map).



STN

Stands for „Stations“. Toggles visibility of active stations (airports and/or FIRs and UIRs) on the world map. A **green** dot on the upper left corner indicates that the visibility is ON (all stations will be depicted) where a **red** dot indicates OFF (no stations will be depicted).

ATC

Toggles visibility of the „ATC-Ribbon“. A **green** dot in the upper left corner indicates that the ATC Ribbon window is open. If no dot is indicated means that the window is closed.

TRFC

Toggles visibility of the „Traffic Options“ panel. A **green** dot on the upper left corner indicates that no filter is activated and all 'snapshot' traffic (worldwide) will be depicted, whereas a **yellow** dot indicates that a filter is activated and only partial traffic will be depicted.

13.4 Active Controllers and Stations

Active Controllers and Stations, at airports and in FIRs/UIRs will be depicted on the EFB worldmap.

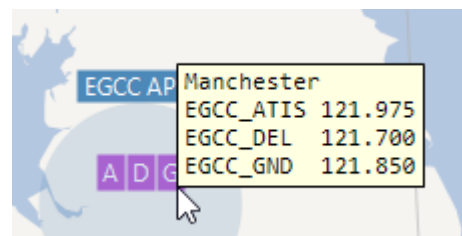


For airports, depending on the service (Tower, TWR, or Approach, APP) a circle with a 10NM, or 30NMs respectively radius will be depicted. At the edge of the circle a label is depicted which displays the type of service (TWR or APP).

There is NO circle depicted on the map, if only „Ground“ or „Delivery“, as well as ATIS is provided at an airport. For such airports you will see small rectangles containing the first letter of the respective service (A = ATIS, G = Ground, D = Delivery).

Hovering the mouse pointer over such a label will provide further information about the frequencies:

Airports



Open / Close the ribbon

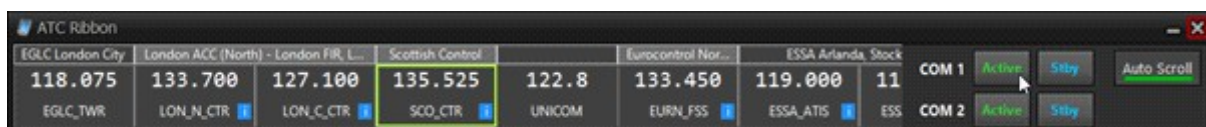
This window opens **automatically** as soon as a flight plan becomes active in EFB. If you don't like to have this window opened automatically, go to the Client settings, tab „Miscellaneous“ and unselect the respective option. The option is selected by default. However, you can open/close the window **manually** at any time at your discretion using the soft button „ATC“.

Important

When the flight plan will be cleared, either manually or automatically after the flight has been accomplished, the frequencies of the destination airport remain visible on the ribbon. They remain visible until a new EFB flight plan will become active, or until the program quits. If there are no more services active at the destination airport, UNICOM will be inserted.

Selecting a frequency

To select and transfer a frequency to one of the COM radios simply click on the frequency and then push one of the buttons for „Active“ or „Standby“ on the right side. The buttons become enabled as soon as a frequency has been selected. The selected frequency will be surrounded by a green border. A second click on the selected frequency will unselect it and the four buttons on the right side become disabled.



A colored frequency indicates that this frequency is selected on one of the radios.



Green This frequency is selected as „Active“, either on COM1 or COM2. Just underneath the frequency it is indicated whether it is COM1 or COM2.

Blue This frequency is selected as „Standby“ either on COM1 or COM2.

White This frequency is not selected on any radio.

Tooltips

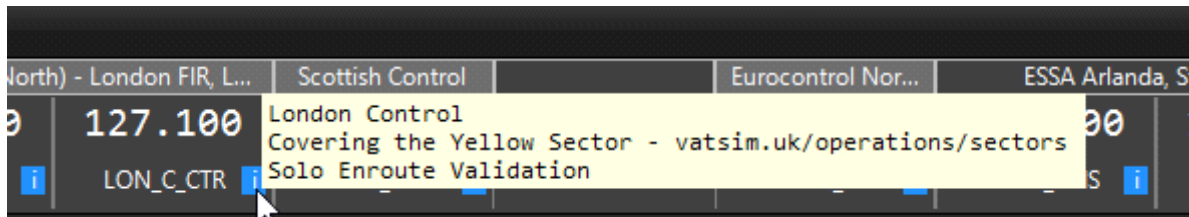
Additional information on the ATC Ribbon is available through tooltips.

ATC Ribbon

EGLC London City	London ACC (North) - London FIR, L...	Scottish Control	Eurocontrol Nor...	ESSA Arlanda, Stock			
118.075	133.700	127.100	135.525	122.8	133.450	119.000	11...
EGLC_TWR	LON_N_CTR	LON_C_CTR	SCO_CTR	UNICOM	EURN_FSS	ESSA_ATIS	ESSA...

In this example the length of the text of the FIR „London ACC (North) – London FIR“ is too long to be displayed within the bounds of the rectangle. In such a situation the text will be shortened and **three dots** will be **appended**. If you move the mouse pointer over the rectangle a tooltip becomes visible showing the entire text.

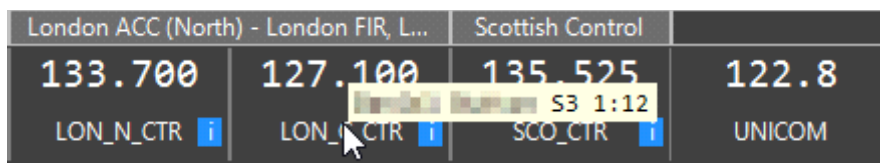
If a station provides a so called „e-ATIS“ you can hover the mouse pointer over the blue „i“ to show the tooltip with the full text message.



North) - London FIR, L...	Scottish Control	Eurocontrol Nor...	ESSA Arlanda, St
127.100			
LON_C_CTR			

London Control
Covering the Yellow Sector - vatsim.uk/operations/sectors
Solo Enroute Validation

Hovering over the callsign will show a tooltip with the name, rating and the duration since logon of the active controller (the name of the controller in the following screenshot has been blurred intentionally).

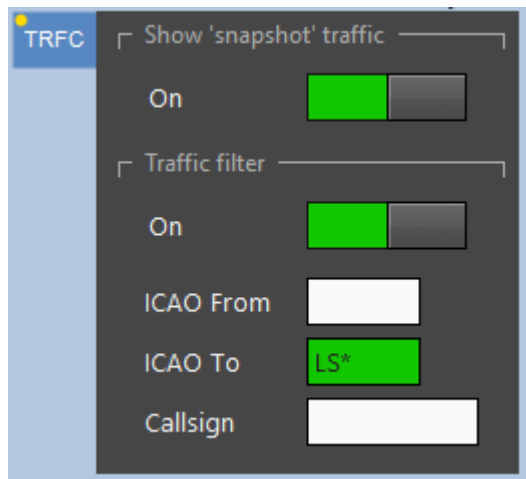


London ACC (North) - London FIR, L...	Scottish Control
133.700	127.100
LON_N_CTR	LON_C_CTR

Blurred Name S3 1:12

13.6 Traffic

Selecting the soft button „**TRFC**“ opens the dialog for the '**snapshot**' traffic settings. „Snapshot“ traffic is provided via the „**red**“ way and will be updated every 2 minutes (see „Online data“).



Important

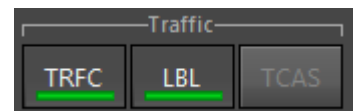
The settings in this window **will not change** „live“ traffic which is received via the „**blue**“ way.

Snapshot traffic ON/OFF

Click on the toggle switch at the top of the window to show or hide „snapshot“ traffic in general. This option is set by default.

Important

To show or hide the **entire** traffic („live“ and „snapshot“) you **still** have to toggle the button „**TRFC**“ from the map options:



Filter settings

„Snapshot“ traffic data can be filtered by airport codes and callsigns. It is also possible to create a combination of these criteria.

To filter by a departure or destination airport, enter the ICAO code of the airport in the respective text box. It is also possible to create a filter for a set of airports. If you would like to create a filter for all aircraft which are flying into an airport in Switzerland, just enter „LS*“ into the textbox named „ICAO To“. A star at the end means 'any letter' or 'any number'.

If you would like to filter for a certain callsign, enter the respective callsign into the text box named „Callsign“. You may also define a filter for a group of callsigns (e.g. The filter „SWR*“ will only depict aircraft with a callsign starting with SWR.

To activate or inactivate a filter, use the toggle switch above the text boxes. As soon as its background becomes green, the filter is active.

Filter settings will be saved when the Client quits and will be automatically loaded again upon program start.

Traffic symbols

On both worldmap and groundchart you will see the aircraft of the other users who are online.

As long as your "Pilot-Client" Program (e.g. vPilot, xPilot or IvAp) is not yet connected to the online Network, EFBv2 will show already all aircraft from downloaded online data („snapshot“ traffic). This shall give you an overview for the parking positions already in use before you connect with the online network. Those data are however only updated in a 2 min cycle, therefore even this overview is not completely up-to-date.

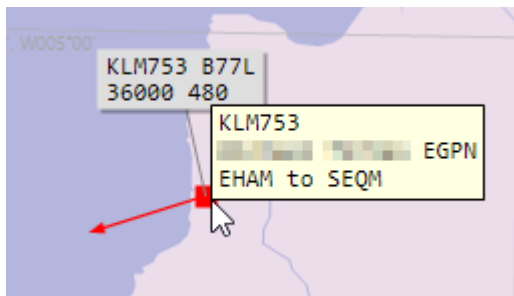
„Snapshot“ traffic is depicted in red while „live“ traffic is depicted in blue. You are however free to change these colours (see chapter "Colours").

Important

„Snapshot“ traffic and „live“ traffic will be depicted simultaneously according to the current settings. While „live“ traffic is only depicted in a certain range around your aircraft, „snapshot“ traffic is depicted worldwide. If you don't like to depict both at the same time, you may switch off 'snapshot' traffic as described previously in this chapter.

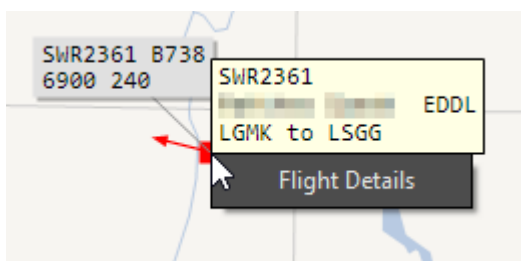
To avoid depicting of the same aircraft twice (snapshot and live), you once have to configure where EFB can read the callsign of an aircraft. The configuration for the callsigns of 'other' traffic has to be done in the **Server settings**, tab „Online“, while the callsign of the own aircraft must be defined when creating the EFB flight plan, in **„Create flight plan, step 2“** (Further information please see next chapter „Settings“).

Hovering the mouse pointer over an aircraft symbol („snapshot“ traffic only) will provide the following information: Callsign, name of the pilot, and (if available) departure and destination airport.



The pilot's name has been blurred intentionally for this manual.

Furthermore, as soon as the tooltip is visible, a **right**-mouse-click opens a menu item **„Flight details“**.



Selecting „Flight details“ retrieves detailed information from the EFB Server and provides them in a separate window like seen on the next screenshot:

Flight details

Callsign

SWR2361

Aircraft

B738

Pilot

Departure

LGMK - Mikonos (Greece)

Destination

LSGG - Geneva (Switzerland)

Alternate

LSZH - Zurich (Switzerland)

Routing

VARIX UL995 KEA UL52 KOR UL613 YNN/N0451F360 UL611 TUMBO
 OVVER AMOXO RODON VAKSU SPL ROTAR SRN/N0378F220 L615
 BANKO

ETD/ATD

08:30z / 08:30z

ETE

02:42

ETA

11:12z

Remarks

+VFPS+/V/PBN/A1B1C1D1S1S2 DOF/200623 REG/N806SB
 EET/LAAA0046 LYBA0101 LDZO0106 LIMM0148 LFFF0225 LFMM0230
 LSAS0240 OPR/SWR PER/C RMK/TCAS SIMBRIEF

Settings

To be able to read the callsign of an AI-aircraft, EFB has to know the number of the data field in which this information is provided by the „Pilot-Client“ program.

Important

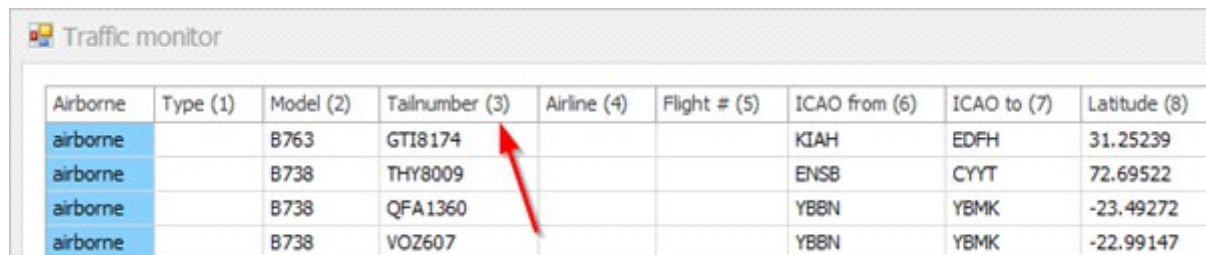
Unfortunately X-Plane does not provide callsign information because this information is not used for AI-traffic.

Therefore it is not possible to prevent the same aircraft from being depicted twice (once as „snapshot“ traffic and once as „live“ traffic). As long as you are using X-Plane, it is recommended to switch off „snapshot“ traffic as soon as your „Pilot-Client“ program is connected with the online network and therefore is providing „live“ (blue) traffic.

Because there are several „Pilot-Client“ programs available, there are also several possibilities in which data field the callsign of the aircraft will be provided when data is received over the „blue“ way.

„Red“ traffic data is provided the same way for both online networks and must therefore not be configured.

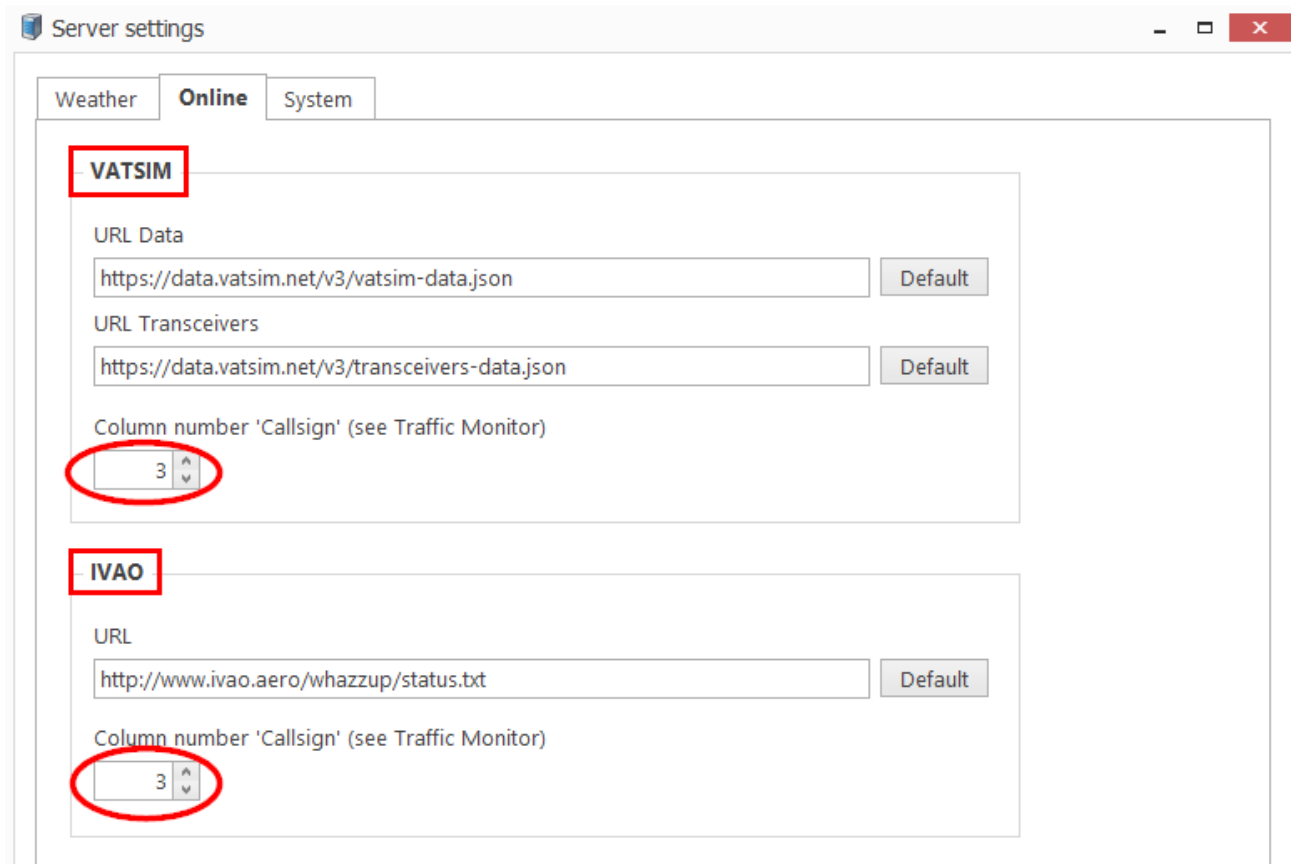
The number of the data field which must be configured can be read from the „Traffic monitor“ which can be opened via the EFB Servers menu „System“, then „Traffic monitor“.



Airborne	Type (1)	Model (2)	Tailnumber (3)	Airline (4)	Flight # (5)	ICAO from (6)	ICAO to (7)	Latitude (8)
airborne		B763	GTI8174			KIAH	EDFH	31.25239
airborne		B738	THY8009			ENSB	CYYT	72.69522
airborne		B738	QFA1360			YBBN	YBMK	-23.49272
airborne		B738	VOZ607			YBBN	YBMK	-22.99147

Have a look at the different data and search for the column which is providing the callsign. On the right side of the column headers title a number is displayed (see the red arrow).

This number (3 in this example) has to be set in the EFB Server settings, menu „System“, „Settings and more...“, then „Settings“ and then tab „Online“. Make sure to set the value for the proper online data provider (VATSIM or IVAO).



Server settings

Weather **Online** System

VATSIM

URL Data
 Default

URL Transceivers
 Default

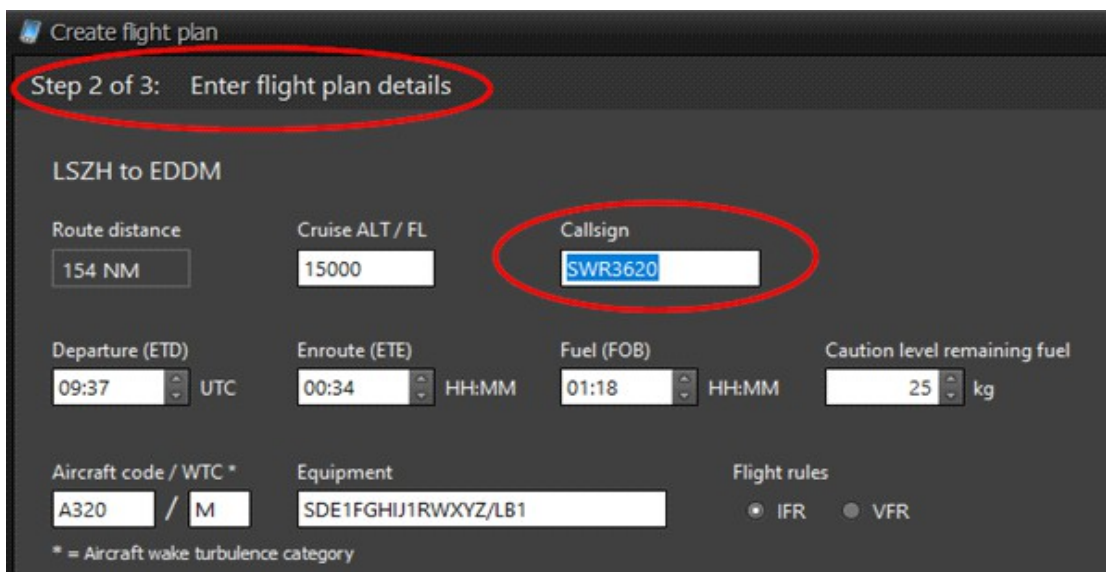
Column number 'Callsign' (see Traffic Monitor)

IVAO

URL
 Default

Column number 'Callsign' (see Traffic Monitor)

To prevent the own aircraft symbol from being depicted twice, you have to enter your callsign when you create the EFB flight plan (step 2, see next picture). Your own callsign will be saved and automatically inserted next time when you create a new flight plan.



Create flight plan

Step 2 of 3: Enter flight plan details

LSZH to EDDM

Route distance

Cruise ALT / FL

Callsign

Departure (ETD)
 UTC

Enroute (ETE)
 HH:MM

Fuel (FOB)
 HH:MM

Caution level remaining fuel
 kg

Aircraft code / WTC *
 /

Equipment

Flight rules
☒ IFR ☐ VFR

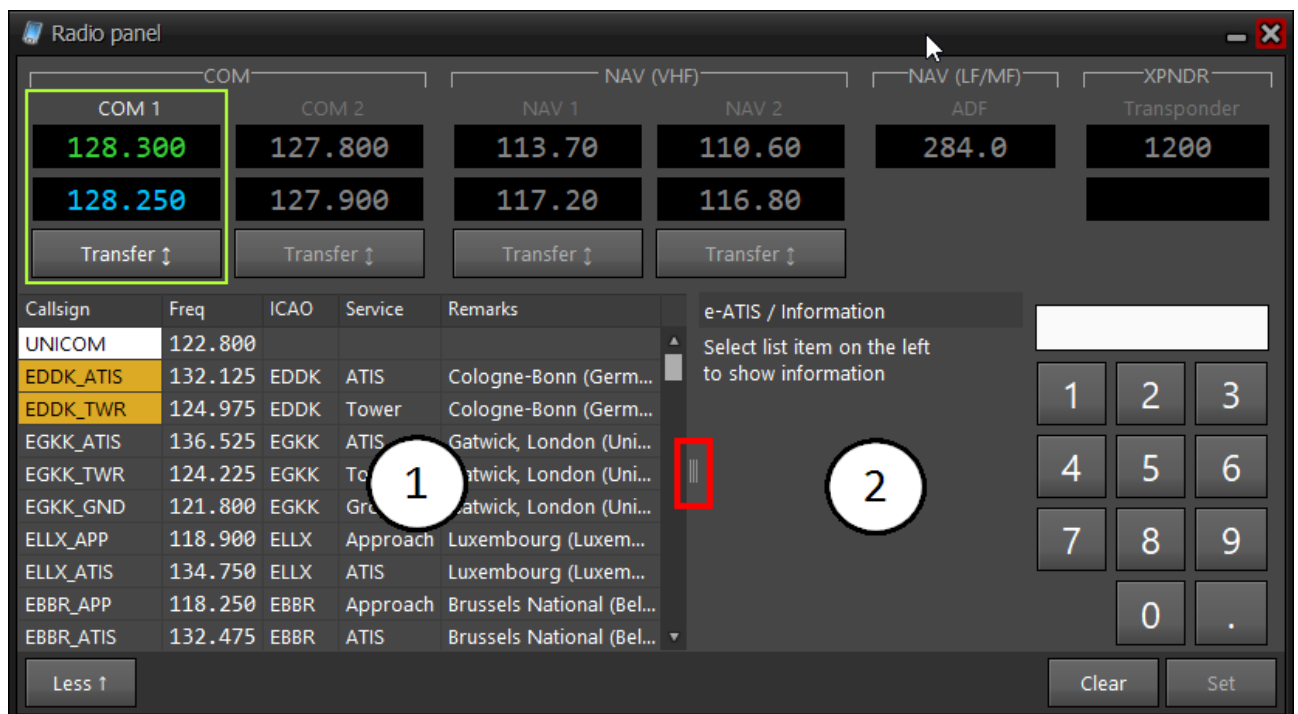
* = Aircraft wake turbulence category

13.7 Frequencies

In contrast to "normal" operation (if you don't fly online) the Radio Panel includes an additional area:

1. List of the active frequencies:
Beginning with UNICOM, then all the active controllers, sorted in ascending order by the distance to the „visibility center“.
2. Display of e-ATIS of the selected frequency in the left column (if available)

The width of the different areas can be adjusted by the mouse pointer (see red rectangle). Apart from that handling of the frequencies is identical to *Non-Online Ops“.



Problems

Unfortunately it happens from time to time that controllers use a login, which does not comply with the data definitions used in EFBv2. The list of data definitions is unfortunately updated on very irregular - not to say sporadic - intervals and furthermore is not clear (at least not officially), where such updates can be downloaded. EFBv2 can only show what is supplied from the respective networks.

14 Data directories

Within the data directory selected for installation, the following sub directories will be created and managed by the Client. If you have used the proposed standard installation path, the data can be found in: „C:\Users\<username>\Documents\AivlaSoft\EFB2\Client“

<i>Folder name</i>	<i>Managed by</i>	<i>Comment</i>
Checklists	EFB	Folder for checklists
Database	EFB	The actual database
Flightlogs	EFB	Automatically generated flightlogs in PDF format
Globe	EFB / User	Data used for display in the World Map. „ worldLargestCities.txt “, and „ pointsOfInterest.txt “ can be found here.
Library	User	In this folder a "Library" can be created. See "Documents library" in this User Guide
License	EFB	Licensing contract
Logfiles	EFB	Logfiles
Manuals	EFB	EFBv2 documents in PDF format
Minima	EFB / User	Files for approach minimums display. Read details under "Minimums" in this User Guide. Also contains *.inc files for „Initial Climb Altitude“ values on SIDs.
Online	EFB	Data for online operations (IVAO/VATSIM)
Profiles	EFB	Aircraft profiles. See "Profile Editor" in this User Guide.
Routes	EFB	Saved routings/Flightplans
Settings	EFB / User	User Settings, among others also the files „ trafficAssignments.txt “ and „ xpndr.txt “
Sounds	EFB / User	Sound files
Updates	EFB	Download of software updates
Uplink	User /EFB	Uplink directory for routings. See details in document "6 EN Flightplan.pdf"

Very important !!!

Please only edit data within **directories labelled "User"**.

Strictly refrain from changing **any other data**. Any change can result in **malfunctions or - as a worst case - in a program crash**.

15 Troubleshooting

This chapter shall give you solutions to several problems that can develop due to the fact that Simulator Scenery data do not comply with Real World data (Navigation Procedures). Read also chapter "Enhance/Update Runways" in the document "4 EN Database".

15.1 No procedures

15.1.1 Problem

It may happen that no Departure and/or Arrival Procedures are displayed although they exist in Real World.

This may have the following two reasons:

1. The installed procedures files (Aerosoft NavDataPro or Navigraph FNS data) effectively do not contain such data
2. At the creation process of the database for EFBv2 the procedures could not be assigned to the respective takeoff/landing runways in the Simulator.

How can I decide which of the two cases is the culprit?

Open the Main Function to select an airport ("Airports") and look for the airport in question. In the rightmost column ("Procedures") you can see which kind of procedures is available for this airport. "APPR/DEP" means, that a full set of departure and arrival procedures is available whereas "APP" means that only approach procedures are available.

If this column does not give any evidence of available procedures, then it's case "1". There is no solution for this situation.

If there is one of the above mentioned remarks in the "Procedures" column but still no procedures are shown in the "Procedures" dialogue, then it's case "2".

15.1.2 Causes

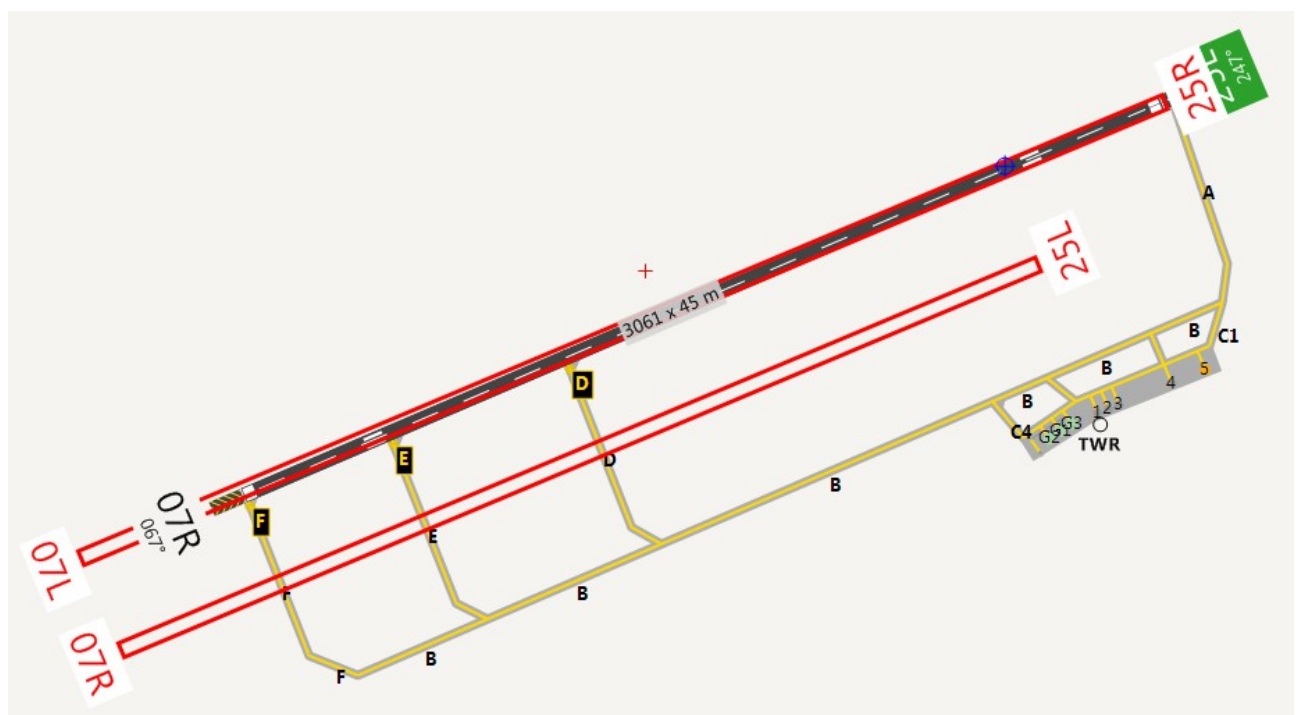
What could be the cause that during the creation process of the EFBv2 database navigation data (Real World) could not be assigned to the take off and landing runways of the Simulator (virtual world)?

On the one hand it can be that in the Simulator a certain runway does not exist at all, on the other hand the runway's geographical data are deviating to such a large degree from the Real World that no runway assignment could be achieved.

For this specific case we have created a help function for the Ground Map. Using the key combination "Ctrl+ALT+A" will superimpose the Real World runway layout (from ARINC data) to the runway layout of the Simulator. Using this help function the difference between Real World and Simulation is quickly recognized.

The red frames show the runway definitions laid down in the Navigation data (ARINC data). "Below" those you still see the layout of the Simulator runways, complying to EFBv2's standard layout.


In this example it is easily recognizable that in Real World two parallel runways exist whereas in the Simulator only one of them, the northernmost exists which is an addition to that even shorter than its Real World counterpart.



As long as the help function is active (left picture), the runway designators of the Simulator runway are shown as originally designated in the Simulator, **25L** in this case. Without the "red" layer (right picture), the automatically assigned runway designator is shown, **25R** in this case.



For this airport the runway designator could automatically be assigned in the correct way, however there are (rightly) no procedures in EFBv2 for the southernmost runway 07R/25L available. Only runways 07L and 25R are assigned.



DAOO - Departure

Weather

Procedures

Performance

Runway

Ident	TORA	QFU	Remarks
07L	3061m	067°	Wind unknown
25R	3061m	247°	Wind unknown

SID

Ident	→ To	Type	DIR TO	Transitions
SID51	→ HILIL		East	CHE, TRB
SID52	→ FAROS		East	BAY, GRS
SID53	→ HMB 432		Southwest	OJD, TLM
SID54	→ BAHRI		Northeast	HAMRA, LABRO
SID71	→ HILIL		East	CHE, TRB
SID72	→ FAROS		East	BAY, GRS
SID73	→ HMB 432		Southwest	OJD, TLM
SID74	→ BAHRI		Northeast	HAMRA, LABRO

Subsequent an example where the assignment of the runway designators could not be done automatically, and as a consequence no procedures are listed although they are mentioned in the Airport listing

Select Airport

Nearest Route Recent **Find**


ICAO Code Airport name or city

ZMD

Cond	ICAO	Name, Info	Procedures
	ZMDA	Dadal	
	ZMDZ	Dalanzadgad	APPR

The list of available procedures remains empty and in addition a warning is presented, which points to the facts discussed here.

DEP / ARR

 **ZMDZ - Arrival**

Weather **Procedures** Performance

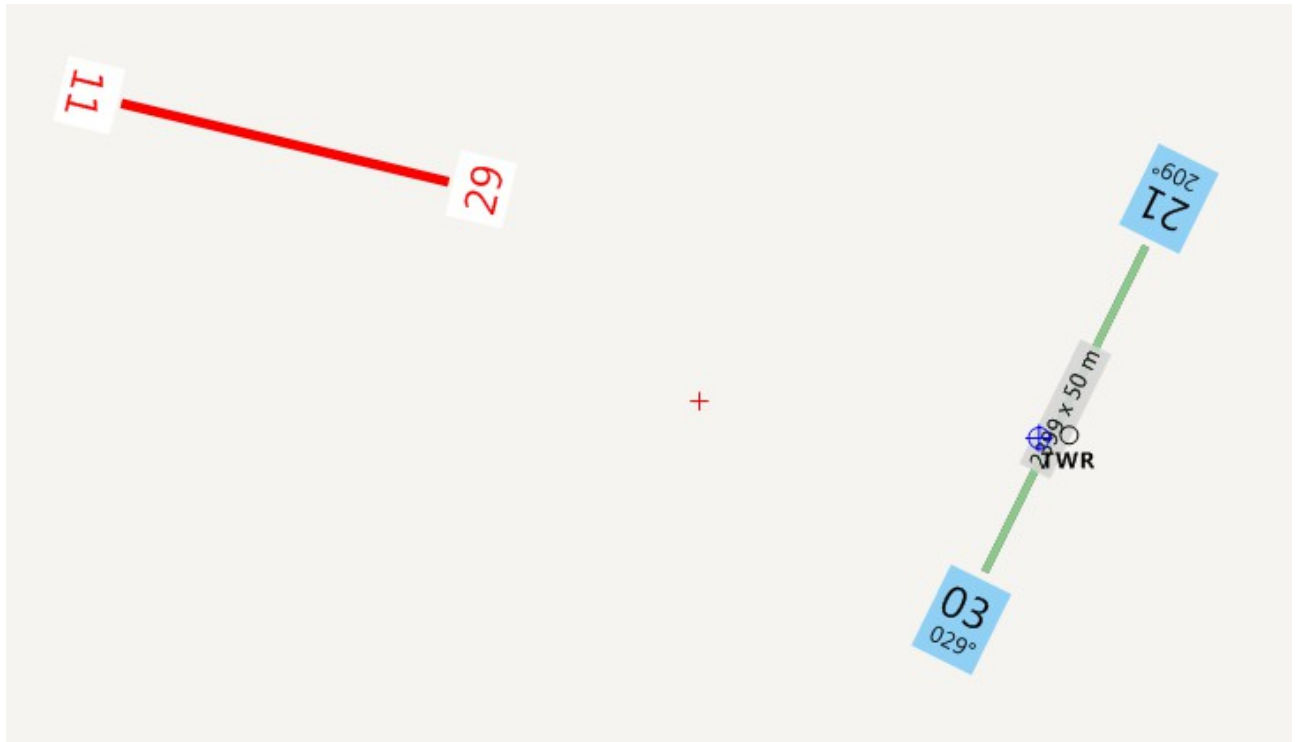
Runway

Ident	LDA	CAT / QFU	Freq/Ident/CRS	VFR Pattern	Remarks
03	2399m	QFU 029°		1000 ft Left	Weather n.a.
21	2399m	QFU 209°		1000 ft Left	Weather n.a.

Approach

No procedures available due to missing runway mappings. For troubleshooting, please see the manual or the FAQs on the support website.

If you check the runway layout comparison it is obvious why an automatic assignment is not possible, and as in this example, generally impossible.



Important

Approach and departure procedures always have their end or origin respectively at the geographical position of the corresponding runway's threshold. An automatic assignment to a certain runway in the simulator only makes sense if the deviation of these geographic positions is relatively small. Otherwise it can happen that an approach procedure ends at a position where no runway is at all.

An additional source of information that can be consulted for such oddities is the „Runway-Mapping-Logfile“, which is generated during the creation process of EFBv2's database. It can be found in the folder „Logfiles“ inside the data structure of the Server. The filename (e.g. „runwayMappings_FSX_NG1805.txt“) indicates the AIRAC Cycle and the Simulator used. In this case it means the Simulator FSX and the AIRAC Cycle 1805 from Navigraph.

```

16 DTTG · 06 | 06 · 24 | 24
17 DXNG · 03 | 03 · 21 | 21
18 FAAB · 01 | 01 · 07 | 07 · 19 | 19 · 25 | 25 · · · (not assigned Sim: · 11, · 29)
19 FAFO · 11 | 11 · 29 | 29 · · · (not assigned Sim: · 06, · 24, · 16, · 34)
20 FAGG · 11 | 11 · 29 | 29 · · · (not assigned Sim: · 02, · 20)
21 FALA · 07 | 06L · 25 | 24R · · · (not assigned Sim: · 06R, · 24L)
22 FAPE · 08 | 08 · 17 | 17 · 26 | 26 · 35 | 35 · · · (not assigned Sim: · 10, · 28)
23 FATW · No automatic assignments. · ARINC: · 18, · 36 · Sim: · 18, · 36
24 FAUT · 14 | 14 · 32 | 32 · · · (not assigned Sim: · 09, · 27)
25 FAWK · 01 | 01 · 19 | 19 · · · (not assigned Sim: · 06, · 24)

```

Lines 16 and 17 show an entry where the assignment could be done without further problems.

In line 18 the first four assignments could be done, while there was no assignment possible for RWY 11/29 of the Simulator. This could be a runway with no procedures at all or a runway that doesn't exist (any more) in Real World. Furthermore it could also be that its geographic extents do not match any of the ARINC runways.

In line 23 no assignment was done. The information at the end of the line shows the ARINC and the Simulator designators respectively.

In this situation a quick glance to the Ground Layout of this airport with activated ARINC help function will reveal the cause.

15.1.3 Method of resolution

Looking at the previous explanations it becomes obvious that the "marriage" of two different worlds (Real World Navigation data and Simulator) is not always easy and can at some point score complex dimensions, especially if the airport concerned has a complex layout with numerous runways, possibly added new ones and possibly removed old ones.

At some point it is simply not possible to cope with the problems without manual intervention to achieve a reasonable solution.

What are the offered solutions?

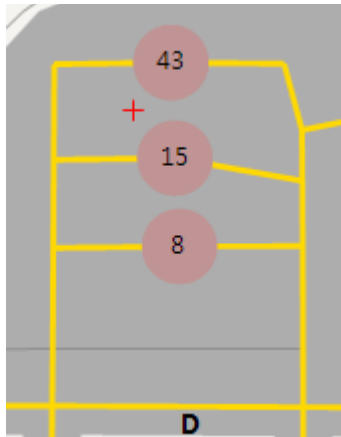
As long as "only" wrong runway identifiers are concerned, although the runways are a close match between Real World and Simulator, the runway assignments can be manually changed in the Database Builder. This assignment will be used at the end of a database creation process and is oversteering the automatic assignment. Read more about that in "Enhance / Update Runways" in document "4 EN Database".

AIRAC Cycles exclusively deal with authentic Real World data. Therefore in most cases more recent (usually payware) airport scenery AddOns can help to solve such situations. Such AddOns usually model the newest runway layout and therefore avoid problems with runway assignments.

If you are familiar with the freeware „Airport Design Editor“ (ADE), you can also edit and compile the basic BGL files (so-called AFCAD files).

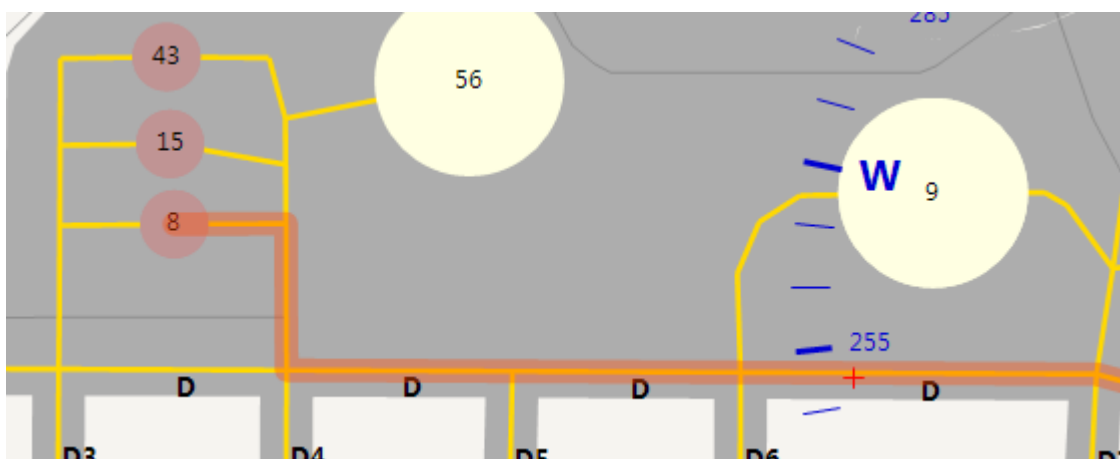
15.2 The marshaller is turning his back on me...

A few airports feature parking positions which can be accessed from both sides.



In all Simulators parking positions always have a certain orientation, i.e. an angular direction for the parked aircraft. In Real World this orientation is easily recognizable by various markings on the tarmac. Programs like EFBv2 and (and many others AddOns like e.g. „GSX Ground Services for FSX/P3D“ von fsDreamTeam) are deriving such information from the BGL files, where the definitions for the airport ground layout are contained.

The Taxi-Function of EFBv2 is looking for the **shortest** way between startpoint and endpoint by interpreting those BGL files. If your aircraft would approach the parking position No. 8 from the east, EFBv2 would propose the following taxi route:



AddOns like "GSX" mentioned above will place a marshaller at the requested parking position. It is the marshaller's duty to turn his face towards the incoming aircraft and giving directions for final parking. In the Simulator the marshaller will take his position and orientation for this parking spot from the information stored in the BGL file.

In the example above (orientation of the parking spot no. 8 is 090° due East) the marshaller would look towards the West (270°) from where he is expecting the incoming aircraft.

If you approach the Parking Spot as directed for shortest way from the East, you would only see the marshaller's back.

There is no direct solution for this problem as both AddOns use the same algorithm. The only way would be to move into the parking spot on your own from the other side.

In order to give you a hint whether you will be confronted with such a situation to choose your own taxi directions to properly enter the parking spot, you can display the orientation of the parking spots by pressing the key combination „**Ctrl-ALT-P**“. A white triangle will show you the orientation of the parking spots. Pressing the same key combination again will make the triangles disappear again.

