



FLY is FUN

User Guide

www.flyisfun.com

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1 Welcome and Warning

Congratulation and thank you for your interest in *Fly Is Fun*.

With *Fly Is Fun* you can prepare a flight, just in a few minutes: Direct To, Route, Flight Plan, NOTAMs, METARs, TAFs, QNH, ILS approach simulation to any runway, vertical navigation, simulating VOR, NDB, DME, Marker beacons, RNAV navigation and Marker beacons warnings, this without specific ILS/VOR/NDB/RNAV equipment on board.

Exploring the application, you will discover that the application provides lot advanced functions as:

- **GPS** navigation, **VOR**, **NDB**, **DME**, **EDE**, **Marker beacons**, **RNAV** navigation and Marker beacons, **ILS** approach ... The application is completely autonomous.
- Automatic and manual **Logbook**. The **Logbook** records:
 - o flight track (can be exported as. KML (Google Earth) or. GPX file)
 - o departure and arrive airport
 - o departure and arrive time
 - o aircraft
 - o pilot(s)
- 5 portraits and 5 landscape **screens** (fully customized)
- **Warnings** before entering to the controlled or special use airspace
- **Virtual radar** - users can see aircraft broadcasting ADSB-Out or FLARM. Needs an ADSB or FLARM receptor connected to *Fly Is Fun*.
- Dynamic **terrain map** (colors depend of height above ground level), obstacles
- Free **topographical map**. Maps respecting RMaps SQLite format created by users and MBTiles could be imported
- Free World navigation database
- Airspaces warnings
- **Route** planning, calculation of fuel consumption (depend on wind and of aircraft)
- **Flight Plan** elaboration
- **METARs/TAFs** consultation
- **NOTAMs** and **QNHs** consultation
- **Rain Radar** displaying raining areas and wind info
- **Barometric altitude** and vertical speed indicators – (require your device to have a barometric sensor)
- **Sunset / Sunrise** calculator
- **Export and import** from waypoints and routes via. GPX or. KML file.
- Organize your nav items to **folders**
- Easy setup of your own nav items, RWY and airspace using Google Earth
- Support for external Bluetooth GPS, Bluetooth Barometric (pressure) sensor
- **NAV1** **NAV2** support (switching them by one click)
- **VAC** information in PDF format
- Application can display:
 - o **ACC** GPS accuracy
 - o **ACM** Accelerometer
 - o **AGL** Height above ground level – GPS or barometric based
 - o **AGS** Average ground speed
 - o **ALT** Altitude – GPS or barometric based
 - o **BRG** Bearing to next WPT, RWY, etc.
 - o **CAL** Correct altitude (ILS approach, vertical navigation)

- **CRS** Selected desired course to next WPT. Indicate also the runway axis if using RWY approach, ILS approach or vertical navigation
- **DAL** Density ALTitude
- **DME** Distance to Direct to, to next WPT, or to the end of the route.
In case of ILS approach the distance is up to the runway threshold
- **DTA** Desired time over WPT
- **EDE** Estimated Distance up to End of the route, if a route is active
- **ELEV** Ground elevation
- **ET** Estimated time to next WPT or to the end of route
- **ETA** Estimated time of arrival to next WPT or to the end of route
- **FL** Flight Level
- **GAL** Geoid ALTitude
- **GS** Ground Speed
- **HDB** Heading bug
- **HDG** Heading (compass)
- **HUM** Humidity of the air
- **IAS** Indicated Air Speed (external source)
- **LOG** Logbook recorded time
- **LT** Local time
- **METARs** METeorological Aerodrome Reports
- **MGS** Max ground speed
- **NOTAMs** NOTice To Air Man
- **PRE** Current pressure (barometric sensor)
- **QNH** QNH
- **RDL** Radial from next WPT
- **RRA** Rain Radar Age, displays information on rain areas
- **RRD** Required rate of descent (ILS or vertical navigation)
- **SR** Sunrise
- **SS** Sunset
- **SW** Stop watch
- **T** Temperature
- **TAF** Terminal Aerodrome Forecast
- **TAS** True airspeed (external source)
- **TRK** Current track
- **UTC** UTC time
- **VAR** Magnetic variation
- **VS** Vertical speed
- **XAL** Cross track altitude (= ALT - CAL)
- **XTK** Cross track distance

Use **Fly Is Fun** application for VFR FLYING ONLY!

Using the application is at your own risk.

We are not responsible for any use of this application in any cases.

Fly Is Fun does not substitute any aircraft gauge or device.

All data downloaded to this application can be incorrect and not valid.

Information displayed by this application are without any warranties.

Navigation data used in this application is not made from official sources!

Have fun and fly Safe!

2 Hardware and OS configuration

All Android devices are not equal!

To use **Fly Is Fun** it is highly recommended having a device (smartphone or tablet) with at least:

- Hexacore Processor
- 4 GB of RAM or more
- 32 GB ROM or more and at least 4 Go for the application
- Screen: As bright as possible, to be able reading it in full sun day light. Full HD screen at least

- Satellite location

Ability to get location signal from as many satellite constellations as possible:

- **GPS:** American satellite constellation
- **GLONASS:** Russian satellite constellation
- **BEIDOU:** Chinese satellite constellation
- **GALILEO:** European satellite constellation

and if possible EGNOS, WAAS, MSA

- **EGNOS** European **G**eostationary **N**avigation **O**verlay **S**ystem, **WAAS** **W**ide **A**rea **A**ugmentation **S**ystem, and **MSA** **M**ulti-functional **S**atellite **A**ugmentation System are Satellite Based Augmentation Systems that permit a wider ranging coverage and greater accuracy on land as well as at sea than the terrestrial DGPS systems

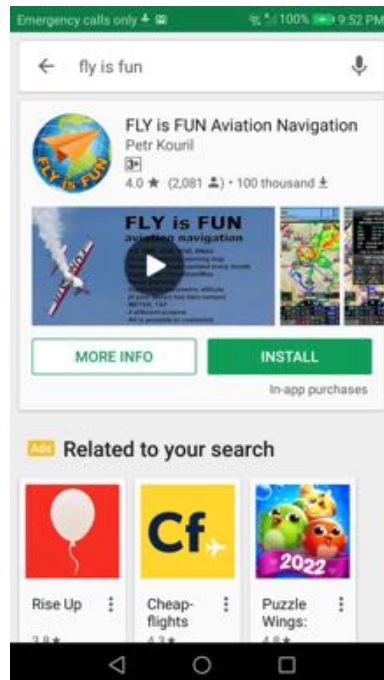
Note : Increasing the number of location sources/constellation increase drastically the precision and reliability.

- Sensors: Accelerometer, 3 axis gyros, compass, barometer
- Android: 10 or above.

3 Installing and starting *Fly Is Fun*

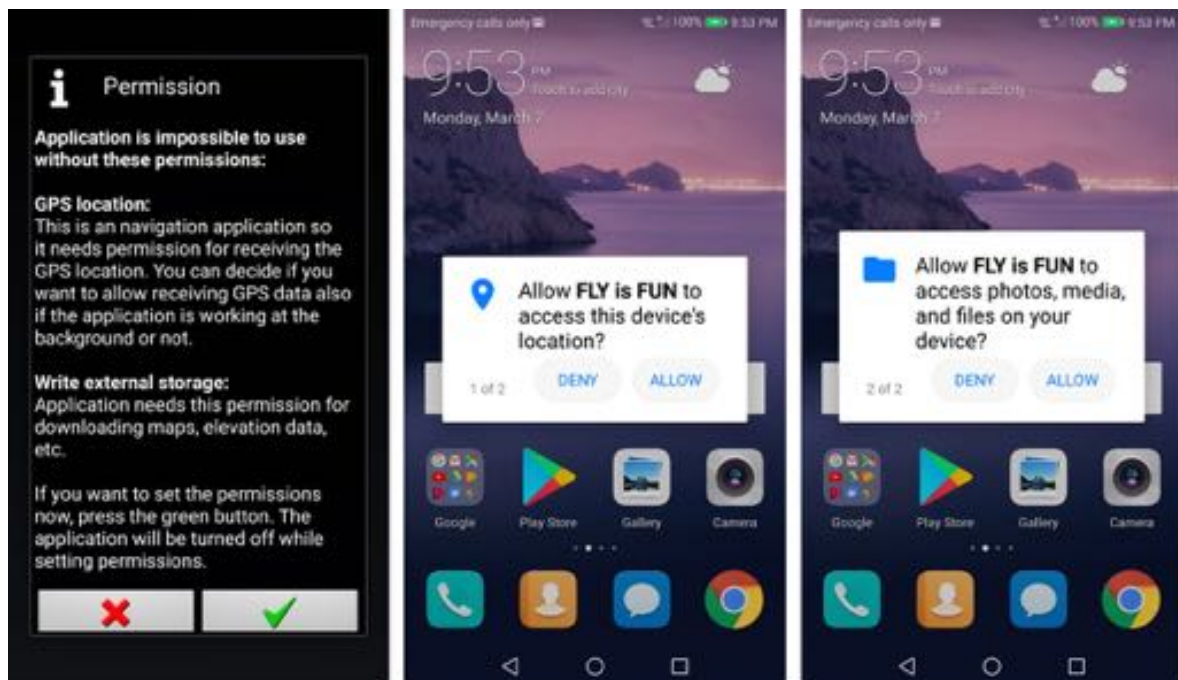
Install *Fly Is Fun* from Google Play store:

<https://play.google.com/store/apps/details?id=gps.ils.vor.glasscockpit>



During installation, you will be asked to grant *Fly Is Fun*:

- To access device localization information
- To read and write on the device memory

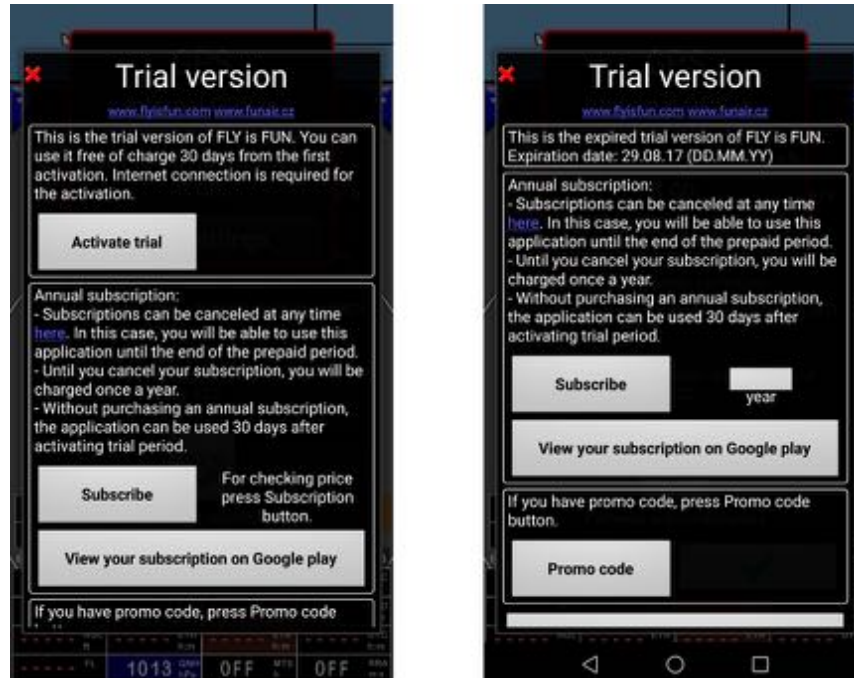


3.1 Starting *Fly Is Fun*

You can try ***Fly Is Fun*** for free during 30 days.

During the trial period, all features are accessible.

During the trial period, when launching ***Fly Is Fun*** you will see the following screen:



Activate trial activate the 30 days trial period.

After it, you will need to subscribe.

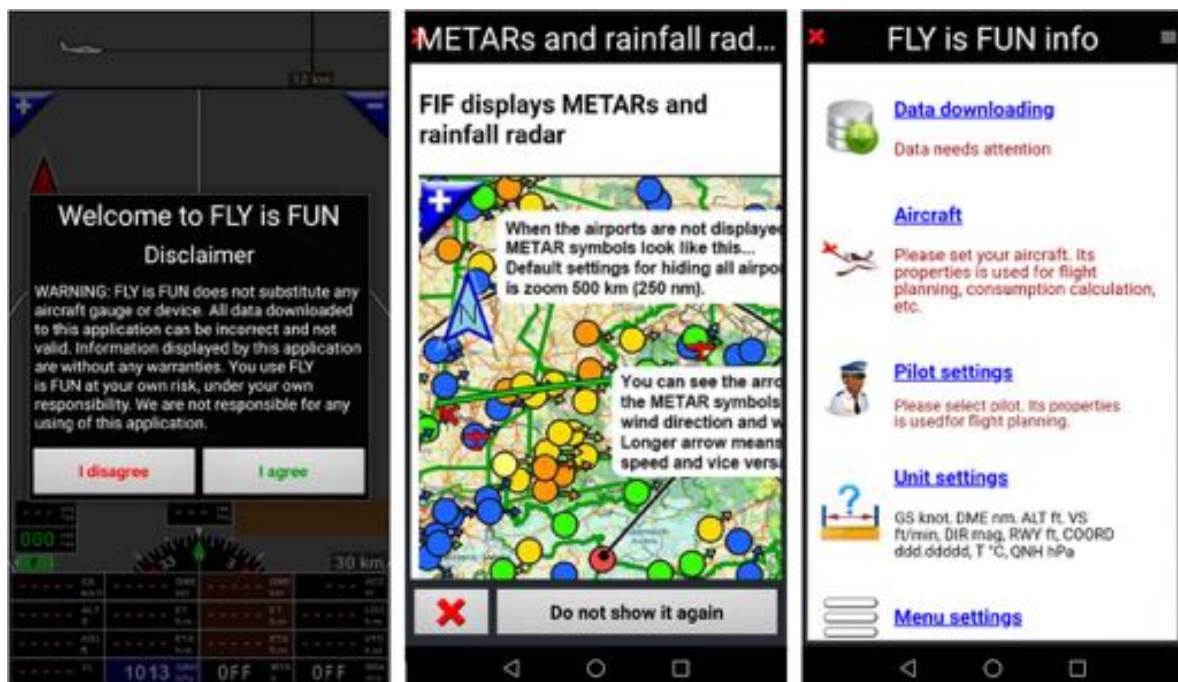
Press the ***Subscribe*** button to check the subscription price.

Subscription is managed by Google and can be stopped at any time.

The subscription cost is the equivalent of few beers. While subscribing, I am sure you will be happy to think you are supporting ***Fly Is Fun*** development team, that you are offering him some beers (not enough for a good champagne!) or that you are offering few liters of fuel (few minutes of flight)



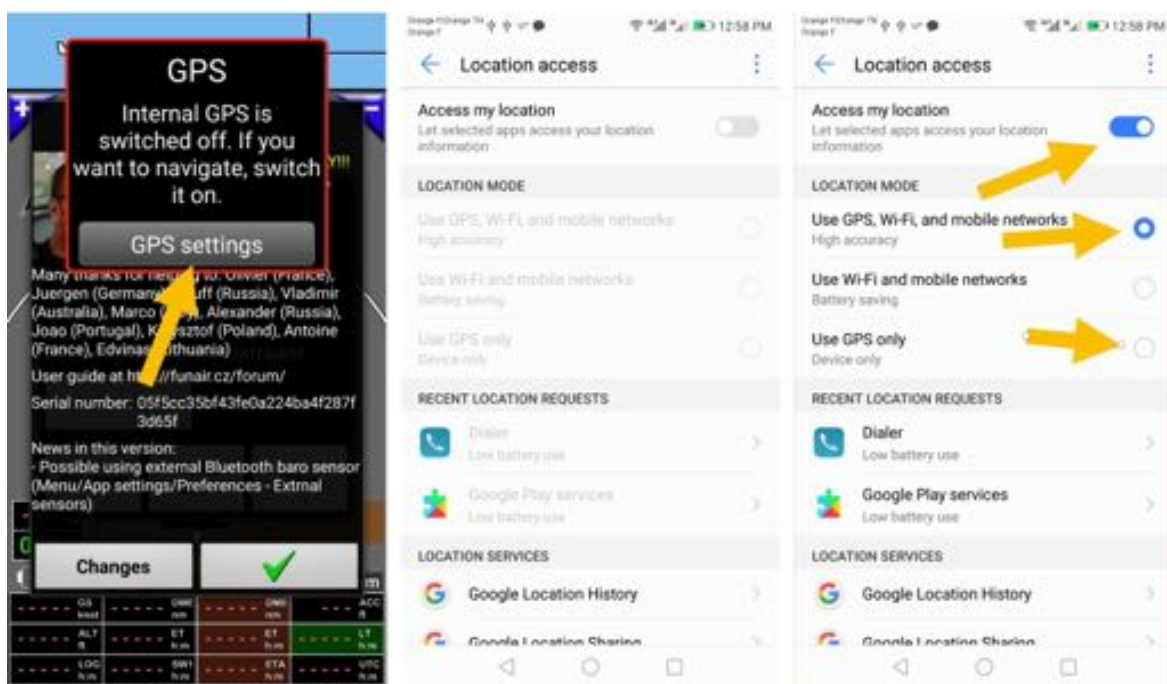
Starting **Fly Is Fun**, the Welcome screen pop-up and the Disclaimer message is displayed.



Once you press on the **I agree** button, a **METAR and rainfall radar** info page prompt followed by the **Fly Is Fun Info** page. Most of the application parameters could be set from the **Fly Is Fun Info** page.

3.2 GPS setting

During starting phase, **Fly Is Fun** check the access to the device location informations. If **Fly Is Fun** can't access location information, a message pop-up requesting the GPS activation.



Select **GPS setting** to calls Android location access screen and select. There select the option allowing the highest accuracy **GPS, WIFI and mobile network**.

Note: even if during flight, in many of cases you will only receive GPS signal, selecting **GPS only** create location problems on many devices.

3.3 Welcome screen and Disclaimer

Fly Is Fun is a great application. **Fly Is Fun** provide advanced VFR and IFR function to pilots, but the application:

- i) is executed on non-certified devices,
- ii) use data that could be incorrect, outdated,
- iii) is not certified and
- iv) code could contain bug.... that for displayed information could be wrong!



Pressing on **I agree** means that you are fully aware of the fact that **Fly Is Fun** should not be used during flight and certainly not as main navigation instrument.

Pressing on **I agree** mean as well that if you decide to use **Fly Is Fun**, you expressly agree using it AS IS, at your own risk under your own responsibility and that developer responsibility can't be involved. You are using **Fly Is Fun**, the application, AS IS, at your own risk.

Once accepted **Fly Is Fun info** page pop up.

This page is displayed each time you start **Fly Is Fun**.

If you do not want to display it, in the upper right corner press on menu button and select then **Hide at start-up**.

Fly Is Fun info page is also accessible via:

- Short press on **Compass rose**, then
- Application settings, and
- Fly Is Fun info page

4 Setting the application

Fly Is Fun info page allows an easy configuration of the application and also to check if data are still up to date.

Underlying text is:

- **Red**, if data are missing, out dated or not found
- **Green** if data are found and up to date.



From the **Fly Is Fun info** page, you can easily:

- Select and import data via **Data downloading**
 - o Air navigation data from the navigation data baseData are updated according to AIRAC cycle.
 - o Maps to use as background of the moving map screen
 - o Terrain data: Elevation data.
- Set and select aircraft via **Aircraft**
 - o Aircraft specification are used for flight preparation, flight plan and logbook, cabin pressure calibration.
- Set and select Pilots and copilots via **Pilot**:
 - o Pilot and copilot information are used for flight plan and logbook.
- Define favorite units via **Unit setting**:
 - o Set favorites units for speed, distance, altitude, vertical speed, bearing ...

4.1 Data downloading

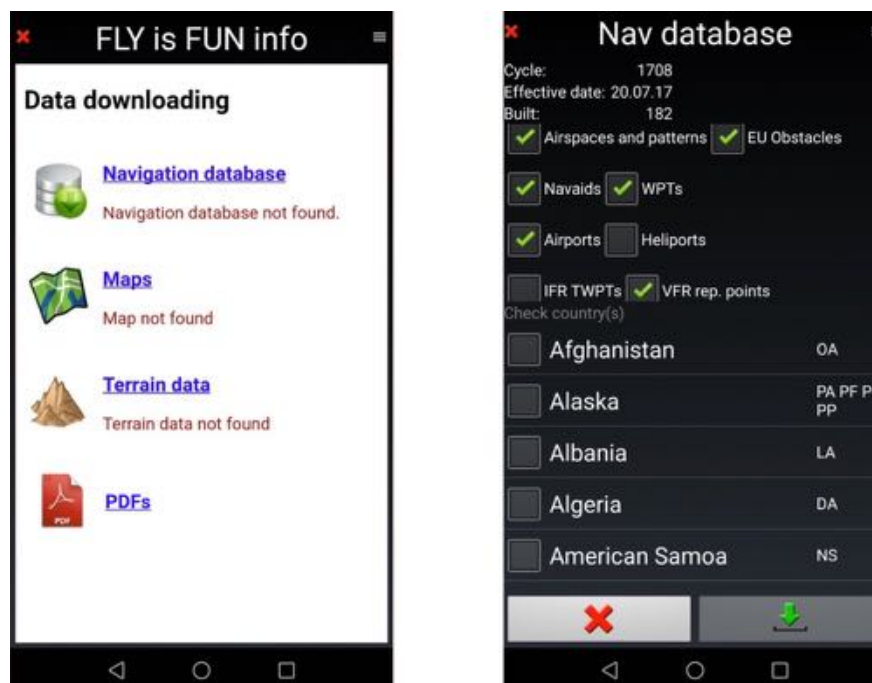
4.1.1 Air navigation data – Selection and importation

Navigation data are available for VFR and IFR.

- Press on **Data downloading** call the selection screen.

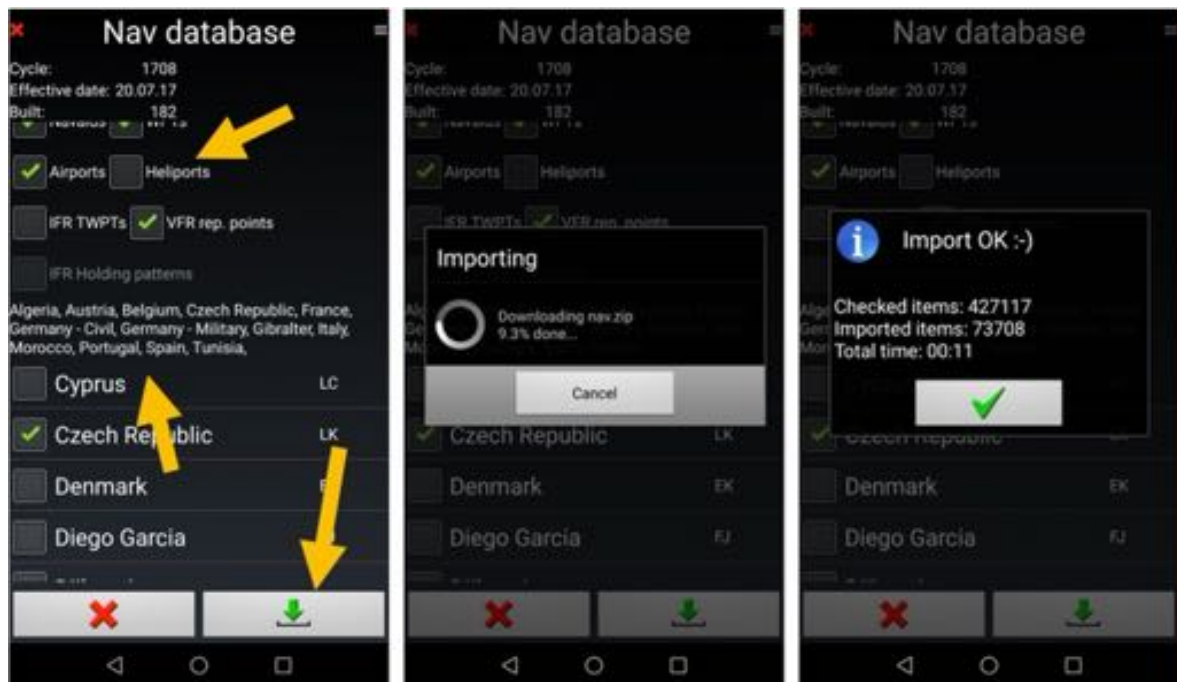
From **Nav database** windows you can select data you would like to download:

- Airspaces
- Obstacles
- Nav aids
- VFR and IFR reporting points
- IFR holding patterns
- Airport and airfields info
- ...



Type of data to import are selected in the upper part of the screen.

Countries for which those data are requested are selected in the lowest part.

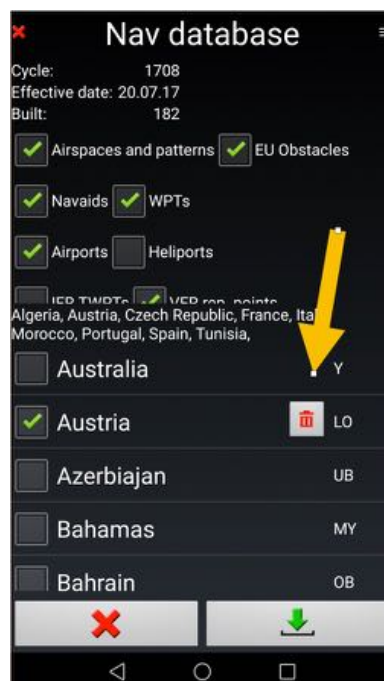


Once selection performed, names of countries for which data will be imported appears. Press on **green tick** initiate the download process.

Note 1: Data are updated according to AIRAC cycle.

Note 2: Select only countries for which you really need the data
Downloading the whole navigation database will take several hours and can a little bit slow down searching in database.

Note 3: Installed data could be deleted per country: Press on **trash**



Note 4: If you fly VFR only, there is no need to select and import IFR data.



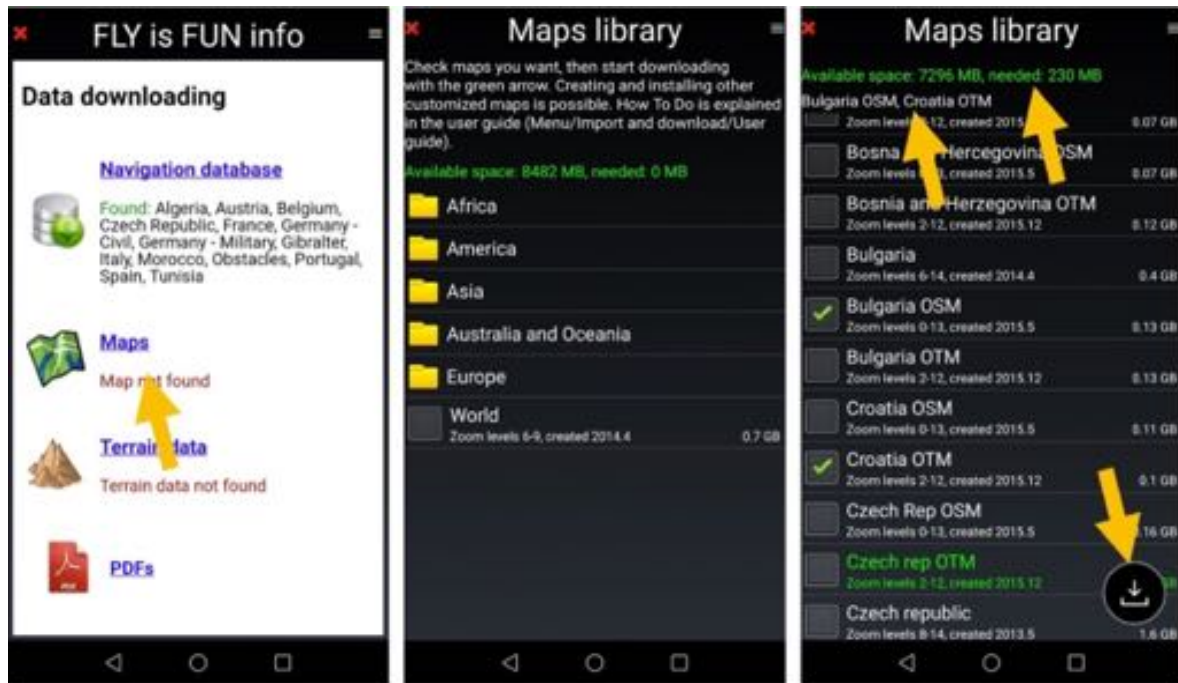
Once navigation have been downloaded, data installed and up to date appears in **green** followed by countries names for which data are available on the device.

4.1.2 Topographical Maps - Selection and download

On **Fly Is Fun** server topographical maps are available for free, for almost all countries. Maps have been generated using data provided by OpenStreetMap®, OpenTopoMaps® and OpenFlightMaps®

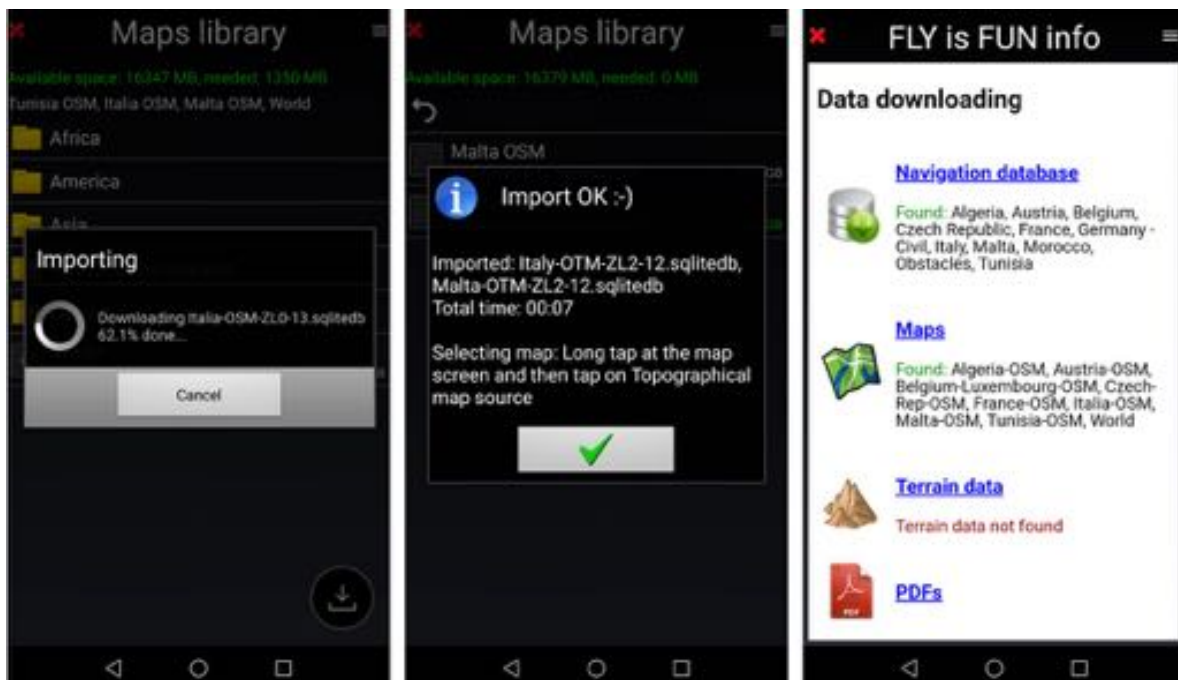
- Press on Data downloading then on Maps call remotes Maps library.

Via **Maps library** screen you will be able to select free topographical map to download.



Once maps have been selected:

- **Green check** indicates maps that will be downloaded
- Information on the requested and available storage space is displayed
- **Press** on **vertical arrow** initiate the download process.
- Names of **installed maps** are highlighted in **green**.

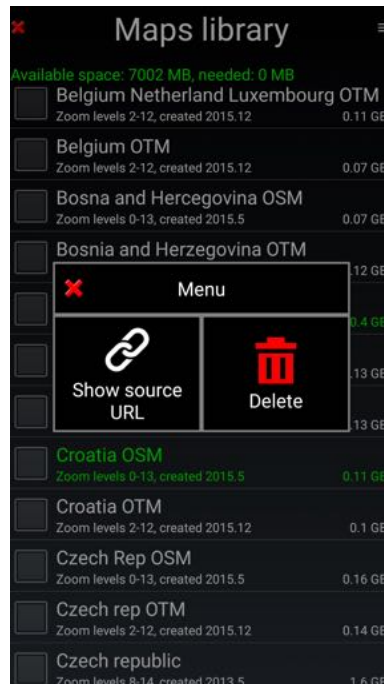


Note 1: It is advisable to always download the **world map** to.

Note 2: If don't find a map for one country, select the world map that covers the world and, please, drop a note on **Fly Is Fun** forum <http://funair.cz/forum/> .

To make free space suppressing a map:

- Long press on map name, then Press on **trash** delete the map



If you select **Show source URL**, you will see the map URL.

It can be used to download maps on a PC and then copy them on the Android device via USB connection.

Maps used by the application need to be in the **MBTiles** folder or in **RMapsSQLite** folder that are located in the **Maps** folder, which is in the **Files** folder that is in the **gps.ils.vor.glasscockpit** folder.

Note 3: User can import its own maps, that should be in **MBTiles** or **RMaps SQLite** format.

Note 4: **Fly Is Fun** allows importing **Slippy Mercator tiles** (tiles are located in folders).

Note 5: Since the release of **Android 12**, developers must store their application data in the **Android** folder. **Fly Is Fun** data is stored in the **gps.ils.vor.glasscockpit** folder which is located in the **Data** folder of the **Android** folder. To see files in Android folder, file manager permission and show hidden files are needed.

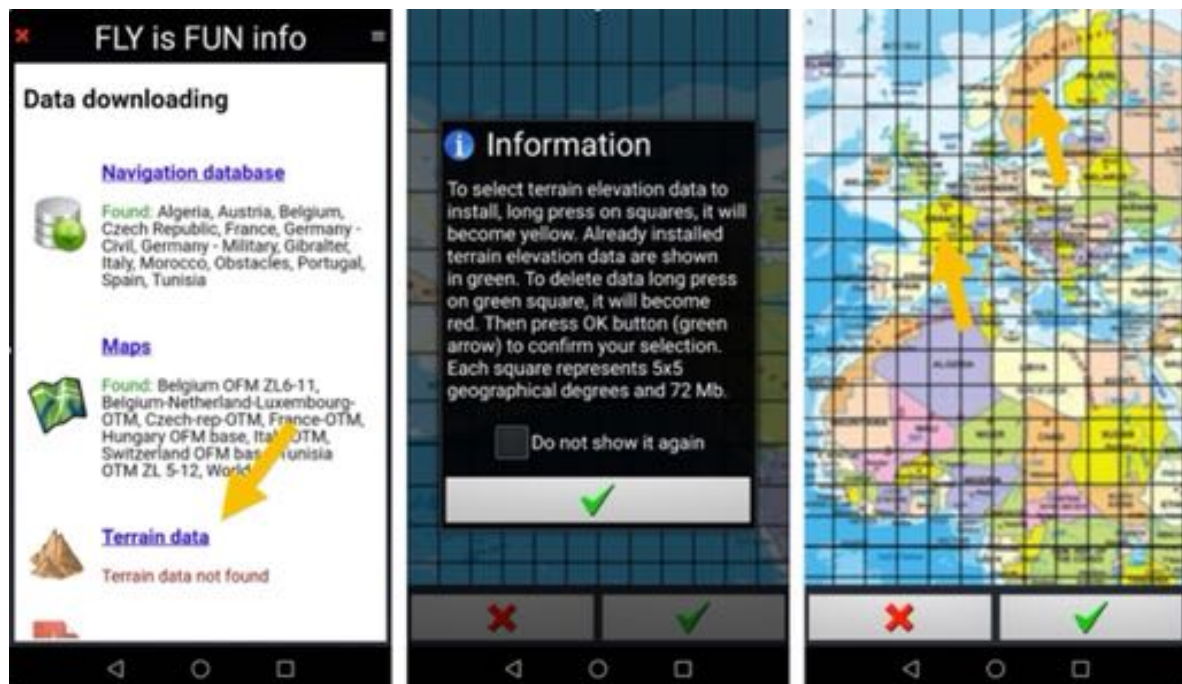
4.1.3 Terrain data - Selection and download

Terrain data are used to know ground elevation, to display it and to calculate aircraft altitude above ground level.

Data concerning artificial obstacles in Europe are downloaded via the **Nav database** as seen previously.

Terrain data files are downloaded in 5x5 geographical degrees blocks. Each 5x5 degrees rectangle requires approximately 72MB of memory and 130 MB during installation phase.

To download Terrain data from **Data downloading** screen select **Terrain data**.

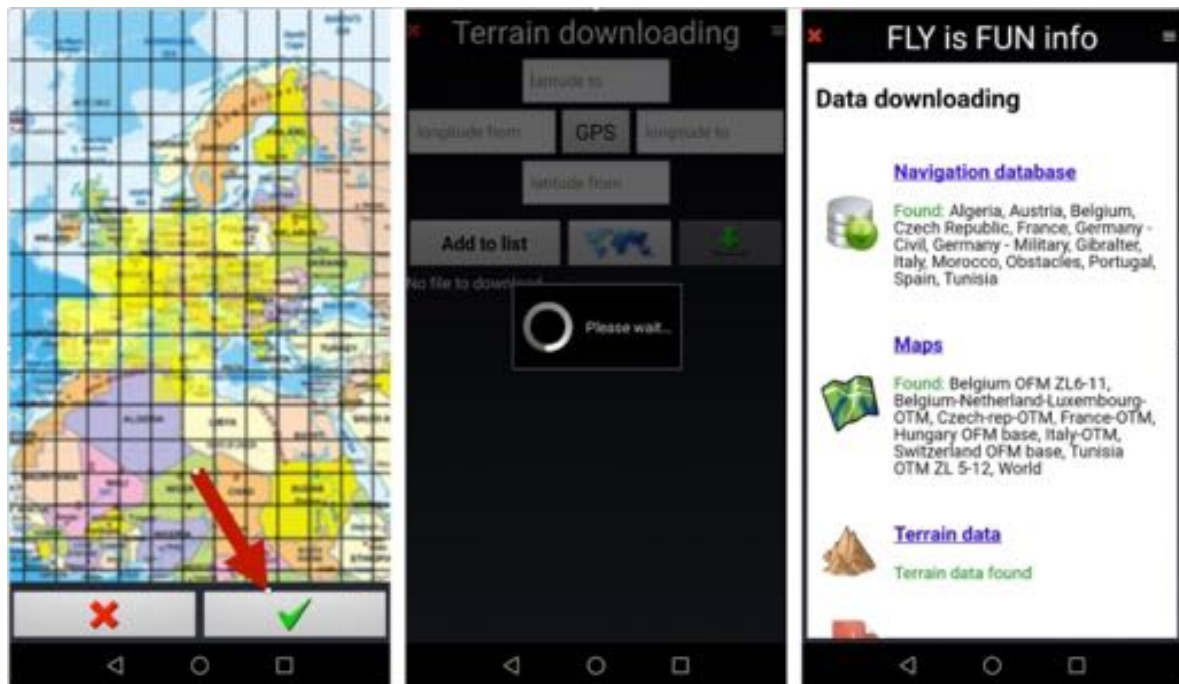


Long press on square select the area. Square becomes **Yellow**.

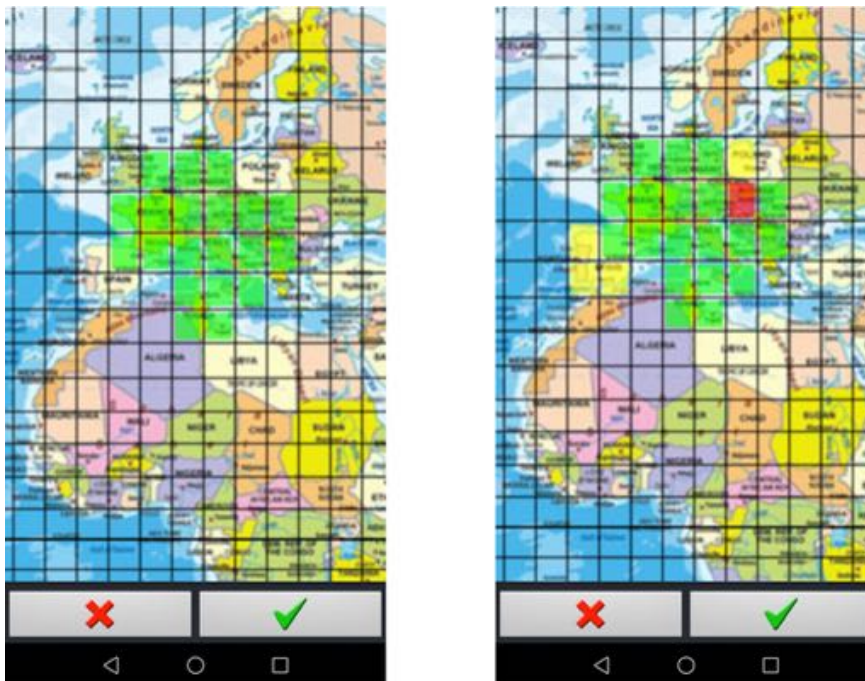
Yellow indicate that terrain data for a specific area will be downloaded.

Press on **green tick** to initiate download process.

When terrain data installed, they are displayed in **green**.



Pressing again on **Terrain data** call the map.
Installed terrain data appears in **green**.

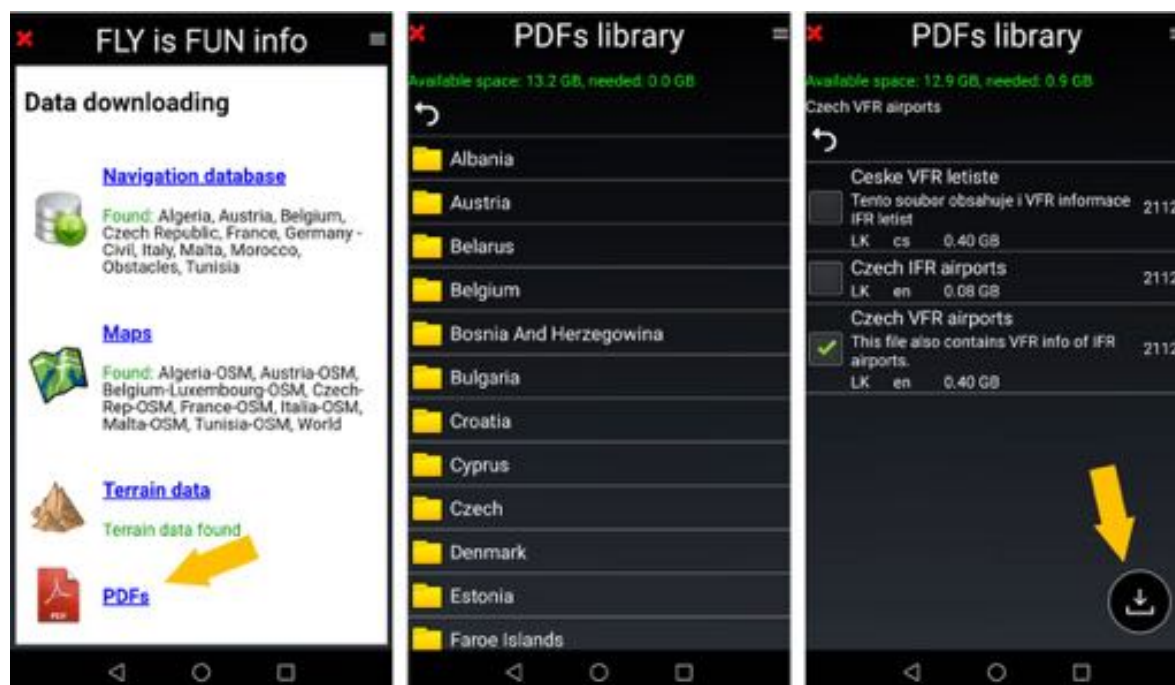


- Long press on a **green square** to suppress elevation data. It will become **red**.
- Long press on a square that is not **green** to download additional terrain data. It will become **yellow**.
- Press on **green tick** to initiate downloading or deletion process.

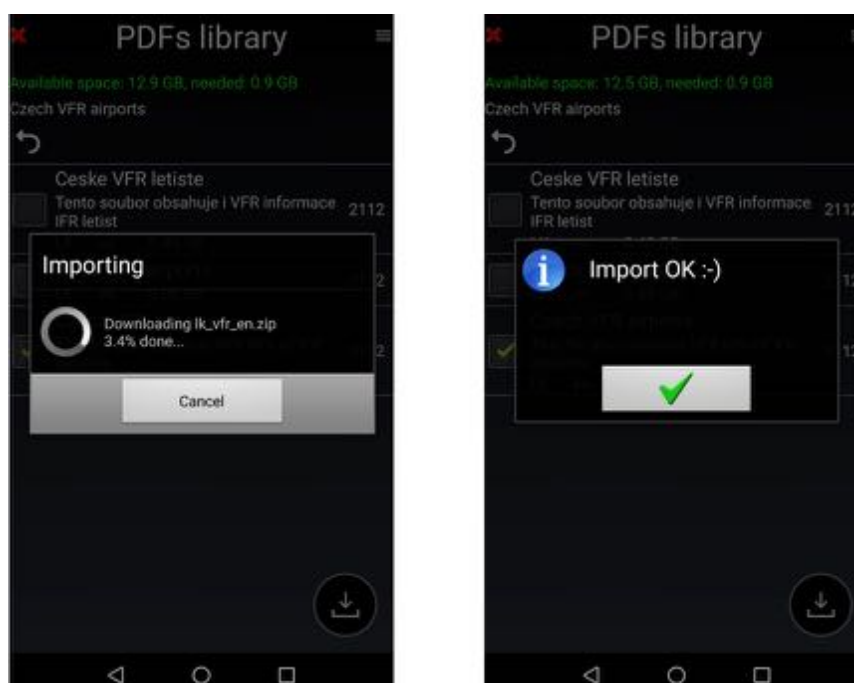
4.1.4 VAC - PDF documents - Airport information

Note: As there is no known free access data base storing updated VAC and PDF documents for the whole world. Those documents could be totally out dated !!!

For automatic download in **Data downloading** select **VAC and PDF documents**, then in **PDF Library** select the country for which you need PDF documents.



Once VAC and PDF documents have been selected press on **download arrows** initiate import process.



If you know database accessible via APIs allowing free download of VAC and PDF document, you can share the information with **Fly Is Fun** development team emailing it at aviationsoft@gmail.com.

Importing manually VAC and PDF documents is possible. Please refer to chapter **Using PDF files – AIF, VAC, ULM terrain info...**

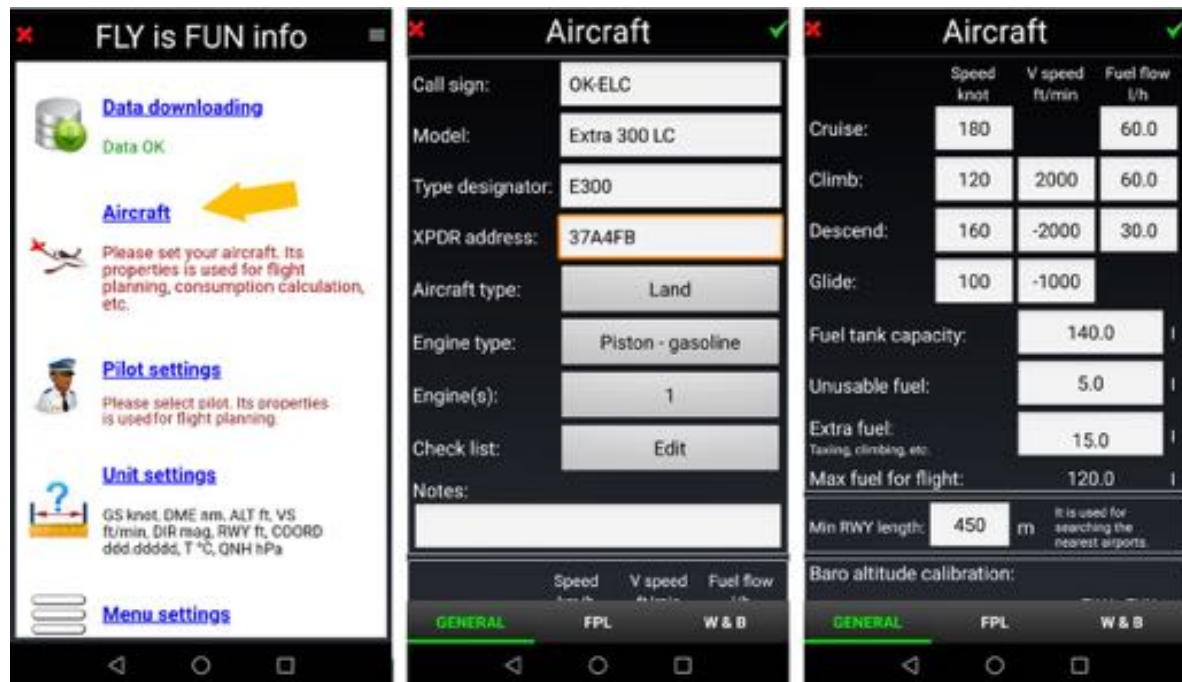
4.2 Aircraft - Setting

Aircraft information are used for flight preparation, flight plan, if needed, weight and balance calculation and logbook registration.

- Press on Aircraft open Aircraft configuration screen or Aircrafts library.

Aircraft configuration screens open automatically, if there is no aircraft configured.

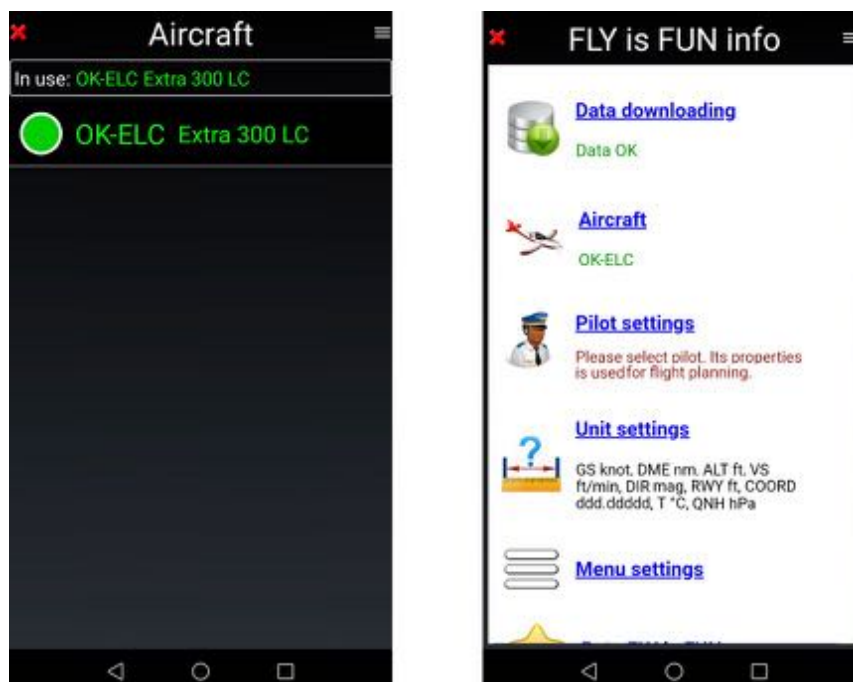
This screen allows entering information requested for flight preparation



and for flight plan.



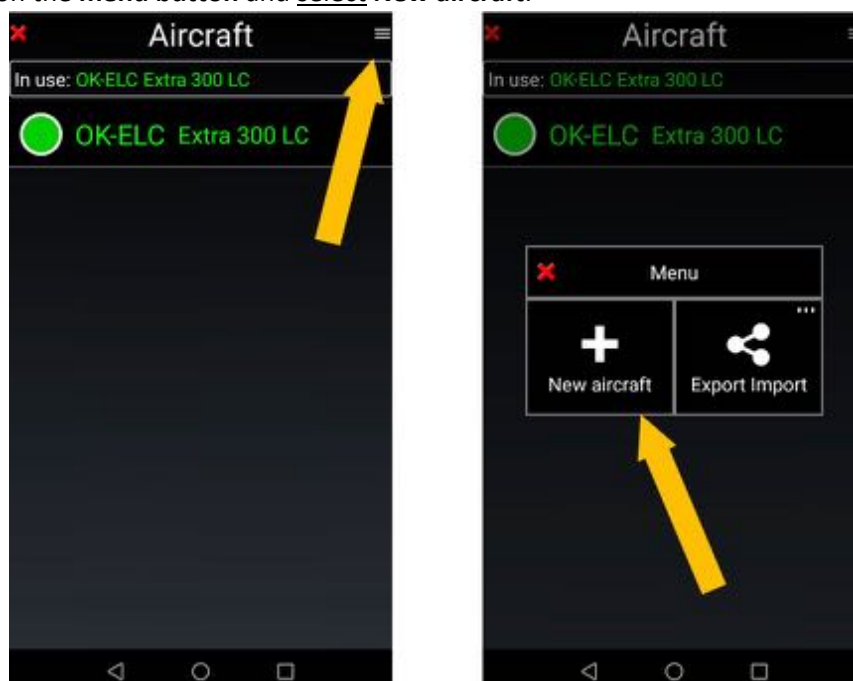
In **Aircrafts Library** names of configured aircrafts are displayed.
If only one aircraft is configured, this aircraft is used by default.



The name of the selected aircraft is highlighted in **green** and displayed on *Fly Is Fun info* page.

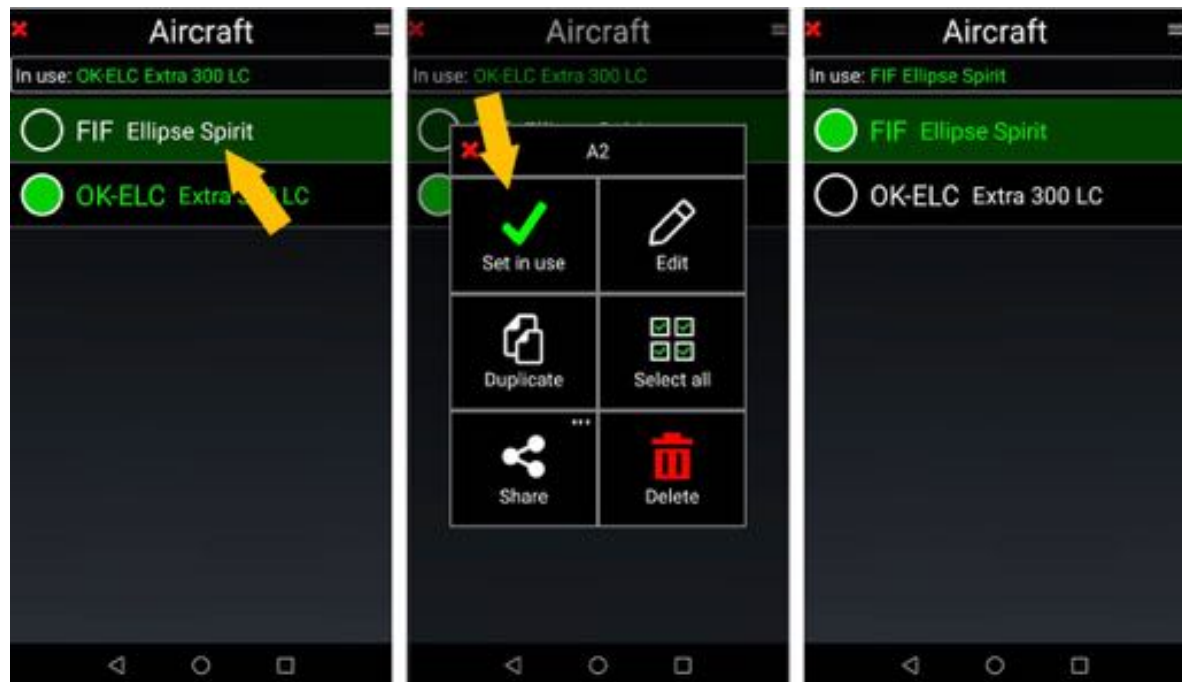
To configure a new aircraft, from **Aircrafts library**

- Press on the **menu button** and select **New aircraft**.



- Select **Export Import** to import or export aircraft settings.

If several aircrafts are configured, to select the aircraft to use



- Long press on its name and then
- Set in use.

The name of the selected aircraft is highlighted in, **green**.

Note 1: If you want editing existing aircraft configuration long press on its name and then select **Edit**, or swipe it from left to right

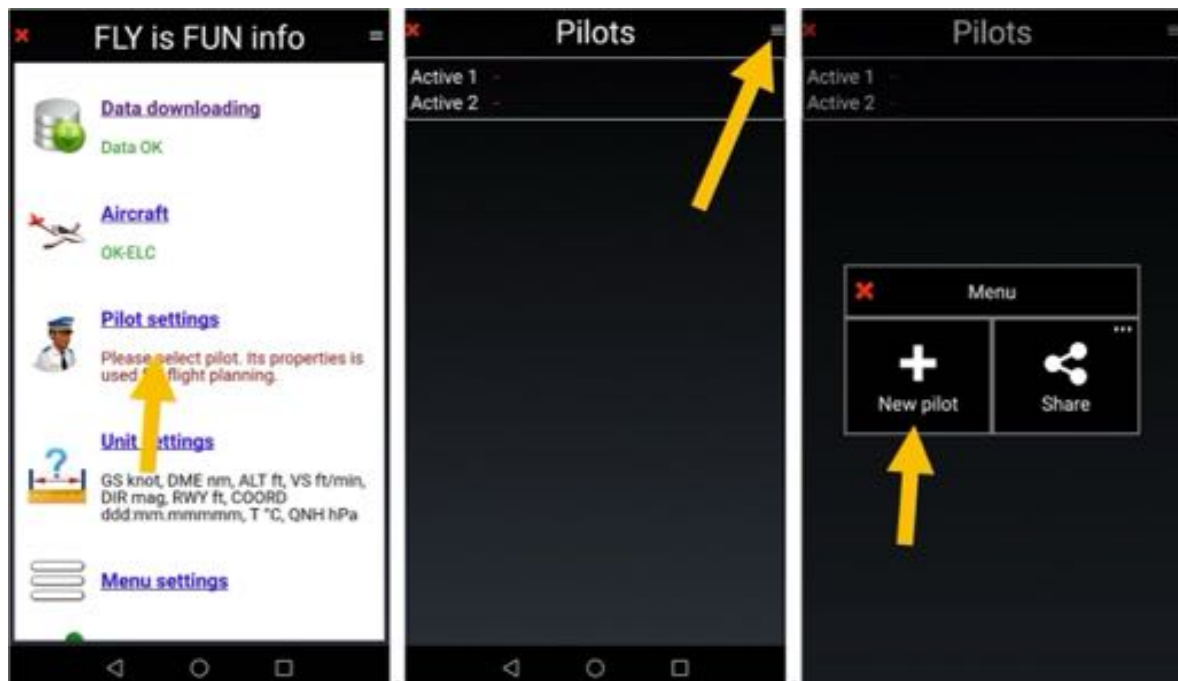
Note 2: If you want to select several aircrafts for export, deletion or sharing, swipe from right to left on desired aircrafts names.

4.3 Pilots - Setting

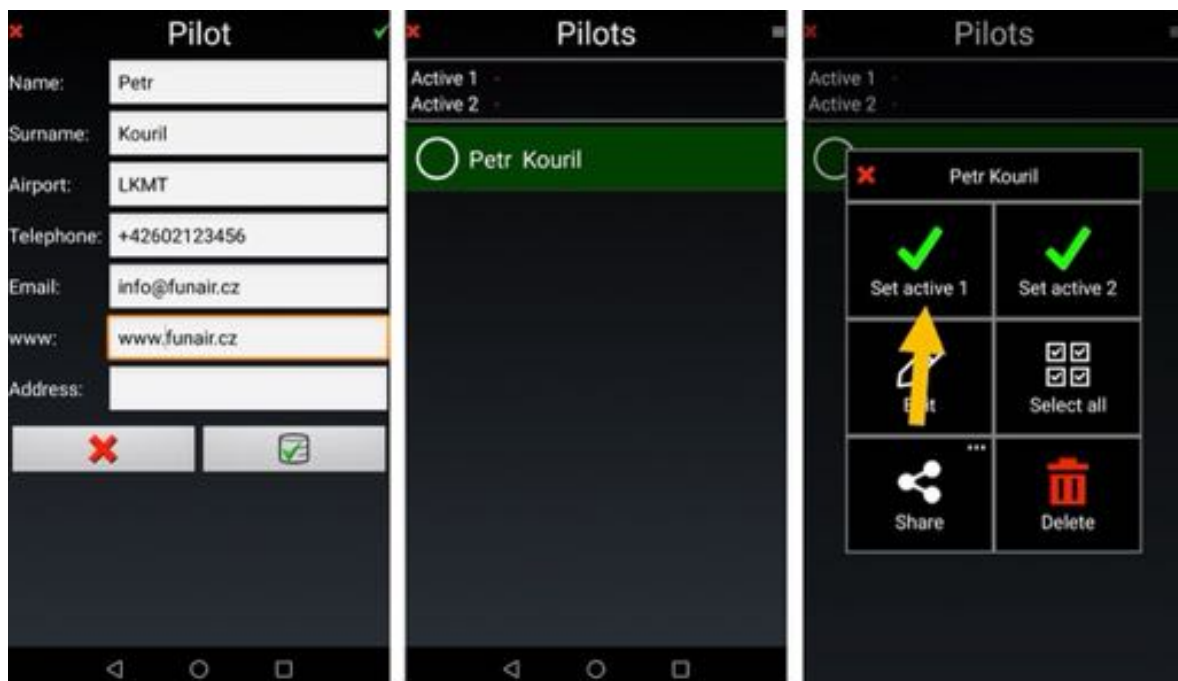
Pilot(s) info are used for logbook statistics and flight plan.
Pilot could be PIC Pilot in Charge, Instructor or Co-Pilot.

To create a new pilot and set its role from *Fly Is Fun info* page

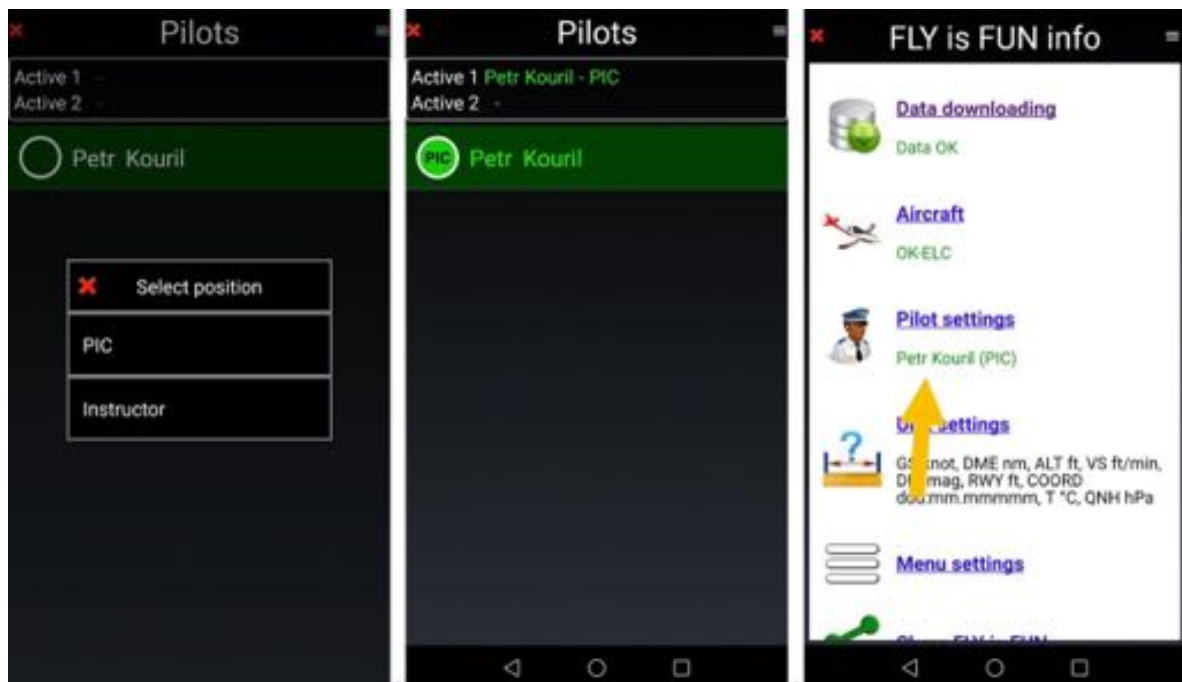
- Select Pilot settings
- Press on the **menu button**
- Select New pilot or import-export profiles.



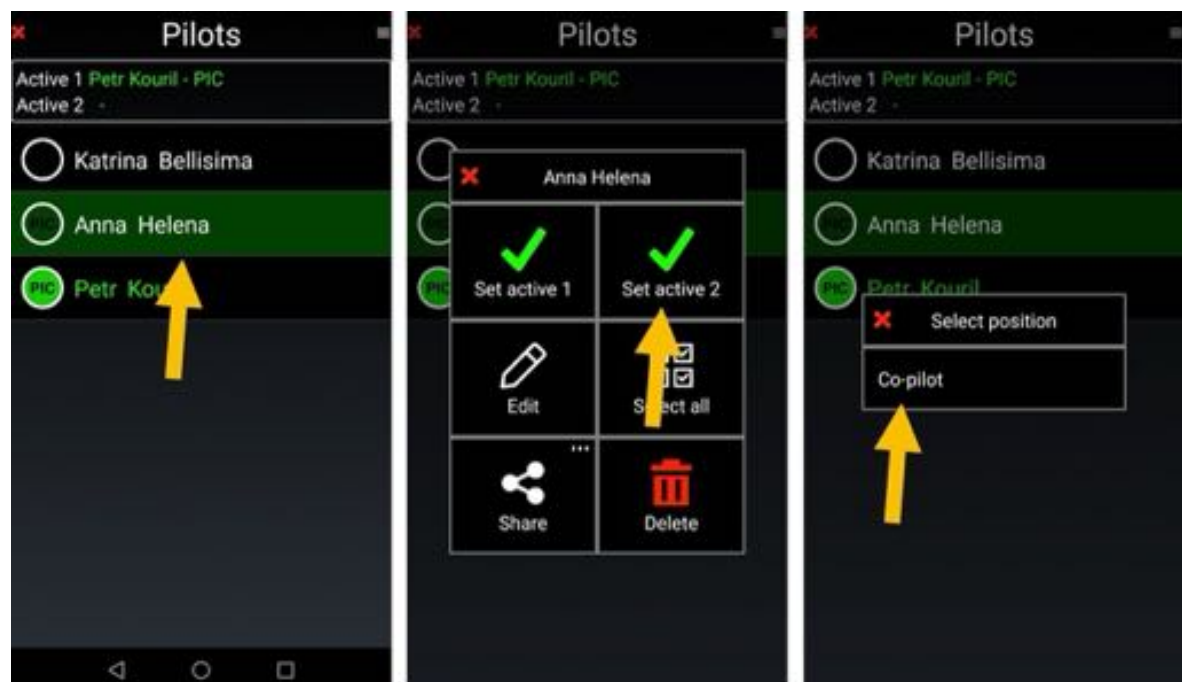
Create the pilot and then set him as **Active 1** or **Active 2**.



- select it as PIC Pilot in Charge, Instructor or Co-Pilot



Same result could be obtained for co-pilot, choosing co-pilot names in **Pilots list**



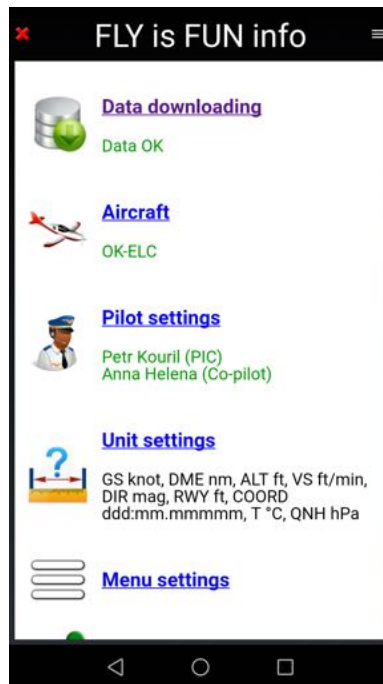
- Press on co-pilot name, Anna Helena, and set her as active 2 and then as co-pilot.

Note 1: If you want editing existing pilot profile

- Long press on pilot name and then Select Edit, or
- Swipe it from left to right

Note 2: If you want to select several pilots for export, deletion or sharing

- swipe desired pilots from right to left.

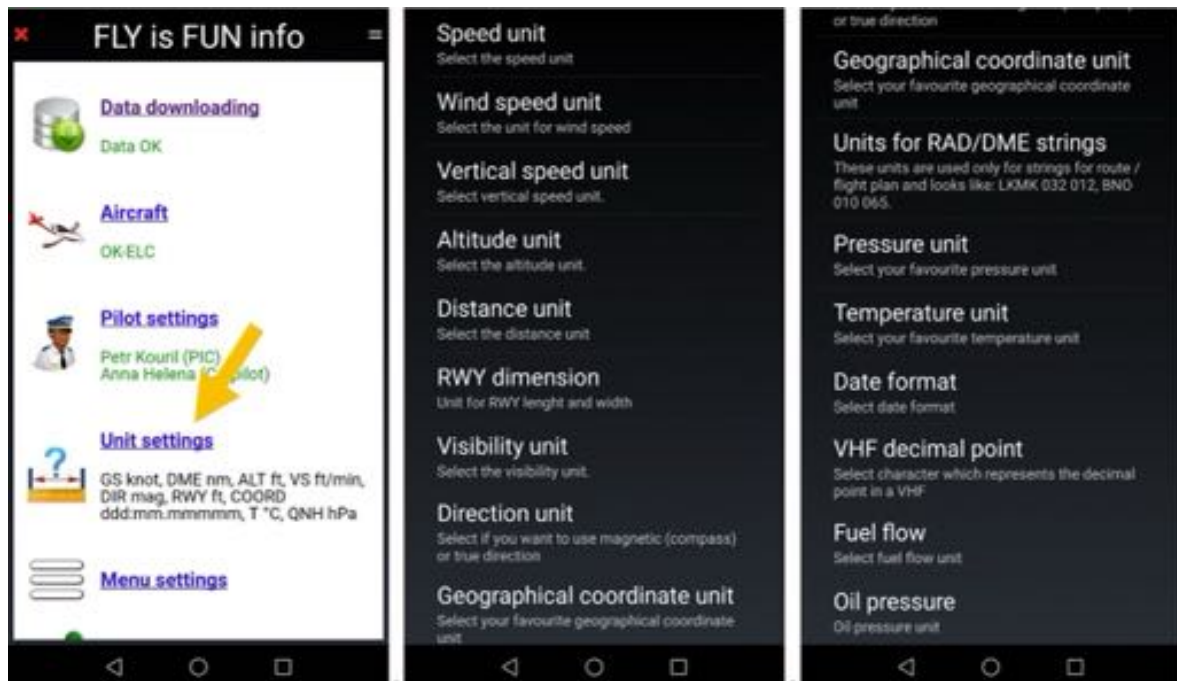


Pilots names and position are displayed on ***Fly Is Fun info*** page.

This info is used to file the logbook and the flight plans.

4.4 Units - Setting

Unit setting allows preferred favorite units to use within the application.



You can set favorite units for:

- | | |
|---------------------------|---|
| - Speed | knot, km/h or mph |
| - Wind speed | knot, km/h, mph, m/s |
| - Vertical speed | feet/min or m/s |
| - Altitude | feet or meter |
| - Distance (horizontal) | nm, km or sm |
| - RWY dimension | feet or meter |
| - Visibility (horizontal) | nm, km or sm |
| - Direction unit | true geographic or magnetic compass |
| - Geographical coordinate | 6 different possibilities |
| - Units for RDL/DME/EDE | distance (nm, km or sm) and direction (true or compass) |
| - Pressure unit | hPa, inHg or mmHg |
| - Temperature | Celsius or Fahrenheit |
| - Date | DD.MM.YY, MM.DD.YY or YY.MM.DD |
| - VHF decimal point | default country, "." or "," |
| - Fuel flow | Liter per hour, Gallon per hour, kg per hour or Pounds per hour |

Units selection and validation is easy.

If you have completed all steps describe in previous pages:

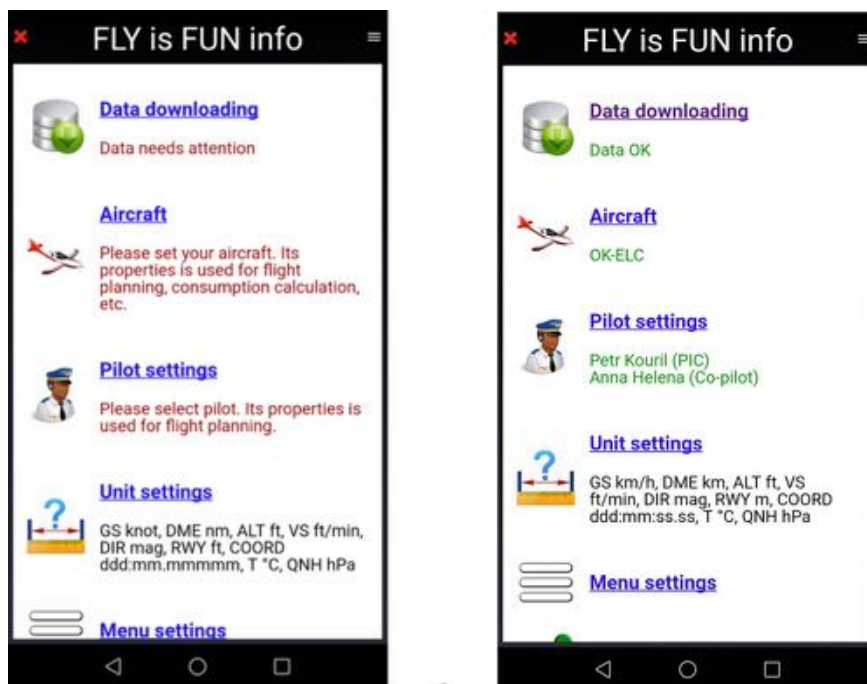
- The Data are downloaded and up to date
- An Aircraft is configured and selected
- A Pilot is selected

and

- Units set

All is in green.

Fly Is Fun configuration is achieved.



Congratulation!!!

Fly Is Fun is ready.

Next step will be to use it.

- Press on the **red X** to close the **Fly Is Fun info** page.

4.5 NOTAMS

It is possible to consult directly, from **Fly Is Fun**, the ICAO - International Civil Aviation Organization NOTAMS database.

To be able to consult, you need to register and enter in **Fly Is Fun** the key ICAO will assign you.

This is the procedure to follow.

Note 1: If you use **Fly Is Fun** on multiple devices, copy and paste the key in the right place.

Note 2: Some national civil aviation authorities transmit to the ICAO partial, truncated NOTAMS. It is your responsibility to check if the NOTAMS rebroadcast by ICAO are suitable for you.

4.5.1 NOTAMS settings

Short press on compass rose

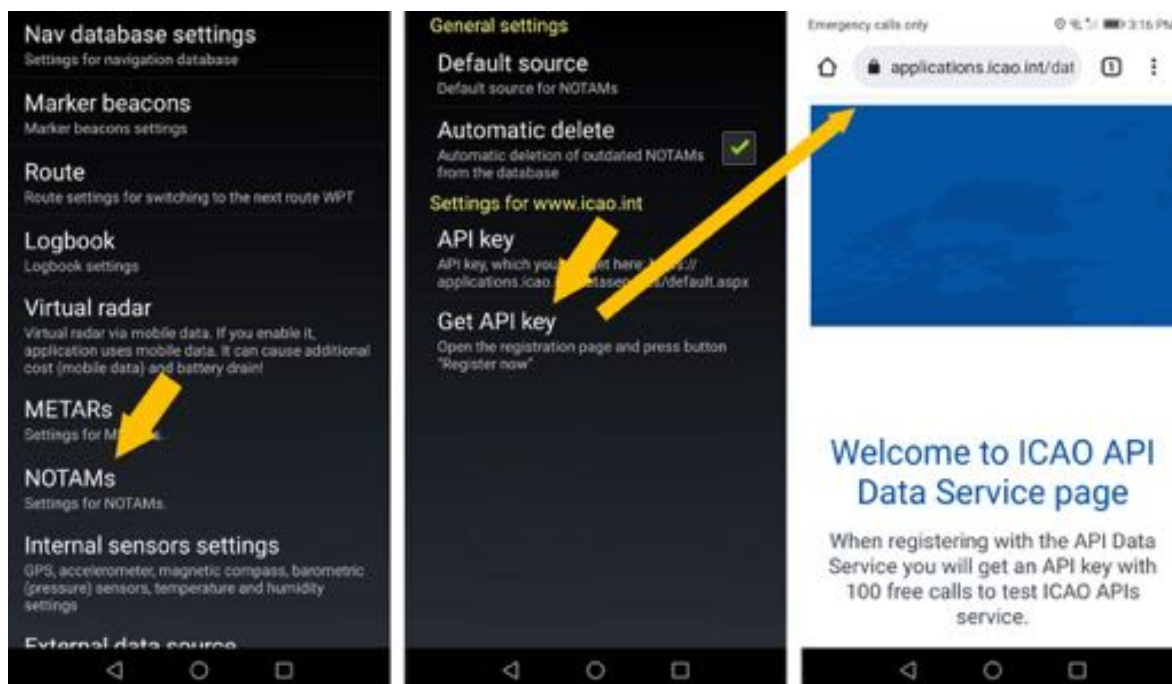
Select Application settings-> Preferences



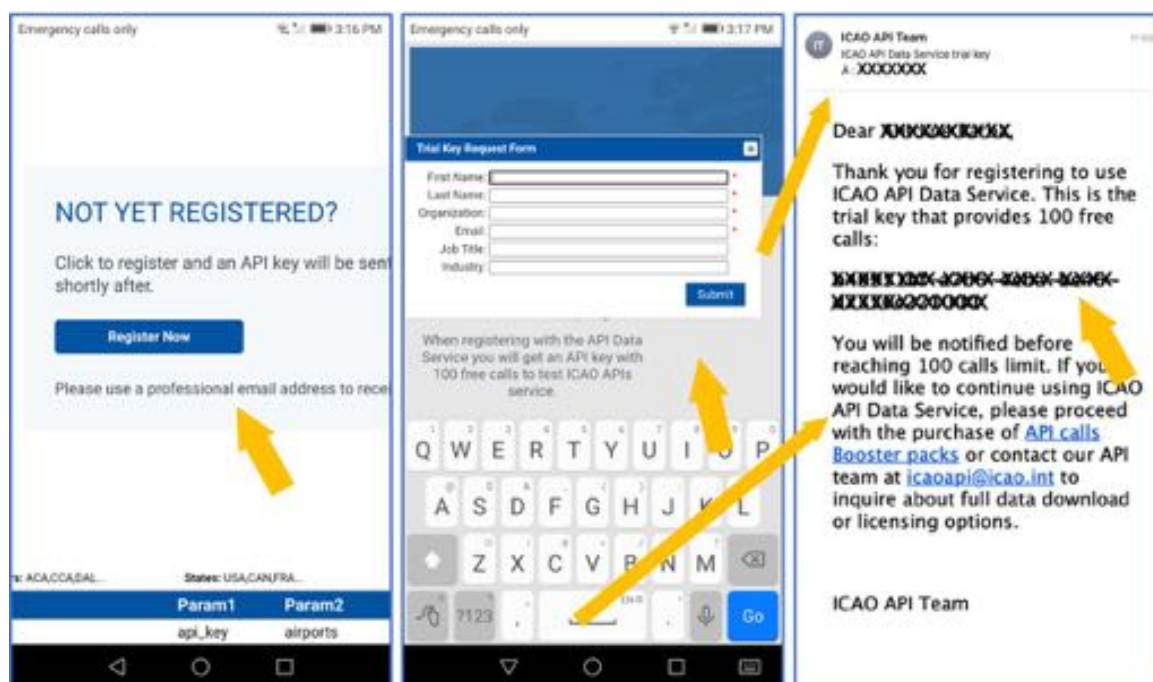
In the Preference windows scroll down to **NOTAMS**

- Select NOTAMS -> Get API key

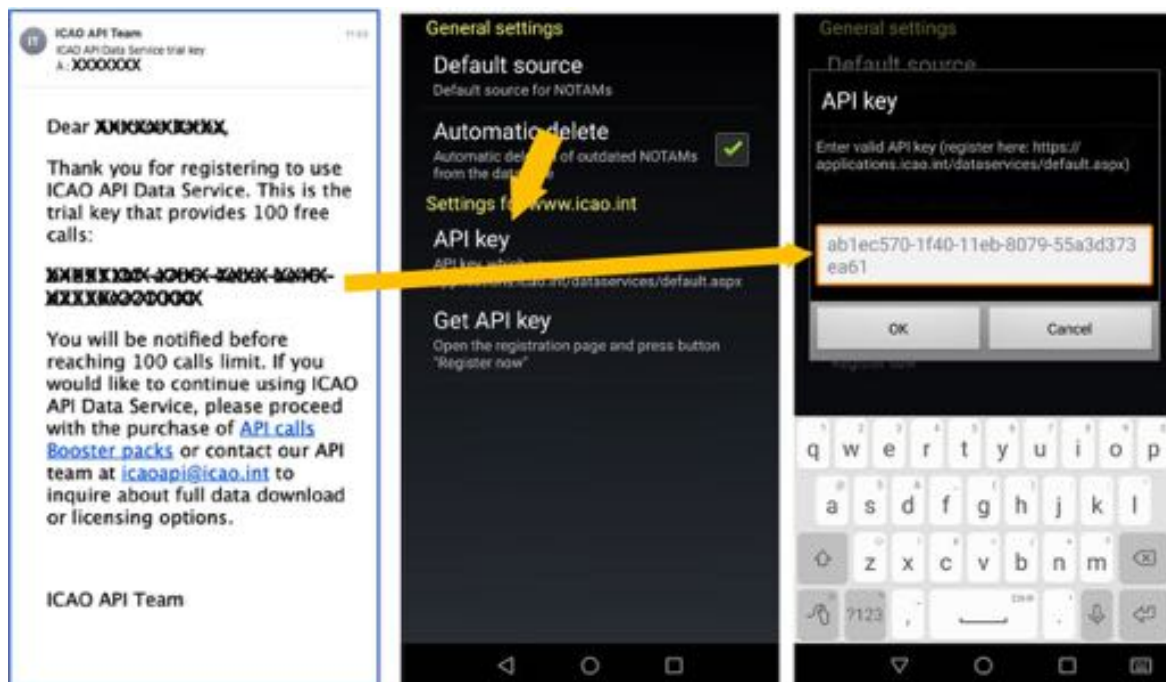
To be redirected to a page <https://applications.icao.int/dataservices/default.aspx> allowing to register.



You must register on the ICAO site to obtain the key that will be emailed to you.



Once registered , you will receive the key by email.



Copy and paste the key in the **API key** field and press OK
Application setting -> Preferences -> NOTAMs -> API key field

As long the key will be active, you will be able to consult NOTAMs directly from **Fly Is Fun**

5 Main screens

Fly Is Fun provide 5 main screens, that could be used in portrait or in landscape mode:

- **Moving map screen:** aeronautical data are displayed over the topographical map
- **Terrain screen:** Ground color vary according aircraft elevation AGL
- **Notepad screen** allowing to write notes
- **2 instruments screens:** one screen with 6 indicators, one screen with 8 indicators

Closing *Fly Is Fun info* page you get one of those screens.



To switch between screens, swipe from left to right or from right to left with your fingers.

5.1 Moving Map Screen

Moving Map Screen is probably the screen you will use the most. It could be displayed in portrait mode as well as in landscape mode.



On the upper part, you see a vertical cut displaying:

- Terrain data (if terrain data have been downloaded for the area)
- Airspaces
- The aircraft, which color varies according Above Ground Level altitude AGL
- Next WPT
- Glide slope, in case of ILS approach or vertical navigation.

On the moving map, you see:

- Waypoints WPT, reporting points, airfield, obstacle...
- Airspace limits
- The aircraft, which color varies according Above Ground Level altitude AGL
- The map, if a map of the area is active. If no map is activated for the area, background is grey.

Below it you see a rose compass and beside a black rectangle, the *WPT/Route_info* windows.

On the lowest part (portrait mode) or on the left side (landscape mode), you see various indicators.

Buttons and indicators are customizable:

- Long press on the compass rose (black circle) to open customization screen windows..

Portrait mode - Default indicators			
GS - GPS Ground Speed	DME - Distance to "Direct to 1" or to "next WPT" of the active route	DME/EDE – Distance to end of route. EDE displays if route active	ACC - GPS reception accuracy
ALT - GPS Altitude Above Mean Sea Level AMSL	ET - Estimated Time to "Direct to 1" or to "next WPT" of the active route	ET - Estimated time required up to the last point of the route	LOG - Log elapsed time since takeoff
AGL - Above Ground Level GPS Elevation	ETA - Estimated Time of Arrival to "Direct to 1" or to "next WPT" of the active route	ETA - Estimated time of Arrival at last point of the route	UTC - Zulu time
FL - Flight Level	QNH	MTS -METAR & TAFS	RRA - Rain Radar

Landscape mode - Default indicators		
GPS - Ground Speed		ACC - GPS reception accuracy
ALT - GPS Altitude Above Mean Sea Level AMSL		LOG - Log elapsed time since takeoff
FL - Flight Level		UTC - Zulu time
AGL – GPS Elevation Above Ground Level AGL		XTX - Cross track distance
QNH		MTS -METAR & TAFS
SW - Stop Watch 1		RRA - Rain Radar
DME - Distance to "Direct to 1" or to "next WPT" of the active route		DME/EDE – Distance to end of route. EDE displays if route active
ET - Estimated Time to "Direct to 1" or to "next WPT" of the active route		ET - Estimated flight Time to end of the route
ETA - Estimated Time of Arrival to "Direct to 1" or to "next WPT" of the active route		ETA - Estimated Time of Arrival at the end of the route

In addition, of above-mentioned indicators you can see other indicators on the moving map screen:

- Compass
- **BRG** - Bearing of next Waypoints
- **CRS** – Desired Course to the next Waypoints
- **TRK** – Ground course
- **Waypoint window:** In this window, active route name and "direct to" waypoints are displayed
- Scale indication distance up to the circle
- A line in front of the aircraft with per minute and per 5 minutes graduation)
- The **North arrow** could be pressed to select **Track Up**, **North Up** or **Route Up**
- Short press or long press on "+" and "-" buttons allows to zoom in or out.

Aircraft color varies according to **AGL Above Ground Level elevation**.

5.1.1 Select the map to display as background of Moving Map screen

In chapter **Topographical Maps - Selection and download** we saw how to select and download maps from *Fly Is Fun* server. Once downloaded, to use a map as background of the *Moving Map* screen:

- Long press anywhere on the map part **popup with 8 buttons window**.
if there is no map displayed in background, background is grey.



- Press on Map Selection to display the list of maps ready to use.
- Select the map to use



Note 1: Always keep the **World 6-9** map on your device.

If the background remains grey, selecting the **World 6-9** map, will help you to see/check where the GPS is positioning your aircraft and if the map you initially selected was suitable for the area.

Note 2: Maps are installed in the **MBTiles** folder or in the **RMapSQLite** folder, that are in the **Maps** folder which is in the **gps.ils.vor.glasscockpit** folder.

5.2 Notepad screen

The Notepad allows you to take notes with your finger or a stylus

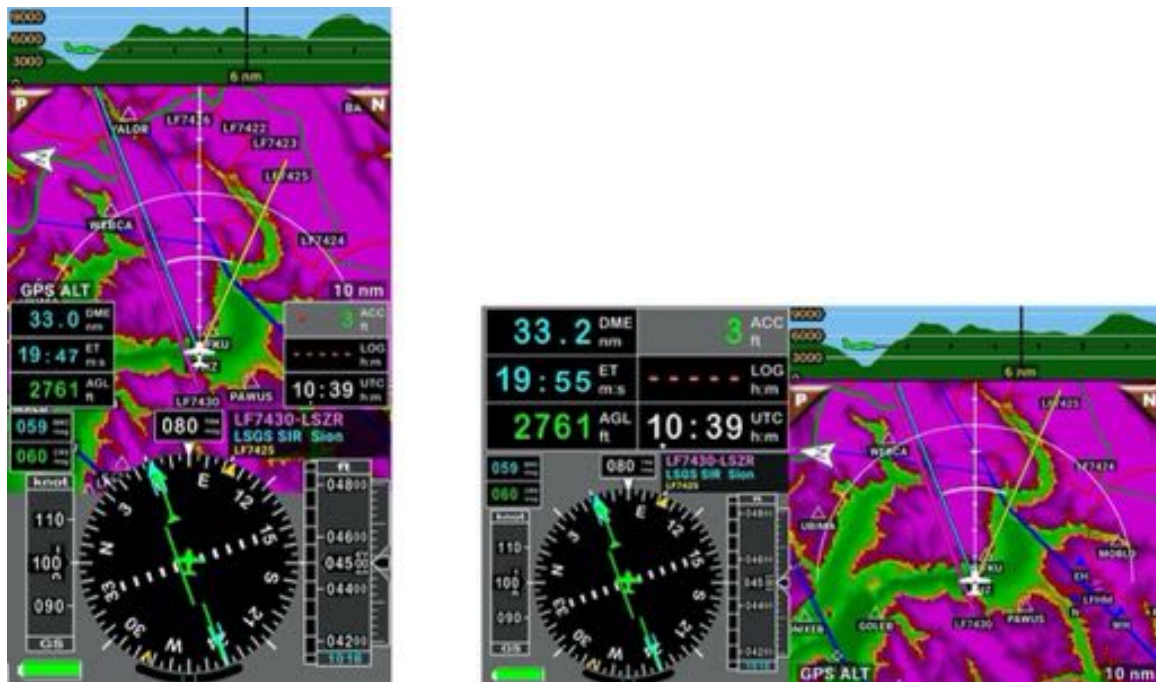


5.3 Terrain screen

Terrain screen display aircraft above ground level elevation.

Ground color varies according to aircraft altitude above it.

This presentation is extremely useful simulating IFR flight and ILS approach.



On the upper part, you see a vertical cut displaying:

- terrain appears (if terrain data are available)
- airspaces
- the aircraft

On the terrain map, you see

- waypoints WPT, reporting points, airfield, obstacles...
- airspace limits
- the aircraft
- ground displayed (if terrain data are available) with color varying according to aircraft altitude above ground

On the lowest part of the screen:

- Compass for radial approach
- GPS ground speed indicator
- GPS altitude indicator

and indicators displayed for

Distance to next WPT	GPS accuracy
Estimated time to next WPT	Log
GPS altitude Above Ground Level	UTC - Zulu time

- Long press on compass rose (black circle) to customize buttons.



Short press on **AGL indicators** to display colors assignment rules.

User can choose between 2 set of colors, or define it is one rules. Rules (altitudes) and colors can be set in application preferences:

- Short Press on the **compass rose**, then
- Application settings
- Preferences and then
- Press on Terrain settings.

Note: Aircraft color vary according its altitude Above Ground Level

5.4 Instrument screens 1 & 2

If you prefer flying with instrument only, the application provides two dedicated screens.

Instrument screen with 8 indicators.



Instrument screen with 6 indicators.



- Long press on the compass rose (black circle) to customize indicators

6 Gesture: Short press – Long press – Swipe ...

All functions and features provided by the application are accessible via menus and buttons.

The application takes full advantage of multi touch screens and of Android capabilities, several of them are accessible via gesture, increasing the efficiency.

Usage of one finger, of two fingers, long press, short press... produce different results.

To get the most of **Fly Is Fun**, we suggest training until getting comfortable with gesture results.

6.1 Topographical moving map – some key gesture

By default, the map is locked, with the aircraft displayed at the right place, but consulting the moving map, moving it, rotating it, zooming IN and OUT is very easy.

6.1.1 Exploring the map – Unlocking it – Rotating it – Back to default presentation

To unlock the moving map, just put two fingers on it.

Then you could move it with one finger.

As soon the aircraft is out of displayed area, a blue bubble appears indicating aircraft position.



To call the aircraft back on its default position and lock the map:

- Short press on **North arrow**,
- or
- Short press on **Blue bubble**.

Note: once screen is unlocked the black line that was in front of the plane indicate the aircraft direction and information displayed in vertical cut are information on black line path.

6.1.2 Zooming IN or zooming OUT - Moving map or Terrain screen

On **Moving map** and **Terrain screen** it is possible zooming in or zooming out

- Zoom IN:
 - Swipe from bottom to the top of map screen with one finger
 - Short press on “+” button
 - use two fingers, on moving map screen only.



- Zoom OUT:
 - swipe from top to bottom of map screen with one finger
 - short press on “-” button
 - use two fingers, on moving map screen only.

Note: On **Moving map** and **Terrain screen** you will also be able:

- Adjusting progressively the resolution: short press on “+” or “-” buttons
- Selecting directly the right level of zoom: long press on “+” or “-” buttons and select scale.



6.1.3 Measuring distance between 2 points displayed on the map

You will have probably noticed, that while unlocking the map with two fingers on the moving map or zooming IN and zooming OUT, again with two fingers to, an info box popup in the upper part of the screen.

Fly Is Fun calculate automatically the distance between the 2 points you are touching and also provide bearing and radial information.



Note: Bearing and Radial depends of finger order. Which was the first finger touching the screen

6.2 Displaying info - Gesture

6.2.1 Info related to items or airspace displayed

- Short press on item displayed on moving map, terrain map or vertical cut open info box related to it displaying main info related to the point or the airspace.



Selected item airfield, WPT, reporting point, airspace will be highlighted in yellow.



- Short press on info box to close it. If you do nothing info box close automatically after few seconds.

Note 1: during a flight, approaching airspaces an info box automatically pops up displaying messages.



Note 2: Alerts could be customized in application preferences:

- Short press on compass rose, then Application settings, Preferences and then
- Press on Warning and info dialog box.

Aircraft symbol - short press

Short press on aircraft open a **Position info** page that provide helpful information while exchanging with radio stations or aircrafts around.



North arrows – Moving map screen - short press or long press

Short press on **North arrow** always lock the map and call the aircraft back to its default position.

Long press on **North arrow** allows choosing map orientation. Map orientation could be:

- Track up
- North up



- Bearing up
- North up.



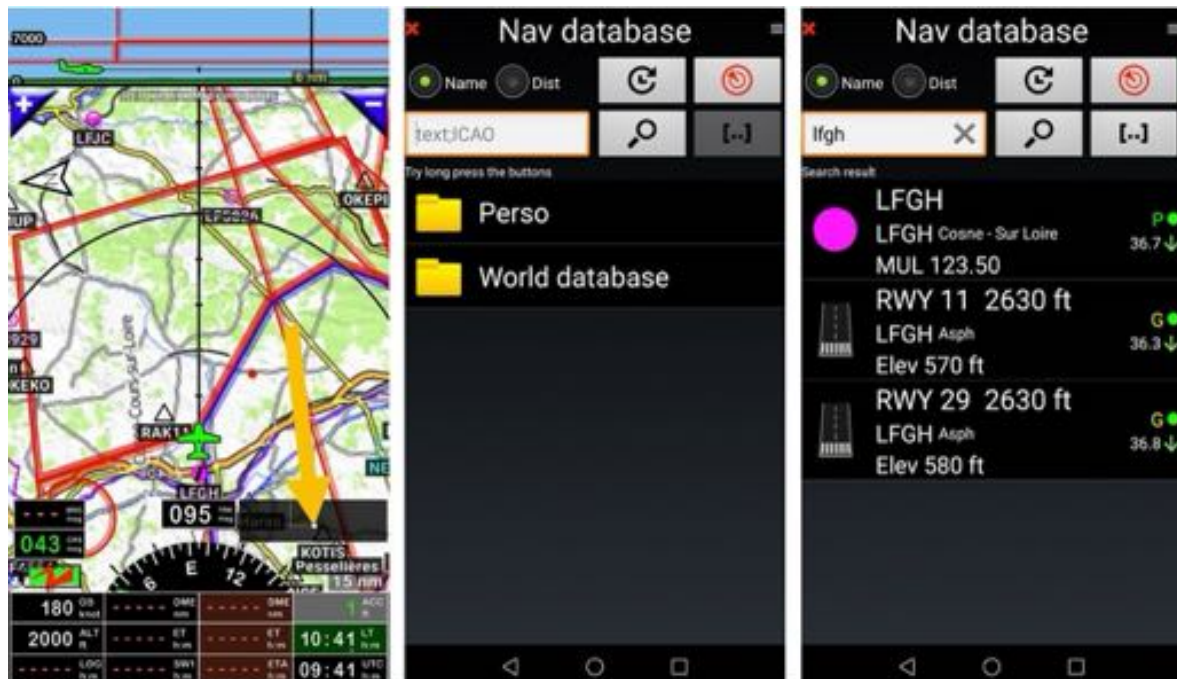
6.3 Press on WPT/Route_info window

Short press on **WPT/Route_info** window and see what happen.

6.3.1 *Result if there is no active route*

WPT/Route_info windows:

- Provide direct access to Nav database
- Display name of selected (next) WPT.



Long press on **WPT/Route_info** window: switching **NAV1** and **NAV2** (if NAV2 is selected)

Note 1: Selecting **NAV2**

- Open Nav database, long press WPT, **Navigate**, **NAV2**
- Open Nav database short press WPT symbol on the left side, **NAV2**
- Short press WPT at the map, then Press **NAV2**.
- Long press any place of map, then Press **NAV2**.

6.3.2 Result if a route is active

Short press on **WPT/Route_info** windows open a menu, where choices are proposed:

- Direct to (Nav database): open *Navigation database* where all items are stored and
- **Route dialog box**: open route detail.



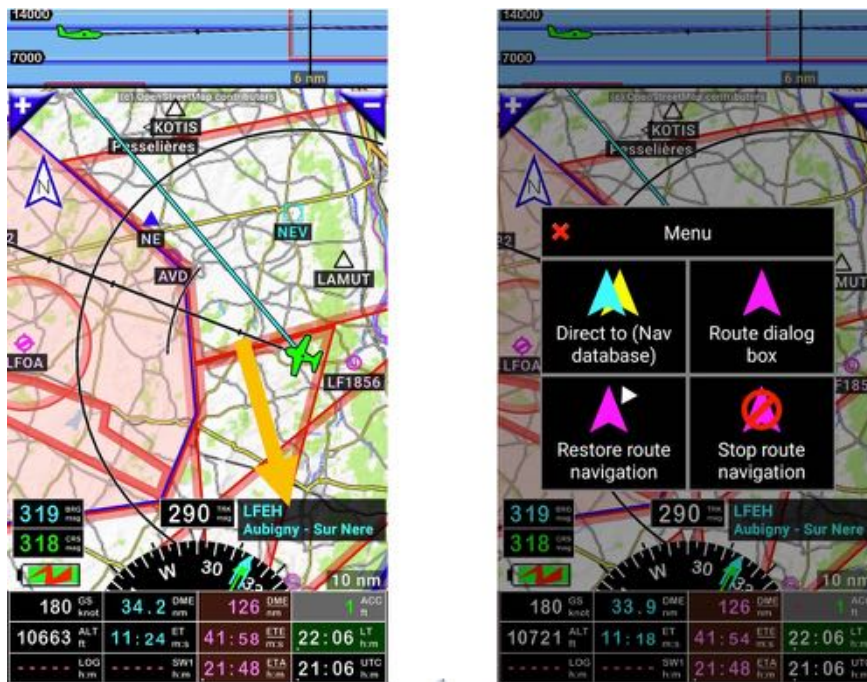
Short press result if a Direct To was selected when a route is active

If a route is active, short press on **WPT/Route_info windows** prompt a menu with multiple options:

- Direct to (Nav database): open the *Navigation database* where nav items are stored
- **Route dialog box**: open route detail
- **Restore route navigation**: restore the route and activate next WPT of route.

This function is used if **NAV1** or **NAV2** where activated interrupting the route

- **Stop route navigation**: stop and close the active route.



6.4 Moving Map – long press on...

Long press anywhere on **Moving Map** open a menu, proposing several choices:



Via this menu, it is possible:

- To get information on:
 - Distance from the aircraft to selected item / point
 - Bearing from the aircraft the selected item / point
 - Radial from selected item / point to the aircraft
 - Elevation of selected item / point.
- To activate functions:
 - **NAV1 direct to**: Direct to selected item, only direction guidance (localizer approach)
 - **NAV2 direct to**: Direct to selected item, only direction guidance (localizer approach)
 - **Note** Fly Is Fun allows selection of 2 different items / points for **direct to**
 - **Holding pattern**: allows creation of waiting circuits
 - **Start new route**: Start route creation
 - **Sunrise / Sunset calculator**: Calculate Sunrise and Sunset hours for any point of the world
 - **Nearest**: Provide information of nearest Airports, Frequencies, METARs, airspaces
 - **Nearest airports**: provide names of nearest airports sorted by distance
 - **Nearest with options**: provide names of nearest nav items according choices
 - **Nearest airports VHF**: provide frequency info of nearest airport
 - **Nearest airports PDF**: Displays PDF document related to nearest airport if on appropriate Fly Is Fun folder
 - **METARs/TAFs around**: Displays METARs and TAFs info for airports that are around
 - **Nearest airspace**: provide information on Airspace and patterns around the aircraft
 - **Create new WPT**: Create new WPT in the Nav Database
 - **Map selection**: Allows selecting an installed map

6.5 Terrain Map – Long press on...

Long press anywhere on **terrain screen** open a menu, proposing several choices:



Via this menu, it is possible:

- To get information on:
 - o Distance from the aircraft to selected item / point
 - o Bearing from the aircraft the selected item / point
 - o Radial from selected item / point to the aircraft
 - o Elevation of selected item / point.
- To activate functions:
 - o **NAV1 direct to**: Direct to selected item, only direction guidance (localizer approach)
 - o **NAV2 direct to**: Direct to selected item, only direction guidance (localizer approach)
 - **Note** Fly Is Fun allows selection of 2 different items / points for **direct to**
 - o **Holding pattern**: allows creation of waiting circuits
 - o **Start new route**: Start route creation
 - o **Sunrise / Sunset calculator**: Calculate Sunrise and Sunset hours for any point of the world
 - o **Nearest**: Provide information of nearest Airports, Frequencies, METARs, airspaces
 - **Nearest airports**: provide names of nearest airports sorted by distance
 - **Nearest with options**: provide names of nearest nav items according choices
 - **Nearest airports VHF**: provide frequency info of nearest airport
 - **Nearest airports PDF**: Displays PDF document related to nearest airport if on appropriate Fly Is Fun folder
 - **METARs/TAFs around**: Displays METARs and TAFs info for airports that are around
 - **Nearest airspace**: provide information on Airspace and patterns around the aircraft
 - o **Create new WPT**: Create new WPT in the Nav Database
 - o **Show in another application**: Allows seeing the point in another application

i.e. Earth, Maps, Maps Me...

6.6 Compass rose button menu - short press on ...

Short press on **compass rose** calls a menu related to the flight.
This menu could be call from any of the 4 main screens:



- **Navigate:** open Navigate menu
- **Nearest:** open Nearest menu
- **In flight setting:** open In-flight setting menu
- **Information:** open Information menu
- **Tools:** open Tools menu
- **Application settings:** open Application settings menu
- **Downloads:** open Downloads menu
- **Close:** Quit the application.

7 Menus and sub menus

7.1 Navigate



- Direct to (Nav database): open the *Navigation database* where all items are stored
- **Direct to (coordinate)**: allows entering geographic coordinates of the point
- **Route**: open route library
- **Stop NAV1 navigation**: deactivate **NAV1** direct to
- **Stop NAV2 navigation**: deactivate **NAV2** direct to
- **Stop route navigation**: stop and close the active route
- **Alternate airport 1**: select first alternate airport of active route for direct to (if defined in route, gray background if not)
- **Alternate airport 2**: select second alternate airport of active route for direct to (if defined in route, gray background if not).

7.2 Nearest



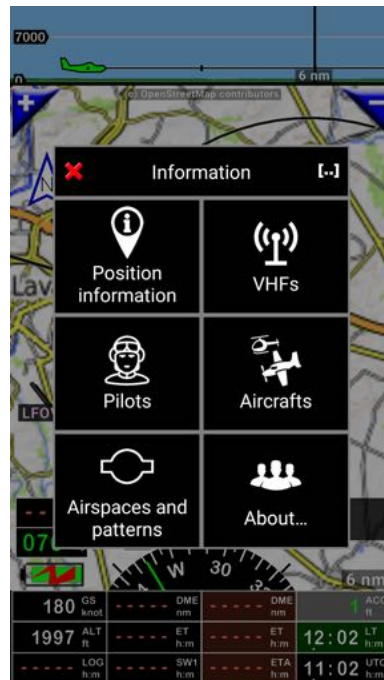
- **Nearest airports:** provide names of nearest airports sorted by distance
- **Nearest with options:** provide names of nearest nav items according to pilot choice (ILS, LOC, RWY, VOR, NDB, APT, WPT, TWPT, FIX, HP, OBST, MB);
- **Nearest airports VHF:** provide frequency info of nearest airport
- **Nearest airports PDF:** Displays PDF document attached to nearest airport (if files are on device)
- **METARs/TAFs around:** Displays METARs and TAFs info for airports that are around. Active Internet connection needed
- **Nearest airspace:** provide information on Airspace and patterns around the aircraft.

7.3 In flight setting



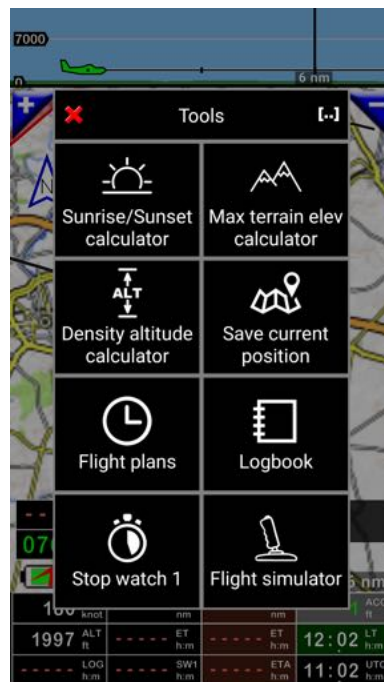
- **Course:** allows entering course information
 - Short press on **CRS** indicator allows setting course information.
- **Heading bug:** allows correcting compass
- **Speed bug:** allows correcting speed
- **Altitude correction:** allows correcting altitude information
 - Short press on **ALT** indicator allows to setting altitude correction.
- **QNH:** Allows entering QNH info
 - QNH information could be directly imported from METARs/TAFs info
- **Wind**
 - **Manual input:** allows entering manually wind parameters, wind force and wind direction
 - **Measure wind:** flying a 360°, evaluate wind force and wind direction
 - **METARs/TAFs:** allows importing wind force and wind direction from METARs or TAFs
- **Altitude data source:** allows selecting altitude source
 - **Note:** *Fly Is Fun* should be connected to an external data source
- **GPS altitude correction.** Allows insertion of the GPS altitude correction

7.4 Information



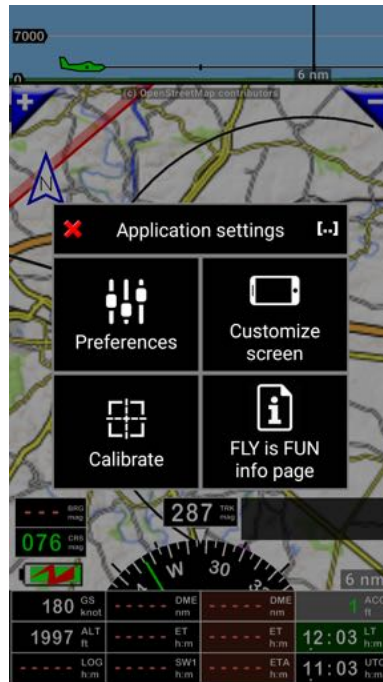
- Position information: open *Aircraft position info* windows
- **VHF**: display VHF frequency per country, sorted per airport
- Pilots: open *Pilots list*
- Aircrafts: open Aircrafts library
- **Airspaces and patterns**: Display Airspace and patterns per country
- **About**: Display *Fly Is Fun* version number and other information about the application.

7.5 Tools



- **Sunrise / Sunset calculator:** Calculate Sunrise and Sunset hours for any point of the world
 - **Note:** if you select Sunrise and Sunset calculator directly from the moving map, Latitude and Longitude info of the selected point will be used for calculation.
- **Max terrain elev calculator:** Calculate maximum terrain elevation between 2 points.
 - **Note:** Press on **calculator** to initiate elevation calculation.
- **Density altitude calculator:** calculate density altitude depending of Temperature, Dew point, Humidity and Pressure
- **Save current position:** save aircraft current position creating a WPT in navigation database
- **Flight plans:** open Flight Plans library, displaying stored flight plans
- **Logbook:** Calls the logbook
 - **Note:** long press on **Log** indicator open the Logbook.
- **Stop watch 1:** activate or deactivate Stop watch 1
 - **Note:** short press on **SW1** indicator open Stop Watch 1.
- **Flight simulator:** allows to train with the application simulating navigations and WPT selection
 - **Note:** once simulator is on, background of ACC indicator is in light grey.
 - Short press on **ACC** indicator open simulator panel.

7.6 Application settings

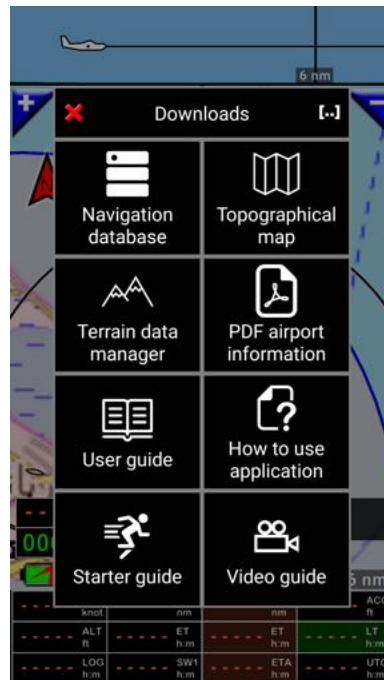


- **Preferences:** open preferences menus and submenus allowing deep customization and fine tuning of the application
- **Customize screen:** open menu allowing screen customization. Each main screen could be customized, in portrait mode and or in landscape mode

Note: Long press on **compass rose** open screen customization menu.

- **Calibrate:** allows slip sensor calibration
- **Fly Is Fun info page:** open the info page.

7.7 Downloads



- **Navigation database:** open Nav database selection screen
- **Topographical map:** open Maps library and map selection screen

Note : names of maps installed on the device are displayed in **green**.

- **Terrain data manager:** open terrain data selection

Note: area for which terrain data are already available on the device are highlighted in **green**.

- **PDF airport information:** open PDFs library selection

Note: Display only countries for which automatic download is possible.

- **User guide:** Allows downloading the user guide
- **How to use application:** Allows downloading a short memo
- **Starter guide:** Allows downloading starter guide
- **Video guide:** Allows watching video guide on YouTube.

8 Direct to

8.1 NAV1 - Direct to item selected on map

Short press on an item of the map open an info box with:

- Item name and elevation
- Radial, bearing and distance
- Estimated time and fuel, based on aircraft characteristics

Short press on **NAV1** for **Direct to**.

Selected item name appears in **cyan** in *WPT/Route_info* windows.

If the GPS is on with a fix, a **cyan line** linking aircraft with **NAV1** appears and information as **BRG** Bearing, **DME** Distance, **ET** Estimate time of arrival are displayed in **cyan** (**cyan is NAV1 default color**).



CRS: heading to follow to reach the point, from the aircraft

CRS: Course to follow to reach the point, starting from the place where it was selected. CRS can be marked with a green line and displayed

The name of the point selected as **NAV1** or as the **next WPT** to reach appears in **cyan** in the selection window.

If instead of a short press on the point, a long press is made on the point, a menu offering several choices appears.



Similar actions could be performed from terrain screen.



8.2 NAV2 – Direct to

NAV2 allows to select another WPT for direct to, and to switch rapidly between them.

To select another point

- Press on **NAV2**.



Indicators related to item selected as **NAV1** or next active WPT are using **cyan letters**.

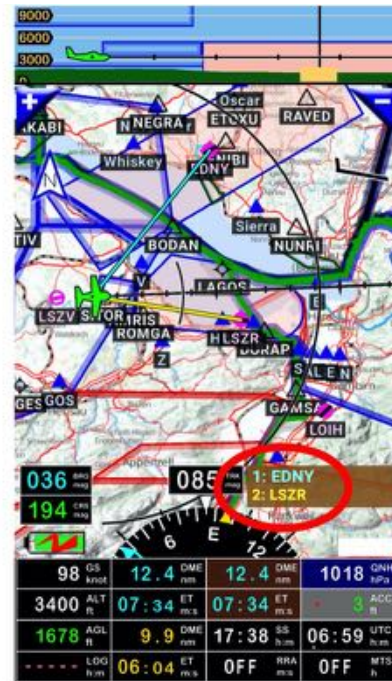
Indicators related to item selected as **NAV2** are using **yellow letters**.

Indicators related to the route or to End of the route have **brown background**

You will see later, that if you like having more information related to **NAV2**, as bearing, distance... how to customize indicators.

Switching **NAV1** item and **NAV2** item is easy and fast.

- Long press on **WPT/Route_info windows** and see what is happen.



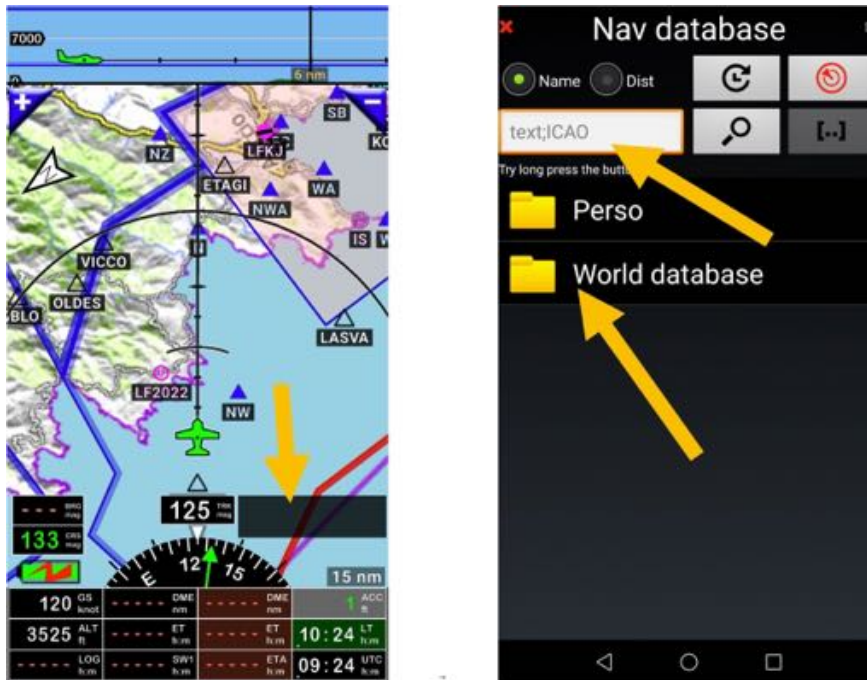
Previous **NAV2** item is now **NAV1** and previous **NAV1** item is now **NAV2**.

Note 1: Airspaces cannot be selected for direct to.

8.3 Selecting item in Navigation database for Direct to

To select an item in **Nav database**

- Short press on WPT/Route_info windows
- Enter item name in the search field
- Press on the magnifying glass.



Once desired item is found

- Short press on its name set it as **NAV1 direct to**.

Note 1: Long press on the **magnifying glass** allows you to refine the search criteria

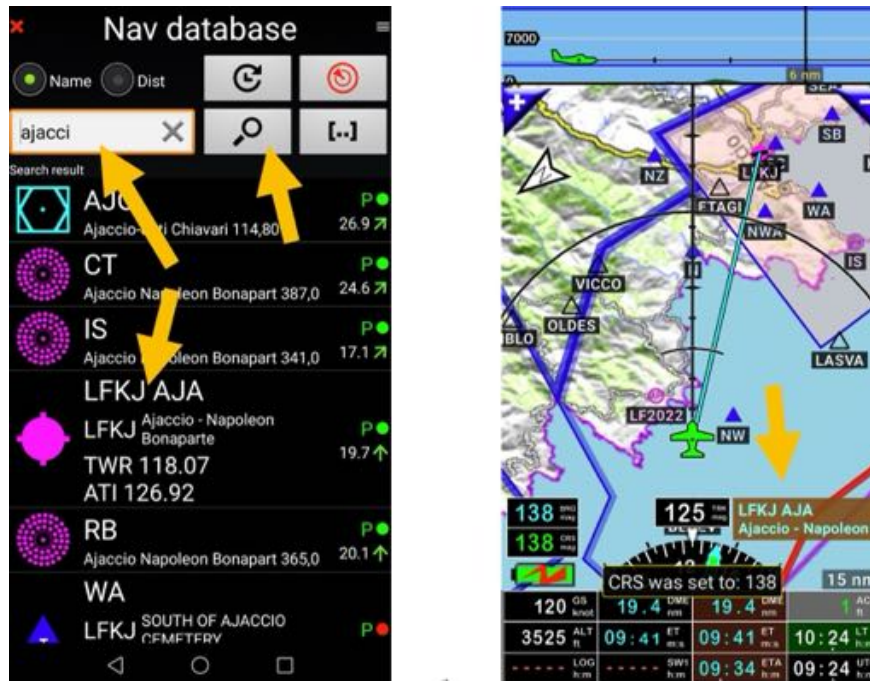
Note 2: Long press on an *item name* calls a menu allowing to select other actions

8.4 Direct to RWY – VFR approach

Who did not spend minutes turning around, searching desperately grass RWY in the middle of prairies, or even regular RWY in forest between trees?

Fly Is Fun allows selecting RWY, this is extremely useful to lock precisely the aircraft on right alignment, on right RWY. Once locked, you just have to follow...

The application offers this possibility, not only for largest airports, but for all kinds of airfields, including ultralight airfield having grass RWY, mountain airfields as soon their RWY coordinate are in Nav database.



if airfield is already selected for Direct to

- short press on **WPT/Route_info windows**, open Nav database windows.
- Press on **RWY to use**.



Selected RWY appears now in WPT info box.

CRS indicators display RWY orientation.

The green CRS lines with arrow materialize RWY axes and direction for final approach.

Bring the aircraft on the CRS line axe and follow it to see the RWY just in front of the aircraft.

RWY could be defined for any airfield, including ULM airfield, your own airfield...

You will see later on how easily it is to create a RWY and associate it to an airfield.

8.5 Direct to - ILS like approach - RNAV like approach

8.5.1 Direct to - ILS like approach - RNAV like approach to RWY with info

If you like getting not only RWY axis, but also glide path to follow, instead of selecting **RWY 02**

- select AC RWY 02.



RWY axis is materialized and glide path displayed on vertical cut.



Glide being activated alerts will prompt according to aircraft position

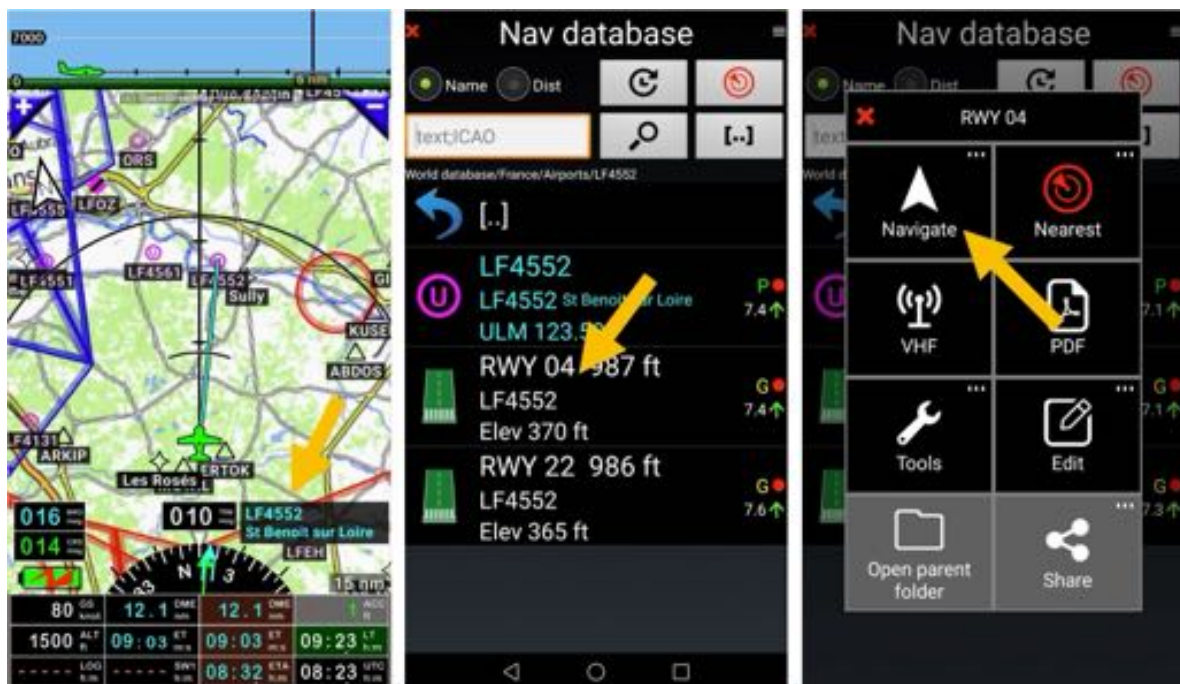
8.5.2 Direct to - ILS like approach - RNAV like approach to any WPT

The application allows selecting WPT or item to determine CRS and glide path.

8.5.2.1 ILS like approach on RWY

Approaching St Benoit sur Loire **LF4552** ultralight airfield, selecting final RWY, it is possible choosing an ILS like approach, determining glide path and threshold crossing height.

- Open WPT/Route_info windows
- Long press on **RWY** name, then
- Select **Navigate...** or short press on the RWY symbol on the left side



There you can select:

- **NAV1 direct to:** Direct to selected item, only direction guidance (localizer approach)
- **NAV2 direct to:** Direct to selected item, only direction guidance (localizer approach)
- **NAV1 LOC approach:**
- **NAV1 ILS approach:** You will be asked for glide slope and threshold crossing height.



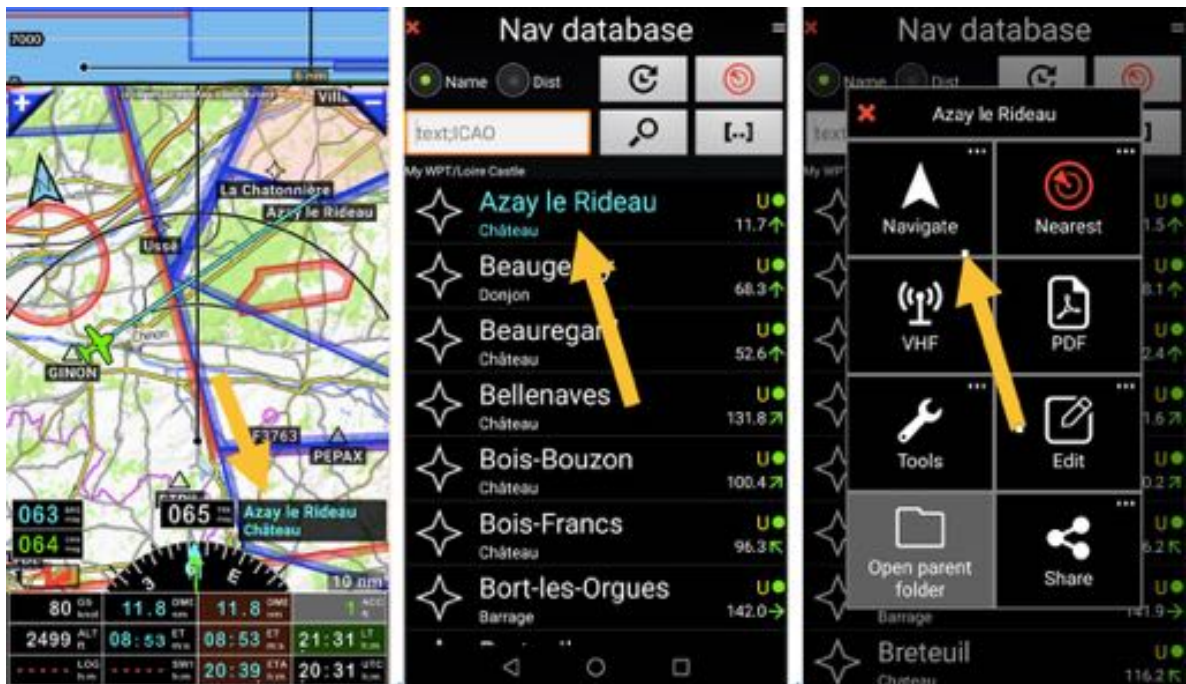
ILS like approach is configured.



8.5.2.2 ILS like approach on other WPT

Approaching Azay le Rideau castle it is possible to choose for an ILS like approach determining glide path and threshold crossing height.

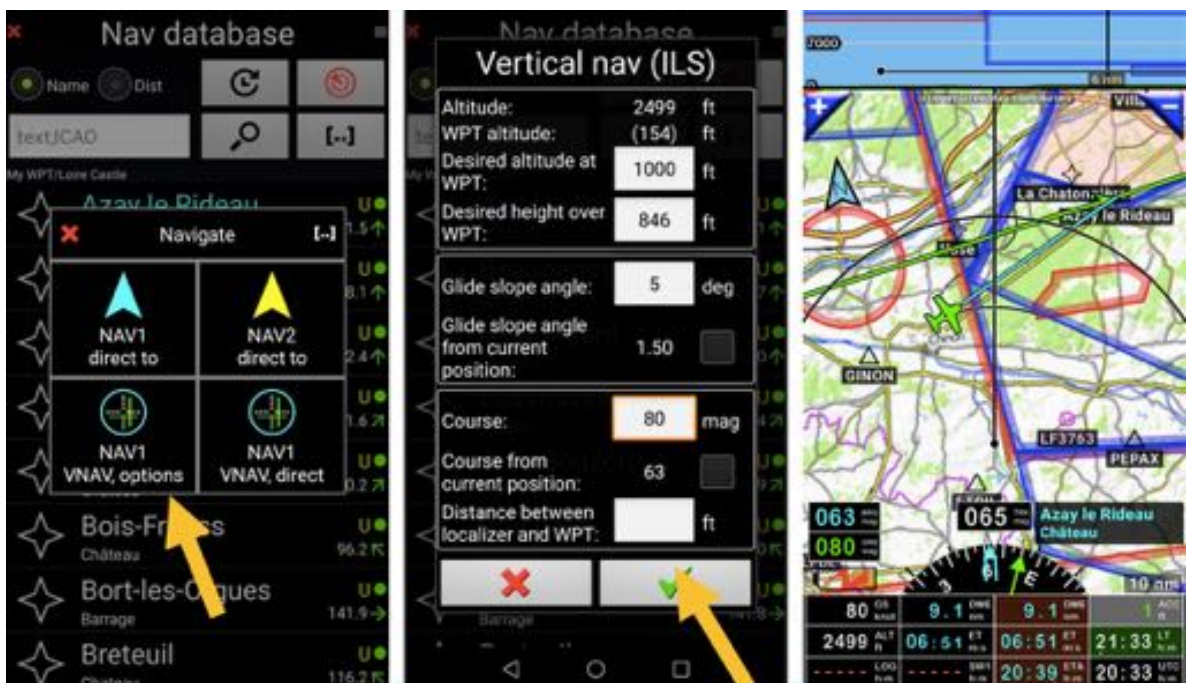
Short press on **WPT/Route_info** windows, then long press on **WPT name**, select **Navigate...** or short press on the WPT symbol on the left side



There you can select:

- **NAV1 direct to:** Direct to selected item, only direction guidance (localizer approach)
- **NAV2 direct to:** Direct to selected item, only direction guidance (localizer approach)
- **NAV1 VNAV options:** You will be asked for altitude at WPT, glide slope angle, course
- NAV1 VNAV direct:

If you select NAV1 VNAV options, enter your parameters and then validate it.



It's configured.

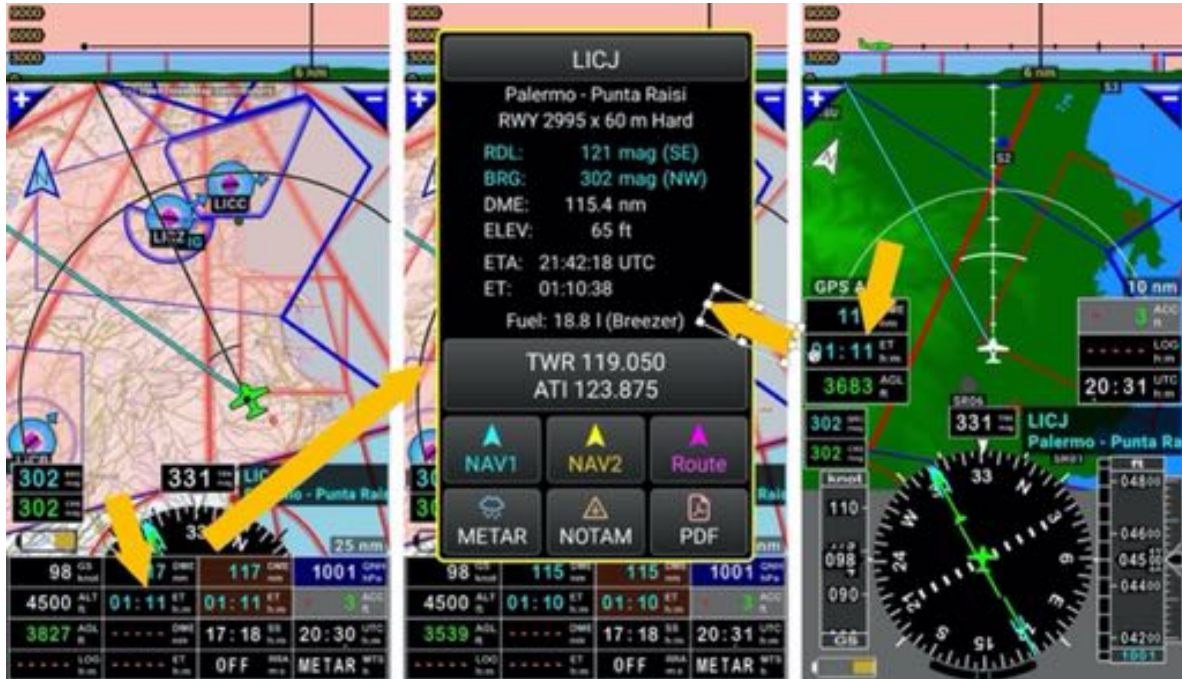


Glide path appears on vertical cut. Helpful function for pilots willing to control precisely their glide.

8.6 Direct to: tricks

8.6.1 Consulting info related to next selected WPT

Short press on **next WPT** indicator that display Estimate Time **ET**, using **cyan characters**, open info box of next WPT.



The information box displays:

- VHF frequencies
- The elevation
- The distance
- Estimated time of arrival

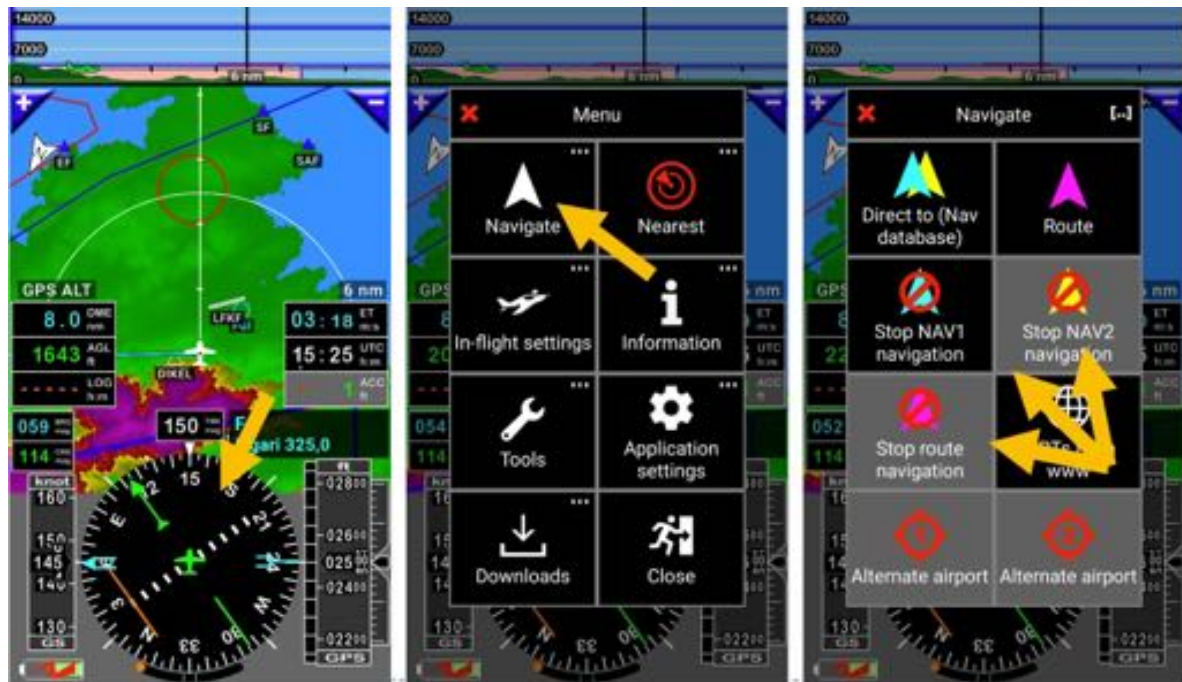
It also allows the consultation of

- METARs & TAFs
- NOTAMs
- PDF documents linked to points, VAC, ULM field sheets... if properly installed on the terminal.

8.6.2 Stop Direct to or Route

If you wish using the moving map without vectors or information related to **Direct to**, you can **Stop NAV1 navigation**, **Stop NAV2 navigation** or **Stop route navigation**; to do so:

- Short press on **compass rose**, then
- Press on **Navigate** and
- select Stop NAV1, Stop NAV2 or Stop route navigation.



If NAV1, NAV2 or route are not active, buttons background is grey.

9 Route

A route should at least be composed of 2 points, one origin and one destination.
If a route has only one point, it's not a route and you cannot save it.

9.1 Creating a route

9.1.1 Selecting items on map

- Short press on the map to select first route point
- Press on **Route** in Info dialog box



- First point created, a green tick appears.

To select it as a second route WPT:

- Short press on another point to select it as a second route WPT
- Select **Route** in Info dialog box.

First route segment is displayed.



To select it as a third route WPT:

- Short press on another point to select it as a third route WPT
- Select Route in Info dialog box.



Route is now composed of 3 points and 2 segments.

We forgot *Porto Vecchio*. A fourth WPT will be inserted via drag and drop

- Long press on first route segment
- Drag and drop it over Porto Vecchio



Route is now composed of 4 points and 4 segments.

Note: Creating the WPT, we could have named it

- Long press on point near of the town to inserted the fifth WPT

Menu pop up proposing to add the nearest item or to create a new WPT, and then select its position in the route.



- Press on **green tick** to go back to route detail.



Route detail is displayed.

Depending on the aircraft that will be used and the scheduled time of departure, the arrival times at the different WPT are displayed.

If the arrival time is after sunset. The sunset time is displayed in red.

Press on **green tick** to save it.



call topographical maps allowing to see the route displayed on it.



calls **Navigation database** allowing to search stored items by names.

Note 1: Short press on **magnifying glass** to search directly

Note 2: Long press on the **magnifying glass** allows fine tuning searching criteria.



Calculate terrain elevation between points of the routes.



Allows entering up to 2 alternate diversion airports.

Note: alternate airports taken in consideration for flight plan and fuel estimation.



Save the route.

9.1.1.1 Sorting routes items and additional information

On route detail, long press on any WPT name call a menu allowing to perform some operations:



- **VHF**: display VHF frequencies related to the item
- **PDF**: allows consulting PDF documents attached to the item, if PDF files are on the appropriate folder and format on the device
- **Tools**:
 - o Sunset – Sunrise calculator
 - o METARs & TAFS
 - o **Show at map center**: see selected item in the middle of the map
 - o **Show in another application**: see selected item in other application as Earth or Maps
- **Show WPT properties**: display WPT properties, allows entering wind information
- **Move up**: move the WPT up
- **Move down**: move the WPT down
- **Set order**: set WPT order
- **Trash**: delete the WPT

9.1.2 Creating a route using the Navigation Database

Open the route Library and start route creation:

- Short press on brown indicators **DME – ET – ETA**
Existing route are listed.
- Press on the **rose arrow**



Alternative to access Routes library windows:

- short press on **compass rose** then on **Navigate** and on **Route** also drive to Routes library



If a route is active **brown** indicators **EDE - ET - ETA** indicators are underlined

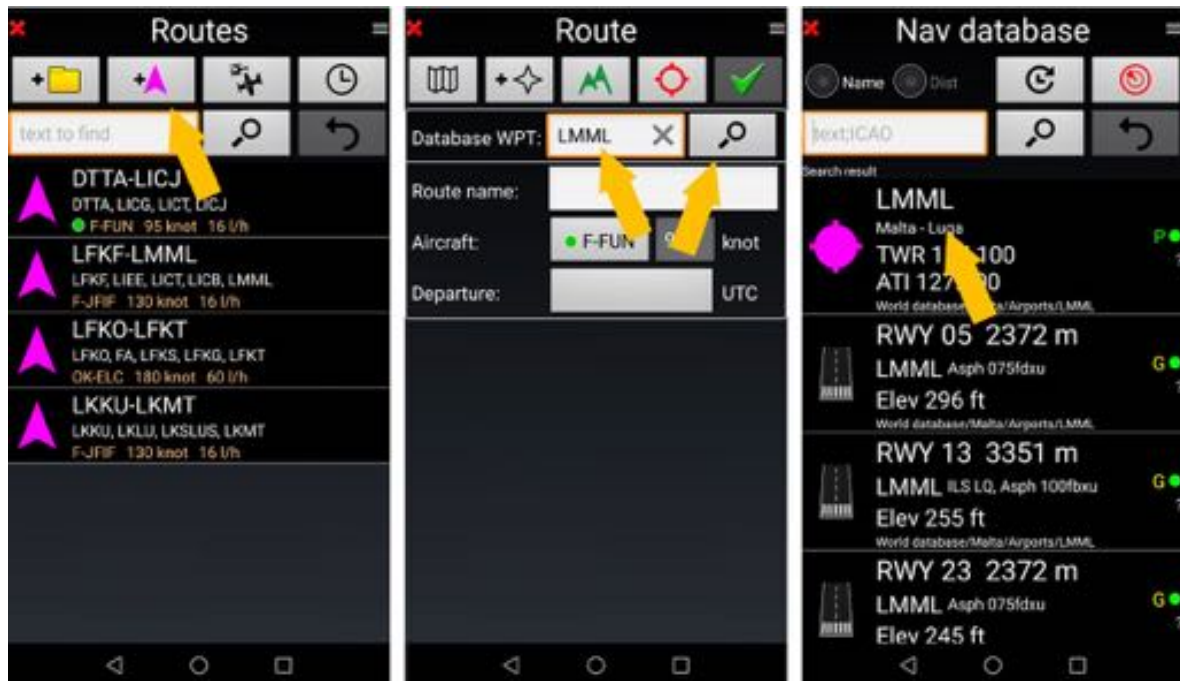
- Short press on the **EDE - ET - ETA** indicators opens the active route WPT list.



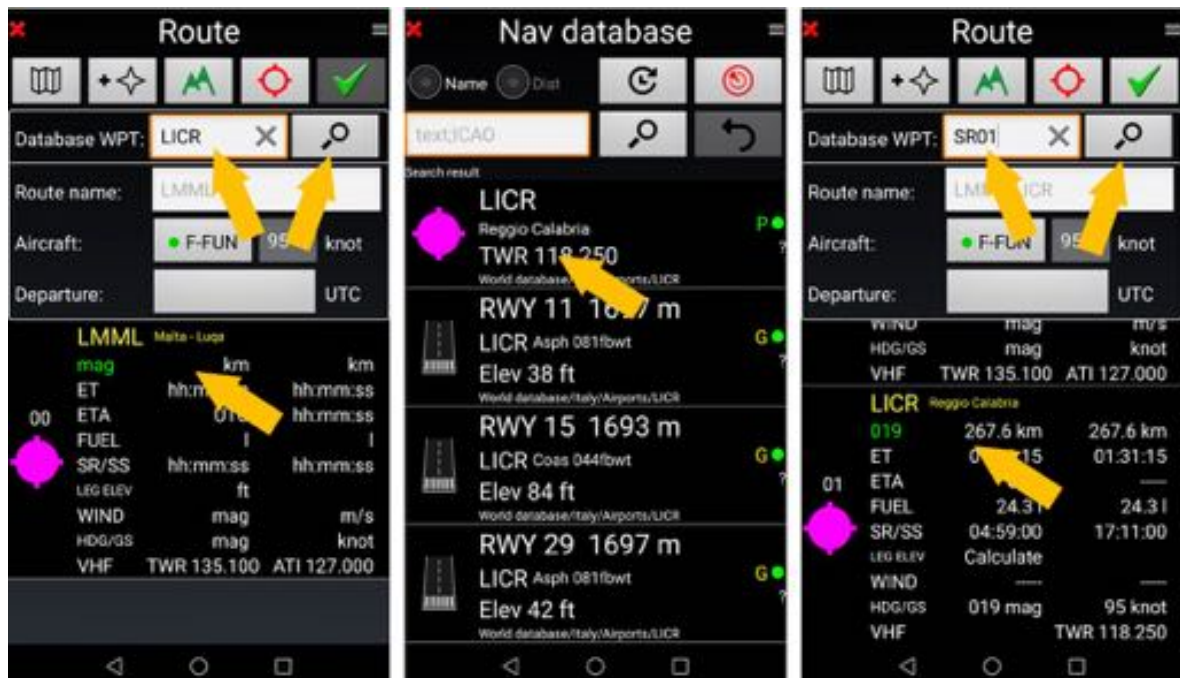
- Press on **Stop** close the **Active route**.

To create a new route from **Route library**,

- Press on **pink arrow** open a new **Route window**.
- Enter **WPT names in Database WPT** field. Letters could be WPT name or ICAO codes
- Short press on **Magnifying glass** to search and select the WPT in the list.



repeat the operation until the route is ready.



Note: for each additional WPT, you see

- Distance, with the previous WPT and cumulated from the starting point
- Sunset and sunrise hours
- Frequency related to the WPT

Press on **green tick** to save the route.



Route is now available in route library.

Note1: default route name is the ICAO of the first airfield and of the last airfield.

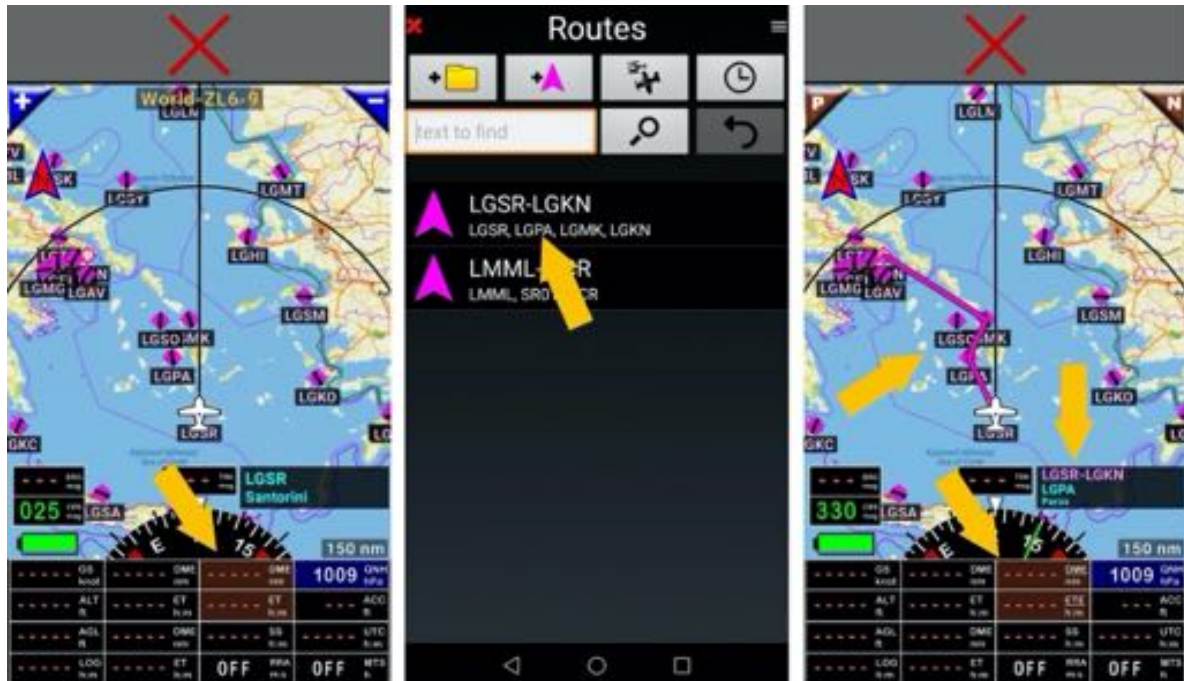
Note2: Under the route name you see the aircraft registered with the route. This is used for the calculation of flight time and fuel requirement, as well as for the flight plan to be filed. Opening the route, you can change the aircraft, all will be recomputed.

9.2 Using a route

9.2.1 Using an existing route

Open **Routes library** to select the route.

- Press on brown indicators **DME – ET – ETA** open the **Routes library**, and
- Press on a **route name** select the route.



The route is active **EDE – ET – ETA** are underlined.

Route name is displayed on **WPT/Route_info windows**, the active **WPT** is in **cyan**.



- Short press on the **EDE – ET – ETA** indicators open the **active route detail**.

9.2.2 Selecting another route WPT

When a route is active, to activate another WPT

- Short press on **P**revious or **N**ext to select it, if the Moving Map screen is configured so, or
- Short press on **EDE - ET - ETA** to display the route details, then
- Short press on the name the WPT to select.



Route name is displayed on **WPT/Route_info windows**, the active **WPT** is in **cyan**.



During a flight, as soon as WPT is reached, the application selects automatically the next WPT.

Note : Shot press on **ET** indicator, display information regarding the WPT.

9.3 Information displayed in active route

Active route windows display lot of information



available for each WPT

- **BRG:** to the WPT
- **DME:** Distance from the aircraft to next WPT and from the aircraft to End of Route via the active WPT and then via all WPT up to it
- **ET:** Estimated flight time to WPT and to the WPT via the active WPT and then via all WPT up to it
- **ETA:** Estimated Time of Arrival to WPT and to the WPT via the active WPT and then via all WPT up to it
- **DTA:** Desired Time of Arrival
- **SR/SS:** Sun Set and Sun Rise hours
- **ALT:** Targeted flight altitude
- **ELEV:** Max elevation of the segment
- **WIND:** Wind force and Wind orientation
- **VHF:** Frequencies

9.4 Additional features related to Routes

When a route is ready and not activated it is possible to activate it, to edit it, to consult METARs, TAFs and NOTAMs, to add wind direction and force) to compute terrain elevation and minimum flight altitude, to see the route summary calculated according aircraft specification and wind input, to edit a flight plan to file.

- **Aircraft:** allows to consult the aircraft characteristics
- **Calculate Altitudes:** calculate max terrain elevation and of minimum safe altitude
- **Edit:** open a submenu allowing some operations
 - o **Edit:** open the route in edit mode
 - **Note:** in *Routes library*, swipe from left to right on route name open directly edit mode
 - o **Copy:** copy the route
 - o **Paste:** paste copied route
 - o **Duplicate and invert order:** Reverse WPTs order for the return route
 - o **Select all:** allows selecting all routes to export or send them in various formats
 - o **Trash:** allows destroying route.
- **METARs/TAFs around:** collect METARs and TAFs around the route. Active Internet connection required
- **New Flight Plan:** generate Flight Plan to save and or to file
 - o **Export:** allows exporting the route it in various formats
- **Navigate:** Activate the route
- **NOTAMs:** Download NOTAMs for departure and arrival airport, and for airspaces and FIR along the route
- **Setting:** allows displaying Local Time or UTC Zulu Time
- **Set Wind:** allows to enter wind force and direction to consider for the route calculation
- **Share:** allows sharing the route it in various formats *
 - o **Export:** save it locally
 - o **Send:** allows sending the route
- **Show at the map center:** open the map on the first leg of the route
- **Summary:** shows estimated flight duration and fuel requirement according aircraft

Note 1: To download METARs, TAFs and NOTAMs an Internet access is mandatory

Note 2: To access the NOTAMs database, the user has to be registered on ICAO web site and to have set the connection to the NOTAMs. Before flight the pilot needs to make sure that the key provided by ICAO is still active. Refer to chapter **NOTAMs settings**

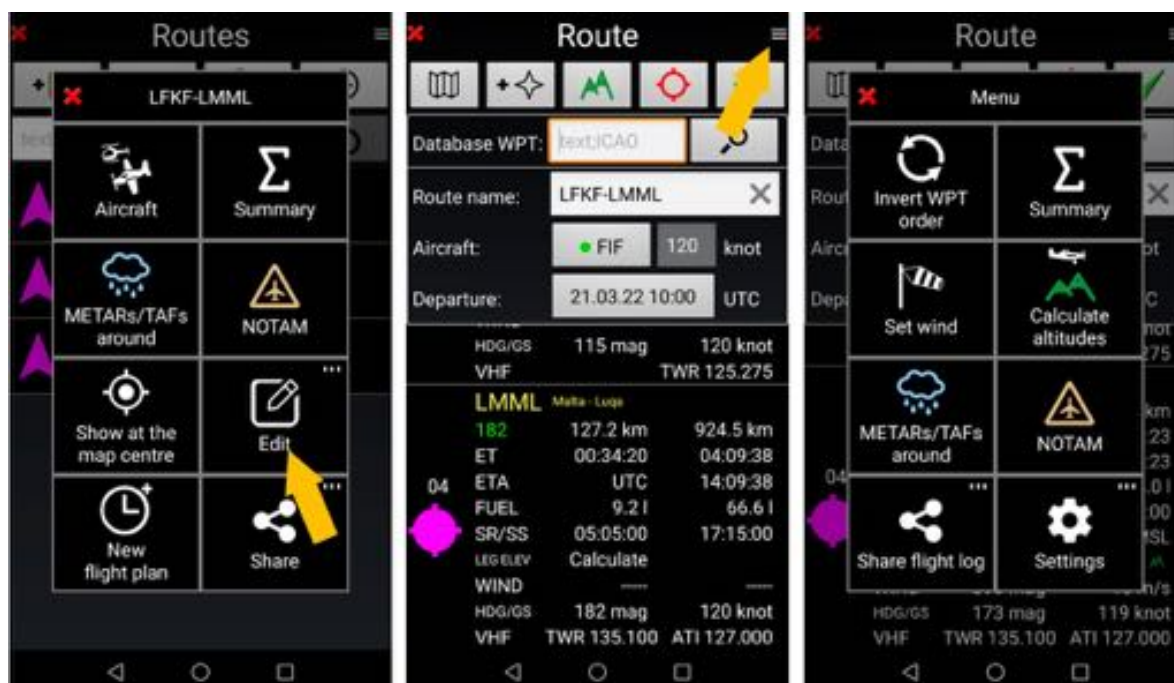
9.4.1 Calling the additional features related to the route

Long press on a route name to call a box proposing several options



9.4.1.1 If the route is not activated

If the route is not activated, the route is in edit / planning mode,



- short press on the 3 lines on the upper right corner to call some options

9.4.1.2 If the route is activated

If the route has been activated, the route is in use.



- short press on the 3 lines on the upper right corner to call some options

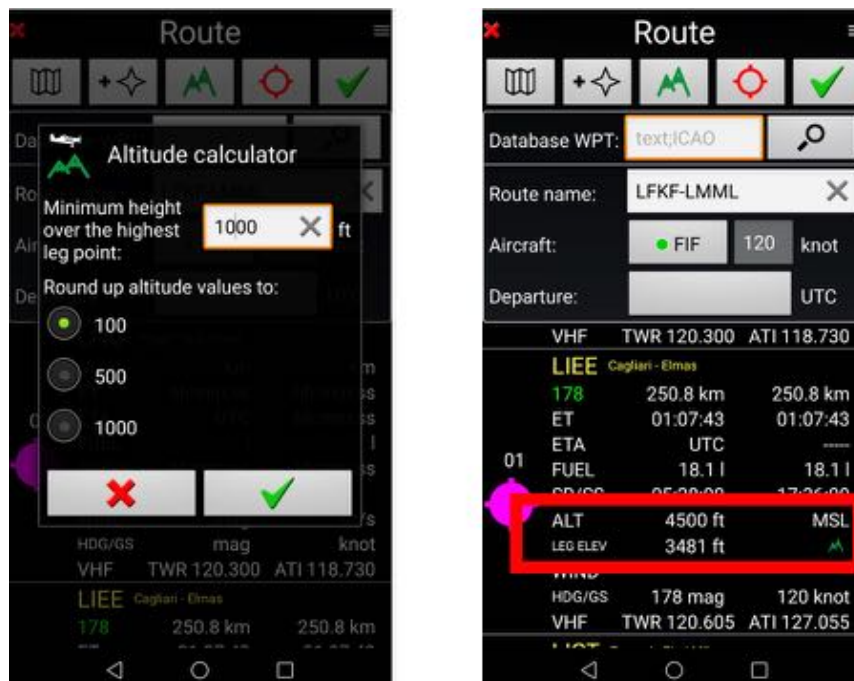
9.4.2 Calculate Altitudes

Once the terrain elevation data that have been downloaded by the user and it has been set the minimum safe altitude parameters on **Fly Is Fun**, it is possible to calculate the maximum terrain elevation on each segment and the minimum safe altitude.

Open the route in edit / inactive mode and short press on the 3 lines in the upper right corner to call the **Calculate altitudes** feature



- select Calculate altitudes feature. **Fly Is Fun** calculate the max elevation per route segment

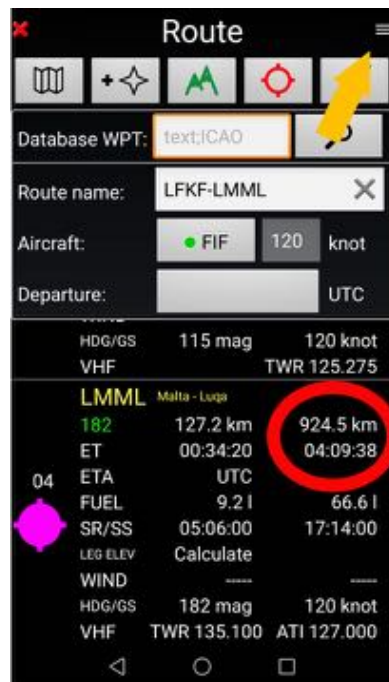


- set the minimum height and validate clicking the **green tick**.

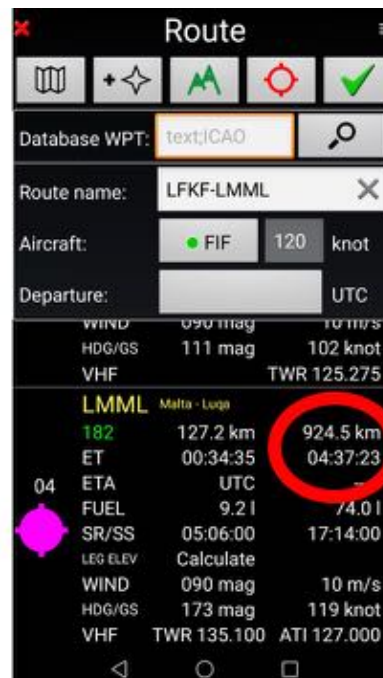
Fly Is Fun will calculate the minimum safe altitude per route segment. The MSL altitude and the max leg elevation are then displayed.

9.4.3 Set Wind

Open the route in edit / inactive mode and short press on the 3 lines in the upper right corner to call the **Set wind** feature.



- select Set wind.



Enter the wind direction and the wind speed and validate clicking the **green tick**.

You see immediately the wind impact.

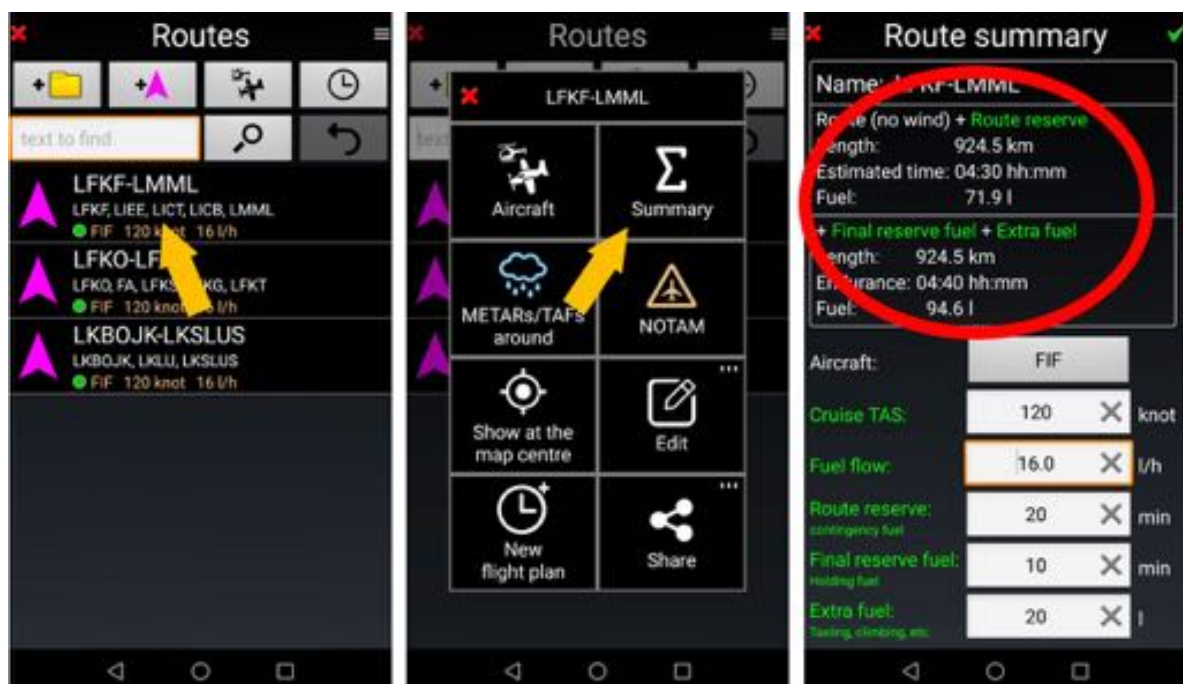
9.4.4 Route Summary

Route Summary allows to display:

- Total route length, with or without alternate airfields
- Flight duration estimated according parameters as:
 - o Speed of the selected aircraft
 - o Wind previsions
- Fuel estimation according parameters as:
 - o Hourly consumption of the selected aircraft
 - o Various fuel reserve
 - Route extra time
 - Final fuel reserve
 - Extra fuel requested for taxiing, climbing...

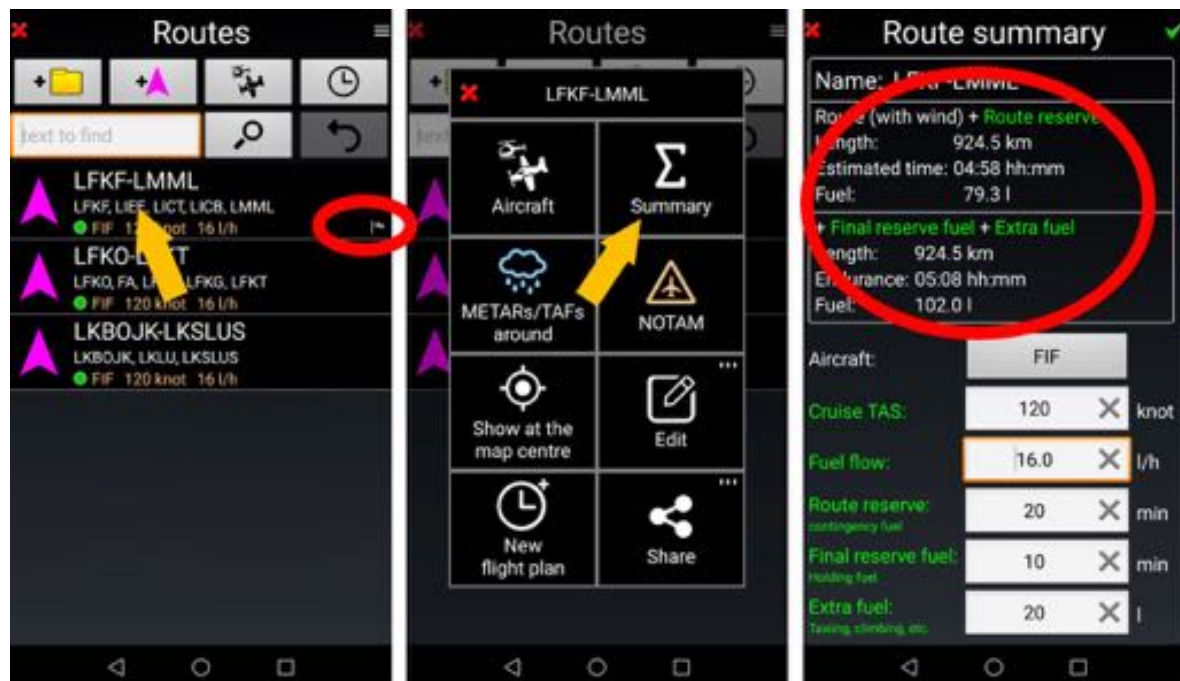
To display the **Route Summary**:

- In **Route edit mode**, with the route inactive mode and short press on the 3 lines in the upper right corner to call the Route Summary feature.
- In the **Route library** windows long press on route name to select **Summary**.



If wind parameters have been saved for the route, a small windsock appears beside the route name

The wind impact is taken in consideration in the Route Summary



Note 1: As the Route Summary is called from the Route library or from the Route windows in edit mode, **Fly Is Fun** considers that the route is not activated, that the user is in planning mode.

Distance, expected fly duration and fuel consumption... are computed from the first point of the route up to the last point of the route.

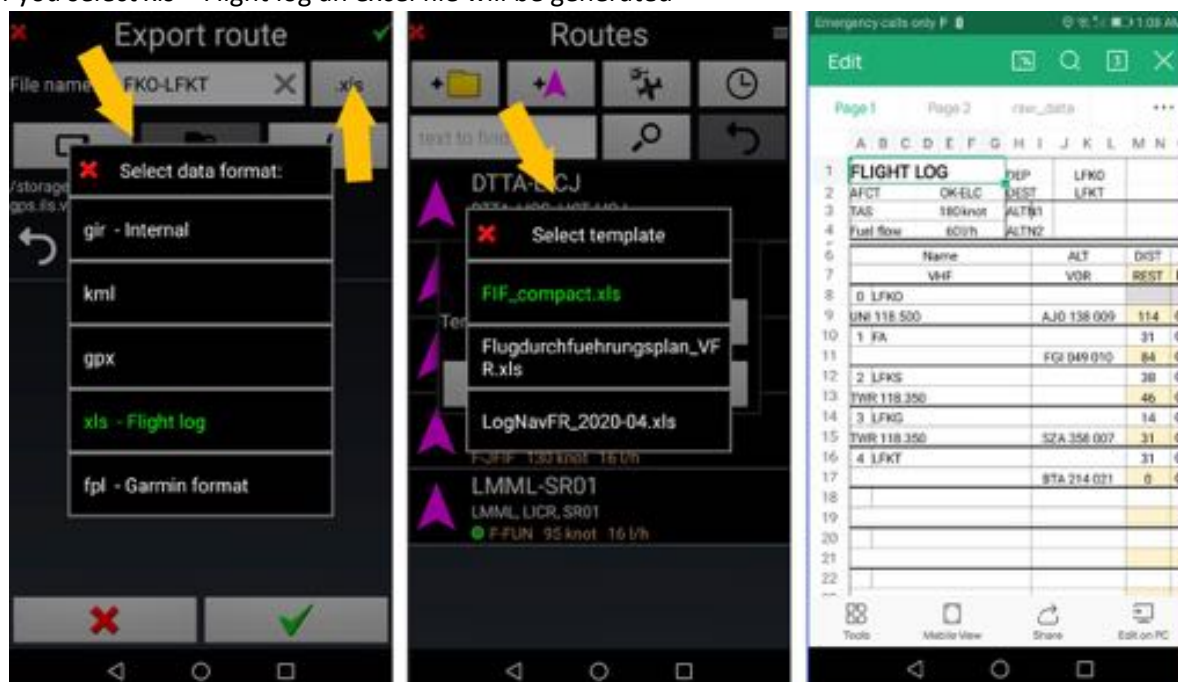
9.5 Sharing a Route – Editing a Flight Log

It is possible to share a route in various format .gir (Fly Is Fun internal format), .kml, .gpx, .fpl (Garmin format) and to generate .xls Flight log. To do it, from **the Route library**:

- Long press on the route name then **Share**, then **Export** the file on the device or **Send** via email.
- Select the desired format and click on **green tick** to validate



If you select xls – Flight log an excel file will be generated



Exported files are stored by default in the **File** folder, located in **Android -> Data -> gps.ils.vor.glasscockpit -> Files**

9.5.1 Customized .xls Navigation Log

You can use your own Flight log

To create your own Flight log, download and customize one of **Fly Is Fun** Flight Log, using this link : http://www.funair.cz/downloads/templates/route_template.xls.

In the Flight Log you will find a **raw_data tab**. *Fly Is Fun* store in this tab, all data related to the route and the aircraft. The Flight Log use data of the **raw_data tab**, to display them in other tabs.

Your customized.xls Flight Log will use to, those data. That for,

- the **raw_data tab** must be included as a tab of your customized Flight Log. Doing it, make sure living it unchanged, this including its name.
- customized tabs should be linked with the **raw_data tab** and their data from it

Once your customized Flight Log will be ready, you need to save it in .XLS format (**Note:** do not try to save it in .XLSX format, it won't work) and store it in **Route** folder. The **Route** folder is located in the **Templates** folder of **Fly Is Fun** application.

- Android -> Data -> *gps.ils.vor.glasscockpit* -> Files -> Templates -> Routes

The *gps.ils.vor.glasscockpit* folder is the **Fly Is Fun** application folder. It is located in the **Android** folder

Later on you will be able choosing and selecting your own Log Nav template

- Long press on route name , select **Send** or **Export**.

Some of **Fly Is Fun** user are sharing customized xls.navigation log templates on the forum.

You can find them at <http://funair.cz/forum/viewforum.php?f=17> .

Do not hesitate trying them and/or adding yours.

9.6 Flight Plan

9.6.1 Create a new Flight Plan

To generate a new Flight Plan, from the Routes library



- Long press on a **route** then **select New Flight Plan**.

A windows with a pre filed flight plan open.

You can as well create a flight plan from the Flight Plan library



- In the Routes library **press** on the **Flight Plan** icon, then **select +**

A flight plan to be completed is displayed

9.6.2 Complete or modify a flight plan

Using available info, some fields of the Flight Plan, as the route detail, the aircraft, the pilot ... are automatically populated. They can be adjusted.

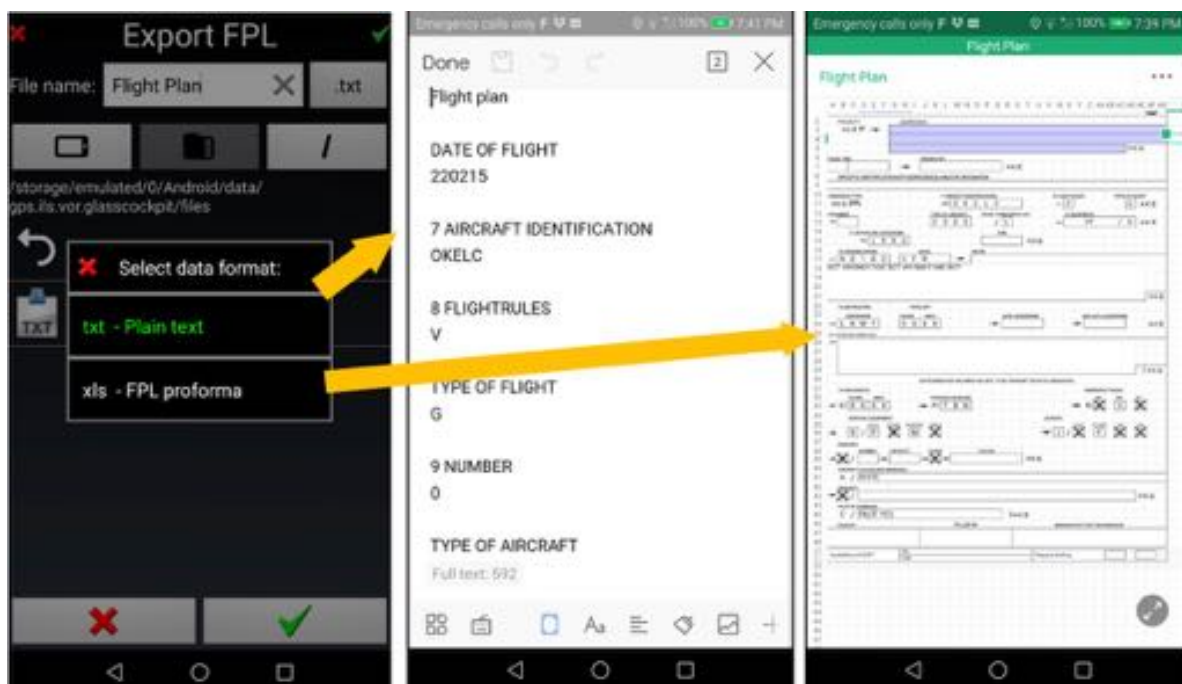
- The **Flight Plan** being finalized press on **green tick** to save it.

9.6.3 Using an existing Flight Plan

Flight Plans stored in the **Flight plans** library, can be edited, modified and send.

- Long press on the **Flight Plan** and select the operation to perform.

The **Flight Plan** can be exported or sent as .txt or .xls file.



Exported Flight Plan are stored on the Android device in the **Files** folder located in the **gps.ils.vor.glasscockpit** folder.

Note 5: Since the release of **Android 12**, developers must store their application data in the **Android** folder. **Fly Is Fun** data is stored in the **gps.ils.vor.glasscockpit** folder which is located in the **Data** folder of the **Android** folder. To see files in Android folder, file manager permission and show hidden files are needed.

10 METARs and TAFs

To consult METARs and TAFs an active Internet connection is required.

10.1 Interpreting METARs and TAFs

METARs and TAFs are displayed decoded with configurable colors



The default code of METARs and TAFs colors is that of *Fly Is Fun*, but the user can select other colors set, colors code adopted by FAA, GAFOR, NATO or ORBIFLY.

The user can also decide whether or not to display the raw data

10.2 METARs and TAFs global vision

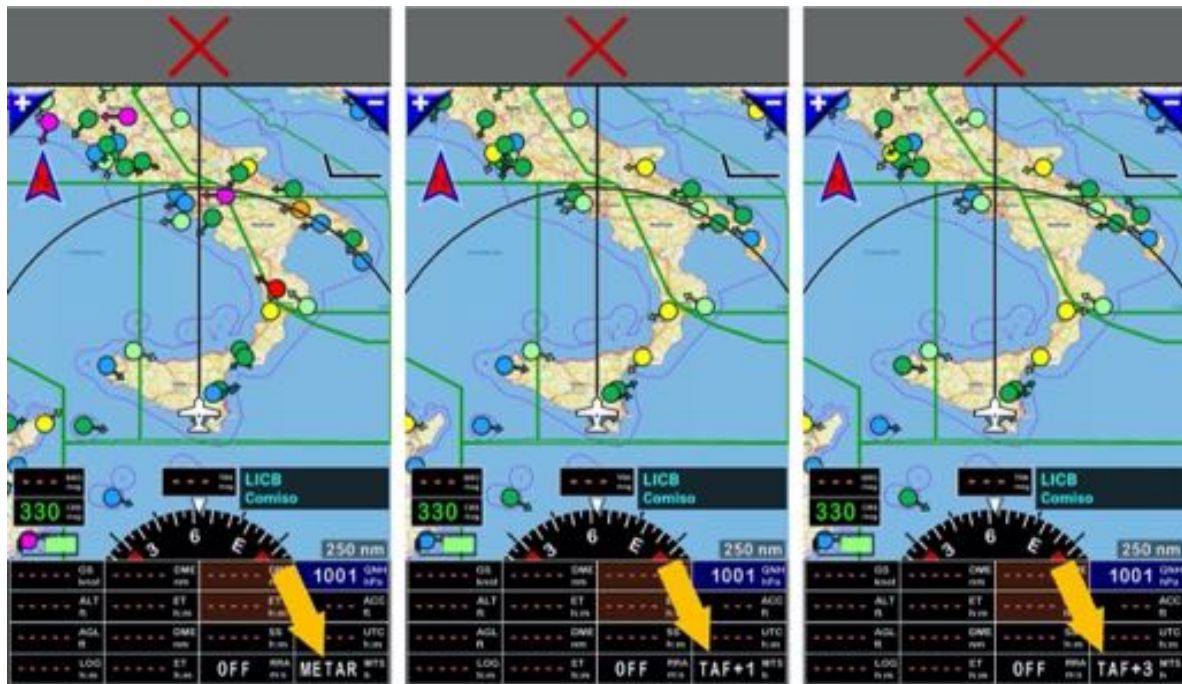
METARs and TAFs can be displayed on the map presented as:

- Colored dots with arrows indicating the direction of the wind strength, low zoom level
- Circles, surrounding aerodromes or weather forecast stations, with arrows indicating the direction and the force of the wind, higher zoom level

At low zoom levels, to not overload the processor and to facilitate the readability of METARs and TAFs, areas, airspace, terrain and other usual information are not displayed. The vertical section is grayed out with a red cross.

To display METARs and TAFs, on the Moving Map screen

- 1st short press on the MTS button calls up METAR observations, **the button displays METAR**



- The following short presses call up TAFs forecasts for the next hours in 1-hour steps. The MTS button then displays TAF + 1, then TAF + 2, then TAF + 3 ... until TAF + 9

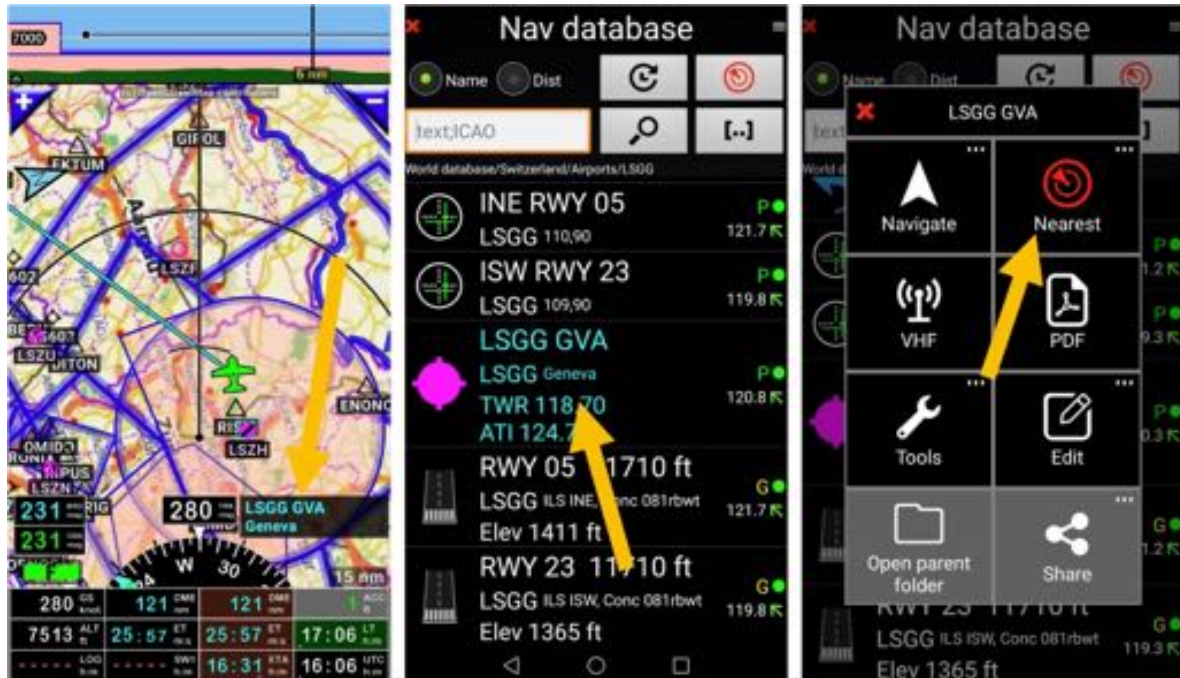


- Long press on the **MTS button** to suspend METARs or TAFs display. OFF is displayed

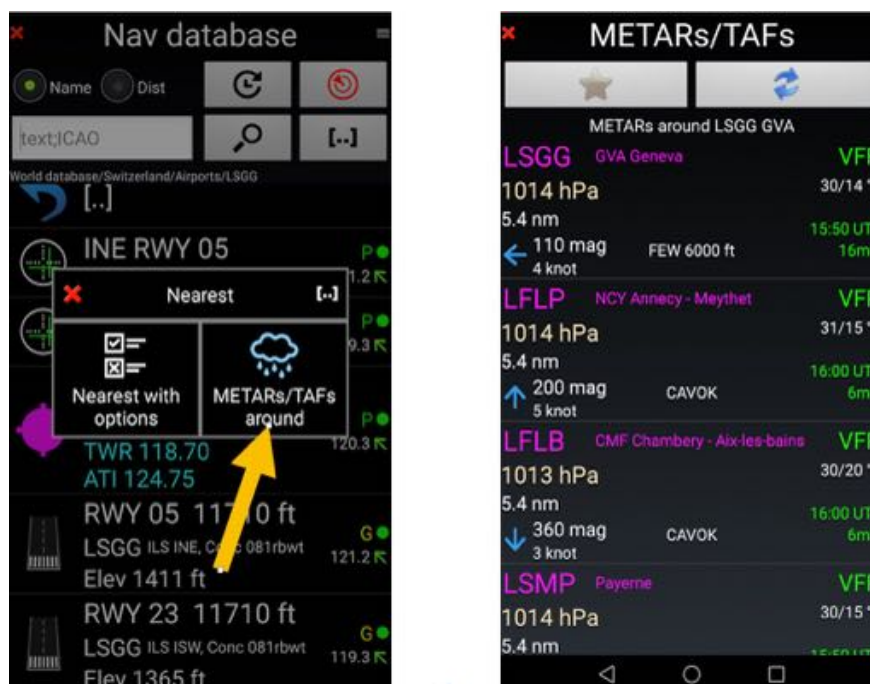
10.3 Consultation of METARS and TAFs for an item of the Nav database

Open the **Nav Database** and select the item for which you want to consult the METARs and TAFs.

- Long press on the item name and select **Nearest**.



then select **METARs/TAFs around** to see METARs and TAFs displayed.



10.4 Consultation of METARS and TAFs for a route

10.4.1 Consulting METARS and TAFs for a saved route

To consult the METARS and TAFs for a route whose name is displayed in the route library:

- Long press on the **route name**
- then select METARS / TAFs around.



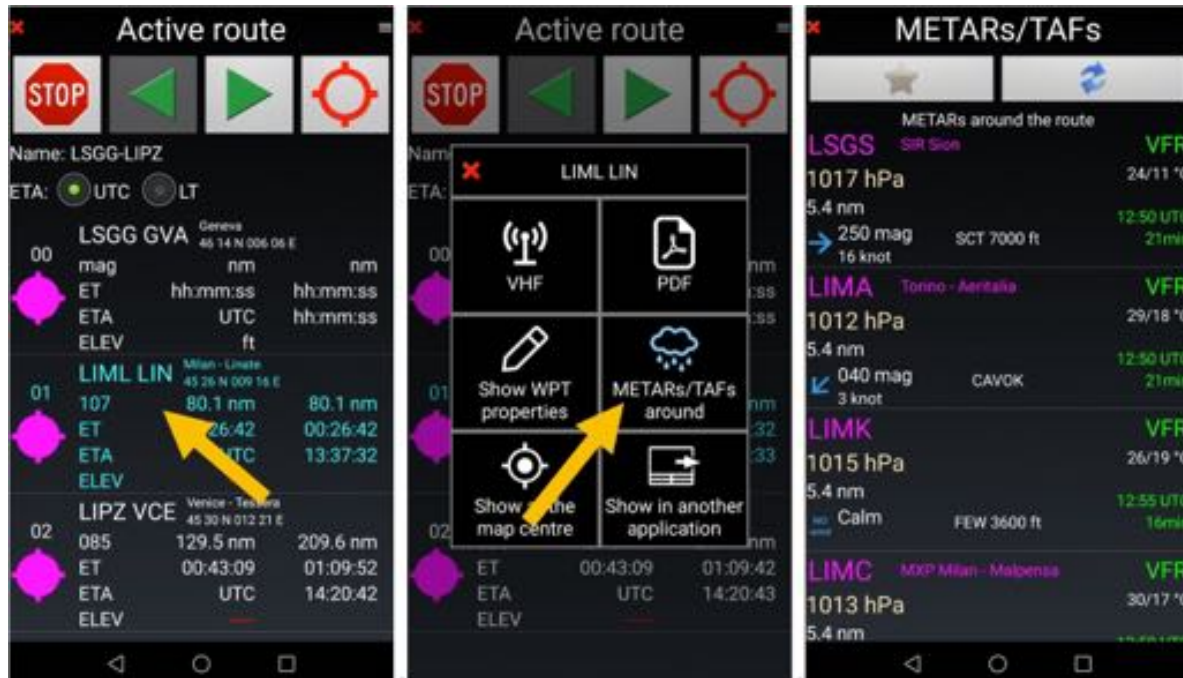
- Short press on the name of an aerodrome gives access to METARS history and TAFs forecasts

Note: In the route library, Short press on the name of a route activates it.

10.4.2 Consultation of METARs and TAFs, when route is active

To get METARs and TAFs around a specific WPT of the route

- Long press on any WPT of the route in **Active route** window, and
- Select METARs / TAFs around.



Note: Short press on WPT name select it as next route WPT.

To get METARs and TAFs along the route

- Short press on the 3 lines at the upper right corner of **Active route** window, and
- Select METARs / TAFs around.



10.5 Setting QNH and wind using METARs or TAFs data

If the Android terminal is equipped with a barometric sensor or connected to an external sensor, *Fly Is Fun* can use its QNH info or the calculation of the displayed altitude.

Without an external sensor, the use of pressure information provided by METARs or TAFs makes it possible to adjust the displayed QNH and to adjust the altitude of the flight level.

- Long press on the QNH button, then select nearby METARs / TAFs, then **QNH and wind**

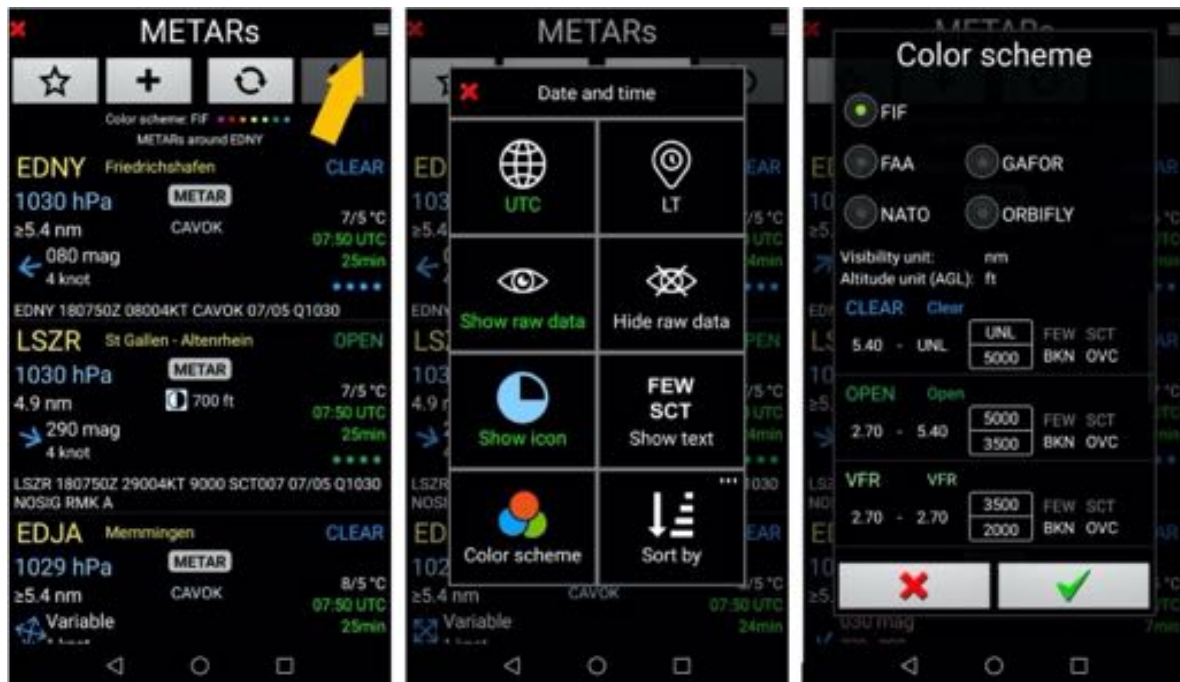


QNH value and wind are displayed, Fly Level altitude is adjusted.

10.6 Setting METARs and TAFs

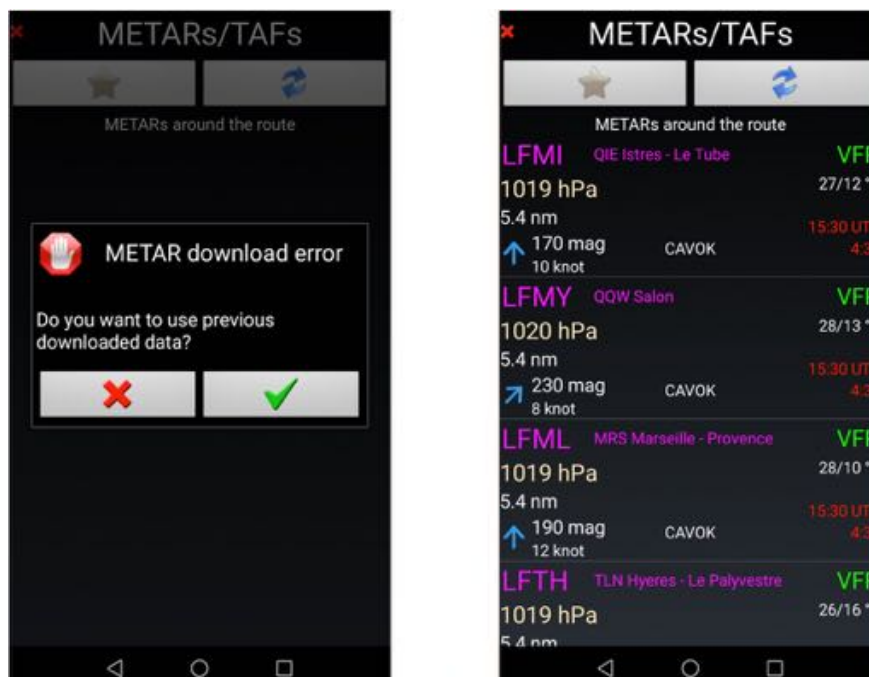
It is possible to configure the way you want to see the METARs and TAFs messages

- Raw or decoded, with or without icon
- Zulu time or local time
- FIF, NATO, GAFOR, OBIFLY color code



10.7 Displaying old data

If, during consultation, there is NO internet connection, an alert message will pop-up. Only most recent message you downloaded will pop-up



11 Rain Radar

For more than 80 countries Fly Is Fun can display information on rain. This information is provided by RainViewer <https://www.rainviewer.com/>. It is recommended to install their application.

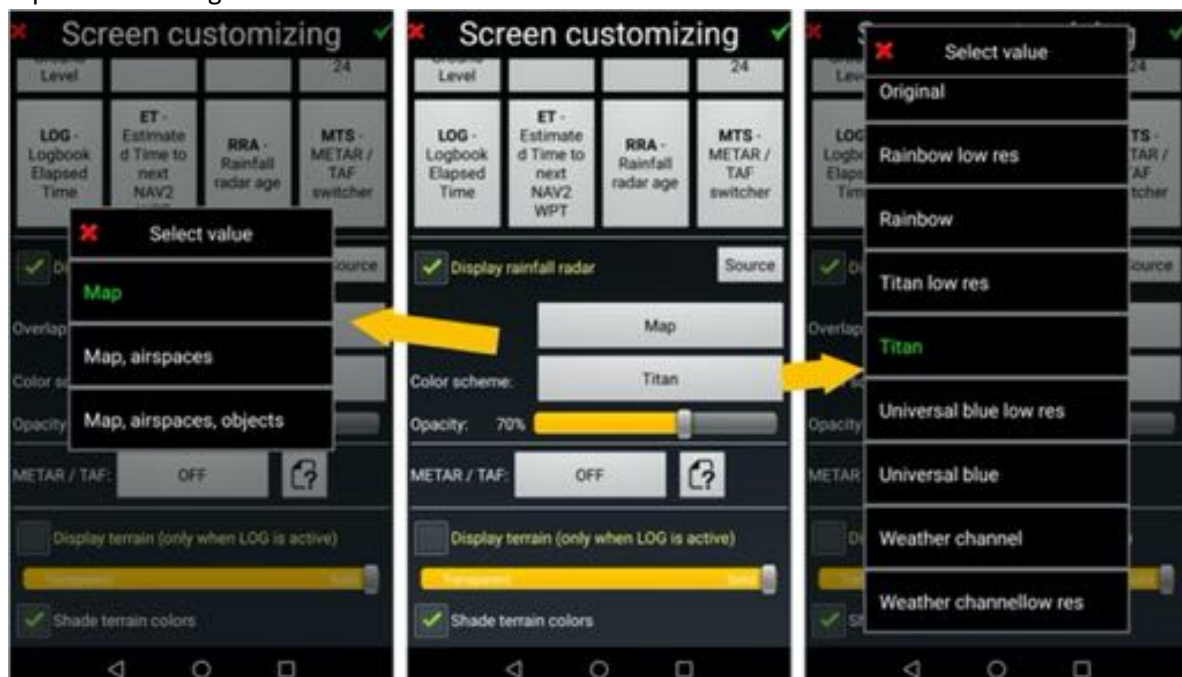
- Short press on the **Rain Radar RRA button** superimposes the precipitation on the Moving Map. Cloud formations appear if you are in a covered area, and connected.



11.1 Rain radar settings

To configure the rainfall colors, the transparency, the elements covered:

- Long press on the **compass rose**, then scroll down to the **Rainfall radar section**, see details in the chapter Fine tuning – Customization



11.2 Rain Radar and ... Google Earth

To display cloud formations and precipitation, **Fly Is Fun** loads tiles and stores them in a cache before displaying them on the Moving Map screen.

As Google Earth uses tiles with a similar format, it is possible installing a script loading the Google Earth tiles, to cache them and to display them superimposed using the RRA button.

Note: This possibility, which depends on Google's policy, may disappear from one day to the next.

11.2.1 Google Earth script to install

The Google Earth.txt script

`updateTime=0 // seconds`

`updateDelay=0 // seconds, application first try to update when needed (UpdateTime) +TimeDelay`

`minZoom=4`

`maxZoom=16`

`resolution=high // high, medium, low, veryLow`

`cacheEnabled=true`

`url=http://mt0.google.com/vt/lyrs=y&hl=en&x={x}&y={y}&z={z}&s=Ga`

need to be named "Google Earth.txt" and install as .txt file in the folder **WeatherTilsServers**
Android -> Data -> gps.ils.vor.glasscockpit -> Files -> Maps -> WeatherTilsServers

11.2.2 Setting the Rain Radar to use the Google Earth script

To select the script and use it:

- Long press on the **compass rose**, and scroll down to the **Rain Radar section**
- Select **Google Earth** in Color Code
- Set the **Opacity** to 100%



Back on the **Moving Map** screen

- Short press on the **RRA button** which then displays **MAP**



Note 1: you must be connected to the Internet for the tiles to load and eventually display

Note 2: in the script, the command *CacheEnabled = true* makes caching of the tiles for off-line usage possible

Note 3: if you choose using this script, you will miss rain info, but have worldwide coverage

12 WPT waypoints – Creating WPT – Creating RWY – WPT Import-Export

Fly Is Fun is widely open and support following WPT formats:

- .GPX standard format for most GPS
- .KML Google Earth format
- .GIW **Fly Is Fun** own format

This facilitate importation of existing items, point of interest, waypoints.

12.1 Create dedicated folder to store your WPT

Warning – Store all your WPT in dedicated folder located outside of World Nav database.

Fly Is Fun navigation items and data are updated according AIRAC cycle (28 days frequency).

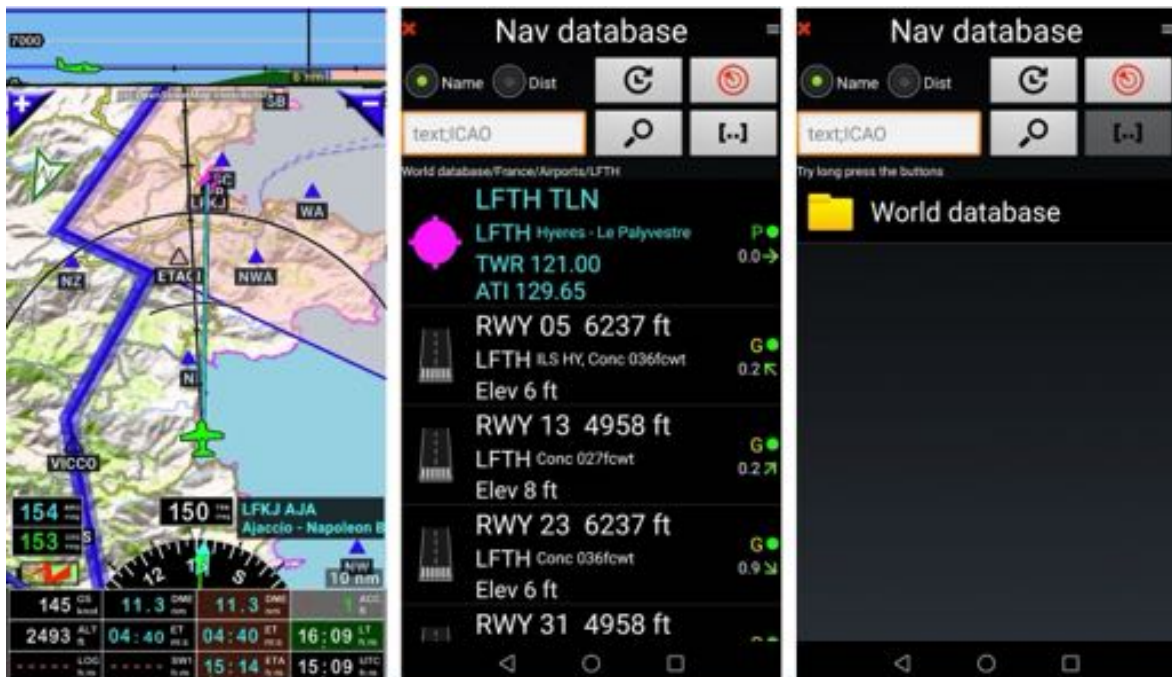
Data update process is the following:

- Data located in the **World database** folders **are deleted**
- New data are downloaded from **Fly Is Fun** worldwide database.

If user waypoints are stored in the **World database** folder, **they may be deleted**.

Creating for your own data a folder outside of the **World Nav Database** folder is easy.

- Short press on WPT/Route_info windows, opens the Nav Database then
- Long press on [...] until you get **World database** folder.



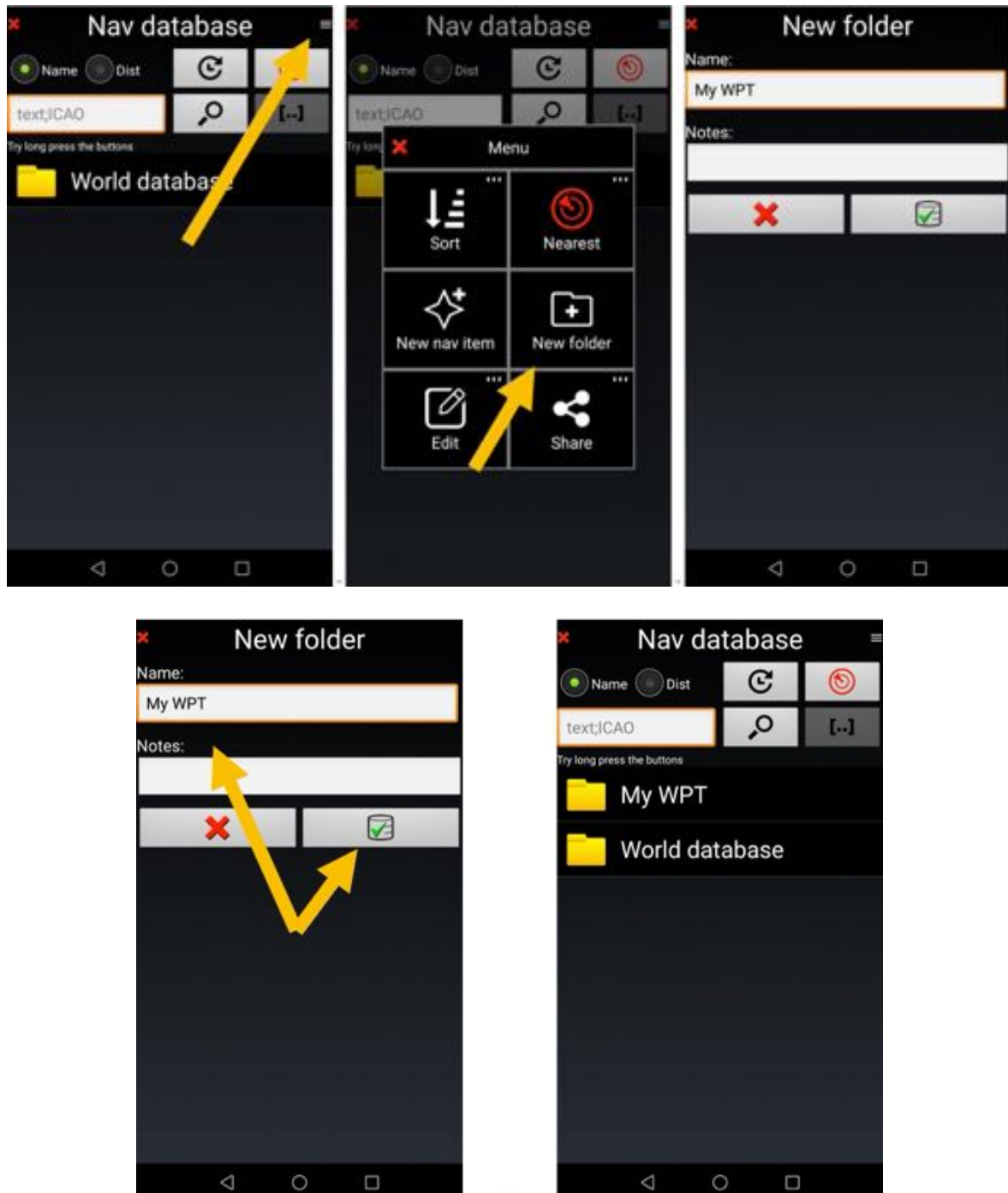
You can also access to **Nav database** via short press on **compass rose** then Press on **Navigate** and then on **Direct to (Nav database)**.



Note: if you short press on [...] you will have to repeat the operation until you reach top of the database.

To create the folder in which you will store your WPT and data.

- Short press on the **menu button**
- Select New folder
- Name your folder ex : **My WPT** and
- Press on **green tick** to create it.

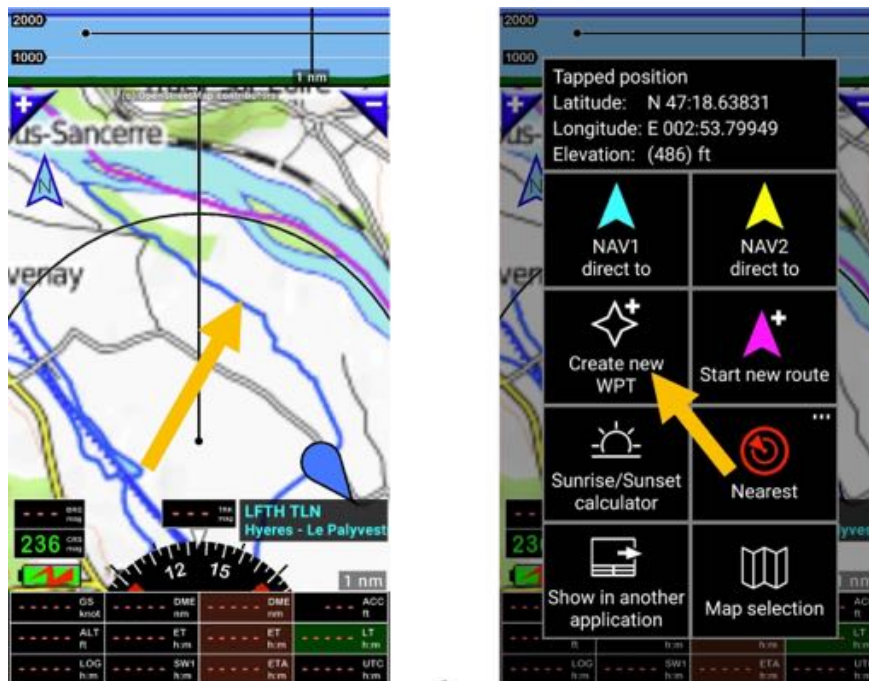


Done

My WPT folder has been created outside of World database folder !!!.

12.2 Creating WPT

Long press on a point of the map, then select **Create new WPT**.



Item / WPT screen pop up, where all data concerning the item should be completed.

Item type should be defined:

ILS Approach	NDB	APT Airport
VOR	WPT	OBST Obstacle
FIX	RWY Runway	MDB Marker Beacon
LOC Localizer Approach		

If **Airfield APT** is selected, airfield type should be defined:

Not specified	Military	Glider
Service	Ultralight	Not registered
Non-serviced	Helicopter	Seaplane base
Restricted		

Note 1: the ICAO code or the assigned code must be entered in the ICAO code fields

This code is used to link the various elements of the airfield:

- The point designating the airfield
- The runways
- The frequencies

Note 2: the country code makes it possible to find the path to the folder in which the VACs and PDF documents concerning the airfield are classified

Once completed

- Press on **green tick** validate and save the point



In this example, we created an ultralight airfield in France and saved it.

12.3 Creating runway RWY and associating it to created airfield

Long press on moving map screen, select **Create a new WPT** open **Nav item** description windows:



Define runway characteristics, position Latitude and longitude of the beginning of the runway, elevation, length width, orientation, ... and Press on **green tick** to validate and save the data.

Note 1: RWY name correspond to RWY orientation and always **start with RWY**.

Note 2: It is important filing ICAO code, as it will allow associating Airfield and RWY.



Airfield and RWY being created, it needs to be grouped in a folder.

12.3.1 Creating an airfield folder containing airfield items

It is mandatory to group Airfield item and associated RWY in one dedicated airfield folder.

All items related to the airfield shall contain

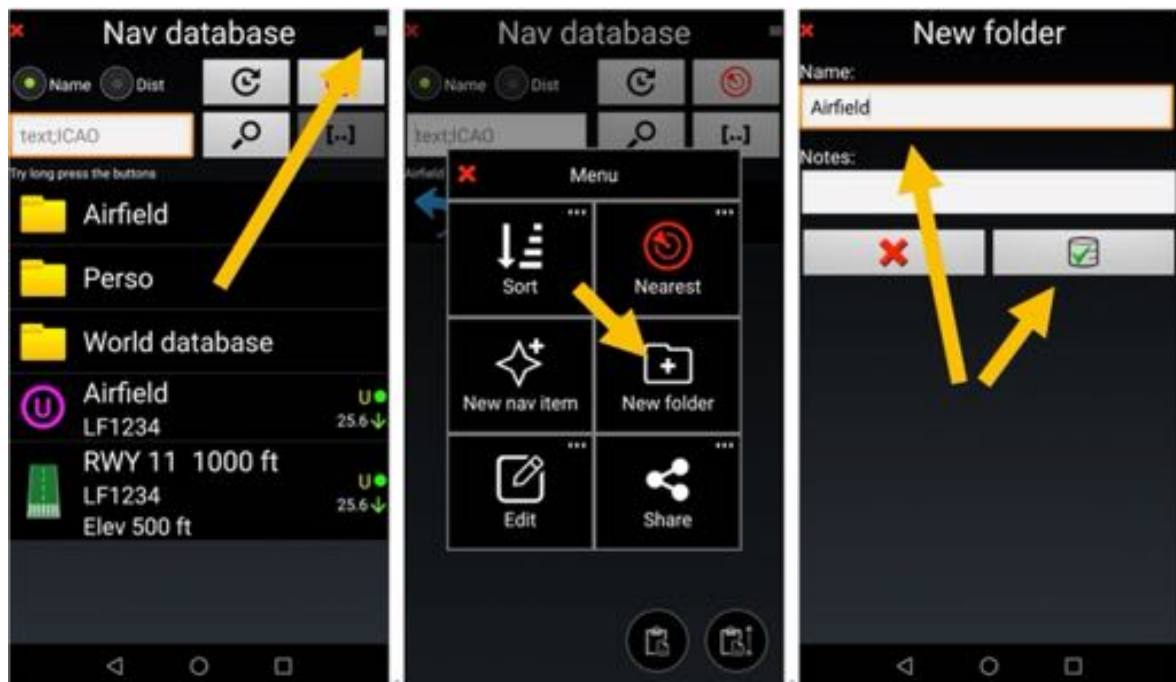
- Airfield WPT with its name, frequency info
- Runway RWY

should be grouped on an Airfield folder named with Airfield name.

Note: All items related to the airfield should share same ICAO code.

To create a folder:

- Short press on the **menu button**
- Select New folder,
- Name it, and
- Press on **green tick** to create it.



Then place WPT and RWY in the airfield folder and the folder in My WPT folder.

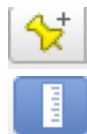
Once completed, you will be able to use the airfield and the RWY for navigation even for ILS like approach with glide path...

12.3.2 Creating Airfield and RWY with Google Earth and importing them

Creating an Airfield and RWY with Google Earth is very convenient and fast.

12.3.2.1 Within Google Earth

- Create Airfield WPT with the tick
- Create runway with the ruler



Note 1: ruler allows calculating RWY length and measuring its orientation.

Note 2: one RWY per used orientation should be created.

Note 3: a runway name is always composed by RWY followed by the two numbers of its orientation.



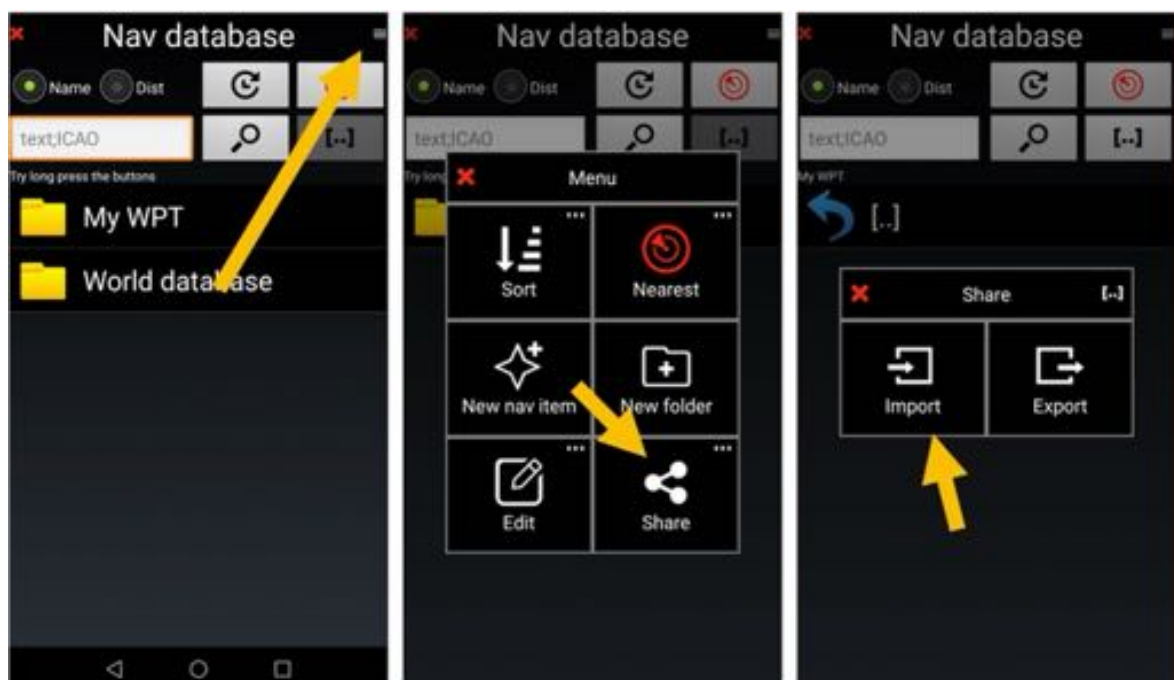
- Group all related Google point in one folder



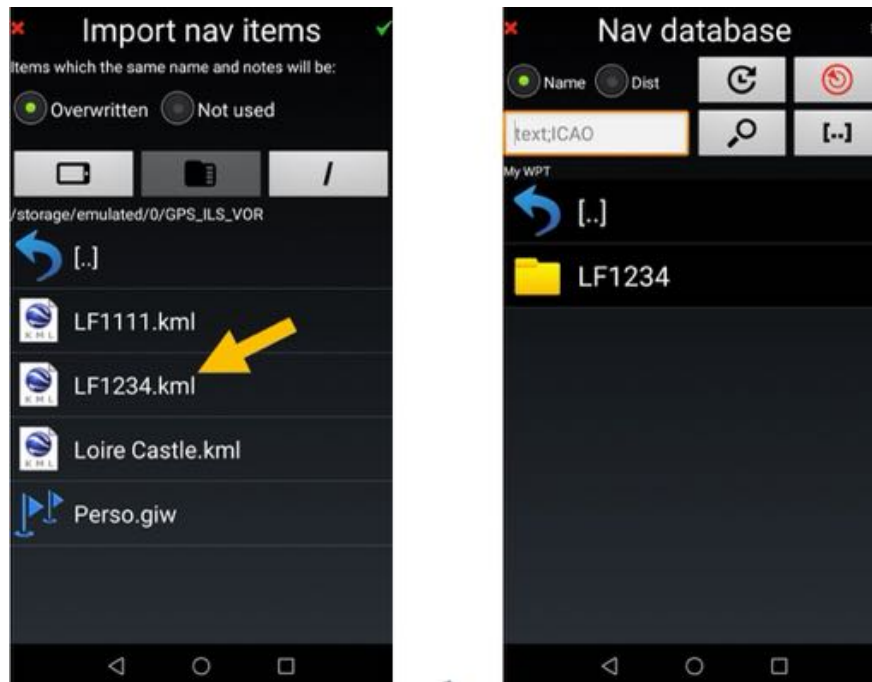
- Export the folder in KML format (not KMZ)

12.3.2.2 Within Fly Is Fun application

Open the Nav database, select the folder where you like to import the airfield and it is RWY then import the KML file.



Select .KML file/folder and import it.

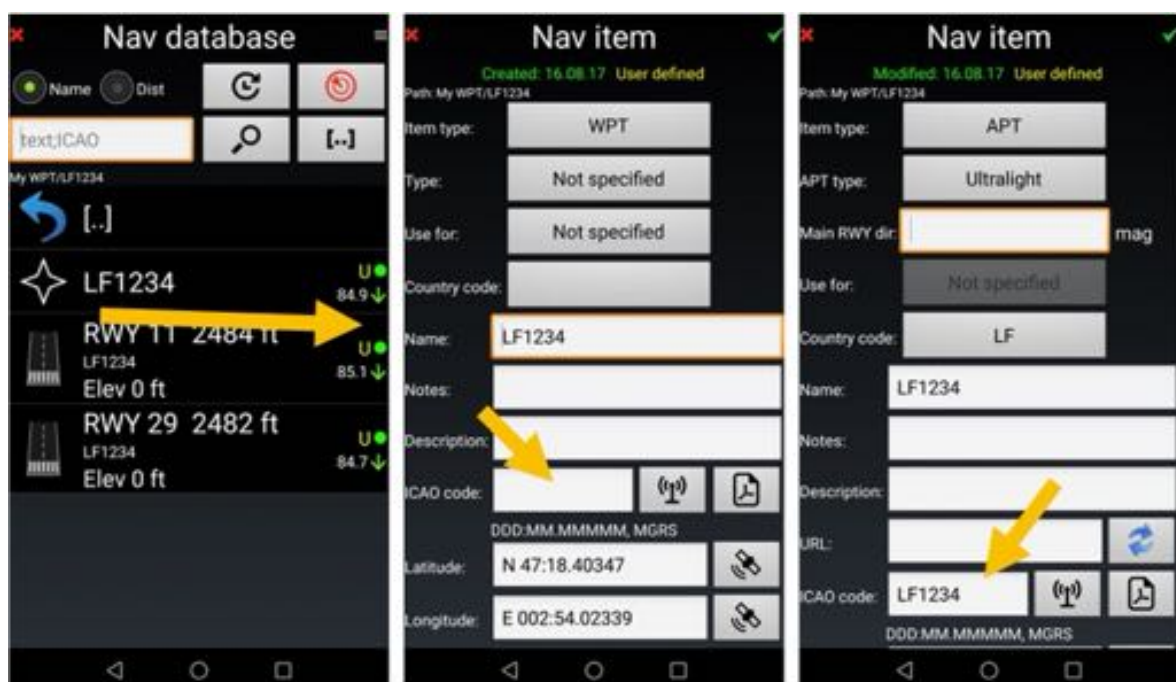


Once data have been imported, missing information to imported items should be added.

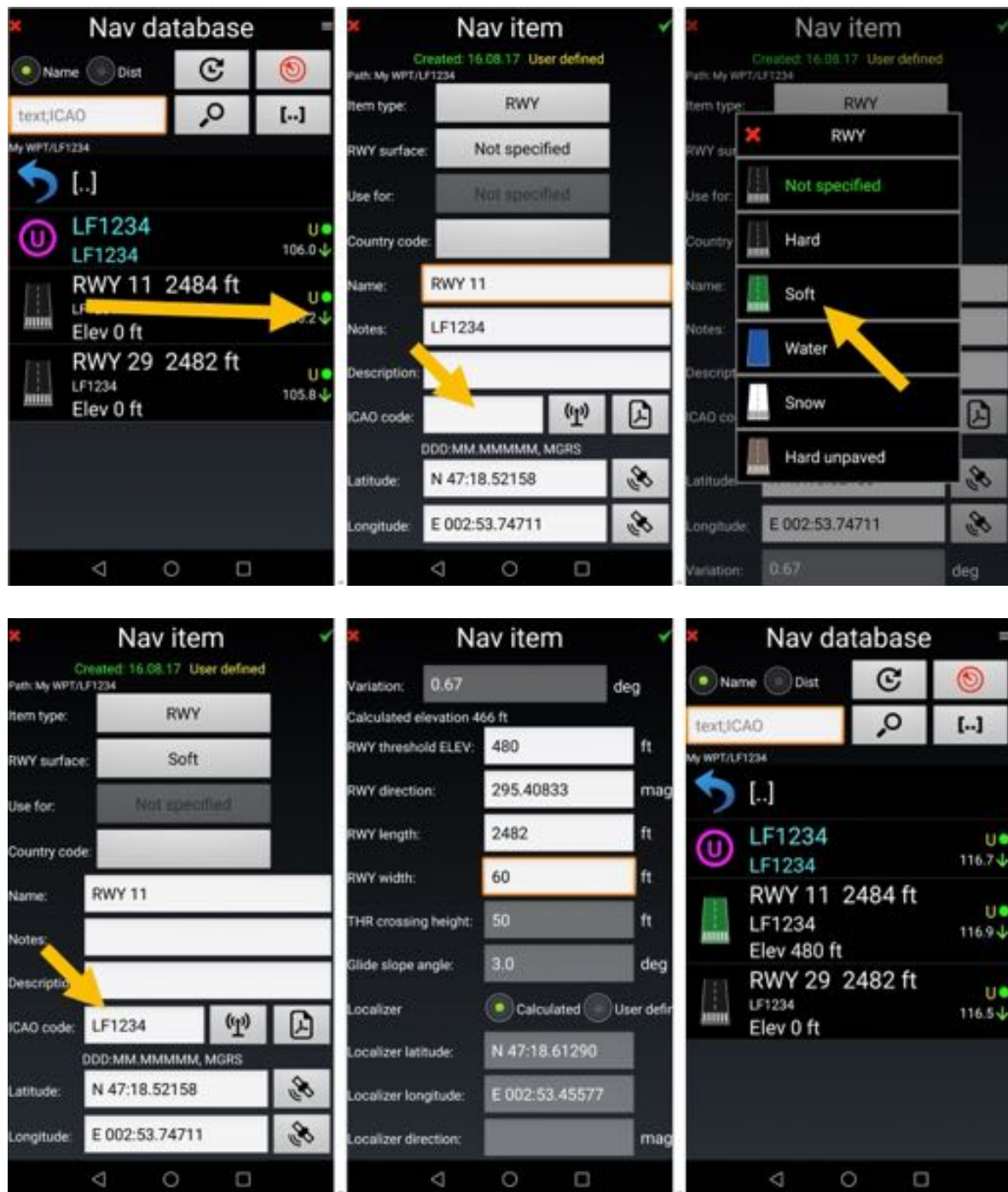
- Airport ICAO code should be added to Airport and RWY items
- VHF frequency information should be added to Airport items, if available
- RWY characteristic, elevation and width should be added to RWY items.

To edit item

- Swipe from left to right on item name
- or Long press on **item name** then Press on **Edit** and again on **Edit**

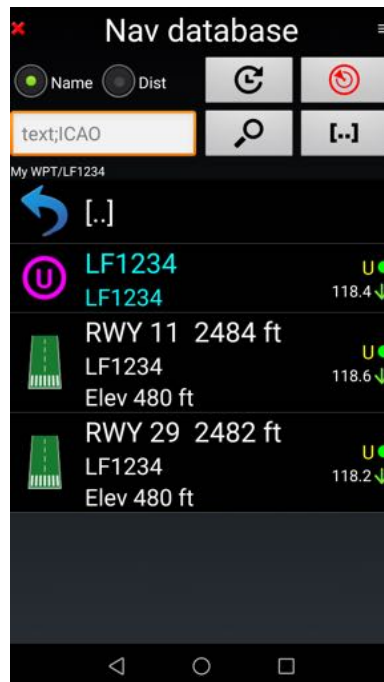


- For airfield item, you need to define item type, airfield type, ... and attribute ICAO code.
- For runway RWY items, you should enter RWY characteristic, threshold elevation, length and width... and attribute ICAO code.



- Press on **green tick** validate and save the modification.

Information being added the new airfield and its RWY is ready to be used within the application



12.4 ILS setting

The below picture shows an ILS navigation item, which is the most complicated configuration to set.

Warning: If you edit ILS, RWY or LOC, the coordinates determine position of the runway threshold!

Complete the data filed.

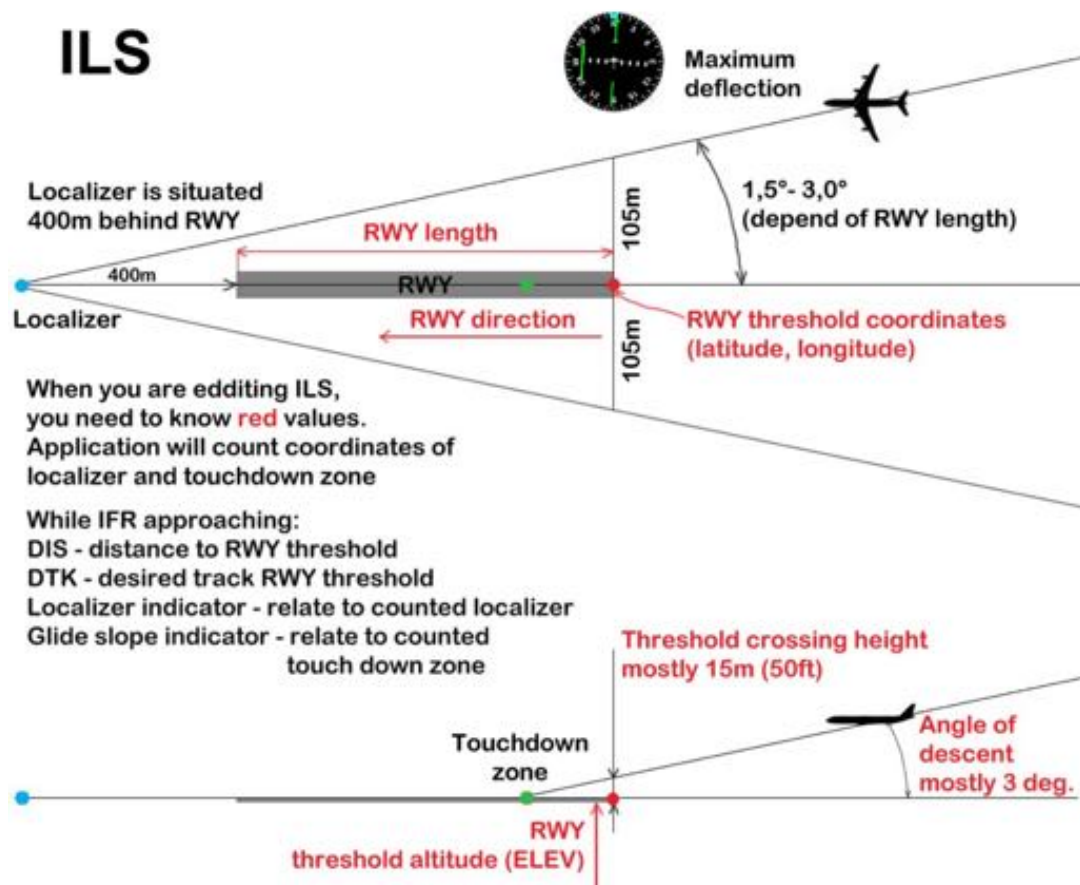
In order to calculate the touchdown zone coordinates, the application needs:

- the RWY threshold elevation
- threshold crossing height
- angle of descent.

In addition, in order to calculate the geographical coordinates of the localizer, the application needs:

- RWY direction
- RWY length

Normally the localizer is positioned 400m behind RWY and glide slope transmitter is situated near touchdown zone. Normal RWY threshold crossing altitude is 15m (50ft) and descent angle 3 degrees. See the next picture.

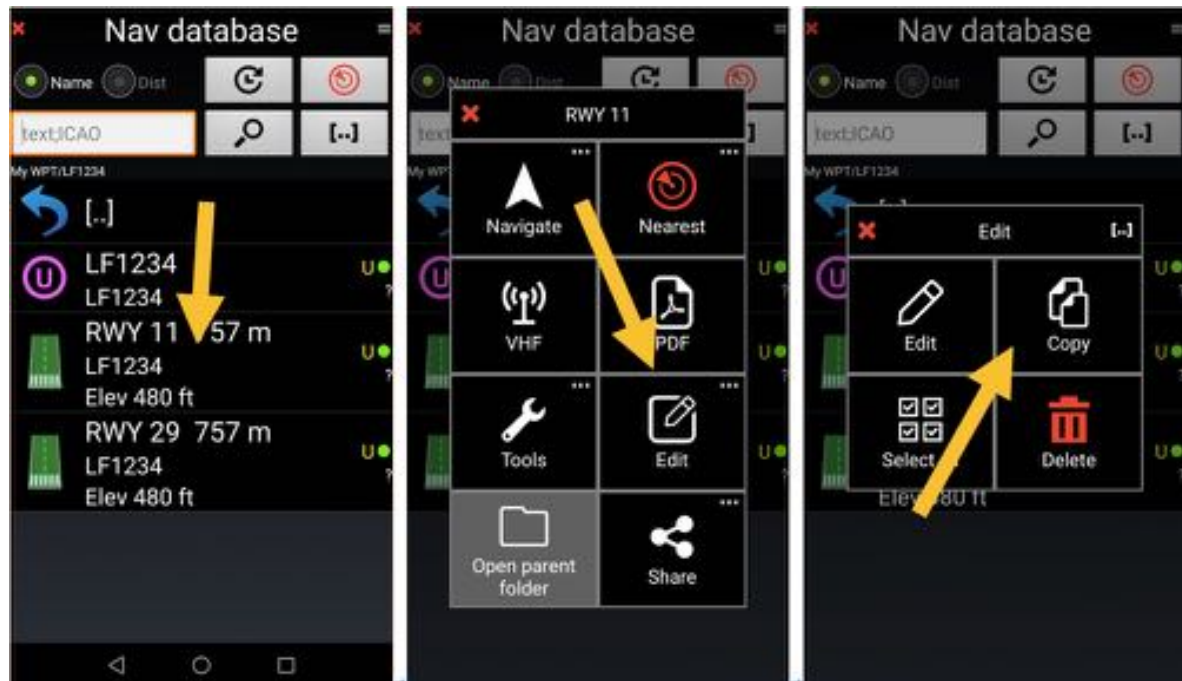


After the World database has been imported, it contains a lot of RWY nav items. These items are generated by application and have only direction guidance. Application creates ILS nav items only at RWYs, where ILS was published (safe glide slope angle and RWY threshold crossing height are known).

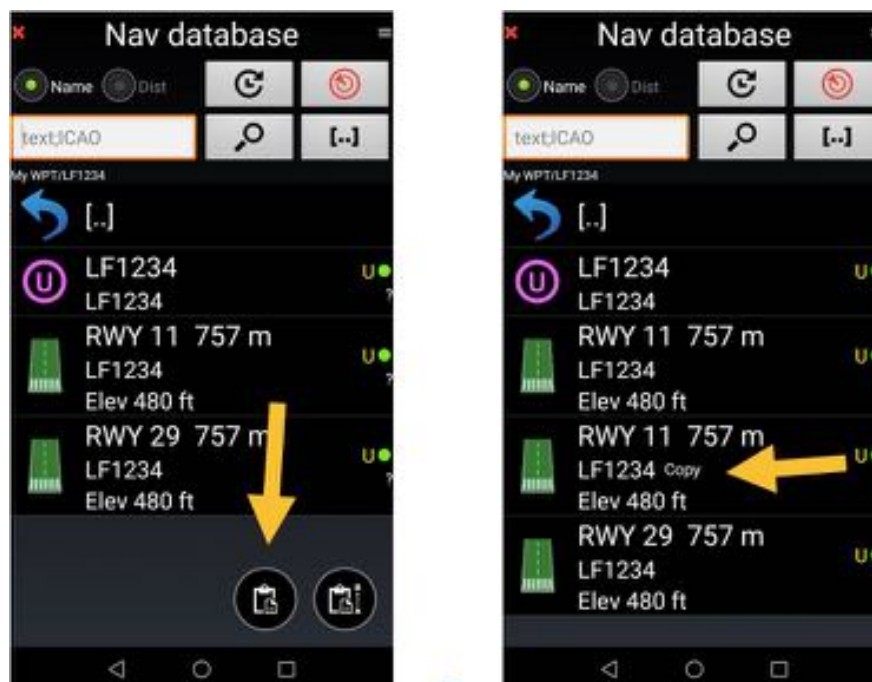
It is very easy to change RWY nav item to ILS, but you have to know **safe** glide slope angle and **safe** RWY threshold crossing height.

First make a copy of RWY

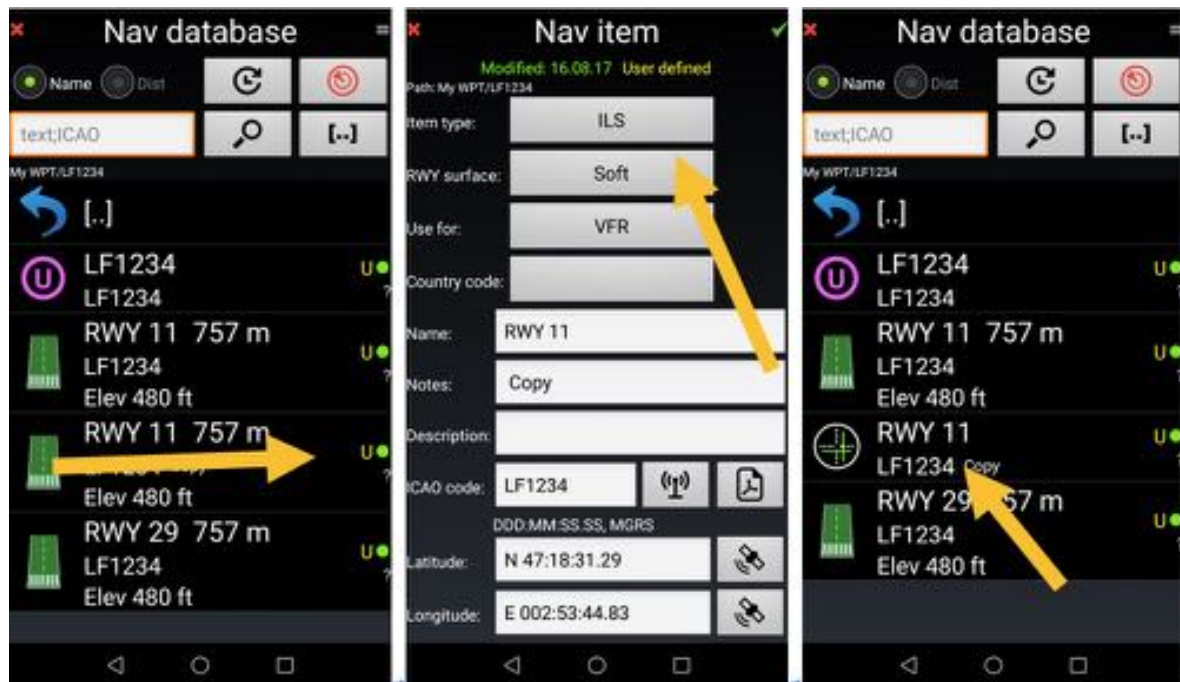
To copy the RWY long press on **RWY name**, then select **Edit**, and then **Copy**



To paste the RWY, Press on **Paste**. RWY is duplicated



then swipe with one finger on RWY name to open it in Edit mode, select **ILS** in Item type button.



- File requested information
 - o **safe** glide slope angle, and
 - o **safe** RWY threshold crossing height
- Press on **green stick** to validate and save

12.5 Importing WPT waypoints

It is to import WPT. Example with WPT of Loire Castle position in France generated using Google Earth

Note: Google Earth file should be KML, *not kmz*.

- Open **Nav database** and go to **My WPT** folder.
- in **My WPT** Press on **menu button**, select **Share**, then **Import**, then **Loire Castle.kml**

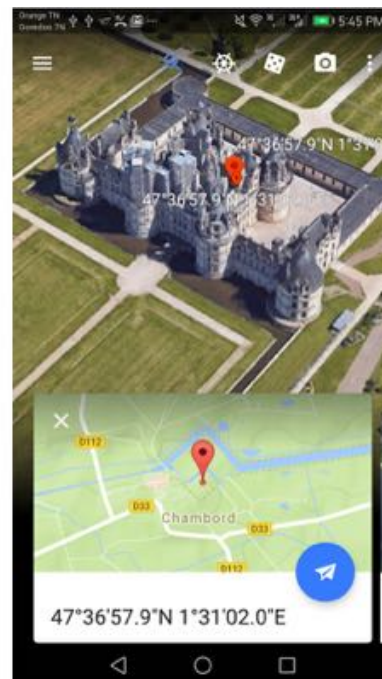
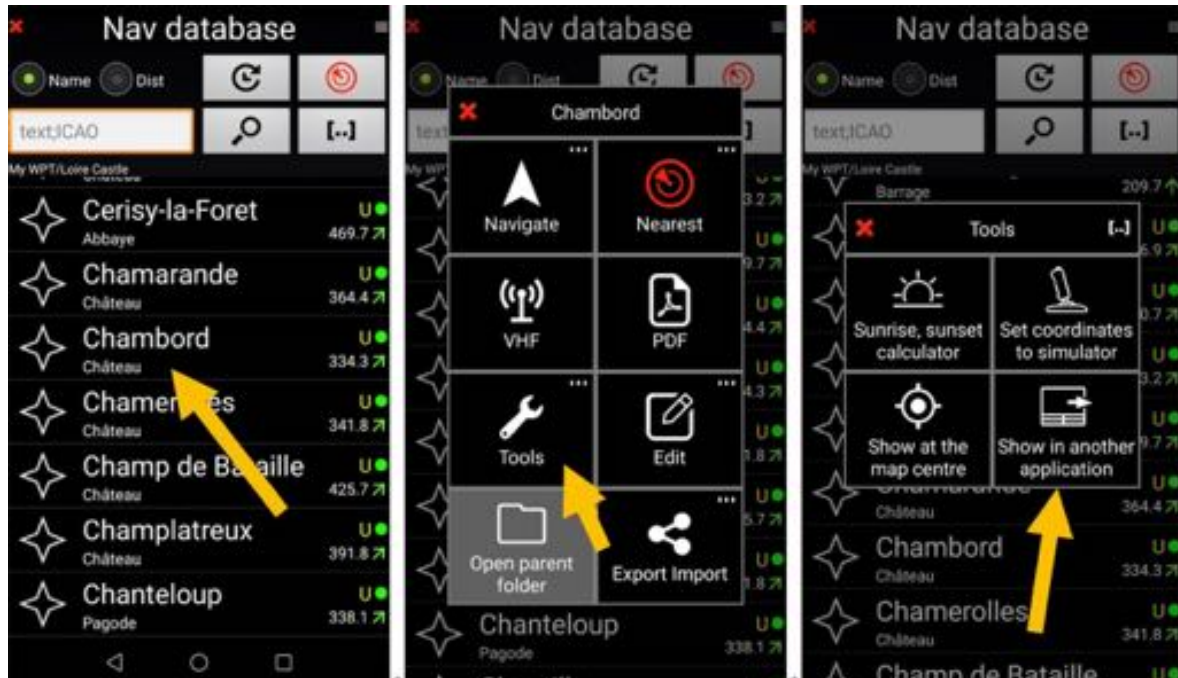


So easy.

12.5.1 View a WPT or an item with Google Earth

it is possible, using third party application, to verify if WPT or item location.

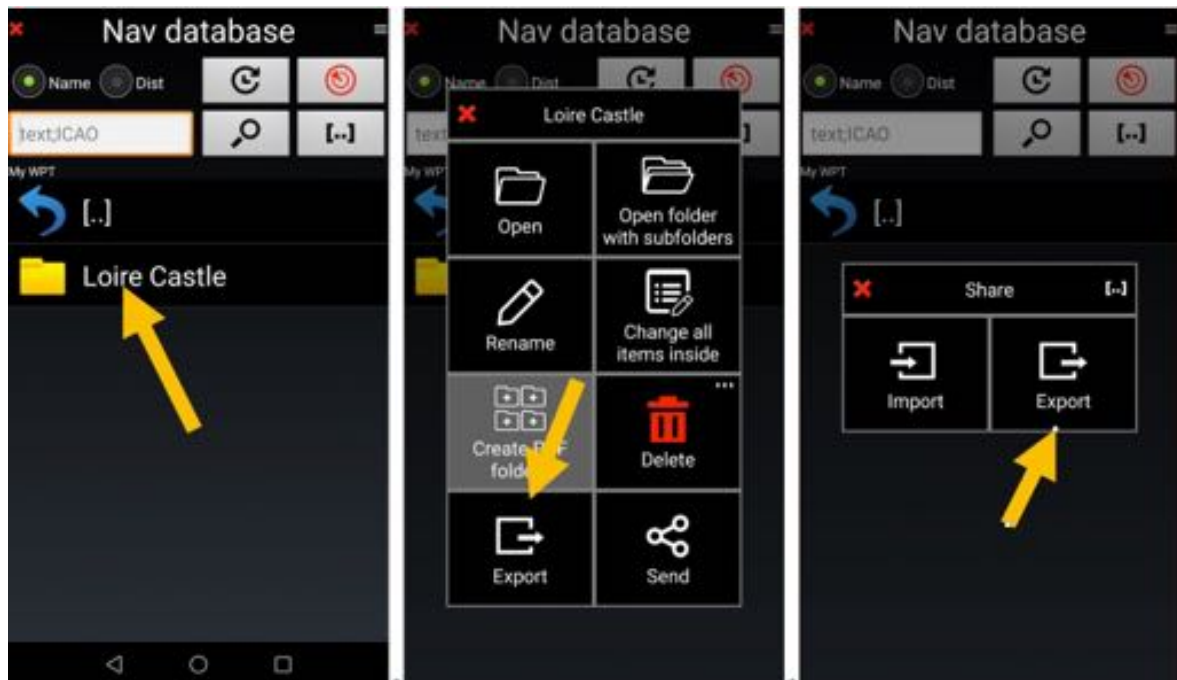
Long press on **item name** in Nav database, select **Tools** and then **Show in another application**



here it is with Google Earth

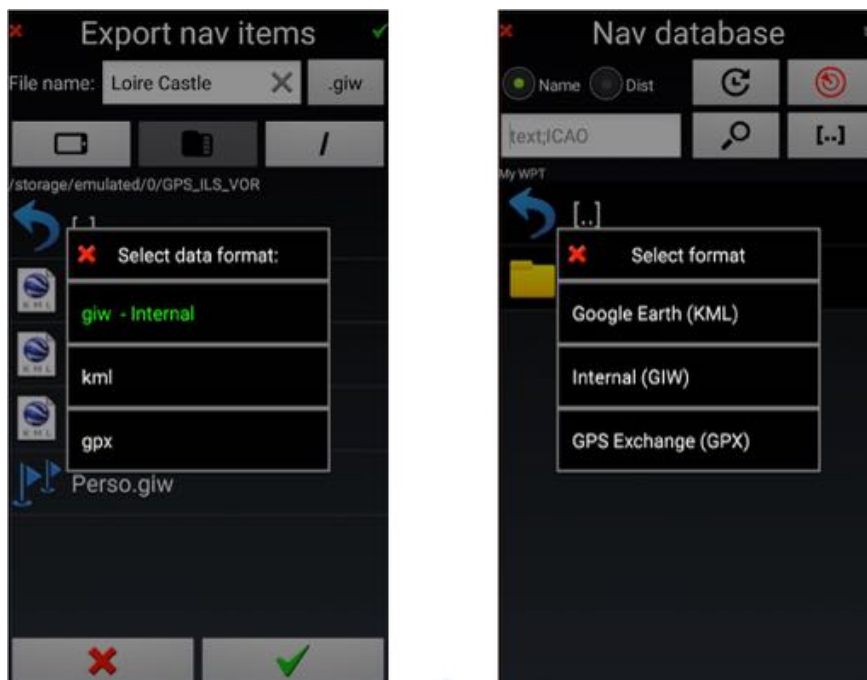
12.6 Exporting WPT waypoints

Long press on **WPT name** or on folder containing WPT to export it, then select **Export** or **Send**



then select appropriate file format

Note 1: It is advised to keep .GIW, *Fly Is Fun* own format. Translating to GPX or KML, you lose information. GPX and KML should be reserved for exportation to applications that can't read GIW.



Note 2: ability to export folders allows saving all points in one passage, useful for backup purposes

Note 3: items of World data base folder can't be exported.

13 Importing / Exporting Routes

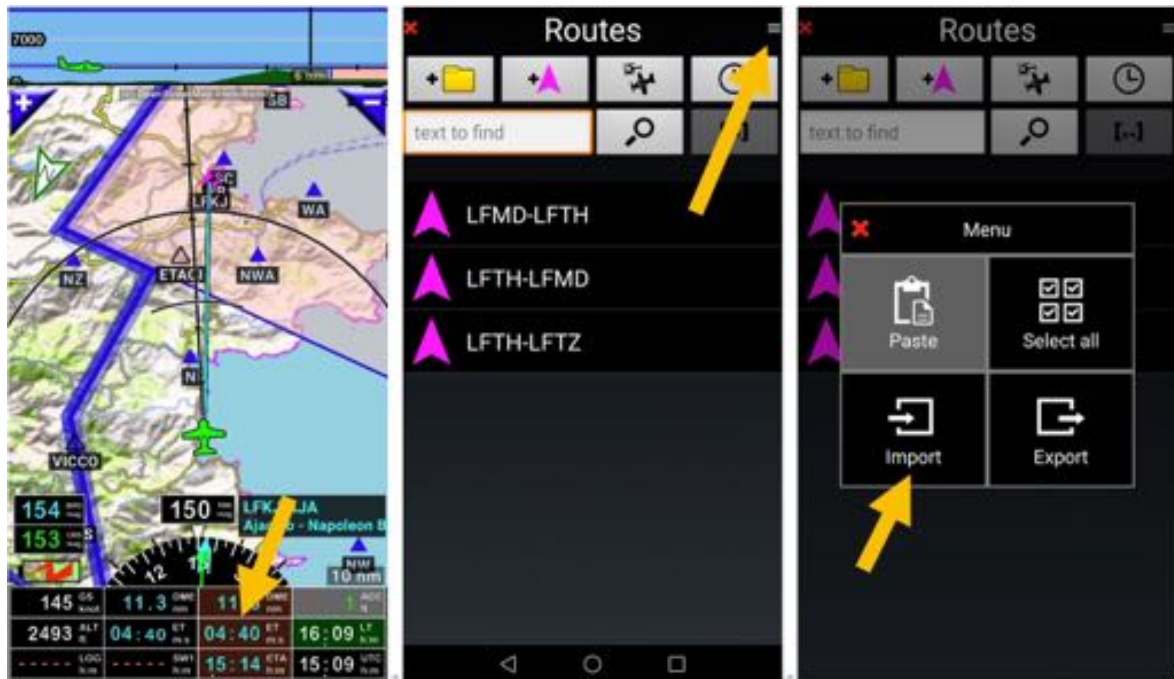
13.1 Importing route

Fly Is Fun allows you to import or export routes using the following formats

- .GPX standard format for most GPS
- .KML Google Earth format
- .GIR **Fly Is Fun** own format

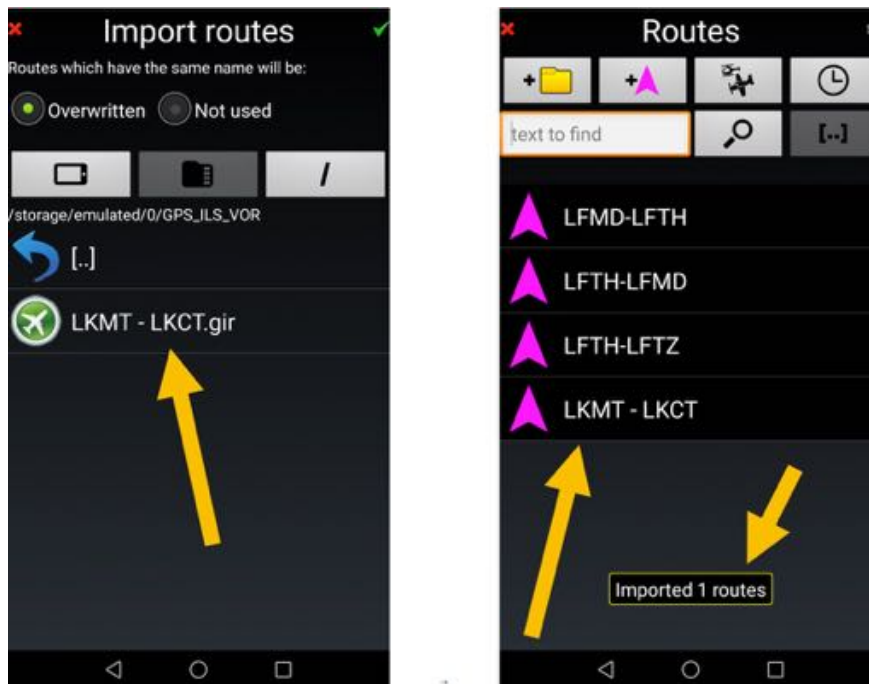
To import a route

- Open Routes library and
- Select **Import**



- Select the route to import.

The route appears now in **Routes library**



Note 1: to access to the route library, you should first stop the active route. Press on **STOP** button

Note 2: there are several implementations of GPX format. All are not equal, not compatible...

13.1.1 Transferring route from PC Windows planning software to Fly Is Fun

Some pilots like using PC windows flight planning software, since:

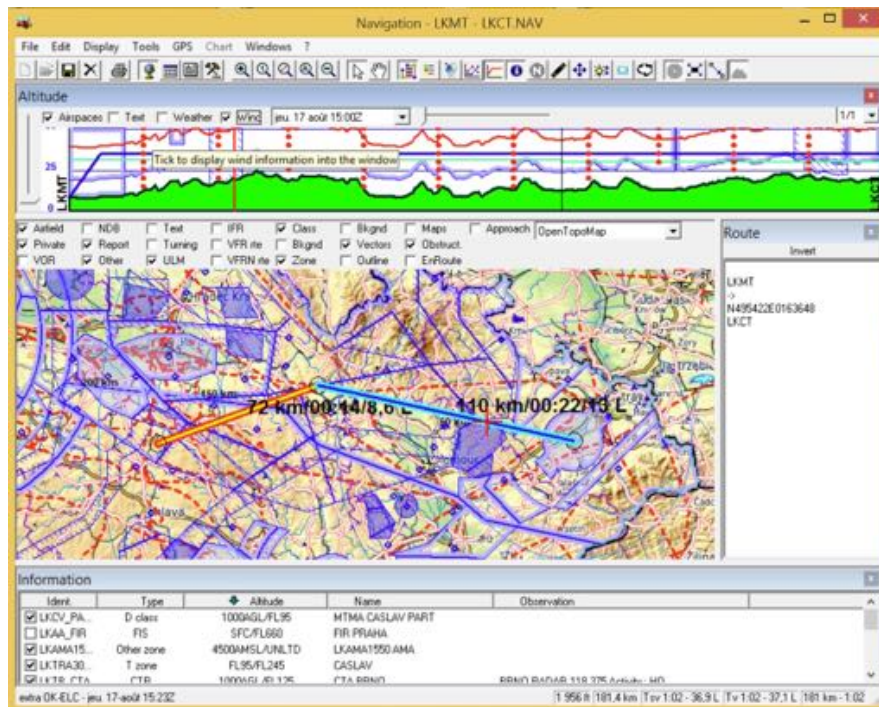
- their PC have large 32-inch screen that could be more comfortable than 8-inch screens
- it is convenient to store routes and WPT on a PC hard drive

Most of PC flight planning software are allowed to export routes as .GPX file. Only few of them propose to export routes as .GIR file, **Fly Is Fun** own format.

Transferring routes in .GIR format allows keeping valuable information as wind, max elevation by segment, targeted flying altitude ...

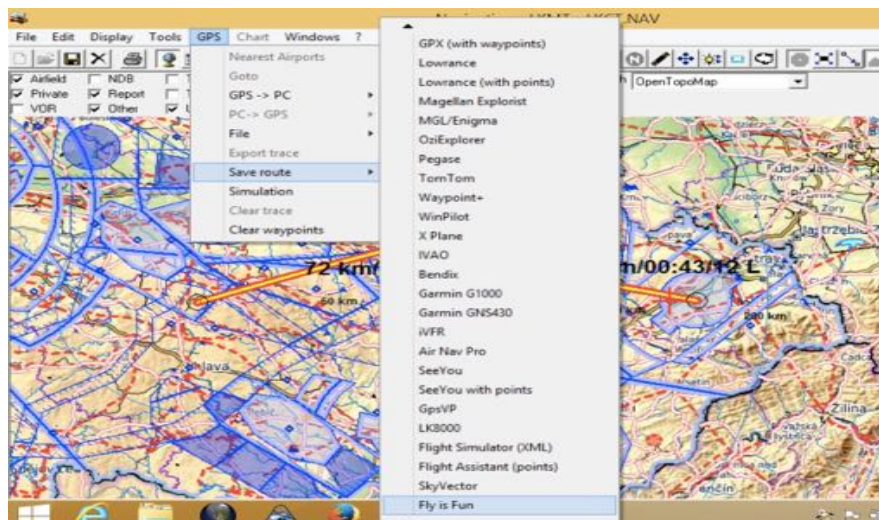
Foufou Navigation developed by from François Fouchet <http://francois.fouchet.free.fr/> , require a special attention. It is a powerful Windows PC flight planning application, made available by its developer as donation ware, that works well with **Fly Is Fun**.

We won't teach how to use this application, only how to transfer data to use with the application



Exporting the route from Foufou Navigation

To export the route, select menu **GPS**, then **Save route**, then scroll down to and select **Fly Is Fun**



Note: most of Windows PC planning software propose only GPX format.
They do not transfer with the route wind info, altitude info, elevation info...

Importing the route in Fly Is Fun application

Then to import the route in the application use above described procedure

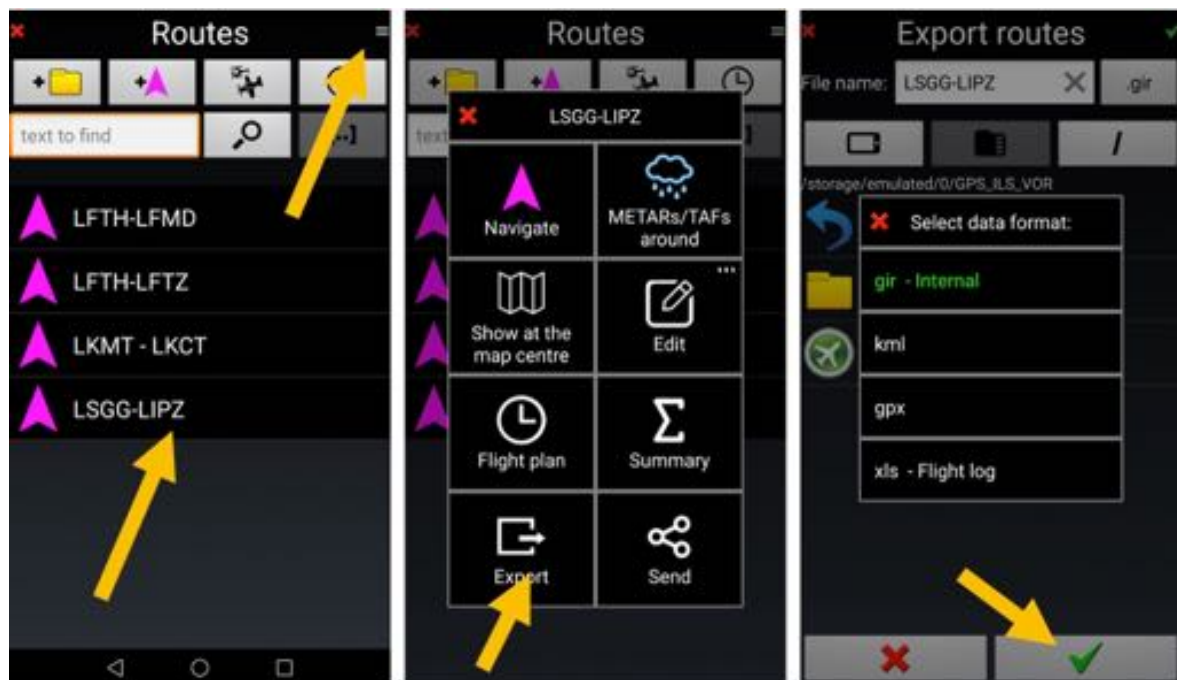
13.2 Exporting route

To export a route, from **Routes library**

- Long press on **route** you would like to export, then
- Select **Export**
- Name the route you are exporting
- Select the data format

Note 1: It is advised to keep .GIR, **Fly Is Fun** own format. Translating to GPX or KML, you will lose information. GPX and KML should be reserved for exportation to applications that can't read GIR.

- Select the directory to use on your device
- Press on **green tick** validate the action



Note: You can export all your routes in one single operation, which is convenient for backup purposes

14 Logbook – Flight recording –Tracks

Filling logbooks is one of the most boring pilot's activities. **Fly Is Fun** Logbook do it for you. By default, **Fly Is Fun** use the pilot(s), copilot(s) and aircraft indicated while setting the applications.

Logbook records:

- Length of the flight
- Average speed
- Maximum speed
- Number of GPS fixes
- Departure and arrival airport
- Departure and arrival time
- Flight track
- Aircraft
- Pilot(s)
- ...

Logbook record could be exported as .KML (Google Earth) or .GPX file

When speed exceeds adjusted value, application creates new logbook record. Application fills departure time, departure airport code, pilot name, aircraft registration, aircraft type, etc. After landing, application fills arrival time, arrival airport abbreviation, duration, etc.

Of course, you can switch off automatic creating logbook and switch on and off manually.

When logbook is recording, application saves GPS fixes – so you can export your flight tracks to KML or GPX files and watch them for example at Google Earth.

Exporting is by single record, or all records together, or for selected records, applying filter.

To open the Logbook, long press on **LOG** indicator.

Alternatively, you can call the Logbook via short press on **compass rose**, then **Tools**, then **Logbook**.



Logbook

Pilot: To:

Aircraft: From:

Date and time: ☒ UTC ☐ LT DD.MM.YY

DIAP	DIAP	T	N	I
25.04.15	25.04.15	00:56	00:00	00:00
13:41	14:37	SE		
LFFD	LFAJ	00:43	00:00	00:00
24.05.15	24.05.15	00:43	00:00	00:00
15:10	15:53	SE		
LF XU	LFAG	00:54	00:00	00:00
30.05.15	30.05.15	00:54	00:00	00:00
09:19	10:13	SE		
LFAG	LF XU	02:24	00:00	00:00
30.05.15	30.05.15	02:24	00:00	00:00
10:39	13:00	SE		

To filter and select information to display use the buttons

- Pilot,
- Aircraft and
- To and From

that allow to filter per Pilot, Aircraft or date.

In front of each record you get:

- T: Total flight time and number of landings
- N: Night flight time:
- I: Instrument flight time.

Long press on any log rows calls a Pop-up menu:

Logbook

Pilot: To:

Aircraft: From:

Date and time: ☒ UTC ☐ LT DD.MM.YY

DIAP	DIAP	T	N	I
25.04.15	25.04.15	00:56	00:00	00:00
13:41	14:37	SE		
LFFD	LFAJ	00:43	00:00	00:00
24.05.15	24.05.15	00:43	00:00	00:00
15:10	15:53	SE		
LF XU	LFAG	00:54	00:00	00:00
30.05.15	30.05.15	00:54	00:00	00:00
09:19	10:13	SE		
LFAG	LF XU	02:24	00:00	00:00
30.05.15	30.05.15	02:24	00:00	00:00
10:39	13:00	SE		

Logbook

Pilot: To:

Aircraft: From:

Date and time: ☒ UTC ☐ LT DD.MM.YY

DIAP	DIAP	T	N	I
25.04.15	25.04.15	00:56	00:00	00:00
13:41	14:37	SE		
LFFD	LFAJ	00:43	00:00	00:00
24.05.15	24.05.15	00:43	00:00	00:00
15:10	15:53	SE		
LF XU	LFAG	00:54	00:00	00:00
30.05.15	30.05.15	00:54	00:00	00:00
09:19	10:13	SE		
LFAG	LF XU	02:24	00:00	00:00
30.05.15	30.05.15	02:24	00:00	00:00
10:39	13:00	SE		

- **Show tracks on map:** allow displaying the track
- **Edit:** open logbook row
- **Merge with next row:** allows merging rows

Note1: to merge two row, associated aircraft and pilots should be the same.

- **Share:** allows to share the logbook.

In logbook row, you can assign Pilot and co-pilot names, aircraft, define number of landing, fine tune flight info...

The image displays two screenshots of the 'Logbook row' form. The left screenshot shows the form with fields for Pilot 1, Pilot 2, Aircraft, Departure, Arrival, Total, Night, and IFR. The right screenshot shows the form with fields for Pilot 2, Aircraft, Departure, Arrival, Total, Night, IFR, and Notes. Both screenshots show a red 'X' icon at the bottom left and a green checkmark icon at the bottom right.

Note 2: Swipe logbook row from left to right on a record open logbook row in Edit mode allowing associating pilots and co-pilots, position, aircraft used, ... seeing statistics of this record



Note 3: short press on the **menu button** to select chronological order

- Most recent to oldest
- Oldest to most recent

Note 4: Swipe logbook row from right to left select row. When some row(s) are selected, you can view summary of selected rows, export them, share them or delete them.

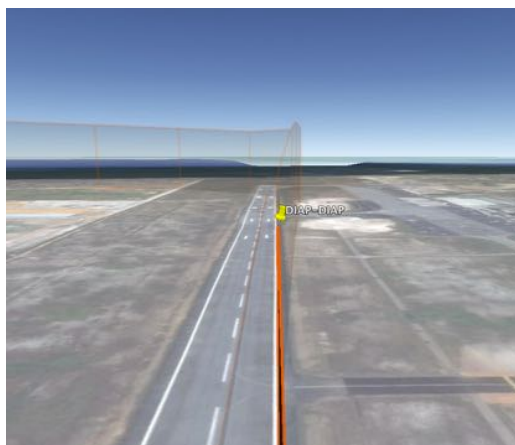
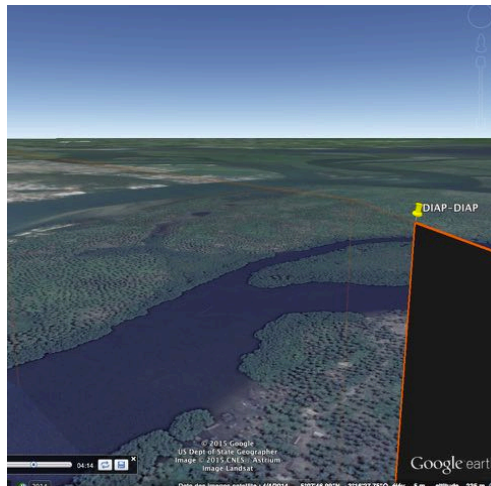


14.1.1 Logbook Export, flight track export

Recorded data could be exported and replayed.

Recording tracks during flight allows to replay the flight and to demonstrate if needed that there was no penetration in prohibited airspaces...

Records could be replayed with Google Earth



15 North symbol orientation and colors

To change among North up, track up and CRS up– long press the **North symbol**

To lock the map and return to automatic map shift by GPS position short press the **North symbol**.

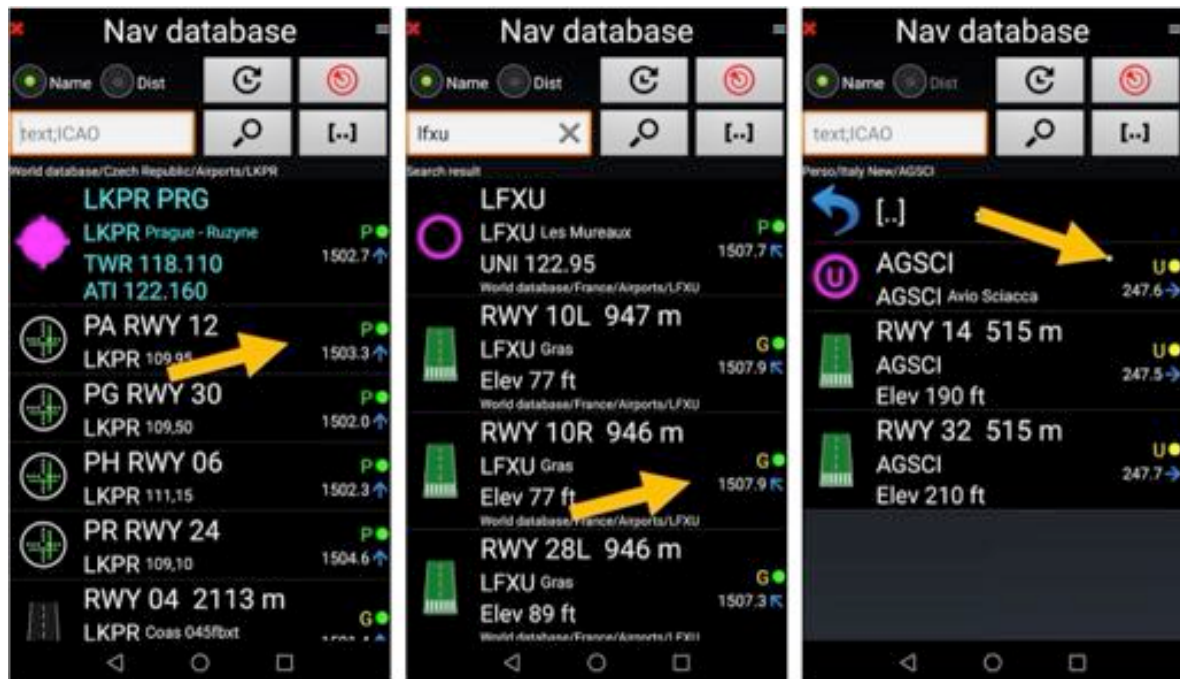


- Fill
 - **Red** - No GPS track
 - **Blue** - GPS OK, map shifting by finger
 - **White** - GPS OK, map shifting by GPS position
- Outline:
 - **Black** - Track up
 - **Blue** – Northup
 - **Green** - CRS up

16 Nav database – some more info

Navigation items imported and updated from *Fly Is Fun* server and items created or imported by the user are stored in Nav database. Only Airspaces and Patterns are not displayed via the Nav data base windows, but they can be consulted in the Airspace/Pattern windows that is accessible via Short press on compass rose, then select **Information** and **Airspaces and Patterns**.

In front each item names on the same line, at its right you can see some strange P, G, U, C, letters with green, yellow or red color points, and just below a question marks or numbers



What Do those letters and colors mean?

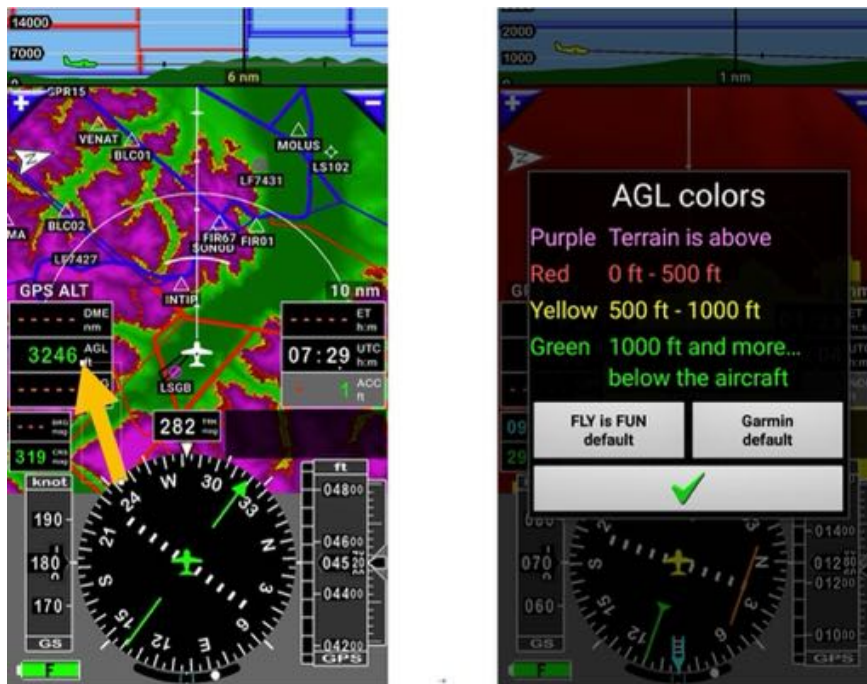
- **P** : Published by *Fly Is Fun* using data provided by external sources
- **G** : Generated by *Fly Is Fun* user community and inserted in FIF database. Update is not granted, user need to check data validity
- **U** : User created or imported item
- **Green** : update or user creation date within the last 28 days
- **Yellow** : update or user creation date within 29 to 84 days
- **Red** : update or user creation date is more than 84 days
- **Number** and **arrow**: the number indicate the distance (in km or nm according selected distance units) and the arrow, the direction. To get distance and direction, you need a valid GPS signal with a fix
- **?** : mean that distance can't be calculated as GPS fix is missing

17 Aircraft

17.1 Aircraft color

Aircraft color varies dynamically according to its altitude **Above Ground Level AGL**

Short press on **AGL** indicator to display threshold values implemented. Threshold is customized in preferences. Default threshold and colors are the following



On moving map if **aircraft is green**, or if **surface is green** on terrain map, it indicates that altitude below aircraft is higher than 1 000 ft.



On moving map if **aircraft is yellow**, or if **surface is yellow** on terrain map, it indicates that altitude below aircraft is less than 1 000 ft. and higher than 500 ft.



On moving map if **aircraft is red**, or if **surface is red** on terrain map, it indicates that altitude below aircraft is between 0 ft. and 500 ft.



If **aircraft is purple** on moving map, or if **surface is purple** on terrain map, it indicates that aircraft has negative AGL altitude...

17.2 Aircraft symbol

Aircraft symbol could be selected in preferences



18 PDF files – AIF, VAC, ultra-light terrain info....

It is possible to store PDF files in **Fly Is Fun** directory and linking them to WPTs and nav items. This allows consulting VACs and other PDF information related to the airfield.



All folders containing **PDF** documents are grouped together in the main **PDF** folder.

In the **PDF** folder the organization is as follows:

- Main country file. Its name is the ICAO country code
 - o In this file, each aerodrome has its file. Its name is the ICAO code of the field.

Example: the PDF documents concerning **LKZA** are in the **LKZA** folder which is in the **LK** folder, which is in the **PDF** folder.

- Android -> Data -> gps.ils.vor.glasscockpit -> Files -> PDF -> LK -> LKZA

All folders concerning Belgium airfields are located in EB folders.

All folders concerning Czech airfields are located in LK folder.

All folders concerning French airfields are located in LF folder

All folders concerning Italian airfields are located in LI folder.

In each airfield folder, you may locate several PDF files related to the airfield (STAR, SID, ADC ...)

To be sure to create the folders in the right place and with the right names:

- Long press to the country inside the **World database** (in Nav database list)
- Select **PDF**

Note 1: To display PDF files, you need a PDF viewer installed on the device (for example Adobe Reader).

Note 2: In the **Files** folder there is a **PDF** folder dedicated for the PDF files uploaded by end-user and a **PDF_system** folder is reserved to documents downloaded by the application.

18.1 PDF documents automatically imported by the application

As explain previously, automatic importation of VAC and PDF documents related to airfields concerns currently approximatively 50 countries



Limitation is due to the fact that only very few Aviation Regulatory Authorities grant free access of third parties applications as **Fly Is Fun** via API's.

If you know API's that could facilitate data and PDF document access, please make **Fly Is Fun** development team aware of it, email at aviationsoft@gmail.com . Development team will then study the possibility of using those API's to make IAP and VACs PDF documents accessible via **Fly Is Fun** server.

18.2 Other countries - Automatizing PDF collection and folder creation

For other countries, manual or semi automatized import remain possible.

To keep documents updated, its highly recommended to find mechanism allowing the automatization of the task.

Fly Is Fun and Air Navigation Pro on iOS are classifying VAC and PDF documents in similar way.

That for tools initially developed for on Air Navigation Pro on iOS to facilitate VAC and PDF documents collection and installation, creation and organization of folders, ... could be used with **Fly Is Fun**

18.2.1 PDF collection automatization using Foufou Navigation

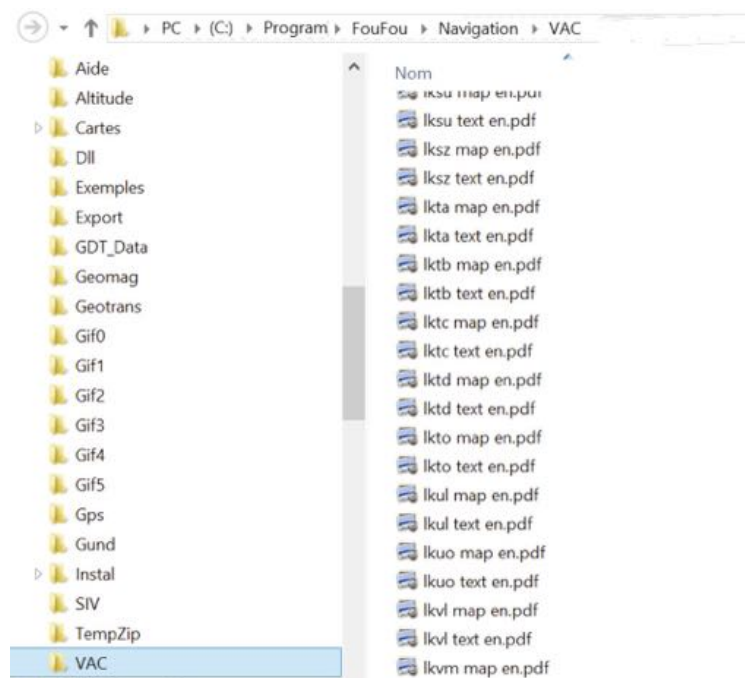
Again, *Foufou Navigation* <http://francois.fouchet.free.fr/>. This application is very helpful if you need to import VACs, IAP or ULM terrain PDF files.

Foufou Navigation:

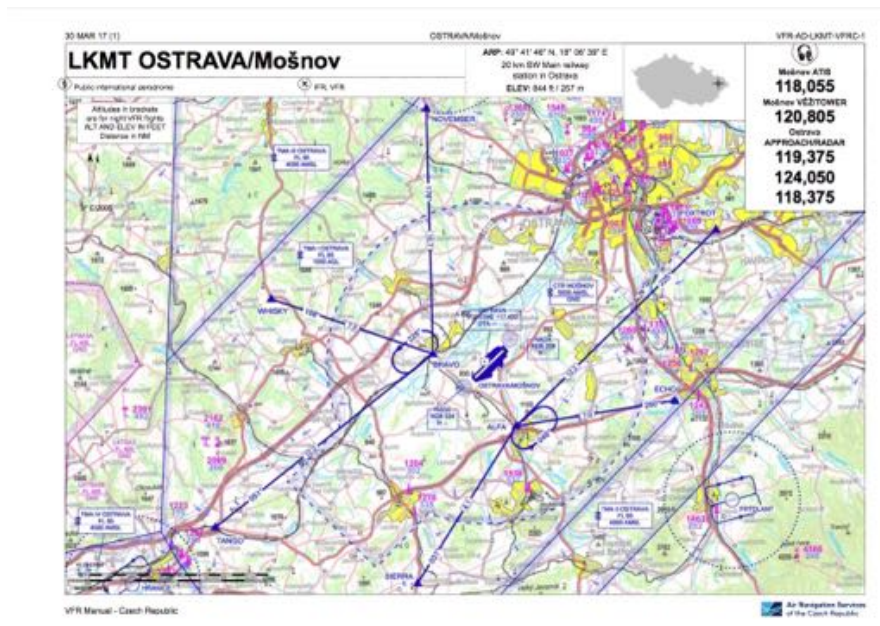
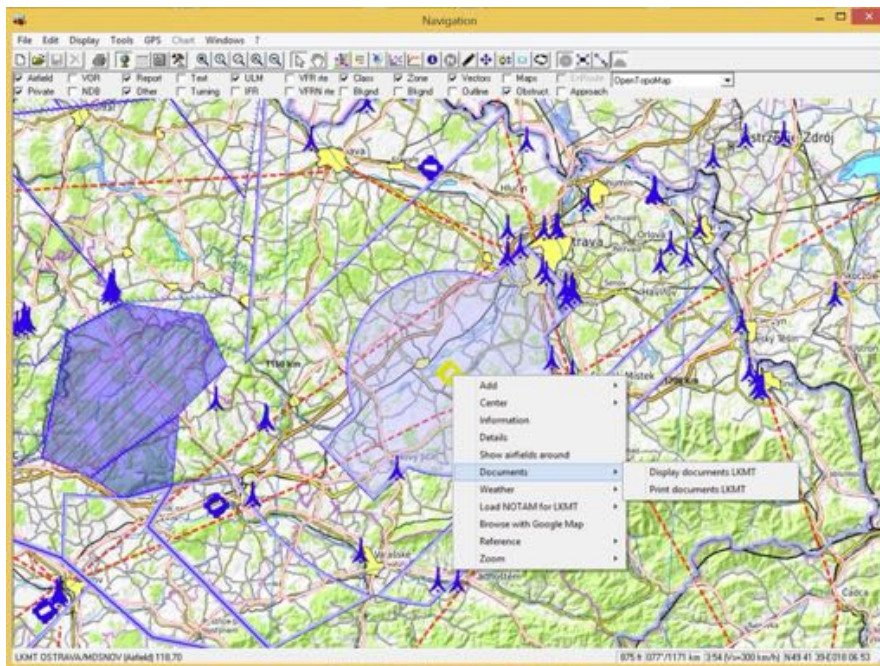
- import automatically VACs on other documents, from official site for countries as Belgium, Canada, France, Italy...
- allows manual import for some other countries
- installed PDF files could be consulted within *Foufou Navigation* and exported in the appropriate format for ***Fly Is Fun*** the application.

Within **Foufou Navigation** VAC are installed automatically in **VAC folder**

C: Program -> Foufou -> Navigation -> VAC



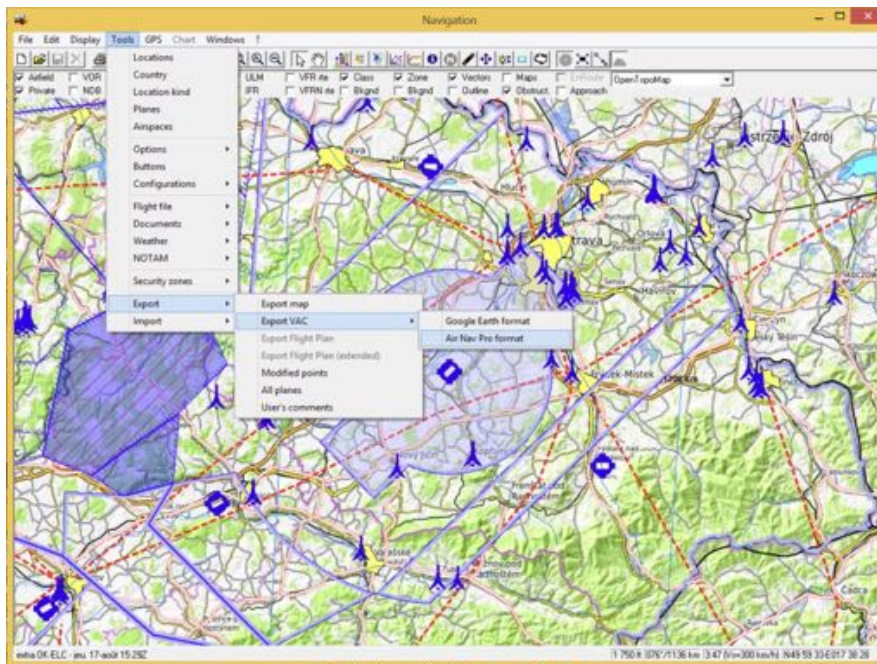
When VACs are installed, it is easy to consult them on the PC with **Foufou Navigation**



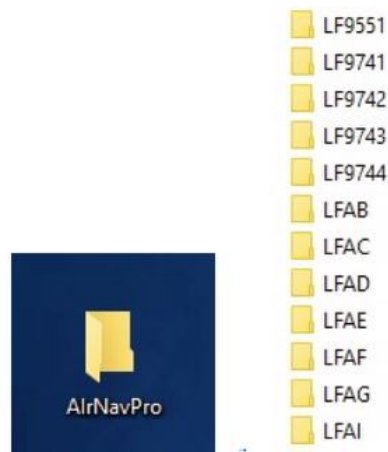
but this is not what we are looking for.

To export documents to use with **Fly Is Fun** from **Foufou Navigation** select

- -> Tools
- > Export
 - > Export VACs
 - > Air Nav Pro Format

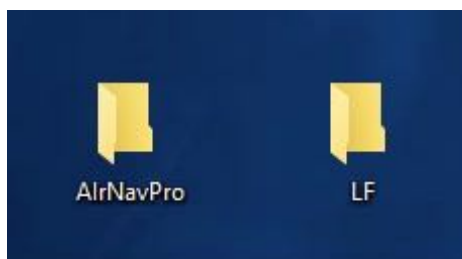


Foufou Navigation creates an **AirNavPro** folder containing one subfolder per airfield.



Create a folder per country i.e. **LF**

- Select in **AirNavPro** folder all **LFwxyz** folders and
- Drag & drop them into **LF** folder

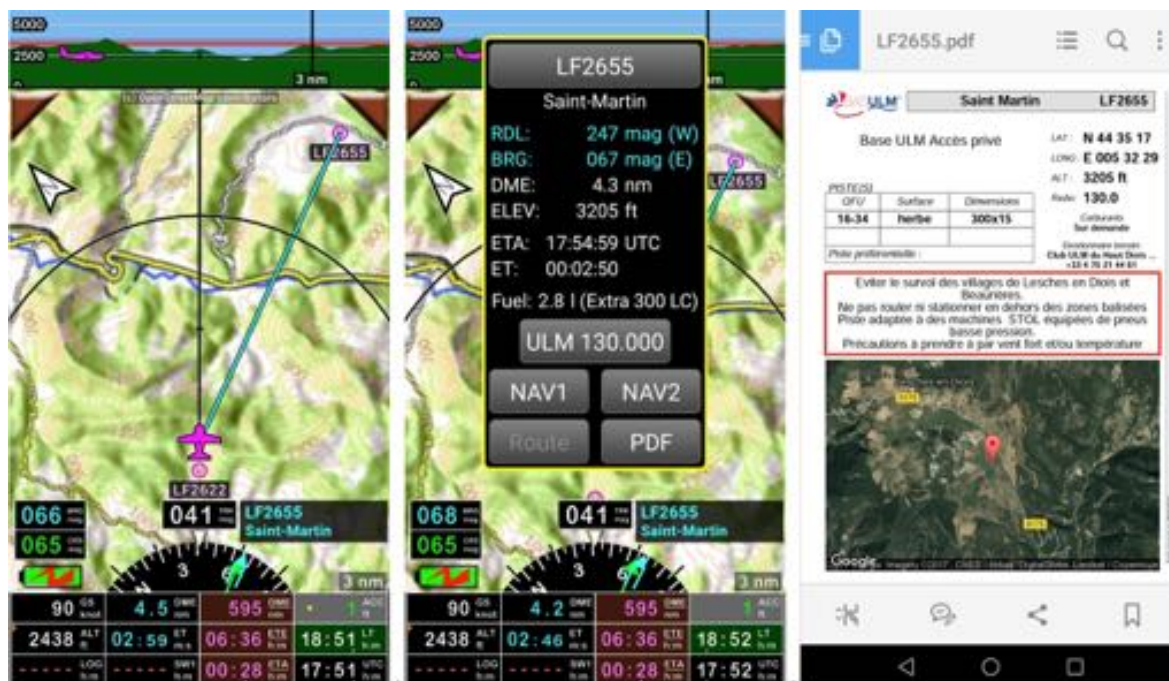


- Transfer **LF** folder in the **PDF** folder in the **Files** folder of the **gps.ils.vor.glasscockpit** folder

You are ready

Later on, during Flight, you can consult documents

i.e. France: ULM airfield



i.e. Tunisia: airport



19 ADSB-IN - FLARM – AHRS – Pressure

19.1 Using external devices and sensors

Fly Is Fun can be connected with external devices or sensors. Devices as :

- External GPS
- External Baro
- Aeolus Sense from Talos Avionic www.talosavionics.com
 - o Non-certified Artificial Horizon (*)
 - o Static and pitot pressure used for IAS, CAS, altitude
- Stratux www.stratux.me
 - o ADSB-IN traffic receptor
 - o Non-certified Artificial Horizon (*), if the Stratux integrate an AHRS card
 - o Slip turn indicator , if the Stratux integrate an AHRS card
 - o Reception of FLARM, FANET, OGN traffic, if flashed with the Stratux Europ firmware and equipped with the right antennas <https://franks-stratux.de/category/stratux-europe-edition/> , <https://github.com/b3nn0/stratux> and <https://www.ulforum.de/ultraleicht/forum/2-technik-und-flugzeuge/8050-stratux-europe-edition>

can be used

(*) **Warning:** a non-certified artificial horizon cannot claim to replace a certified artificial horizon. At best it is a gadget that allows, by calm conditions and with perfect visibility, to train to the use of an artificial horizon

Non-certified artificial horizon should never be used in IFR flight conditions without visibility.

All the tests carried out by professional pilots with non-certified sensors have shown that in the event of a turbulent situation, of a sudden change of position, of a prolonged turn at a steep inclination, etc. the information displayed was erroneous and could be the source of wrong decisions and accidents. As a result, we can in no way trust an uncertified artificial horizon.

19.2 Stratux: ADSB-IN traffic - Artificial Horizon - Slip turn indicator

The Stratux makes it possible to display on the moving map screen and on the terrain screen of *Fly Is Fun* the ADSB-IN traffic information (and possibly FLARM) and on the terrain screen and the instrument screens the artificial horizon and the slip turn indicator

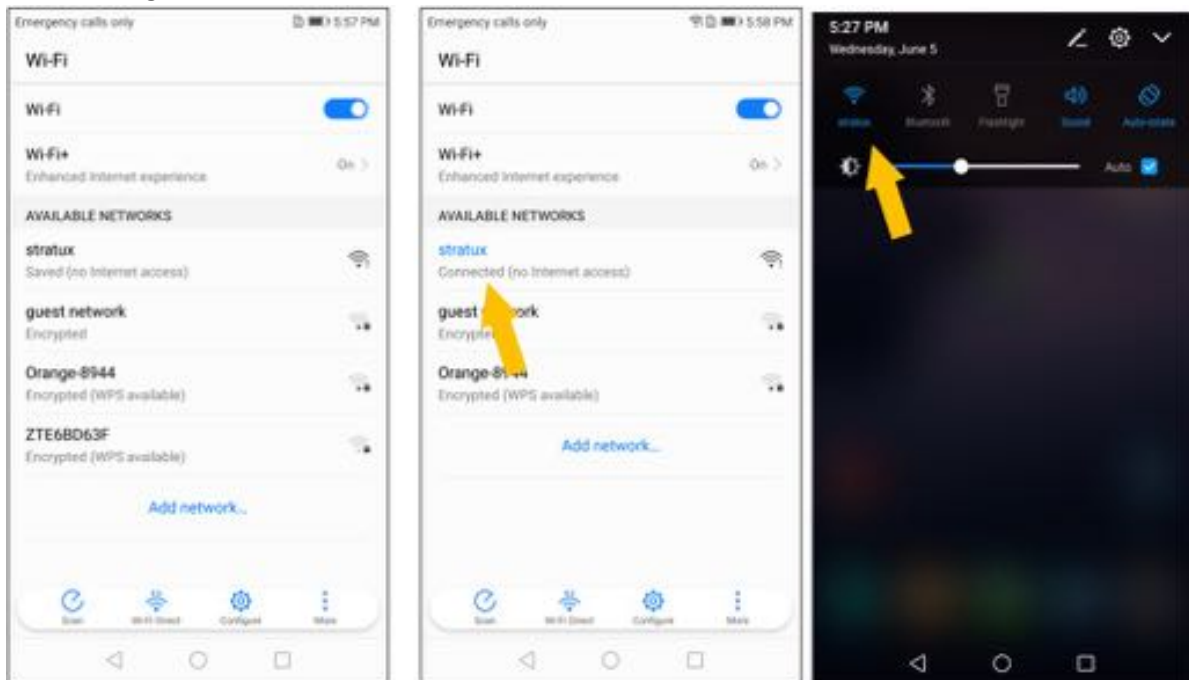
19.2.1 Connect the Android device and *Fly Is Fun* to the Stratux

Step 1: Connect your Android device to the **Stratux** WIFI network

Step 2: Configure *Fly Is Fun* to use information from **Stratux**

19.2.1.1 Connect your Android device to the Stratux WIFI

With both devices powered on, select the **Stratux** WIFI network on the Android device on which *Fly Is Fun* is running.



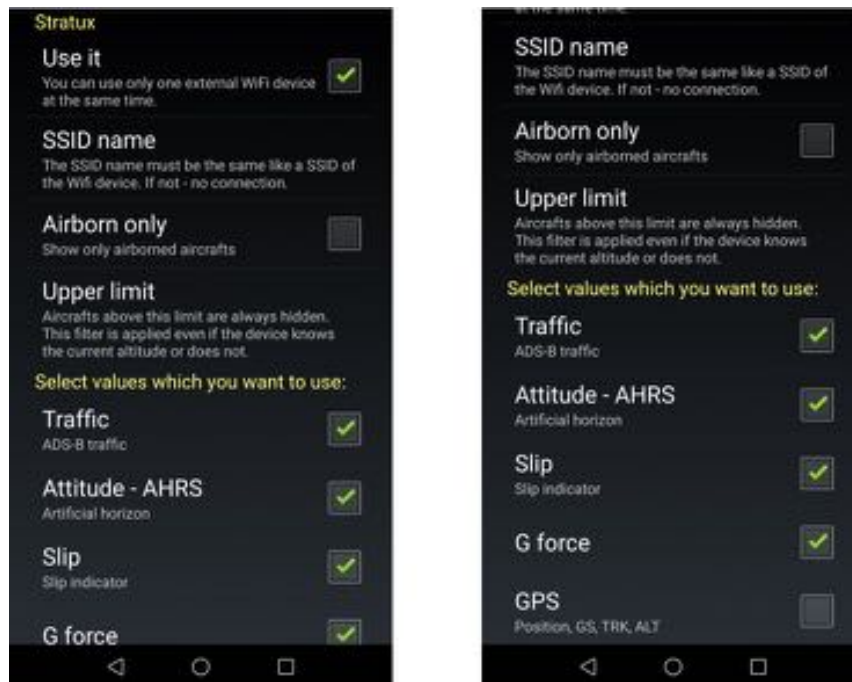
19.2.1.2 Configure Fly Is Fun to use information from Stratux

To use the information from **Stratux** in *Fly Is Fun*, *Fly Is Fun* must be connected to **Stratux** and allowed to use in *Fly Is Fun*

- Short press on compass rose and then Application settings
- Select Preferences then External data source then WIFI and then Stratux

In the Stratux window

- Check **Use** to allow *Fly Is Fun* to use data from Stratux



- Then select the data you want to use
 - Traffic
 - traffic information broadcasted via ADSB-OUT by aircraft and by ground station will be displayed on the **moving map** and on the **terrain** screens
 - traffic information from FLARM-equipped devices relayed by the OGN network, will be displayed on the **moving map** and on the **terrain** screens, if installed Stratux firmware is that of the Stratux - European edition
 - Attitude – AHRS
 - The *artificial horizon* information will be displayed on the **terrain** screen and on the **instrument** screens, if the Stratux and *Fly Is Fun* get position information from their respective GPS. Requires the AHRS card to be installed in the Stratux.
 - Slip
 - Provides information used by the *Turn Coordinate Ball Indicator* displayed on the **Terrain** screen and on the **Instrument** screens, if the Stratux and *Fly Is Fun* get position information from their respective GPS. Requires the AHRS card to be installed in the Stratux.
 - G force
 - Acceleration information. Requires the AHRS card to be installed in the Stratux.
 - GPS
 - allows *Fly Is Fun* to use GPS data coming from the Stratux connected GPS.

Once the connection between *Fly Is Fun* and the Stratux is active a **WIFI logo** appears on the **Moving map** screen as well as on the **Terrain** screen



19.2.2 Displayed traffic information

Fly Is Fun and the Stratux being connected, aircraft position broadcasted via ADSB and picked up by the Stratux receiver are displayed on the **moving map** and the **terrain** screen.



A short click on an aircraft displays additional information about it such as speed, heading, altitude, and age of the information.



19.2.3 Artificial horizon – Turn Slip indicator

If the Stratux is equipped with the AHRS card, once the Stratux and *Fly Is Fun* are connected and both get the position information from their respective GPS, it is possible to use in *Fly Is Fun* artificial horizon and turn slip indicator information provided by Stratux.

Artificial horizon and turn slip indicator are displayed on the **terrain** and on the **instrument** screens



19.2.3.1 Calibration of the Artificial Horizon and of the Turn Slip indicator

As soon as the aircraft is stabilized, in horizontal flight line at constant speed, it is possible to calibrate the Artificial Horizon and of the Turn Slip indicator, via Long press on the Turn Slip indicator.



20 Altitude – QNH & Flight level - Barometric pressure and sensor

Altimeters display an altitude that results of barometric pressure. GPS indicates an altitude computed by satellites.

On an altimeter, the barometric pressure adjustment knob is used to enter the local QNH. By playing with it, it can be seen that a variation of the barometric pressure modifies, in more or less, the indicated altitude.

The altitudes indicated by a well-calibrated altimeter with the local QNH and that of a good GPS having a good reception of the satellite signals, generally correspond. It is convenient for low-altitude flights.

Warning: if for good GPS the horizontal accuracy error is only a few meters or centimeters, the vertical accuracy error may be over one hundred feet.

20.1 QNH & Flight Level

In flight level the displayed altitude is no longer displayed based on local QNH, but on **standard pressure of 1013 hPa**. Even if real altitude is wrong, as all aircrafts calculate their altitude with the same pressure reference, this contributes to safety.

As the GPS doesn't know the barometric pressure, there may be significant differences between the altitudes indicated by the altimeter using **standard pressure of 1013 hPa** for Flight Level and the GPS.

To display a consistent flight level in the **FL - Flight Level button**, *Fly Is Fun* needs to know the local QNH. With it, the application can calculate the altitude differences and display the Flight Level.

20.1.1 QNH – Manual input

- Long press on flight level **FL Flight Level** button, or
- Press on **QNH** button
- Select QNH



- Enter the local **QNH** value

Example with local QNH = 1022 hPa



Example with local QNH = 1008 hPa



The local QNH has been modified, the value indicated in the flight level button FL is modified, while the GPS altitude remains unchanged.

20.1.2 QNH - Use of METARs / TAFs

If you have a network connection or have recent METARs and TAFs information stored, you may use them to input QNH to use.

- Long press on flight level **FL Flight Level** button, or
- Press on **QNH** button
- Select METARs/TAFs around



- Long press on **airport QNH** you want to use
- Select QNH and Wind or Adjust Wind



The local QNH has been modified, the value indicated in the flight level button FL is modified, while the GPS altitude remains unchanged.

20.2 Baro sensor - Basics

The application can use GPS or barometric altitude (if your device has a **barometric sensor**).

Barometric altitude is more precise and also aircrafts use barometric pressure.

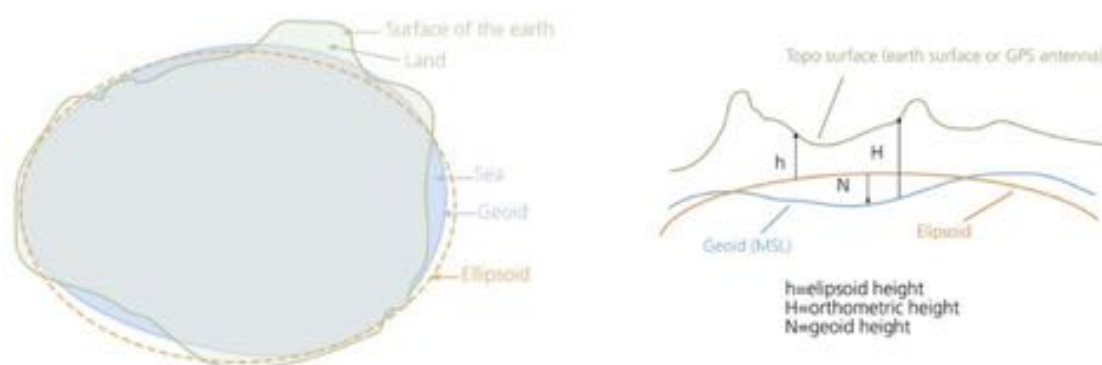
Do not use barometric altitude in pressurized cabin when using internal device barometric sensor.

- There is the ability to display both values - GPS based and barometric pressure based together
- Terrain map altitude, glide slope indicator and altitude strip can use either the GPS or the barometric sensor data. You can select which:
 - o Pressing Menu/In-flight settings/Altitude data source
 - o Long press at the Altitude strip or ALT value and select **Altitude data source**.

	GPS based	Barometric based
Values which can be selected in Customize screen	ALT – GPS Altitude AGL – GPS Height Above ground level ALT – GPS Altitude feet (always feet, even if distance unit in preferences is set to metric unit) VSI – Vertical Speed	ALT – Barometric altitude AGL – Baro Height above ground level PRE – Current Pressure FL – Flight Level QNH – QNH VSI – Vertical Speed
Indicators background color	Black	Blue
Need to set QNH	No	Yes (except FL)

GPS altitude correction

It is recommended to use the automatic altitude correction.



GPS gives ellipsoid height which can be more than 100m out from the real geoid height. **Fly Is Fun** has geoid heights of the entire world and can do the correction i.e. translate ellipsoid height to geoid height (MSL altitude).

If you want to see geoid height at your current position, use customize screen and select GAL – geoid altitude.

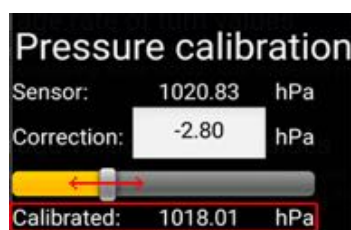
If you disable Automatic GPS altitude correction in Preferences you can make the altitude correction manually by selecting Menu/In-flight settings/GPS altitude correction.

20.3 Calibrating barometric based altitudes

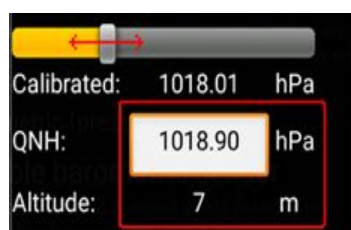
If you want *Fly Is Fun* displays correct barometric altitude, you must calibrate your device in two steps:

Step 1: Calibrating your device on the ground (this step you do only ones)

- Open Pressure calibration (Menu/Application settings/Preferences, then Press on Internal sensors settings/Pressure sensor calibrating)
 - o If you know actual pressure at your current position – **QFE**, slide the seek bar until you see the same pressure at field called **Calibrated**.



- o If you can use an altimeter from your plane set the same pressure curve (QNH) on the plane altimeter and on *Fly Is Fun*. i.e. Set the aircraft pressure indicator, inside the altimeter to 1019 hPa and the same value on the device. Then slide seek bar until you see the same altitude shown on the plane altimeter gauge and on device altitude field.



Now the barometric sensor is calibrated.

Step 2: Calibrating your cabin static pressure in the air.

This step you must do for each aircraft which you use.

Most of the aircraft has cabin pressure a little bit less then static pressure. If you do not do this step, altimeter displays on the ground correct altitude, but when you fly, altitude can be for example 150 feet more. **It is very dangerous.**

- Take-off and fly at constant altitude at your cruising speed.
During fly, note:
 - o Speed at *Fly Is Fun* (**Speed**)
 - o Altitude at the airplane altimeter (**Correct altitude**)
 - o Altitude at *Fly Is Fun* (***Fly Is Fun* indicates**)
- Back on the ground, create the aircraft which you want to calibrate. If you do not know, how to do it, please visit chapter **Aircraft settings** (Menu / Information / Aircrafts).
 - o Open editing of the aircraft in which you flew before (swipe to the right on it) or create new one.

- Fill Baro Altitude calibration fields



A screenshot of the 'Aircraft' calibration screen. The title 'Aircraft' is at the top with a red 'X' icon on the left and a green checkmark on the right. Below the title, the text 'Baro altitude calibration:' is displayed. Underneath, there are three input fields with labels above them: 'Speed km/h', 'Correct altitude m', and 'FLY is FUN indicates m'. Each field is currently empty.

When you fly, you must activate correct aircraft to see correct altitude! Selected aircraft has light green circle.



A screenshot of the 'Aircrafts' selection screen. The title 'Aircrafts' is at the top with a red 'X' icon on the left and a hamburger menu icon on the right. Below the title, the text 'In use: OK-ELC Extra 330 LC' is displayed in green. Underneath, there are two radio button options: 'OK-ELC Extra 330 LC' with a selected (filled) light green circle, and 'OK-RAJ Cessna 152' with an unselected (empty) white circle.

21 Fine Tuning – Customization of Fly Is Fun

Fly Is Fun buttons can be configured to display the following information:

ACC : GPS Accuracy	EDE : Distance to end of the route, if a route is active	MTS : METAR / TAF switcher
ACM : Accelerometer	EDE : Distance to end of the route, km, if a route is active	PRE : Current PREssure
AGL : Above Ground Level Baro	EDE : Distance to end of the route, nm, if a route is active	QNH : QNH
AGL : AGL Baro feet	ELE : Ground Elevation	RRA : Rainfall Radar Age
AGL : AGL Baro meter	ET : Estimated flight time to direct to, to WPT, or NAV1	RDL : Radial from NAV1
AGL : AGL GPS	ET : Estimated flight time to NAV2	RDL : Radial from NAV2
AGL : AGL GPS feet	ETA : End of route ETA UTC hh:mn	RRD : Required Rate of Descent
AGL : AGL GPS meter	ETA NAV1 : Estimated time of arrival at NAV1 LT hh:mn	SR : SunRise LT 24
AGS : Average Ground Speed	ETA NAV1 : Estimated time of arrival at NAV1 UTC hh:mn	SR : SunRise UTC 24
ALT : Altitude Baro	ETA NAV2 : Estimated time of arrival at NAV2 LT hh:mn	SS : SunSet LT 24
ALT : Altitude Baro feet	ETA NAV2 : Estimated time of arrival at NAV2 UTC hh:mn	SS : SunSet UTC 24
ALT : Altitude Baro meter	ETE : Estimated flight Time Enroute	SW1 : Stop Watch 1
ALT : Altitude GPS	FL : Flight Level Baro	SW2 : Stop Watch 2
ALT : Altitude GPS feet	FL : Flight Level GPS	T : Temperature
ALT : Altitude GPS meter	FTD : Flight Track Distance	TAS : True AirSpeed
BRG : Bearing to NAV1	GAL : Geoid Altitude	TRK : Track
BRG : Bearing to NAV2	GS : Ground Speed	TRN : Turn Angle to WPT
CAL : Correct Altitude	GS : Ground Speed km/h	UTC : Zulu Time 12
CRS : Course	GS : Ground Speed kt	UTC : Zulu Time 24
DAL : Density altitude	GS : Ground Speed mph	VAR : Magnetic VARIation
DME : Distance toNAV1	HDB : Compass heading	VOL : Voltage
DME : Distance NAV1 km	HDB : Heading bug	VS : Vertical Speed Baro
DME : Distance to NAV1 nm	HUM : Relative humidity	VS : Vertical Speed GPS
DME : Distance to NAV2	IAS : Indicates Air Speed	WD : Wind Direction
DME : Distance to NAV2 km	LOG : LOGbook elapsed time	WS : Wind speed
DME : Distance to NAV2 nm	LT : Local Time 12	XAL : ALT cal Baro
DTA : Desired time of arrival LT	LT : Local Time 24	XAL : ALT cal GPS
DTA : Desired time of arrival UTC	MGS : Maximal Ground Speed	XTK : Cross track distance

21.1.1 Moving map customization

The indicator buttons assignment, the number of indicator buttons, the thickness of the lines, the colors, the information displayed according to the zoom levels ... can be configured.

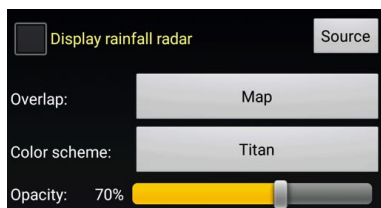


- Long press on compass rose open Screen customization

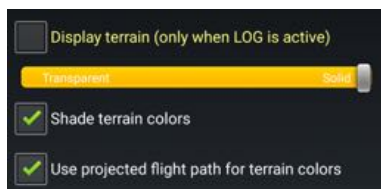
In Portrait mode 4 lines can be displayed, 18 indicators can be customized.

In landscape mode 2 columns can be displayed, 26 indicators buttons can be customized.

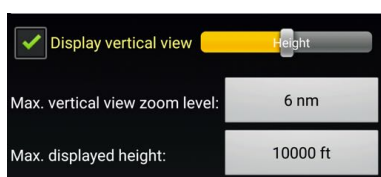




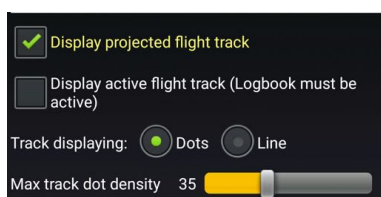
Allows to choose the color codes and the level of transparency assigned to the rainfall presentation, and the elements that will be covered



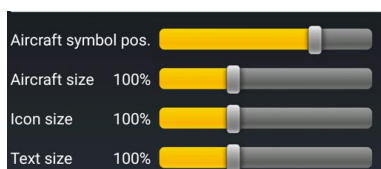
Allows displaying terrain elevation in the moving map



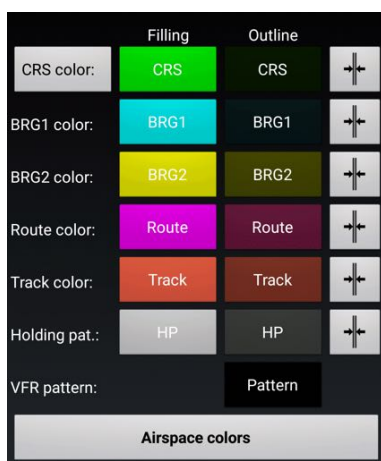
Setting of the vertical view



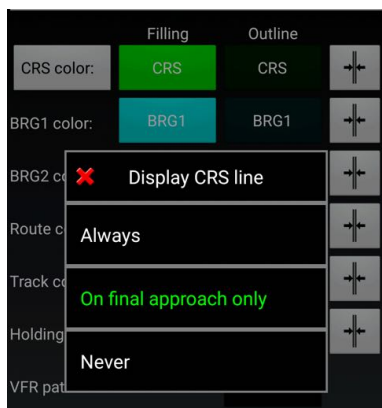
Displays the flight projection and the flight trace



Adjusts the aircraft position and presentation



Setting the lines color and thickness

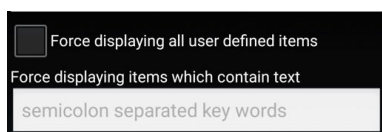


The course, the desired direction, could be displayed on the screen:

- Always
- On final approach only
- Never.

As with routes, the course from one point to the other one is presented with a pink line, my preference for CRS is ***On final approach only***.

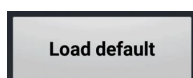
With this setting CRS line displaying RWY axis, appears once RWY is selected, which is extremely useful for final approach.



Allows setting rules to display user items



Allows setting rules to display items according zoom level



Allows setting back *Fly Is Fun* default configuration for this screen

Replacing “+” and “-” buttons by “N” and “P” buttons on the Moving Map

When route is active, on the Moving Map, instead of displaying **+** and **-** buttons, it is possible to display buttons facilitating WPT selection: **N** *next route WPT* and **P** *previous route WPT* buttons.

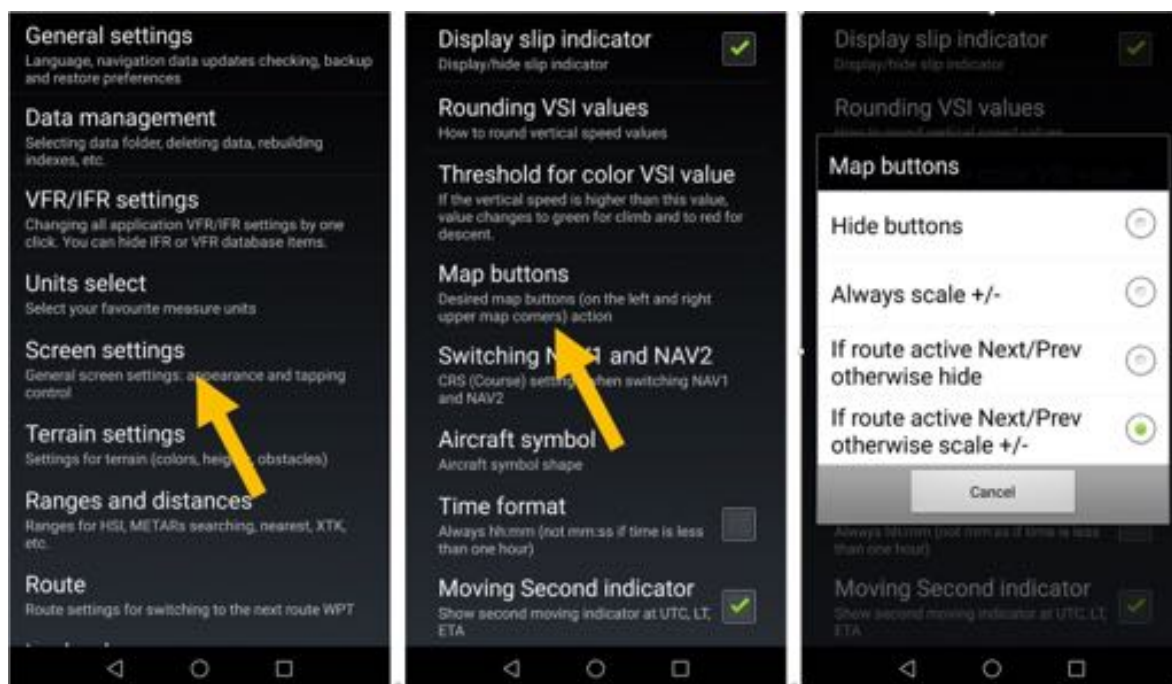


To set those buttons

- Short press on **compass rose**, then
- Press on Application settings, then Preferences,



- then **Screen settings**, then **Map buttons** and make choice



My preference is If route active Next/Prev otherwise +/-.
when a route is active, this configuration allows fast switching between route WPT from main screen

Note 1: Long press on **P** or **N** call the active route window.

Note 2: Zoom IN or OUT remain possible with fingers

21.2 Preferences

Higher customization level is possible in **Preferences**. Feel free exploring the various options

- Short press on **compass rose**,
- Press on Application settings, then Preferences

Don't be afraid playing with settings. It's always possible restoring factory default setting, without losing your data.

To restore factory default setting

- Short press on **compass rose**,
- Press on Application settings, then Preferences, then General settings, and
- Factory default.



General presentations of Preferences

General settings		
Language	Show info page at start-up	Restore settings
Check data upgrade	Backup settings	Factory default

Data management		
Data location	Rebuild database indexes	Delete data

Units select		
Speed unit	RWY dimension	Pressure unit
Wind speed unit	Visibility unit	Temperature unit
Vertical speed unit	Direction Unit	Date format
Altitude unit	Geographical coordinate unit	VHF decimal point
Distance unit	Unit for RAD/DME strings	Fuel flow

Screen settings		
Full screen mode	Display rate of turn indicator	High displayed DME precision
Screen orientation	Display slip indicator	Threshold for color VSI value
Screen size	Enable compass heading	Rounding VSI value
Show/hide screens	Map orientation	Background brightness
Tapping settings	Maps buttons	Frames brightness
Aircraft symbol	Time format	Render when dirty only
Airspaces displaying	Moving second indicator	Force texture reloading
VFR IFR Settings		
Use VFR and IFR	Use only VFR	Use only IFR

Nav database settings		
Switching NAV1 and NAV2	VFR / IFR filter	Editing World database
Nav database row size	Editing World database	History nav items number

Marker Beacons		
Play sound	Database Marker Beacons	Virtual Marker Beacons

Route		
Max DME for switching	Min distance between 2 WPTs	Nearest APT RAD/DME
Always switching DME	Display coordinate	Nearest VOR RAD/DME

Logbook		
Automatic start/stop	Enable simulator	Update interval
GS for automatic start	Logbook notifying	KML export track format
Altitude for recording	Save flight track	

Virtual radar		
Enable virtual radar	Refresh interval	Max information age

METARs		
--------	--	--

Range for searching METARs	Color scheme	
----------------------------	--------------	--

NOTAMs		
Default source	API Key	Get API key
Automatic delete		

Internal sensors settings		
Ignore unreliable status	Average rate of turn value	Average Heading values
Min GS for GPS track	Enable VS vertical speed calculation	Enable Accelerometer
Min GS for rate of turn	Average vertical speed values	Average Accelerometer values
Altitude correction	Enable Compass sensor	

External data sources		
Bluetooth	WIFI	
o External GPS	o Aeolus Sense	
o Barometric altimeter	o Stratux	

Ranges and distances		
HIS and PFD settings	Altitude bug range	Alarm clock bug range
XT range	Speed bug range	Max nearest distance
Max XAL deflection	DME alert bug range	Range for searching METARs

Terrain settings		
Load default values	Red height AGL (ft.)	Zero Earth elevation blue
Green height AGL (ft.)	Safe height AGL color	Show all obstacles

VHF searching priority		
Nav items, APT, TWPT	TMZs	Other Airspaces
CTRs, ATZs		

Warning and info dialog		
General settings	DME reminder	Alarm clock
GPS signal loss	Airspaces	Object tap information
Routes		

To get more detail on various options, explore the application and go in ***Preferences***.

22 Using your own maps

Fly Is Fun provides topographical maps generated in RMaps SQLite or in MBTiles format. Those free maps are generated from open sources providers, by users wishing to share their maps.

Pilots who need specific or personalized cards can use their own cards. Imported maps must be in MBTiles or RMaps SQLite format.

Applications such as **SAS Planet**, **MOBAC - Mobile Atlas Creator**, **Global Mappers...** make it possible to generate maps in MBTiles or RMaps SQLite format.

22.1 MBTiles or RMaps SQLite maps

MBTiles maps need to be installed in **MBTiles** folder.

RMaps SQLite maps need to be installed in **RMapSQLite** folder.

MBTiles folder and **RMapSQLite** folder are located in **Map** folder that is in the files folder of the **gps.ils.vor** folder

Android -> Data -> gps.ils.vor.glasscockpit -> Maps -> MBTiles

Android -> Data -> gps.ils.vor.glasscockpit -> Maps -> RMapSQLite

Once installed in the appropriate **MBTiles** or **RMapsSQLite** folder, back in **Fly Is Fun** you can select the map.

From the Moving Map screen

- Long press on **moving map screen**, then
- Press on **Map selection** and
- Select the map

22.2 Import Slippy Mercator tiles

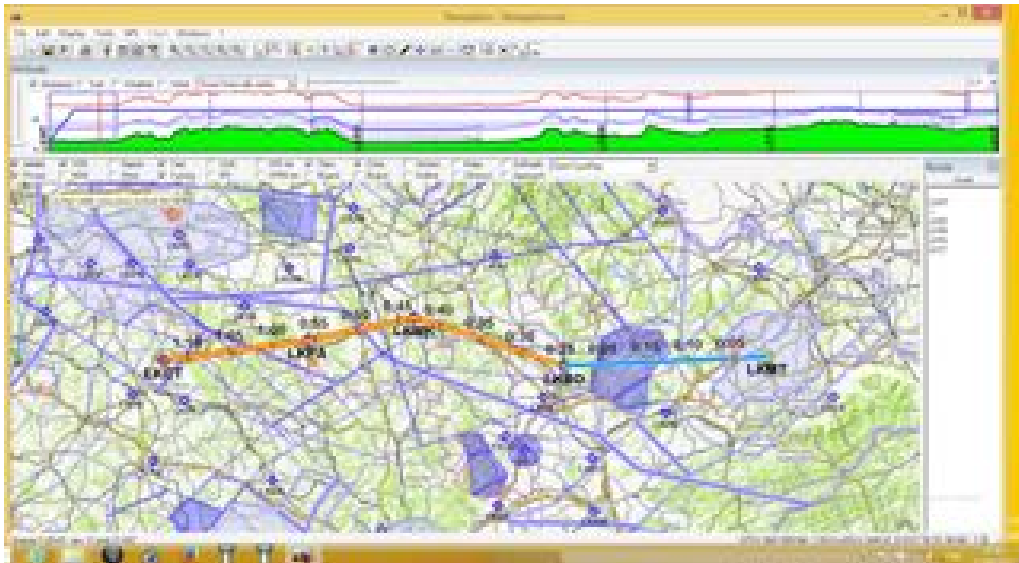
While consulting on-lines maps or satellite image services, some of them are saving, in temporary folders in the PC, tiles in Slippy Mercator format.

Fly Is Fun allows importing those tiles.

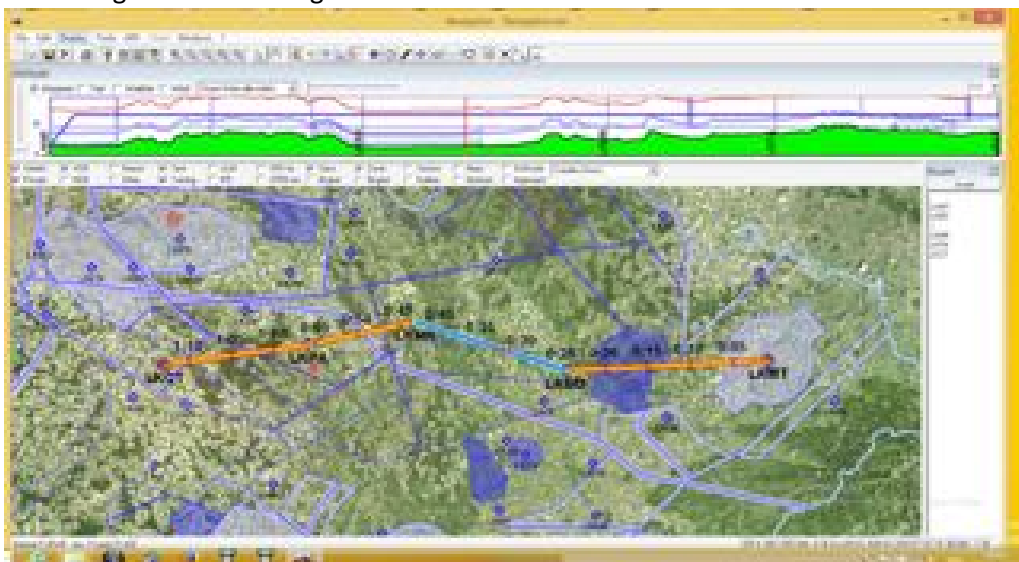
Example with Foufou Navigation from François Fouchet:

During flight preparation, maps and satellite image of online services were used.

- OpenTopoMap used as background:



- **Here** images used as background:

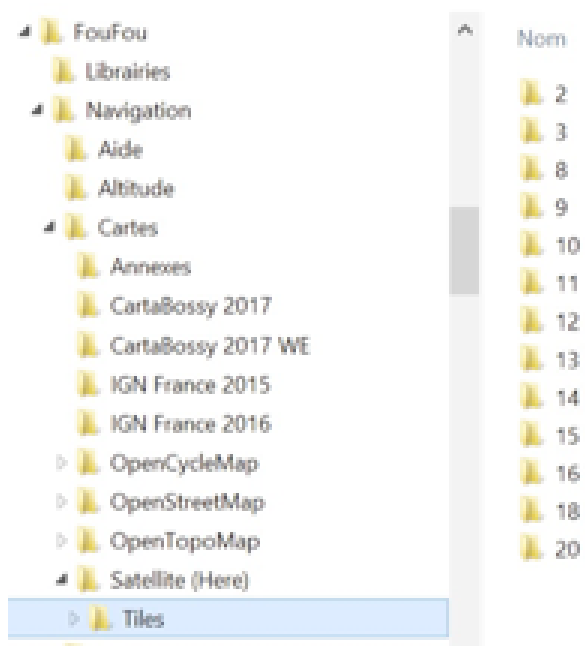


- Zoom IN



Foufou Navigation store the slippy Mercator tiles, on internal folders

Default path C:\ Programs\ Foufou\Navigation\Cartes\Satellite (Here)\Tiles\subfolders



Knowing where tiles are stored, it is possible to copy them in a **Tiles** folder on the Android device.

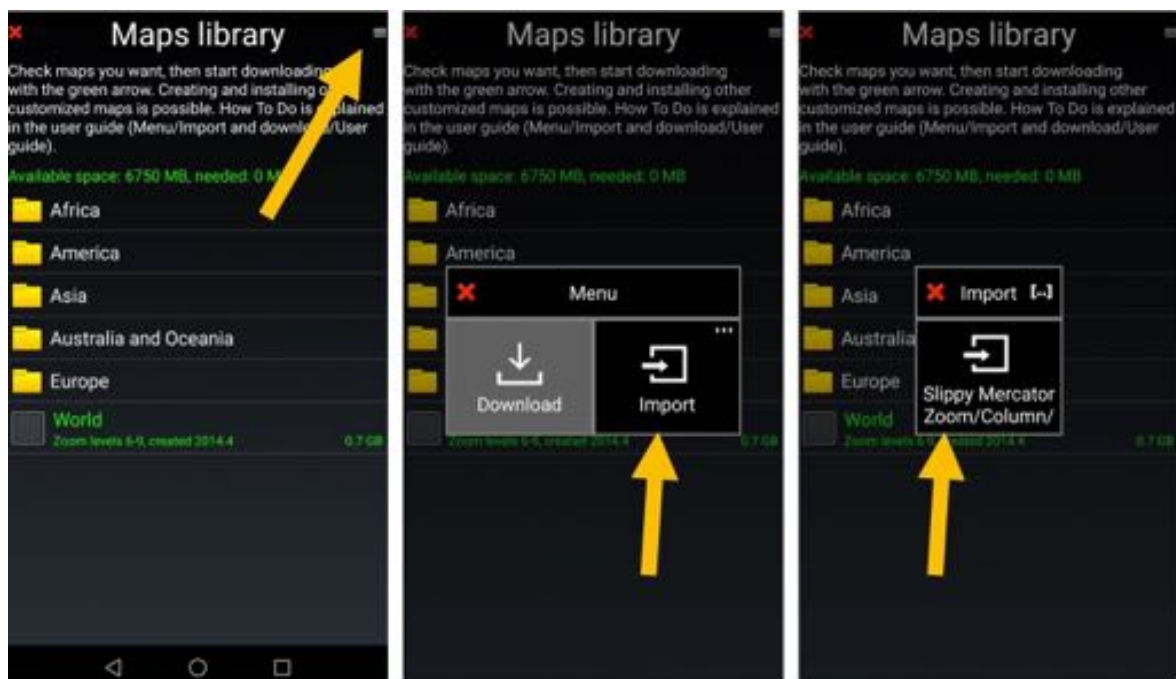
To start import and map generation procedure:

- Short press on **compass rose**, then
- Press on Downloads, then on Topographical map

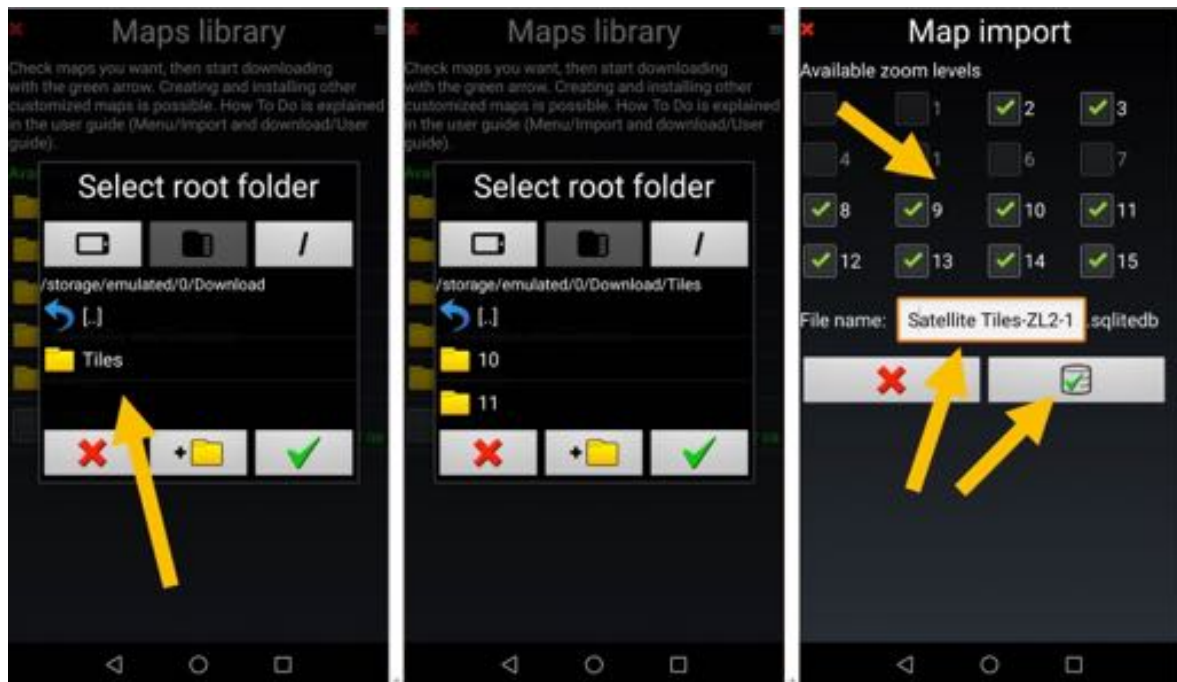


from Maps library

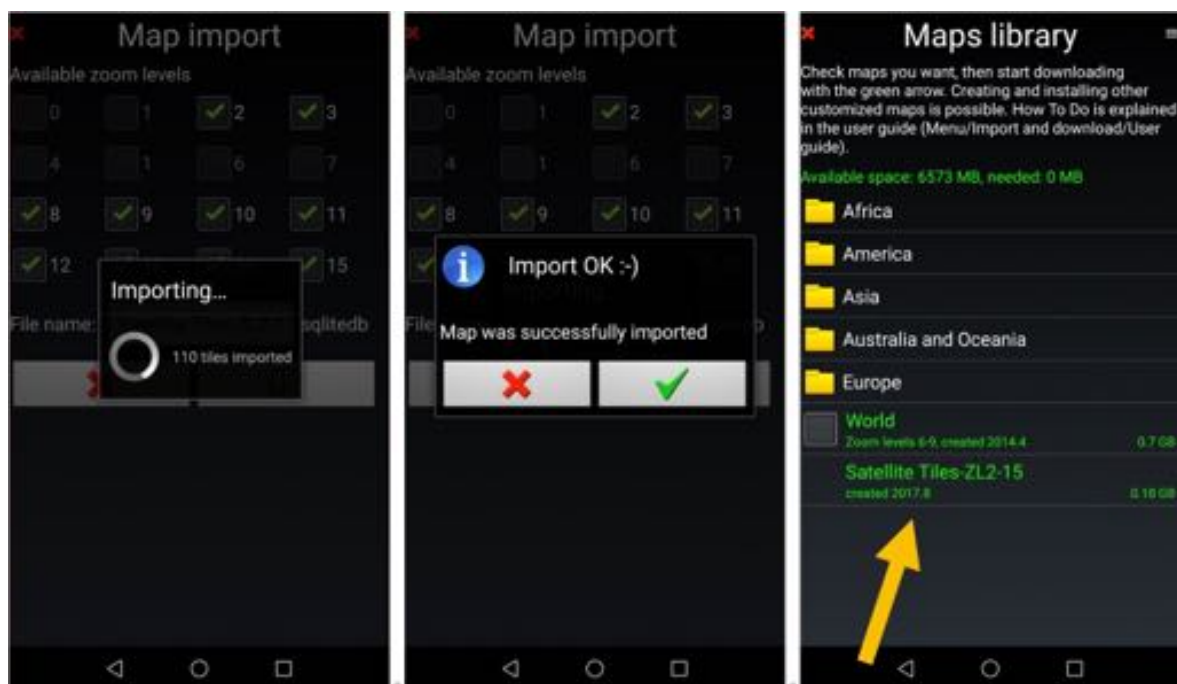
- Press on the **menu button**, then
- Press Import and Import Slippy Mercator Zoom/Column/



- Select tiles to import, zoom level
- Name the file.



- Press on **green tick** start importation process



Once importation completed, the new map is in **Maps library**.

To use the map:

- Long press on **moving map screen**, then
- Press on **Map selection** and
- Select the map

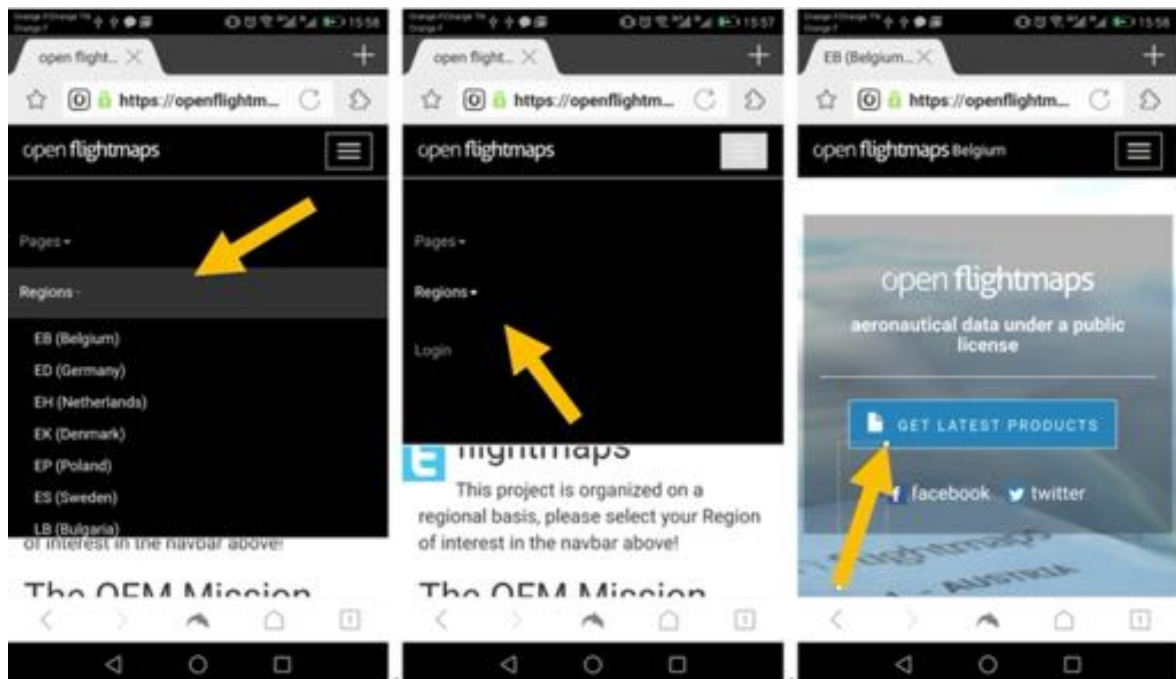
22.3 Open Flight Maps

22.3.1 Collecting data from Open Flight Maps

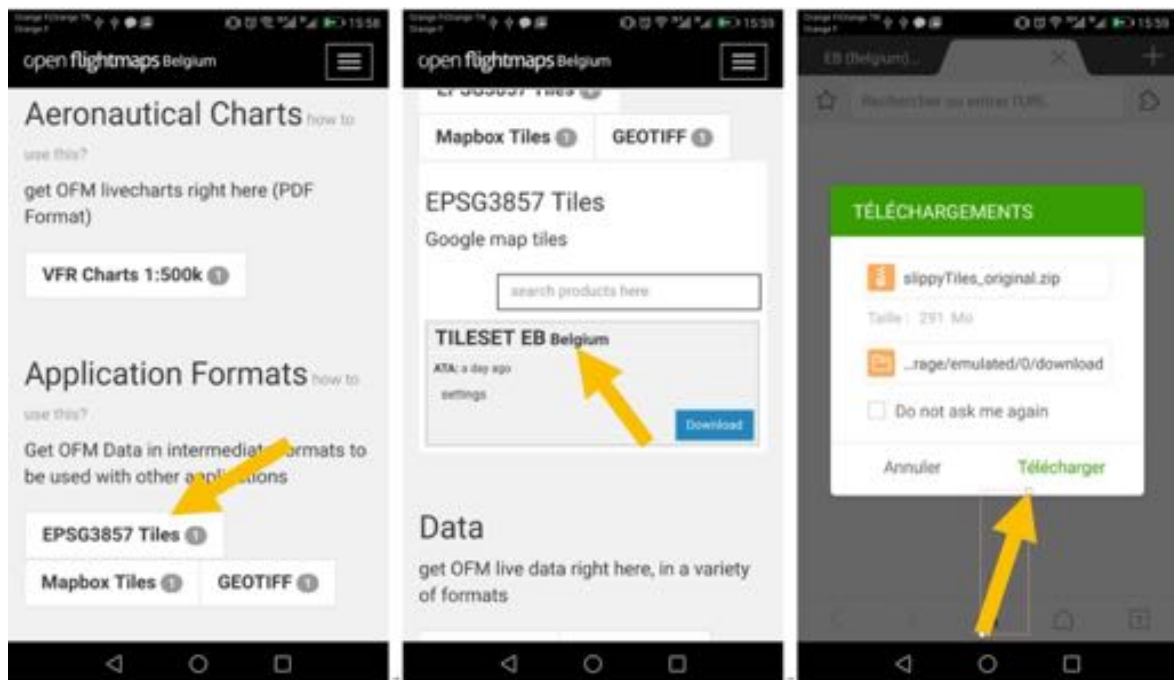
Go to Open Flight Maps web site <https://openflightmaps.org/live/>



- Select region then **Get latest products**.



in Application format select EPSG3857 Tiles and then download.



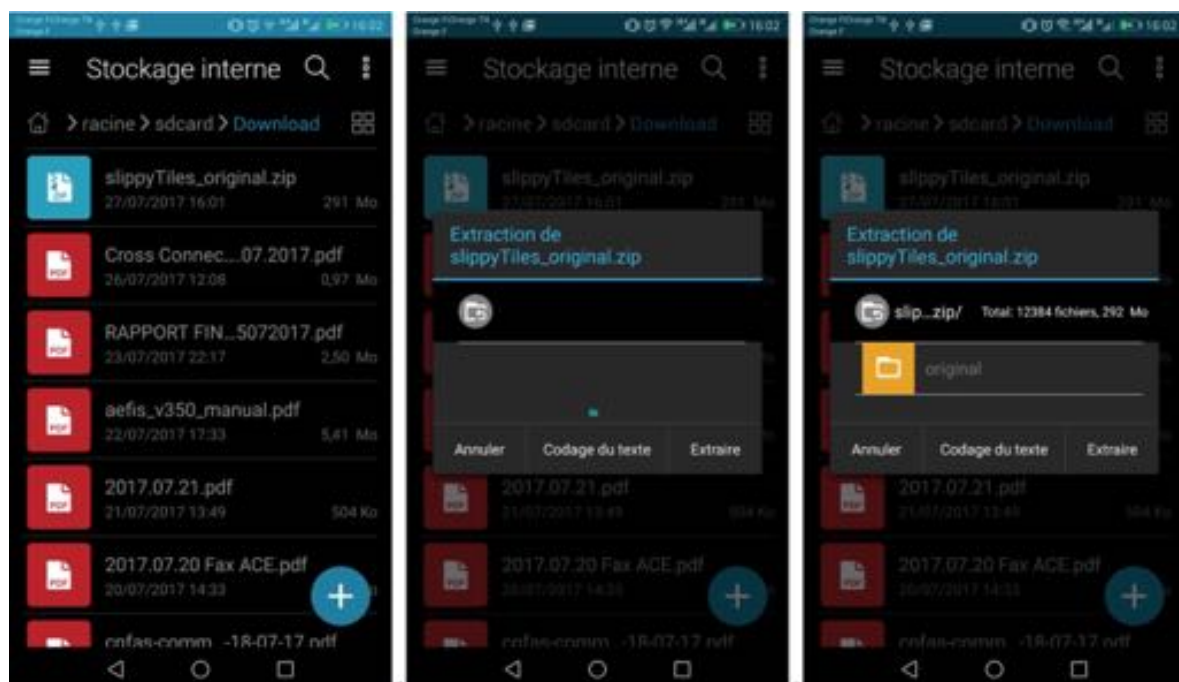
you are downloading on your device a file named **slippyTiles_clipped.zip**.

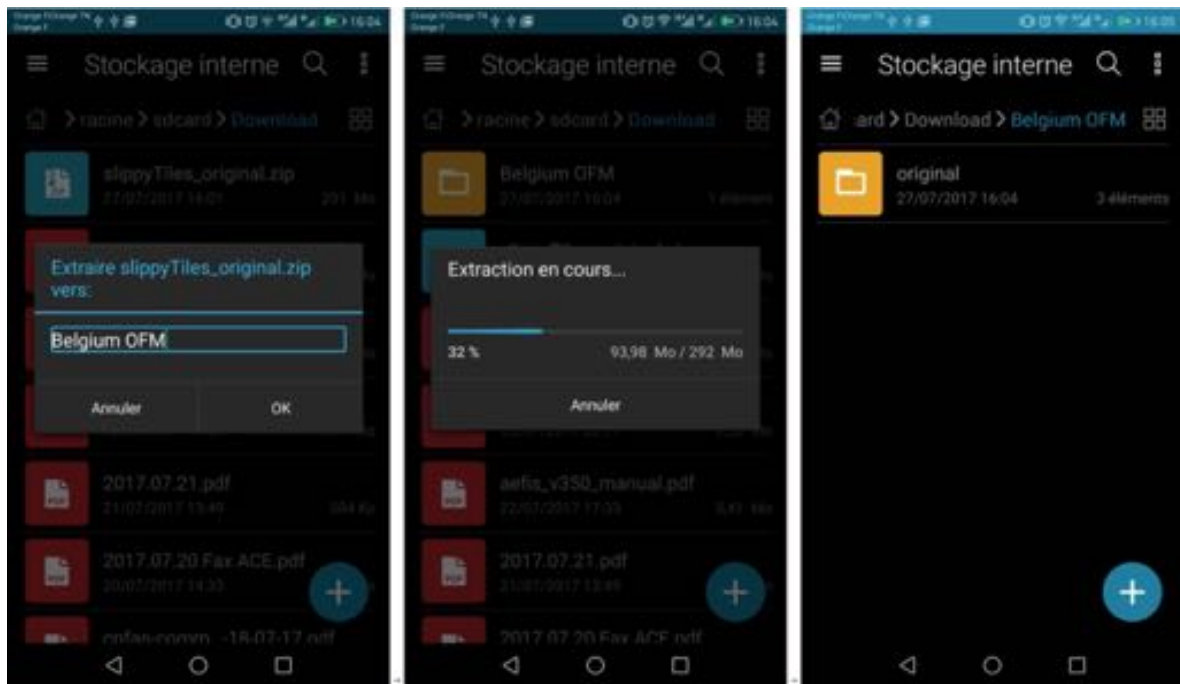
22.3.2 Unzip *slippyTiles_clipped.zip*

You can import and unzip on a PC or directly on the Android device.

If performed on PC, the folder named is **clip**.

If performed on Android device, file name should be named.





Unzipped folder contains 3 subfolders named:

- aero
- base
- merged

Each of this subfolder contains 3 sub subfolders named:

- 256
- 256@2x
- 512

and each of this sub subfolder contains only one folder named **latest**.

Fly Is Fun allows importing slippy Mercator's tiles in 256x256 format. In **latest** folders, we are only interested by data that are in **256** format. 256@2x and 512 folders could be deleted.

22.3.3 Differences between "aero" - "base" and "merge"

aero folder contains aero data in tiles format without map in background
Not interesting for **Fly Is Fun**. You can delete it with its data.

base folder contains only the background map without aero data
It is very convenient to use it with **Fly Is Fun** own data on top

merge folder contains aero data projected on the base map in tiles format

22.3.4 Importing Open Flight Maps tile and using the map

Follow process describe in section **Importing Slippy Mercator tiles**

Tiles to import are in **latest** folder.

Open it, but don't open its subfolders 10 – 11 – 6 – 7 – 8 – 9

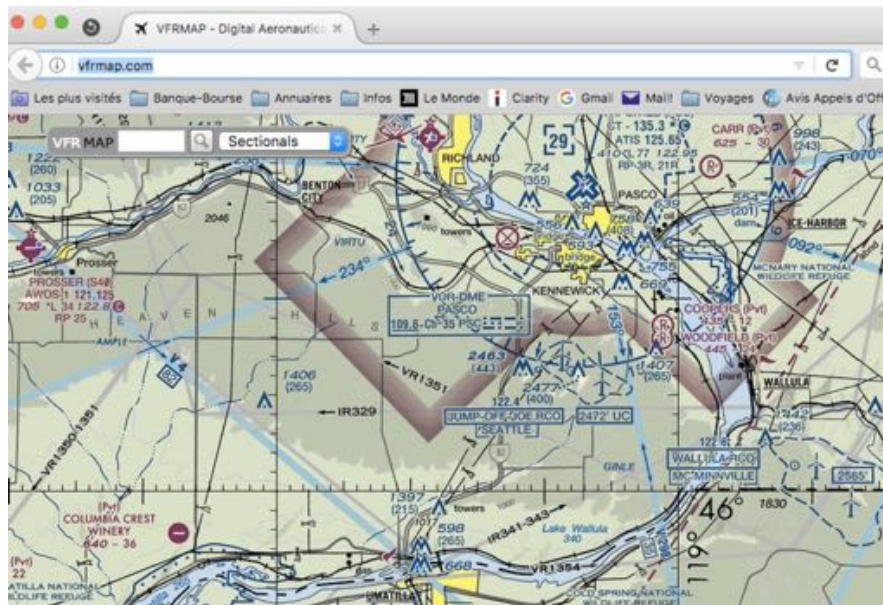
Then follow the procedure described in the previous chapter **Import Slippy Mercator tiles**

22.4 US sectional charts

US Federal Aviation Administration keep updated digital documents including charts that are freely available to pilots. See: https://www.faa.gov/air_traffic/flight_info/aeronav/digital_products/

FAA VFR charts are generated as TIFF georeferenced maps and made available by FAA site as TIFF or as PDF file. See https://www.faa.gov/air_traffic/flight_info/aeronav/digital_products/vfr/

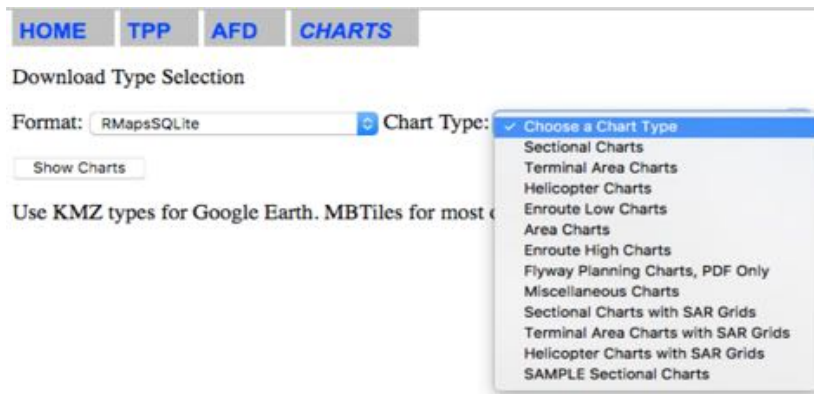
Using VFR web site <http://vfrmap.com/> you can navigate using your web browser



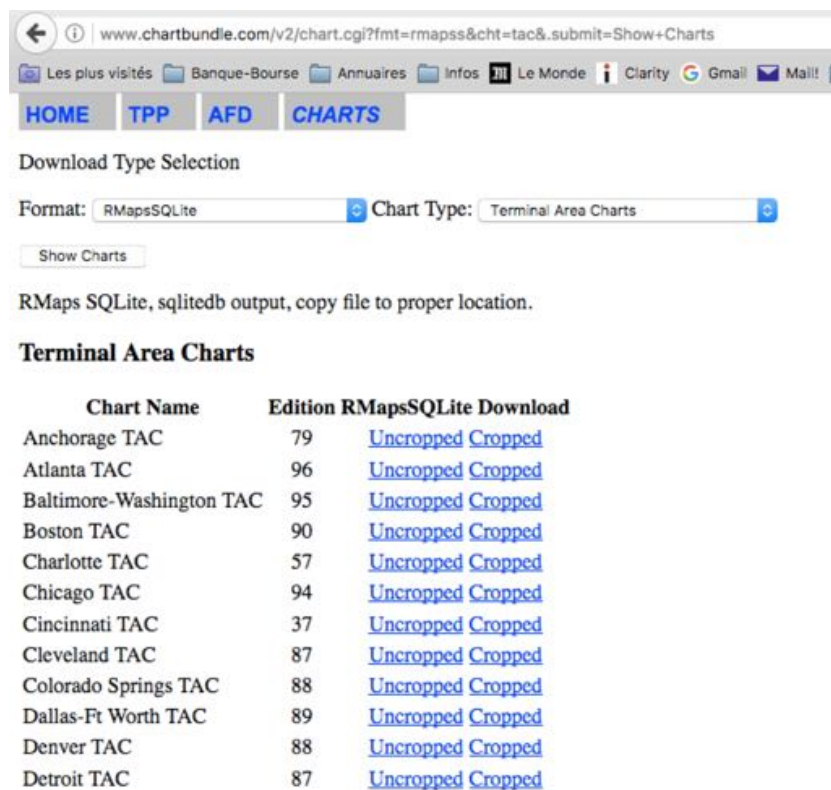
Using ChartBundle.com web site <http://www.chartbundle.com/> you can generate update RMaps SQLite raster charts to be used with **Fly Is Fun**.

Being on ChartBundle.com:

- select **Charts** <http://www.chartbundle.com/charts/>
- scroll down up to Full Chart Download
- Press on **Download full chart** here <http://www.chartbundle.com/v2/chart.cgi>
- There you should select:
 - o Format: RMapsSQLite
 - o Chart type
 - Sectional Charts, Terminal Area Charts, Helicopter Charts, Enroute Low Charts, Area Charts, Enroute High Charts, Sectional Charts with SAR Grids, Terminal Area Charts with SAR Grids, Helicopter Charts with SAR Grids



- Press on **Show Charts** and
- Select chart to download



- ... wait until Chart bundle generate the map
- then download the RMaps SQLite chart

and install it .

To do it refer above to chapter Importing MBTiles or RMaps SQLite maps.

Once installed, to use the map, just select it:

- Long press on **moving map screen**, then
- Press on **Map selection** and
- Select the map



23 Airspaces and patterns

The application displays airspace on the moving map and on terrain screen.



Short press on **airspace border** open an information box with:

- Name
- Abbreviation, class
- Vertical borders
- VHF if available.



To consult the list of imported airspaces

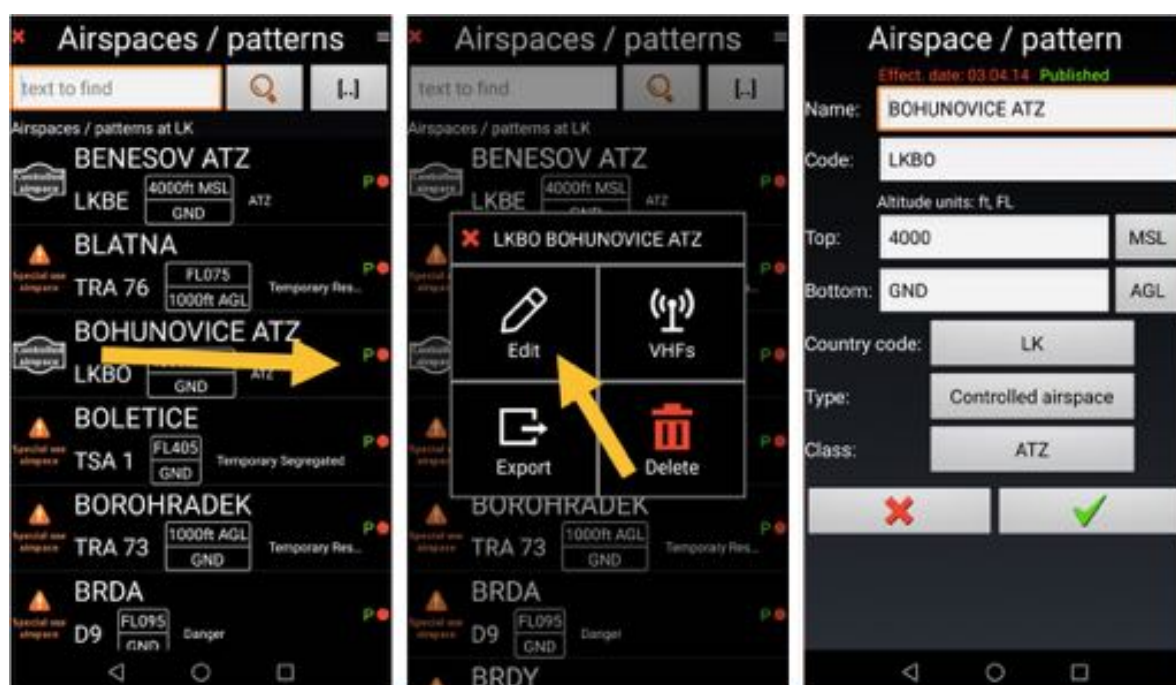
- Short press on **compass rose**, then
- Press on Information, and then on Airspaces and patterns.



Airspaces and patterns library open.

To edit an airspace:

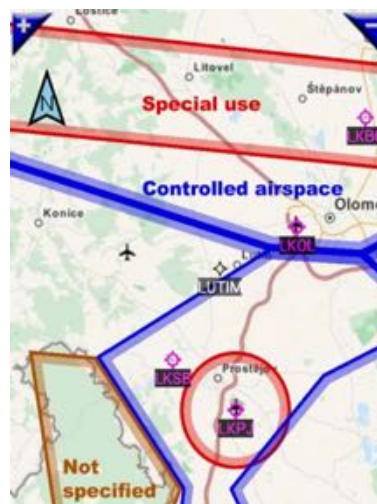
- Swipe from the left to the right on its name, then Edit airspace windows open,
- or
- long press on **airspace name**, then
- Press on **Edit**.



Airspaces Edit mode allows to specify:

- Airspace Name
- Airspace Country code
- Airspace Top altitude and type
- Airspace Bottom altitude and type
- Type:
 - o Not specified
 - o Special use airspace
 - o Controlled airspace
 - o Pattern
 - o Transponder mandatory zone
 - o Radio mandatory zone
 - o Park
- Class
- ...

On the moving map, you see the various colors of the airspaces



Airspace color depend its type:

- **RED:** **Special use** airspace or airspace **class A**
- **BLUE:** Controlled airspace
- **BROWN:** Not specified or ATZ
- **BLACK:** Patterns

Fine tuning is possible via **Preferences**

- Selecting airspaces to display
 - o Short press on compass rose, then Press on Application setting, then Preferences then Screen settings and Airspaces
- Fine tuning Warning
 - o Short press on **compass rose**, then Press on **Application setting**, then on **Preferences**, then on Warning and Info dialog box and Airspaces

23.1 Creating and importing user defined airspaces and patterns

Fly Is Fun allows to import its own airspaces and patterns

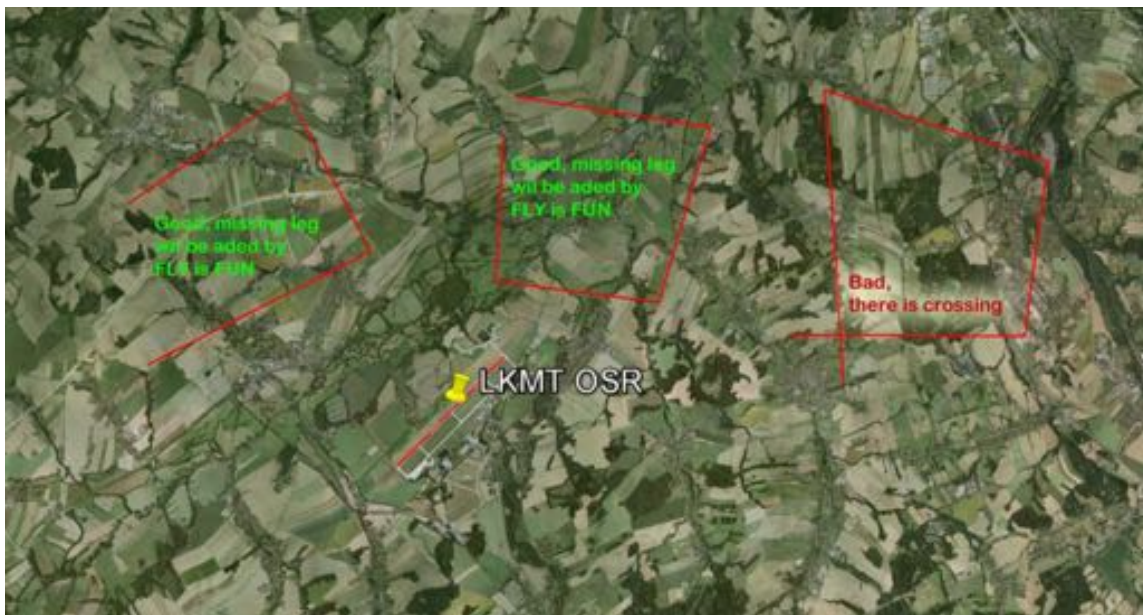
23.1.1 Creating airspaces and patterns with Google Earth

23.1.1.1 Creating airspaces with Google Earth

If you want to create your own airspace, just draw it in Google Earth using the **Path** tool.

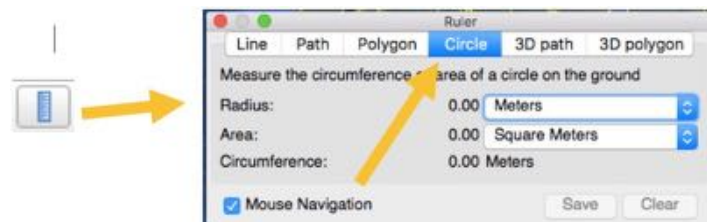


Click at a starting point and then click at a different point and a path will appear between the two clicks. If you click on a third point another path will appear. Through a succession of clicks you will outline the airspace drawing its contour.



Important: Do not cross the lines when creating an airspace.

If you like to create a circular CTR, you can as well use the circle



Created airspace should be exported in KML format (~~not~~ KMZ) and imported in to *Fly Is Fun*. Copy file to your Android device, open airspaces list and select **Import**.

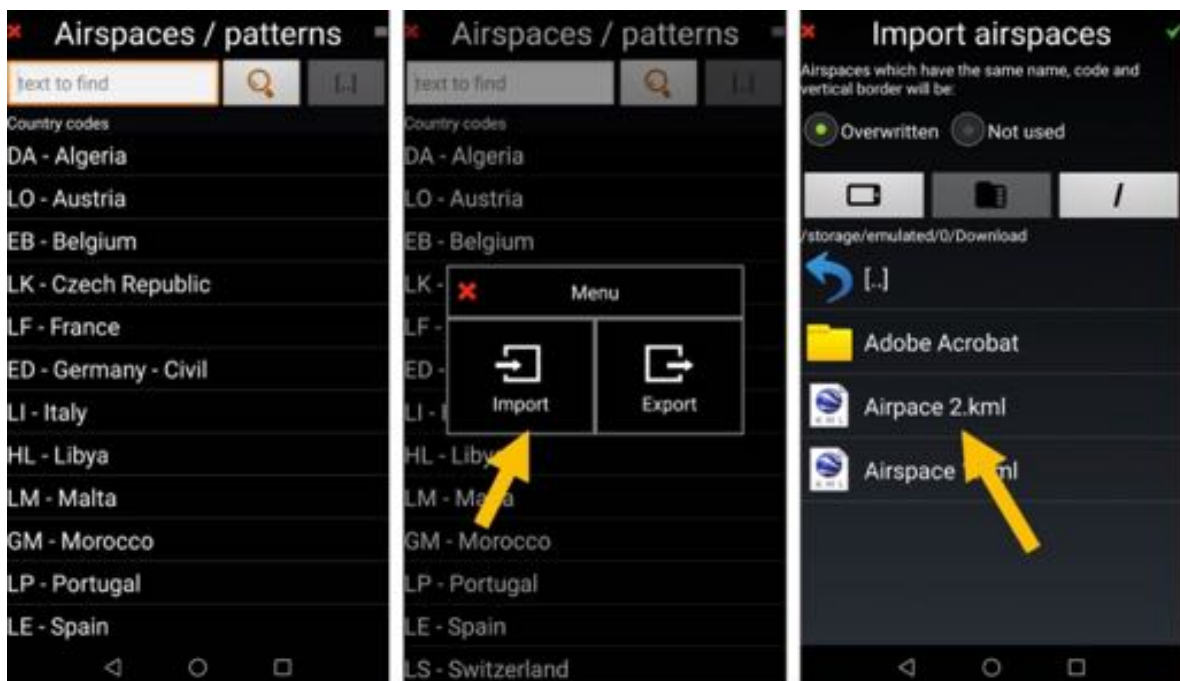
23.1.1.2 Importing airspace in Fly Is Fun

Within the application open **Airspaces / patterns** library, import the airspace and add missing information: elevation, type....

Short press on compass rose, then Press on Information, then Airspaces and patterns,



then on the **menu button** and then on **Import**
Select the file to import



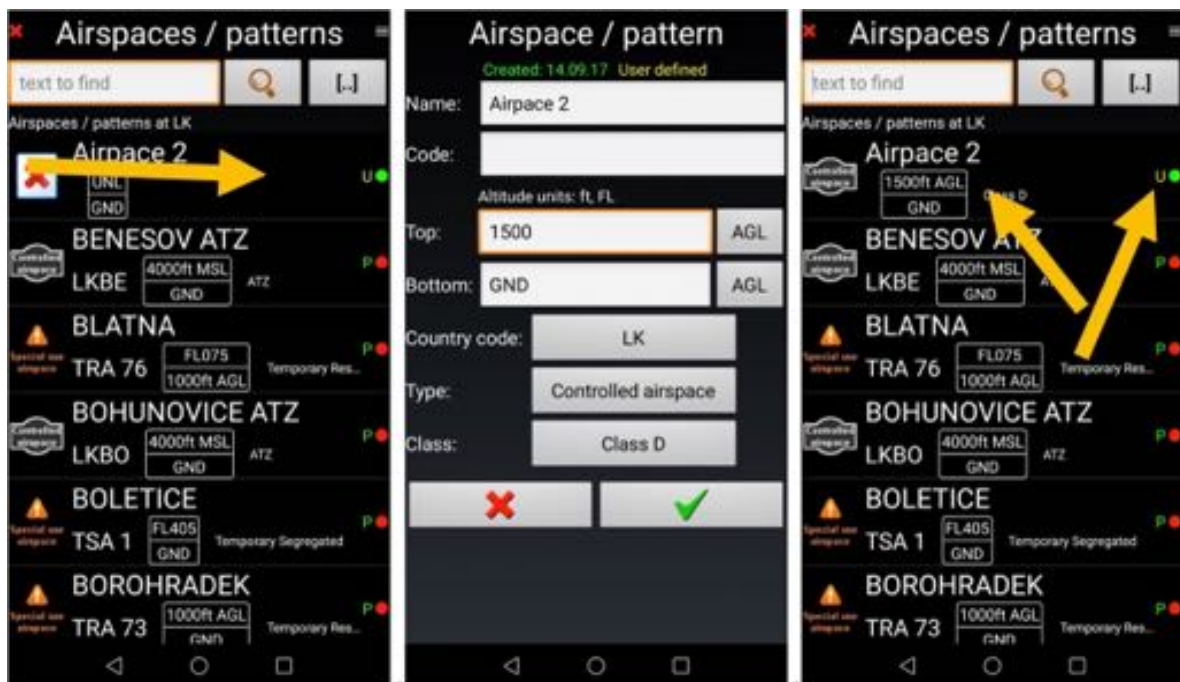
select the country, start the importation.



Imported airspace is in airspace country list.

Swipe from left to right on its name to open edit mode.

Add missing information, elevation, class, type... and validate with Press on **green tick**.



Airspace is ready.

Note: **U** mean crated by user. **P** mean *Fly Is Fun* data

23.1.2 Using OpenAir

Fly Is Fun also enables to import airspaces at **OpenAir** format, so airspaces could be created too using this format.

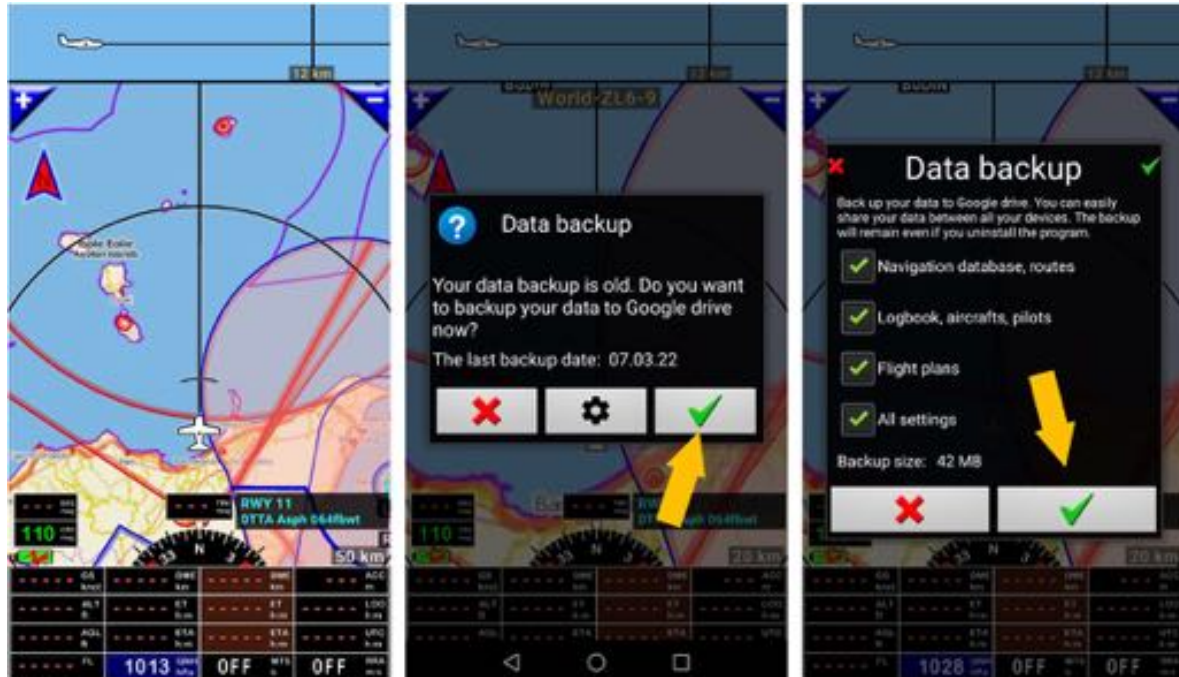
Look here for more information: <http://www.winpilot.com/UsersGuide/UserAirspace.asp>.

24 Backup – Data Back Up and Restore

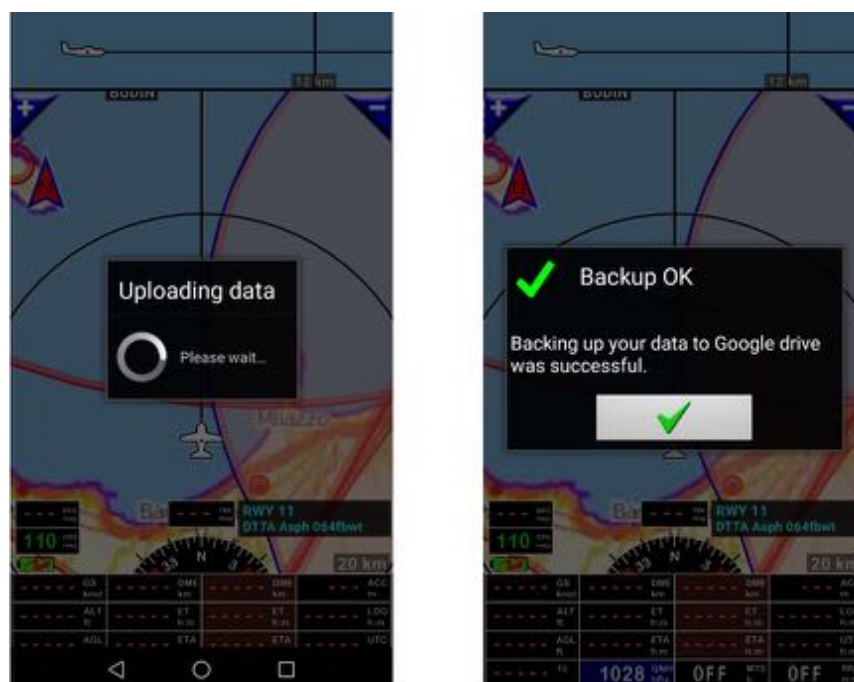
Fly Is Fun allows you to backup your data on your Google Drive, to restore them and to transfer to other Android devices.

24.1 Automatic backup to Google Drive

Regularly, when launching the application, a message inviting you to perform the backup pop-up.



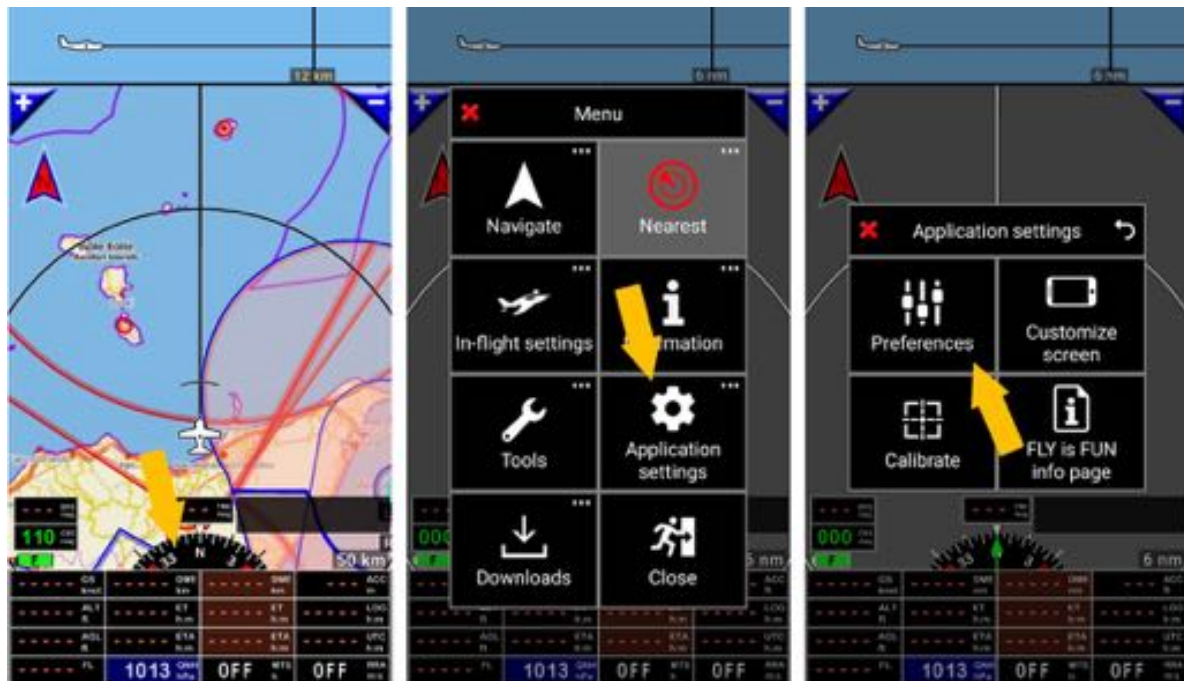
- Press on the **green tick** opens a window allowing you to choose the data to be saved
- Press on the **green tick** initiate the backup on the Google Drive linked to the Google account



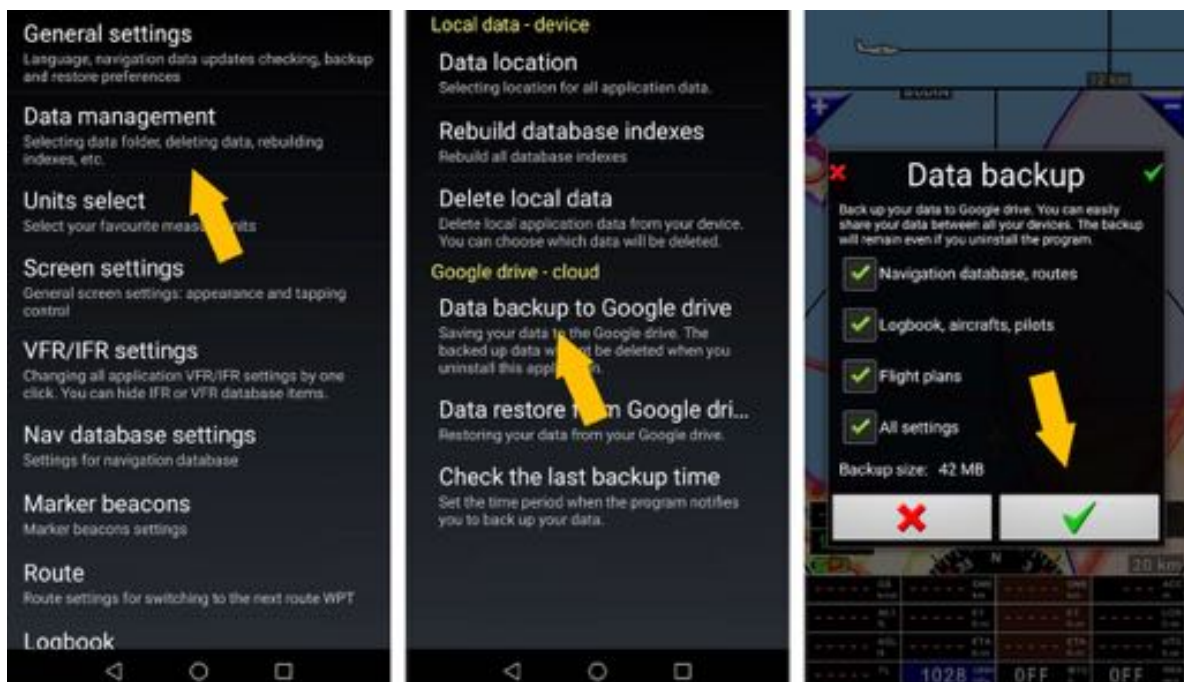
- - A message is displayed when the backup is done.

24.2 Manual backup to Google Drive

You can initiate the backup of your data at any time without waiting for the message



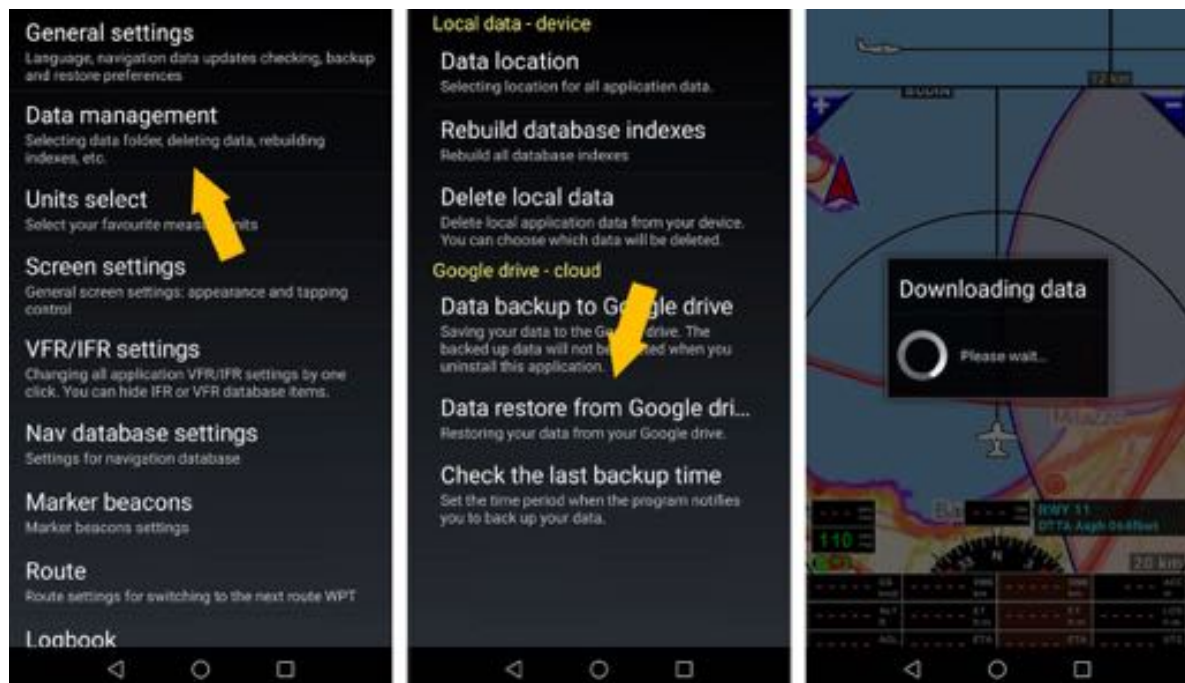
- Press on the compass rose, select Application Settings, select Preferences



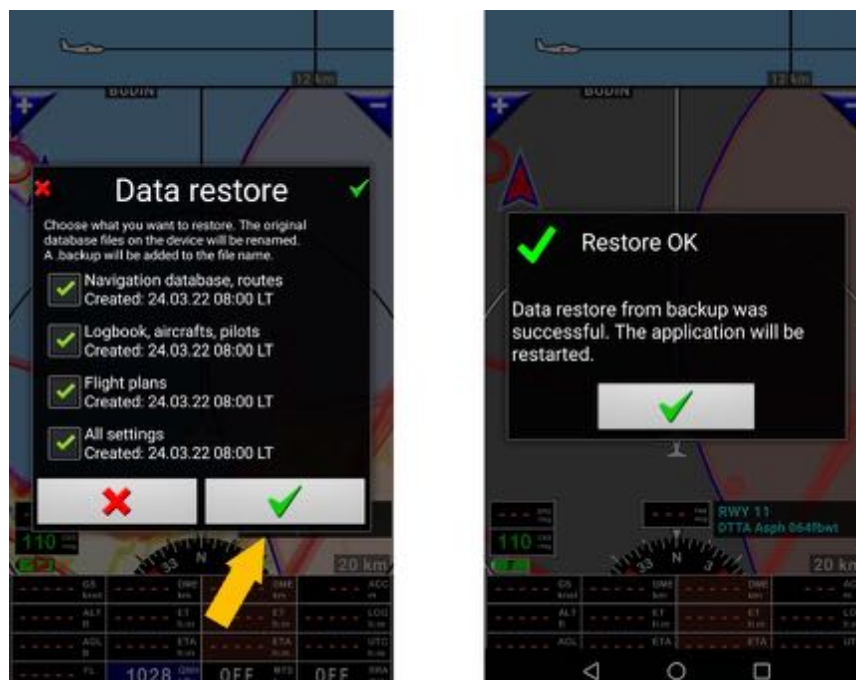
- Select Data Management, then select Data Backup to Google Drive
 - Press on the green tick initiate the backup on the Google Drive linked to the Google account
- A message is displayed when it is finished.

24.3 Data restoration

To restore data



- Select Data Management, then select Data restore from Google Drive
- Press the **green tick** Fly Is Fun searches the data available on the Google Drive



- Select the data to restore then press the **green tick** to launch the restoration

Note 1: to save the data, you must first have configured Google Drive

Note 2: the Restore options facilitate duplication on multiple Android devices

Fly Is Fun

Have nice and safe flights

www.flyisfun.com