

ScanNav Companion Documentation Version 4.0

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Introduction

The Android app "ScanNav Companion" is a simplified version of ScanNav with essential cockpit functions, designed specifically for SnMap raster charts. Only the charts themselves are charged, making the app completely free for ScanNav users who already have SnMap charts installed. The app is not yet available on the Google Play Store; it can be downloaded from the ScanNav website (see the "Installation" section).

Supported Devices and Android Versions

ScanNav Companion 4.0 is compatible with all Android tablets and phones from version 5 (Lollipop) to the latest (16 - Baklava to date) and for all types of processors (arm/intel/mips).

For older Android 4 versions (Ice Cream Sandwich, Kitcat, and Jelly Bean) you can use the previous version of Companion 3.0, knowing that it will not evolve.

The storage space required depends mainly on the mapping (for example, allow approximately 500MB for one of the complete SnMap packs)

Choosing the interface language

The user interface is displayed in the language configured on your Android device. For languages not listed below, the interface will be displayed in French. To change the language, you must change your device's settings.

Some of the translations were done **using Google Translate** to test their accuracy, and there are certainly many errors (including mistranslations). Any feedback on their readability is welcome.

The following languages are currently available:

- **French:** Native version
- **English:** Native manual translation
- **German:** Manual translation (Contribution by Odile Pelletier-Lombard)
- **Spanish / Portuguese / Italian :** automatic translation via Google Translate

Features

The main features are as follows:

- **Map support :** Map management is seamless (automatic loading and linking between maps). This version works exclusively with the latest generation SnMap raster maps. These must be in Mercator projection, perfectly rectified, and free of distortions. It is strongly recommended to use only the SnMap maps from the ScanNav suite, with which the mapping engine is highly developed (see <http://www.scannav.com/FR/PackRaster.php>).
- **GPS positioning** with track saving
- **tracking repeaters** (COG, SOG, BTW, DTW, XTE, ETE, ETA, VMG), and Sounder (DPT) since version 3.0
- **Creating Waypoints and Routes**
- Interactive management of Routes/Waypoints/Tracks in a list with **search function** and **synchronization with the map**
- **Object layer** management allowing for quick showing/hiding of object classes.
- **Import/Export** in GPX format
- Using the **internal GPS** , or a **Wi-Fi NMEA source**
- Ability to transmit NMEA frames from the internal GPS via Wi-Fi.

Important notes on Android access rights

With each new version of Android, restrictions have appeared on access to different directories. The following restrictions apply (some variations may exist depending on the manufacturer):

- To access outside of its private space, Companion must obtain the user's permission, which it is strongly advised to accept (see "application permissions" in the following chapter).
- Without permissions, ScanNav Companion will only be able to access its own application space, located in directories, some of which are invisible to other applications. Furthermore, all maps and personal data in these directories will be erased if Companion is uninstalled.
- Furthermore, even if permissions are granted, an additional restriction applies to write access to external SD cards. Thus, while Companion can read all directories on the SD card, it can only write to its dedicated directory "android/data/com.mlombard.scannav", and this directory is deleted upon uninstallation of the application.

In the file or directory selectors used in various functions (GPX import/export, choosing the base directory for maps, etc.), a list of shortcuts is displayed at the top of the window; they are as follows:

- The "Shared" "ScanNav" directory is located at the root of the internal drive. Access will only be possible if the necessary permissions are granted. Aside from these permission restrictions, no other restrictions apply; data will not be erased upon uninstallation, and other applications have access (if they have obtained the required permissions).
- "Private" Only Companion has access to this directory; it is not visible to other applications and will be deleted upon uninstallation.
- "SD0" This is the directory located on the internal card, specific to the application (android/data/com.mlombard.scannav). Its use is identical to "Shared", except that it will be deleted when Companion is uninstalled.
- "SD1" (and subsequent directories, depending on whether or not one or more external SD cards are present): This is the directory located on the external SD card and specific to the application. It is the only directory that Companion can write to on the card, and it will be deleted when Companion is uninstalled.
- "Downloads": This is the standard Android download directory, usually named "Download", located at the root of the internal storage (with some exceptions depending on the manufacturer). Access will be denied if you have not granted the necessary permissions. This shortcut is not displayed if it is not relevant.

By default, Companion stores its information in "Shared" if permissions are granted. Otherwise, it tries "SD0", and as a last resort, "Private".

Facility

Installing the application

Since the app isn't yet listed on the Google Play Store, you need to allow installation from "Unknown Sources" on your tablet or phone. To do this, go to your Android security settings and check the box labeled "Unknown Sources (Allow installation of non-Market apps)." On recent versions of Android, a window will open prompting you to

go to the settings. Simply follow the instructions to accept the exception.

Download the latest version of the installation package from the following link:

<http://www.scannav.com/Compagnon/SNCompagnon.apk>

and run it on your device to install it.

Downloading and installing are very quick, as no maps are installed. Permissions and map downloads will be requested the first time you launch the application.

APPLICATION PERMISSIONS

Previously requested during installation, permissions are now only granted upon explicit request from the application. Therefore, upon the first launch of Companion, a window will ask you to accept the following permissions, which will be unchecked by default.

Although it may function in a degraded mode if you do not grant them, **it is strongly recommended that you accept them**.

- **Storage** : If this permission is not granted, your data will be stored in the application's dedicated directory and cannot be exported. Furthermore, it will be deleted when the application is uninstalled (see "Important Notes on Android Access Rights" in the introduction).
- **Location** : This permission is required for the use of the internal GPS. You can do without it if you are only using an external NMEA source.
- **Phone** : If this permission is not granted, you may have problems recognizing your license if you reinstall your system.

REQUEST TO DOWNLOAD MAPS

On first launch, or if it doesn't detect any installed maps, ScanNav Companion will prompt you to install some. If you don't install any maps, you'll see a blank screen.

Three license-free maps are offered by default:

- **BASECHARTS**: It is highly recommended to install at least this package, which consists of a basic global coastline. It is very lightweight and installs very quickly.
- **MARINE AREAS**: This is a basic map of the Marine Protected Areas along the French coast. In addition to viewing the protected areas, this package provides slightly more detail than the global outline of the French coastline, allowing you to test the software. It is also very lightweight and easy to install.
- **DEMONY**: This is a demo pack of royalty-free maps covering the New York area. It will allow you to further test the software with detailed maps. Please note that these maps are not up-to-date and should not be used for navigation.

See chapter "3 Card Installation" below for the procedure.

Activating the card license

Installing additional cards requires prior activation of your license. You must be connected to the internet at that time.

- Launch the "ScanNav Companion" application by clicking on the icon .
- Click on the extension menu, and select the "**License Activation**" entry. The extension menu is displayed by clicking the **button**  **in the bottom right corner**.
- In the form, indicate your Names/Surname/Email, and possibly address, as well as the product code that was provided to you when you placed your order.
- Then click the "Submit" button, and wait a few moments until the result is

displayed.

Map installation

Before installing the cards, we recommend checking the " **Home Directory** " setting in your system configuration, described at the beginning of the " **CONFIGURATION** " section below. The cards will be installed in this directory, and you should define its location before installing the cards if the default settings are not suitable.

By default, the chosen directory will be the shared directory (which will persist across multiple installations), or, if you have not granted permission (see above), the private directory for Companion (which will be deleted upon uninstallation of the software).

The first maps to install are the global coastline contour maps (BASECHARTS, see above)

If you own maps from the SnMap packs, **be sure to activate the license (see previous chapter) before installing them** . The procedure is the same for demo maps and packs you have purchased. We recommend using the standard procedure, which downloads and installs the maps in one go.

NOTES ON THE STRUCTURE OF LIBRARIES

Each library corresponds to a subdirectory of the base directory, named according to the identifier of the corresponding pack.

In versions 2.9 and earlier, maps could be installed directly in the root directory of the maps folder if the user hadn't created a dedicated folder. This is no longer possible to clarify library management. If Companion detects maps in the root directory, it will automatically migrate them to a library named "Migrated," which can be enabled/disabled like other libraries. To avoid duplicates in different directories, we recommend reinstalling the packs using the standard method, and once the checks are complete, uninstalling the "Migrated" pack.

STANDARD PROCEDURE

This method is the simplest. The maps are downloaded one by one, and installed immediately after each download is complete.

1 – Installation : In ScanNav Companion, select " **Maps** " and then " **Download and Install...** " from the extension menu (button in the bottom right corner) to open the map installation management window. Note: This window appears automatically when the application starts if no maps are present in the library (see "1-Installing the application" above).

When you first open this window, a message will appear indicating that it is downloading the list of cards in your subscription. This message should disappear on its own after a few seconds.

The list of available packs then appears, with each entry displaying the pack ID and title. Clicking on an entry displays the pack details, including legal information, the number of cards in the pack, its size, and an " **Install** " button.

⇒ Click this button to start the download/installation.

A progress bar then appears to indicate the progress status, including the number of cards in the queue, the number of cards whose installation is complete, and possibly the number of cards with errors, then disappears when the installation is complete.

The installation time will vary depending on the number of maps in the pack and your internet connection speed. During installation, you can return to the Companion app's main screen; the maps will then be displayed as they are installed. You can return to the

installation screen at any time to check the progress.

If the installation stops for any reason (for example, if the application closes, your tablet or phone shuts down, or your internet connection is lost, etc.), simply click the "Install" button again. The download/installation will resume where it left off, without re-downloading the already installed maps. Similarly, you can restart the installation later to check for updates. No maps will be downloaded if they are already up-to-date with your license.

If installation errors are reported, check that you still have available space on your device, that your connection is active, and that your license is up to date (see chapter 2 "Activating the card license" above), then try again.

2 – Uninstallation : To uninstall a pack, simply click the "Uninstall" button for the corresponding pack. This button will be absent if no map is installed for that pack.

Please note: older versions of the packs are no longer available for download after one year. To reinstall them after this period, you will need to purchase an update or install them from a personal backup.

PROCEDURE WITH PRE-DOWNLOADED PACK

With this method, you must download (or copy from your computer) the relevant package(s) in Zip format. The required space is therefore twice the size of the package (once for the installation package, and once for the installed maps).

Important : The installation source must be a map pack (.zip extension), not individual maps (.snmap extension). To install individual maps (.snmap), follow the manual procedure described below.

Open the map installation window (see "standard procedure" above), then click the menu button  in the top right corner , and select the " **Install a previously downloaded pack** " option

- A file selector will open, allowing you to choose the package (zip file) to install. Navigate to the location where you downloaded the package, then select the file corresponding to that package, and confirm by pressing the "Select" button.
- A new window will open to confirm the destination library name. We recommend keeping the suggested name, which is the default name of the selected installation file. However, you can choose a different destination from the drop-down list of existing entries, and also create new entries using the " **New** " button.

Once you have made your selection, click " **Install** ." The process will begin, and a progress bar will appear at the bottom of the screen until it is complete. Once the installation is finished, a window will display the installation results, and the maps will be loaded on the screen (*). The installation is not interrupted; you can continue working while it is in progress.

The entry will then appear in the list of installed packages under the chosen name and with the label "Custom Pack". To **uninstall it** , follow the same procedure as for the standard procedure.

MANUAL PROCEDURE

Warning : This manual procedure, used in previous versions, is obsolete since Beta version 2.5 and is therefore indicated in gray. It can still be used for troubleshooting purposes **only by experienced technicians** who understand the directory structure. Certain restrictions related to changes in the Android permissions system must also be taken into account.

You must copy the maps from your PC version of ScanNav to the SD card (physical or

virtual) of your Android device. This can be done either from your PC by inserting the physical SD card into a reader on your PC, or via USB connection; or via Wi-Fi from your Android device, after having previously shared the directory(ies) on your PC (in this last case, we recommend using ES File Explorer, available for free on the Play Store, see here: <https://play.google.com/store/apps/details?id=com.estrongs.android.pop>). The main map directory can be installed wherever you want, but it is strongly recommended to use the default location as described below. Subdirectories of the main directory were mandatory up to Beta version 2.4. From Beta version 2.5 onwards, they are no longer mandatory, but it is advisable to retain the naming recommendations.

- At the root of the SD card (path /sdcard or /mnt/sdcard or other depending on the case), create a directory "ScanNav".
- In this ScanNav directory, create a subdirectory called "Charts"
- In this "ScanNav/Charts" directory:
 - Copy the map "Europe.snmap" from your PC in the ScanNav installation directory (by default "C:\Program Files (x86)\Marc Lombard\ScanNav\DemoCharts\Europe.snmap") to the "/sdcard/ScanNav/Charts" directory on Android, in order to have the general map.
 - Create subdirectories corresponding to the SHOM chart packs you own. Up to Beta version 2.4, directories had to have one of the following names, depending on the chart(s) you own. Since Beta version 2.5, these names are flexible, so the following naming convention is now only a recommendation (you can now create as many subdirectories as you like):
 - "Sleeve": SHOM Sleeve pack
 - "Atlantic": SHOM Atlantic pack
 - "Mediterranean": SHOM Mediterranean pack
 - "UKHO-GB": UKHO United Kingdom + Ireland pack
 - "UKHO-PTSD": UKHO Spain + Portugal pack
 - Copy the SnMap maps from the packs from your PC to these directories depending on the pack.
 - You can copy the charts to the "Charts" home directory, but in this case they will always be taken into account, regardless of the library selected in the preferences (see below).

Other menus related to maps

The "Maps" menu entry also includes other options:

- **" Active Map Library "** allows you to enable/disable map packs without uninstalling them. Only packs installed in the home directory are offered.
- **" Frames "** allows you to display a red frame around each available map, according to the same principle as in ScanNav, in order to graphically check the list of maps present.
- **" Map rotation "** allows the user to rotate the map with two fingers, in conjunction with zooming. Uncheck this box to return to a "North at the top" view (default).

Configuration

Click on the extension menu, and choose the "Preferences" entry.

Under the heading " CARD LIBRARY ":

- The "**Home Directory**" entry corresponds to the home directory where the maps will be installed. To change it, click on the entry and modify the directory using the directory selector that appears.
- **Map Library** " entry has the same function as the "Maps" ⇒ "Map Libraries" menu.
- If you installed the maps manually before activating the license, the map pack(s) you configured above will have been scanned, with no results because no active maps will have been detected. You must then instruct Companion to re-scan the map directory(ies) to detect them. To do this, click on "**reload maps**". This operation is necessary whenever you manually change the contents of the map directories (adding or deleting maps), but is normally unnecessary on standard installations, unless otherwise specified by support.
- "**Scale Priority**" allows you to adjust which maps are displayed based on the zoom level, thus adapting the display to the screen resolution and the user's vision. When the cursor is in the center, the software will select maps whose scale matches the zoom level. Moving the cursor to the left will select smaller scales (with less detail) which will be enlarged on the screen (resulting in larger text), and moving it to the right will select larger scales (with more detail, but smaller, less legible text).

Under the heading " LOCATION ":

You can be located with

- the internal GPS.
- via an external NMEA source using Wi-Fi
- or by triangulating the GSM and Wifi network (approximate positioning)

Once the initial tests have been carried out, **it is recommended to uncheck "location via Wi-Fi network"** and to **keep only one positioning source: either** the internal GPS, **or** the NMEA Wifi source.

Configuring the NMEA Wi-Fi interface: In addition to selecting the "Location via external NMEA source" option, you must configure the Wi-Fi communication port on which the information will be received. You must first consult the documentation for the sending device to determine the protocol settings, port number, and IP address. To connect to ScanNav on a PC (version 14.1 and later), refer to the documentation in the ScanNav release notes.

In this version, the configuration is simplistic and consists of a string to be entered, which must be entered meticulously, according to the following syntax: "**XXX** " "**numport** "{"**:IPaddress** "}, or:

- "XXX": Protocol used: must be **UDP** or **TCP**
- "numport": Port number (e.g., 5000)
- ":IPaddress": Remote IP address: Required in TCP, Optional in UDP. In UDP, if the address is not specified, Companion listens to all devices transmitting on the port number specified in numport, regardless of their IP address. Otherwise, only frames originating from the specified IP address are accepted.

Examples (to be entered without the quotation marks):

- "UDP3555": accepts phrases from all network transmitters that transmit on port 3555 in UDP mode, regardless of their IPs.

- "UDP3555:192.168.1.4": Same, except that only frames from IP address 192.168.1.4 are accepted.
- "TCP5000:192.168.1.4": connects in point-to-point TCP mode to the IP address 192.168.1.4 on port 5000
- "TCP5000:monordi": connects in TCP point-to-point mode to the IP address of the computer "monordi" on port 5000

To connect to the PC version of ScanNav, use the UDP protocol (with or without IP).

"Centering the boat" When this box is checked, the boat remains centered on the map. This option is also available directly in the expansion menu.

"Interpolation distance" This parameter indicates the minimum displacement below which no point will be stored.

Under the heading " NMEA WIFI OUTPUT ":

Companion allows you to broadcast the position given by the internal GPS on the Wifi network, and thus transform a phone or tablet into an external GPS, which can be used by ScanNav on PC (from version 14.1) or Companion on another Android device without internal GPS.

The configuration consists solely of defining the UDP or TCP communication port, following the same principle as described in the previous chapter (see **Configuring the NMEA Wifi interface** above). For use with ScanNav PC or Companion, use the UDP protocol.

The NMEA output is activated/deactivated via the **"NMEA Wifi Output" entry in the general extension menu**.

Important note : When Companion is running in the background, the transmission of NMEA data frames is not interrupted unless Android decides to stop the background task. Note a difference between version 4.0 of Companion and previous versions: The latest versions of Android systematically stopped GPS listening as soon as Companion went into the background. This is no longer the case starting with version 4.0.

It is therefore important to disable the NMEA output if you no longer need it, before switching to another application, in order to save battery (use of Wifi and GPS).

Under the heading " VISUALIZATION ":

"Keep screen on" Prevents the screen from going into sleep mode when ScanNav Companion is displaying the map screen. Note that sleep mode resumes its normal operation when you switch screens.

"Lubil Line" Displays a lubil line in front of the boat. Clicking this option opens a window allowing you to select various parameters (line color and thickness, length in nautical miles, graduation in time or distance). The lubil line is only displayed when the GPS is active and valid data is being received.

" Interactive rotation " allows the user to rotate the map with two fingers, in conjunction with zooming. This option is also available directly in the "Maps" extension submenu. Uncheck this box to return to a "North at the top" view (default).

" Map frame visualization " displays a red border around each available map, similar to the principle in ScanNav. This option is also available directly in the "Maps" submenu of the extension.

" Visualization of map edges " allows you to avoid hiding the edges of the maps or the map's title blocks/general information, following the same principle as "navigable area" in

ScanNav.

" Waypoint Symbol Size " Allows you to increase or decrease the size of the symbols to best adapt their visibility to your device's resolution and your preferences. Note: Waypoint size is automatically adjusted to screen resolution starting with version 3.0. Users of previous versions who increased this value may need to reset it to 100%.

Under the heading " REPETITORS ":

Each repeater can be individually enabled/disabled. They will only appear on the screen if they are checked, and if:

- For COG, SOG, and DPT: GPS must be activated
- For all others (BTW/DTW/XTE/ETE/ETA/VMG) : GPS must be activated and a destination waypoint must be defined
- Ensure that the "Active Repeaters" entry is checked in the extension menu.
- The DPT repeater (sonar) requires connecting an external Nmea source.

The size of the repeaters can be set as a percentage of the base size, making them more or less visible and allowing them all to fit on the screen depending on your device and its orientation. If, due to their size and number, all the repeaters don't fit within the screen width, simply swipe them left or right.

List of repeaters:

- COG (Course Over Ground): Instantaneous ground course (heading)
- SOG (Speed Over Ground): Instantaneous ground speed (expressed in knots)
- VMG (Velocity Made Good): Effective approach speed to the waypoint
- BTW (Bearing To Waypoint): Heading to follow to reach the destination waypoint
- DTW (Distance To Waypoint): Distance to the destination waypoint (expressed in Nautical Miles)
- XTE (Cross Track Error): Course correction to reach the destination waypoint:
 - If preceded by "L" (Left): correction towards Port
 - If preceded by "R" (Right): correction to Starboard
- ETE (Estimated Time Enroute): Estimated time to reach the destination waypoint (based on current conditions)
- ETA (Estimated Time of Arrival): Estimated time of arrival at the destination waypoint (based on current conditions)
- DPT (Depth): Displays the probe (new in 3.0)
- Other instruments will be available in later versions.

"Advanced" chapter :

Automatic backup : Allows you to set the frequency of automatic backups in minutes. Enter a value of 0 to disable it.

Notes:

- Automatic saving happens in the background, and should not normally impact performance.
- If you disable automatic saving, it will still be performed when the application goes to sleep (goes into the background, etc.)

Automatic return to the selection tool : Starting with version 4.0, to prevent accidental changes to routes and waypoints, the selected tool automatically reverts to the default selection tool after a period of inactivity. You can define the inactivity period here in seconds, up to 5 minutes. To disable this feature, set the value to 0.

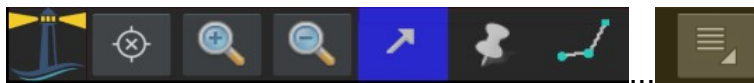
Secure Connections : Due to security updates, older versions of Android have issues accessing the HTTPS protocol, which is used for license validation and map downloads. This option is usually set to the correct value based on your Android version, but you can enable or disable it.

It is recommended to leave the other entries as they are and not modify them. Further information will be provided in subsequent versions if necessary.

Use

Once the map library is configured, its use should be very intuitive.

Toolbar:



The toolbar shown above appears at the bottom of the screen (see later in this document for the use of each button). On low-resolution phones in portrait mode, not all buttons may be visible. In this case, simply press in the center of the bar and drag it left or right without lifting your finger to reveal the missing buttons.

Map visualization:

To scroll through the map on the screen, simply swipe your finger across it. To zoom, use two fingers: spread them apart to zoom in and pinch them together to zoom out. The maps will load automatically as you move and zoom.

It is also possible to zoom in/out using the buttons  and  toolbar, which can be easier when using one hand on a phone, and allows operation on devices without multi-touch.

Screen rotation : On most tablets/phones, you can rotate the screen to display in portrait or landscape mode.

It is also possible to control the rotation more precisely manually by checking the "Map Rotation" option in the "Maps" extension submenu, or in the preferences. Rotation is then performed interactively with two fingers. To return to a "North Up" orientation, uncheck the "Map Rotation" box.

Activating GPS:

If you are using the internal GPS, first make sure that GPS is enabled in your Android system settings (location settings), and that you have accepted location permissions.

If you are using an external Wifi source, make sure that the wifi connection is active and properly configured.

Next, click the button . A window will ask if you want to activate the track (see below). After confirmation, the boat will appear at your location, and the center of the button will be replaced by a filled circle . If you move, the track (if active) will be displayed. Active repeaters will also be shown.

Click the same button again to stop GPS listening: The GPS button returns to its initial state, and the repeaters disappear if they were active.

The GPS may take some time to receive valid information. Initially, the map is positioned

at the last known GPS location (which may be quite old).

The symbol representing the boat on the map will be displayed in different colors, depending on the GPS reception status:

- In Green: Active GPS reception.
- In Grey: Persistent position not updated (listening disabled, or no GPS reception yet)
- In red: GPS not receiving a signal, or disabled.
- In Yellow: Position received by GSM/Wifi triangulation.

If you have any doubts about the signal strength, check the "Show received positions" box in the "DEBUG" section of the preferences. Text notifications will then appear for each received GPS or Wi-Fi point. You can also view GPS status changes or information about the satellites used for location tracking (also in the form of text notifications).

Important: It is recommended to disable location by GSM/WiFi triangulation and keep only internal or external GPS (see above in preferences).

The GPS activation window asks you the question "Do you want to continue the old track?" and offers you 3 choices:

- "No track": no track will be recorded or displayed, only the boat will be positioned on the map
- "New Track": A new track will be created
- "Yes": The previous track will be used. However, this choice is not valid on the first launch of ScanNav Companion.
- If you do not confirm one of these 3 choices (click outside the window, or press the Android back button), the GPS activation is cancelled.

All intermediate points are retained in the track. Its display (visibility, line color and thickness, class) can be controlled in the track properties. See the "Route Properties" chapter for a description of these attributes. However, the list of displayed points differs from that of routes: For tracks, the points display the date, position, route, and speed over ground.

Note one difference between **version 4.0** of Companion and previous versions: The latest versions of Android systematically disabled GPS and Wi-Fi as soon as Companion moved to the background or the device entered sleep mode. This is no longer the case with version 4.0, and Companion will therefore continue to record your track. It is therefore important to disable GPS tracking if you no longer need it, before switching to another application, in order to conserve battery power (by reducing Wi-Fi and GPS usage).

Object creation/modification tools

Preliminary note: The tool selected in the toolbar determines the actions performed during interactions. Starting with version 4.0, to prevent accidental changes to routes and waypoints, the selected tool automatically reverts to the default selection tool after a period of inactivity (30 seconds by default; see [the Configuration section](#) to modify or disable this value).

QUESTION: TOOL

This tool is the default. It is recommended to return to this tool outside of the route and waypoint creation phases to avoid inadvertently creating waypoints or routes. The interactions with this selected tool are as follows:

If the "object list" window is open, a **short press on an object** displays the object's details and highlights it (same behavior for waypoints, routes and tracks) (see below)

A **long press on the map** opens a context menu allowing certain actions on objects intersecting the clicked point.

- "Map Properties": Displays the underlying map properties dialog, allowing you to view its analytical details.
- "Maps...": Displays a list of underlying maps, sorted from largest to smallest scale. Simply select from this list to switch to the corresponding scale.
- "Navigate to XXX": Allows you to define waypoint XXX as the destination waypoint (see GOTO function)
- "Stop navigation to XXX": only appears if navigation tracking to a waypoint is active. Stops navigation tracking to the waypoint.
- "Properties of XXX": displays the properties of the selected object
- "Delete XXX": deletes the selected object
- Note: XXX represents the name of the object intersecting the point. If several objects intersect the point, this name is replaced by "..." and a submenu appears allowing you to choose the object on which to apply the operation.

GOTO FUNCTION:

The destination waypoint is indicated on the map by a translucent red circle superimposed on the waypoint. The current tool should be the **"query" tool** to define the destination waypoint (see above).

- You can move the destination waypoint (see "creating waypoints") to define a new destination.
- When the Goto function is active, additional tracking repeaters are displayed (if GPS is active).

CREATING/MODIFYING WAYPOINTS: TOOL



With this tool selected, a waypoint will be created each time you tap the map (touch the map, hold your finger down for about half a second, and then lift it without moving). A window will then appear allowing you to modify the waypoint's properties before confirming. If you click "Cancel," the waypoint will disappear.

To move an existing waypoint, press and hold on it, then drag your finger without lifting it. You can also modify the settings before confirming. If you tap "Cancel," the waypoint will revert to its initial state (position and attributes).

To delete a waypoint from the screen: press and hold on it, then quickly flick your finger back up at the end (the "fling" action).

By performing a faster press (simple "tap" on the screen and immediately lifting the finger) on an existing waypoint, the waypoint properties are displayed.

WAYPOINT PROPERTIES:

The waypoint properties window displays the following fields:

- name: must fit on a single line
- Comment: Free text field that can span multiple lines. The area expands as you enter lines.
- Symbol: allows you to choose the symbol to display.
- Class: allows you to group several objects (waypoints/routes/tracks) within the same class. These classes can then be managed via the Layers panel to be activated or deactivated simultaneously.
- Minimum scale: Define a minimum scale below which the waypoint size will decrease until it is no longer displayed, thus reducing screen clutter. Check the

box and specify a scale to activate this feature. Note: The scale is approximate and may vary depending on the screen.

- Visible: If this box is unchecked, the waypoint will never be visible (used in conjunction with layers).
- Latitude/Longitude: By clicking on one of the latitude or longitude fields, a window will allow you to enter or correct the position in degrees/minutes.

The Symbol/Visible/Minimum Scale settings are saved between the creation or modification of each waypoint within the same session (the default settings when creating a new waypoint are those assigned during the previous validation). The default value of the "Class" parameter is defined in the "Layers" window (see below).

ROUTE CREATION/MODIFICATION TOOL



When this tool is selected, click (press and hold) on successive locations on the map to create a route. To complete the route, double-click on the map or press and hold. The properties window will appear, allowing you to modify the route's graphical attributes. The next time you click on the map, a new route will be created.

You can also:

- To move a point on an existing route: Click on it and drag it while holding down your finger (if you click on a waypoint belonging to another route, that route becomes the currently edited route).
- Create intermediate points: Click on the midpoint of a road segment to create the intermediate point
- To delete an existing waypoint: Click on the point, and quickly drag your finger up at the end (the "fling" action) (same function as for individual waypoints)
- To edit the general properties of a route (name, color, line, class), or view the list of points with their headings and distances: long press on the entry corresponding to the route in the list of objects, or long press on one of the waypoints of the route in the map.

Notes:

- When you create or edit a route and click on an existing waypoint of another route, the edited route changes. If changes have been made to the previous route, the route properties window appears, allowing you to confirm, discard, or resume editing the same route.
- The same applies if you do not interact within the maximum time allowed to return to the selection tool.

ROAD PROPERTIES:

The route properties window displays the following fields:

- Name/Class/Comments/Visible: See the description in the Waypoint properties above.
- Color/Thickness: allows you to change the color and thickness of the road line
- Points list: the number of points and the total distance is indicated at the top, and is followed by the list of all the points, with for each its position, and the distance and heading to follow to reach it from the previous point.
- By pressing and holding on one of the points, you can edit its properties (see chapter above).
- You can scroll through the list of points up or down if they are not all displayed on the screen.
- Comments: You can hide or show this field by clicking on the small button to its left, which allows more space to view the list of points, very useful especially in

cases where the comment has several lines.

The validation buttons are as follows:

- OK: Confirm the changes made
- Cancel: cancels all changes
- Continue: This button only appears if interactive edits are in progress with the "Routes" tool. It allows you to resume edits on the same route, for example, when the window automatically reappears after the inactivity timeout has expired.

Layer management:

To open the layer management window, use the "Layers..." entry in the main extension menu or the object list. For those familiar with it, this concept is very similar to that used in ScanNav.

This window allows you to quickly show or hide multiple objects belonging to the same class. Simply check or uncheck the box in the row corresponding to the layer.

The checkbox can take 3 states:

- Green checkmark: all objects of this class are visible.
- Grey square: Some of the objects of this class are visible, and some are hidden.
- Empty cell: all objects in this cell are hidden.

Layer definition is automatic, based on the "Class" field in the object properties. The "**Default Layer**" field allows you to define a layer to which all newly created objects will be classified by default. Simply enter a name in the input field. This can be the name of an existing layer or a new name. To assign it to an existing name, long-press on the layer's corresponding line.

For example, you can enter "Summer 2013," and all new tracks, waypoints, and routes will be categorized there by default. This allows you to easily show or hide all data related to your "Summer 2013" navigation without having to delete and re-import it.

The list contains as many entries as there are different classes defined for the objects. The first row, "Unnamed," corresponds to objects for which no class has been defined. You can scroll up or down the list if all the entries do not fit on the screen.

To confirm your changes, click the "OK" button. If you click "Cancel," no changes will be saved.

GPX import:

Accessible via the extension menu ==> "Import GPX", this allows you to import waypoints, tracks, or routes to view them on your Android device. For example, you can export a database of waypoints from ScanNav to display them in Companion.

The import process runs in the background, so if you're using a very large GPX file, the waypoints won't appear immediately. You can continue navigating the map or performing other operations during this time. The imported waypoints and other objects will appear once the import is complete.

Note: certain concepts such as classes, minimum display scales, road line thickness, etc... are specific to ScanNav (and ScanNav Companion), and are therefore implemented as extensions, as they are not included in the basic GPX format.

Export GPX:

Allows you to export all objects in GPX format for archiving or use in ScanNav. Note: To perform a selective export, use the export function available in the object list menu.

Displaying the list of objects (Waypoints/routes/traces):

You can display the list of objects via the "Objects List" entry in the extension menu. The list appears to the left of the map in landscape mode, or at the top of the map in portrait mode. To expand the list area, touch the edge separating the list from the map and drag your finger. This list contains its own toolbar:



Extension menu, allowing you to:

- Define the type of objects to display (Waypoints, Routes, Traces, or all types)
- Open the "Layers..." management window.
- List all objects, or only those in the visible map area ("Visible only")
- Configure the action to be taken when the user selects an entry in the list
 - "Auto zoom": the map zooms in on selected elements to include them all in the map
 - "Auto-center": the map refocuses on the selected elements, without changing scale
 - Neither of the two entries was checked: no action
- Switching between "Multiple Selection" and "Single Selection" modes (see below)
- "Select All": Switches to "Multiple Selection" mode and selects all entries in the list
- "Deselect all": Deselects all entries
- "Export selection": allows you to export the selected items in the list in GPX format.
- "Properties": Opens a window allowing you to edit the properties of the selected object. Note: You can also long-press on an item in the list when you are in "Simple Selection" mode.
- close list



This button allows you to quickly switch between "Single Selection" and "Multiple Selection" modes . Its icon changes depending on the selection mode.



Delete the selected item(s) from the list



Search tool. Enter text in the field immediately to the left of this button, and click the button. The list will then display only the items whose name contains the entered string. To return to the full list, clear the text field and click the button again.

In Simple Selection mode:



- Only one item is selected at a time, and the details (comments) of the selected item are displayed under its name.
- You can edit the object's properties by long-pressing the element, which opens the object's properties window.

In Multiple Selection mode:



- Multiple items can be selected, which allows, for example, the deletion of several items at once.
 - Click on an item to select or deselect it.

- To select or deselect an entire range of items, long-press on one item, then click on another item in the list. All entries between these two entries (inclusive) will be selected or deselected depending on the selection state of the first entry.

The list and the map are synchronized in both modes: Depending on the "Auto Zoom" and "Auto Center" modes, selecting an item from the list centers or zooms the map to the corresponding object, and clicking on an object in the map selects the object in the list.

The items selected in the list are highlighted in blue on the map.

Other functions of the general extension menu:

- "Active Repeaters": This allows you to hide all repeaters (by unchecking the box) without affecting their individual settings in the preferences. Note: Repeaters will only be present when GPS is active (see above "Configuration → Repeaters", "GPS activation", and "Goto function").
- "About ScanNav": Displays a window with ScanNav Companion version information. You can check if a newer version of ScanNav Companion is available by clicking the "Check for Updates" button in this window.
- "Documentation": opens the documentation
 - "Local documentation": Opens this document on your device without requiring internet access (available in French only). Note: You must have a PDF reader installed on your device.
 - "Online documentation": Requires an internet connection. Opens the documentation on the ScanNav website. This is available in French, English, German, Spanish, and Portuguese.
- "Clock": Displays a clock overlay on the map. This was initially a simple test that was retained. However, the component used is discontinued by Google, and while functional with older versions of Android, it no longer works correctly from Android version 12 onwards. This component will therefore likely be removed.
- "Maps" / "License activation" / "Preferences": see above.

Support functions and reports:

- " **Force Exit** ": When you close an app, Android simply puts it aside so you can open it more quickly if needed. This menu allows you to force the Companion app to completely close and reset its state. This is only necessary if you encounter problems, for example, with reinstalling maps.
- " **Send logs** ": allows you to send logs to facilitate support. Only use this feature at the request of support.

If Companion crashes, a dialog box will open the next time you start the application, asking you to send the crash report.

- If you click " **OK** ", an email window will open. You can view the technical information sent and optionally add other information to help reproduce or contextualize the incident. The report is then deleted from your device. Note: On the latest versions of Android, you also have the option to use other sharing methods besides email, depending on the applications installed on your tablet/phone.
- If you click " **Cancel** ", nothing is sent, and the report is deleted from your device.
- If you click on " **Later** ", the report is "parked" in a separate directory, and can be sent later (for example, when you have an internet connection without extra charges).

When one or more crash reports are "parked," a new " **Send Crash Reports** " entry appears at the end of the extension menu. Click this entry to send the pending reports (the same confirmation box as above will appear); these reports will then be deleted, and the menu entry will disappear.