

Navigation and Messaging Platform User Guide

Version 2.12

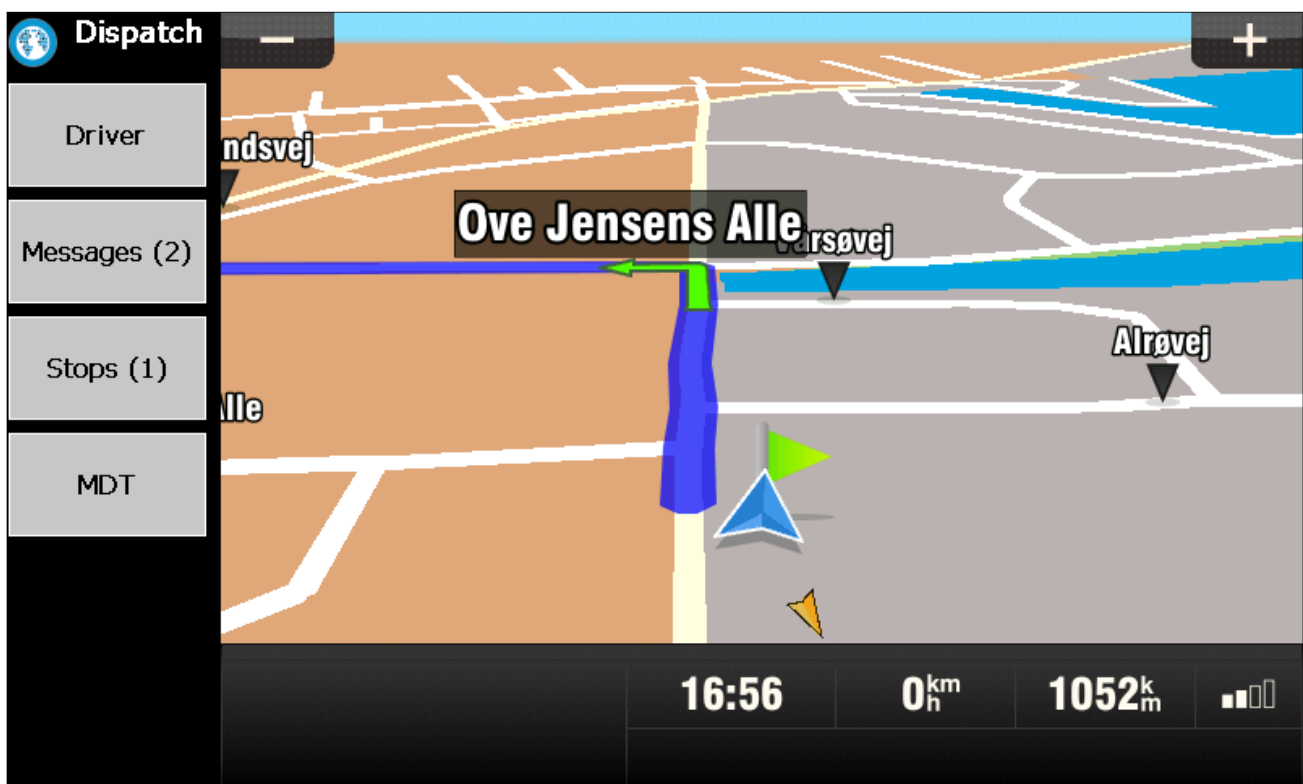


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Introduction

This document describes the details of the Navigation and Messaging Platform(NMP), a platform providing the combined functionality of a navigation system with fleet management and a Mobile Data Terminal, MDT.

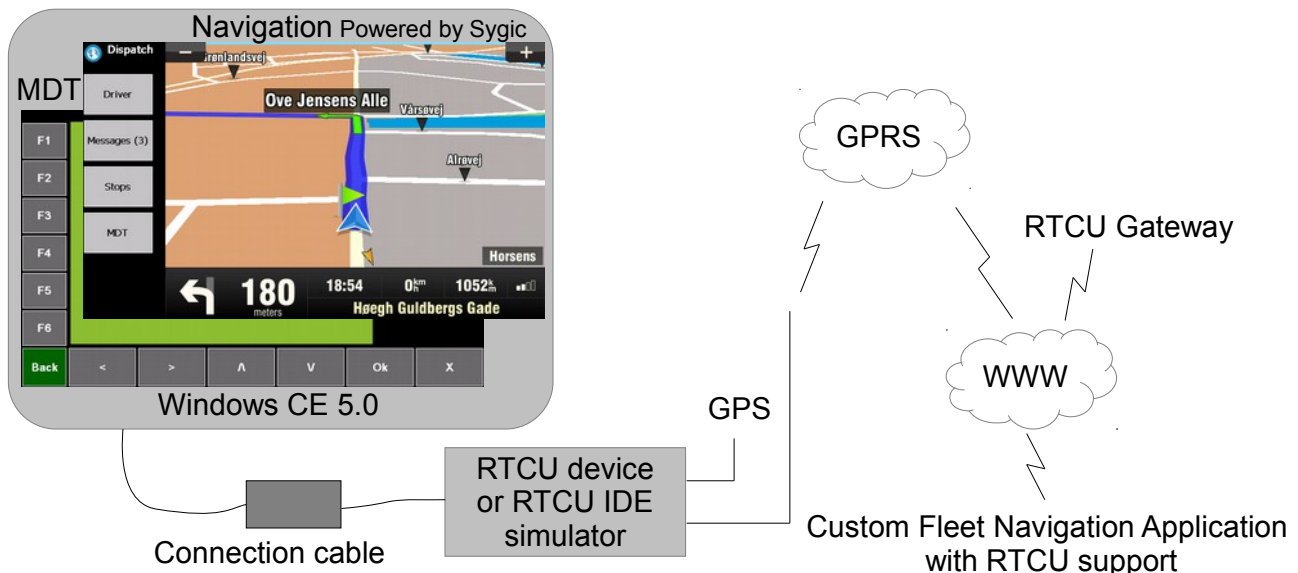
This document will describe the installation and use of the NMP, and for information about the usage of the PNM-100 and PNM-200 devices please refer to the Technical Manual for those products.

The package contains either an SD card with the application, or a Windows CE device with the application already installed on an SD card.

The NMP is controlled and managed from the RTCU application and for more detailed information on the programming, please consult the RTCU IDE online help.

The RTCU application runs on an NMP enabled RTCU with firmware 2.64 or higher and the NMP application runs on a Windows CE 5.0 device with .Net Compact Framework 2.0 or higher.

To change an RTCU application from using a Garmin navigation devices and/or an MDT to use an NMP, very few changes are needed; The navigation interface must be opened before the MDT interface, and the NMP must be fed GPS data by calling `gpsFix()`¹ repeatedly for the navigation part to work.



¹ See Online Help, Navigation section.

Features

This includes

- Compatible with the navigation API, most existing programs will only need small changes.
- Compatible with MDT API.
- Uses GPS information from the RTCU, preventing any inconsistencies between the navigation device and the RTCU.
- Configurable:
 - Waypoint symbols
 - Logos
 - Translations
- Additional user defined buttons for interaction with the RTCU.
- Support for hardware buttons on supported hardware.
- Support for status leds on supported hardware.
- Support for rear view camera on supported hardware.

Contents of package

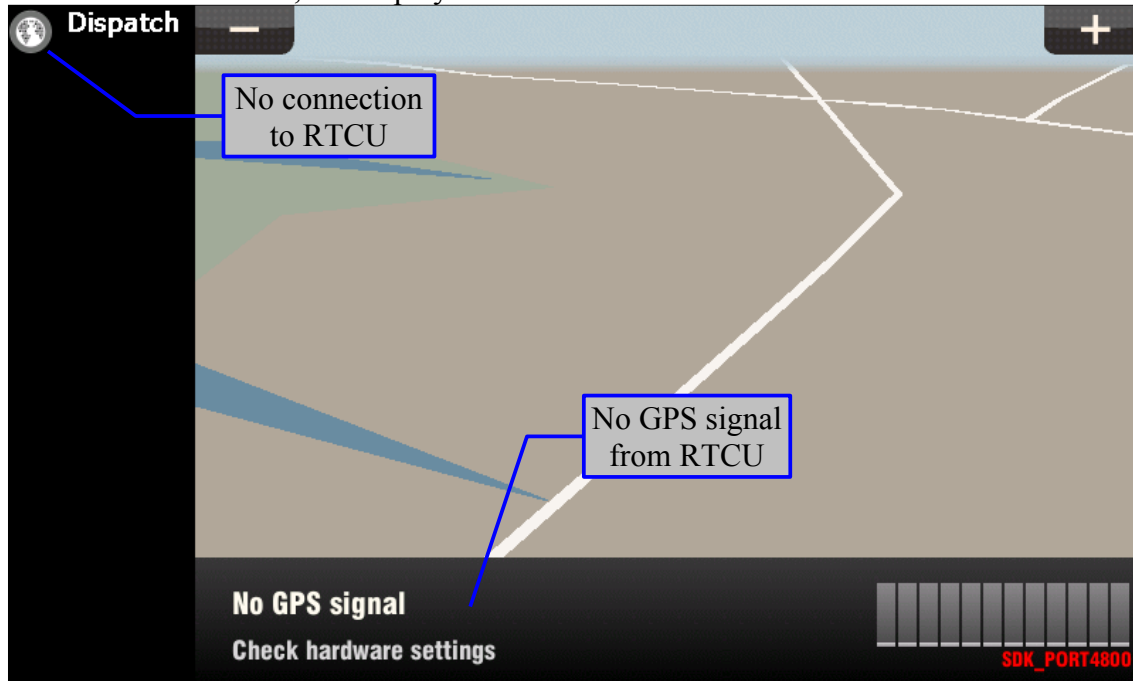
The NMP package contains the following:

- NMP - User Guide V212.pdf This document
- SD Card with the following content:
 - \nmp Folder with NMP software
 - \drive\ Folder with navigation system
 - \drivers\ Folder with drivers for different disk configurations
 - \res\ Folder with resources for navigation system
 - \map\ Folder with map data
 - \install.exe Installation program
 - \install.xml Installation configuration
 - \autorun.exe Launcher application. Moved to the autorun location on the device when install is run.

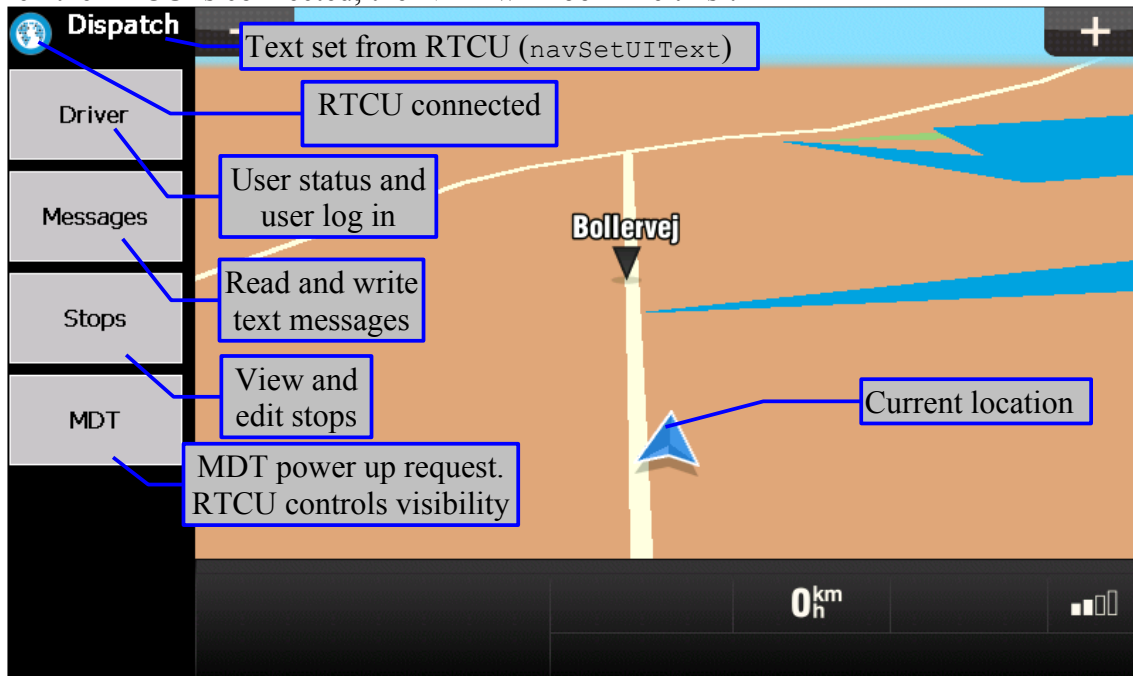
How to use the NMP

The main menu

When the NMP is started, the display will show this:






When the RTCU is connected, the NMP will look like this²:



² Please notice that the buttons etc. can be changed in the settings, see Menu buttons.

Connection status

The connection status can show three different icons:

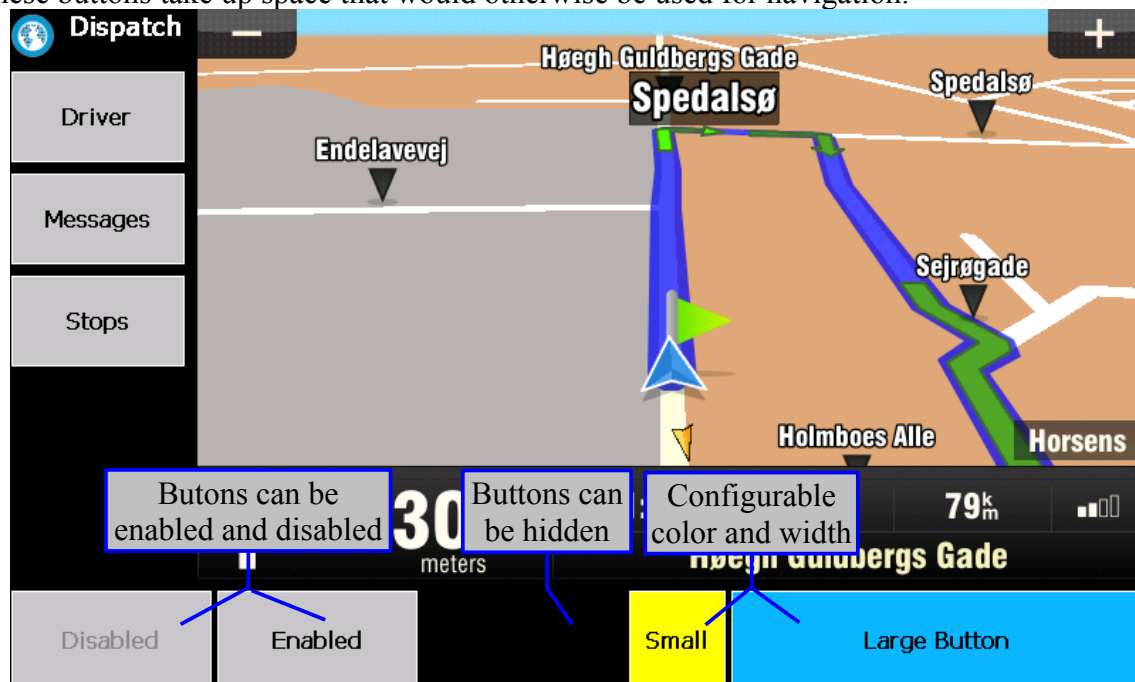
	No connection	The RTCU is not connected to the NMP. All the buttons will be disabled, only the navigation window is visible to allow the route to be visible.
	Connected	RTCU is connected. The buttons are enabled.
	File transfer in progress	A file is being transferred to the NMP. The responsiveness might suffer a bit.

By clicking the icon, the about dialog is shown.

To access the underlying operating system, press the icon for about 5 seconds and then enter the admin code to be able to exit. The code is controlled by the settings (page 17), with the default being 'admin'.

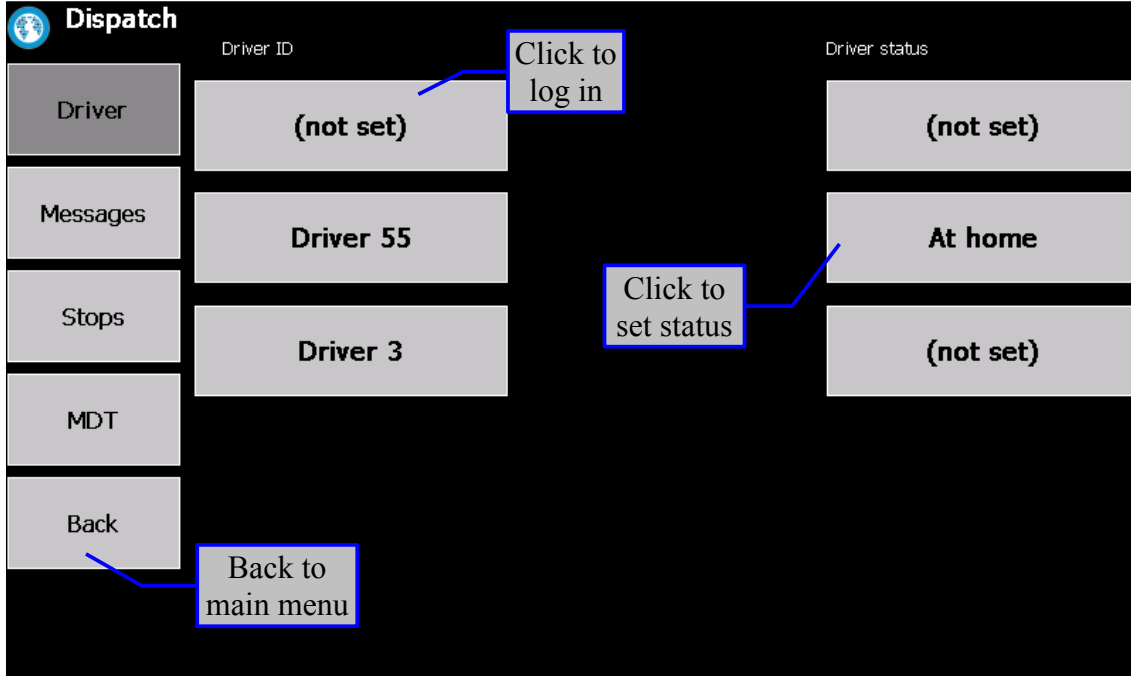
Configurable Buttons

Using special NMP functions, it is possible to add buttons below the navigation window. These buttons take up space that would otherwise be used for navigation.



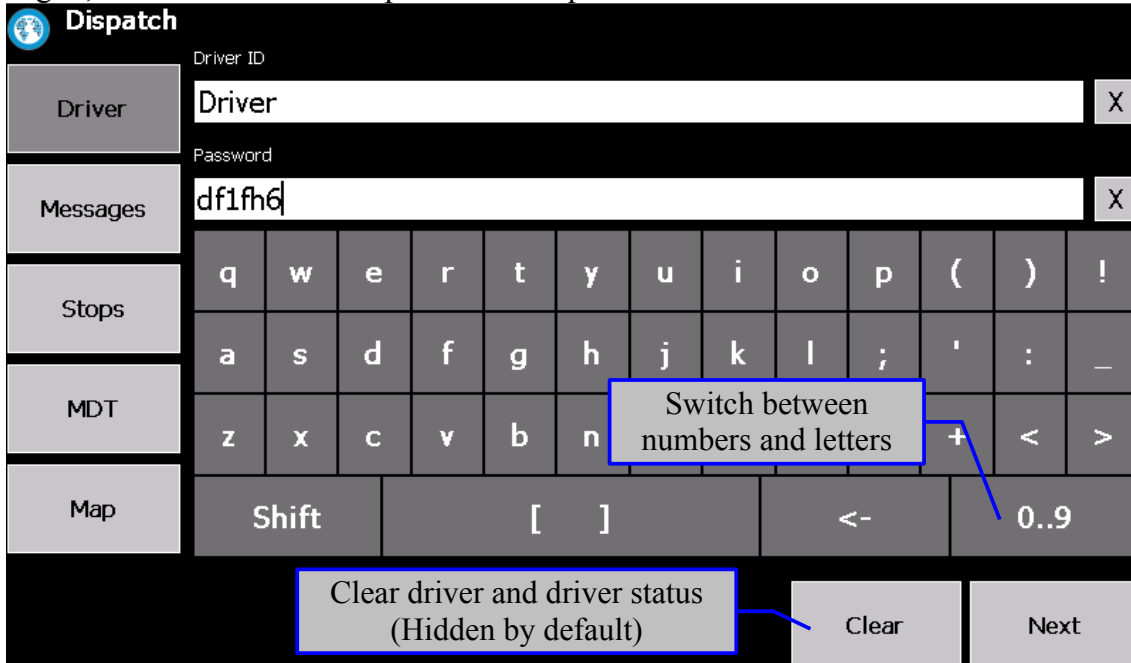
Driver menu

The driver menu shows all the drivers and their status. To go back to the main menu, press back or the driver button.



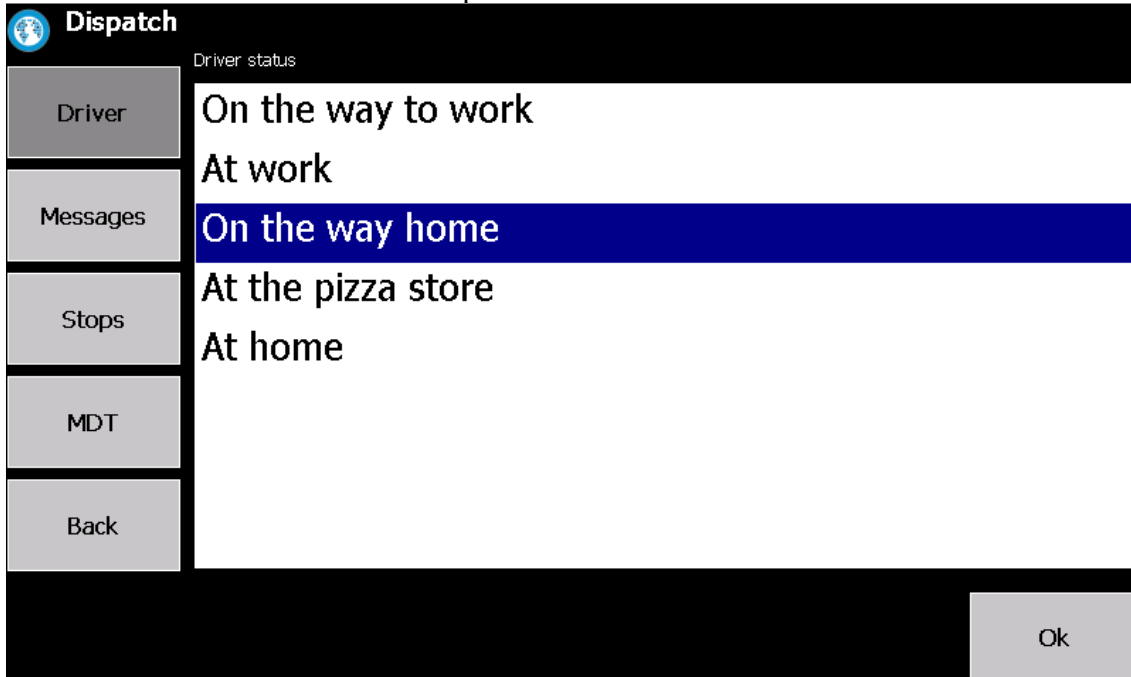
The screenshot shows the 'Dispatch' application interface. On the left is a vertical menu with buttons: Driver, Messages, Stops, MDT, and Back. The main area is divided into three columns: Driver ID, Driver status, and a central area. The Driver ID column contains buttons for '(not set)', 'Driver 55', and 'Driver 3'. The Driver status column contains buttons for '(not set)', 'At home', and '(not set)'. A blue box labeled 'Click to log in' points to the '(not set)' button in the Driver ID column. Another blue box labeled 'Click to set status' points to the 'At home' button in the Driver status column. A third blue box labeled 'Back to main menu' points to the 'Back' button in the left menu.

To log in, enter the User ID and password and press next to set the status.



The screenshot shows the login interface. On the left is a vertical menu with buttons: Driver, Messages, Stops, MDT, and Map. The main area has two input fields: 'Driver ID' with the text 'Driver' and 'Password' with the text 'df1fh6'. Below the input fields is a numeric keypad with letters. A blue box labeled 'Switch between numbers and letters' points to the '+' button on the keypad. At the bottom, there is a 'Clear' button and a 'Next' button. A blue box labeled 'Clear driver and driver status (Hidden by default)' points to the 'Clear' button.

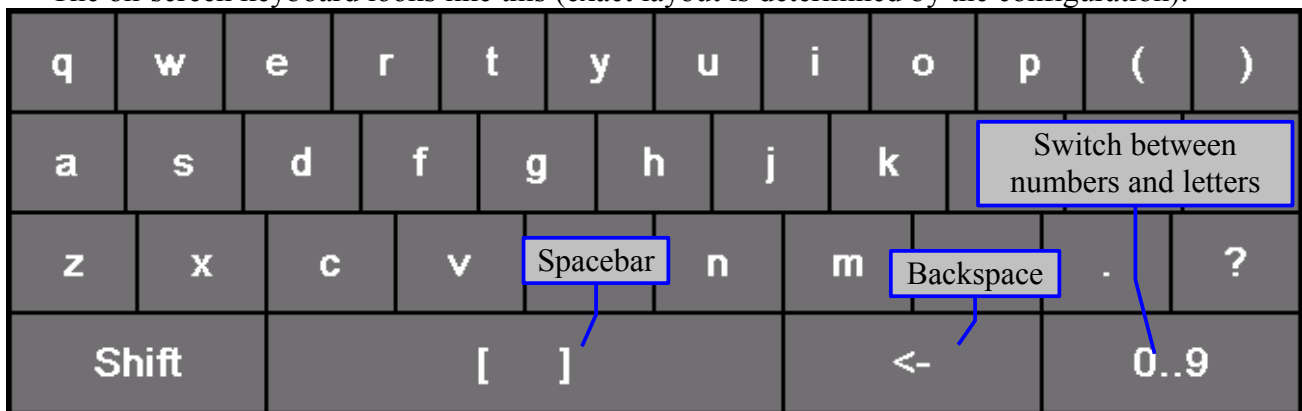
Select the user status from the list and press Ok.



The screenshot shows a mobile application interface titled "Dispatch". On the left is a vertical menu with buttons: "Driver", "Messages", "Stops", "MDT", and "Back". The main area is titled "Driver status" and contains a list of status options: "On the way to work", "At work", "On the way home" (highlighted in blue), "At the pizza store", and "At home". At the bottom right is an "Ok" button.

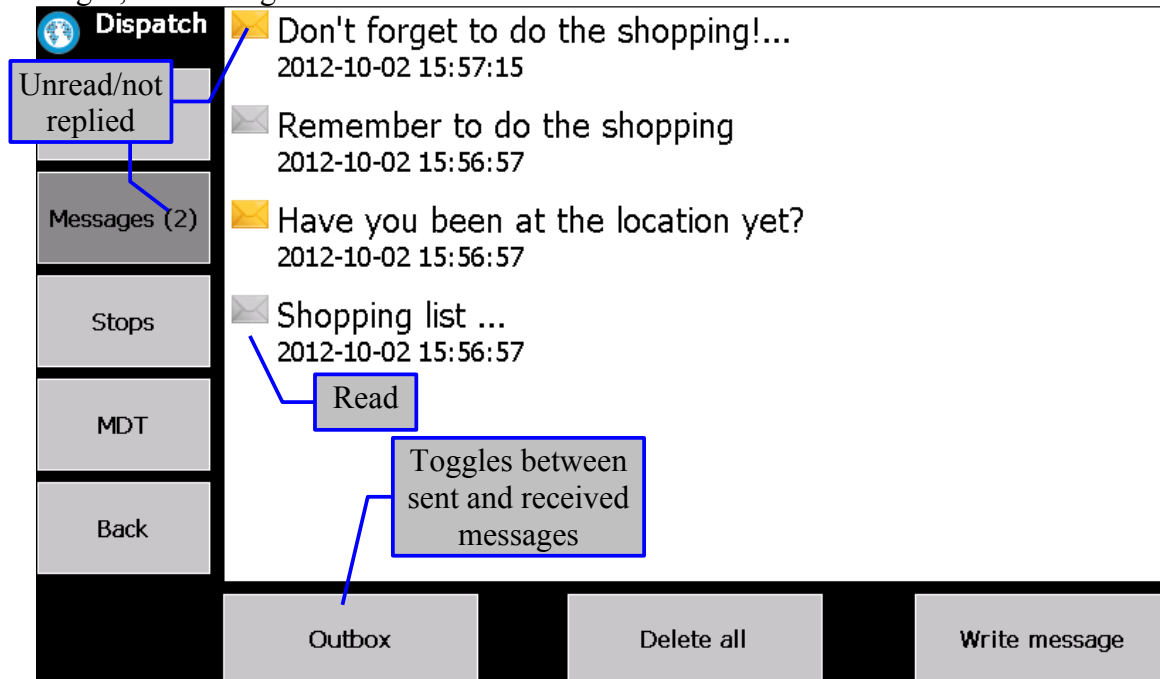
Keyboard

The on-screen keyboard looks like this (exact layout is determined by the configuration):

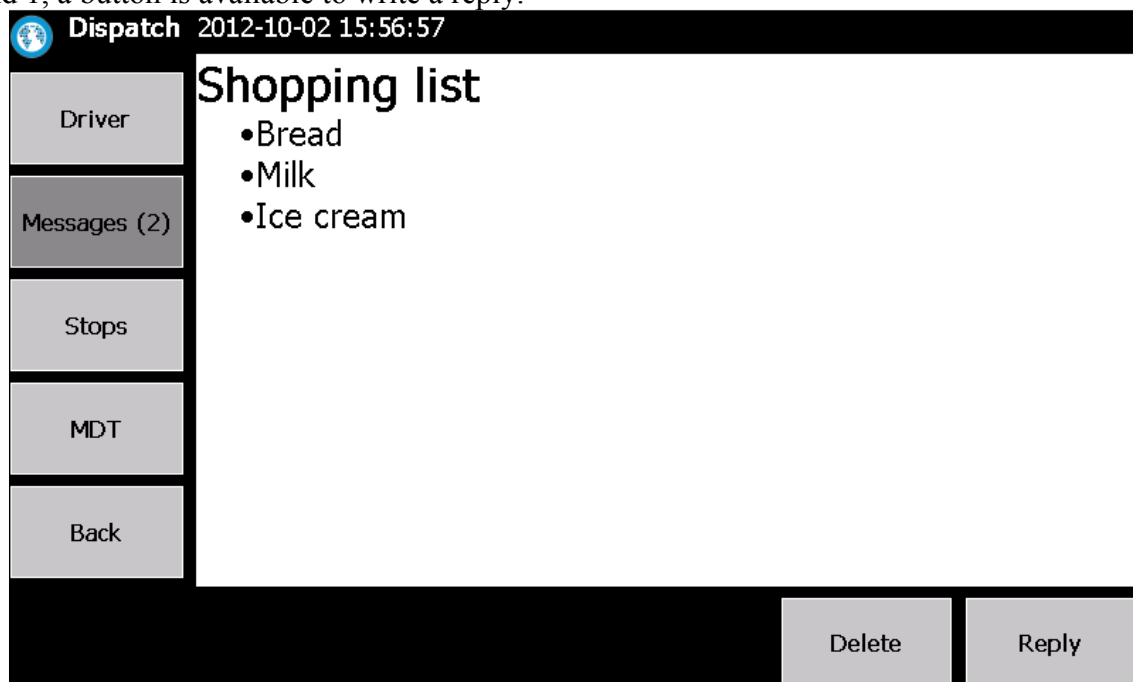


Message menu

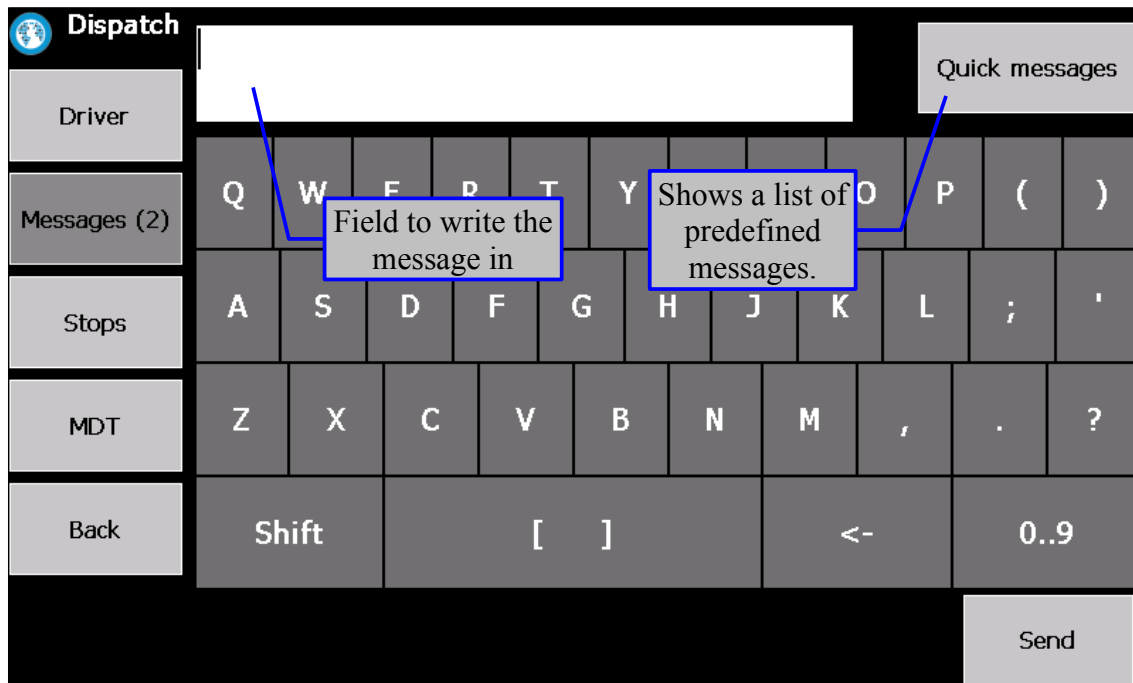
The message menu provides a list of received and sent messages. When the RTCU deletes messages, the message button will flash until this menu is accessed.



When viewing messages, the reply options depend on what type of message it is. For message type 2 and 3 (acknowledge and yes/no) a button is shown for each reply. For type 4, user defined replies, clicking the reply button will show the list of predefined replies. For type 0 and 1, a button is available to write a reply:

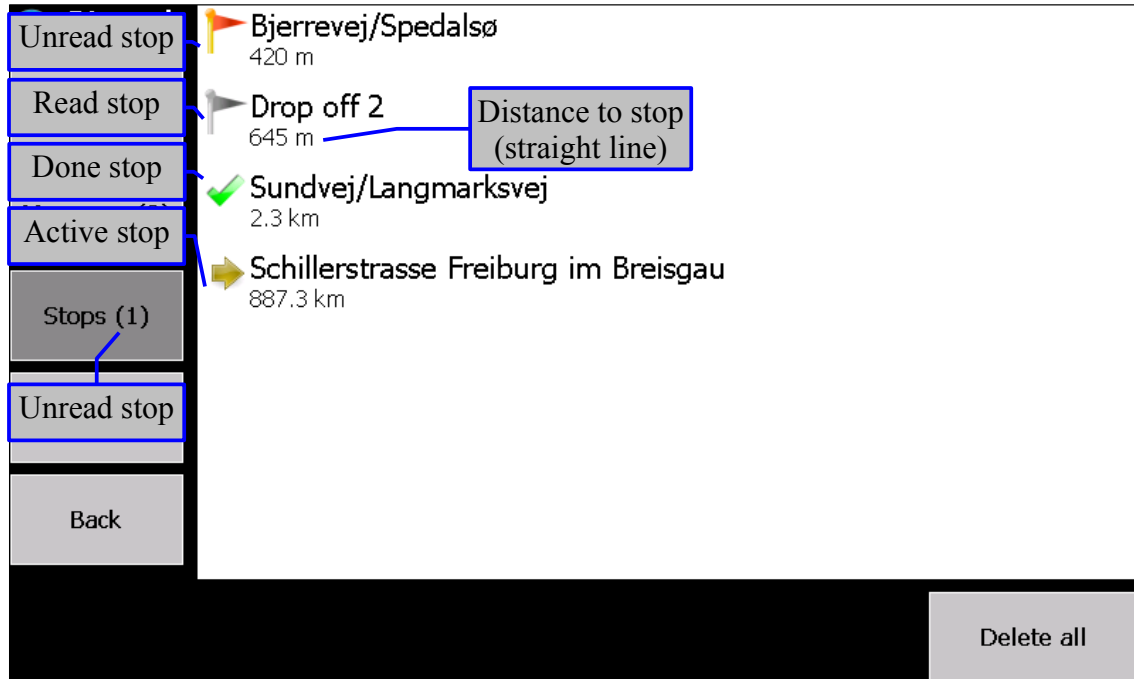


The screen looks like this when writing a new reply. From the quick message menu, it is possible to select predefined messages.

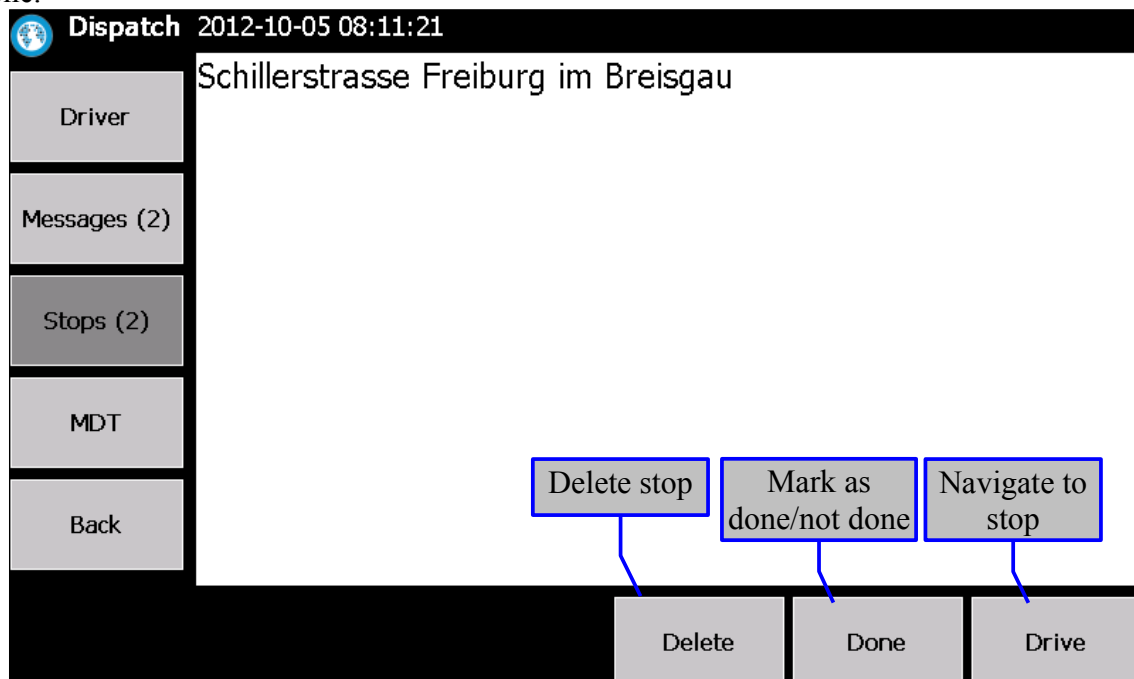


Stop menu

The stop menu shows a list of the stops. When the RTCU deletes stops, the stop button will flash until this menu is accessed.



Clicking a stop will mark it as read and make it possible to activate, delete and mark it as done.



When clicking Drive, the route will be calculated and the stop marked active. Once the route has been calculated, it will be shown. Click the “Done” button to dismiss the preview.

The “Details” button makes it possible to disable some types of road (toll road, motorway etc.) and see the progress of the route.



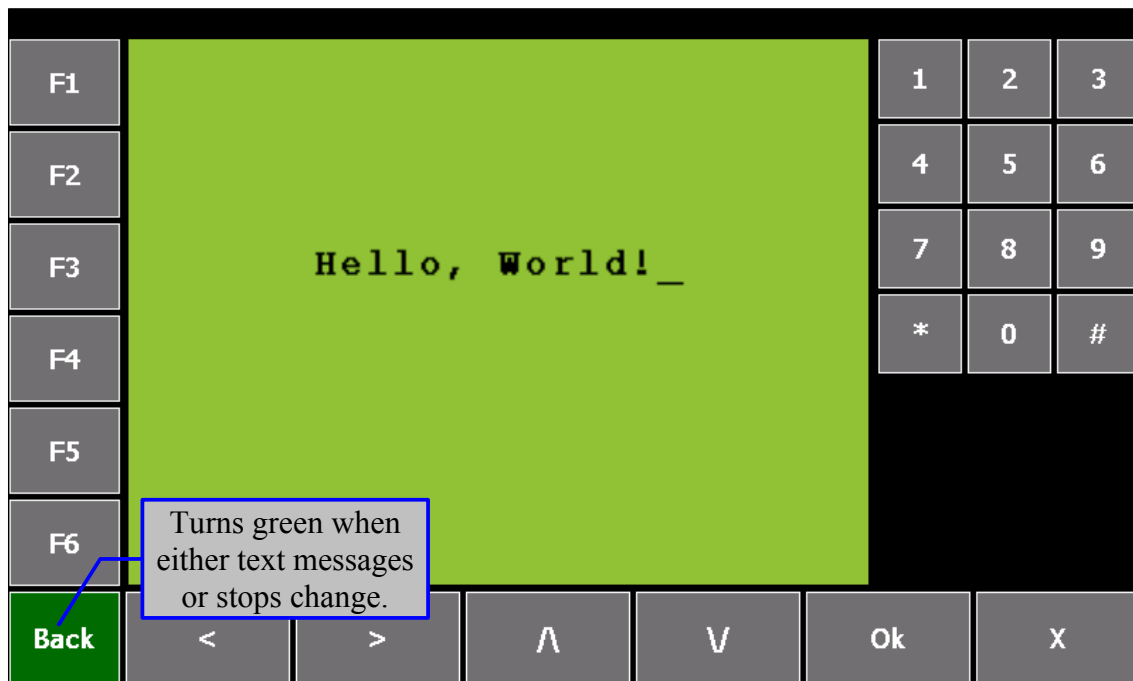
Mobile Data Terminal menu

The MDT provides the same buttons and display size as the MDT-200.

The button to show the MDT menu is only visible when the RTCU unit has activated it with `mdtPower (power:=on)`³.

Clicking the MDT button on the Main menu sends the `PowerUP` key to the RTCU, which can then decide to show the MDT by calling `mdtStandby(enable :=false)`. Similarly, when the back button is pressed, the RTCU receives `mdtGetKey = 126` (Power key), and can then hide the MDT menu with `mdtStandby(enable :=true)`.

To close the MDT menu and remove the button, call `mdtPower (power:= false)`.



³ See Online help, MDT section.

Updates

The NMP can be updated in two different ways. Remotely via the RTCU device, or locally by accessing the SD card.

Remote update

The NMP can be updated after it is deployed, by sending the update file through the RTCU device.

This is done by transferring the `update.zip` file to the file system of the RTCU, and then calling the `nmpUpdate`⁴ function, which will transfer the file to the NMP device and start the update. Transferring the update to the NMP device takes a long time due to the connection speed.

SD Card update

With physical access to the NMP, it is possible to update directly via the SD card, providing a faster transfer speed. To perform an update, remove the SD card from the device, place the `update.zip` and `update.xml` files in the NMP folder on the SD card, reinsert the card and start the NMP device.

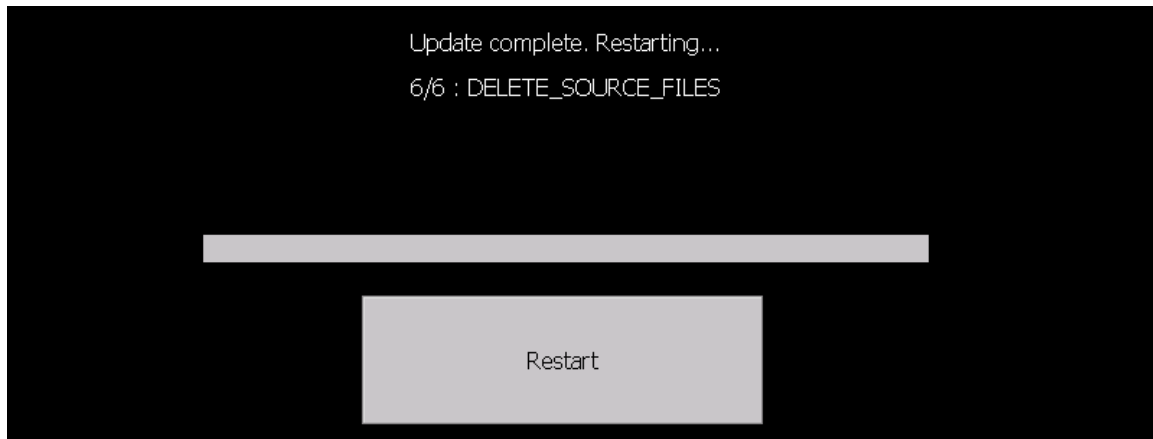
Update process

Once the update has been transferred to the NMP, it will either ask the user if it should be installed, or install it immediately, depending on the type of update. If the update is postponed or is interrupted, it will try to install it again the next time the NMP starts.



⁴ See Online help, `nmpUpdate` and `nmpUpdateProgressReceive`.

To perform the update, the navigation application shuts down, closing communication with the RTCU unit. Instead an update program runs through several steps before showing the result of the update. The device will restart after a moment, or it can be restarted manually.



How to configure the NMP

By removing the SD card from the device and inserting it in a PC, it is possible to configure certain features of the device. Make sure to make a backup before making any changes to be able to restore it to a known state. Note that the license for the navigation maps is located on the SD card, and can not be transferred to another card, as it is tied to the SD card.

Settings

The settings of the NMP are all stored in the file `\SD Card\NMP\settings.xml`.

To generate a file with the default settings, simply delete the existing `settings.xml` and run the program to generate a new file with most of the defaults included.

To avoid having to set all the settings, it is possible to only specify a small subset, and then use the defaults for the rest.

To e.g. change the baud rate, the following `settings.xml` file is enough:

```
<?xml version="1.0"?>
<Settings xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <Baud>57600</Baud>
</Settings>
```

Basic device configuration

The following settings are used, when no device specific settings are defined.

<Port>	Serial port on the NMP device that the RTCU is connected to.
<Baud>	Determines the baud rate to use when communicating with the RTCU. It must match the baud rate of the RTCU. The default value, which is compatible with older RTCU firmware, is 9600 baud. The maximum suggested value is 57600 baud.
<drivePath>	Path to the Drive application.

Device specific settings

As a new thing in v2.00, it is now possible to define some settings for specific devices. This makes it possible to use the same configuration for multiple devices. By default, the definitions for the PNM-100 and the PNM-200 devices are included.

The device specific settings are placed under the element `<Device>`. This element has the attributes `id`, which must be set to the ID of the device, and the optional attribute `name`, which is only used for describing the device. To get the ID of the device, see Probing the device on page 27.

The `<Device>` element contains the following elements. If an element is not set, the defaults specified in the generic elements will be used instead.

<Port>	Serial port
<Baud>	Baud rate of the connection to the RTCU.

<SdCardName>	Physical name of SD card drive. Must be the Physical name, as seen in the Storage manager, for instance DSK1. If this is not correct, the licenses for the maps will not work. If this is omitted, no changes will be made, and the current settings will be used.
<drivePath>	Path to the Drive application.
<deviceId>	Optional id for use with custom devices. A value between 0 and 15, that is added to 0x100 to become the actual device ID ⁵ . Is not used on official devices.

Functionality

<DisconnectShutdown>	Obsoleted. Use DisconnectTimeout instead.
<DisconnectTimeout>	Timeout in seconds, when connection is lost or never established. When this times out, a dialog will ask to shut down, with a timeout of 30 seconds. Set to -1 for default, 0 disabled. Defaults to 3 minutes on PNM220, disabled on all other. If nmpPower is enabled, the device may choose to reboot instead, to attempt to restore the connection.
<HideTaskBar>	Hides the task bar and makes the application topmost. Should be true unless access to the underlying Windows CE device is needed.
<ClearRouteWhenDone>	Determines if the route is removed from the map once the destination has been reached.
<OnlyButtonsOnMain>	Determines if the custom buttons will be shown on all views or only the navigation/map view.
<dbPath>	Path to database file for storing all the data. Should not be changed.
<DatabasePass>	Password used to encrypt the data. Should not be changed.

Menu buttons

The following settings controls the visibility of the buttons in the menu bar.

<ShowDrivers>	Determines if the Driver button is visible. If hidden, functionality needing this button should not be used.
<ShowMsg>	Determines if the Message button is visible. If hidden, functionality needing this button should not be used.
<ShowStops>	Determines if the Stop button is visible. If hidden, functionality needing this button should not be used.

⁵ See nmpGetHardwareId in the on-line help

<code><ShowMDT></code>	Determines if the MDT button is visible. If hidden, the MDT can only be shown from the RTCU unit.
<code><NavMenu></code>	Shows a button similar to the driver, message, stop etc. buttons, to access the navigation screen. If this is enabled, the dedicated back button will be removed, as the navigation screen is considered on the same level as the rest. If <code>ShowExit</code> is enabled, the menu button will be the exit button, when on the navigation screen.
<code><AutoShowMenu></code>	If true, hidden menu buttons will be shown if needed. If e.g. the Message menu is disabled with <code>ShowMsg</code> and a message is received, it will be made visible.

Hiding buttons

The element `<HideButtons>` makes it possible to hide some of the buttons and thereby disabling some features.

The `<HideButtons>` tag contains a number of `<HideButton>` tags, containing a button and a hide attribute:

```
<HideButtons>
  <HideButton button="stops.done" hide="true"/>
</HideButtons>
```

If hide is false, the button is not hidden.

See the following table for a list of possible button names.

Name	Description
msg.delete	Delete message.
msg.reply	Reply to message.
msg.ok	Ok reply.
msg.yes	Yes reply.
msg.no	No reply.
msg.deleteall	Delete all messages.
stops.done	Mark destination as done.
stops.drive	Drive to destination.
stops.delete	Delete destination.
stops.deleteall	Delete all destinations.
user.clear	Clear driver.

Sound settings

<PlaySounds>	<p>The value of the child tags determines if sounds will be played when the following events occurs:</p> <p><OnMsgDelete> A message has been deleted by the RTCU.</p> <p><OnMsgReceived> A message has been deleted by the RTCU.</p> <p><OnStopDelete> A stop has been deleted by the RTCU.</p> <p><OnStopReceived> A stop has been received by the RTCU.</p>
<Volume>	Determines the system volume used during startup. Value between 0 and 100, where 0 is off and 100 is highest volume.
<HighSpeedThreshold>	Determines the speed at which to use the highest sound volume. The volume levels are based on the settings in the Sygic menus and varies with the speed.

Hiding menus

The following settings defines settings related to the hiding of the menu and button bars.

<MenuWidth>	Width of the menu when not collapsed.
<MenuCollapsedWidth>	Width of the menu when it is collapsed. The width of the connection icon is 32 pixels.
<ButtonsHeight>	Height of the configurable buttons when not collapsed.
<ButtonsCollapsedHeight>	Height of the panel with the configurable buttons when it is collapsed.
<ButtonsHideWidth>	Width of the button to hide the configurable buttons.
<CanHideButtons>	Determines if it is possible to hide the configurable buttons by pressing a button. If false, the hide button is not visible. It is always possible to use <code>nmpHideMenus</code> to hide it from the RTCU.
<CanHideMenu>	Determines if it is possible to hide the menu by pressing a button. If false, the hide button is not visible. It is always possible to use <code>nmpHideMenus</code> to hide it from the RTCU.

Debug

The following settings are used for debugging the device.

<LogFolder>	Determines where the debug logs are stored.
<LogComm>	Determines if the communication with the RTCU is logged. Should not be enabled under normal circumstances.
<LogDebug>	Determines if debug output is logged. Should not be enabled under normal circumstances.
<ShowExit>	Displays button in the main menu to exit to the operating system.

<AdminPass>	Sets the password to use to exit the application. It is converted to AdminHash and removed from the file on the next run of the application.
<AdminHash>	The hashed version of the password. Should not be set directly, but can be removed to block exiting via the connect icon, and to allow exit without password via the exit button.

Time settings

The following settings are used to configure the time settings. The actual time is set based on the time received in the GPS data.

<TimeZone>	Sets the time zone to use. To get a list of valid time zone names, see the following table or the installation program (page 27). If omitted, it is not changed.
<AutoDST>	Determines if automatic switching to Daylight Savings Time is to be used. If omitted, it is not changed.

Some common time zones

The following list contains the commonly supported time zones. For an exact list of supported time zones, see Probing the device at page 27.

Name	Description
GMT Standard Time	(GMT) Dublin, Edinburgh, Lisbon, London
Greenwich Standard Time	(GMT) Monrovia, Reykjavik
UTC	(UTC) Coordinated Universal Time
Central Europe Standard Time	(GMT+01:00) Belgrade, Bratislava, Budapest, Ljubljana, Prague
Central European Standard Time	(GMT+01:00) Sarajevo, Skopje, Warsaw, Zagreb
Romance Standard Time	(GMT+01:00) Brussels, Copenhagen, Madrid, Paris
W. Europe Standard Time	(GMT+01:00) Amsterdam, Berlin, Bern, Rome, Stockholm, Vienna
W. Central Africa Standard Time	(GMT+01:00) West Central Africa
E. Europe Standard Time	(GMT+02:00) Minsk
FLE Standard Time	(GMT+02:00) Helsinki, Kyiv, Riga, Sofia, Tallinn, Vilnius
GTB Standard Time	(GMT+02:00) Athens, Bucharest, Istanbul
Russian Standard Time	(GMT+03:00) Moscow, St. Petersburg, Volgograd
Ekaterinburg Standard Time	(GMT+05:00) Ekaterinburg
N. Central Asia Standard Time	(GMT+06:00) Novosibirsk

North Asia Standard Time	(GMT+07:00) Krasnoyarsk
North Asia East Standard Time	(GMT+08:00) Irkutsk
Yakutsk Standard Time	(GMT+09:00) Yakutsk
Vladivostok Standard Time	(GMT+10:00) Vladivostok
Magadan Standard Time	(GMT+11:00) Magadan
Kamchatka Standard Time	(GMT+12:00) Petropavlovsk-Kamchatsky

Themes

The color of the components in the application can be changed by using themes. A theme consists of an xml file specifying the colors to use for the components. The default theme files `day_default.xml` and `night_default.xml` are included and can be used as a base for creating custom themes⁶. If the theme file can not be loaded, the default day theme will be used.

To determine which theme to use, the setting `<ThemeMode>` is used. If it is set to 0, the day theme is used. If it is set to 1, the night theme is used, and if it is set to 2, the theme is selected automatically, based on the time of day.

The following settings define the themes to use for night, day and when starting.

<code><DayThemePath></code>	Path to file with the theme to use during the day. If not supplied, <code>day_default.xml</code> is used.
<code><NightThemePath></code>	Path to file with the theme to use during the night. If not supplied, <code>night_default.xml</code> is used.
<code><DefaultThemePath></code>	Path to default theme to use until the correct theme is determined. If not supplied, no default theme will be used.

The following setting is used only when no theme is set, or the theme does not define a color to use for the background color of the MDT lcd.

<code><mdtLcdIntColor></code>	Background color of the MDT display. ARGB ⁷ color stored as a decimal integer. Will be overridden by colors specified in the theme.
-------------------------------------	--

The theme file contains the following elements:

<code><Background></code>	The color used for the background of the application
<code><Foreground></code>	Color used for the background of buttons and similar
<code><ButtonNotification></code>	Color used for buttons when flashing (e.g. to show that new messages has arrived).

⁶ The default theme files may be overwritten by updates, so any custom themes should use different names.

⁷ 32-bit value representing the color components alpha, red, green and blue. When viewed as hex, the format is 0xAARRGGBB. Alpha should always be 0xFF (opaque).

<Text>	Color used for the text in buttons
<Border>	Color used for the borders of buttons and for the text written directly on the background.
<ActiveForeground>	Color used for pressed buttons
<DisabledButton>	The color for the text on disabled buttons.
<ListBackground>	Used for the background of lists, text boxes etc.
<ListText>	The color of the text used in lists and text boxes.
<MDTButton>	Color of the buttons on the MDT.
<MDTButtonText>	Color of the text on the MDT buttons
<MDTLcd>	The color of the MDT “lcd”. If no color is supplied, the color specified in the settings is used.
<MDTLcdText>	The color of the text on the MDT “lcd”. The default color is black.
<KeyboardBackground>	The color of the keyboard keys.
<KeyboardText>	Color of the text on the keyboard keys.

Each color consists of an element for each of the red, green and blue components of the color.

Translations

The language to use for the user interface is defined with the following setting:

<Language>	Determines the language to use. The files [Language].txt and symbols_[language].csv must exist.
------------	---

The file containing the localized strings for a language is named [language].txt, and resembles an ini file. Each line consists of a key and a value, separated by an '='. The key may not be translated, while the value is supposed to be translated. Note that {0},{1} etc. in the value will be replaced with text when used, so it is important that they are not removed. For translation of the text on the MDT, the key for the buttons is based on the id of each button (see on-line help). The text for the MDT can use multiple lines, using | for line-break. Besides translation, [language].txt also contains a few language specific settings. These are settings.lang which is the language used in the navigation window (must match a .lang file in \SD card\Res\Skin) and settings.voice which is the language used for TTS while navigating (must match a folder in \SD Card\Res\Voices). If no language is specified for one of these, the settings in the navigation window will be used.

Keyboard

The following settings can be used to control the keyboard:

<keyboardPopupKeys>	This setting controls what happens when a key on the keyboard is pressed. When false, the border of the key will be highlighted. When true, a larger version of the key will be shown above the key, showing what key has been pressed, when hidden by the finger.
<keyboardShowEnter>	If true, a button is available on the keyboard to insert new lines when writing messages. Note that this means that application on the RTCU must handle the possibility of new lines (CR+LF) in the message.
<keyboardLayout>	Path to keyboard layout file. If not supplied, the default keyboard layout is used. The keyboard layouts are stored in simple text files where each line in the file is a line on the keyboard, and each character in the file is a key on the keyboard. The bottom line of the keyboard with Shift, space etc. can not be changed.

Waypoint symbols

Two things are needed for a waypoint symbol. An image to display, and a definition to make the symbol available.

The image for a symbol is a series of 32 bit BMP files with transparency in 6 different sizes, named [1-6]_[name].bmp, where image 1 is the smallest and image 6 is the largest. The images must be stored in the \SD Card\Res\icons\POI\ folder along with the images for the other symbols.

Most image editors does not support writing BMP files with transparency, but some do, including GIMP (<http://www.gimp.org/>).

The definition of the symbols are stored in the file \SD Card\nmp\symbols_[Language].csv. Each line is a definition of a symbol, starting with the ID, then the localized name, ending with the common name of the images(the part without the number).

Images

Some images in the NMP software can be replaced to make it possible to change the identity to better fit with other devices. The following images in \SD Card\nmp\ can be replaced:

- Logo.png: The logo used in the about dialog.
- Connection_ok.png, connection_lost.png, connection_transfer.png: Connection status icons.

These images are ordinary .png files and can be created with most image editing programs.

Sounds

The sound files must be stored as PCM encoded .wav files(Waveform Audio File Format).

In addition to the sounds for `nmpPlaySound`, which can be placed anywhere, the following sounds in `\SD Card\nmp\` can be replaced with custom sounds:

- `msg.wav`: The sound played when messages are received and deleted.
- `stop.wav`: The sound played when stops are received and deleted.
- `mdt.wav`: The sound played when the MDT beeps.

How to install the NMP (optional)

This is a step-by-step instruction how to install the NMP application on a Windows CE device. This is not needed if a pre-installed device has been purchased:

- 1) Insert SD Card with application in Windows CE device.
- 2) Run `Install.exe` from the root of the SD Card.
- 3) Within seconds a message box appears with the message “Installation Successful”
- 4) Reboot the device and the NMP is running.

How to modify installation for a new device

The installation program needs to know the location of the SD card as well as the correct location to place the autorun program.

Before running the installation on a new device, it is therefore needed to check the folder location etc. and to make the needed changes to the installation configuration. Once the settings are correct, the `install.xml` can be used on all identical devices.

Open `install.xml` from the root of the SD card and check that the following settings are correct:

<code><EnableAutorun></code>	Set to true to have the application run automatically on startup. Set to false to not run on startup.
<code><BaseFolder></code>	Folder with the entire installation. Will normally point at the SD card
<code><AutoRunFilePath></code>	Many WinCE devices are able to run a specific program on boot. The location is device dependent and can not be read from the device itself. Contains the following two tags: <code><folder></code> The folder that the autorun program must be placed in. <code><file></code> The file name of the autorun program, e.g “Autorun.exe” Besides the autorun program, the configuration for the autorun program will also be placed in the folder.

Probing the device

Besides performing the installation of the NMP application, the installation program can also probe the device for relevant information, such as device id, timezones, persistent folders, serial ports and physical drives.

The installation program will only probe the data when no installation configuration is available, so rename or move `install.xml`, insert the SD card in the device and run `install.exe`. This will generate the file `info.xml` which looks like this⁸:

```

▼<Info xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http
  <DeviceId>Samsung Electronics/SMDK2450 Board</DeviceId>
  <autoRunPath>\Network\2577\autorun.exe</autoRunPath>
  ▼<persistentStorage>
    ▶<StorageProperties>...</StorageProperties>
    ▶<StorageProperties>...</StorageProperties>
    ▶<StorageProperties>...</StorageProperties>
    ▼<StorageProperties>
      <name>\SD Card</name>
      <writable>true</writable>
    </StorageProperties>
  </persistentStorage>
  ▼<DriveIds>
    ▼<DriveId>
      <drive>\SD Card</drive>
      <id>02BFDFE431</id>
    </DriveId>
    ▼<DriveId>
      <drive>DSK3</drive>
      <id>02BFDFE431</id>
    </DriveId>
  </DriveIds>
  <registryPath>\Flash Disk\Documents and Settings\system.hv</registryPath>
  <startupFolder>\Flash Disk1\startup</startupFolder>
  ▼<serialPorts>
    <string>COM2</string>
    <string>COM3</string>
    <string>COM1</string>
    <string>COM4</string>
    <string>COM5</string>
  </serialPorts>
  ▼<timeZones>
    ▼<TimeZone>
      <internalName>Dateline Standard Time</internalName>
      <displayName>(GMT-12:00) International Date Line West</displayName>
    </TimeZone>
  </timeZones>

```

Diagram annotations:

- Device ID: Points to `<DeviceId>Samsung Electronics/SMDK2450 Board</DeviceId>`
- Folders: Points to `<name>\SD Card</name>`
- Disk name: Points to `<drive>DSK3</drive>`
- Available serial ports: Points to `<string>COM1</string>`
- Timezone name: Points to `<internalName>Dateline Standard Time</internalName>`

This information can then be used for determining the correct settings for the device.

⁸ Please note that the file shown has been truncated to avoid too much redundant data.

Troubleshooting

Error	Solution
RTCU and NMP does not connect	Make sure that the cables are connected correctly and the correct port and baud rate is specified on both the RTCU and the NMP.
NMP complains that it does not have GPS connection	Make sure to call gpsFix repeatedly on the RTCU.
Stop is not activated when clicking “Drive”	Make sure that there is GPS data available.
NMP does not switch between night and day theme.	Make sure that the theme files exist and the paths are correct. Make sure that the theme switching is set correctly in the Sygic settings. Only if it is set to automatic, will the theme switch automatically.