NAVIGON

Users´s manual

NAVIGON Configuration Kit 5.0

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Impressum

NAVIGON GmbH
Berliner Platz 11
D-97080 Würzburg

Hotline (dtms-Service, 0,12 €/min): 0180-5-NAVIGON (0180-5-6284466)

Table of contents

1 Introductions

Topics covered in this chapter:

1.1 Important safety information

Note In your own interest, read the following notices and safety information carefully before starting up your navigation system.

1.1.1 Safety information on navigation

The use of ***NCK*** may only be effected at your own risk.

Attention: To protect yourself and others from accidents please do not operate the navigation system while driving!

Attention: You must not look at the display except when it is absolutely safe to do so!

Attention: The road layout and the traffic signs are absolutely prior to the instructions of the navigation system.

Attention: You must not follow the instructions of ***NCK*** except when the circumstances and the road traffic regulations allow doing so. ***NCK*** will guide you to your destination even when you have left your planned itinerary..

Note: We recommend to effect route planning before beginning the journey. If you are on the road and you want to establish a new itinerary, please drive to the next parking site!

Note: If you have not understood the instructions or if you are not sure about what to do next you may quickly refer to the map or arrow view of your navigation system.

1.1.2 Safety information on the GPS receiver

Attention: As it is not waterproof, don't expose your GPS receiver to water!

Attention: Do not install the cable next to security relevant equipment and supply lines.

Attention: Please check the security relevant equipment when you have installed the navigation system.

Attention: The GPS receiver should be disconnected from the power supply while your car is parking. As it spends energy permanently you might risk discharging the car battery.

Attention: The installation of the GPS receiver must not interfere with the sure operation of your car.

Note: Do not varnish the GPS receiver. Doing so might impede the reception of GPS signals.

Note: Do not use any harsh solvents for cleaning the GPS receiver. A damp cloth is sufficient! You might damage the case of the GPS receiver.

Note: Do not unplug by pulling the cable. This might damage the cable!

Note: Do not fold the cable. Check that the cable may not be damaged by any sharp object.

1.1.3 Safety information on the installation in the vehicle

Attention: Do not fix the holder within the deployment zone of airbags.

Attention: When you install the holder, please check that it may not constitute any safety risk, even in case of an accident.

1.2 Search facilities and conventions

Find information quickly

This manual offers the following search facilities:

- ⇔ In the footnote at the bottom of the page, you may check which chapter and which section you are actually reading.
- ⇔ A glossary at the end of the manual contains explanations on the technical terms used in this manual.
- ⇔ An index at the end of the manual allows precise search for the information contained in this manual.

Conventions

The conventions on the fonts and symbols used in this manual are explained in the two following tables:

Style	
bold	Buttons, icons, names of entry fields, and elements of the software's user interface. Also used for highlighting warnings and notices.
bold italic	Registered names and trademarks.
SMALL CAPITALS	Window and dialogue box titles.
`Source code`	File names and source code.
Italic and underlined	Name of the user mode related to the respective section. You do not need to read sections that do not affect your current user mode.

Symbol	**Verwendung**
	Indicates hints and notices that may ease the use of ***NCK***.
	Indicates additional information.
	Warns against dangers that might cause damage to objects and persons.

1.3 Liability

Limitation of liability

The software and the manual are subject to change without notice. NAVIGON GmbH may not be liable for the correctness of the information contained in this manual nor for damages resulting from the use of this manual.

To improve the quality of our products and our services, we appreciate all suggestions for improvement and all error notices.

1.3.1 Support

You need help?

Call our support staff for **Telephone support**:

Support-hotline for questions about the product
+49-(0)180-5-628 45 48 (0180-5-NAVIKIT)
(dtms-Service, 0,12 EUR/Min)

Hotline for technical questions
+49-(0)190-518 81
(dtms-Service, 1,86 EUR/Min)

On the web site of NAVIGON GmbH (http://www.navigon.com) you will find a Support section with a FAQ-list which gives answers to frequently asked questions.

1.4 Trademarks

Registered trademarks

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The absence of an explicit labelling of registered trademarks does not allow the conclusion that this brand was not subject to the rights of third party.

⇔ Windows, Windows CE, Microsoft Excel, ActiveSync und Microsoft eMbedded Visual C++ are registered trademarks of the MicrosoftCorporation .

2 Operating Mode and Installation

Topics covered in this chapter:

2.1 Operating Mode of your Navigon Configuration Kit

NCK

The ***NAVIGON Configuration Kit*** (NCK) is a professional navigation solution tailor-made for industrial customers. Alongside the pure navigation function, the NCK also offers extra functions relevant to B2B customers. The system, for example, can be used offroad as a navigation aid. Undigitalised routes can be saved as routes (tracks) and driven. In addition, data from the customer directory can be directly transferred to the NCK; in doing so, addresses are directly converted into coordinates and established as destinations.

Linking the NCK to existing systems for tour planning, contract planning or goods management is possible by means of the settings in the INI files. This individualised navigation solution also enables you to tap into complete networks, connections as well as warehouse and customer locations.

Mobility is the decisive factor for even more comfortable navigation systems. Nowadays, systems must not be built-in into the vehicle. The user must be able to carry them with him. The navigation software being installed on a laptop, a PDA or on another Windows CE client e.g. Skeye.Pad, its use is no more restricted to one single vehicle. Its service may be requested in different situations.

By returning the current GPS position, it is possible to check at any time where the vehicle is located. Alongside this, the status of the navigation can be called up at any time, hence the current distance and duration to destination can be simply conveyed. This way you can plan your tours efficiently.

TMC (Traffic Message Channel) ensures you detour traffic jams – enabling your company fleet to be en route with the shortest possible standing times. As a free-of-charge service, TMC reports on current jams and guides the driver to a jam-free alternative route in order to save valuable time. It is possible to use this service in Germany, Austria, Switzerland, Italy, France, Belgium, the Netherlands, Spain, Sweden and Denmark. In this way you can adapt the navigation software to your own route requirements at any time. The portrayal of company-specific destinations (user-defined POIs) in the map round off the NAVIGON Configuration Kit.

.INI Commands

With ***NCK*** you may easily realise the connection to third-party systems (like route planning, order processing or resource planning) for transmitting coordinates or address information by entering .INI parameters.

For detailed information on the .INI commands, please refer to "Special NCK functions" page 97.

Features

With ***NCK***, you will not only arrive quickly and safely at your destination. It is the perfect tool for increasing the efficiency of your mobile navigation.

⇔ easy link to existing systems

⇔ transfer of addresses and contacts from linked systems into

the navigation

- ⇔ offroad navigation – navigation also outside of the recorded road network
- ⇔ creating user-defined points of interest for company-specific destinations (with POI importer)
- ⇔ intuitive, fast use of the navigation, as no manual entry is required
- ⇔ not necessary to know the places you want to go to
- ⇔ return of the current GPS position in order to optimise the tour planning
- ⇔ TMC function for a smooth and jam-free working process
- ⇔ efficient and transparent planning
- ⇔ quick Return-on-Investment

2.1.1 System requirements

Requirements

The following minimum requirements must be fulfilled for a trouble-free use of ***NAVIGON Configuration Kit***:

Supported platforms

- ⇔ Windows for Notebook (2000 with Service Pack 4, XP with Service Pack 1)
- ⇔ Windows Mobile 2003
- ⇔ Windows CE.net 4.2

Note: Support for further platforms is currently being developed.

For further details visits out web site (http://www.navigon.de)

Notebook

- ⇔ Pentium PC 266 MHz
- ⇔ Microsoft Windows 2000 oder XP
- ⇔ DVD-ROM Drive
- ⇔ 64 MB RAM (128 MB RAM recommended)
- ⇔ VGA Graphics Adapter with at least 32000 colours
- ⇔ Microsoft compatible mouse
- ⇔ about 40 MB of free hard disk capacity for the program data
- ⇔ optional: about 1.3 GB of free hard disk capacity for the complete map of Europe

Pocket PC

- ⇔ ARM processor
- ⇔ Windows Mobile 2003
- ⇔ 64 MB RAM
- ⇔ 15-20 MB free hard disk capacity

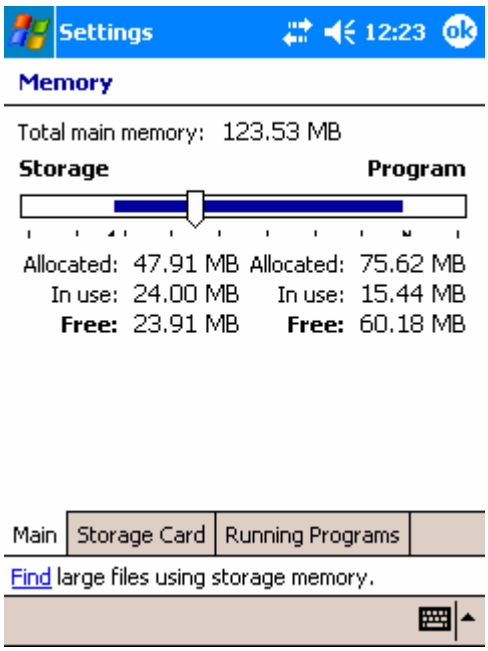
Skeye.Pad

- ⇔ ARM Prozessor
- ⇔ Windows CE.net 4.2
- ⇔ 64 MB RAM

Note: please ensure that the NCK has at least 15 MB of memory available. On account of the dynamic memory consumption depending on the map material we do however recommend 20 MB free memory for optimum performance.

Setting up the memory in Windows Mobile 2003 ...

1. Tap on **Start > Settings** on your ***Windows Mobile 2003***.
2. Activate **System** and tap on the **Memory** symbol



15.83 MB free program memory is available here.

3. If necessary move the memory controller to the left in order to give more program memory to the NCK.

Note: To free up this program memory you can remove some programs that you don't need under "Listed programs". You can also deactivate unrequired functions e.g. WLAN.

Note: This manual explains the operation of the software on a Pocket PC. The operation on other supported Windows Mobile devices works the same way.

2.1.2 Operating Mode of your navigation system

Operating mode of the GPS

Based on satellites the **G**lobal **P**ositioning **S**ystem (GPS) determines your current geographical position. The GPS has originally been developed as a weapon guidance system for the American forces.

The GPS is based on 24 satellites which are in orbit round the earth. They are permanently emitting the time and their current position. The GPS receiver receives this information and calculates the longitude and the latitude of its own actual position.

The signals of at least three satellites are needed to determine the longitude and the latitude. With the signals of at least four satellites the elevation may be calculated, too. The determination has an accuracy of about 3 yards.

Maps

The supplied maps also include geographical coordinates for the points of interest, roads and towns. The navigation system can therefore calculate a path from a starting point to a destination.

If your navigation system receives the signals from at least 3 satellites it can determine your position and show it on the map. This position can serve as a starting point for a route calculation.

As a position definition and illustration takes place once per second you can follow your current position on the map at any time.

Traffic information with TMC

The **T**raffic **M**essage **C**hannel (TMC) provides the navigation system with the latest traffic information. A TMC module which is available as accessory receives these signals broadcasted by radio stations.

Operating mode of the TMC

The traffic situation on highways, motorways, and other routes is checked by jam sensors or by the police and other persons. The collected traffic data is transmitted to traffic guidance centres where they are evaluated and sent to the radio stations. The stations are broadcasting the data inaudibly via RDS (**R**adio **D**ata **S**ignal).

The TMC-receiver extracts the TMC data from the RDS signal and provides the navigation software with them. Current traffic obstructions may then be displayed. The reported obstructions may be considered for route calculation. In case of obstructions on the computed itinerary they may be used for computing an alternative route which evades the obstruction.

NCK features dynamic navigation which is well adapted to the current traffic situation.

2.2 Installation of the navigation system

Quick-start guide…

You must carry out the following procedures before using ***NCK***:

⇔ Software installation, page 17

⇔ Transfering maps, page 19

⇔ Installation in the vehicle, page 20

2.2.1 Software installation

Overview

Please start with installation of the navigation software. You have to proceed differently depending on which device you are installing the NCK. Furthermore the NCK is also offered as an preinstalled version on a memory card.

2.2.1.1 Installing on a Windows CE device without a pre-installed memory card

How to install the software on a Windows CE device...

1. Establish an ***ActiveSync*** connection to your Windows CE device (refer to the user manual for the Windows CE device).
2. Insert the **NCK DVD** in your DVD drive.

   The installation starts automatically with an activated AutoPlay function.
3. Follow the instructions on the screen.

Note: If the installation doesn't start automatically, open the DVD in ***Windows Explorer*** and double-click on the **Setup.exe** program.

2.2.1.2 Installing on a Windows CE device with a previously installed memory card

How to install the software on a Windows CE device...

1. Insert the memory card into your Windows CE device. (you may have to remove the protective cap from the memory slot before you do this).
2. Now launch the file Explorer on your Windows CE device and go to the directory of your memory card. (possible names are, for example Storage Card,SD-Card,CF-Card.)
3. In this folder tip on the installation file **NCK Setup**.
4. The installation is now carried out fully automatically. Please follow the instructions on the screen of your Windows CE device.

2.2.1.3 Installing on a notebook

How to install the software on a notebook…

1. Insert the **NCK DVD** in your DVD drive.

   Installation is launched automatically with an activated AutoPlay function.

2. Follow the instructions on your screen.

Note: If the installation doesn't start automatically, open the DVD in the ***Windows Explorer*** and double-click on the **Setup.exe** program.

Notebooks without serial port…

Many modern Notebooks do no longer provide any serial port. To use our GPS-Mouse with the USB-Cable however, please follow the instructions:

Note: This example describes a Windows XP installation.

The USB2Serial-Driver does not work if your GPS-Mouse contains the optional Bluetooth-Module.

1. Please connect the USB2Serial-Cable (GNS Adapter to USB) with your GPS-Mouse and plug the cable into the USB-Port of your Notebook.

   The "Found New Hardware Wizard" should appear now.

2. Check "Include this location in the search:"

3. Please click on "Browse" and indicate the path of the "USB2Serial" folder on Your **NCK-DVD1** and confirm. Please click "Next" to continue.

   The USB2Serial driver will now be installed automatically.

After the installation we recommend that you restart your Notebook.

Note: Note: To uninstall the USB2Serial driver, please execute **DRemover98_2k.exe**. You will find it in the folder "USB2Serial" on your **NCK-DVD1**.

2.2.1.4 Installing on a Skeye.Pad

How to install the software on the Skeye.Pad…

1. Insert the **NCK DVD** in your DVD drive.

   Installation is launched automatically with an activated AutoPlay function.

2. Follow the instructions on your screen.

3. Click on **install NCK** and choose the main directory of your memory card as the destination folder.

4. Insert the memory card in your Skeye.Pad and reset. The NCK is now automatically installed on your Skeye.Pad.

Note: Alternatively you can install the NCK by opening your memory card under ***Windows Explorer*** and double-clicking on the **.cab** file you've copied in step 3.

2.2.2 Transfering maps

Overview

In the second step please carry out the transfer of the map material.

How to transfer the map material…

1. Launch the setup again as described in the previous section “Software installation” on page 15, and choose **Transfer maps** in the setup.
2. Choose the map material that you’d like to transfer.
3. **Windows CE device**: As the destination folder for the map material choose the main directory of your memory card.

   Notebook: As a destination folder for the map materials, choose the folder **Maps** in the installed NCK program folder.

2.2.3 Software registration and activation

Activation code

At the first start of ***NCK*** you will be prompted to enter an activation code. You cannot start the software without entering this code.

To obtain the activation code, you will need the serial number which is printed on the back of the **NCK** booklet and the number which is indicated at the first start of the software.

With these two numbers you may obtain the activation code:

⇔ in the web on http://www.navigon.com or

⇔ by phone at our support for Germany, Austria and Switzerland
0049- (0)180-5-NAVIKIT (0180-5-6284548)
(dtms-Service, 0,12 €/min).

Enter the activation code into the respective entry field and tap the **OK** button or the ENTER-key of the on-screen keyboard.

Note: Keep the activation code at a safe place. You might need it later, e.g. when you reinstall the software on your device.

2.2.4 Installation in the vehicle

Survey

Mount the holder of the Windows CE device and the GPS receiver before you use the navigation system. You will also have to initialise the GPS receiver and, if purchased, the TMC module.

Note: If the support and the Windows CE adapter are not included in the delivery scope, you can order both from our support team, our online shop or from a specialist dealer.

2.2.4.1 Mounting and connecting your Windows CE device

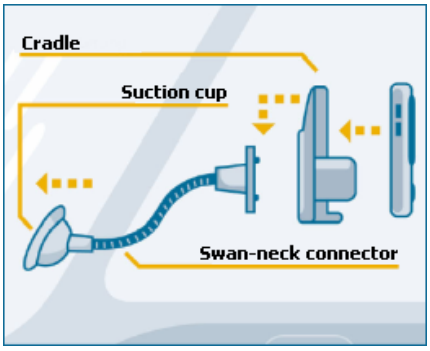
Attention: The mounted holder must not impede the driver's attention on the traffic. If this is not possible, mount the holder somewhere else so that safe driving is granted.

Connecting the Windows CE device...

1. Attach the cradle of the Pocket PC to the swan-neck mount.

Note: Take notice of the inscription on the swan-neck mount. The arrow with the inscription **close** must show in snap-on direction. The connection must snap on audibly.

2. Place the suction cup on the windscreen. Press the lever firmly to the windscreen before switching it.
3. Put the Windows CE device into the cradle. Make sure that it is held safely!
4. Plug the adapter into the socket at the bottom of the Pocket PC.



2.2.4.2 GPS Mounting and connecting the GPS receiver

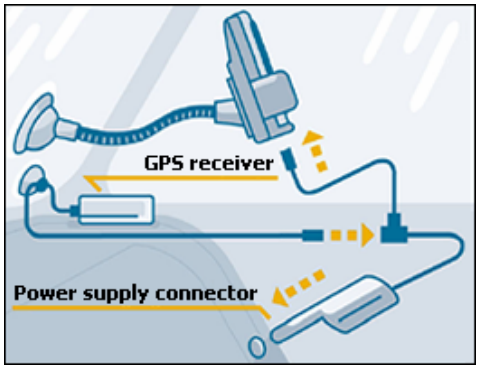
Attention: The mounted GPS receiver must not impede the driver's attention on traffic.

Connecting the GPS receiver...

1. Place the GPS receiver horizontally under the windscreen, as far forwards as possible.

Note: The reception of GPS-signals may be obstructed by windscreen heating wires, by a windscreen aerial, or when the windscreen is metallised. In this case you might use an external vehicle antenna which may be ordered from our support team.

2. Plug the connection cable of the GPS receiver to the respective socket of the adapter which connects the Windows CE device to the power supply.
3. Plug the jack of the adaptor into the socket of the cigarette lighter.
4. Turn the GPS receiver on.



2.2.4.3 Bluetooth-module

Bluetooth module

If you have purchased the Bluetooth module together with your GPS-receiver, it was inserted and has been set up during the installation procedure.

In case you have purchased it as a supplement proceed as described in "Equipping the NAVIGON|TriCeiver ", page 148.

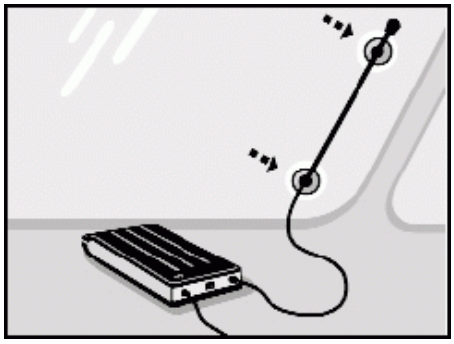
2.2.4.4 TMC-module

TMC-module

If you have purchased the TMC module together with your GPS-receiver, it was inserted and has been set up during the installation procedure.

In case you have purchased it as a supplement proceed as described in "Equipping the Equipping the NAVIGON|TriCeiver ", page 148.

1. Insert the aerial into the left slot.
2. Fix the aerial with the suckers parallel to the right strut on the windscreen.



2.2.4.5 Initialising the GPS receiver and the TMC module

Initialisation of the TMC module

The initialisation process of the TMC module starts automatically. Within a few seconds, the TMC-icon on your Pocket PC switches from **No TMC** to **Searching for broadcast station** and finally to **TMC ready**.

 **No TMC**

 **Searching for broadcast station**

 **TMC ready**

Note: In case the symbol **No TMC** is shown, the TMC-module is possibly not inserted correctly, or the GPS-receiver is not connected correctly. **No TMC** is also shown when your navigation system does not dispose of a TMC-receiver.

For details on the operation of the TMC module, please refer to "Using TMC functionality", page 92.

Initialisation of the GPS receiver

The initialisation process of the GPS receiver starts automatically.

Within 15 seconds, the GPS-icon on your Pocket PC switches from **No GPS** to **No signal**.

As soon as the signals of more than 3 satellites are being received, the GPS-icon switches to **GPS ready**.

 **No GPS**

 **No signal**

 **GPS ready**

This procedure may take about 20 minutes. When the GPS icon becomes **GPS ready** earlier, it would be good to leave the GPS receiver turned on for about 15 more minutes in order to grant its correct operation.

The initialisation process is finished when the reception of more than 3 satellites is assured after about 20 seconds.

Note: This initialisation process must be carried out only once. The other times, the GPS receiver will be ready within about one minute.

Note: When the GPS receiver is connected to the power supply for the first time, leave it connected for about 2 hours in order to charge its battery.

Note: A new initialisation may become necessary when the GPS receiver has not been in use. In this case, the initialisation process would take about 10 minutes.

Caution: Disconnect the receiver from the power supply when you are leaving the car parked for a longer period. Failure to do so might result in a flat battery as the receiver consumes electricity permanently.

For details on the operation of your GPS receiver, please refer to "User interface and basic functionality", page 28.

3 Operating the navigation software

Topics covered in this chapter:

3.1 Starting NCK

Precondition

You have carried out installation and activation of ***NCK*** as described in "Installation of the navigation system", page 17.

Starting the navigation software…

1. Turn on your Windows CE device.
2. Tap on the **NCK** symbol on the desktop.

   The Main screen opens:

Note: Depending on the chosen user mode (refer to section "User modes" on page 37) you will have different functions available.

Main screen

Standard mode

Extended mode

All functions of the program are accessible via the Main screen.

One destination

Tap this button to indicate a destination for navigation (one stage).

For details, please refer to "Navigation and Itinerary planning", page 75.

Navigation homewards

Tap the **Home** icon to navigate to your home address.

For details, please refer "Using your home address", page 56.

Navigation via voice command

Tap the **Voice command** icon to start navigation to a favourite via voice command.

For details, please refer to "Voice command", page 57.

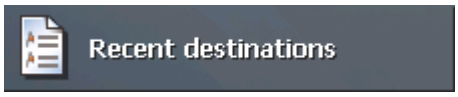
Favourites (Standard mode)

Tap the **Favourites** button to navigate to a favourite.

For details, please refer to "Favourites (Saved destinations)", page 52.

Recent destinations (Standard mode)

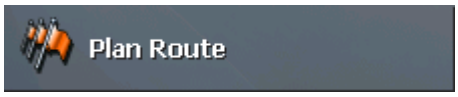
Tap the **Recent destinations** button to select a destination entered previously.



For details, please refer to "Recent destinations", page 54.

Route planning (Extended mode)

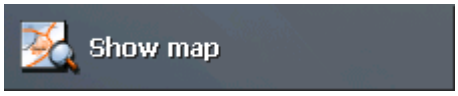
Tap the **Route planning** button for itinerary planning purposes.



For details, please refer to "Navigation to several destinations (Itinerary planning)", page 79.

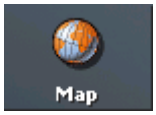
Display the map (Extended Mode)

Tap the **Show map** button to display the map which is currently in use..



Select map

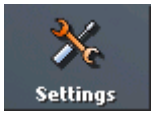
Tap the **Map** button to select another map from the memory card which is currently inserted.



For details, please refer to "Working with the map", page 62.

Settings

Tap the **Settings** button to modify the settings of ***NCK***.



For details, please refer to "Configuration of the NCK", page 133.

Quit

Tap the **Quit** button to quit ***NCK***.

3.2 User interface and basic functionality

Operation

In order to offer a maximum of flexibility and convenience for the operation of ***Configuration Kit*** there is three ways to make entries:

- ⇔ tapping with the stylus,
- ⇔ tapping with your finger, or
- ⇔ via the hardware keys.

Moreover, you may indicate a saved destination by voice to start navigation to it.

3.2.1 Hardware keys

Key configuration

In ***NCK***, you may configure the hardware keys to execute the "Up", "Down", "Left", "Right", "OK" and "Return" actions. This enables convenient and easy operation.

Note: This function is only available on specific Windows CE devices, e.g. a Pocket PC.

1. On the main screen, tap **Settings**.

   The **SETTINGS** screen opens.
2. Via the arrow buttons, select the **KEYS** screen.
3. Tap **Configure**.
4. Select the keys for the respective actions.
5. Tap the **Save** button.

Note: When you quit the navigation software, the keys will have their standard functionality.

3.2.2 Software keyboard

Survey

A software keyboard appears at the bottom of the screen when text entries are necessary. Choose between a standard keyboard, a character keyboard or a mobile phone keyboard.

Select a software keyboard by tapping the respective icon at the bottom of the screen. The icon of the active keyboard appears pressed.

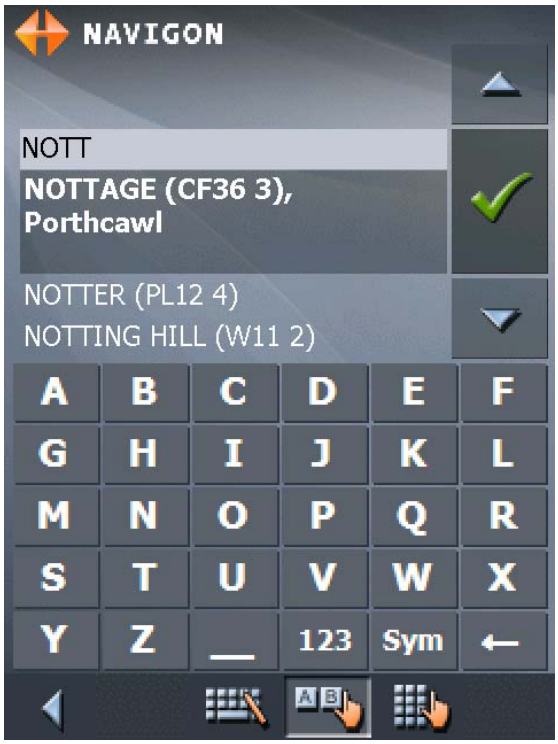
3.2.2.1 Standard keyboard

Use the stylus to operate the standard keyboard.

You may use small or capital letters for entering destination data.

And you need not enter special characters when entering a destination's town or street name. ***NCK*** replaces these characters automatically. When you are looking for, e.g., a French town called "Héroïnès", simply type "heroines".

3.2.2.2 Character keyboard



You may carry out all entries with your finger on the character keyboard. But you may enter capital letters only.

You need not enter small letters or special characters when entering a destination's town or street name. ***NCK*** replaces these characters automatically. When you are looking for, e.g., a French town called "Héroïnès", simply type "HEROINES".

Entering a space, deleting a character…

Tap the icon to enter a space character.

 .

Tap the icon to delete the character at the left of the cursor.

 .

Switching between character and number entry…

Tap the icon to enter numbers, e.g. for a postcode.

 .

Tap the icon to return to the character entry mode.

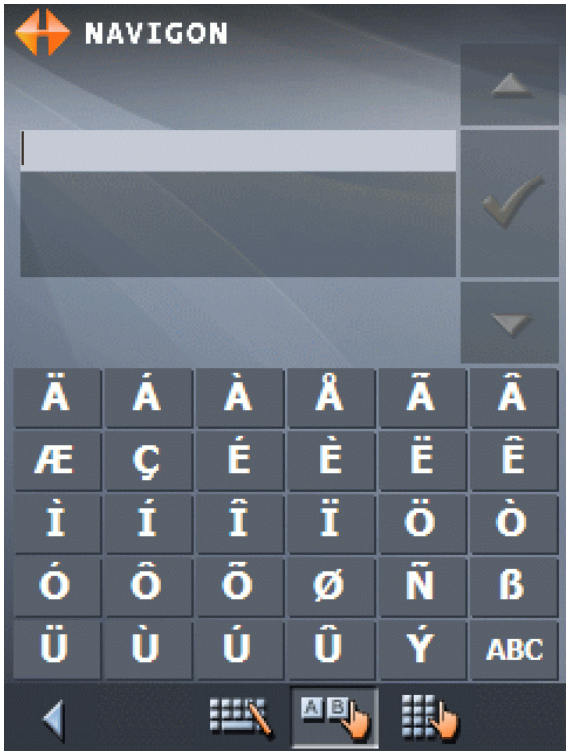
 .

Special characters

Tap the icon to enter a special character.

 .

The special characters keyboard appears.



As soon as you have entered a special character the letter keyboard reappears.

You need not enter special characters when entering a destination's town or street name but they may be helpful for entering names for saved destinations and itineraries.

Moving the cursor

If you want to delete another character than the one to the left of the cursor position, or if you want to insert a character at another place than at the end of the text, you have to move the cursor to the respective place.

Just tap the place where you want to have the cursor.

3.2.2.3 Mobile phone keyboard

You may carry out all entries with your finger on the mobile phone keyboard. But you may enter capital letters only.

As on a mobile phone, each key is designed to enter several letters with it. The position of a letter on a key caption indicates how often you must tap this key to enter the respective letter. E.g., to enter an "S", tap the "PQRS" key four times.

You need not enter small letters or special characters when entering a destination's town or street name. ***NCK*** replaces these characters automatically. When you are looking for, e.g., a French town called "Héroïnès", simply type "HEROINES".

Entering a space, deleting a character…

Tap the icon to enter a space character.

 .

Tap the icon to delete the character at the left of the cursor.

 .

Switching between character and number entry…

Tap the icon to enter numbers, e.g. for a postcode.


.

Tap the icon to return to the character entry mode.


.

Special characters

When you tap a key, a line above the software keyboard appears which lists all characters that may be entered by this key. The

active character is highlighted.

If, e.g., you want to type "Ø", tap the "MNO" key repeatedly until "Ø" is highlighted in the line above the software keyboard.

You need not enter special characters when entering a destination's town or street name but they may be helpful for entering names for saved destinations and itineraries.

Moving the cursor

If you want to delete another character than the one to the left of the cursor position, or if you want to insert a character at another place than at the end of the text, you have to move the cursor to the respective place.

Just tap the place where you want to have the cursor.

3.2.3 Command buttons

Icons

The following buttons appear at the bottom of every ***NCK*** screen:

Return

Tap this icon to return to the previous screen. This icon is not available on the **MAIN SCREEN**.

Main screen

Tap this icon to open the main screen. This icon is not available on the **MAIN SCREEN**.

GPS

The **GPS** symbol is placed at the bottom of the screen. The different GPS-icons have the following significance:

Symbol	Significance
 **No GPS**	A GPS receiver is not connected or the power supply is interrupted.
 **No Signal**	A GPS receiver is connected, but the received signals are not convenient for navigation purposes (e.g. because you are in a closed building).
 **GPS ready**	The signals are convenient. Navigation may begin.

Tap the **GPS** icon to display the current GPS status:

Entry	Significance
GMT	**G**reenwich **M**ean **T**ime Time of London ignoring daylight saving time.

Entry	Significance
Longitude / Latitude	Current position: Indication of east longitude and north latitude.
Satellites	Number of received satellites. At least three satellites must be received for navigation purposes.
HDOP	**H**orizontal **D**ilution **o**f **P**recision: Indicates the quality of position determination. Theoretically any value from 0 to 50 may occur. The smaller the value, the more accurate is the position determination (value 0 = no deviation from the real position). Values up to 8 are convenient for navigation purposes.
Speed	Indicates your current speed.
Position	Indicates the address of your current position.
Save	Tap this button to add the current address to the **FAVOURITES**.
Quit	Tap this button to quit the GPS screen.

Logbook

Tap this icon to access the logbook functions.

For details on the logbook functionality, please refer to "Keeping the logbook", page 95.

TMC

The **TMC** symbol is placed at the bottom of the screen. The different TMC-icons have the following significance:

Symbol	Significance
 **No TMC**	A TMC-module is not inserted or not connected correctly. -OR- The GPS-receiver is turned off or not connected correctly.
 **Searching for broadcast station**	The TMC-receiver is ready but cannot receive TMC signals. This is the case when, e.g., you are in an area where TMC is not available.
 **TMC ready**	TMC signals are being received.

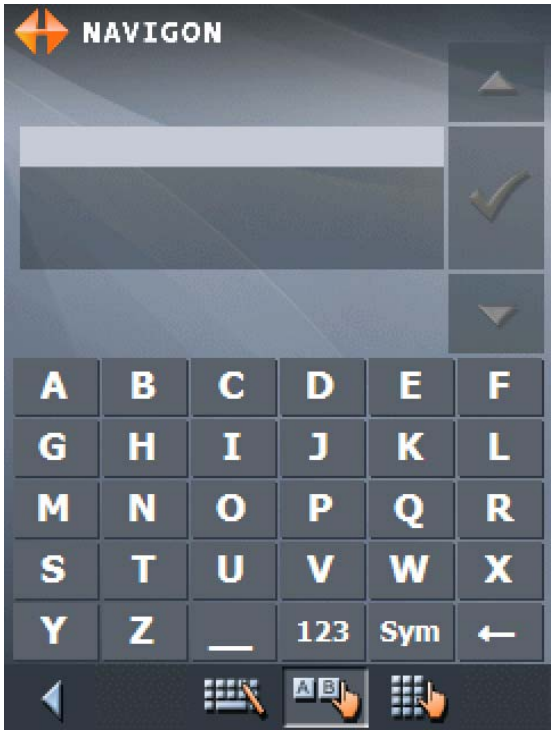
For details on the TMC functionality, please refer to "Using TMC functionality". Page 92.

Start

Tap on this button to open a different program on your Windows CE device without ending the ***NCK***. This could be practical if you want to change or set up contacts, without ending the navigation. Tap on the button again to end this mode.

Note: This button is not available to you on the Notebook.

3.2.3.1 Lists



Survey

There are many cases where you have to select an entry from a list.

If, for example, you have not completely entered the name of a town before tapping **OK**, a list appears which contains all towns beginning with your entry or having it into their names. The postcode of the towns is also indicated in order to allow you to choose the correct one if there is more than one town with the same name.

Entry with focus

One of the entries has the focus. This entry is written in bold. Moreover, there is often some additional information on that entry in a 2nd or 3rd line. In a list of towns, there is indicated the county the respective town belongs to.

Icons

At the right hand side of lists, there are three icons:

OK: Tap this icon to confirm the selection of the entry with the focus (which is placed directly at the left of the OK icon).

Up: Tap this icon to scroll the list one item up.

Down: Tap this icon to scroll the list one item down.

To scroll up or down through the list by several elements, tap several times on the respective button.

3.2.4 User modes

Survey

NCK can be operated in two different user modes: Standard and Extended. This grants an optimum of usability for each user: Less experienced users and users who do not need using the complete functionality of the software work in standard mode. Experienced users who are ready to spend some time in getting used to operate the complete functionality word in *extended mode.*

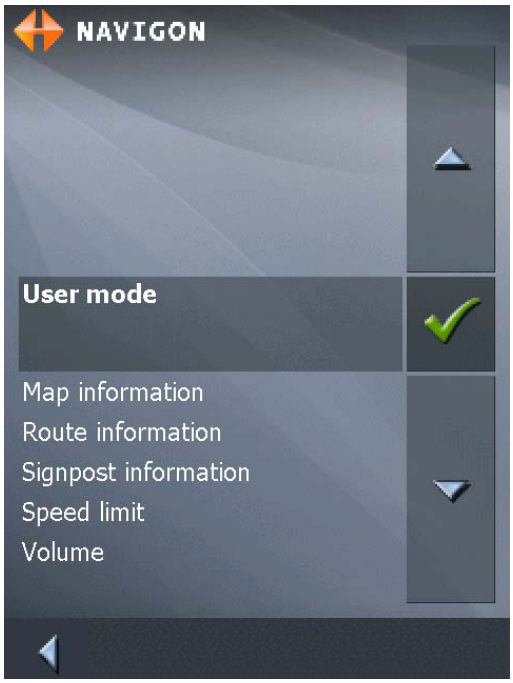
Some configuration settings have an effect on the work in standard mode but can only be changed in extended mode. For further information, please refer to "Configuration of the NCK", page 133.

Changing the user mode

You may at any time switch to the other user mode.

1. In the **MAIN MENU**, tap **Settings**.

   The **SETTINGS** screen appears:



2. The **User mode** entry is at the top of the list. If it is not selected, tap the **Up** icon repeatedly until **User mode** is selected.

   The **USER MODE** screen appears:

Your current user mode is indicated on the **Current user mode** field.

2. Tap **Current user mode** to switch to the other user mode.

   The name of the user mode you want to switch to becomes the caption of the entry field.

3. Tap **Save** to save the changes.

Note: When you switch to standard mode, a dialog window asks you whether you want to keep the configuration changes you have made in *extended mode*. This dialog window appears even when you have not made any configuration changes. Tap **Yes** if you want to keep these changes.

3.2.4.1 Standard Mode

Survey

In **standard** mode, the software is easier to operate. As it offers reduced functionality, functions may be accessed quicker. So, if you do not need functions like Route planning or indicating a destination on the map, we recommend working in **standard** mode.

Functionality

In standard mode, you can:

- ⇔ Select another map
- ⇔ Enter a destination to navigate to (Address, POI)
- ⇔ Navigate home
- ⇔ Select a saved destination
- ⇔ Select a destination from the recent destinations list
- ⇔ Change some configuration settings

3.2.4.2 Extended Mode

Survey

In **extended** mode, you dispose of the complete functionality of ***NCK***. You may for example indicate and navigate to more than one destination (route planning with stages). You may change all configuration settings. If you want to use the complete functionality, work in **extended** mode.

Functionality

In addition to the functions of the standard mode, the extended mode enables you to:

- ⇔ Indicate a direction directly on the map
- ⇔ Plan and save routes with several stages
- ⇔ Adjust the route options before each navigation
- ⇔ Change all configuration settings.

3.3 Indicating a destination

Basic principle of navigation

The indication of destinations is the basis of navigation respectively of itinerary planning. In this chapter, you will learn about the possibilities to indicate and manage destinations in ***NCK***.

For details on how to start navigation to a destination, please refer to "Navigation and Itinerary planning", page 75.

Indicating a destination

In ***NCK*** there are several possibilities to enter or to select destinations:

- ⇔ Manual address entry, see page 40
- ⇔ Via the Special destinations function, see page 42
- ⇔ Via the contacts folder, see page 47
- ⇔ By indication on the map, see page 49
- ⇔ By selection from the Saved destinations list, see page 52
- ⇔ By selection from the Recent destinations list, see page 54
- ⇔ Via the Home icon, see page 56
- ⇔ By Voice command, see page 57
- ⇔ Via a destination file, see page 107
- ⇔ Via Windows Messages, see page 119

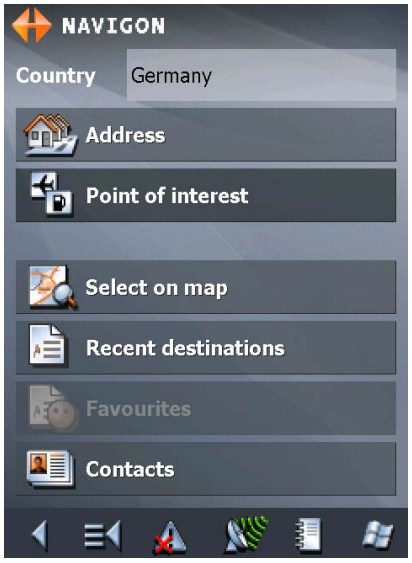
3.3.1 Entering an address

Navigating to a destination…

1. In the **MAIN MENU**, tap **Navigation**

   The **DESTINATION** screen opens

Standard mode



Extended mod

2. Tap the **Country** entry field and select the destination country if it is not yet indicated.

Note: Only countries of which at least a part is represented on the currently loaded map may be selected.

3. On the **DESTINATION** screen, tap **Address**.

   The **ADDRESS** screen opens.

4. Enter the destination town into the **Town or Postcode** entry field. Enter either its name or its postcode.
5. Enter the destination street into the **Street** entry field.
6. Enter the house number of your destination into the **Nr.** field, if you know it.

Note: If the house numbers of the respective street are stored in the database of places, you may tap the field besides the **Street** field.
If no house numbers are stored, the respective field is deactivated. The software navigates to the respective street

7. Enter the name of a crossroad into the **Intersection** entry field if you want to define an intersection as destination point (e.g. because the house number is not available)..
8. Tap the **Save** button if you want to navigate more often to the entered destination. You may then quickly select it from the **Saved destinations** list.

For information on saving destinations, please refer to "Saving a destination", page 59.

3.3.2 Selecting a point of interest

Points of interest

Special destinations, also known as POIs (**P**oints **o**f **I**nterest), are stored in the database of places and may be displayed on the map. Ports, airports, restaurants, hotels, petrol stations, public buildings, and others belong to the special destinations.
Indicate a special destination by selecting one

- ⇔ nearby,
- ⇔ of superregional significance, or
- ⇔ in another town.

Note: With ***NCK***, you may as well define your own POIs and use them for navigation purposes. For further information, please refer to "User defined POIs" page 113.

Selecting a point of interest

1. In the **MAIN MENU**, tap **Navigation**.
   The **DESTINATION** screen opens.

Standard mode

Extended mode

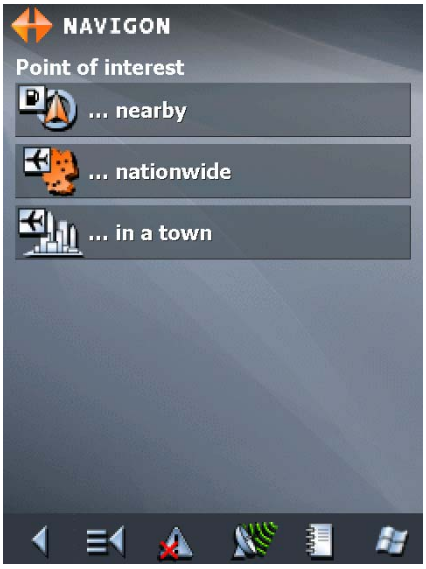
2. Tap the **Country** entry field and select the destination country if it is not yet indicated.

Note: Only countries of which at least a part is represented on the currently loaded map may be selected.

Extended mode

3. On the **DESTINATION** screen, tap **Point of interest**.

The **POINT OF INTEREST** screen opens:



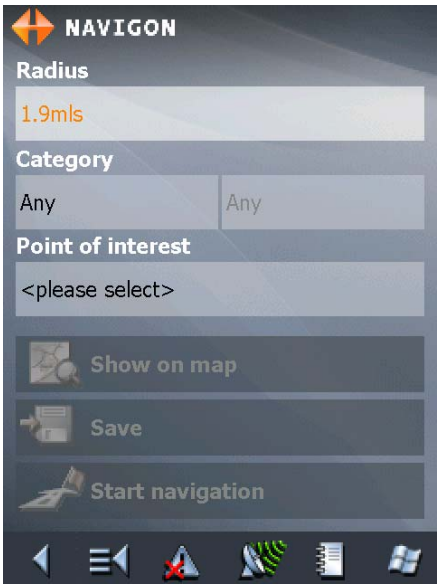
3.3.2.1 Selecting a Point of interest nearby

Note: You may only display special destinations nearby when the GPS receiver is connected and when your current position can be determined.

Selecting a point of interest nearby…

4. On the **DESTINATION** screen, tap **...nearby**.

The **POI NEARBY** screen opens:



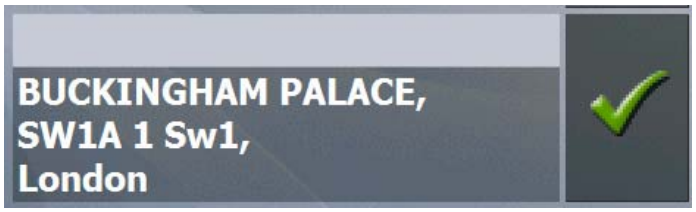
5. Enter the radius around your current position within which you want to search for points of interest into the **Radius** entry field.

6. Select the main category of points of interest to search for from the left one of the two **Category** list fields, e.g. "Garage". Only points of interest situated within the indicated radius will be displayed.
7. Select the **Subcategory** of points of interest to search for from the right one of the two **Category** list fields, e.g. "Audi VW Seat Skoda".

Note: If you leave the **Subcategory** field empty, all points of interest matching with the selected main category will be listed in the **Point of interest** list field.

8. Select the correct destination from the **Special destination** list field.

   All special destinations matching your entries are listed, including their linear distance from your current position:



9. Tap the **Save** button if you want to navigate more often to the entered destination. You may then quickly select it from the **Saved destinations** list.

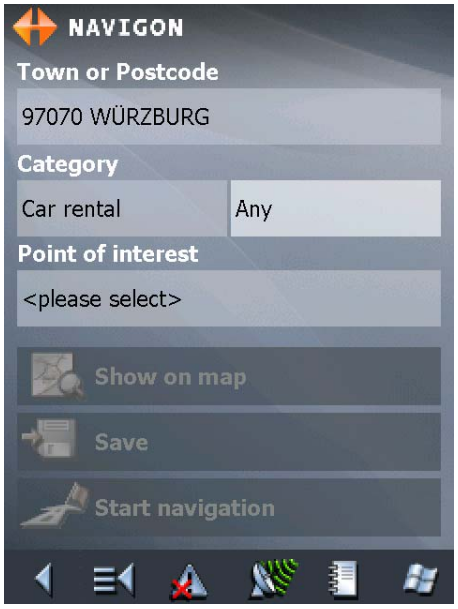
For information on saving destinations, please refer to "Saving a destination", page 59.

3.3.2.2 Point of interest in a certain town

Point of interest in a certain town…

4. On the **POINT OF INTEREST** screen, tap **...in a town**.

The **POI in a town** screen opens:



5. Enter the name of the town in which you want to search for points of interest into the **Town or postcode** field.
6. Select the main category of points of interest to search for from the **Category** list field (e.g. Nightlife). Only categories matching your Town entry are listed.
7. Select the **Subcategory** of points of interest to search for from the right one of the two **Category** list fields (e.g. Cinema).
8. Select the correct destination from the **Point of interest** list field.

Note: You need not make entries into the **Category** and **Subcategory** fields. Their purpose is only to shorten the **Point of interest** list. This list may become very extensive, especially in big towns.

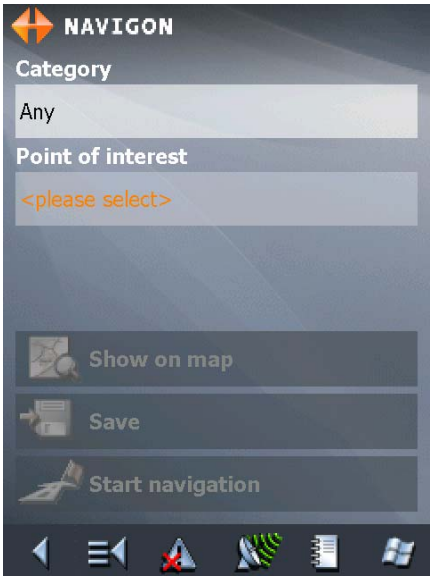
For information on saving destinations, please refer to "Saving a destination", page 59.

3.3.2.3 Point of interest of supraregional significance

Point of interest of supraregional significance...

4. On the **POINT OF INTEREST** screen, tap **...nationwide**.

The **POI NATIONWIDE** screen opens:



5. Select the main category of points of interest to search for from the **Category** list field (e.g. Airports).
6. Select the correct destination from the **Point of interest** list field.

Note: You need not make entries into the **Category** field. Their purpose is only to shorten the **Point of interest** list. This list may become very extensive, especially in big towns.

For information on saving destinations, please refer to "Saving a destination", page 59.

3.3.3 Selecting destinations from the contacts list

Using a contact's address as destination…

Any address from the contacts list on your Windows device may be used as destination for navigation or itinerary planning purposes.

In order to identify an address clearly and without ambiguity, town, postcode, street, and house number should be indicated.

Note: Only contacts the address of which is covered by the currently loaded map may be used for navigation or itinerary planning purposes.

Note: This function is available for Windows 2000 / XP as well as Windows CE devices.

Incomplete address

If an address cannot be identified without ambiguity e.g. because there are two towns with the same name on the map, ***NCK*** lists them all, indicating their postcodes and districts. Select the respective town and tap **OK**.

If the town has been found but the street of the contact is not indicated, you will be guided to the centre of this town.

To avoid problems, the addresses from your contacts list should be complete.

Selecting destinations from the contacts list…

1. In the **MAIN MENU**, tap **Navigation**.

   The **DESTINATION** screen opens.

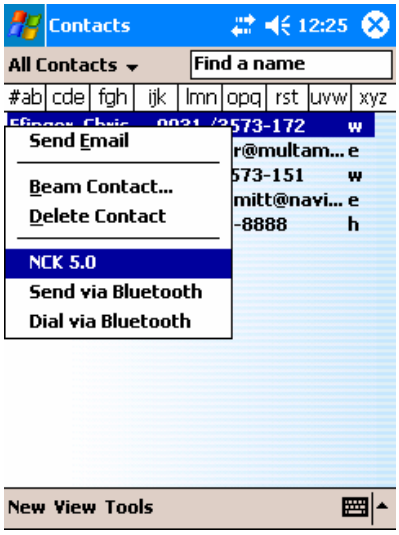
2. Tap the **Country** entry field and select the destination country if it is not yet indicated.

   Note: Only countries of which at least a part is represented on the currently loaded map may be selected.

3. On the **DESTINATION** screen, tap **Contacts**.

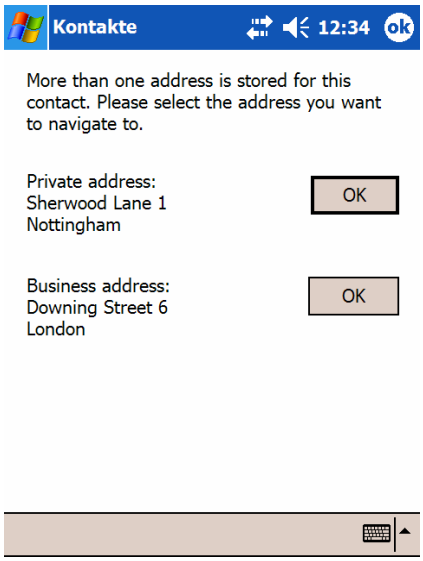
   Your contacts list opens.

4. Tap the respective contact's entry and hold until you get the context menu (examplified with Windows CE):



5. Tap **NCK**.

3a The following screen opens when there was more than one address to be found for the respective contact:



3b Tap the **OK** button, which belongs to the address you want to use as destination.

NCK adopts the address.

6. Tap on the **Save** button if the contact concerns a destination that you frequently drive to. You can then select this contact address quickly from the destination list at any time.

For information on saving destinations to the **FAVOURITES**, please refer to "Saving a destination", page 59.

3.3.4 Indication destinations on the map

You may indicate a destination directly on the map. In addition to towns and streets, you may also select special destinations quickly..

Note: This function is only available in "Extended mode".

Indicating a destination on the map…

1. In the **MAIN MENU**, tap **Navigation**.

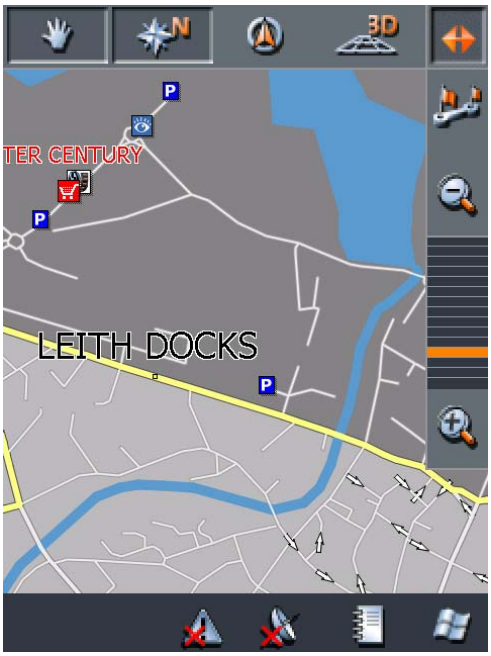
   The **DESTINATION** screen opens.

2. Tap the **Country** entry field and select the destination country if it is not yet indicated.

Note: Only countries of which at least a part is represented on the currently loaded map may be selected.

1. On the **DESTINATION** screen, tap **Select on map**.

   The **MAP** screen opens:

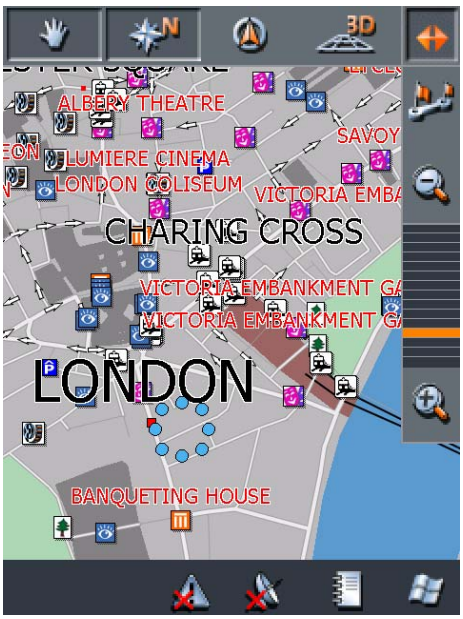


2. Tap on the place you want to determine as destination and hold.

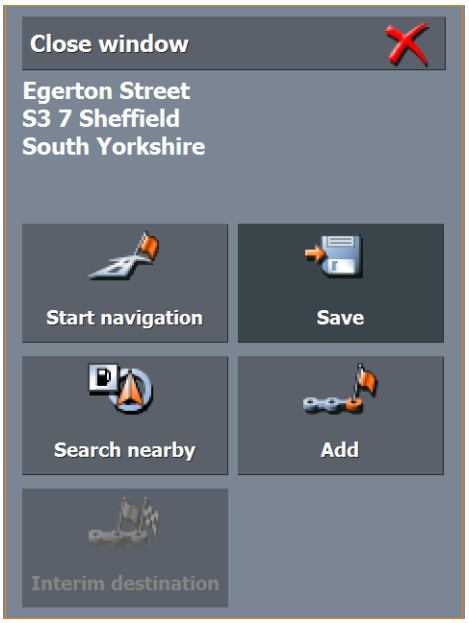
   (Left-Click in the notebook-version)

   A circle of orange points appears round the selected place:

   (The color of the circle can depend on the supported device)



Database information on the respective place will be loaded and displayed. Below the information, there are command buttons for several functions which are available for the selected place.

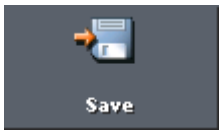


You have the following options:

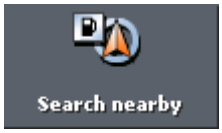
This function is only available when GPS reception is possible (The GPS-symbol must be **GPS ready**).

Tap the **Start navigation** button to start navigation to the selected place.

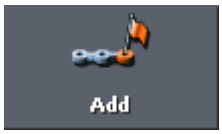
Caution: Using this function while you are already navigating deletes all current destinations (stage points and destination point).



Tap the **Save** button to save the selected place. You may then at any time select this place from the **FAVOURITES**.

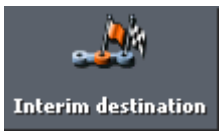


Tap the **Search nearby** button to search for a point of interest near the selected place.



Tap the Add button to add the selected place to your itinerary. The selected point will be marked by a little flag. It will also be added to the list of route points of the **ROUTE PLANNING** screen where it figures as destination point.

Using this function while you are already navigating causes an immediate recalculation of your route.



Tap the Interim destination button to make the selected point the next stage point of your itinerary. Your route will be recalculated immediately.

Tap on the **Save** button in order to save coordinates of the town (irrespective of these being digitalised or non-digitalised) with coordinates in the file stipulated under the parameter `SaveCoordInFile`.

For details, please refer to "Parameter SaveCoordInFile", page 105.

3.3.5 Favourites (Saved destinations)

Saved destinations

All destinations you have saved by tapping the **Save** button are listed on the **FAVOURITES** screen. On this screen you may:

- ⇔ select destinations for navigation purposes,
- ⇔ rename destinations (for details, please refer to "Renaming a destination", page 60) and
- ⇔ delete destinations from the list (for details, please refer to "Deleting a destination", page 61).

Extended mode

1. In the **MAIN MENU**, tap **Navigation**

   The **DESTINATION** screen opens

1a Tap the **Country** entry field and select the destination country if it is not yet indicated.

Note: Only countries of which at least a part is represented on the currently loaded map may be selected.

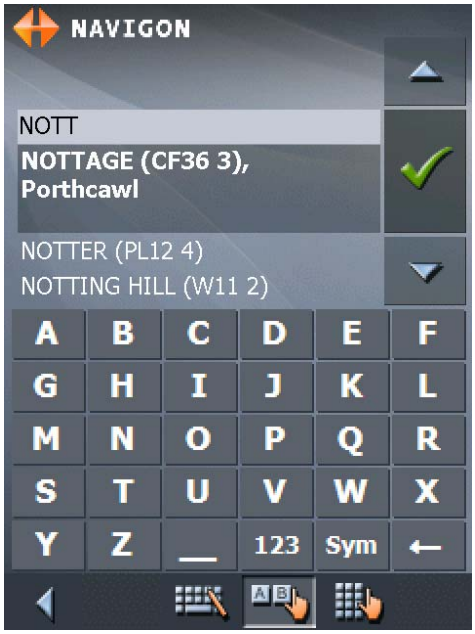
1b On the **DESTINATION** screen, tap **Favourites**.

Standard mode

1. In the **MAIN MENU**, tap **Favourites**.

   The **FAVOURITES** screen opens.

Saved destinations



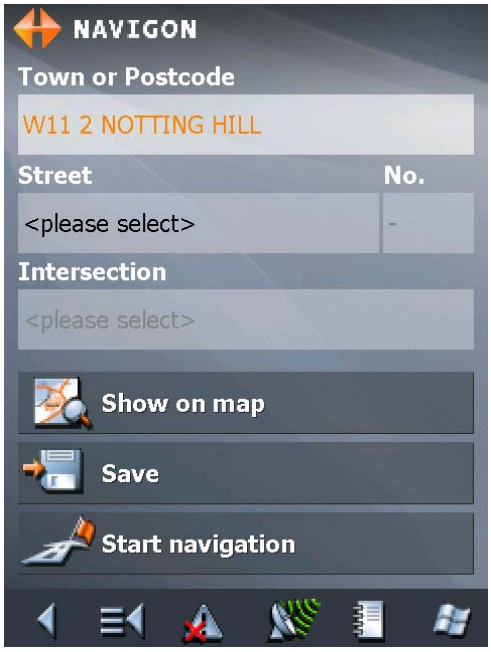
2. Tap the entry of the respective destination.

Note: An asterisk behind a name indicates that a voice command for the respective destination has been stored.

Note: This function is only available on certain Windows CE devices, e.g. a Pocket PC.

3. Tap **OK**.

The **ADDRESS** screen opens. The address data of the selected destination is entered into the respective fields.



For information on deleting or renaming saved destinations, please refer to "Destination management", page 59.

3.3.6 Recent destinations

Survey

All destinations you have navigated to recently are listed on the **RECENT DESTINATIONS** screen. On this screen you may:

- ⇔ select destinations for navigation purposes,
- ⇔ Add destinations to the **FAVOURITES** , and
- ⇔ delete destinations from the **RECENT DESTINATIONS** list.

Extended mode

1. In the **MAIN MENU**, tap **Navigation**.

   The **DESTINATION** screen opens.

1a Tap the **Country** entry field and select the destination country if it is not yet indicated.

Note: Only countries of which at least a part is represented on the currently loaded map may be selected.

1b On the **DESTINATION** screen, tap **Recent destinations**.

Standard mode

1. In the **MAIN MENU**, tap **Recent destinations**.

Recent destinations

The **RECENT DESTINATIONS** screen opens.

2. Tap the entry of the desired destination.

3. Tap **OK**.

   The destination will be taken over. The address is entered into the respective fields.

3.3.7 Using your home address

Survey

You may store your home address in ***NCK*** in order to quickly start navigation home at any place.

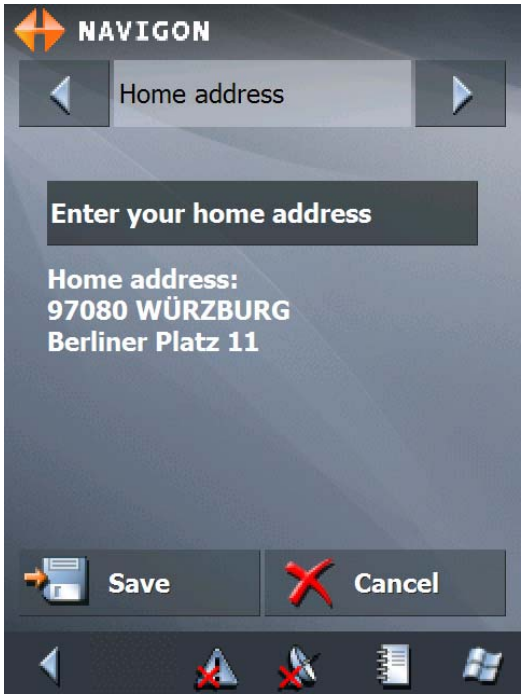
Navigating homewards...

1. In the **MAIN MENU**, tap the **Settings** button.

   The **SETTINGS** screen opens.
2. Select **Home address** .
3. Tap the **Enter your Home address** button.

   The **DESTINATION** screen opens.
4. Tap the **Address** button and enter your address as described in "Entering an address", page 40.
5. Tap the **Save as home address** button.

   The address is taken over to the **HOME ADDRESS** screen.



6. Tap the **Save** button.

   The **HOME ADDRESS** is saved and can now be selected from the **MAIN MENU.**

Using your home address for navigation...

1. On the main screen, tap.

   The route is now being calculated and navigation starts. The route options you have chosen for the last navigation are applied.

   For details, please refer to "Routing options", page 140.

3.3.8 Voice command

Survey

You may store a voice command with any saved destination. You may then start navigation to this destination by speech.

Note: This function is not available on the Notebook and only on certain Windows CE devices, e.g. a Pocket PC with microphone.

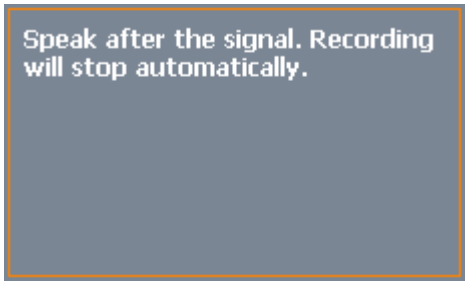
Storing a voice command...

1. Open the **FAVOURITES** screen and select the destination for which you want to store a voice command.
2. Tap the **Edit** icon  .

   The **NAME OF DESTINATION** dialog box opens.

3. Tap the **Voice command** button.

   The following message appears:



4. Pronounce the voice command of the destination.

   The message box closes.

5. In the **NAME OF DESTINATION** dialog box, tap **OK**  .

   The voice command for this destination is now stored.

Navigating "on command"...

1. On the **MAIN MENU**, tap the **Voice command** icon.

.
2. Pronounce the voice command of the destination into your device when you are prompted to do so.

   The route is now being calculated and navigation starts. The route options you have chosen for the last navigation are applied.

   For details, please refer to "Routing options", page 140.

3.4 Destination management

Survey

Destinations may be stored in two lists:

⇔ the **FAVOURITES**

⇔ the **RECENT DESTINATIONS** list

Every destination you are indicating and the destinations from the **RECENT DESTINATIONS** list may be added to the **FAVOURITES**. This makes sense if you want to navigate more often to the respective destination.

⇔ Destinations from the **FAVOURITES** may be renamed.

⇔ Items from both lists may be deleted.

3.4.1 Saving a destination

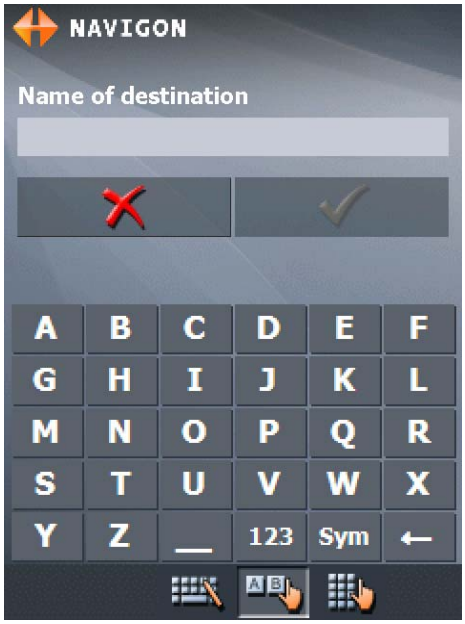
Precondition

You have entered a destination as described in "Indicating a destination", page 39
- OR –
You have opened the **RECENT DESTINATIONS** list as described in "Recent destinations", page 54.

1. Tap the **Save** icon.

If you have opened the **RECENT DESTINATIONS** list, tap the **Edit** icon.

The **NAME OF DESTINATION** screen opens.



2. Enter a name for the destination.

3. Tap **OK**.

   The **NAME OF DESTINATION** screen opens.

4. Tap **OK**.

   The destination has now been added to the **FAVOURITES**.

3.4.2 Renaming a destination

Renaming a destination…

1. On the **DESTINATION** screen, tap **Favourites**.

   The **FAVOURITES** screen opens.

2. Select the destination you want to rename.

3. Tap the **Edit** icon.

   The **NAME OF DESTINATION** screen opens.

4. Enter the new name of the destination.
5. Tap **OK**.

The destination is now renamed.

3.4.3 Deleting a destination

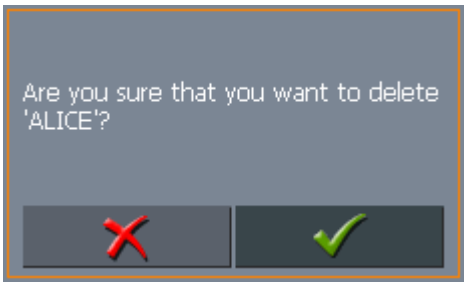
Precondition

You have opened the **FAVOURITES** as described in "Favourites (Saved destinations)", page 52
- OR –
You have opened the **RECENT DESTINATIONS** list as described in "Recent destinations", page 54.

1. Tap the entry of the destination to be deleted.

2. Tap the **Delete** icon.

   The **CONFIRM** screen opens.



3. Tap **OK** to delete the destination from the list.

   The destination is now deleted from the list.

3.5 Working with the map

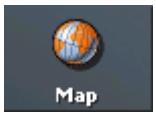
Survey

There are various pieces of information available on the **MAP** screen. Learn in this chapter about the possibilities for working with the map, which depend on whether you are in navigation mode or not.

Displaying the map

You may display the map via **Show map** button on the **MAIN SCREEN** (Extended mode).

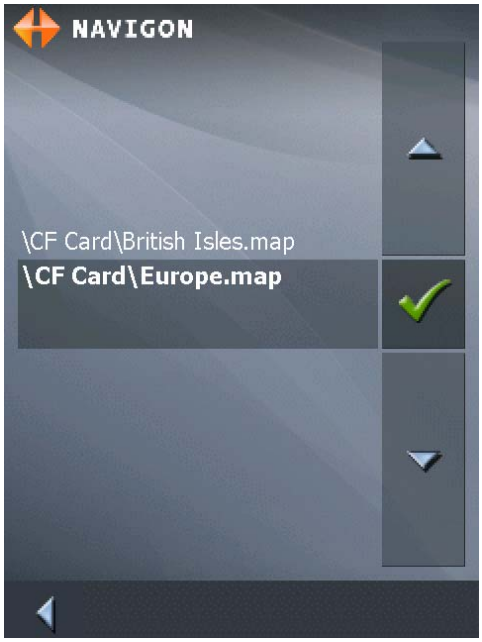
Select map



Tap the **Map** button to select another map from the memory card which is currently inserted.

4. On the **MAIN SCREEN**, tap the **Map** button.

The **AVAILABLE MAPS** screen opens:



5. Tap the entry of the map you want to work with.
6. Tap **OK**.

   The selected map is now loaded. The **MAIN SCREEN** opens.

Selecting another map…

1. If the desired map is on another memory card than the currently inserted one, open the **MAIN SCREEN** and tap the **Quit** button.
2. Insert the memory card, which contains the map you want to work with.
3. Start ***NCK*** over.

3.5.1 Operating the map

Displaying the map

You may display the map

- ⇔ while planning an itinerary,
- ⇔ in order to show destinations on the map, or
- ⇔ in order to select destinations on the map.

Extended mode

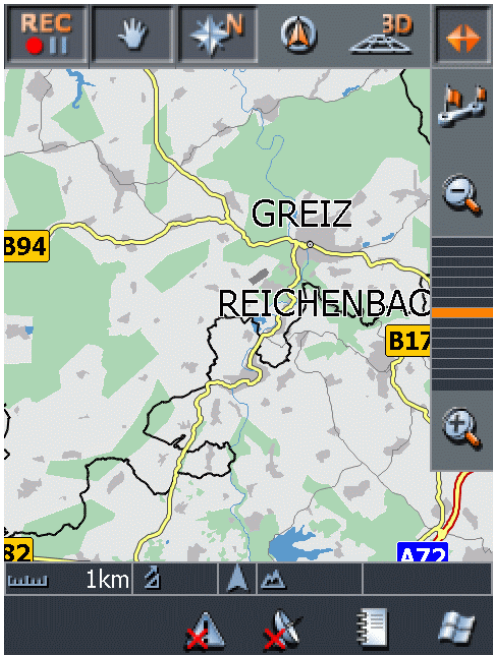
In "extended mode", you may display the map

- ⇔ Via the **Show map** button on the **MAIN MENU**
- ⇔ Via the **Select on map** button on the **DESTINATION** screen
- ⇔ Via the **Show on map** button on the **ADDRESS** screen after having selected a target.

Standard mode

In "standard mode", you may display the map

- ⇔ Via the **Show on map** button on the **ADDRESS** screen after having selected target.



Note: The map is being displayed automatically when you start navigating.

Tapping the map

Tapping short any place on the map makes the **ADDITIONAL FUNCTIONS** screen appear (notebook: right-click). Depending on whether you are in navigation mode or not this screen offers different functions.

Tapping long a certain place on the map (tap and hold) makes information on that place appear (notebook: left-click). You may then, e.g., take over the data for navigation purposes.

For details, please refer to "Indication destinations on the map", page 49.

3.5.1.1 Icons

Survey

The Map screen disposes several icons which allow altering the representation of the map.

When without GPS-reception

Hide/show icons

This icon allows you to hide all other icons in order to see more of the map.

Tap this icon again to show the other icons.

When with GPS-reception

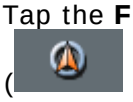
Automode

Tap this icon to display the standard representation of the map after you have modified the view.

The settings of north orientation and auto zoom mode will be applied. Your current position will be centred. The icons will not be displayed.

Freeze

This icon is activated in navigation mode only.

Tap the **Freeze** icon
( / ),
to toggle between "Frozen map" and "Frozen position".

Frozen map

This mode (button up) freezes the map. Your current position (green arrow) moves over the map and may even leave it.

This mode applies automatically when you scroll the map in navigation mode. Otherwise the system would always try to keep your current position in the bottom third of the map.

Select this mode when you want to select a destination from the map while navigation is in progress.

Frozen position (default)

This mode (button down) makes the map scroll continually. Your current position (green arrow) is always centred in the bottom third of the map.

Zoom / Scroll

Tap the **Zoom**/**Scroll** icon

( / ),
to toggle between Zoom and Scroll mode.

Zoom

Zoom mode (Button up) you may scale the map up or down. Zoom in by drawing a rectangle on the map, beginning with the upper left corner. Zoom out by beginning with the lower right corner.

Scroll

In Scroll mode (button down) you may scroll the map. Tap on the screen and drag to the desired direction.

Entire Route

Tap the **Itinerary** icon to display the whole itinerary.

Map in driving direction/north oriented

Tap the **In driving direction**/**North oriented** icon

( / ),

to switch between the two available modes of map orientation. (North orientation / orientation in driving direction).

North orientation

Tap this icon (button down) to orientate the map north up.

Driving direction

Tap this icon (button up) to orientate the map in driving direction.

3D view

Tap this icon to display the map in 3D mode (bee flight view).

2D view

Tap this icon to return to the 2D mode (standard).

Zoom out

Tap **Zoom out** to scale the map up.

Zoom bar

Tap one of the zoom bar sections to modify the scale of the map.

Zoom in

Tap **Zoom in** to scale the map down.

Additional functions

Tapping short any place on the map makes the **ADDITIONAL FUNCTIONS** screen appear. (notebook: right-click).Depending on whether you are in navigation mode or not this screen offers different functions.

Note: The range of offered functionality depends also on whether you are working in **standard** or in **extended mode**.

The **ADDITIONAL FUNCTIONS** screen opens:

Tap this icon to toggle between "Day" and "Night" map view mode.

Tap this icon to switch the voice instructions on / off.

Preferences

Tap **Preferences** to display the **SETTINGS** screen. For details, please refer to "Configuration", page 134.

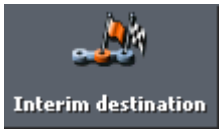
Quit navigation

This function is only available in navigation mode. Tap **Quit navigation** to exit navigation mode.

Block road, Unblock

These functions are only available in navigation mode.

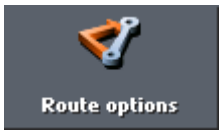
For details, please refer to "Blocking a route section", page 90.



Set interim destination

This function is only available in navigation mode. Tap **Set interim destination** to add a new route point to your itinerary. The route will be recalculated and the newly added route point will be the first destination to navigate to. Navigation to the other route points will be executed later.

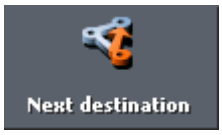
For details, please refer to "Adding a stage point during navigation", page 89.



Route options

This function is only available in navigation mode and in **Extended mode**. Tap **Route options** to modify them.

For details, please refer to "Routing options", page 140.



Next destination

This function is only available when you are navigating a route with at least one stage point and when you are working in extended mode.

Use this function if you want to skip the next stage point.

Example: You have planned an itinerary from your office to "Company A" and then to "Company B" and you are already on your way. Before you arrive at "Company A", a mobile phone call informs you that you need not visit Company A.

Tap the **Next destination** button to navigate to the stage point after the next (here: "Company B").

The system recalculates the route. "Company B" will be your next destination.

For details, please refer to "Next destination", page 90.

3.5.2 Representation of the map in navigation mode

In navigation mode, there is some assistance for navigation, some information on the itinerary and one more command button being displayed:

Assistance for navigation

The following assistance for navigation is being displayed at the left and at the bottom of the map:

Field	Information
①	If there are two manoeuvres to be executed quickly one after the other, the small upper arrow field indicates the manoeuvre to be executed immediately after the next manoeuvre.
②	The green arrow indicates your current position on the map. Since the displayed sector of the map changes continually your current position is centred on the map whenever possible (Moving Map).

Field	Information
③	The bigger arrow field indicates the next manoeuvre to be executed.
④	The distance field indicates the distance to the next manoeuvre. When you approach, the representations changes into a distance bar:  The more yellow bars are displayed the nearer you are to the place where the next manoeuvre must be executed.
⑤	The upper street field indicates the name of the next street to turn on.
⑥	The lower street field indicates the name of the street you are currently on.

Signpost info

The upper part of the Map screen displays information on the signposts you have to follow:

Note: This information can only be displayed when it is contained in the cartographic material.

Speed limit

The left part of the map screen shows possible speed limits:

Note: This information can only be displayed when it is contained in the cartographic material.

Caution: Information contained in the cartographic material can be wrong, e.g. due to road works.

Traffic situation and road traffic regulations are absolutely prior to the information given by the navigation system.

Information on the itinerary

At the right of the map, the following information on the itinerary is being displayed:

Field	Information
	This symbol means "stage". All information displayed below refers to the next stage point.
	ETA (Estimated time of arrival).
	Remaining time to arrival (estimated).
	Remaining distance to arrival (estimated).

Tap this icon to repeat the last spoken instruction. All available information will be displayed.

The displayed information will be hidden after a few seconds.

3.5.3 Displaying additional information on the map

In ***NCK*** you may determine which information is to be displayed on the map. Modifying any configuration begins on the **SETTINGS** screen.

Configuring the display of additional information…

1. Open the **SETTINGS** screen
   - ⇔ by tapping the **Settings** button on the **MAIN MENU**,
   - ⇔ or by tapping short into the map and selecting **Preferences**.

   The **SETTINGS** screen opens.
2. Select **Map information** using the arrow buttons:

Info bar

The **Info bar** at the bottom of the map displays the scale of the map, the inclination, the compass, the altitude and the current speed. .

3. Tap the respective command button to display (On) or not (Off) the **Info bar**.

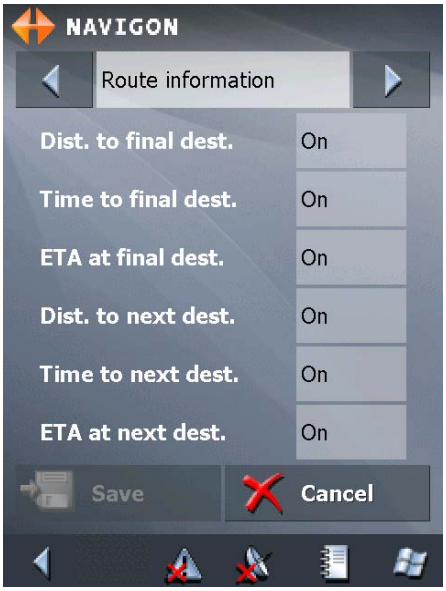
Points of Interest

4. Tap the respective command button to display (On) or not (Off) **Points of Interest** on the map.

Street names

5. Tap the respective command button to display (On) or not (Off) **Street names** on the map.

6. Via the arrow buttons select **Route information**:

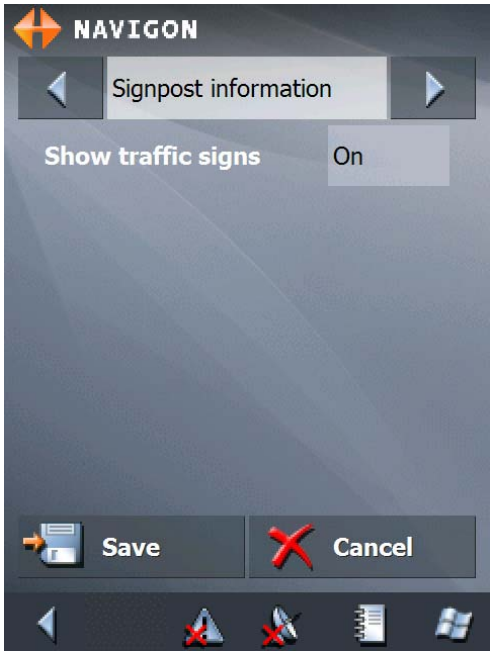


7. Tap the command buttons to display (On) or not (Off) the respective information on the map.

   The desired information on the entire itinerary (upper section) and on the current stage (lower section) will be displayed at the right hand side of the map.

Field	Information
	This symbol means "itinerary". All information displayed below refers to the final destination.
	This symbol means "stage". All information displayed below refers to the next stage point. This section is only available if you have indicated more than one destination to navigate to.
Line 2	ETA (Estimated time of arrival).
Line 3	Remaining time to arrival (estimated).
Line 4	Remaining distance to arrival (estimated).

8. Via the arrow buttons select **Signpost information**.



9. Tap the **Show traffic signs** command to toggle between On and Off mode.

   The new mode is now indicated on the button.

10. Via the arrow buttons select **Speed limit**.

   The **SPEED LIMIT** screen allows you to determine whether you want to display speed limits in navigation mode and whether you want to be warned acoustically on speeding.

Settings	Significance
Show traffic signs	This command indicates whether signposts indicating speed limits are currently being displayed or not. Tap the **Show traffic signs** command and select whether speed limits should be displayed
Warning in built-up areas	This command indicates from how much speeding on you want to be warned when driving within built-up areas. Tap the **Warning in built-up areas** command to select another value or to set it to **Never**.
Warning outside built-up areas	This command indicates from how much speeding on you want to be warned when driving outside built-up areas. Tap the **Warning outside built-up areas** command to select another value or to set it to **Never**.

11. Tap **Save** to save the modifications.

    The modifications will be taken over and displayed on the map.

4 Navigation and Itinerary planning

Topics covered in this chapter:

4.1 General notes on navigation

Use of ***NCK*** is executed at your own risk.

Caution: To protect yourself and others from accidents please do not operate the navigation system while driving!

Caution: You must not look at the display except when it is absolutely safe to do so!

Caution: The road layout and the traffic signs are absolutely prior to the instructions of the navigation system.

Caution: You must not follow the instructions of ***NCK*** except when the circumstances and the road traffic regulations allow doing so. ***NCK*** will guide you to your destination even when you have left your planned itinerary.

Obstructed GPS reception

When you turn off the GPS receiver or when the recepton of GPS-signals is obstructed ***Configuration Kit*** does not close but navigation is interrupted.

As soon as the GPS receiver works again the navigation system notices a possible change of your current position and recalculates the route. You may simply continue navigation.

Note: Navigation will always continue automatically when you switch off your hardware without closing ***NCK*** before.

Quitting navigation mode

When you quit navigation mode by command the main screen appears. You may then indicate another destination or reassume the by selecting the former destination from the **Recent destinations** list.

Arriving at your destination

When you have reached your destination the system pronounces the message "You have reached your destination!"

The map is no more presented in navigation mode. A small green arrow indicates your current position.

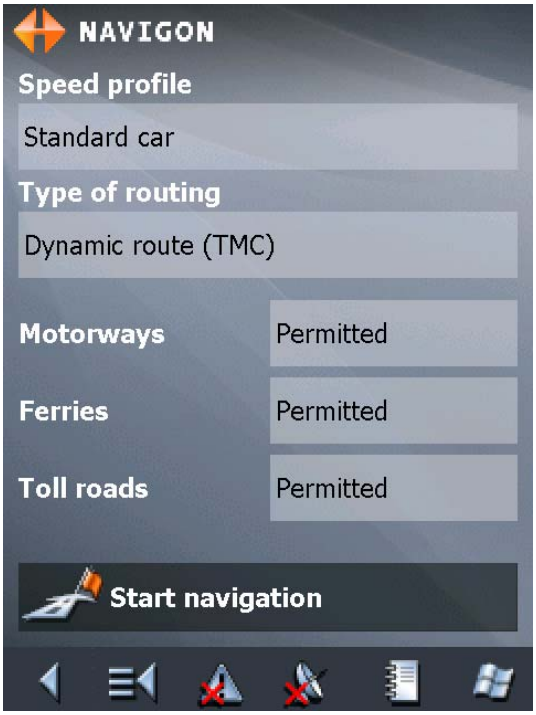
4.2 Navigation to a destination

Navigating to a destination…

1. Enter your destination as described in "Indicating a destination", page 39ff.
2. Tap the **Start navigation** button. (in the **standard** mode the navigation is immediately launched with the settings laid down under the settings screen **ROUTE OPTIONS** – refer to section "Routing options" on page 140).

Extended mode

The **ROUTE OPTIONS** screen opens:



3. Tap the **KIND OF ROUTING** field and select one of the following options:

Option	Signification
Dynamic route (TMC)	You can't select this option unless your GPS receiver is equipped with the TMC module. Traffic and weather situation data broadcasted by the radio stations will permanently be considered for route calculation.
Quick route	The quickest route will be calculated.
Short route	The shortest route will be calculated.

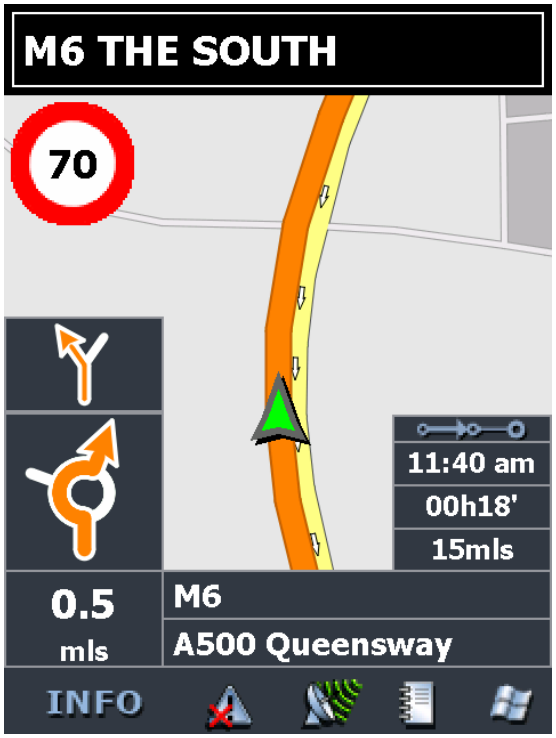
4. Tap the **Motorways**, **Ferries**, and **Toll road** fields successively and select one of the following options:

Option	Signification
Permitted	The respective kind of street will be regarded for route calculation.
Avoid	The respective kind of street will be avoided if reasonable.
Forbidden	The respective kind of street will be disregarded for route calculation.

Note: The standard settings for the route options can be changed by means of the settings screen **ROUTE OPTIONS**. You'll find more detailed information regarding this in the section "Routing options" on page 140.

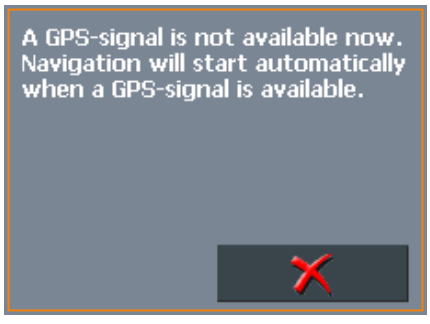
5. Tap **Start navigation**.

   The route is now being calculated. The map is being displayed in navigation mode. Your actual position is shown by a green triangle. The route has orange colour.



No GPS reception?

When the received GPS signal is not sufficient, the following message appears:



You have two possibilities:

⇔ Wait until navigation starts. This will happen as soon as the GPS reception is sufficient.

⇔ Tab **Cancel**

and restart navigation as soon as the reception of GPS signals is convenient. You may notice that by watching the GPS symbol on the screen: it becomes **GPS ready** when the reception is good.

4.3 Navigation to several destinations (Itinerary planning)

Note: This function is only available if you're working in **Extended** mode.

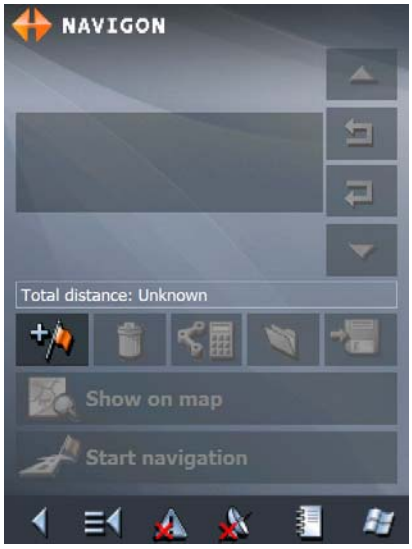
Itinerary planning

You may plan itineraries without receiving GPS-signals, e.g. comfortably at home. Planned itineraries may be stored. Thus you may plan as many itineraries as you want, e.g. for holidays.

Navigating to several destinations…

1. On the main screen, tap **Several destinations**.

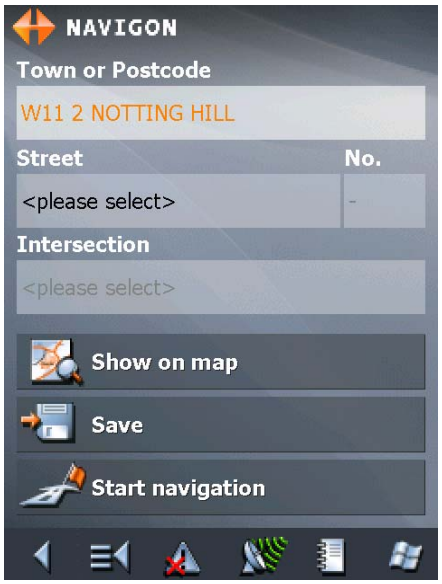
   The **ITINERARY** screen opens:



2. Tap the **Add destination** icon to indicate the first stage point.

   The **Destination** screen opens.

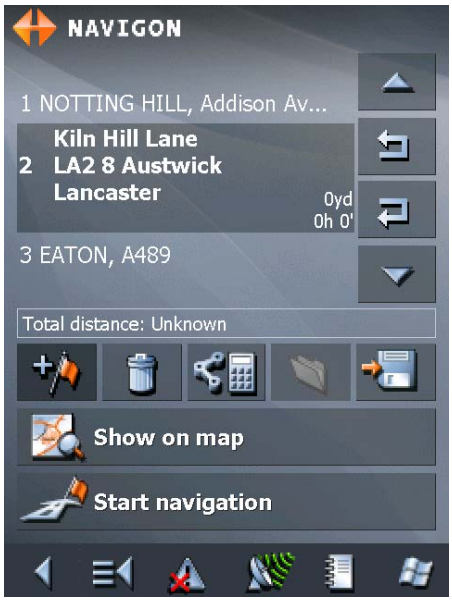
3. Indicate the destination as described in "Indicating a destination", page 39.



4. Tap the **Add to itinerary** icon.

   The **ITINERARY** screen opens. The destination is added as Stage point 1.

5. Repeat steps 2-4 for every stage point you want to add to the itinerary.



Note: If the navigation is launched for a route, the starting point is always the current position. The first leg of the route is the first given route point.

6. Tap **Start navigation**.

   The route is now being calculated. The map is being displayed in navigation mode.

4.3.1 Editing, saving and managing itineraries

Survey

You may plan as much itineraries as you want, e.g. for holidays. You may save them and use them later for navigation purposes. At any moment, you may add stage points, modify the order of the stages, or display the itinerary on the map.
The following commands are available:

Route point up

Tap the **One place up** icon to navigate to the respective stage point earlier (example: stage 3 becomes stage 2).

Route point down

Tap the **One place down** icon to navigate to the respective stage point later (example: stage 2 becomes stage 3).

Add route point

Tap the **Add destination** icon to add a stage point. The new stage point will be added at the end of the list. You may shift it forward using the **One place up** and the **One place down** icon.

Delete route point

Tap the **Delete destination** icon to delete the respective stage point.

This button is deactivated if no route point is marked.

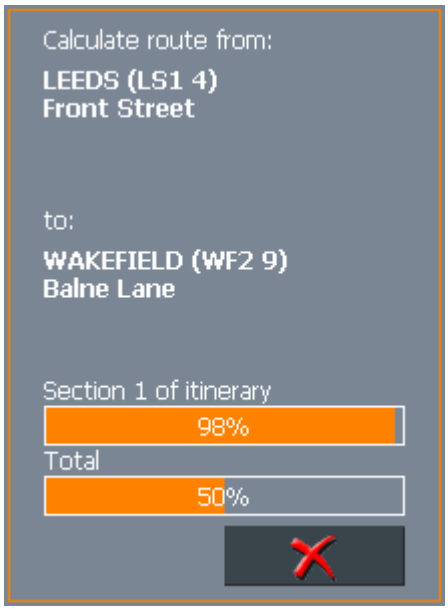
Route administration

For the routes you can

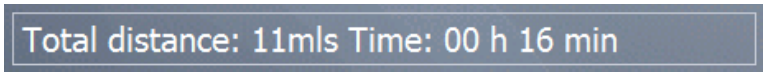
- ⇔ calculate them, in order to display the entire route as well as the probable duration of the journey, see page 80
- ⇔ save them, page 83
- ⇔ load them, page 84
- ⇔ rename them, page 85
- ⇔ delete them, page 86
- ⇔ display the itinerary on the map, page 87
- ⇔ simulate them, page 88

4.3.1.1 Calculating the route

Tap the **Calculate the route** icon to calculate the distance and the estimated duration of the entire itinerary. The information will be displayed after you have entered (or confirmed) the route options.



When the route is calculated, the total distance and the estimated duration from the first to the last route point are displayed below the route points list of the **ITINERARY PLANNING** screen.

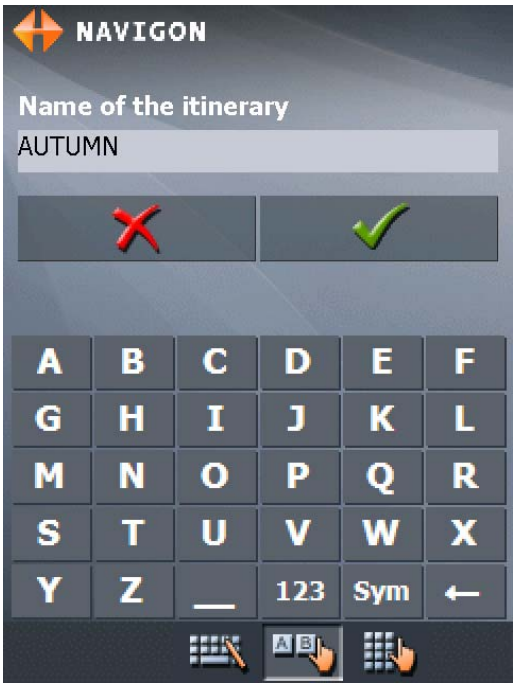


Furthermore, the distance and the estimated duration of each stage will be indicated with the selected route point entry.

4.3.1.2 Save itinerary

1. Tap this icon to save the itinerary you have planned.

   The **NAME OF THE ITINERARY** screen opens.



2. Enter a name for the itinerary.
3. Tap **OK**.

Note: Only the route points will be saved. If you load an itinerary, you will have to recalculate it.

4.3.1.3 Load itinerary

1. Tap this icon to load a saved itinerary, e.g. to modify it or for navigation purposes.

   The **SELECT ITINERARY** screen opens:

2. Select the itinerary you want to load.
3. Tap **OK**.

4.3.1.4 Rename itinerary

1. Tap the **Load itinerary** icon. (This icon is deactivated if there is no saved itinerary available)

   The **SELECT ITINERARY** screen opens:

2. Select the itinerary, that you want to rename.

3. Tap the **Edit** icon.

   The **NAME OF THE ITINERARY** screen opens:

4. Enter the new name of the itinerary.
5. Tap **OK**.

   The **SELECT ITINERARY** screen reopens. The itinerary has been renamed.

4.3.1.5 Delete itinerary

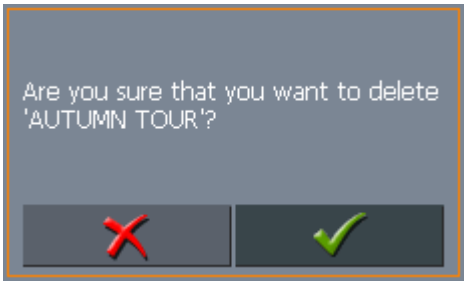
1. Tap the **Load itinerary** icon. (This icon is deactivated if there is no saved itinerary available)

   The **SELECT ITINERARY** screen opens:

2. Select the itinerary, that you want to delete.

3. Tap the **Delete** icon to delete the selected itinerary.

   The **CONFIRM** screen appears.



4. Tap **OK**.

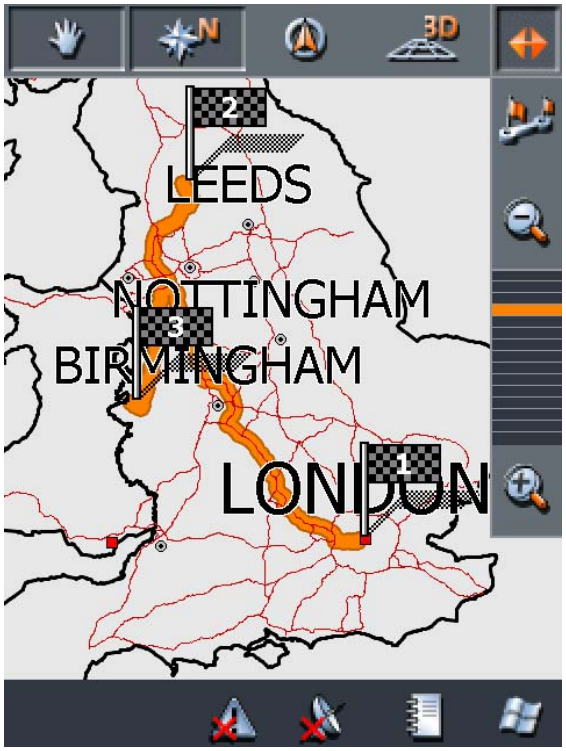
   The **SELECT ITINERARY** screen reopens. The deleted route is no more listed.

4.3.1.6 Displaying the itinerary on the map

Show itinerary

Tap the **Show on map** button to display the entire itinerary on the map.

The map screen opens.



The itinerary is highlighted in orange.

The stipulated route points (destination) are illustrated in the given sequence with numbered flags.

4.3.1.7 Simulating the route

Simulation

You may execute a simulated navigation along the itinerary when the route has been calculated.

Note: The reception of GPS-signals is not necessary for the simulation.

Simulation is restricted to routes of 100 km max.

For details refer to "Simulation", page 110.

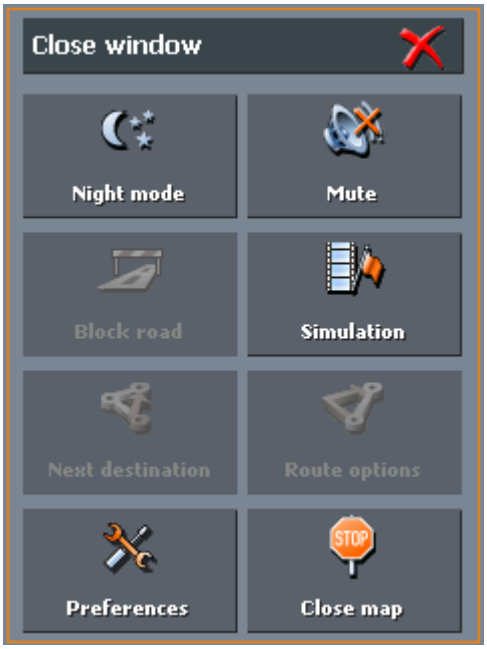
Simulating the route...

1. Tap the **Show on map** button.

   The itinerary is displayed on the map.

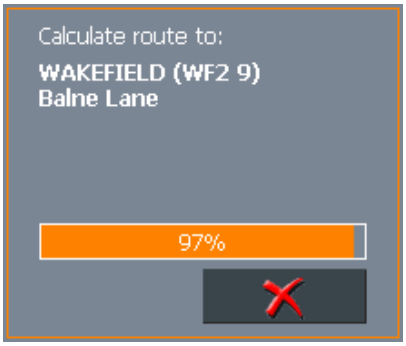
2. Tap short on any place on the map.

   The **ADDITIONAL FUNCTIONS** screen opens.



3. Tap **Simulation**.

   The route will be recalculated for simulation purposes.



Simulation starts when calculation has finished.

Stopping the simulation

You may quit a simulation at any moment.

1. Tap short on any place on the map.

   The **ADDITIONAL FUNCTIONS** screen opens.
2. Tap **Stop navigation**.

4.4 Functions which are usefull for navigationn

Survey

In ***NCK*** the following functions are available in navigation mode:

- ⇔ Adding a stage point during navigation, see below
- ⇔ Skipping the next stage point, see page 90
- ⇔ Blocking route sections, see page 90
- ⇔ Using TMC functionality for navigation purposes, see page 92
- ⇔ Keeping the logbook, see page 95

4.4.1 Adding a stage point during navigation

Note: This function is only available in "Extended mode".

Adding a stage point during navigation…

At any moment during navigation you may add a new stage point to your itinerary. The route will be recalculated in order to make the new stage point the next destination to navigate to. The other remaining stage points will be navigated to after the new one.

Adding a stage point…

Precondition: The map is being displayed in navigation mode.

1. Tap short on any place on the map.
2. Tap **Set interim destination**

   The **DESTINATION** screen opens.
3. Indicate the new stage point as described in "Indicating a destination", page 39.
4. Tap the **Set as route point** button.

   The route will be recalculated in order to make the new stage point the next destination to navigate to.

Note: Select the new stage point directly on the map, just as described in "Indication destinations on the map", page 49. Tap the respective place and hold. From the context menu, select **Add as route point**..

4.4.2 Next destination

Note: This function is only available in "Extended mode".

Next destination

This function is only available when you are navigating a route with at least one stage point and when you are working in extended mode.

Use this function if you want to skip the next stage point.

Example: You have planned an itinerary from your office to "Company A" and then to "Company B" and you are already on your way. Before you arrive at "Company A", a mobile phone call informs you that you need not visit Company A.

Tap the **Next destination** button to navigate to the stage point after the next (here: "Company B").

The system recalculates the route. "Company B" will be your next destination.

4.4.3 Blocking a route section

Blocking a route section manually

You may block a route section manually in order to evade it. Manual blocking forces a recalculation of the route.

Presume that you are driving on a freeway and a radio message announces a traffic jam 4 miles ahead of your current position. With the "Block route sections" function you may instruct the navigation system to evade the announced traffic jam.

Note: If you have the TMC module then any traffic obstructions on your route will be automatically detected by the ***NCK*** and the navigation will detour them.

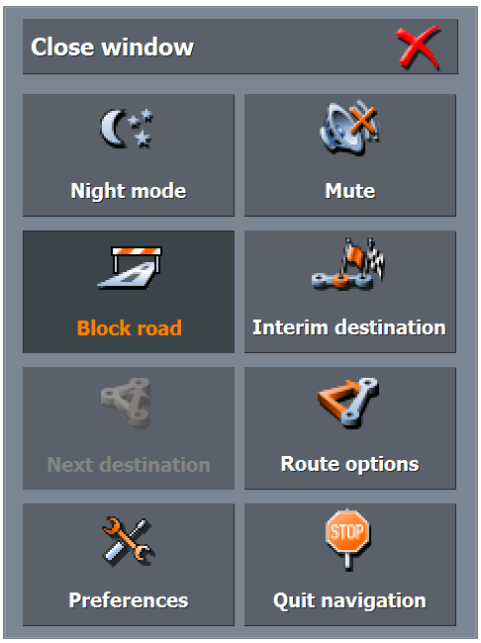
A manual blocking is only valid for the current navigation process. The respective route section will be unblocked for the next navigation or when you restart the software.

Blocking a route section…

Precondition: The navigation system is in navigation mode and the map is being displayed.

1. Tap short on any place on the map.

   ADDITIONAL FUNTIONS MENU OPENS:



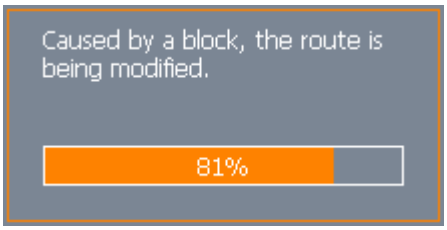
2. Tap **Block road**..

   The **BLOCKING** screen opens.

3. Enter how many miles (from your current position on) you want to block.

4. Tap **OK**.

   This forces a recalculation of the route. The indicated route section will be evaded. On the map, it will be highlighted in red.



Unblocking a route section

1. Tap short on any place on the map.

2. Tap **Unblock**.

   The route section is now unblocked. The navigation system uses the route, which had been calculated originally.

4.4.4 Using TMC functionality

TMC module

The TMC module provides the navigation system with the latest traffic information and enables dynamic route calculation in order to evade traffic jams and other obstructions.
If your GPS receiver disposes of the TMC module, you may display the received traffic information in ***NCK.***

1. Tap the **TMC** icon.

   The **TMC** screen opens.

Tuning

The currently received broadcast station is indicated in the "Station" section.

2. Use the arrow icons of the "Station" section to tune in another station.
3. If you do not want the station which is received best to be tuned in automatically select the station you want to receive. Then tap the **Automatic tuning** button. Its caption toggles then to **Hold**.

   If you want to set automatic tuning again, tap the **Hold** button. Its caption toggles then to **Automatic tuning**.

Displaying traffic information…

4. Use the arrow icons of the "Messages" section to display the next / previous traffic message.

   Every message contains the country, the name or number of the street (motorway, main road, country road), the concerned road section and the kind of obstruction.

Updating traffic information

5. Tap the **Update** icon to display traffic information which has been received since the **TMC** screen has been opened.

Closing the TMC screen

6. Tap the **OK** icon to close the **TMC** screen.

Considering TMC information for route calculation

Configure the TMC settings to determine how TMC information concerning your route should be considered.

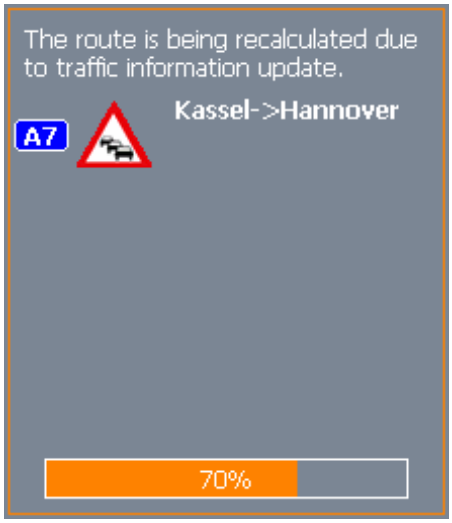
For details, please refer to "TMC", page 142

Automatic route modification

Precondition: You have selected "Route modification **automatically**" in the **TMC** settings (default).

If a reported obstruction concerns your route the system evades obstructions automatically.

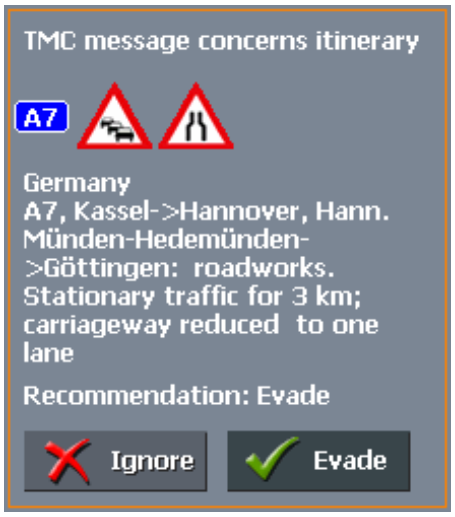
The following message appears while the system calculates the deviation.



Route modification with confirmation

Precondition: You have selected "Route modification **with confirmation**" in the **TMC** settings.

The following screen informs you about a reported instruction concerning your route:



Evade

Tap the **Evade** button to evade the reported obstruction.

The route will be recalculated in order to evade the obstruction.

Ignore

Tap the **Ignore** button to ignore the reported obstruction.

Considering TMC information at a later moment

If you have selected "Route modification **With confirmation**", you may evade or ignore a reported obstruction at a later moment. Proceed as follows:

1. Tap the **TMC** symbol.

   The **TMC** screen opens:

   Use the arrow icons of the "Messages" section to search for an obstruction concerning your route.

2. Tap the **Status** button and select whether the respective obstruction is to be **Evaded** or **Ignored**.

3. Tap the **OK** icon to update the route. The system recalculates the route if necessary.

4.4.5 Keeping the logbook

Survey

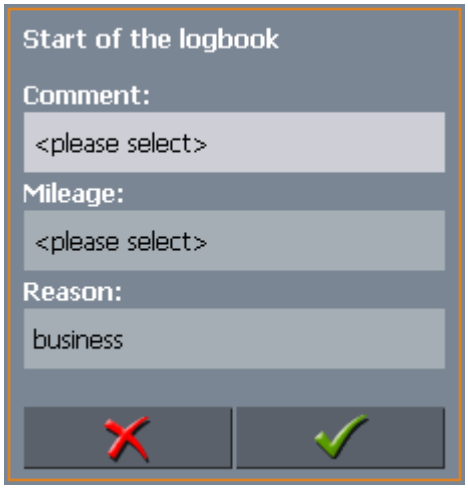
You may make ***NCK*** keep a logbook. Any start of the logbook forces the creation of a file in the root directory of your Windows CE device. You may transmit these files to your PC and open them with, e.g., ***Microsoft Excel***.

Note: This function is only available on certain Windows CE devices, e.g. a Pocket PC.

Starting the logbook…

1. Tap the **Logbook** icon.
    .

   The **LOGBOOK** screen opens:

2. Enter the reason of your journey into the **Comment** field.
3. Enter the mileage at the beginning of your trip into the **Mileage** field.
4. Tap the **Reason** button and indicate whether it is a **Business** journey or a **Private** journey.
5. Tap **OK**

   The system creates the first logbook entry. The **Logbook** icon toggles to
    . **Logbook activated**.

Exiting the logbook…

Collecting data on your trip stops when you arrive at your destination, when you quit navigation, or when you quit ***MobileNavigator***.

Alternatively you may tap the **Logbook** icon. Tap the **Action** field and select **Exit**. The **Logbook** icon toggles to
 . **Logbook deactivated**.

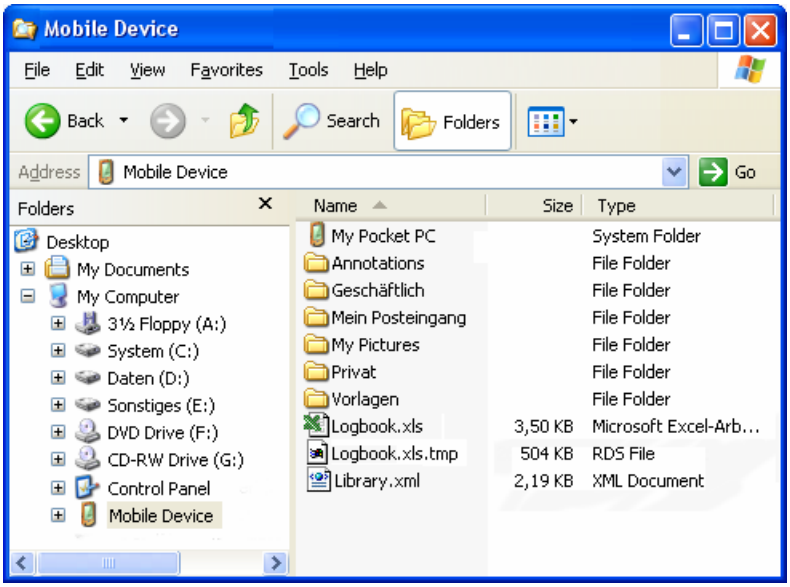
Adding an entry…

You may possibly want to add entries to the logbook, e.g. when your car was refuelled or when you have visited several clients without using your car. In this case tap the **Logbook** icon. Tap the **Action** field and select **Add entry**.

Working with the logbook…

You may transmit the logbook files to your PC where you may open them and modify the entries (if necessary).

1. Establish an connection between your PC and your Windows CE device. (For details refer to the manual of your device)
2. In the root directory of your Pocket PC select "Logbook.xls".



3. Copy the file to your PC and open it with ***Microsoft Excel***.

   The following information is provided by the logbook files: the mileage at the beginning of the journey, the reason of the journey, town and street, the date of the journey, distance, and others. You may print the logbook or, if necessary, add them to the logbook you are keeping for tax purposes.

5 Special NCK functions

Topics covered in this chapter:

5.1 Configuration of the NCK.INI file

Survey

The NCK.INI file is stored in the NCK program folder. In this file, you may change the following configuration settings:

- ⇔ Size and position of the application window, see below.
- ⇔ File interface, see page 99
- ⇔ Submit GPS data to the NCK, see page 109
- ⇔ Execute a simulation, see page 110
- ⇔ Track recording, see page 114

5.1.1 Setting size an position of the application window

Size and position of the application window

The following parameters determine the size and the position of the ***Configuration Kit*** application window when it is being run on a laptop or on a Windows CE device:

Note: The whole screen will be used for the application when you don't set these parameters.

Attention: Set these parameters carefully. Not every window size grants satisfying results.

Section

The concerned parameters must be set in the [Dimension] section of the NCK.INI file.

Parameter	Significance
Width=680	Width of the application window in pixels.
Height=600	Height of the application window in pixels.
OffsetX=120	X-coordinate of the upper left corner of the application window.
OffsetY=0	Y-coordinate of the upper left corner of the application window.

5.1.2 File interface

Survey

Via the File Interface, you may

- ⇔ indicate a destination file which contains a destination for instant navigation (parameter `DestinationFile`), see page 99
- ⇔ determine whether navigation should begin automatically or not (parameter `AutoStart`), see page 102
- ⇔ determine whether the destination file shall be deleted or not after having arrived at the destination (parameter `Delete`), see page 104
- ⇔ read out the current GPS-position (parameters `GPSFile` and `FormatGPSFile`), see page 104
- ⇔ output the way points of a route (parameter `RouteList`), see page 104
- ⇔ write the coordinates of a town in a file (parameter Parameter SaveCoordInFile), see page 105

Section

These parameters may be set in the `[FileIO]` section of the `NCK.INI` file.

Parameter	Significance
`DestinationFile= C:\Input.txt`	Path and name of the destination file which contains the coordinates of a destination for instant navigation.
`GPSFile= C:\GPSOutput.txt`	Path and name of the GPS info file.
`FormatGPSFile= GPGGA`	Format of the GPS info file.
`Delete=1`	Delete the destination file after navigation or not.
`AutoStart=1`	Automatic start of navigation on / off.

5.1.2.1 Parameter DestinationFile

Survey

The `DestinationFile` parameter may be used for indicating a file which contains a destination for navigation purposes. This destination may be indicated

- ⇔ as WGS-84 coordinates,
- ⇔ as Gauss-Krueger coordinates, or
- ⇔ as an address.

The first line of the destination file informs ***NCK*** on which format has been used.

Setting `Autostart=1` starts navigation to the indicated destination instantly. The destination needs not to be entered by the user.

Note: File paths and names may be chosen without any restriction.

Note: If no destination is indicated in the destination file, or if the file `DestinationFile` does not exist the navigation software starts in standard mode.

Structure of the destination file

The file which is indicated in the `DestinationFile` parameter must have the following structure:

```
Format of the coordinates

Destination
```

Format of the coordinates

The format of the coordinates must be indicated as the first parameter in the first line of the destination file.

Coordinates format	Parameter
WGS-84	`[Destination_WGS84]`
Gauß-Krüger	`[Destination_GK]`
Postal address	`[Destination_Address]`

Destination

The indication of the destination depends on the selected format of the coordinates:

Coordinates parameter	Destination parameters
`[Destination_WGS84]`	`X = 10.12737` `Y = 53.37844`
`[Destination_GK]`	`X = 3534445` `Y = 5973018`

`[Destination_Address]`	`City = Würzburg`
	`Street = Berliner Platz`
	`Hno = 11`
	`ZipCode = 97080`
	`CountryId = DEU` (for details refer to "Country Codes - CountryId", page 101).

Note: With the aid of the parameter `SaveCoordInFile` (see section "Parameter SaveCoordInFile" on page 105), you can record and save the coordinates of a town directly from the map.

Note: When you indicate the destination as a postal address, you must not enter all of the address parameters. If the software cannot identify the address without ambiguity, it lists all matching addresses. The user may then select the correct one manually.

For information on how to navigate using a destination file, please refer to “Navigation to the destination of a destination file“, page 107.

5.1.2.2 Country Codes - CountryId

Survey

NCK uses country codes like DEU for Germany or AUT for Austria when stating navigation destinations.

All the valid country codes are listed in the following table.

Note: Ensure when using country codes that they are written correctly (in uppercase), as otherwise the NCK will not recognize them properly.

Code	Country
ALL	used to browse for cities through all countries
ALB	Albanien
AND	Andorra
AUS	Australia
AUT	Austria
BLR	Belarus (Weißrussland)
BEL	Belgium
BIH	Bosnia And Herzegowina
BGR	Bulgarien
HRV	Croatia
CAN	Canada
CZE	Czech Republic
DNK	Demark
EST	Estland
FRO	Faroe Islands
FIN	Finland
FRA	France
DEU	Germany
GIB	Gibraltar
GRC	Greece
VAT	Holy See (Vatican City State)
HUN	Hungary
ISL	Iceland
IRL	Ireland
ITA	Italy
LVA	Latvia (Lettland)
LIE	Liechtenstein
LTU	Lithuania (Litauen)
LUX	Luxembourg

Code	Country
MKD	Macedonia
MLT	Malta
MDA	Moldova, Republic of (Moldawien)
MCO	Monaco
NLD	Netherlands
NOR	Norway
POL	Poland
PRT	Portugal
ROM	Romania
RUS	Russian Federation
SMR	San Marino
SGP	Singapore
SVK	Slovakia (Slovak Republic)
SVN	Slovenia
ESP	Spain
SWE	Sweden
CHE	Switzerland
TUR	Turkey
UKR	Ukraine
GBR	United Kingdom (England Scotland and Wales)
USA	USA
YUG	Yugoslavia
UAE	United Arab Emirates
TWN	Taiwan

5.1.2.3 Parameter Autostart

Survey

Using the `Autostart` parameter, you may set ***NCK*** to start in navigation mode if a valid destination file is provided.

Parameter	Significance
`AutoStart = 1`	Navigation to the destination which is indicated in the destination file (`DestinationFile` parameter) starts automatically as soon as the coordinates have been read. If the information from the destination file results in ambiguity, the user is shown a selection list of possible destinations before the navigation is started.

Parameter	Significance
`Autostart = 0`	Navigation to the destination which is indicated in the destination file (`DestinationFile` parameter) does **not** start automatically. The destination will be listed in the Saved destinations list and may there be selected as destination for navigation. If the information from the destination file results in ambiguity, the user is shown a selection list of possible destinations.

Starting navigation automatically

If the `Autostart` parameter is set to `1` (automatic navigation mode activated), a destination file with valid destination coordinates should exist.

Navigation starts only when a sufficient GPS signal is available. If there is no or no sufficient GPS signal, the following message box opens:

Note: You cannot access any other screen of ***NAVIGON Configuration Kit*** when automatic navigation mode is activated. Nevertheless, you may interrupt navigation at any time.

If the destination file is not located under the parameter `DestinationFile`, the program ends with the respective error notice.

When you have reached your destination, the respective message box opens. Your current position will still be displayed on the map.

5.1.2.4 Parameter Delete

Survey

Using the `Delete` parameter you may determine whether the file which is indicated in the `DestinationFile` parameter shall be deleted or not after the termination of ***NAVIGON Configuration Kit***.

Parameter / Wert	Significance
`Delete = 1`	The destination file will be deleted after the termination of the software.
`Delete = 0`	(default) The destination file will not be deleted.

5.1.2.5 Parameter GPSFile

Überblick

Using the `GPSFile` parameter you may write the GPS-data of your travel into a file.

```
[FileIO]
GPSFile = C:\Temp\GPSOutput.txt
```

As long as you are navigating, the system writes once in every second the GPS-data of your current position into a file. By default, output is in WGS-84 format:

```
[GPS_WGS84]
X= 10.12737
Y= 53.37844
```

5.1.2.6 Parameter FormatGPSFile

Survey

Using the `FormatGPSFile` parameter you may write the data of your travel in GPGGA or GPVTG format.

```
[FileIO]
GPSFile = C:\Temp\GPSOutput.txt
FormatGPSFile = GPGGA
```

As long as you are navigating, the system writes once in every second the GPS-data of your current position into the file indicated in the `GPSFile` parameter. Output is now in GPGGA or GPVTG format:

```
$GPGGA,000020,4947.870605,N,00956.5817,E,1,08,1.1,203.9
,M,48.0,M,,*4F
$GPVTG,69.00,T,69.00,M,0019.5,N,0036.0,K*46
```

5.1.2.7 Parameter RouteList

Survey

In the `[FileIO]` section you may indicate a file (path and name) into which the way list with all its waypoints will be written as soon as the route has been calculated.

```
[FileIO]
RouteList = [File for Way list]
```

5.1.2.8 Parameter SaveCoordInFile

Survey

With the aid of the parameter `SaveCoordInFile` you can directly write the coordinates of a town (irrespective of them being in a digitalised or non-digitalised area) from the map and into a file (in the format XML).

The coordinates of the town can then, for example, be used later on as a destination for a navigation. The saved coordinates are saved both as WGS-84 format as well as in the Gauß-Krüger format.

```
[FileIO]
SaveCoordInFile=\Programme\Navigon\NCK5\Coord.xml
```

```
<?xml version="1.0" encoding="ISO-8859-1" ?>
- <coordinate>
    <wgs84 long="10.074401" lat="48.645844" />
    <gausskrueger x="3579243.250000" y="5390363.000000" />
  </coordinate>
```

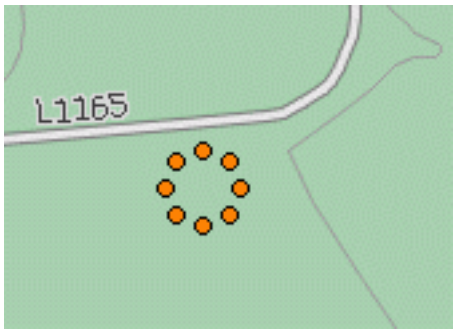
Note: In each case only one coordinate can be saved in the given file.

How to save the coordinate from the map…

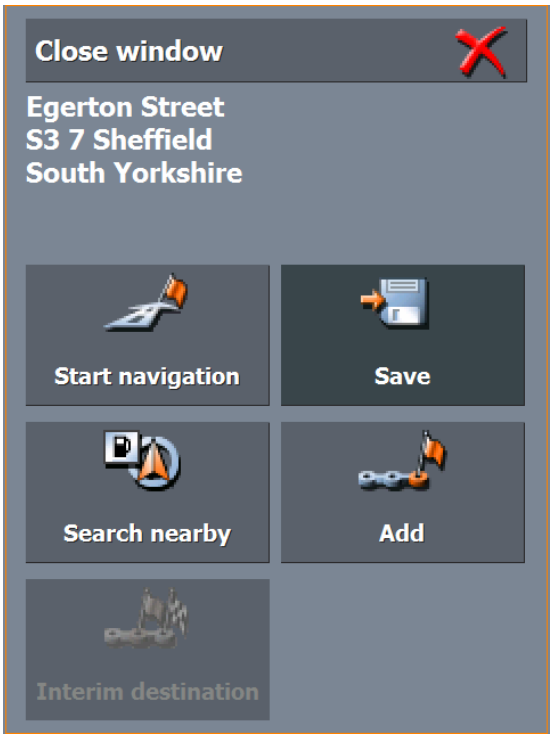
1. Open the map view.
2. Tap for a while on the point of interest that you'd like to establish as the destination.

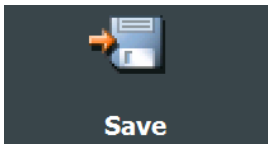
   The location is then circled with an orange dashed line:

   (The colour of the circle can deviate depending on the device)



From the data stocks information on the chosen location will be loaded and displayed.





3. Tap on the **Save** button.

   The coordinates of the destination are then saved in the formats WGS-84 and Gauß-Krüger in the given file.

5.1.3 Navigation to the destination of a destination file

Survey

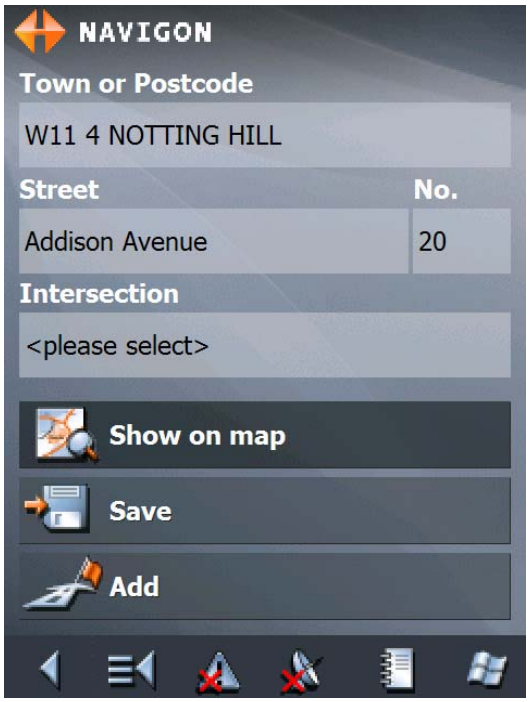
When you have generated a destination file, e.g. via a track record, you may navigate to the indicated destination. The destination file must be indicated in the `NCK.INI` file using the `DestinationFile` parameter.

Example

```
[FileIO]
DestinationFile=\Programme\NAVIGON\NCK5\Data\Input.txt
GPSFile=\Programme\NAVIGON\NCK5\Data\GPSOutput.txt
FormatGPSFile=GPGGA
Delete=1
AutoStart=1
RouteList=\Programme\NAVIGON\NCK5\Data\RouteList.txt
```

Autostart=0

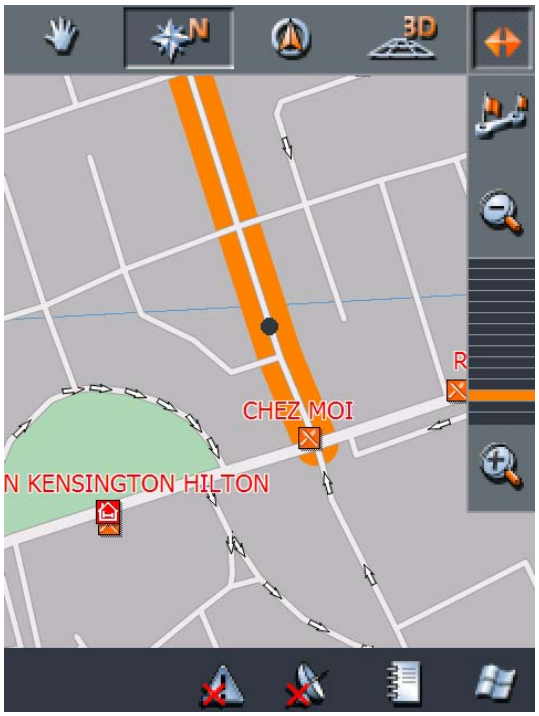
When you have set the `Autostart` parameter to `0`, NCK starts with the **ADDRESS** screen. The information of the destination file has been adopted into the respective entry fields.



Operating the software

You have only restricted possibilities for operating NCK:

⇔ Via the **Show on map** button, you may display the destination on the map. It will be highlighted by a black circle:



⇔ You may **Start navigation**.

⇔ You may enter another address on the **ADDRESS** screen.

Autostart=1

When you have set the `Autostart` parameter to `1`, NCK starts automatically in navigation mode. You won't have other possibilities for operating the software.

5.1.4 GPS-data

Survey

NCK may receive GPS-data not only from the GPS-receiver, but also from other interfaces. The necessary settings may be effected in the `[GPS]` section of the `NCK.INI` file.

```
[GPS]
GPSInput = Message | File |Simulation
GPSInputFile = [File for GPS-Data]
```

Using the `GPSInput` parameter, you may indicate the source from which ***NCK*** receives GPS-data.

Note: Make sure that GPS-data have been written in the NMEA format and once every second into the file before using this file as GPS-data source.

If you don't set the `GPSInput` parameter or if it does not exist, ***NCK*** uses the standard GPS-receiver as source.

Parameter	Significance
`GPSInput = Message`	When `Message` is set, NCK tries to receive data from the Windows Message interface. See also "Transmitting GPS-", page 131.
`GPSInput = File`	When `File` is set, you must indicate a valid GPS-input file using the `GPSInputFile` parameter.
`GPSInput = Simulation`	When `Simulation` is set and a valid simulation file is indicated using the `GPSInputFile` parameter, ***NCK*** starts in simulation mode. By default, ***NCK*** tries to load the `GPSDemoFile.txt` file from the `simfiles` folder.

5.1.5 Simulation mode

Survey

In Simulation mode, you may execute a navigation without using a GPS-receiver and without moving, e.g. for test purposes. In order to start the simulation mode, a simulation file must exist in the `simfiles` folder.

Note: TMC-data cannot be simulated.

Section

The concerned parameters must be set in the `[GPS]` section of the `NCK.INI` file.

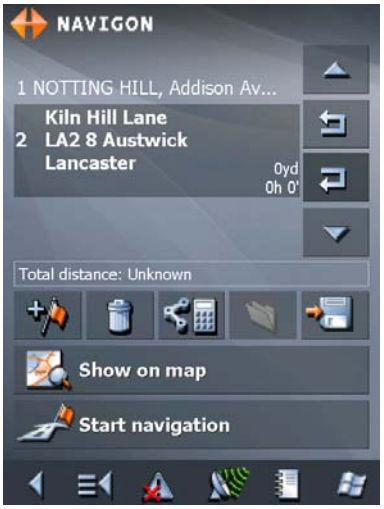
Parameter / Wert	Significance
`GPSInput = Simulation`	When `Simulation` is set and a valid simulation file is indicated using the `GPSInputFile` parameter, ***NCK*** starts in simulation mode. You may now execute a navigation without using a GPS-receiver and without moving, e.g. for test purposes.

Creating a simulation file

In order to start the simulation mode, a simulation file must exist in the `simfiles` folder. You may create one as follows:

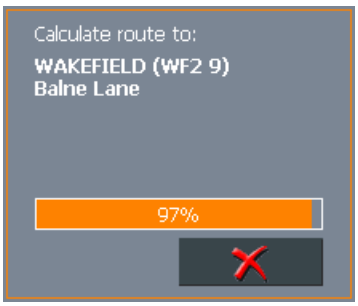
1. Start ***NCK***.
2. Tap **Several destinations**.

   For further information on itinerary planning, please refer to "Navigation to several destinations (Itinerary planning)", page 79.
3. Enter a start and a destination point.
4. Tap the **Calculate the route** icon.
5. Tap the **Show on map** button**.**



6. Tap the **Additional functions** icon.
7. Select **Start simulation**.

   The route will be recalculated.



Simulation mode starts just after the recalculation.

As soon as simulation mode has started, a file named `GPSDemoFile.txt` is created in the `simfiles` folder which may be used for further simulations.

Attention: When you start another simulation, an existing `GPSDemoFile.txt` file in the `simfiles` folder will be replaced. Rename the old file before if you want to keep it.

5.1.5.1 Loading a simulation file

Survey

You may load a simulation file

⇔ manually or

⇔ automatically

Loading a simulation file manually

1. In the **MAIN MENU**, tap **Configuration**.
2. Via the arrow buttons, select the **SIMULATION** screen:

3. Tap **Start simulation**.

   The **Select a simulation file** screen opens.
4. Select the respective simulation file (default: `GPSDemoFile.txt`) from the `simfiles` folder.

Simulation speed

Tap this button to set the speed of the simulation. 1 means a very slow, 29 means a very fast simulation speed.

Loading a simulation file automatically

When a `GPSDemoFile.txt` file exists in the `simfiles` folder and when the `GPSInput` parameter is set to `Simulation` (`GPSInput = Simulation`), ***NCK*** starts automatically in simulation mode.

Simulated navigation

The software simulates a navigation using the GPS-data of the simulation file. When the end of the file has been reached, simulation restarts.

5.2 User defined POIs

Survey

With ***NAVIGON Configuration Kit*** you may define your own Points of Interest (POI) (e.g. all sites or branch offices of your company) and select them as special destinations for navigation.

You may assign your user defined POIs to categories and thus classify them. POIs of one category are represented on the map by always the same symbol.

Note: User defined POIs are an additional module for ***NCK*** which may be purchased separately.

Database of POIs

User defined POIs must be stored in a database. Otherwise they can not be displayed on the map. A new database can be created by the ***POI Importer*** software (by Navigon GmbH).

POI Importer imports text files into a new database which contains the relevant information only. You may as well define how POIs shall be represented on the map.

Features

⇔ You may use as many databases of POIs as you want at the same time,

⇔ each record of a POI contains:
-Name,
-Coordinates;
-Category number

POI folder

Data created with ***POI Importer*** will be stored in the **POI** folder and will be loaded automatically at each start of ***NCK***.

POI Finder

POI-Finder is a software for selecting user defined POIs. When a POI is selected, it automatically starts ***NAVIGON Configuration Kit*** in navigation mode. With ***POI-Finder***, you may

⇔ assign a category to each POI and

⇔ indicate a track leading to it.

Note: ***POI-Finder*** is an additional module for ***NCK*** which may be purchased separately.

5.3 Tracks

Survey

Tracks may be used for navigating to destinations which are not within reach of the public road network which is covered by the map. You may define different tracks, e.g.

⇔ for different types of vehicles, or

⇔ for different seasons.

A track is composed by a list of coordinates which lead from a point of the covered road network to points outside this road network. Tracks are displayed on the map as a static red line.

When you are navigating to a destination outside the covered road network, two route points are being displayed on the map (see example above). The first one is the point where you have to leave the digitized road (which is covered by the map). The second one is the destination point which lays outside the digitized road network. It is represented by a red flag.

As the distance between these two route points is not covered by the map, the software cannot give instructions for driving like on the public road network. Navigation must be effected using the compass rose and the representation of your current position on the map.

When you are reaching a position within 10 yards round the destination point, the system prompts you that you have reached the destination.

Note: If the destination lies on the covered road network, only the destination point is indicated on the map.

5.3.1 Structure of the track file

Track file

A track file is, just like a destination file, indicated by the `DestinationFile` parameter of the `NCK.INI` file. The track consists of several coordinates in either Gauss-Krueger (GK) or WGS84 format.

For further information on indicating files, please refer to "Parameter DestinationFile", page 99.

Structure

A track file must have the following structure:

```
[Destination_WGS84] or [Destination_GK]
X=[Longitude]
Y=[Latitude]
 [POI]
Category = [Name of the POI category (optional)]
Name = [Name of the POI]
Info = [Information text (optional)]
Number = [Number of track coordinates]
Xi = [Longitude]
Yi = [Latitude]
```

Rules

- ⇔ The X and Y coordinates of the section must be the same as the last Xi and Yi coordinates of the `[POI]` section. In the example below, these are the coordinates X6 and Y6.
- ⇔ The first track coordinate should ideally be a point on the road.
- ⇔ Coordinates must be entered either in WGS84 or in Gauss-Krueger format.

Example for a track file

```
[Destination_WGS84]
X=9.9730
Y=49.9203
[POI]
Category=Technology
Name=Pumping station
Info=Wear protective clothing during maintenance work
Number=6

X1=9.9692
Y1=49.9219
X2=9.9707
Y2=49.9228
...
X6=9.9730
Y6=49.9203
```

5.3.2 Activating track recording

Survey

You may record a track while navigating and thus make the system write automatically all necessary coordinates into a track file.

Section

The parameters concerning track recording must be set in the [Track] section of the NCK.INI file.

Parameter	Value	Significance
Record	1	Track recording activated
	0	(Default) Track recording disactivated.
MaxCoord	>0	Maximum number of coordinates. When the maximum number of coordinates is reached, the system inserts a line between the last recorded coordinate and the current position.
	leer oder -1	(Default) Unlimited number of coordinates.
DeltaCourse	Number of degrees	Divergence for track recording in degrees. The system writes a new coordinate for the track only when the newly followed direction differs of more than the indicated number of degrees from the precedent direction. The default value is 2.5 degrees.
Format	WGS84 GK	coordinate format of the track to be saved
	Empty	Default WGS84
Path	Path	Path and name of the folder into which the track file will be stored. The default folder is the program folder of ***NAVIGON Configuration Kit***.

Example

```
[Track]
Record = 1
DeltaCourse = 2
Path = \Programme\NAVIGON\NCK5\Data
```

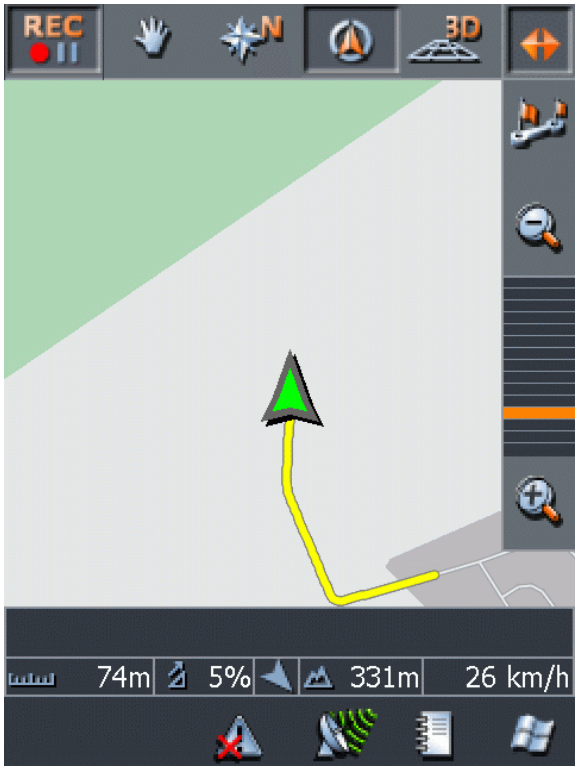
Note: At least the Record parameter must be set to 1, otherwise track recording is not possible.
You may indicate a special folder for tracks (“track” in the example), but you must create that folder before.

Result

If you have activated track recording, you will find an additional icon in map view mode

which serves for recording tracks.

The listed track is then shown with a yellow line.



5.3.3 Recording tracks

Condition

You have activated track recording in the `NCK.INI` file as described above.

Recording a track...

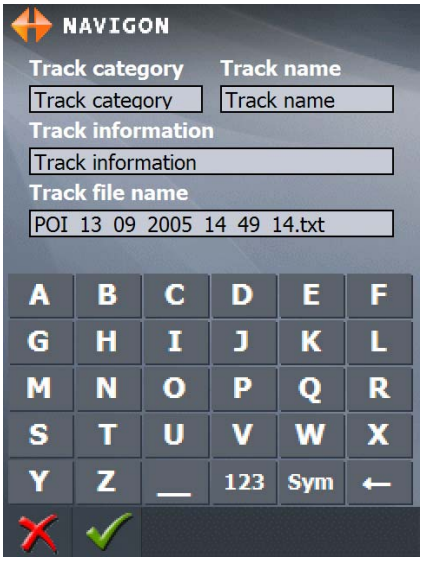
1. In navigation mode, tap the **Record** icon.

   The system starts recording a track. On the map, the track is highlighted by a coloured line.

2. Tap the **Record** icon again when you have reached your destination.

   The **TRACK PROPERTIES** dialog box opens:



3. Change the default entries where necessary and tap the **Save** button.

   The track file will be saved into the folder which is indicated by the Path parameter. It may from now on be used as destination file (see "Navigation to the destination of a destination file", page 107.). You may as well transform the contained data into a file for the ***POI-Finder*** software.

Note: You may record further tracks as long as the system is in navigation mode.

Track file

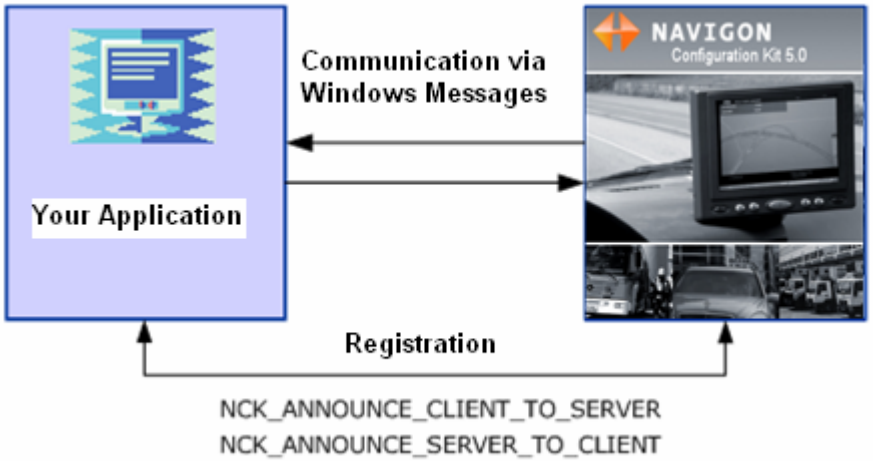
The properties you have entered in the **TRACK PROPERTIES** dialog box will be saved as the parameters Category, Name, and Info in the [POI] section.

```
[Destination_WGS84]
X=9.974818
Y=49.920174
[POI]
Category=Track Kategorie:Mast
Name=Track Name: Mast 1752_a
Info=POI_17_09_2004_12_03_01.txt
Number=46
X1=9.969100
Y1=49.921989
X2=9.969094
Y2=49.921833
...
X46=9.974818
Y46=49.920174
```

5.4 Communication with NCK via the Windows-message interface

Windows message interface

Via the Windows message interface other applications may communicate with ***NCK***. Below, you will find all Windows messages which are available for ***NCK.***



Condition

Before you can use Windows messages, you must bind the `NCKRegMsg.h` file (which is to be found in the folder of the NCK program folder) into your own project.

Data queries and messages from NCK

Several states may be read while NCK is running. Thus your application may react on defined states of navigation.

To do so your application must register the messages using the `RegisterWindowMessage` API function. Use the `WM_COPYDATA` Windows message to query different states.

5.4.1 Registering your application with NCK

Name of the message

NCK_ANNOUNCE_CLIENT_TO_SERVER

The message for registering your application with ***NCK*** returns a WindowHandle to the client. ***NCK*** then broadcasts a message to make itself known to the client.

Parameters

```
wParam = 0;
      // not used
lParam = (LPARAM)(HWND)clientHandle;
      // WindowHandle of the client
```

Name of the message

NCK_ANNOUNCE_SERVER_TO_CLIENT

Broadcasts a WindowHandle to the server.

Parameters

```
wParam = 0;
      // not used
lParam = (LPARAM)(HWND)serverHandle;
```

```
// WindowHandle of the server
```

5.4.2 Checking NCK version

Attention: This message is out of date. For connections to the NCK 5.0 the message NCK_GET_VERSION_EX should be used (see next page).

5.4.2.1 NCK_GET_VERSION

Name of the message

NCK_GET_VERSION

Checks ***NCK's*** major and minor version numbers, and the build number.

Parameters

```
COPYDATASTRUCT cpd;
cpd.dwData = NCK_GET_VERSION;
      // Name of the message
cpd.cbData = 0;
      // not used
cpd.lpData = 0;
      // not used
```

NCK returns its version number via a WM_COPYDATA Windows message.

Name of the message

NCK_VERSION

Parameters

```
COPYDATASTRUCT cpd;
cpd.dwData = NCK_VERSION;
      // Name of the message
cpd.cbData = sizeof(NCKVersion);
      // Size of the NCKVersion structure
cpd.lpData = NCKVersion;
      // Pointer to the NCKVersion structure


typedef struct
{
LONG nSize;            // Size of the structure
LONG nMajor;           // Major version number
LONG nMinor;           // Minor version number
LONG nBuild;           // Build number
} NCKVersion;
```

Return value

The message returns 0 if the version number has been identified, otherwise it returns -1.

5.4.2.2 NCK_GET_VERSION_EX

Name of the message

NCK_GET_VERSION_EX

Checks NCK's major and minor version numbers, and the build number.

Parameters

```
COPYDATASTRUCT cpd;
cpd.dwData = NCK_GET_VERSION_EX; // Name of the message
cpd.cbData = 0; // not used
cpd.lpData = 0; // not used
```

NCK returns its version number via a `WM_COPYDATA` Windows message.

Name of the message

NCK_VERSION_EX

Parameters

```
COPYDATASTRUCT cpd;
cpd.dwData = NCK_VERSION_EX; // Name of the message
cpd.cbData = sizeof(NCKVersionEx);
      // Size of the NCKVersionEX structure
cpd.lpData = NCKVersionEx;
      // Pointer to the NCKVersionEX structure
typedef struct
{
LONG nSize; // Size of the structure
LONG nMajor; // Major version number
LONG nMinor; // Minor version number
LONG nSubMinor;  // second Minor version number
LONG nBuild; // Build number
} NCKVersionEx;
```

Return value

The message returns `0` if the version number has been identified, otherwise it returns `-1`.

5.4.3 Converting coordinates into addresses

Attention: This message is out of date. For connections as of NCK 5.0 the message NCK_GET_ADDRESS with the structure NCKTarget should be used (see next page).

5.4.3.1 NCK_GET_ADDRESS with NCKCoord and NCKAddress

Name of the message

NCK_GET_ADDRESS

Converts a WGS-84 coordinate into a postal address.

Parameters

```
COPYDATASTRUCT cpd;
cpd.dwData = NCK_GET_ADDRESS;
      // Name of the message
cpd.cbData = sizeof(NCKCoord);
      // Size of the NCKCoord structure
cpd.lpData = NCKCoord;
      // Pointer to the NCKCoord structure
typedef struct {
LONG nSize;             // Size of the structure
FLOAT fLongitude;       // Longitude
FLOAT fLatitude;        // Latitude
} NCKCoord;
```

NCK returns the address which corresponds to the transmitted coordinate via a WM_COPYDATA Windows message.

Name of the message

NCK_ADDRESS

Parameters

```
COPYDATASTRUCT cpd;
cpd.dwData = NCK_ADDRESS;
      // Name of the message
cpd.cbData = sizeof(NCKAddress);
      // Size of the NCKAddressstructure
cpd.lpData = NCKAddress;
      // Pointer to the NCKAddress structure
typedef struct {
LONG nSize;            // Size of the structure
char sCountry[10];     // Country
char sCity[100];       // City
char sZipCode[20];     // Postcode
char sStreet[100];     // Street
char sHouseNumber[20]; // House number
} NCKAddress;
```

Return value

The message returns `0` if an address has been identified, otherwise it returns `-1`.

5.4.3.2 NCK_GET_ADDRESS with NCKTarget

Name of the message

NCK_GET_ADDRESS

Converts a WGS-84 coordinate into a postal address.

Parameters

```
COPYDATASTRUCT cpd;
cpd.dwData = NCK_GET_ADDRESS; // Name of the message
cpd.cbData = sizeof(NCKTarget);
      // Size of the NCKTarget structure
cpd.lpData = NCKTarget;
      // Pointer to the NCKTarget structure
typedef struct
{
LONG nSize; // Size of the structure
TCHAR sCountry[MAXLEN_COUNTRY]; // Country Code
TCHAR sCity[MAXLEN_CITY]; // City
TCHAR sZipCode[MAXLEN_ZIPCODE]; // Postcode
TCHAR sStreet[MAXLEN_STREET]; // Street
TCHAR sHouseNumber[MAXLEN_HOUSENUMBER]; // House number
float fX; // x coordinate
float fY; // y coordinate
NCK_COORD_FORMAT coordFormat;
      // format of the coordinates
         (enum NCK_COORD_FORMAT)
NCKErrorStatus errStatus;
      // Error status for the conversion
} NCKTarget;
```

The following fields must be completed with valid values:

⇔ `nSize`

⇔ `fX`

⇔ `fY`

⇔ `coordFormat`

The NCK sends an `NCKTarget` structure with the recorded values for the address back via the `WM_COPYDATA` Windows message.

Name of the message

NCK_ADDRESS

Parameters

```
COPYDATASTRUCT cpd;
cpd.dwData = NCK_ADDRESS; // Name of the message
cpd.cbData = sizeof(NCKTarget);
      // Size of the NCKTarget structure
cpd.lpData = NCKTarget;
      // Pointer to the NCKTarget structure
typedef struct
{
LONG nSize; // Size of the structure
TCHAR sCountry[MAXLEN_COUNTRY]; // Country Code
TCHAR sCity[MAXLEN_CITY]; // City
TCHAR sZipCode[MAXLEN_ZIPCODE]; // Postcode
TCHAR sStreet[MAXLEN_STREET]; // Street
TCHAR sHouseNumber[MAXLEN_HOUSENUMBER]; // House number
float fX; // x coordinate
float fY; // y coordinate
NCK_COORD_FORMAT coordFormat;
      // format of the coordinate 0:WGS84, 1:Gauss-
Krueger
NCKErrorStatus errStatus;
      // Error status for the conversion
} NCKTarget;
```

Return value

The message returns `0` if an address has been identified, otherwise it returns `-1`.

The NCK will complete the following fields with valid values:

- ⇔ `sCountry`
- ⇔ `sCity`
- ⇔ `sZipCode`
- ⇔ `sStreet`
- ⇔ `sHouseNumber`
- ⇔ `errStatus`
  The error status includes an error number (see enum `NCK_ERROR_CODE`) and an associate error text.

5.4.4 Converting addresses into coordinates

Attention: This message is out of date. For connections as of NCK 5.0 the message NCK_GET_COORDINATE with the structure NCKTarget should be used (see next page).

5.4.4.1 NCK_GET_COORDINATE with NCKAddress and NCKCoord

Name of the message

NCK_GET_COORDINATE

Converts a postal address into a WGS-84 coordinate.

Parameters

```
COPYDATASTRUCT cpd;
cpd.dwData = NCK_GET_COORDINATE;
      // Name of the message
cpd.cbData = sizeof(NCKCoord);
      // Size of the NCKCoord structure
cpd.lpData = NCKCoord;
      // Pointer to the NCKCoord structure
typedef struct {
LONG nSize;             // Size of the structure
FLOAT fLongitude;       // Longitude
FLOAT fLatitude;        // Latitude
} NCKCoord;
```

NCK returns the coordinate which corresponds to the transmitted address via a WM_COPYDATA Windows message.

Note: For a list of the Country Codes refer to "Country Codes - CountryId", page 101.

Name of the message

NCK_COORDINATE

Parameters

```
COPYDATASTRUCT cpd;
cpd.dwData = NCK_COORDINATE;
      // Name of the message
cpd.cbData = sizeof(NCKCoord);
      // Size of the NCKCoord structure
cpd.lpData = NCKCoord;
      // Pointer to the NCKCoord structure
```

Return value

The message returns 0 if the coordinate has been identified, otherwise it returns -1.

5.4.4.2 NCK_GET_COORDINATE with NCKTarget

Name of the message

NCK_GET_COORDINATE

Converts a postal address into a coordinate.

Parameters

```
COPYDATASTRUCT cpd;
cpd.dwData = NCK_GET_COORDINATE; // Name of the message
cpd.cbData = sizeof(NCKTarget);
      // Size of the NCKTarget structure
cpd.lpData = NCKTarget;
      // Pointer to the NCKTarget structure
typedef struct
{
LONG nSize; // Size of the structure
TCHAR sCountry[MAXLEN_COUNTRY]; // Country Codes
TCHAR sCity[MAXLEN_CITY]; // City
TCHAR sZipCode[MAXLEN_ZIPCODE]; // Postcode
TCHAR sStreet[MAXLEN_STREET]; // Street
TCHAR sHouseNumber[MAXLEN_HOUSENUMBER]; // House number
float fX; // x coordinate
float fY; // y coordinate
NCK_COORD_FORMAT coordFormat;
      // format of the coordinates
         (enum NCK_COORD_FORMAT)
NCKErrorStatus errStatus;
      // Error status for the conversion
} NCKTarget;
```

The following fields must be completed with valid values:

- ⇔ nSize
- ⇔ sCountry (optional)
- ⇔ sCity (optional)
- ⇔ sZipCode (optional)
- ⇔ sStreet (optional)
- ⇔ sHouseNumber (optional)
- ⇔ coordFormat (details regarding which coordinate format should be converted)

The more precisely the optional fields are completed, the more precisely the conversion can be carried out.

The NCK returns the coordinate to the transferred address by means of a WM_COPYDATA.

Note: For a list of the Country Codes refer to "Country Codes - CountryId", page 101.

Name of the message

NCK_COORDINATE

Parameters

```
COPYDATASTRUCT cpd;
cpd.dwData = NCK_COORDINATE; // Name of the message
cpd.cbData = sizeof(NCKTarget);
      // Size of the NCKTarget structure
cpd.lpData = NCKTarget;
      // Pointer to the NCKTarget structure
typedef struct
{
LONG nSize; // Size of the structure
TCHAR sCountry[MAXLEN_COUNTRY]; // Country Codes
TCHAR sCity[MAXLEN_CITY]; // City
TCHAR sZipCode[MAXLEN_ZIPCODE]; // Postcode
TCHAR sStreet[MAXLEN_STREET]; // Street
TCHAR sHouseNumber[MAXLEN_HOUSENUMBER]; // House number
float fX; // x coordinate
float fY; // y coordinate
NCK_COORD_FORMAT coordFormat;
      // format of the coordinates
         (enum NCK_COORD_FORMAT)
NCKErrorStatus errStatus;
      // Error status for the conversion
} NCKTarget;
```

Return value

The message returns `0` if the coordinate has been identified, otherwise it returns `-1`.

NCK will complete the following fields with valid values:

⇔ `fX`

⇔ `fY`

⇔ `errStatus`
The error status includes an error number (see enum `NCK_ERROR_CODE`) and an associated error text.

5.4.5 Transmitting a new destination

Survey

At any time, a new destination may be transmitted to NCK. It calculates then instantly the route and starts navigation to the new destination. The destination may be transmitted as WGS-84 coordinates, as Gauss-Krueger (GK) coordinates or as postal address.

Name of the message

NCK_SET_DESTINATION_WGS84

Parameters

```
COPYDATASTRUCT cpd;

cpd.dwData = NCK_SET_DESTINATION_WGS84;
      // Name of the message

cpd.cbData = sizeof(NCKCoord);
      // Size of the NCKCoord structure

cpd.lpData = NCKCoord;
      // Pointer to the NCKCoord structure
```

Name of the message

NCK_SET_DESTINATION_GK

Parameters

```
COPYDATASTRUCT cpd;

cpd.dwData = NCK_SET_DESTINATION_GK;
      // Name of the message

cpd.cbData = sizeof(NCKCoord);
      // Size of the NCKCoord structure

cpd.lpData = NCKCoord;
      // Pointer to the NCKCoord structure
```

Name of the message

NCK_SET_DESTINATION_ADDRESS

Parameters

```
COPYDATASTRUCT cpd;

cpd.dwData = NCK_SET_DESTINATION_ADDRESS;
      // Name of the message

cpd.cbData = sizeof(NCKAddress);
      // Size of the NCKAddress structure

cpd.lpData = NCKAddress;
      // Pointer to the NCKAddress structure
```

5.4.6 Navigation status

Survey

After both applications having registered each other, they may exchange information using the WM_COPYDATA Windows message.

5.4.6.1 NCK_GET_STATUS_NAVIGATION

Attention: This message is out of date. For connections as of NCK 5.0 the message NCK_GET_STATUS_NAVIGATION_EX should be used (see next page).

Name of the message

NCK_GET_STATUS_NAVIGATION

Parameters

```
COPYDATASTRUCT cpd;
cpd.dwData = NCK_GET_STATUS_NAVIGATION;
      // Name of the message
cpd.cbData = 0;
      // not used
cpd.lpData = 0;
      // not used
```

NCK then returns the navigation status using a WM_COPYDATA message with a NCK_STATUS_NAVIGATION data section.

Name of the message

NCK_STATUS_NAVIGATION

Parameters

```
COPYDATASTRUCT cpd;
cpd.dwData = NCK_GET_STATUS_NAVIGATION;
      // Name of the message
cpd.cbData = sizeof(NCKStatusNavigation);
      // Size of the Status structure
cpd.lpData = NCKStatusNavigation;
      // Pointer to the Status structure


typedef struct
{
LONG nSize;
      // Size of the structure
LONG nDistance;
      // remaining distance in meters
LONG nDuration;
      // remaining time in seconds
} NCKStatusNavigation;
```

Note: When NCK is not in navigation mode, it returns 0 for both nDistance and nDuration.

Return value This message has no return value.

5.4.6.2 NCK_GET_STATUS_NAVIGATION_EX

Name of the message NCK_GET_STATUS_NAVIGATION_EX

Parameters

```
COPYDATASTRUCT cpd;
cpd.dwData = NCK_GET_STATUS_NAVIGATION_EX;
      // Name of the message
cpd.cbData = 0;   // not used
cpd.lpData = 0; // not used
```

NCK then returns the navigation status using a `WM_COPYDATA` message with a `NCKStatusNavigationEx` data section.

Return value This message has no return value.

Name of the message NCK_STATUS_NAVIGATION_EX

Parameters

```
COPYDATASTRUCT cpd;
cpd.dwData = NCK_GET_STATUS_NAVIGATION_EX;
      // Name of the message
cpd.cbData = sizeof(NCKStatusNavigationEx);
      // Size of the Status structure
cpd.lpData = NCKStatusNavigationEx;
      // Pointer to the Status structure typedef struct
{
LONG nSize; // Size of the structure
LONG nDistance; // remaining distance in meters
LONG nDuration; // remaining time in seconds
} NCKStatusNavigation;
typedef struct
{
LONG nSize; // size of the struct
LONG nDistanceToLastDest;
      // remaining distance in meters to last
         destination
LONG nDurationToLastDest;
      // remaining time in seconds to last destination
LONG nDistanceToNextDest
      // remaining distance in meters to next
         destination
LONG nDurationToNextDest;
      // remaining time in seconds to next destination
} NCKStatusNavigationEx;
```

Note: When NCK is not in navigation mode, it returns 0 for bothn`DistanceToNextDest` and `nDurationToNextDest`.

Return value This message has no return value.

5.4.7 Arriving at the destination

Name of the message

NCK_DEST_REACHED

If you have reached your destination, NCK sends a `WM_COPYDATA` Windows message with a `NCK_DEST_REACHED` data section.

Parameters

```
COPYDATASTRUCT cpd;
cpd.dwData = NCK_DEST_READHED;   // Name of the message
cpd.cbData = 0;                  // not used
cpd.lpData = 0;                  // not used
```

5.4.8 Transmitting GPS-data

Survey

Via Windows messages, GPS-data may be sent to NCK every second. Use the `WM_COPYDATA` message to send the data.

Before sending data, your application must have made itself known to NCK (as described in "Registering your application with NCK", page 119).

GPS-data must refer to one specific GPS-position. They must conform the NMEA protocol and must consist of either VTG and GGA or RMC and GGA.

Name of the message

NCK_GPS_DATA

Parameters

```
COPYDATASTRUCT cpd;
cpd.dwData = NCK_GPS_DATA;
      // Name of the message
cpd.cbData = sizeof(NCKGPSData);
      // Size of the GPS Data Structure
cpd.lpData = NCKGPSData;
      // Pointer to auf the GPS Data Structure


typedef struct
  {
  LONG  nSize;
      // Size of the structure
  TCHAR sGPSSignal[256];
      // current GPS Information string
  } NCKGPSData;
```

Example for lpGPSData

```
$GPGGA,000020,4947.870605,N,00956.5817,E,1,08,1.1,203.9
,M,48.0,M,,*4F\r\n$G
PVTG,69.00,T,69.00,M,0019.5,N,0036.0,K*46\r\n
```

Note: Both of the NMEA-strings end with CR + LF.

Return value

This message has no return value

NCK

In the [GPS] of the NCK.INI file, the GPSInput parameter must be set to Message.

```
[GPS]
GPSInput = Message
```

5.4.9 Terminating NCK

Survey

NCK may at any time be terminated by the application which has called it. There are two possibilities:

⇔ Terminating NCK with user confirmation, or

⇔ terminating NCK without user confirmation.

Name of the message

NCK_QUIT_WITH_CONFIRMATION

Parameters

```
COPYDATASTRUCT cpd;
cpd.dwData = NCK_QUIT_WITH_CONFIRMATION;
      // Name of the message
cpd.cbData = 0;
      // not used
cpd.lpData = 0;
      // not used
```

Name of the message

NCK_QUIT_IMMEDIATELY

Parameters

```
COPYDATASTRUCT cpd;
cpd.dwData = NCK_QUIT_IMMEDIATELY;
      // Name of the message
cpd.cbData = 0;
      // not used
cpd.lpData = 0;
      // not used
```

5.4.10 Demo application

Overview

On the DVD in the DemoApplication folder you'll find the ***NCKController***, which implements all the Windows messages written above. In order to develop the ***NCKController*** you require ***Microsoft eMbedded Visual C++ 4.0***.

In order to develop the ***NCKControlle***r for the Notebook version, the ***Microsoft Visual Studio C++ 6*** or higher is required.

6 Configuration of the NCK

Topics covered in this chapter:

6.1 Configuration

Configuration

In ***Configuration Kit***, you may modify the following settings:

On the main screen, tap the **Settings** button to configure ***NCK***.

On the **SETTINGS** screen, tap the **Save** button to apply your modifications if you have made some.

6.1.1 User mode

User mode

On the **USER MODE** screen, you can switch between Standard mode and Extended mode.

For details to the different user modes refer to "User modes", page 37.

Restoring the factory settings…

1. If you want to restore the factory settings, tap the **Factory settings** command.
2. Confirm the restoration.

6.1.2 Map information

Note: This function is only available in "Extended mode".

Info on the map

On the **MAP INFORMATION** screen, you may effect the following modifications:

Element	Signification
Info bar	The **Info bar** at the bottom of the map displays the scale of the map, the inclination, the compass, the altitude and the current speed. 
Points of Interest	Tap the respective command button to display (On) or not (Off) **Points of Interest** on the map.
Street names	Tap the respective command button to display (On) or not (Off) **Street names** on the map.

6.1.3 Route information

Note: This function is only available in "Extended mode".

Route info

On the **ROUTE INFORMATION** screen, you may effect the following modifications:

Element	Signification
Dist. to final dest.	Remaining distance to the final destination (estimated).
Time to final dest.	Remaining time to the final destination (estimated).
ETA at final dest.	ETA (Estimated time of arrival) at the final destination.
	Tap the respective command buttons to display (On) or not (Off) the respective information on the map. All information displayed below refers to the final destination. . 
Dist. to next dest.	Remaining distance to the next stage point (estimated).
Time to next dest.	Remaining time to the next stage point (estimated).
ETA at next dest.	ETA (Estimated time of arrival) at the next stage point.
	Tap the respective command buttons to display (On) or not (Off) the respective information on the map. All information displayed below refers to the next stage point.  This section is only available if you have indicated more than one destination to navigate to

6.1.4 Signpost information

Signpost information

The **Show traffic signs** command indicates whether signposts information during the navigation are currently being displayed or not.

Note: This information can only be displayed when it is contained in the cartographic material.

6.1.5 Speed limit

Speed control

In the settings screen **SPEED** you can set if, during the navigation, speed restrictions should be displayed and whether you should be warned if you exceed these restrictions.

Setting	Significance
Show traffic signs	This command indicates whether signposts indicating speed limits are currently being displayed or not. Tap the **Show traffic signs** command and select whether speed limits should be displayed **Always** **On speeding only** or **Never**.
Warning in built-up areas	This command indicates from how much speeding on you want to be warned when driving within built-up areas. Tap the **Warning in built-up areas** command to select another value or to set it to **Never**.
Warning outside built-up areas	This command indicates from how much speeding on you want to be warned when driving outside built-up areas. Tap the **Warning outside built-up areas** command to select another value or to set it to **Never**.

Note: This information can only be displayed when it is contained in the cartographic material.

Caution: Information contained in the cartographic material can be wrong, e.g. due to road works.

Traffic situation and road traffic regulations are absolutely prior to the information given by the navigation system.

6.1.6 Volume

Volume

On the **VOLUME** screen, modify the volume of the spoken indications of the navigation system.

6.1.7 Representation

Note: This function is only available in "Extended mode".

Representation

On the **REPRESENTATION** screen, you may effect the following modifications:

Setting	Signification
Skin	Skins are made to personalize the user interface of ***NCK***. Tap the **Skin** field. Select one of the available skins and tap **OK**.
Darken at night	Tap this field and select whether the screen is to be darkened at night or not. (not available for notebooks and not for all PocketPcs)

6.1.8 Automode

Note: This function is only available in "Extended mode".

Automode

On the **AUTO MODE** screen, you may effect the following modifications:

Setting	Signification
Begin with	Select the default map view: **2D** or **3D**.
3D Autozoom	Select the default for navigation with 3D view: **Autozoom** or **No Autozoom**. With Autozoom, the system changes the scale of the map depending on your current speed: When you drive slowly, the scale becomes small. When you drive fast, the scale becomes high.
2D Autozoom	Select the default for navigation with 2D view: **Low Autozoom**, **Standard Autozoom**, **High Autozoom**, or **No Autozoom**. With Autozoom, the system changes the scale of the map depending on your current speed: When you drive slowly, the scale becomes small. When you drive fast, the scale becomes high. The lower the Autozoom, the lower the scale.
2D View	Select the default for navigation with 2D view: **North oriented** or **In driving**

6.1.9 Routing options

Routing options

On the **ROUTING OPTIONS** screen, indicate your speed profile. This entry will have an effect on the calculation of the remaining time and of the **e**stimated **t**ime of **a**rrival (ETA).

3. Tap the **Speed profile** button. Select one of the available profiles and tap **OK**.
4. Tap the **Type of routing** field and select one of the following options:

Option	Signification
Dynamic route (TMC)	This option is only available when TMC signals may be received. With this option, the quickest route will be calculated. Reported traffic obstructions on your route will be considered automatically. The Fast route is being calculated when TMC is not received.
Fast route	The quickest route will be calculated.
Short route	The shortest route will be calculated.

5. Tap the **Motorways**, **Ferries**, and **Toll roads** fields successively and select one of the following options:

Option	Signification
Permitted	The respective kind of street will be regarded for route calculation.
Avoid	The respective kind of street will be avoided if reasonable.
Forbidden	The respective kind of street will be disregarded for route calculation.

6.1.10 Logbook

Logbook

On the **LOGBOOK** screen, determine whether the logbook is to be started automatically at the beginning of navigation (Yes) or not (No).

Independent from the settings made here, you may at any time start or stop the logbook via the

icon.

Note: This function is only available on certain Windows CE devices, e.g. a Pocket PC.

6.1.11 Key information

Hardware keys

On the **KEYS** screen, you may configure the hardware keys to execute the “up”, “down”, “left”, “right”, “enter” and “return” actions. This enables convenient and easy operation.

When you quit the navigation software, the keys will have their standard functionality.

Tap the **Configure** button to check or to modify the configuration.

Note: This function is only available on certain Windows CE devices, e.g. a Pocket PC.

6.1.12 Itinerary

Note: This function is only available in "Extended mode".

Calculating legs

In the settings screen **ROUTE PLANNING** you can set whether or not after reaching a leg the calculation to the next leg is carried out automatically.

If the automatic calculation is activated, after reaching the first leg the route to the next will be calculated automatically.

If you deactivate the automatic calculation, you can navigate to the next leg destination by briefly tapping somewhere on the map and then tapping the **Next Destination** button.

6.1.13 Format

Units

On the **FORMAT** screen, determine which units are to be used for time and distance indications.

Setting	Signification
Time	Tap the **Time** field to toggle between **12 hours** (AM/PM) and **24 hours** time format.
Distance	Tap the **Distance** field to toggle between **kilometres** or **miles** distance units.

6.1.14 GPS

GPS

On the **GPS** screen, configure the GPS receiver.

Tap **Automatic detection** when you have reconnected or changed your GPS-receiver. Follow the instructions on the screen.

Tap **Manual settings** when automatic detection is not successful. Set the following values:

Setting	Signification
Receiver	Tap the **Type of receiver** field. Select the appropriate receiver from the list and tap **OK**.
Com-Port	Tap the **COM-port** field and indicate the COM / USB-port used by the receiver.
Baud	If you are using a GPS receiver of another brand than NAVIGON (Type: Other receiver), enter the respective Baud rate into the Baud field.

6.1.15 TMC

TMC

On the **TMC** screen, determine whether route modifications caused by TMC traffic information are to be carried out automatically or with explicit confirmation.

6.1.16 Simulation

Simulation

On the settings screen **SIMULATION** you can establish the settings for a simulation and load saved simulation data.

For details refer to "Simulation", page 110.

6.1.17 Home address

Home address

On the **HOME ADDRESS** screen, you may save your home address to quickly start navigation homewards from anywhere.

1. Tap **Enter your home address**.

   The **DESTINATION** screen opens.

2. Tap the **Address** button and enter your home address as described in "Entering an address", page 40.

3. Tap the **Set as home address** button.

The address is indicated on the **HOME ADDRESS** screen.

6.1.18 Radio-Mute

Note: This function is only available in "Extended mode".

Note: This function is only available on certain Windows CE devices, e.g. a Pocket PC.

Radio-Mute

On the **RADIO-MUTE** screen, you may activate the radio-mute function if your hands-free kit is connected to the RADIO-MUTE jack of your car radio. Possible retardations of the hands-free kit will then have no negative effects on the spoken indications of the navigation system.

6.1.19 Product information

Product information

On the **PRODUCT INFORMATION** screen, the name and the version of the software are displayed.

Tap **Show intro** to make the system explain its most important functions.

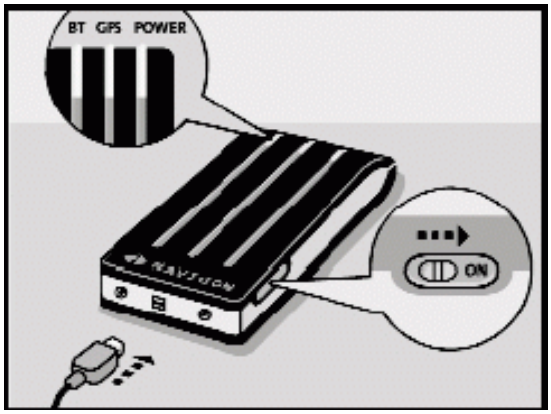
7 Appendix

Topics covered in this chapter:

7.1 Annex A: GPS-receiver NAVIGON|TriCeiver

Starting up

1. Connect the NAVIGON|TriCeiver with the vehicle connection cable and switch it on.



Dioden

Blue light: Bluetooth status (BT)

⇔ Flashes every 1 second if no Bluetooth connection has been created.

⇔ Lights up constantly if a Bluetooth connection has been created.

Green light: GPS status (GPS)

⇔ Flashes every second if no GPS fix exists or the position cannot be determined.

⇔ Lights up constantly if a GPS fix exists or the position has been determined.

Orange light: battery status (Power)

⇔ Lights up constantly if the receiver is switched on (cable and battery operation).

⇔ Battery operation: lights up constantly as long as the battery capacity is sufficient.

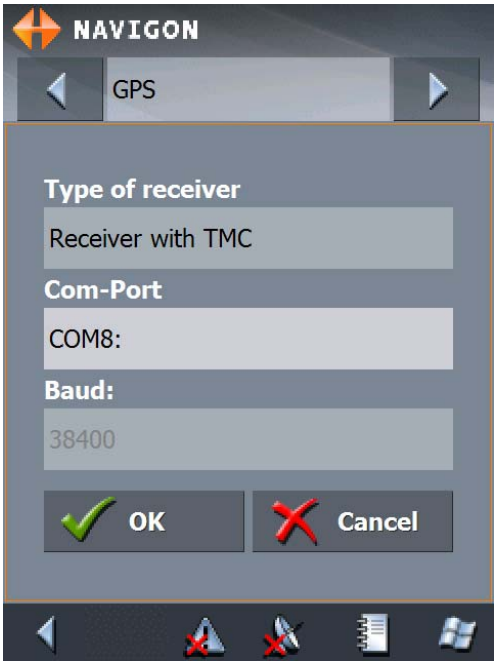
7.1.1 Setting up the NAVIGON|TriCeiver in the NCK

Survey

If there's no connection between the NAVIGON|TriCeiver and the Windows CE device, you can check or correct the correction settings.

1. On your Windows CE device, start the NCK, in order to establish the Bluetooth connection.
2. On the main screen, tap the **Configuration** button.

   The **CONFIGURATION** screen opens.



3. Via the arrow buttons, select **GPS**.

Automatic detection

4. Tap **Automatic detection** when you have reconnected or changed your GPS-receiver. Follow the instructions on the screen.

Manual settings

1. Tap **Manual settings** when automatic detection is not successful. Set the following values:
2. Tap the **Type of receiver** field and indicate the type of your GPS receiver.

You have…	then…
the expandable NAVIGON GPS receiver,	select **Navigon Modular**.
non-expandable NAVIGON GPS receiver with TMC,	select **Navigon with TMC**.
a non-expandable NAVIGON GPS receiver without TMC,	select **Navigon without TMC**.
a GPS receiver of another brand,	select **Other** receiver..

You have…	then…
an integrated GPS receiver and an external TMC receiver	select **Integrated GPS / external TMC**.

3. Tap the **COM port** field and indicate the COM-port.

Note: If you have established a wire connection, it is normally COM-Port 1.

Please refer to the manual of your Windows CE device for information on what COM-port to select for Bluetooth connections.

4. If you are using a GPS receiver of another brand than NAVIGON (Type: Other receiver), enter the respective Baud rate into the Baud field.

   The blue LED at the GPS receiver shines when the connection is established.

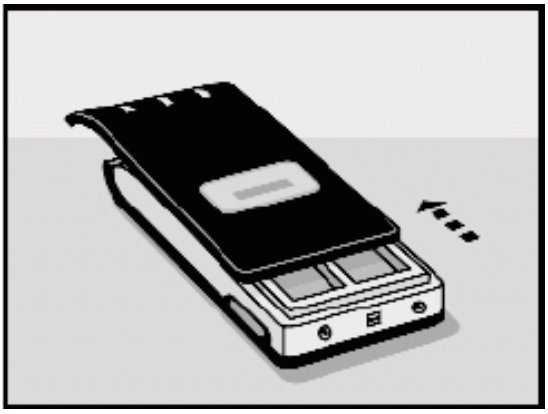
5. Leave the GPS receiver connected to the power supply for about 2 hours in order to fully charge its battery.

7.1.2 Equipping the NAVIGON|TriCeiver

Expansion modules

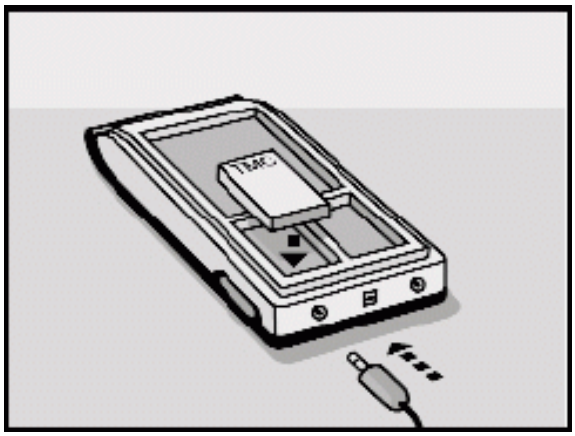
At any moment, the GPS receiver may be equipped with the Bluetooth module (for wireless data transmission) and / or with the TMC module (to provide traffic information to your navigation system).

1. Remove all cables from the GPS receiver.
2. Slide the back cover in the direction of the arrow in order to insert the TMC and/or Bluetooth module.

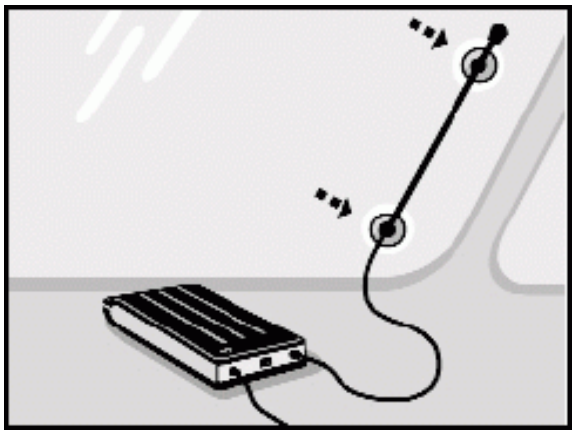


TMC Module

3. Set the TMC module in the lower left section and insert the aerial in the left slot.



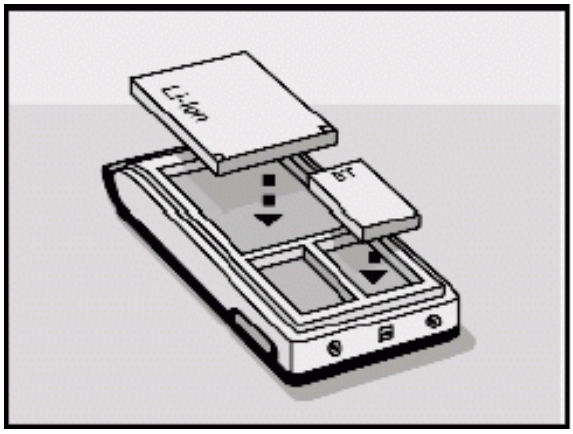
4. Fix the aerial with the suckers parallel to the right strut on the windscreen.



Bluetooth-Module

5. Set the Bluetooth module in the lower right compartment and the lithium ion battery in the upper compartment.

   When you start up, the left lamp lights up blue.



7.2 Annex B: problem solutions

7.2.1 Performance

Slow calculation

Route calculation is very slow, the voice indications in navigation mode are coming late.

The efficiency of both route calculation and navigation depends on the amount of free memory and on the kind of memory card you use.

In order to navigate properly, the system should dispose of at least 15MB of free memory on your Pocket PC.

7.2.2 GPS-receiver

Possible error sources concerning the initialisation of the GPS receiver

If the GPS symbol stays red (no GPS-reception) even though the system has been installed correctly, this may be due to one of the following reasons:

- ⇔ Reason A: an incorrect COM-port is selected.
- ⇔ Reason B: the receiver is not supplied with power.

A

The GPS receiver is connected to another COM-port than COM 1.

1. On the main screen, tap the **Configuration** button

   The **CONFIGURATION** screen opens.
2. Via the arrow buttons, select **GPS**.
3. Tap **Automatic detection** when you have reconnected or changed your GPS-receiver. Follow the instructions on the screen.
4. Tap **Manual settings** when automatic detection is not successful. Set the following values:
5. Tap the **COM-port** field.
6. Select another COM-port.

   When the GPS symbol becomes green, you may start navigation.

B

The cigarette-lighter is not permanently supplied with power.

If the GPS symbol stays red (no GPS-reception) even though you have tried all available COM-ports, it may be that your cigarette-lighter is not permanently supplied with power.

1. Quit ***NCK***
2. Start your engine.
3. Restart ***NCK***

   The GPS receiver should now be ready for use within short time (the GPS symbol becomes green). In the future, start your vehicle before starting the navigation software.

The GPS receiver takes long to be ready to use

The GPS receiver has a battery which maintains saving data collected during the initialisation process.

Once the initialisation has been executed successfully, there is two modes of starting the GPS receiver up:

Mode 1	takes about 5 to 6 minutes. The GPS receiver has not been used for at least one week.
Mode 2	takes about 1 to 2 minutes. The GPS receiver has been used almost daily.

8 Glossary

COM-Port

A COM port is a connector to a communications interface, usually the serial port. The ports are numbered by a number behind "COM". A communications interface is designed to connect hardware like a mouse or a GPS receiver.

GMT

GMT (**G**reenwich **M**ean **T**ime) is the mean solar time at the Royal Greenwich Observatory in Greenwich near London, England, which by convention is at 0 degrees geographic longitude. Theoretically, noon Greenwich Mean Time is the moment when the Sun crosses the Greenwich meridian (and reaches its highest point in the sky in Greenwich). Up to 1972, GMT was the global time standard. Because of the Earth's uneven speed in its elliptic orbit, GMT has been replaced by UTC (**U**niversal **T**ime **C**oordinated) which is an ultra stable time standard based on atomic clocks.

GPS

The GPS (**G**lobal **P**ositioning **S**ystem) is based on 24 satellites which are in orbit round the earth. They are permanently emitting the time and their current position. The GPS receiver receives this information and calculates the longitude and the latitude of its own current position.

The signals of at least three satellites are needed to determine the longitude and the latitude. With the signals of at least four satellites the elevation may be calculated, too. The determination has an accuracy of about 3 yards.

HDOP

The **H**orizontal **D**ilution **o**f **P**recision (HDOP) indicates the quality of position determination. Theoretically any value from 0 to 50 is possible. The smaller the value is, the more accurate is the position determination (value 0 = no deviation from the actual position). Values up to 8 are convenient for street navigation.

POI

Point **o**f **I**nterest (POI). See ➔Special destination.

RDS	**R**adio **D**ata **S**ignal (RDS) is a service offered by broadcasting stations. TMC information is broadcasted via RDS.
Sonderziel	Special destinations, also called POI (**P**oints **o**f **I**nterest), are covered by the map and may be displayed on it. Harbours, airports, restaurants, hotels, petrol stations, public buildings, and others belong to the special destinations. You may determine special destinations as itinerary points for navigation purposes.
TMC	**T**raffic **M**essage **C**hannel (TMC) supplies your navigation system with the latest traffic information. A TMC module which is available as accessory receives the signals which are broadcasted by radio stations.

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