



NWC Voyager User Guide

MPDS
Compatible

NERA
enabling a wireless future 



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Starting up

- Switch ON NWC Voyager.
For location of the ON/OFF switch, see "[Switching ON](#)" in [Getting Started](#).
- Turn ON the PC and click **Start > Programs > vtLite Mobile**.

Note! VtLite can only be used on one PC at a time.

1 The satellite search program is initialized.
See also "[Satellite search](#)" in [Getting Started](#).

2 NWC Voyager starts searching for **last used satellite/elevation** (Ocean Region) as default. If not found the system searches for the 2nd last used.

3 When receiving a satellite signal, a signal strength bar will appear in the search window.

The longer the signal bar or higher the signal strength indicator value, the better the signal quality.

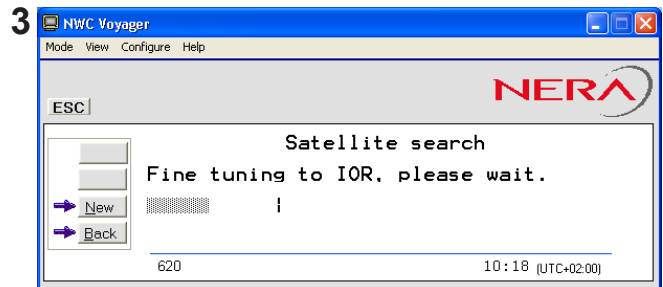
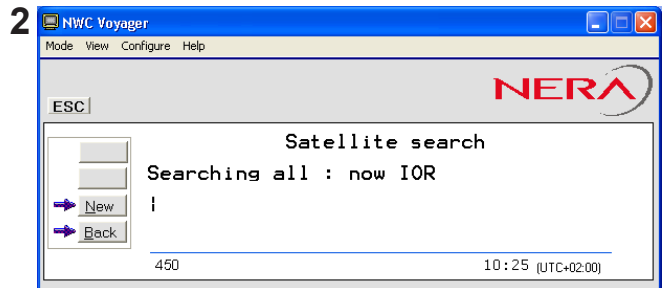
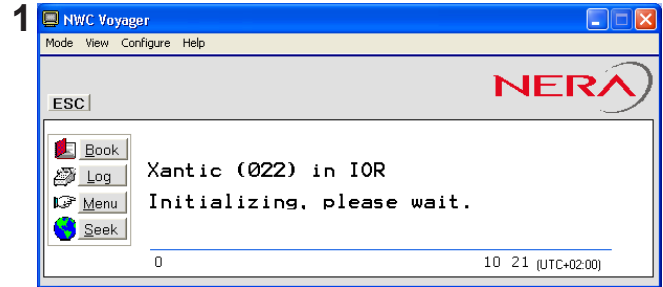
The maximum marker indicates the highest signal strength achieved during the current search.

Note! It is recommended that the signal strength reading (S/N=Signal/Noise ratio) should be at least 535. The antenna will automatically fine-tune to the best signal and accept it.

Clicking **Seek** starts the search again, see also step 5.

If required, select a specific satellite by clicking **New**.

See also "[Selecting default Net provider](#)" in [Getting Started](#).



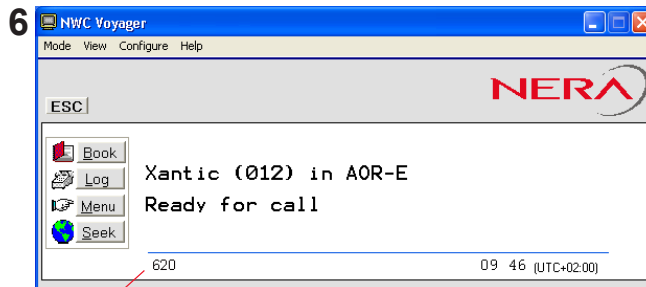
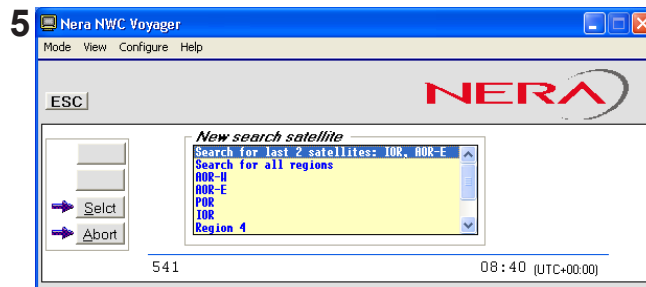
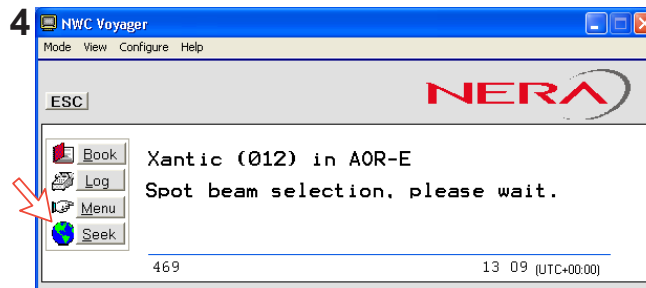
4 NWC Voyager automatically searches available spot beams and selects the strongest one.

5 The system only searches for the **two last used** satellites.

Clicking **Seek** opens the **New search satellite** window, allowing the "oldest" of the **two last used** satellite regions to be replaced, leaving the selected one on top of list.

6 The equipment is ready for use when the **Main window** appears.

To make a connection, see "[Making a call](#)" in [Getting Started](#).



S/N=Signal/Noise ratio

Phone book

Adding and editing entries can also be done from the handset, see **OPERATION FROM HANDSET** in **Getting Started**.

Phone book capacity

	MCU	SIM card <i>(Data vary with card type)</i>
Phone numbers:	100 entries	100 entries
Number length:	19 digits	19 digits
Name length:	29 characters	12 characters
Entry numbers:	0 - 99	100 and up

The SIM card entries and "MCU" entries merge when the card is inserted. The list is sorted by name.

Abbreviated dialing (prefix 23)

1 Clicking **Book** opens the **Phone book**.

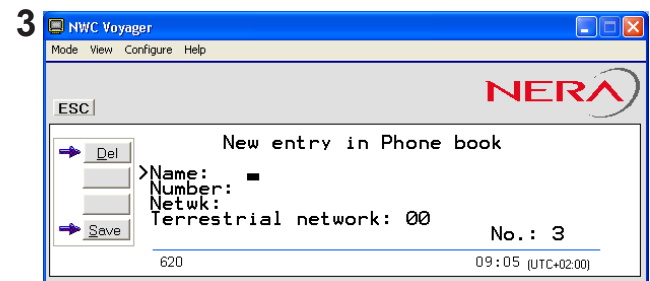
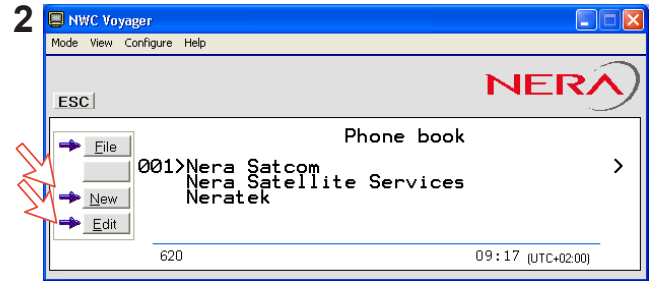
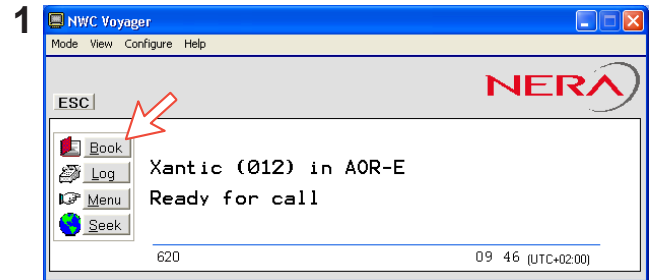
2 Scroll through list /  to wanted entry.

Example: dialing **(2)(3)(1)(5)(#)** on the telephone or keypad fetches and sends the telephone number stored under short number entry 15.

Adding or editing entries

3 Clicking **New** (window **2**) opens the window used to add an entry to the book.

Use **Del** to modify. **Save** stores the new entry.



4 Clicking **Edit** (window **2** on previous page) opens the window allowing changes to be made in the Phone book.

Use **Del** to modify. **Remov** erases the entry.

Note! The book is also used with the restriction "Dial from book only", see "[Restricted dialing setup](#)".

Netwk = Net provider

Another Net provider may be selected when dialing this number from the phone book. If no selection, the system uses the default one.

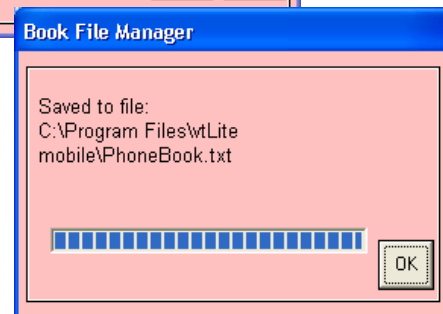
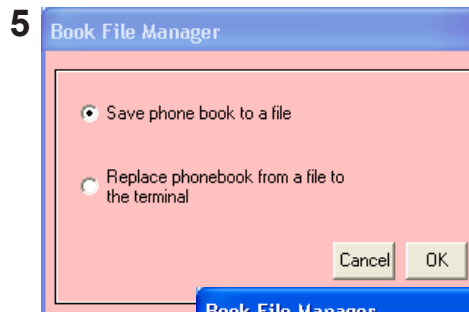
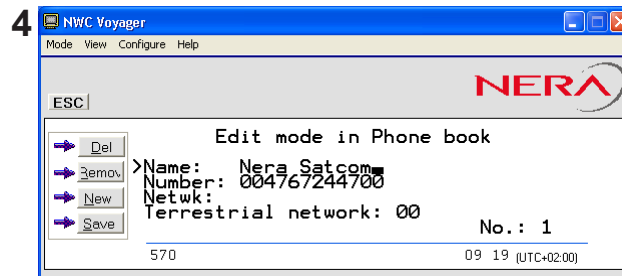
Terrestrial network

It is possible to change Terrestrial network for the selected Net provider (00 is most common). Call your Net provider for more information.

Saving entries to/from PC

(owner level only, see "[Shifting to owner level](#)")

5 Click **File** to save phone book, or replace the stored one.





Traffic Log

This function logs all outgoing and incoming calls both with and without SIM card inserted. Incoming calls may be logged as well.

Up to 100 calls can be logged:

Circuit switched calls (Cct) including:

- 4.8 - 64 speech
- 3.1 kHz Audio (e.g. G3 fax)
- 64 kbps UDI data

Packet switched data calls (Mpds) including:

- Mobile Packet Data Service calls

The NWC Voyager *owner* may set the log output mode as follows, (see "[Traffic log settings](#)):

- paused
- cleared (stops logging and clears the log)
- enabled
- automatic printout to RS-232A
- automatic printout to RS-232B

Traffic log readout

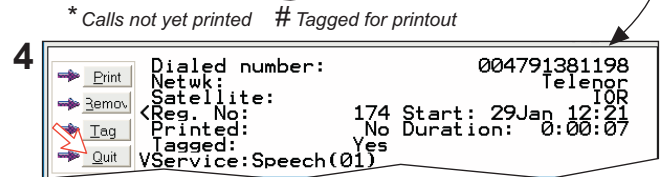
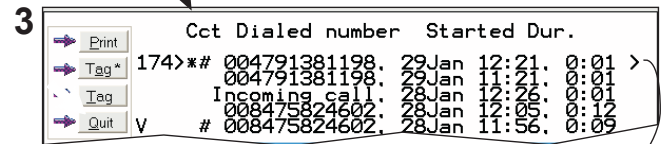
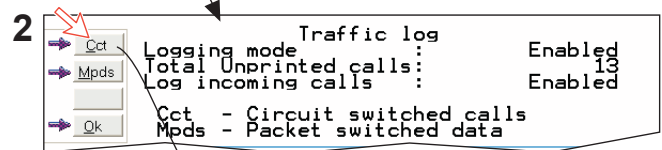
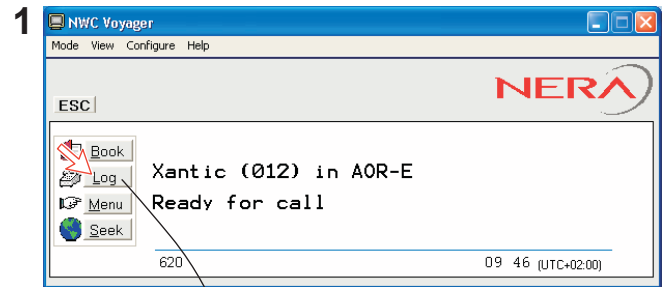
1 Clicking **Log** opens the Traffic log window.

2 The Traffic log window shows whether the logging is enabled, whether incoming calls are logged, and the total number of *unprinted* calls (MPDS and Cct calls).

Circuit switched calls:

Clicking **Cct** displays the list of calls.

3 Scroll / to wanted call record and press to display details of the selected call.






4 The call details include data such as dialed number, start of the call, duration, service and terminal Id.

Quit reverts to main window.

Mobile Packet Data Service calls:

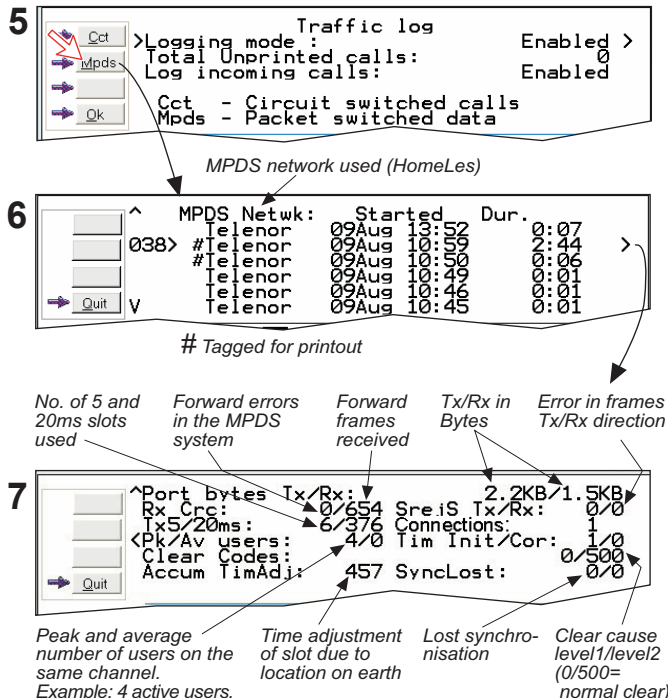
5 Clicking **Mpds** displays the list of *Mobile Packet Data Service* calls.

6 The call list include data such as Net provider, start of the call and duration.

Scroll / to wanted call record and press  to display details of the selected call.

7 The call details include data such as Rx/Tx in bytes, forward frames received, etc.

Quit reverts to main window.



5 Traffic log

```

>Logging mode:      Enabled
Total Unprinted calls: 0
Log incoming calls: Enabled
Cct - Circuit switched calls
Mpds - Packet switched data
    
```

MPDS network used (HomeLes)

6

```

^ MPDS Netwk:  Started  Dur.
038> #Telenor 09Aug 13:52  0:07
      #Telenor 09Aug 10:59  2:44
      #Telenor 09Aug 10:50  0:06
      #Telenor 09Aug 10:49  0:01
      #Telenor 09Aug 10:46  0:01
      #Telenor 09Aug 10:45  0:01
V
# Tagged for printout
    
```

No. of 5 and 20ms slots used → 4/0
Forward errors in the MPDS system → 0/654
Forward frames received → 6/376
Tx/Rx in Bytes → 2.2KB/1.5KB
Error in frames Tx/Rx direction → 0/0

7

```

^Port bytes Tx/Rx: 2.2KB/1.5KB
Rx_Crc: 0/654 Sre.iS Tx/Rx: 0/0
Tx5/20ms: 6/376 Connections: 1/0
<Pk/Av users: 4/0 Tim Init/Cor: 1/0
Clear Codes: 0/500
Accum TimAdj: 457 SyncLost: 0/0
Quit
    
```

Peak and average number of users on the same channel. Example: 4 active users. → 4/0
Time adjustment of slot due to location on earth → 457
Lost synchronisation → 0/0
Clear cause level1/level2 (0/500=normal clear) → 0/500



Traffic log settings

(owner level only, see "Shifting to owner level")

1 In the Main window, clicking **Log** opens the Traffic log window, which displays the current log mode, number of unprinted calls, and whether logging of incoming calls is enabled/disabled.

- Click **Edit** or to open **Logging mode** window:
- **Paused**: any logging is off.
- **Cleared**: all log entries are deleted (incoming and outgoing).
- **Enabled**: outgoing logging is on.
- **Automatic printing to RS-232 A**: output to local printer
- **Automatic printing to RS-232 B**: output to local printer

Scroll / to wanted mode, and click or press to select.

• Scroll down to **Log incoming calls** and click **Edit** or to enable or disable logging of incoming calls. Press to select.

Circuit switched calls:

2 Clicking **Cct** in the Traffic log window (1) opens the list of *all* call records except MPDS calls.

Print outputs all unprinted calls (marked with a star):

- Clicking **Tag*** marks *all* calls with a hash, which adds the records to the printout file.
- Clicking **Tag** marks the *selected* call with a hash, which adds the record to the printout file.
- Clicking **Tag** again untags a selected record.

3 Pressing at a record when in window (2) displays detailed call data.

The screenshots show the following interface elements:

1. Traffic log window:

```

Traffic log
Logging mode          : Enabled
Total Unprinted calls: 15
Log incoming calls   : Enabled

Cct - Circuit switched calls
Mpbs - Packet switched data

620                               10:47 (UTC+02:00)
    
```

2. Logging mode window:

```

Logging mode
Paused
Cleared
Enabled
Automatic printing to RS-232 A
Automatic printing to RS-232 B
    
```

3. Log incoming calls window:

```

Log incoming calls:
Enabled
Disabled
    
```

4. Cct Dialect number window:

Cct	Dialed number	Started	Dur.
174>*	004791381198	29Jan 12:21	0:01
	004791381198	29Jan 12:21	0:01
	008475824602	28Jan 12:06	0:12
	008475824602	28Jan 11:56	0:05

Not printed

5. Detailed call data window:

```

Dialed number: 004791381198
Netwk:         Telenor
Satellite:     IOR
<Reg. No:     174 Start: 29Jan 12:21
Printed:       No Duration: 0:00:07
Tagged:        Yes
VService:     Speech(01)
    
```


Hours:minutes:seconds

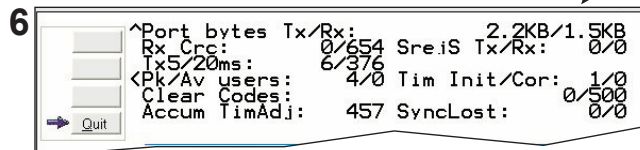
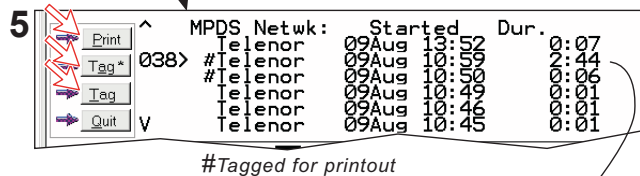
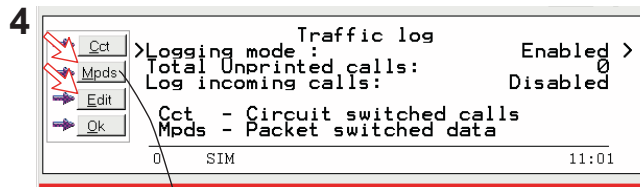
Mobile Packet Data Service calls:

4 Clicking **Mpds** in the Traffic log window (1) opens the list of *Mobile Packet Data Service* call records.

5 **Print** outputs all unprinted calls (tagged with a hash) in Printout Viewer.

- Clicking **Tag*** marks all calls with a hash, which adds the records to the printout file.
- Clicking **Tag** marks the *selected* call with a hash, which adds the record to the printout file.
- Clicking **Tag** again untags a selected record.

6 Pressing  at a record when in window (2) displays detailed call data.



Traffic log printout viewer - normal calls (Cct)

The viewer lists tagged call records.

Records that have been printed out previously are

marked with a hash.

The record file can be printed out or saved to disk.

For default setup, see **"Print handling setup"**.

Click to save record file

Click for printout

Subscriber number

Type of service

Start date and time

Call duration in minutes and seconds

Terminal Id

MSN number

Net service provider

User name if access code is activated

Click to delete record file

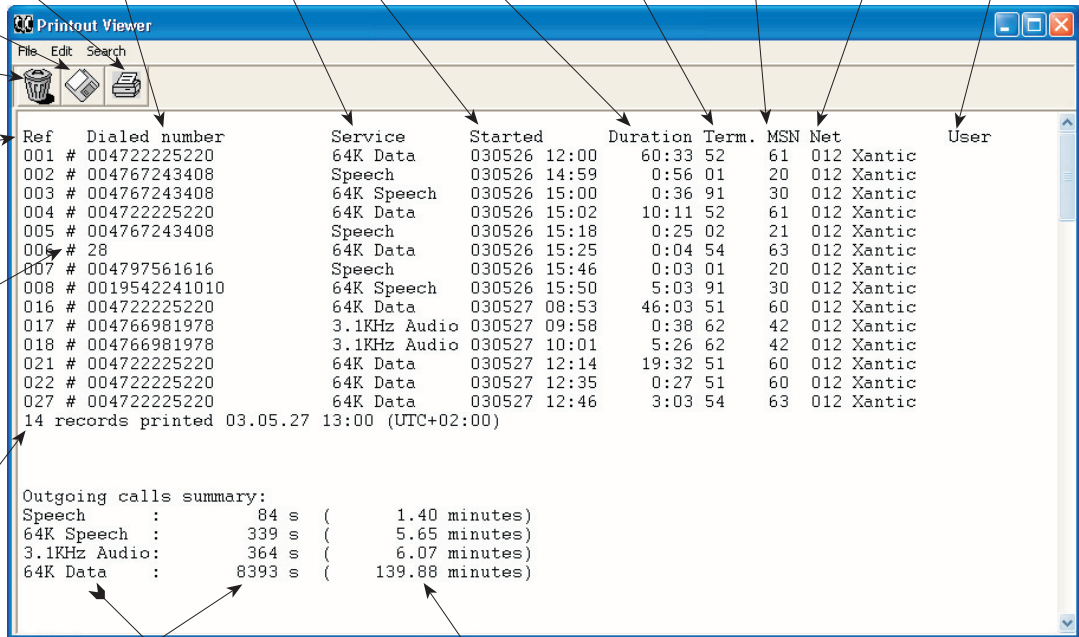
Ref. no.

#: record printed previously. "No hash" when printed first time.

Number of records

Duration in seconds per service

Accumulated time in minutes and 1/100 of a minute



The screenshot shows a window titled "Printout Viewer" with a menu bar (File, Edit, Search) and a toolbar with icons for saving, printing, and deleting. The main area contains a table of call records and a summary section.

Ref. no.	Subscriber number	Type of service	Start date and time	Call duration in minutes and seconds	Terminal Id	MSN number	Net service provider	User name if access code is activated
001 #	004722225220	64K Data	030526 12:00	60:33	52	61	012 Xantic	
002 #	004767243408	Speech	030526 14:59	0:56	01	20	012 Xantic	
003 #	004767243408	64K Speech	030526 15:00	0:36	91	30	012 Xantic	
004 #	004722225220	64K Data	030526 15:02	10:11	52	61	012 Xantic	
005 #	004767243408	Speech	030526 15:18	0:25	02	21	012 Xantic	
006 #	28	64K Data	030526 15:25	0:04	54	63	012 Xantic	
007 #	004797561616	Speech	030526 15:46	0:03	01	20	012 Xantic	
008 #	0019542241010	64K Speech	030526 15:50	5:03	91	30	012 Xantic	
016 #	004722225220	64K Data	030527 08:53	46:03	51	60	012 Xantic	
017 #	004766981978	3.1KHz Audio	030527 09:58	0:38	62	42	012 Xantic	
018 #	004766981978	3.1KHz Audio	030527 10:01	5:26	62	42	012 Xantic	
021 #	004722225220	64K Data	030527 12:14	19:32	51	60	012 Xantic	
022 #	004722225220	64K Data	030527 12:35	0:27	51	60	012 Xantic	
027 #	004722225220	64K Data	030527 12:46	3:03	54	63	012 Xantic	
14 records printed 03.05.27 13:00 (UTC+02:00)								
Outgoing calls summary:								
Speech	:	84 s	(1.40 minutes)				
64K Speech	:	339 s	(5.65 minutes)				
3.1KHz Audio	:	364 s	(6.07 minutes)				
64K Data	:	8393 s	(139.88 minutes)				

Traffic log printout viewer - Mobile Packet Data Service calls (MPDS)

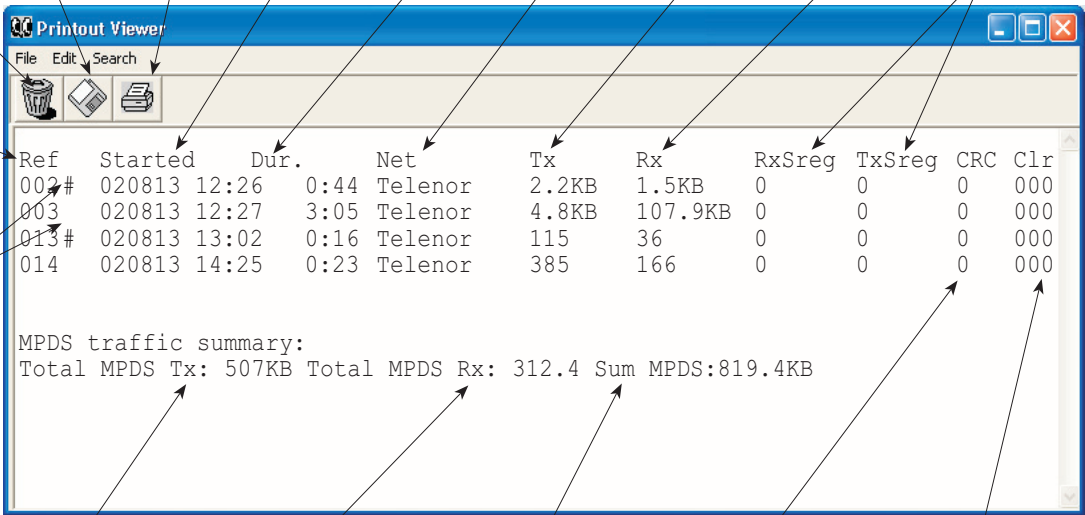
The viewer lists tagged call records.

Records that have been printed out previously are

marked with a hash.

The record file can be printed out or saved to disk.

For default setup, see **"Print handling setup"**.



Click to delete record file

Click to save record file

Click for printout

Start date and time

Call duration in minutes and seconds

Net service provider

Transmitted data in Bytes

Received data in Bytes

Retransmitted frames

Ref. no.

Ref	Started	Dur.	Net	Tx	Rx	RxSreg	TxSreg	CRC	Clr
002#	020813	12:26	0:44	Telenor	2.2KB	1.5KB	0	0	0 000
003	020813	12:27	3:05	Telenor	4.8KB	107.9KB	0	0	0 000
013#	020813	13:02	0:16	Telenor	115	36	0	0	0 000
014	020813	14:25	0:23	Telenor	385	166	0	0	0 000

#: record printed previously.
"No hash" when printed first time.

MPDS traffic summary:
Total MPDS Tx: 507KB Total MPDS Rx: 312.4 Sum MPDS:819.4KB

Total transmitted KiloBytes

Total received KiloBytes

Sum of Rx + Tx KiloBytes

Forward errors in the MPDS system

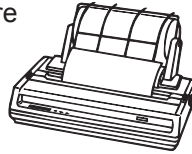
Clear cause codes. 000=normal clearing of connection



Traffic log output to serial printer

When connected, traffic log details are automatically output as indicated below. One line is printed out after each call.

To dump the traffic log, select menu



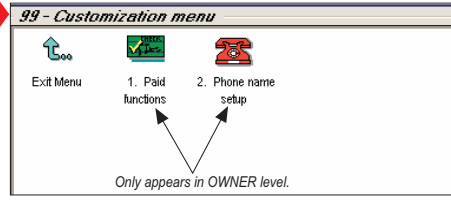
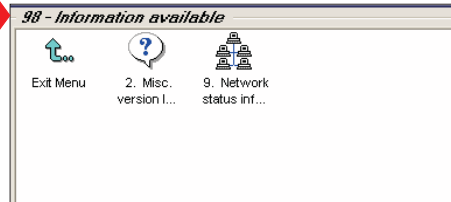
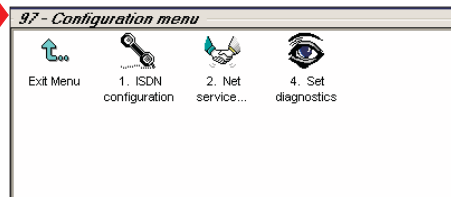
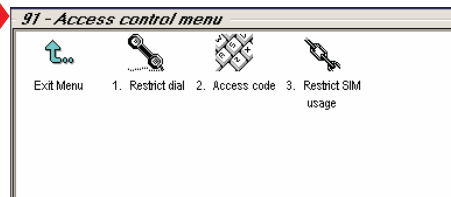
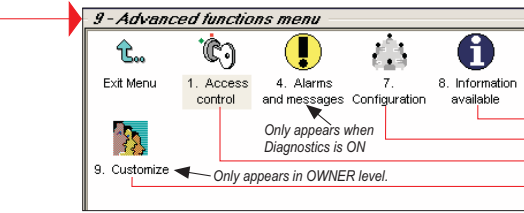
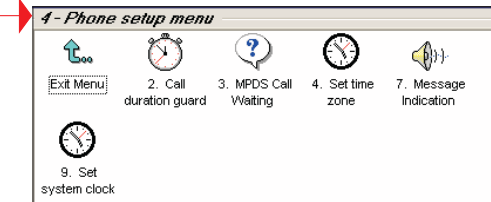
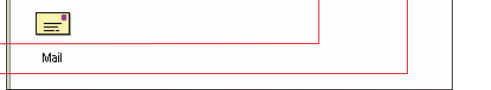
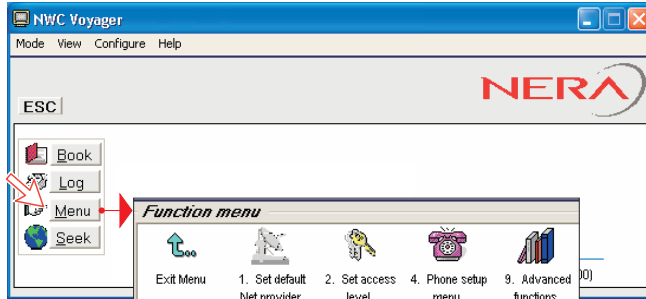
>information>Traffic log in the Nera ISDN Handset.
For setting up, see **Serial printer settings** in **Getting Started**.

Select logging mode in vtLite Mobile Traffic log to: Automatic printing to RS232A or RS232B, see **Traffic log settings** earlier in this manual.

Reference number	Subscriber number	Type of service	Start date and time	Call duration in minutes and 1/100 of a minute	Transmitted & received data in kilobytes	MSN number	Net service provider	User name if access code is activated
Ref	Dialed number	Service	Started	Duration	Tx+Rx	MSN	Net	User
001	004791381198	Speech	030616 07:10	0:19		20	004Tel	
002	004722225220	64K Dat	030616 07:14	1:26		60	004Tel	
003	004766981978	3.1 Aud	030616 07:23	0:52		42	004Tel	captain
004	0047911381198	Speech	030616 07:26	0:06		21	004Tel	
005	Incoming call	Speech	030616 07:27	1:03		20	004Tel	
006	MPDS	MPDS	030616 07:45		1407KB		004Tel	
007	004722225220	64K Dat	030616 07:47	3:14		63	004Tel	
008	004766981978	3.1 Aud	030616 09:30	0:54		40	004Tel	
009	004791381198	64K Spe	030616 09:45	0:20		30	004Tel	
010	MPDS	MPDS	030616 11:26		112.5		004Xan	
10 records printed 03.06.16 11:26 (UTC+02:00)								
Outgoing calls and MPDS traffic summary:								
Speech	:	83 s	(1.38 minutes)				
64K Speech	:	12 s	(0.20 minutes)				
3.1KHz Audio	:	62 s	(1.06 minutes)				
64K Data	:	270 s	(4.50 minutes)				
Total MPDS Tx: 521.5KB								
Total MPDS Rx: 997.0KB								
Sum MPDS: 1632.0KB								

Menu functions

Point at icons and double-click the mouse to open menus and functions.





Function reference list

 Reference number for direct selection. Click menu in main window and then key in the number.

Ref.	Function	Features
1	Set default Net provider	Allows changing Net service provider (and terrestrial network). See " Selecting default Net service provider ".
2	Set access level	Allows shifting between user level and owner level, changing PIN code and owner password. See " Access level ".
4	Phone setup menu	
42	Call duration guard	Sets maximum call duration for 64 kbps calls.
43	MPDS call waiting	Allows automatic disconnection of MPDS at incoming call.
44	Set time zone	Sets MCU Time Zone (UTC and date are set automatically).
47	Message indication	Switches indication of received fax and data calls on/off.
49	Set system clock	Sets MCU time and date.
9	Advanced functions menu	
91	Access control menu	See " Advanced functions ".
911	Restrict dial	Only allows calls from Phone Book. List of barred numbers may be established.
912	Access code	Sets personal codes for using the satellite terminal.
913	Restrict SIM usage	Only allows calls with specific card, no card or any card.
94	Alarms and messages	See information on CD
97	Configuration menu	
971	ISDN configuration	Chooses between ISDN protocols.
972	Net service providers	Changing Net service provider data.
974	Set diagnostics	Allows additional system information to be displayed.
98	Information available	See " Advanced functions ".
982	Misc.version Id information	Displays a series of version information windows and FWD ID.
983	Transceiver status	Displays max/min voltages and temperatures in RF unit.
989	Network status information	Displays various network status information.
99	Customization menu	See " Advanced functions ".
991	Paid functions	Installs additional functions, if any.
992	Phone name setup	Allows altering the factory and phone name.

Access level

The NWC Voyager user program (vtLite Mobile) is accessible from two levels:

- **USER LEVEL**
- **OWNER LEVEL** – accessed by owner level password.

Warning! To prevent misuse, passwords other than default must be entered before putting the NWC Voyager in operation.

Activating/changing user PIN code

1 Double-click the **Set access level** icon on the **Function menu**.

2 Click **Edit** to enter/modify the PIN code.


3 Key in:

- Old PIN code (*default: 1234*)
- New PIN code (*4 - 10 digits possible*)
- Retype to confirm

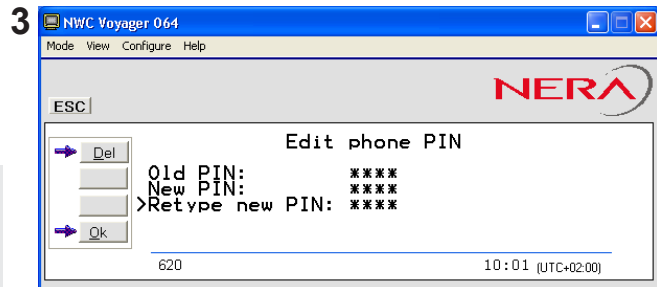
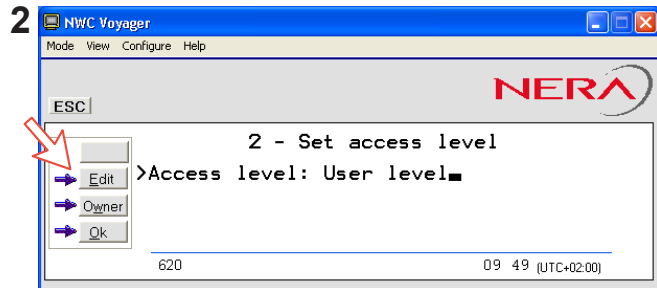
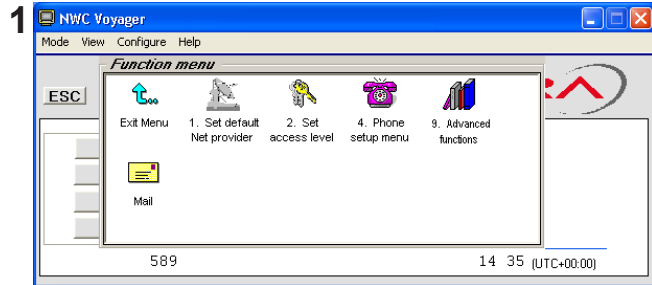
Click **Ok** for each entry and to store the new code.

*Note! Clicking **Ok** without entering any numbers for **New PIN** and **Retype new PIN** disables the PIN code. NB! The **Old PIN** code must be entered to reactivate the previous PIN code.*

*If the **PIN** is accidentally lost, it is possible to reset the user's password to default (1234) by logging in as owner:*

" + owner's password"

(Resetting is not possible on the SIM card.)



Functions requiring owner level

Programming of the functions below requires that the user access is set to **OWNER LEVEL**:

- Phone book save/restore
- Traffic log settings/printouts
- Modifying owner password
- Net Service provider names
- Restricted dial
- Restricted SIM usage
- ISDN configuration (except data/time element)
- Access code
- Paid functions
- Phone name setup

Shifting to owner level

1 Click **Owner** in **Set access level** window.

2 Key in the password.

Note! The default password is: 1 2 3 4 5 6 7 8 9 0

Clicking **Ok** activates the **Owner level**.

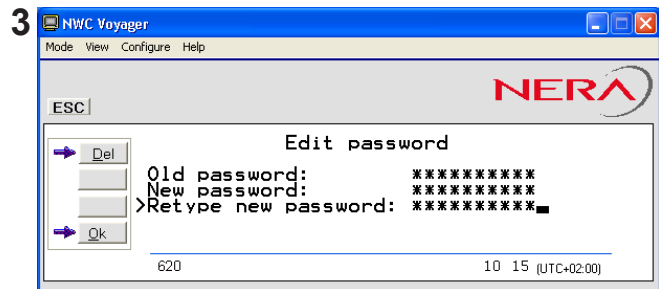
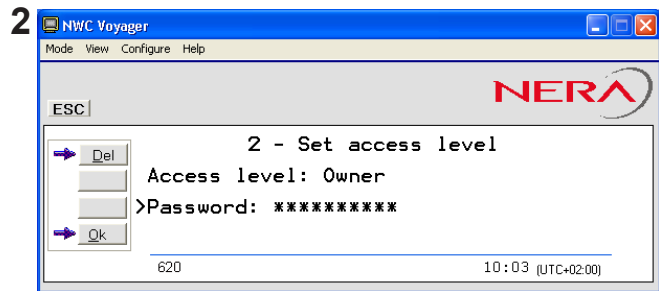
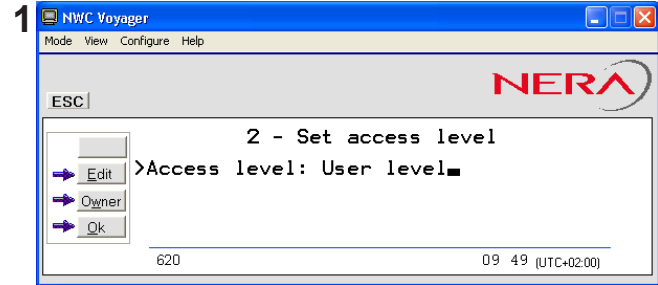
Changing owner level password

3 Click **Owner** in **Set access level** window again, and click **Edit** to modify the owner password. Key in:

- Current password
- New password (*10 – 12 digits*)
- Retype to confirm

Click **Ok** for each entry and to store new password.

*To revert to **User level**, open the "Set access level" window and click **User**.*





Selecting default Net service provider

The default Inmarsat Net service provider for a satellite (Ocean Region) is automatically used if the user does not select another one when making a call.

Make sure that you choose the Net service provider who commissioned the equipment. You will otherwise be barred or charged additional rate.

In this menu default Net service provider can be preprogrammed for the *current* Ocean Region.

When using SIM card, selection is automatically restricted to one of the allowed Net service providers and does not need to be programmed!

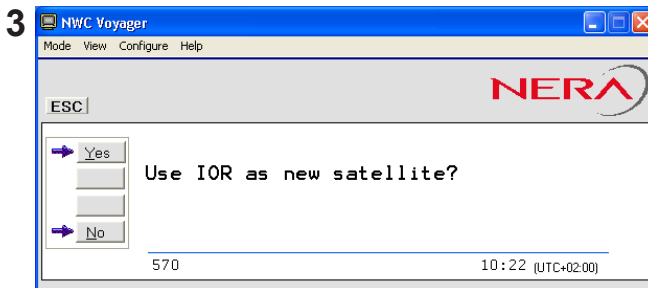
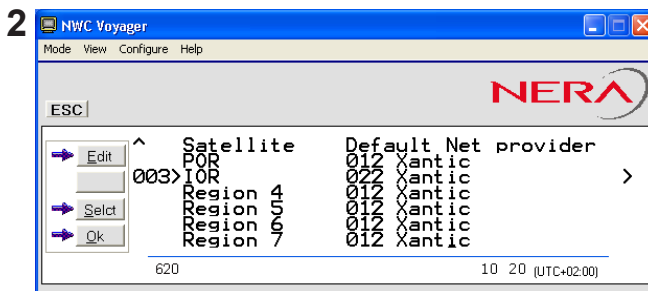
Procedure:

1 On the **Function menu**, double-click the **Set default Net provider** icon to display the current selections.

2 Scroll up/down to change satellite: / .

3 Clicking **Select** or pressing opens the window prompting you to confirm the choice of satellite with the current default Net service provider.




To change default Net service provider for a satellite region, see next page.



4 Clicking **Edit** or pressing / at the satellite region selected in step 2, displays the list of available Net service providers.

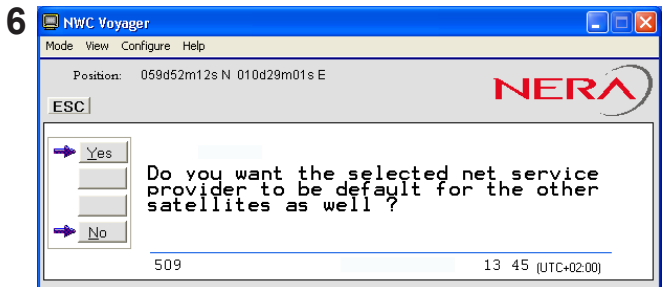
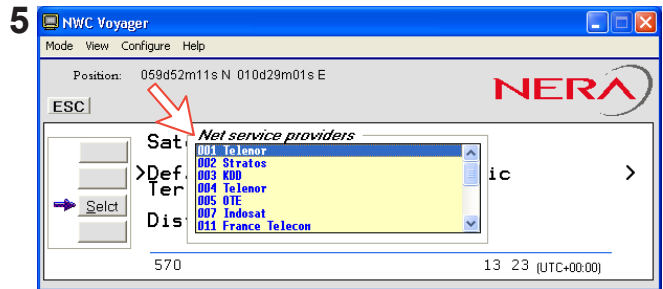
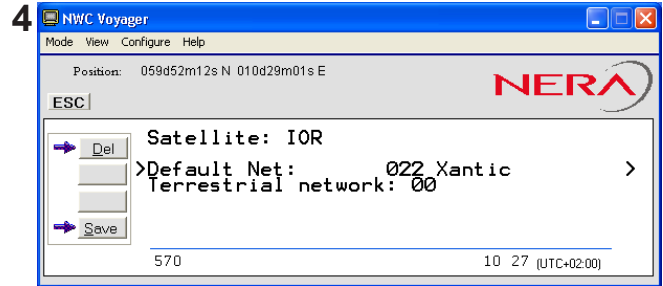
Terrestrial network

It is possible to select different terrestrial network. If no selection, the system uses the default net: 00.

5 Scroll to required Net provider:  / , and press  to enter chosen Net as default.

Save stores the selected Net provider for this satellite (Ocean Region).

6 Click **Yes** sets Net service provider for all satellites (Ocean Regions).



Phone setup



This phone setup menu includes the following functions:

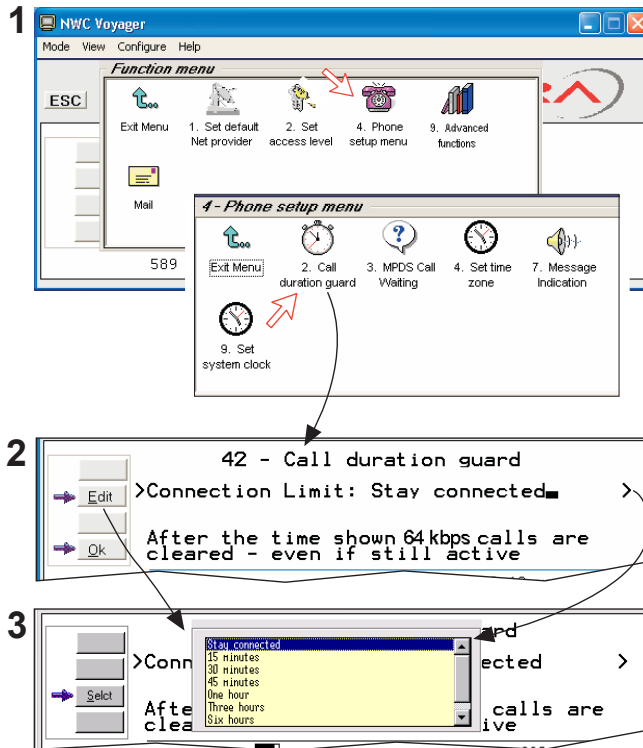
- Limitation of call duration.
- Indication of received calls, *see next page*.
- Setting time zone, *see later*.
- Setting date and time, *see later*.

Double-click the **Phone setup menu** icon in the **Function menu** to access the above functions:

Call duration limit

The call duration guard prevents accidental transmission of prolonged 64 kbps calls. The timer sets the point at which the call is automatically cleared:

- 1 Double-click the **Call duration guard** icon
- 2 Click **Edit** to set the timer.
- 3 Scroll / to select the required limit (either "Stay connected" or in steps between 15 minutes and 12 hours), and click **Select** to store the setting.





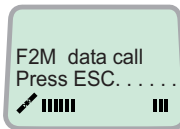
Message indication

When the Message Indication function is set On, a received data and/or fax call is signalled in all Nera Display Handsets:



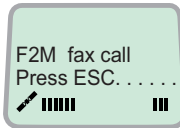
The ringing stops when pressing **ESC**, or when the call is finished.

Data call:

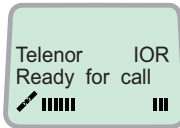


F2M = Fixed-to-Mobile

Fax call:



When the call is finished, the display reverts to idle.

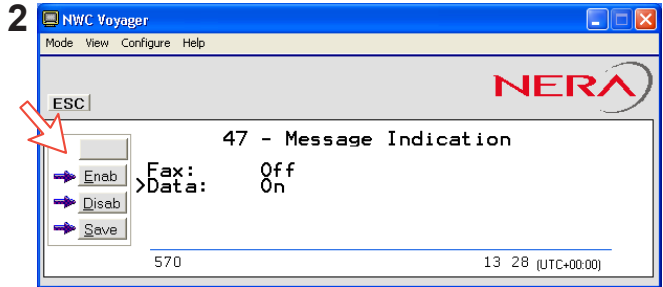
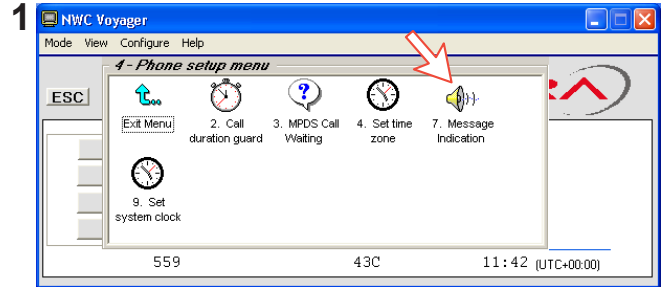


Setup:

1 Double-click the **Message Indication** icon in the **Phone setup menu**.

2 Select **Fax** or **Data** and **Enable** or **Disable** indication of received messages, as required.

Press **Save** to store the settings.



Default G3 fax connection is configured on TEL2 on TA (MSN40)

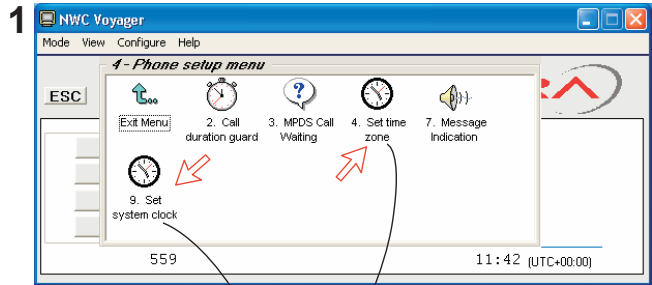
Fax = 3.1 kHz Audio
Data = 64 kbps data



Setting time zone

If *connected* to GPS, the time displayed in the window is set using the **time zone** function:

- 1 Double-click **Set time zone** to change zone.
- 2 Clicking **Edit** opens the list.
- 3 Scroll to select the required zone. Click **Set** to store the selected zone.

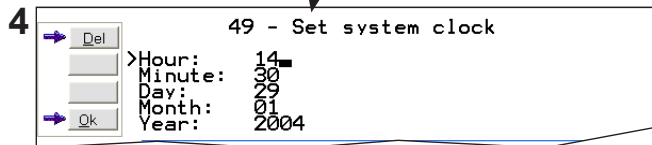
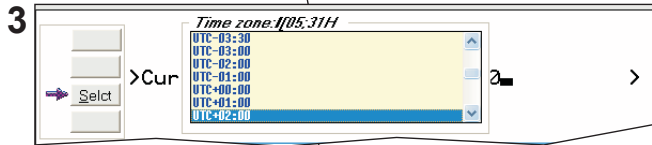
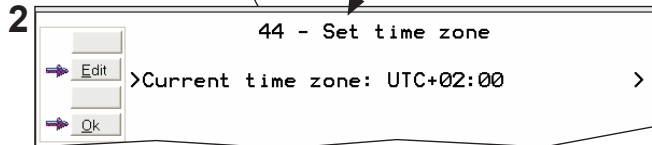


Date and time

If *not connected* to GPS, the **system clock** is set as follows:

- 1 Double-click the **Set system clock** icon.
- 4 Scroll down through entries and key in new data. Use **Del** to modify. Clicking **Ok** stores the selected settings.

Note! NWC Voyager now restarts.

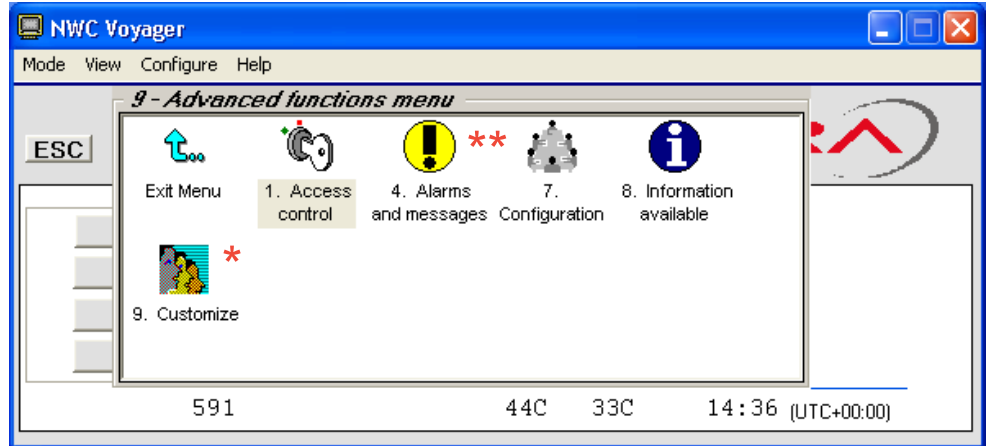


Advanced functions

* Some Advanced functions are accessible from **OWNER LEVEL** only.

The OWNER LEVEL is protected by password. For shifting to owner level and assignment of password, see "**Access level**".

** Other Advanced functions are accessible when **Diagnostics** is turned ON.



The Advanced functions include the following menus:

- **Access control:** Restrict dial
Access code
Restrict SIM usage
- **Configuration:** ISDN configuration
Net service provider names
Set diagnostics
- **Information available:** Misc. version Id information
Network status information
(more info when diagnostics is ON, see "**Set diagnostics**")
- **Customize:** (owner level)
Paid functions
Phone name setup

Access control

Restricted dialing

The restricted dialing function allows the owner to establish a Barred list of subscriber numbers that cannot be called; or set NWC Voyager for dialing from Phone Book only. The restricted dialing modes prevent misuse of NWC Voyager:

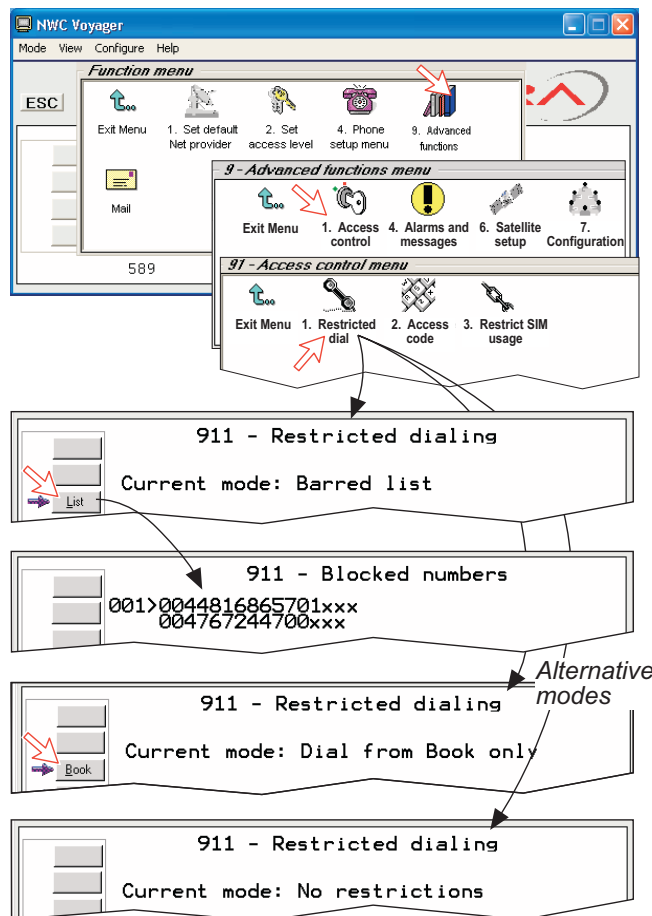
- **Barred list**, which may contain up to 10 phone numbers or part of numbers that **can not** be called. E.g. the entry "0087" in the barred list prevents all mobile-to-mobile calls.
- **Dial from Book only**, which restricts calls to the numbers in NWC Voyager Phone Book. It is still possible to append: an entry with number field "0047" means that it is possible to dial all Norwegian numbers. When a SIM card is inserted, the SIM entries will **not** be merged with the "phone" entries. The function is active for non-SIM operation and for one specific SIM card, see "**Restricted SIM usage**".
- **No restrictions (default)**.

Only one mode can be active at one time, as selected by the owner, see *next page*.

Checking the dialing setup

Via the **Function menu > Advanced functions menu**, double-clicking the **Restrict dial** icon on the **Access control menu** shows the active mode:

- *Barred list*
- *Dial from Book only*
- *No restrictions*



Restricted dialing setup
(owner level only)

"Barred list" and phone book are established as follows:

1 Open the **Restricted dial** window as shown on the previous page.

2 The **Restricted dialing** window shows which list is currently active.

Edit allows selection of restriction mode.

Scroll up/down to select:
(Selct enters the chosen mode)

3 Clicking **List** displays the blocked phone numbers. The List key only appears when Current mode is **Barred list**.

4 Clicking **Edit** allows the barred number to be modified:

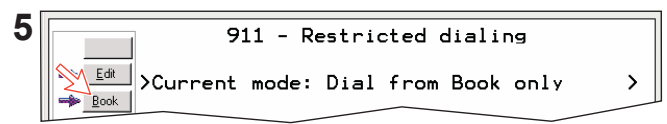
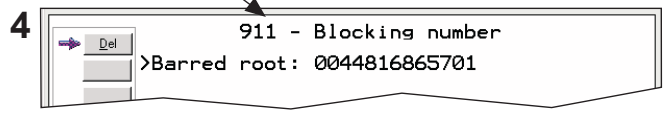
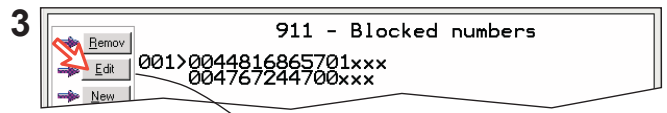
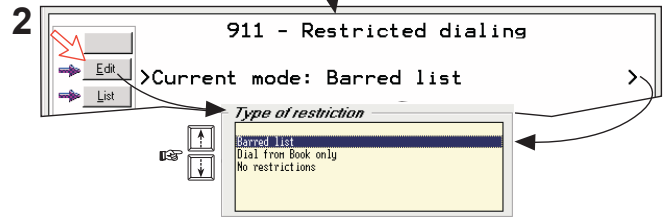
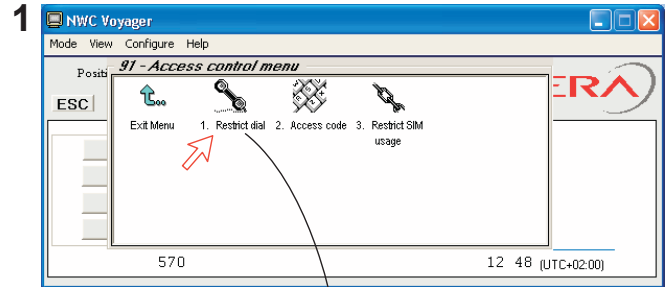
The field is empty when clicking **New** to add a phone number to the list.

Remove deletes number.

Save stores the changes.

5 When the restriction mode "Dial from Book only" is active, clicking **Book** allows data to be entered.

*Warning! Remember to revert to **user level***



Access code (owner level only)

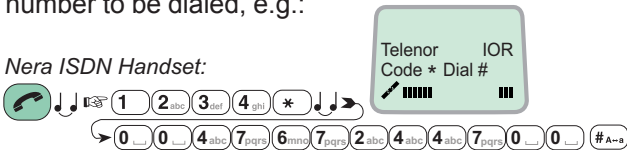
Access code can be activated for 4.8/64K speech only.

When the access code function has been activated, the user is always prompted for a 1 - 8 digit personal code when making a call.

All telephones are activated. To release a telephone for use without access code, see **MSN configuration**.

Entering the personal code allows the subscriber number to be dialed, e.g.:

Nera ISDN Handset:



Analogue telephone:



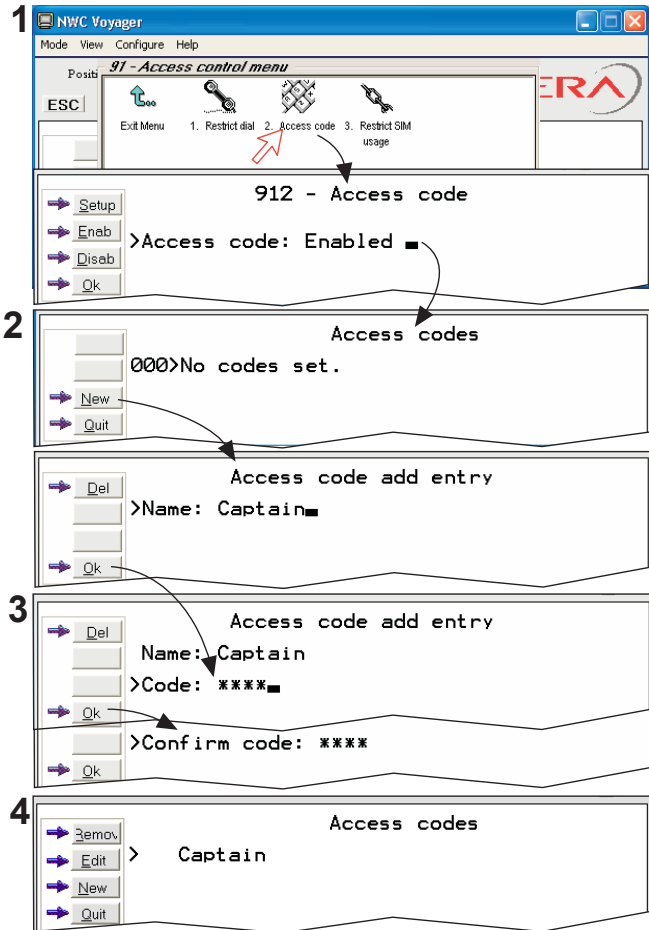
Setup:

1 Double-click the **Access code** icon in the **Access control menu**, and press **Enab** to allow code entry.

2 Pressing **Setup > New** opens the **Access code entry window**, allowing a name associated with the particular code to be entered.

3 Pressing **Ok** allows entering the personal code. Pressing **Ok** again prompts you to confirm the entry.

4 When pressing the **Access code** icon the next time (1), the window displays a list of the names associated with the programmed access codes.





Restricted SIM usage

Allowed SIM

NWC Voyager can be set to operate from:

- Lock SIM, locked to one specific SIM card. Any other SIM user will be rejected.
- No SIM card. All SIM users will be rejected.
- Any SIM card (*default*).

Setting SIM restrictions

(owner level only)

1 Double-click the **Restrict SIM usage** icon.

2 The SIM restrictions window shows an example with the setting **Allowed SIM: No SIM**.

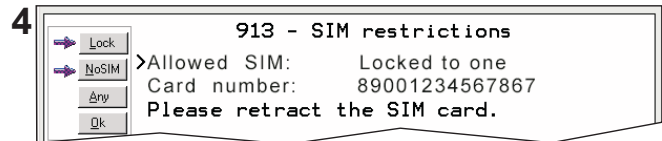
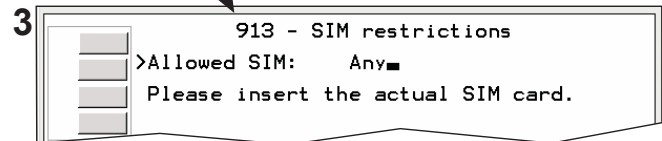
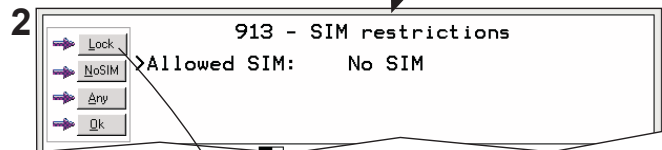
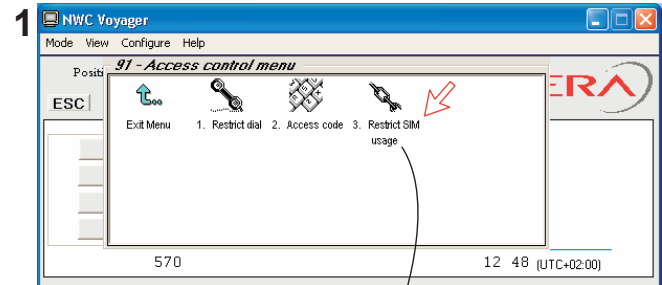
Click **Any** (default) to set NWC Voyager for operation from any SIM card.

Lock SIM:

3 Click **Lock** and insert the actual SIM card. NWC Voyager can now be operated with that specific card only.

4 When retracting the card, the Id of the SIM provider is displayed.

Ok stores the settings.



Configuration menu

ISDN protocol configuration

1 Open the **Configuration menu** via the **Function menu > Advanced functions menu**.

2 Double-clicking the **ISDN configuration** displays the ISDN configurations implemented in NWC Voyager.

Switch to **owner level** to edit the entries:

• Protocol

Select Euro ISDN for connection of equipment conforming to the European ISDN standard. Select NI-1 protocol for equipment conforming to the NI-1 standard (National ISDN-1).

• Date/time element

When enabled, date and time is sent to the connected Terminal Equipment during call establishment. Some ISDN devices do not survive this message. The date and time transmission may then be disabled.

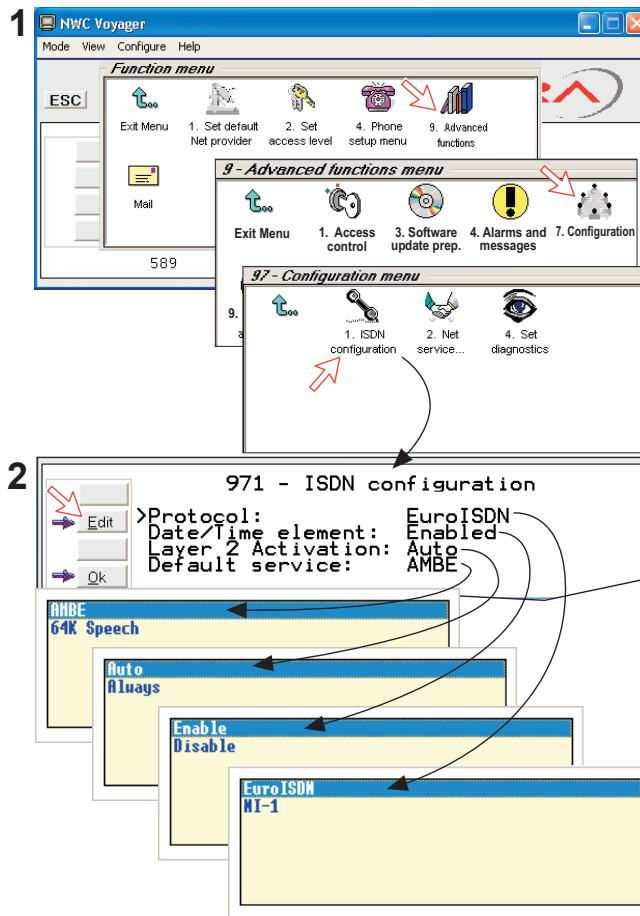
• Layer 2 Activation

The layer 2 connection is deactivated after some idle time as default. Some ISDN devices interpret this as an alarm situation. Layer 2 deactivation can then be disabled. When the ISDN protocol is set to NI-1, this option is on as default.

• Default service

Some ISDN devices can not signal their own MSN number. Such a phone will be not able to use the 64 kbps service since all "unknown" speech devices are required to use the 4.8 speech service. The user can set NWC Voyager to map all "unknown" devices to 4.8 speech (AMBE) service.

*NB! Remember to revert to **user level**.*







Net service providers (owner level only)

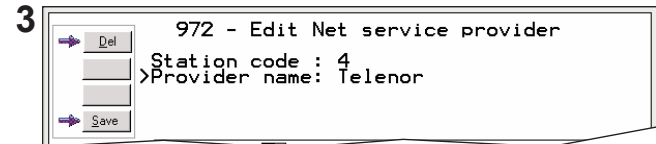
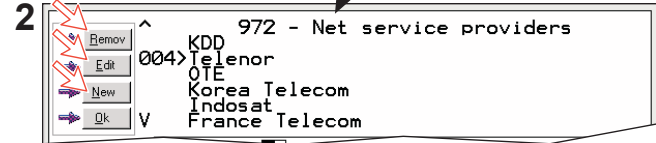
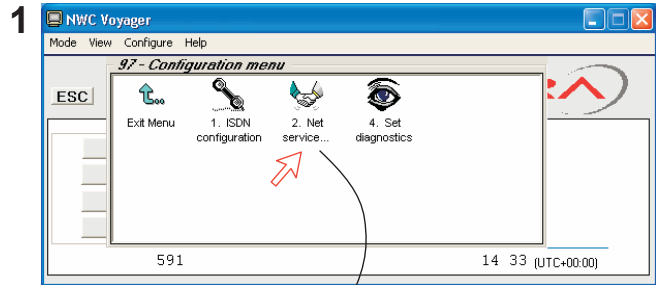
Adding, editing, or removing entries in the list of Net service providers:

1 Via the **Function menu > Advanced functions menu**, double-clicking the **Net service providers** icon in the **Configuration menu** displays the list of Net service providers including their station codes.

2 Scroll to required Net service provider,  . Clicking **Ok** returns you to the Configuration window. **Remov** deletes entry. Clicking **Edit** opens the window allowing the station code and provider name to be modified (window **3**).

4 Clicking **New** (window **2**) opens the window allowing station code and provider name to be added. Use **Del** to modify. **Save** stores the changes.

*NB! Remember to revert to **user** level.*





Set diagnostics

Additional system information is displayed when diagnostics is turned **On**.

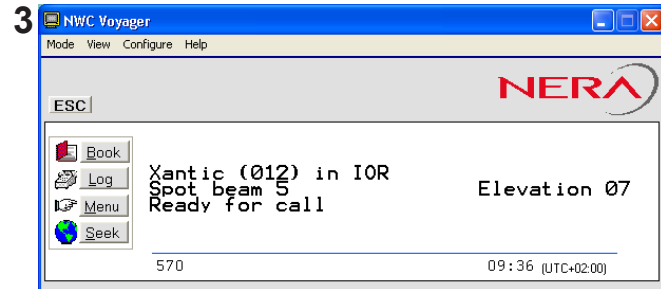
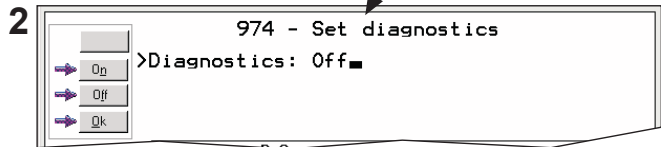
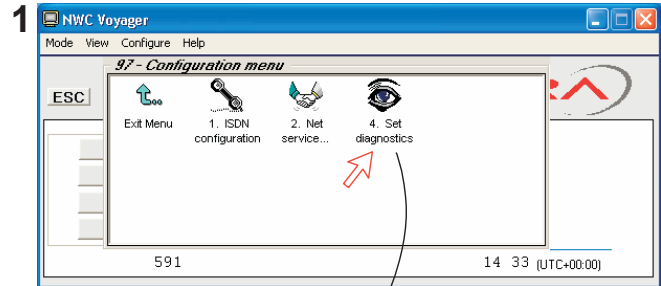
See also **MENU FUNCTIONS**.

1 Double-click the **Set diagnostics** icon via the **Function menu > Advanced functions menu > Configuration menu**.

2 Click **On** or **Off** as required.

3 Shows idle window with Diagnostics is **On**.

*Note! Diagnostics is automatically reset to **Off** when turning power off/on.*



Information available

Miscellaneous version Id information

The **Information available** function displays the terminal forward Id and system versions.

1 Via the **Function menu > Advanced functions menu**, double-clicking the **Miscellaneous version Id information** icon in the **Information available** menu displays the available data (window 2).

2 With **Diagnostics On**, pressing  opens a series of version information windows.

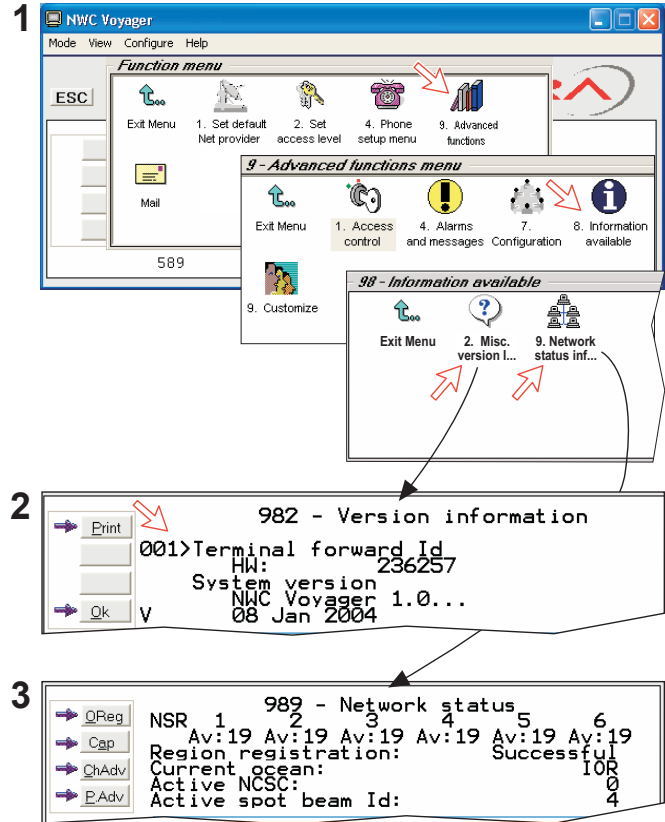
Clicking **Print** outputs a system report in the printout viewer.

Network status information (owner level only)

This function displays various network status information.

3 Double-click the **Network status information** icon in the **Information available** menu for readout.

*NB! Remember to revert to **user** level.*





Customize menu

(owner level only)

1 Open the **Customization menu** via the **Function menu** > **Advanced functions menu**.

Paid functions

2 A paid function is activated by entering an "Opening key" provided when purchasing the function.

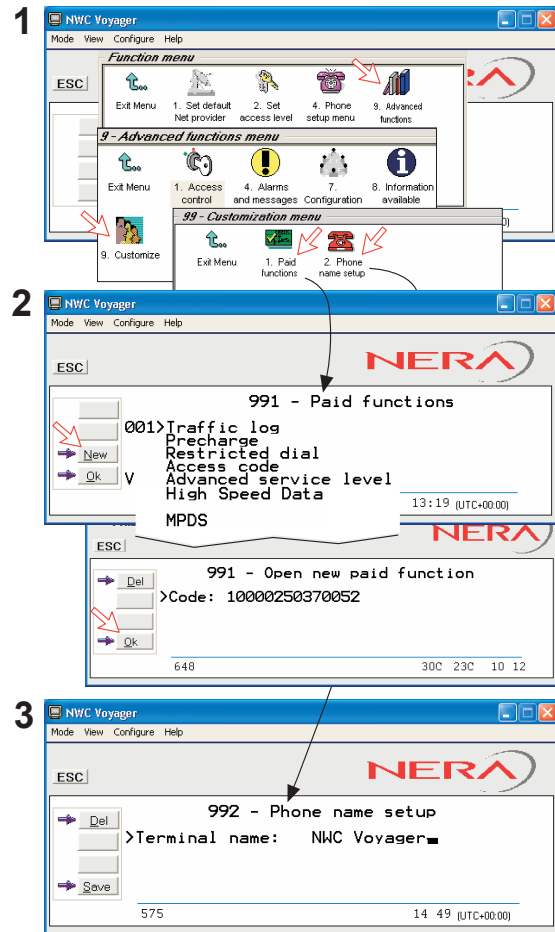
Double-clicking the **Paid functions** icon in the **Customization menu** displays the list of available functions.

Clicking **New** opens the **Open new paid functions menu**. Enter the "Opening key" and click **Ok**.

Phone name setup

3 Double-clicking the **Phone name setup** icon in the **Customization menu** displays the Phone name, i.e. NWC Voyager. To change, key in uppercase/lowercase letters as required. Use **Del** to modify. **Save** stores the changes

*NB! Remember to revert to **user** level.*





Routing of incoming calls

When applying for IMN numbers, a **Terminal Id** (OID/DID) is received from the Net service provider.

All devices connected to NWC Voyager can make outgoing calls. For incoming calls it must be assured that the Terminal Ids and MSN numbers configured are as commissioned.

To make an incoming call reach a particular device, an MSN number and the Terminal Id “connected” to the IMN number must be programmed into the Main Communication Unit (MCU). *See later in this manual.*

The table below lists valid MSN numbers for the available services.

Numbers to be programmed into ISDN devices:

<i>In ISDN device:</i>	<i>In Main Communication Unit:</i>
MSN number	MSN number and Terminal Id <i>(the Terminal Id is paired with a specific IMN number)</i>

For an easy start, some Terminal Ids and MSN numbers have been preprogrammed into the MCU (marked with a star in the table).

Note! A Term.Id already entered is not accepted.

LIST OF VALID TERMINAL IDs AND MSN NUMBERS									
ISDN PORTS								ISDN/RS-232/USB PORTS	
4.8kbps speech		64 kbps speech		3.1 kHz audio		56 kbps data		64 kbps data	
Term.Id	MSN	Term.Id	MSN	Term.Id	MSN	Term.Id	MSN	Term.Id	MSN
01*	20*	91*	30*	61*	40*	71*	50*	51*	60*
02	21*	92	31	62	41	72	51	52*	61*
03	22	93	32	63	42	73	52	53*	62*
04	23	94	33	64	43	74	53	54*	63*
05	24	95	34	65	44	75	54	55	64
06	25	96	35	66	45	76	55	56	65
07	26	97	36	67	46	77	56	57	66
08	27	98	37	68	47	78	57	58	67
09	28	99	38	69	48	79	58	59	68
<i>01/20 Handset. First HS connected.</i>		<i>91/30 Handset. First HS connected.</i>		<i>3.1 kHz audio service</i>		<i>51/60, preset for ISDN port 52/61, preset for RS-232A port 53/62, preset for RS-232B port 54/63, preset for USB port</i>			

























*** Preprogrammed**

Routing of incoming calls (examples)

The table below illustrates the use of appropriate Terminal Ids for the various services combined with examples incoming IMN numbers.

* Preprogrammed, see table on previous page.

Note! If the Net service provider does not specify which Terminal Id should be used with the various IMN numbers, select Term. Id no.1 for the first 4.8 kbps telephone, then no. 2 for the second phone. Use the same principle for the other type services. It is advisable to note down the selections.

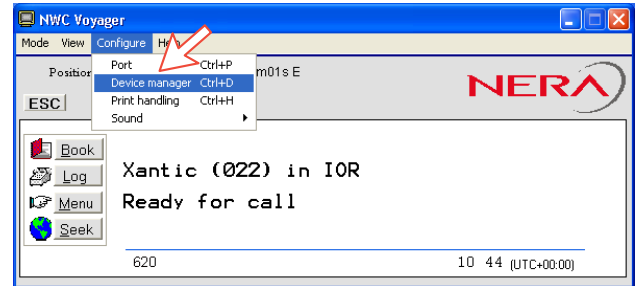
Name	Service	MCU ports	Provided by ISP:	
			Term.Id	IMN
Cockpit <i>MSN 20*</i> 	4.8 kbps speech	ISDN 	01*	762420510 
Via TA <i>MSN 21*</i> 	4.8 speech	TA - TEL1 	02*	762420511 
Via TA <i>MSN 40*</i> 	3.1 kHz audio	TA - TEL2 	61*	762420513 
Fax Gr.4 <i>MSN 60*</i> 	64 kbps data	ISDN 	51*	600020521 
Data <i>MSN 61*</i> 	64 kbps data	RS-232 A 	52*	600020522 
Data <i>MSN 62*</i> 	64 kbps data	RS-232 B 	53*	600020523 
Router <i>MSN 63*</i> 	64 kbps data	USB 	54*	600020524 
Cockpit <i>MSN 30*</i> 	64 kbps speech	ISDN 	91*	600020525* 

*Preprogrammed



MSN configuration

You are prompted to enter the owner level password (default: 1234567890). For security, the password should be changed before or after configuration of a device. See [ACCESS LEVEL > Changing owner level password](#).



Click to open Device Manager for configuration of ISDN/analogue/RS-232/RS-422/USB > > > >

Nera ISDN Handset

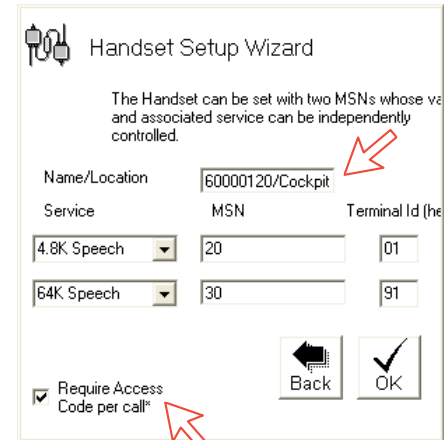
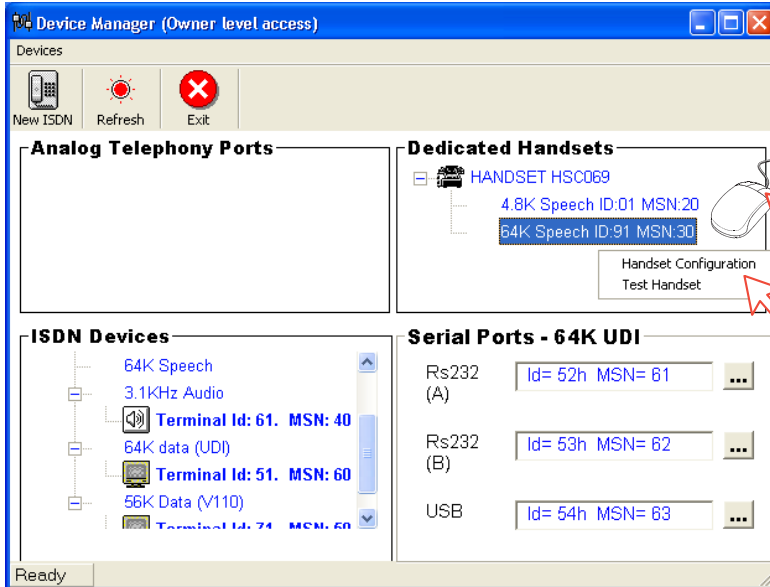
- Nera ISDN Handsets will automatically be configured with Handset MSNs in the Device Manager.
- The first Nera ISDN Handset connected will be given MSN20 & MSN30.
- The next Nera ISDN Handset will be the next available MSN.
- The MSNs can be controlled independently, e.g. if two handsets are given the same MSN, they will

both respond to an incoming call to that MSN.

- To verify selected MSN of a handset, check in the Device Manager or press the "R"-button on the Handset.

*Open the device manager, see previous page. Right-clicking a Dedicated Handset and then clicking **Handset Configuration** starts the Handset Setup Wizard.*


*Enter **Name/Location** of the installed Handset, as required.*



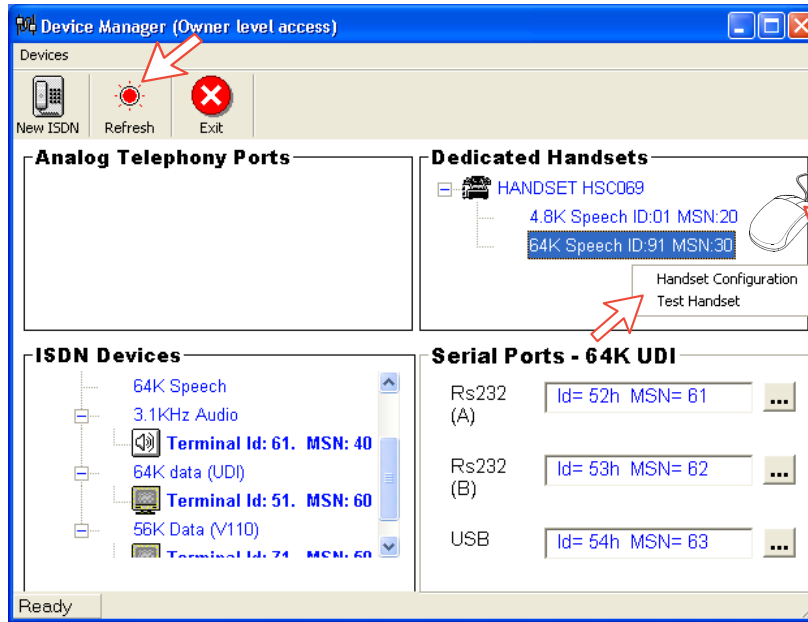
*When access code has been enabled, **Require Access Code** must be unchecked to allow this Handset to be used without entering a code.*

Deleting an ISDN Handset

Unplug the Nera ISDN Handset to be deleted and rightclick the same in the **Dedicated Handset** list. Clicking **Test Handset** removes its data, leaving the Terminal Id and MSN number vacant for another Display Handset.

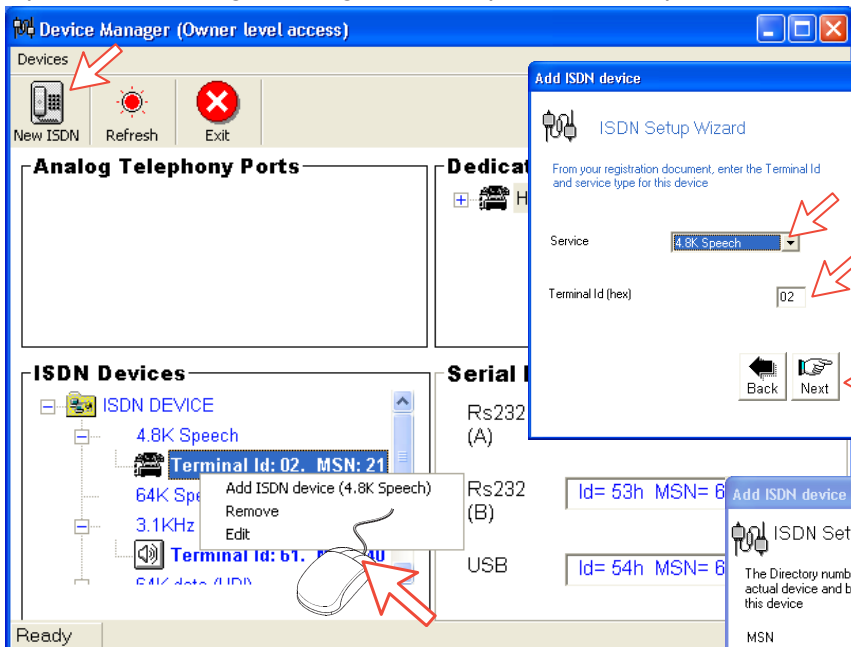
If necessary, click refresh:  and repeat clicking **Test Handset**. The Main Communication Unit will remember the handset connection data. All handsets are given a unique name.

Note! A triangle symbol  in the Device Manager appears when a Display Handset is missing.



ISDN port (selection example: 4.8 speech)

Open device manager and right-click to open ISDN Setup Wizard.

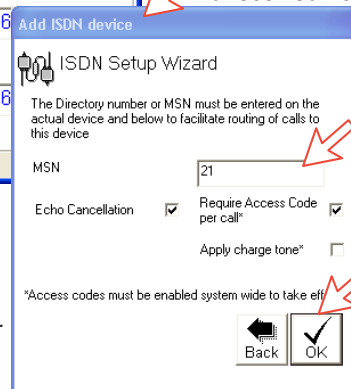


Select the required service:

- 4.8 kbps standard speech service
- 64 kbps speech service
- 3.1 kHz Audio
- 56 kbps data service (V110)
- 64 kbps data service (UDI)

Click to continue.

The system selects the Next available Terminal Id. Check with Terminal Id received from Net provider.



Key in MSN number if not using the recommended one.

Click to enter number.

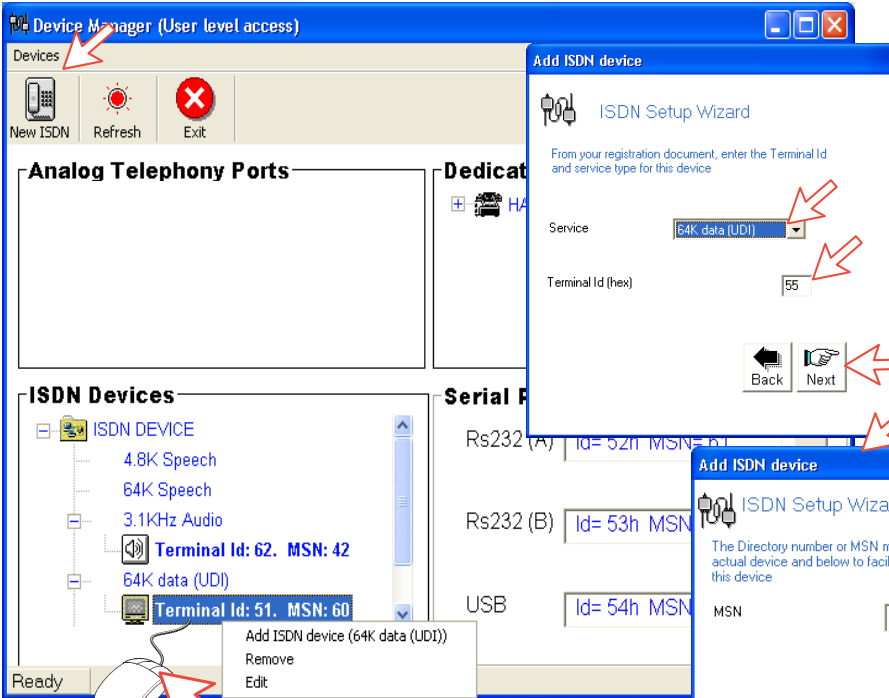
Echo Cancellation is performed automatically for allvoice calls. Uncheck if problems with echo cancellation.

Require Access Code is checked when used for 4.8 speech and 64 kbps speech.

Apply charge tone is used when connecting pay phone.

ISDN port (selection example: 64 kbps data service)

Open device manager and right-click to open ISDN Setup Wizard.



Select the required service:

- 4.8 kbps standard speech service
- 64 kbps speech service
- 3.1 kHz Audio
- 56 kbps data service (V110)
- 64 kbps data service (UDI)

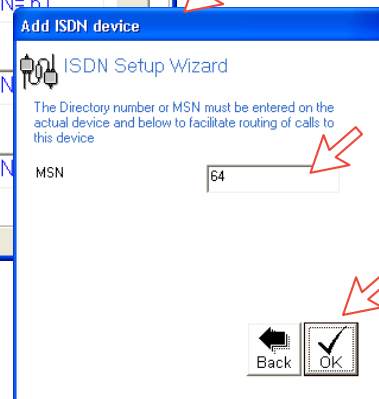
Click to continue.

The system selects the Next available Terminal Id.

Check with Terminal Id received from Net provider.

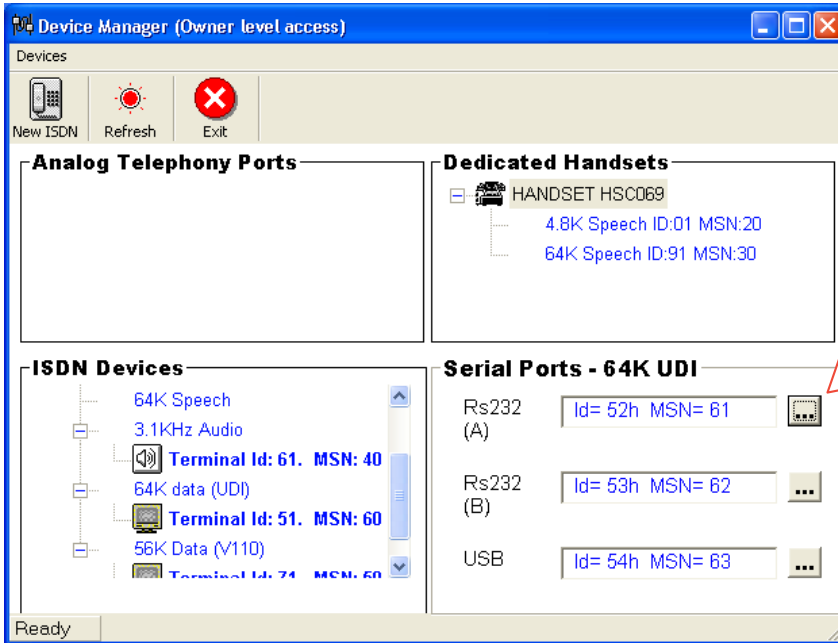
Key in MSN number if not using the recommended one.

Click to enter number.

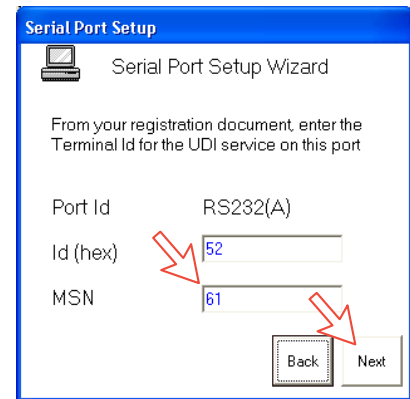


RS-232 port

Open device manager and right-click to open setup editor.



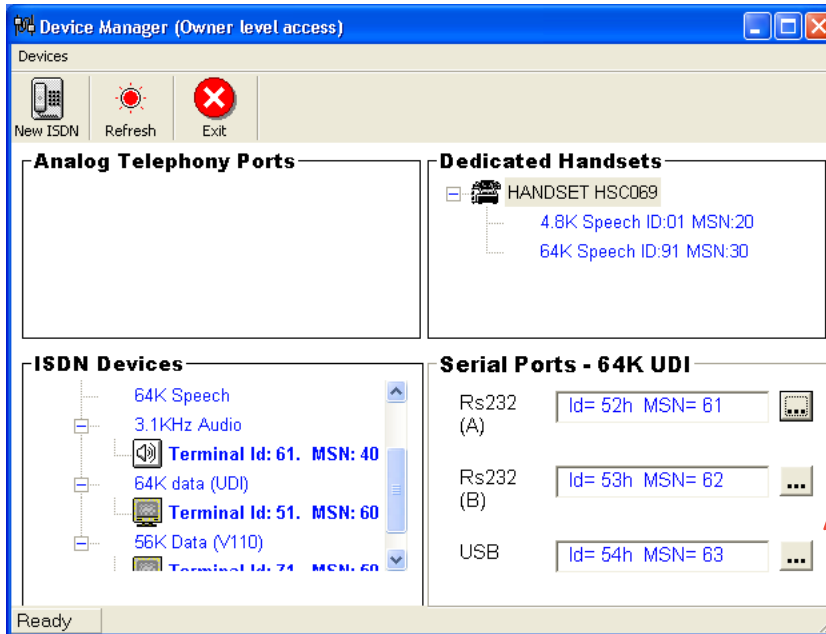
Click to open **Serial Port Setup**.
Key in MSN number if not using the recommended one.
Click **Next** to enter number.



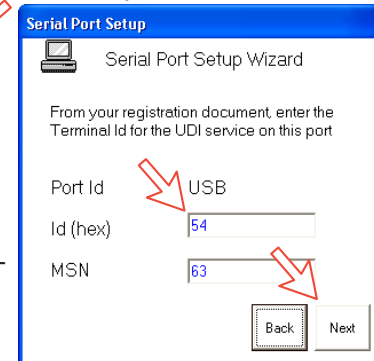


USB port

Open device manager and right-click to open setup editor.



Click to open **Serial Port Setup**.



Key in MSN number if not using the recommended one. Click **Next** to enter number.

Saving and reloading configurations

The NWC Voyager configuration settings may be stored on the PC harddisk, e.g. prior to replacing software.

Procedure:

- 1 Open the Device Manager window as indicated
- 2 Clicking **Devices > Save config to a file** automatically stores the data in a "Config.cgf" file in the vtLite directory **c:/program files/vtLite Marine**.
- 3 After installing the software, the settings may be transferred back to NWC Voyager by pressing **Load**.
- 4 Clicking **Restore Factory Defaults** loads default NWC Voyager configurations.

Printout/storing a configuration summary:

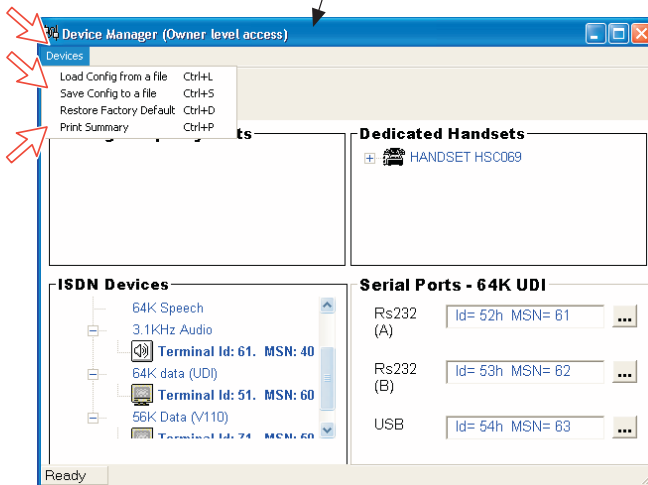
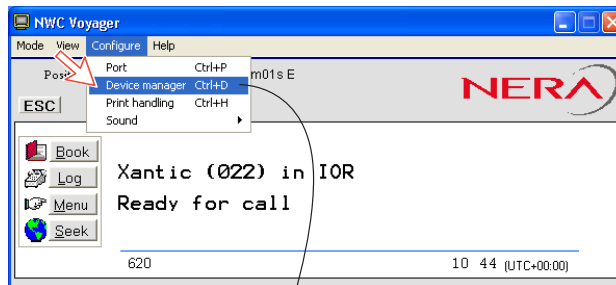
- 5 Clicking **Print Summary** opens the **Printout Viewer** (see next page) which lists the settings of the end user equipment, and allows filing and/or printout.

Note!

Save config to a file only saves the Device Manager settings.

Settings such as Net provider / Access codes / ISDN protocol are not saved.

*Phone book data and traffic log must be saved in the **Book** and **Log** menus.*





Configuration printout viewer

The list is sorted by Terminal Id

Print to local printer

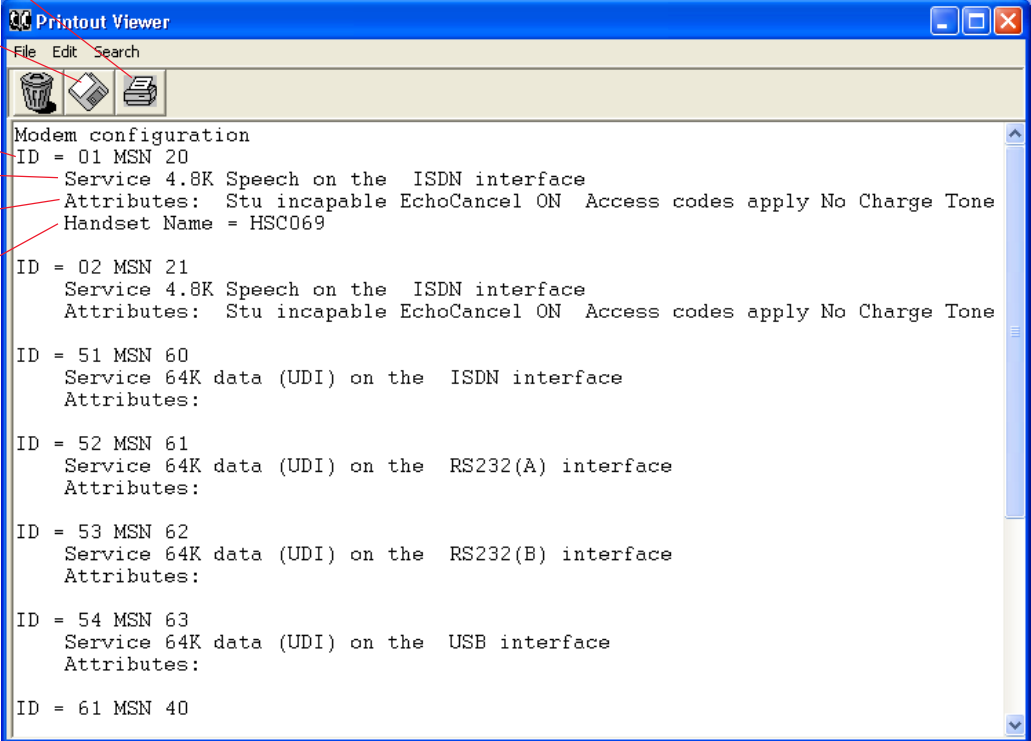
Save to disk

Terminal Id and
MSN number

Type of service

Individual device
settings

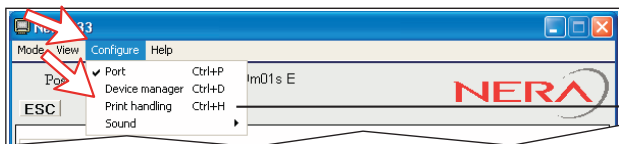
Name/location,
if entered



```
Printout Viewer
File Edit Search
[Icons: Trash, Disk, Printer]
Modem configuration
ID = 01 MSN 20
Service 4.8K Speech on the ISDN interface
Attributes: Stu incapable EchoCancel ON Access codes apply No Charge Tone
Handset Name = HSC069
ID = 02 MSN 21
Service 4.8K Speech on the ISDN interface
Attributes: Stu incapable EchoCancel ON Access codes apply No Charge Tone
ID = 51 MSN 60
Service 64K data (UDI) on the ISDN interface
Attributes:
ID = 52 MSN 61
Service 64K data (UDI) on the RS232(A) interface
Attributes:
ID = 53 MSN 62
Service 64K data (UDI) on the RS232(B) interface
Attributes:
ID = 54 MSN 63
Service 64K data (UDI) on the USB interface
Attributes:
ID = 61 MSN 40
```

Print handling setup

The **Printout from modem** window is used for setting of default output of Traffic log, Modem configuration etc.



Clicking **Configure > Print handling** opens the **Printout from modem** window. The following settings are selectable:

Default print action:

Normally, choose **Print to screen** which causes the file to be output via the Printout viewer. *For an example, see "TRAFFIC LOG > Printout viewer".*

For direct printout, choose **Print to default windows printer**.

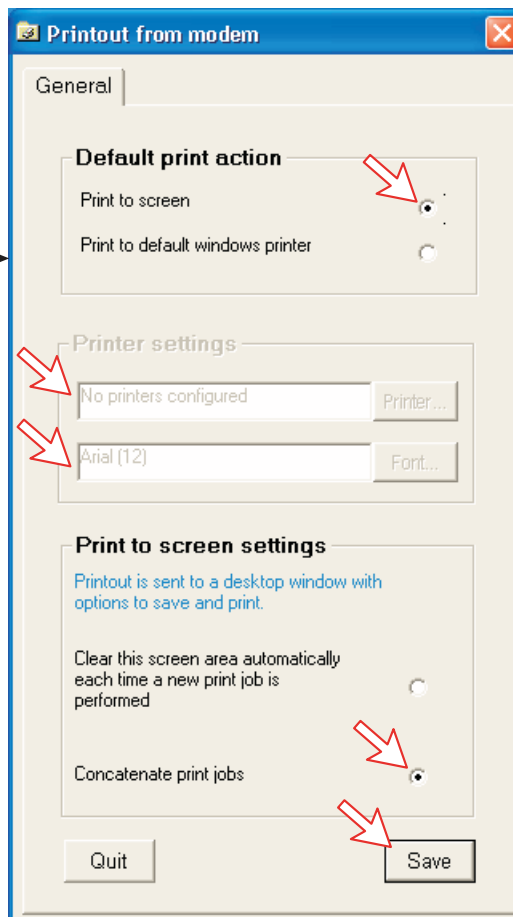
Print to screen settings:

Determines the output of records via the Printout viewer. Normally, use **Concatenate print jobs** which "chains" the jobs to be printed or saved to file.

The alternative choice clears the screen after each printout.

Printer settings:

For hardcopy printout, make sure that the appropriate printer and font are selected.





Mobile Packet Data Service

The MPDS service can be efficient for applications such as:

- E-mail
- Internet/intranet
- Navigational updates
- Vessel telemetry transmission
- Database queries
- E-commerce

The user *only* pays for the *amount* of data sent over the network, and not for the time connected.

Ports supporting MPDS:

- RS232A
- RS232B / RS422
- USB

No configuration is needed!

Dial number ****94#** to set up an MPDS call.

See the MPDS application on the NWC Voyager CD.



Inmarsat Fleet system

The Inmarsat Global Area Network service (GAN) provides 4.8 kbps voice communications service and 64 kbps data transmission to and from mobile/fixed subscribers anywhere within the worldwide coverage of the Inmarsat 3 spot Beam system, see [Satellite Coverage Map in Getting Started](#).

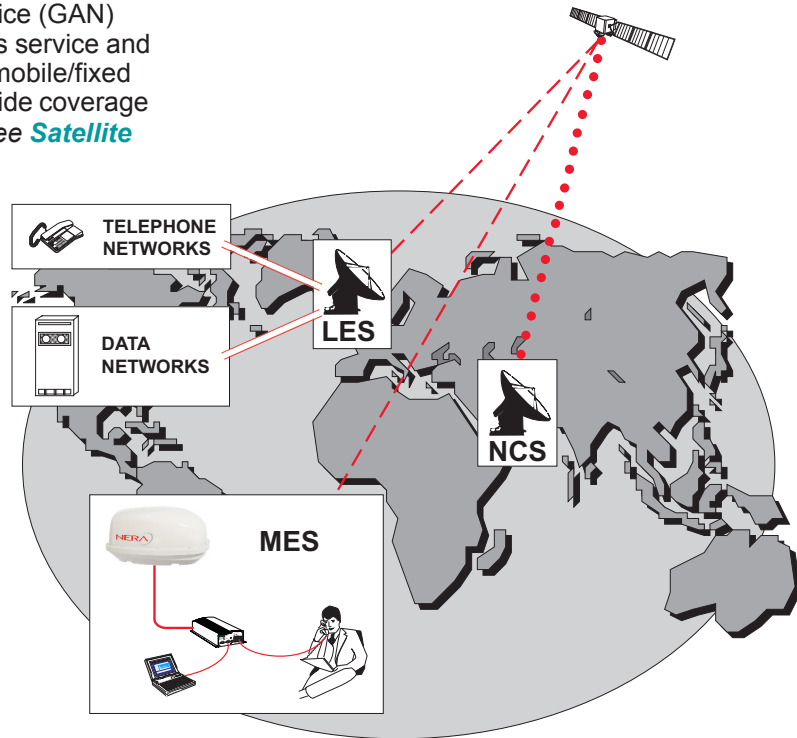
The benefit of the INMARSAT system is its high capacity, and the rapid and reliable connection between the land based (fixed) users and the **Mobile Earth Stations (MESs)**.

Each satellite region is under the control of a **Network Coordinating Station (NCS)**, which controls and monitors the traffic between the MESs and the LESs.

NCS: *Network Coordinating Station, one in each Ocean Region (supervises all messages and signals sent in the Inmarsat system).*

LES: *Land Earth Station w/Net service providers (interconnects fixed telecommunication networks with the Inmarsat system).*

MES: *Mobile Earth Station (NWC Voyager, a user terminal for the Inmarsat system).*



Overview of the Inmarsat Fleet system.



System satellites

The satellites are positioned in a geostationary orbit above the equator at approximately 35700 km altitude.

See figure.

In geostationary orbit, each satellite moves at the same rate as the earth, and so remains in the same relative position to the earth.

The satellites provide 99% landmass coverage.

NWC Voyager can communicate via the four satellite Ocean Regions:

AOR-W Atlantic Ocean West Region

AOR-E Atlantic Ocean East Region

IOR Indian Ocean Region

POR Pacific Ocean Region

For coverage area of the satellites for NWC Voyager, see [Satellite Coverage Map in Getting Started](#).

Transmission frequencies

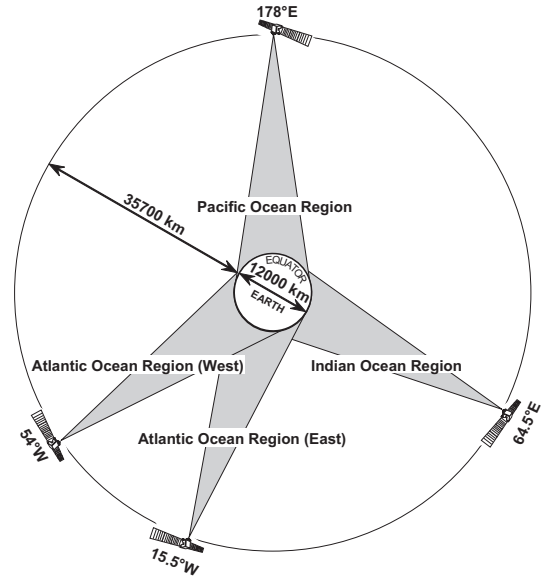
The Inmarsat terminals operate in the following frequency bands:

MES *transmission* frequencies:

1626.5 MHz - 1646.5 MHz

MES *receiving* frequencies:

1530.0 MHz - 1559.0 MHz



Satellite positions.

A large number of channels are available (20 kHz channel separation), offering 4.8 or 64 kbps voice communication, as well as 3.1 kHz audio or 64 kbps data communication.

Duplex communication uses two channel frequencies, one in each direction.

The LESs provide interface to the international networks for telephony and data: PSTN (Public Switched Telephone Networks) and PSDN (Packet Switched Data Networks).



Antenna search pattern

Azimuth sweep

A 360° rotation of the antenna in azimuth at a fixed elevation angle. The turn rate is 50° per second.

Hemispheric search

A hemispheric search is constituted by azimuth sweeps at elevation angles 5°, 25°, 45°, 65° and 85°.

The antenna searches on the NCS Common TDM channel frequency (NCSC), initiated by the Main Communication Unit (MCU) of NWC Voyager.

When finding the satellite signal, it completes the hemispheric search and moves to the position where the strongest signal was detected.

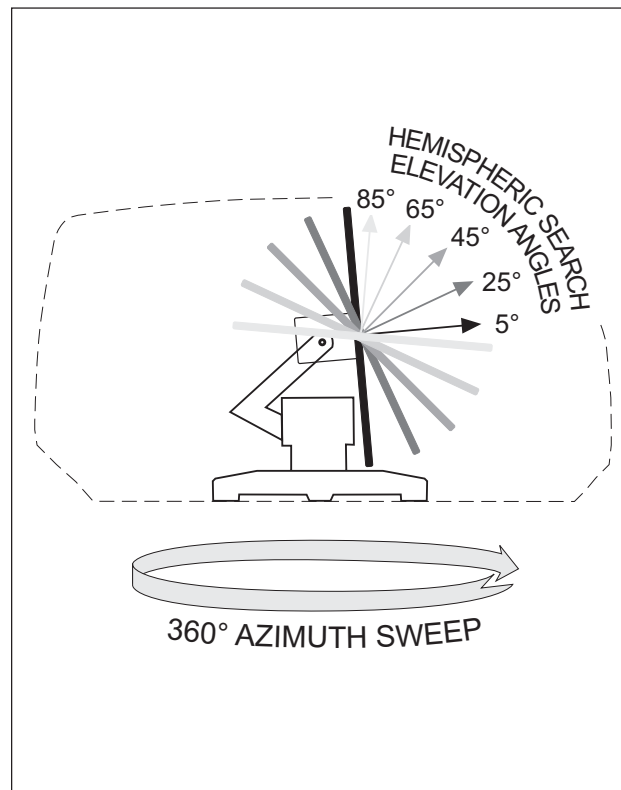
The antenna reports back to the MCU for verification of valid NCSC.

If no valid signal is detected, no further automatic action occurs until the MCU initiates a new search.

A search request from the MCU may contain channel frequency and an order to make a full 360° search at a specific elevation, memorized from last time. The system only searches for the last two satellites, unless the user selects another manually. If no satellite is found, a hemispheric search will be performed.

Tracking

At the end of a search, NWC Voyager performs a fine-tuning of the antenna position around the strongest detected signal. The fine-tuning is obtained by a squinting function based on satellite signal quality.



Note! NWC Voyager remembers the last used Ocean Region when switching the terminal off/on.



Communication services

Global beam service

- **Speech:** - 4.8 kbps

Spot beam services

- **Speech:** - 64 kbps / 4.8 kbps
- **Data:** - 56/64 kbps
- **MPDS** - Mobile Packet Data Service
FWD = 64 kbps, RTN = 64 kbps
Shared channel
- **Telefax:** - 64 kbps Group 4
- Group 3 via
Terminal Adapter (TA)
- **Audio:** - 3.1 kHz (Audio)

The NWC Voyager MCU has following ports (see figure):

- ISDN ports for connection of ISDN telephones or Nera Terminal Adapter; a total of 8 devices.
- RS-232/RS422 and USB ports for connection of data equipment.

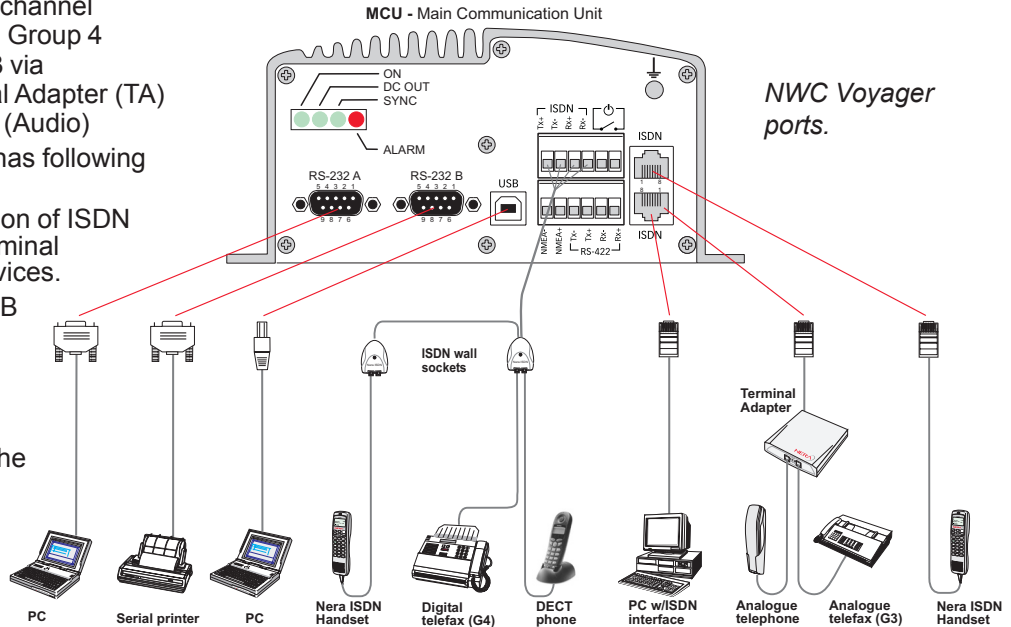
Internal communication

Equipment connected to the various interfaces may communicate with each other via an internal MSN (Mobile Subscriber Number) assigned to each unit.

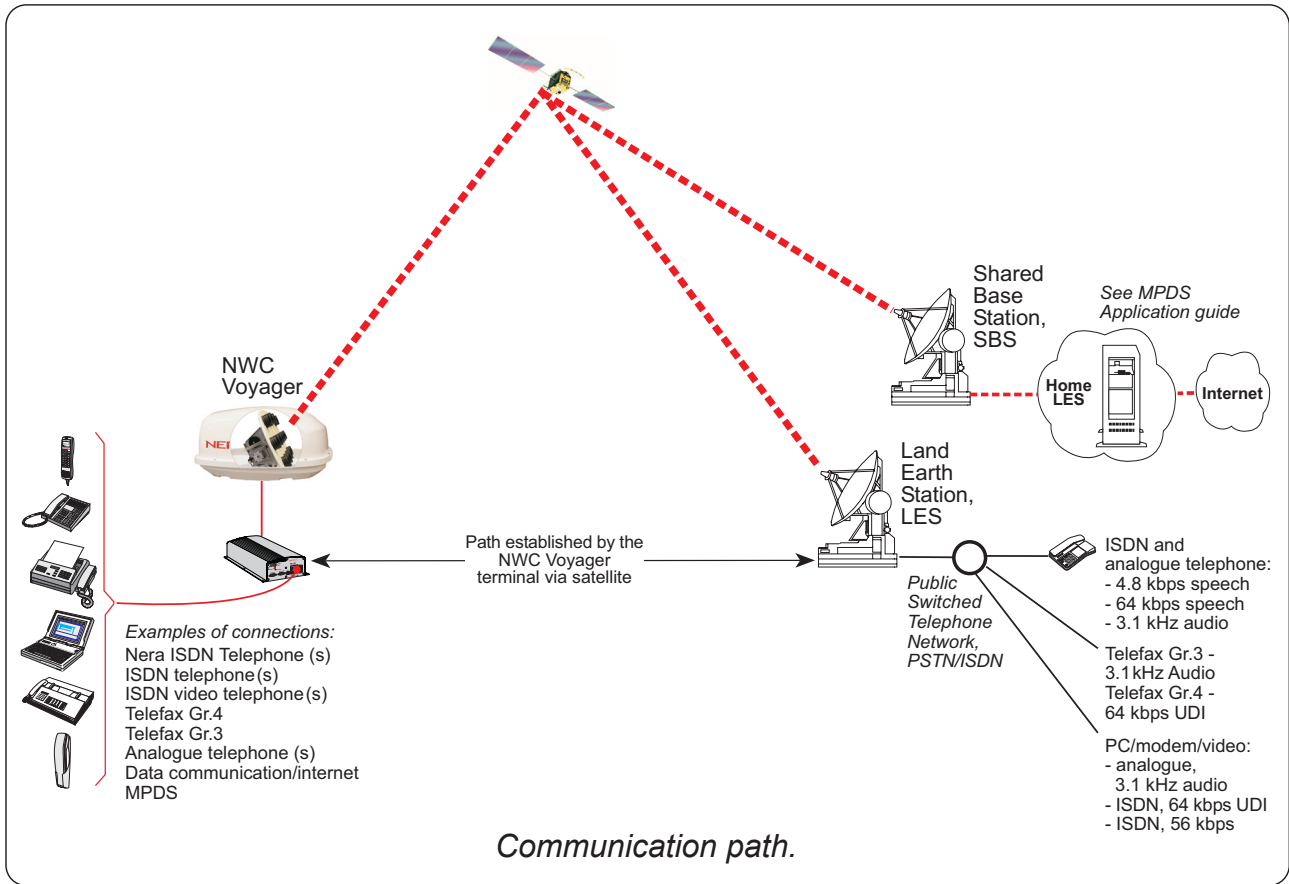
Control interface

The **RS-232** or **USB** port allows connection of a PC for configuration of NWC Voyager.

A PC program (vtLite Mobile) that provides the software to operate and configure NWC Voyager terminal is supplied on the enclosed CD (requires at least Windows 98).



NWC Voyager ports.





Net service provider

The Net service provider issues your user licence and IMN (Inmarsat Mobile Number) phone numbers. It is also responsible for the billing of calls (charges).

The NWC Voyager may respond to individual IMN numbers, giving the possibility to transfer a call directly to each device attached to it.

Note! TermID is a term that includes both Originating Identity (OID) and Destination Identity (DID). The DID is used from LES to MES to identify the service, whereas OID is used from MES to LES to identify the service. TermID is used in this manual because the DID and OID have the same value.

Calls from Mobiles

See figure.

To make an outgoing call, you use a standard international telephone number with the 00 prefix. The MES automatically includes information to identify itself and the particular device that originates.

System signalling

The LES uses the identifying information of the attached device for billing purposes. The MES transmits the dialing information on a channel specially assigned by the NCS to the LES. LES routes the call over the public telecommunications networks to the intended destination. When the called party responds, the call proceeds.

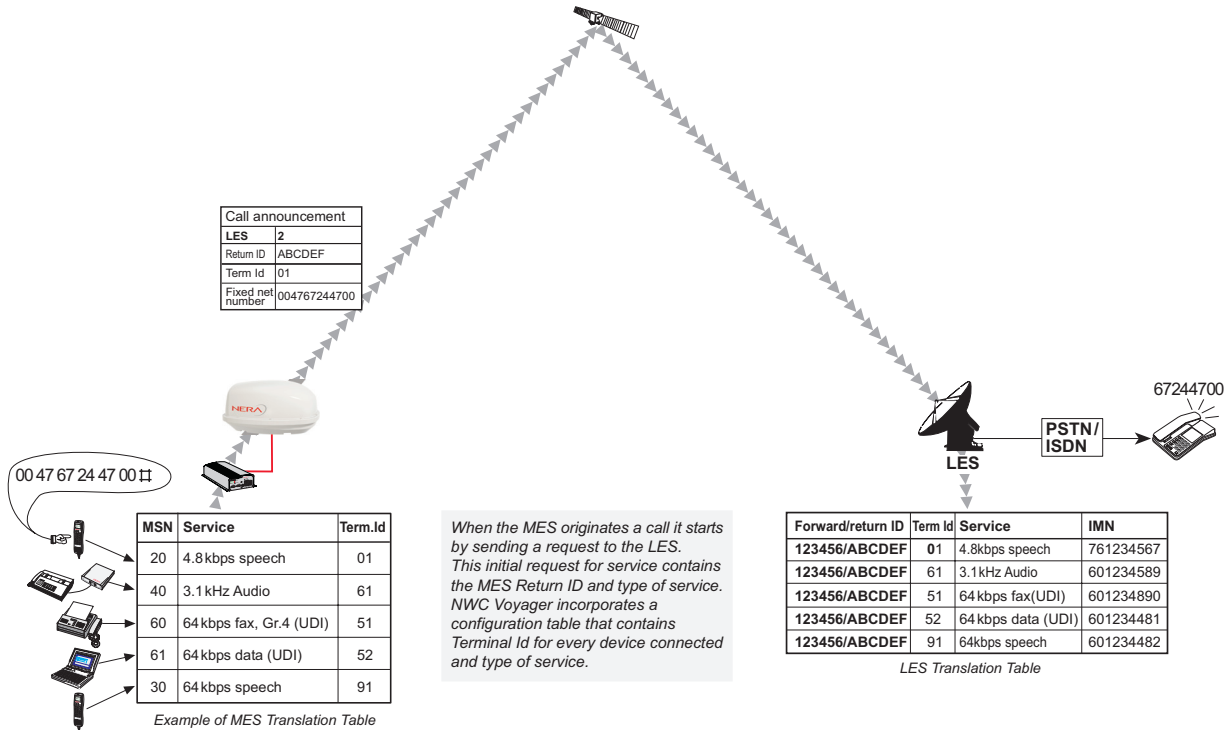
Call announcement from mobile to fixed:

The MES uses the Return Identity (RTNID) to communicate with the LES. It uses the TermID to identify its **IMN** number and the service in use.

The attached equipment dials the number and transmits its **MSN** number to the **MES**. The MES routes the MSN to a TermID.

LES checks that the RTNID is commissioned before connecting the call to the fixed net.

Calls from Mobiles



Calls to Mobiles

See figure.

The NWC Voyager terminal receives incoming calls via the IMN phone numbers. IMN numbers are assigned to the following ports by the user:

- *ISDN ports*
- *RS-232 serial data ports*
- *RS-422 serial data port*
- *USB serial data port*

Calls are made as ordinary international (Satellite) calls by dialing the international prefix (normally 00) followed by **870** and the IMN number, e.g.:
00 **870** 762420510.

The common Ocean Region access no. 870 connects the call to the dialed NWC Voyager regardless of the Ocean Region the user currently communicates through.

If the Net service provider does not support access no. 870, call the Ocean Region directly:

- 871 – AOR-E** (Atlantic Ocean Region East)
- 872 – POR** (Pacific Ocean Region)
- 873 – IOR** (Indian Ocean Region)
- 874 – AOR-W** (Atlantic Ocean Region West)

Call announcement from fixed to mobile:

The LES uses the MES's Forward Identity (FWID) to communicate with the MES, and the Terminal Identity (TermID) to identify the IMN number and the service in use.

The FWID together with the TermID replaces the need of the IMN number to be transmitted through the Inmarsat system in order to identify the MES and the specific equipment attached to it. This means that LES routes an IMN number received from the fixed net to the specific FWID and TermID identifying the MES.

The MES identifies the FWID and the TermID and routes it to a Mobile Subscriber Number (MSN) which is programmed in the attached equipment. Nera provides a table to identify which TermID is routed to an MSN.



Calls to Mobiles



Call announcement	
LES	2
Fwd ID	123456
Term ID	01



00 870 761234567



MSN	Incoming call route	Term.Id
20	4.8kbps speech	01
40	3.1 kHz Audio	61
60	64 kbps fax, Gr.4 (UDI)	51
61	64 kbps data (UDI)	52
30	64 kbps speech	91

Example of MES Translation Table

When requested to call a specific IMN, LES translates the IMN to a Terminal Id. The request is then sent to the MES which translates the Terminal Id to an MSN number. To "connect" a Terminal Id to a physical line, NWC Voyager incorporates a translation table. This table can contain up to 100 Id translations, and each Terminal Id in use is programmed with type of call and destination. A call is not allowed to be routed to a device that is configured to another type than the Terminal Id specifies. A telephone Terminal Id can only be routed to a phone type device. A telefax Terminal Id can only be routed to a fax device.

Forward/return ID	Term Id	Service	IMN
123456/ABCDEF	01	4.8kbps speech	761234567
123456/ABCDEF	61	3.1 kHz Audio	601234589
123456/ABCDEF	51	64 kbps fax (UDI)	601234890
123456/ABCDEF	52	64 kbps data (UDI)	601234481
123456/ABCDEF	91	64 kbps speech	601234482

LES Translation Table

Back to Start Page 

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