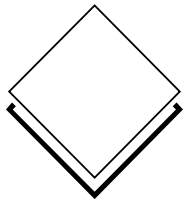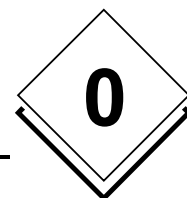# novaPro32 Routel

User's Manual

7000991003 Q2

This description corresponds to the current program release, Version 5.0. Changes may occur at any time without prior notification.

EY_3600_

List of icons and symbols

Keyboard operation

Wait

Diskette

Mouse operation

Single mouse click with left button

Single mouse click with right button

Double mouse click with left button

Double mouse click with right button

Description

Application

Information

Attention

Note

Trademarks

|	
Designer	Trademark of Micrografx, Inc.
Micrografx Designer	Trademark of Micrografx, Inc.
Media Manager	Trademark of Micrografx, Inc.
Windows	Trademark of Microsoft Corporation
Microsoft Office 97 Professional	Trademark of Microsoft Corporation
MS Office	Trademark of Microsoft Corporation
Microsoft Access 97	Trademark of Microsoft Corporation
Microsoft Office 2000	Trademark of Microsoft Corporation
Microsoft Word	Trademark of Microsoft Corporation
Acrobat Reader	Adobe Systems Incorporated
Pentium	Trademark of Intel Corporation

Sauter Systems

1 General

This description describes the installation and set-up procedure of an EY3600 novaPro32 Routel installation for:

> EY3600 novaPro32 Version 4.0 SR1-Routel or newer (Routel with DW34)

1.1 Set-Up
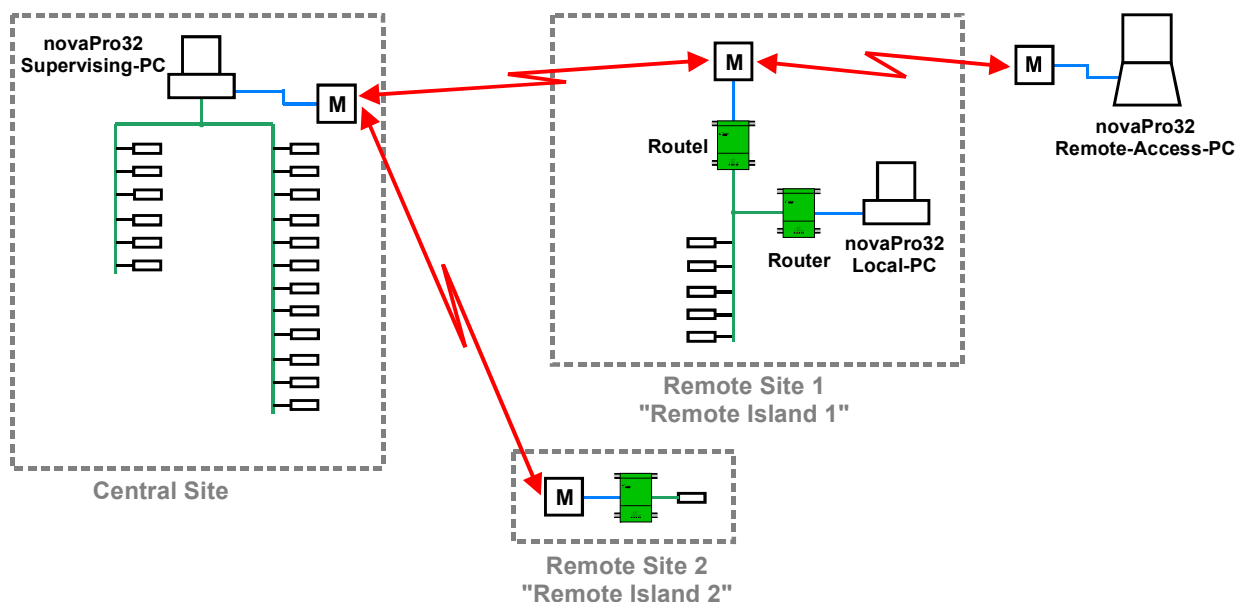
1.2 Definition of terms

Remote Supervision, Routel:
- PC and AS-Island linked with Modem.
- Function: Events are messaged from the island towards the PC, when they occur.
- Telephone link: Established by the island (EY291)
- Switch setting on the EY291: **"Routel"**

Remote Access, Router:
- PC and AS-Island linked with Modem.
- Function: User establish a link with the AS island upon their requirement.
- Telephone link: Established by the PC (the User)
- Switch setting on the EY291: "**Routel**", or "**Router**"!

→ A **Remote Access** can be made on a Router or Routel Island. The mode of operation in both cases is **Remote Access** ("Router")! **Important: It's the way the telephone link is established, not the configuration of the island**!

1.3 Introduction

Remote Supervision, Routel:

Remote Supervision: The PC and AS island are linked via modems. Alarms and limit violations are messaged from the island towards the PC.

The activation (subscription for the spontaneous upload) of Routel addresses on the AS is on the Routel dedicated DW34 and not on the standard DW 35 (from V4.0SR1-Routel!).

However, in installations with Routel and non-Routel islands, the activation of addresses on the non Routel islands is on DW35. **Also when accessing a Routel island from the PC (Remote access!)** the activation of these addresses (Pictures, address lists, Trends) is on DW35 and not on DW34. DW34 is used exclusively for the activation of addresses that have to be spontaneously transmitted by the Routel towards the PC (EP addresses).

Features Remote Supervision

1. Local Operation PC on the Routel island
   An unlimited number of Operation PC (256) may be connected to a Routel island, or may access a Routel island in Remote Access (Router) mode, without having an influence on the Routel Operations.

2. Up to four Routel (Remote Supervision PC) per AS-Network
   Up to four Routel, each serving its own Remote Supervision PC, can be connected to a Routel island. Each of the Remote Supervision PCs can activate its own set of addresses for spontaneous messaging (DW34).

3. No garbage collection for the Routel addresses
   There is no garbage collection for the Routel addresses (DW34). Consequently, there is no daily telephone call to re-activate these addresses.

4. Cold/warm stop/start
   EY3600 novaPro32 can be stopped and re-launched either with, or without the de-activation/re-activation of the addresses concerned (selectable).
   When using the warm stop/start option of novaPro32, the lengthy calling of each island during the stop and start procedure is omitted.
   On the other hand, the data base of the current alarms on the PC is lost and not refreshed when warm starting. This leads to no alarms being displayed in the alarm list thereafter. Therefore, it's possible to also make a cold start after the system had been stopped with a warm stop.
   After a warm start, however, the data base of the current alarms is also refreshed at the next following messaging of an event from the island and the alarms of this island are displayed in the alarm list thereafter.

5. Remote-access message
    The Routel reports any access from a remote-access PC (Router mode) to the
    Routel to the Supervision PC. This, on the one hand, for security reasons, but also
    because alarms occurring during the access of the remote PC would be lost on the
    supervision PC (Routel memory flushed by the data reading from the remote-
    access PC).
    After the reception of a remote-access message, the Supervision PC is
    automatically going to call the island concerned, refreshing and thus reading all the
    addresses concerned and then displaying them in the alarm list.
    The 'Messaging remote accesses' function is configurable within the Routel
    (enable/disable).
    The 'Remote Access Messages' received are logged into the Routel logfile and can
    also be displayed on screen (configurable within nP32, enable/disable)

6. Supply supervision message
    The Routel reports any power failure of the Routel to the Supervision PC (after the
    power supply has been restored).
    The 'Supply Supervision Message' function is configurable within the Routel
    (enable/disable).
    The received 'Supply Supervision Messages' are logged into the Routel logfile.

7. Display of the modem connection
    Current modem connections are displayed on screen dynamically (status line).

8. Links window
    The Links window displays anoverview of the connected islands and the number of
    activated Routel addresses per island.

9. Log functions
    Log (Private_Data\System\RoutelLog.txt) with text entries of all connections and its
    triggers.

10. Configurable HDB-block reading
    The standard upload and memorisation of HDB blocks is fully supported.
    The messaging of the HDB message (25%), by which the AS triggers the reading of
    the HDB data by the PC, can be configured per AS and per HDB block
    (analogue/binary and MFA1-127 / MFA 128-256) (configuration with FBD, MFA60).

11. Manual Routel address activation and de-activation
    To switch off the messaging of Routel addresses temporarily, the addresses of a
    Routel island can be de-activated and re-activated manually, without having to stop
    novaPro32.

Features Remote Access (Router)

1. Time-out for the telephone connection
    It is possible to configure a time-out, after which a Router connection will be broken.
    A message will be displayed 60 seconds before disconnection. The time-out can be
    re-armed within the displayed dialogue.

1

1.4 Recommendations concerning modems

The Routel and novaPro32 (via Windows) basically support all modems, as well as any other switched DCE devices (data communication equipment) such as ISDN terminal adaptor, GSM phones, switched radio modem, etc., as long as these devices are controlled by character strings (e.g. AT commands).

The proper control strings to be configured for these devices have to be worked out from the documentation of these units.

The following modems have been tested by SBA and are thus recommended for standard telephone connections:-
- **3Com/US-Robotics (e.g. 56k message modem)**
- **Olitec (e.g. Speedcom 2000)**
- **ZyXel (e.g. Omni 288S)**

This manual is based on the use of these modems, and all proper parameters for them are listed in the sections concerned.

We strongly advise against using modems of internet starter kits, or so-called Internet modems. These modems are often configured fixed for the use with a particular provider and often there is no documentation available, which makes a successful application within a Routel installation impossible.

Furthermore, we advise you to use identical modem types within any modem link (i.e. within a project).

1.5 Recommendations concerning Windows

Since novaPro32 will be running permanently on the Supervision PC, we strongly recommend you to use WIN-NT-SP6 or WIN2000 as the operating system for this PC. The WIN98 operating system is not suitable for long-term operation.

2 AS set-up

2.1 Microprogram

The microprograms of the Routel AS have to be functionality index '7' ('g').

2.2 Reporting HDB upload

The standard upload and memorisation of HDB blocks is fully supported.

The reporting of the HDB message (25%), by which the AS triggers the reading of the HDB data by the PC, can be configured per AS and per HDB block (analogue/binary and MFA1-127/MFA 128-256) with FBD, MFA60.

HDB block messaging is enabled by default.
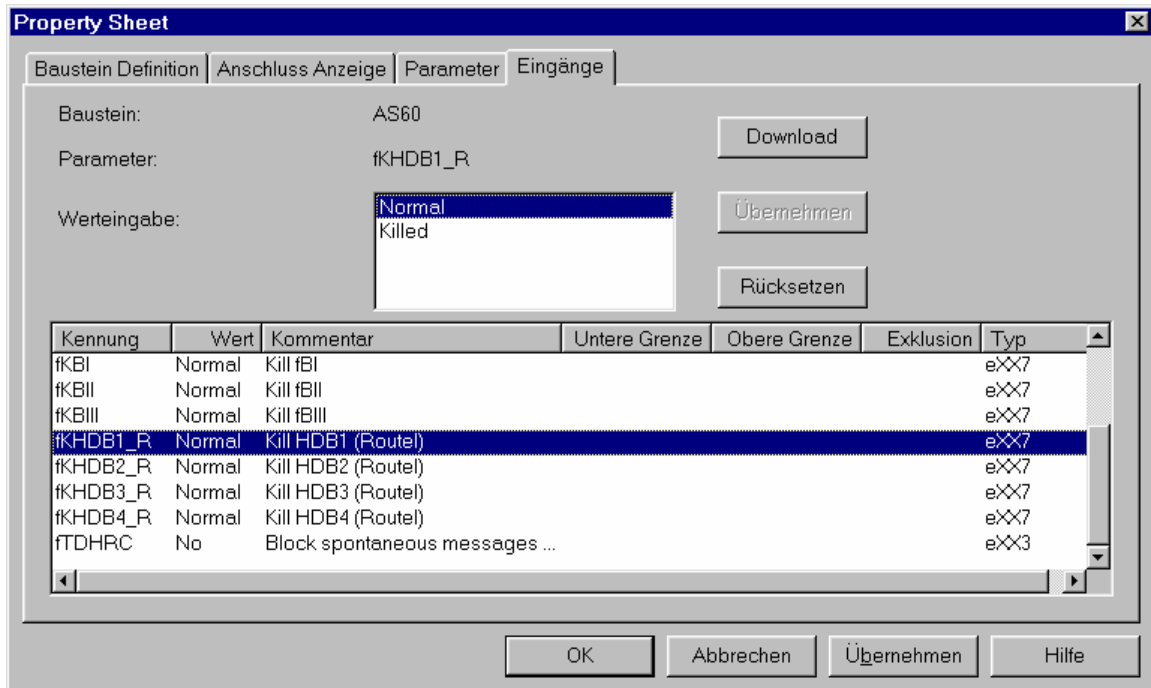
Configuring the HDB block messaging:-

Enter a block 'AS60' within the FBD concerned:-
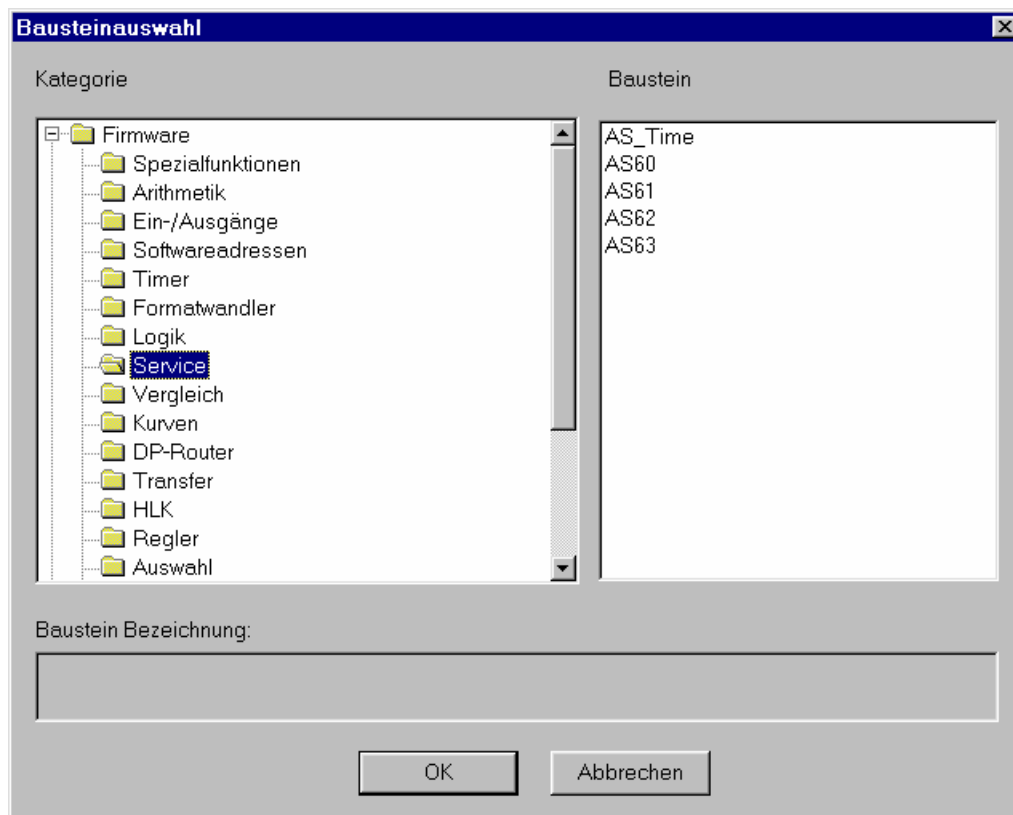
Open the 'Properties' of the block and select the 'Inputs' tab:-

Choose 'Killed' to disable the messaging of the HDB block concerned:-

- Block1: Binary addresses   MFA 0-127
- Block2: Analogue addresses MFA 0-127
- Block3: Binary addresses   MFA 128-256
- Block4: Analogue addresses MFA 128-256

(For an AS with 128 MFAs, only both blocks have to be set to equal values: e.g. 1 & 2 for binary addresses)

The reason for making addresses HDB active, but not setting the bit for the messaging in MFA60, is to be able to use the HDB from the AS memory without saving the HDB onto the hard disk of the PC (if only a short-term HDB is required).

3 Routel set-up

3.1 u-program

The u-program of the Routel, EY291 has to be of index 'e' (Routel islands only).

The Routel requires two EPROMs.

One is a standard index 'e' EPROM as supplied by SBA (or the file '501120_001e.bin').

The one located on the transformer side of the Routel has to be matched to the parameters of your project using the Routel-Para program (→ Regarding a method without matched EPROM, please refer to **Special Hints** below).

3.2 Routel-Para

The Routel-Para program (routelpara.exe) can be found on the FBD/nP32 CD or on the intranet.
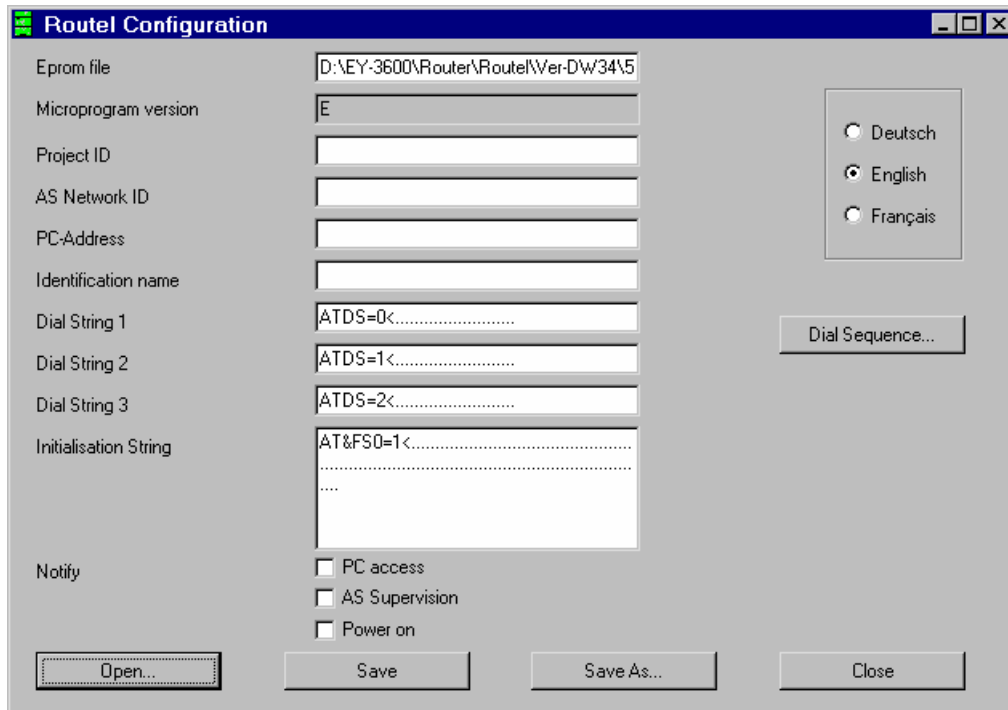
The base for the EPROM to be programmed is the bin file of the Routel EPROM ('g') '501120_001e.bin'.

Open the Routel-Para program (by double clicking it) and choose your language.

3
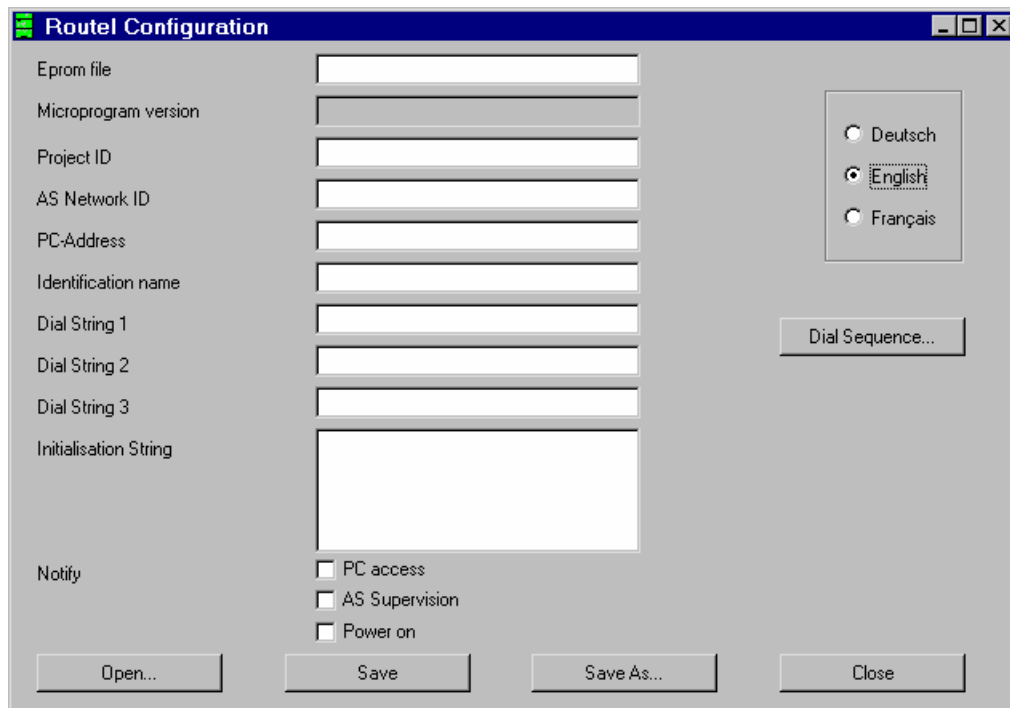
Open the '501120_001e.bin' file:-

The parameters displayed are the factory default parameters.

The following parameters have to be set according to your project:-

Project ID
- The ID of your project (e.g. from your BMTL export file or from the registry)

AS Network ID
- The ID of the AS network concerned (e.g. from your BMTL export file or from the registry)

PC address
- For the Routel islands to work properly, the PC address has to be set to:-

  PC-Address=32512+nx4

  where n is 0 for the first island of this project, 1 for second and so on.
- If you have more than one Routel on the same island, the PC address for the second PC (Routel) has to be: the one of the first one + 1, for the third: the one of the first + 2 ...
- **Important: These rules must be strictly observed.**

Dial string 1

- The dial string for your modem, normally:-

  "ATDT[phone number]<"

  (Where the '<' character has to follow the string, it causes the Routel to send the carriage return.)
  (The dots indicate the available number of characters for this string)
  (Special characters within the phone number: ',' makes the modem wait for 1 or 2 seconds, 'w' makes the modem wait for the dial tone before dialling. Refer to your modem manual for more information.)
  → Please also refer to **Special Hints** below regarding the modem dial-up strings.

Initialisation string

- This string is sent to the modem when the Routel receives a positive flank of the DSR signal (when the Routel or the modem is started or the cable is re-connected). N.B.: The command is sent to the modem only if the EYZ291 is set to Routel mode (when the Routel switch is set).
- You have to enter the string that sets the modem to the proper mode of operation. Normally, the string which loads the factory default settings followed by the command for 'Auto Answer' is fine. The following commands have been tested:-

E.g. ZyXel:	"AT&FS0=1<"
3COM:	"AT&F1S0=1<"
Olitec:	"AT&FS0=1&WZ<"

  (Where the '<' character has to follow the string. It causes the Routel to send the carriage return.)
  (The dots indicate the available number of characters for this string.)
  → Please also refer to **Special Hints** below regarding the modem Init strings.

Notify

- **PC access**: Causes the Routel to call the Supervision PC after an access from a remote-access PC (3rd-party access).
- **AS supervision**: Causes the Routel to call the Supervision PC after detecting a change in the number of ASs active on the AS network concerned, or if the AS network is no longer available.
  (→ Concerns the AS supervision by the Routel. This message is not yet interpreted by novaPro32. This 'AS supervision by 291' feature will be included in V4.1)
- **Power on**: Causes the Routel to call the Supervision PC after power has been restored to the Routel.

Dial Sequence

Click the 'Dial Sequence...' button to open the 'Dial Sequence' menu:-

The 'Dial Sequence' settings determine the way the Routel commands the modem to re-dial the Supervision PC in case the latter doesn't respond (dial sequence for the non-connect case).

At this moment, only 'Sequence 1' and the first channel is to be used, since the nP32 software does not support more than one modem for the reception of Routel calls.

The default settings as above lead to the following sequence:

1. The Routel will call the Supervision PC 5 times (4 repetitions) at intervals of 2 minutes.
2. Then the Routel will call the Supervision PC 3 times (2 repetitions) at intervals of 10 minutes.
3. Then the Routel will call the Supervision PC 256 times (255 repetitions) at intervals of 30 minutes.
4. Afterwards, the Routel will not call the Supervision PC until this has called the Routel again.

This increasing interval is required mainly due to national laws (avoiding blacklisting). The modem thus needs to lock (blacklist) a phone number that has been dialled frequently with no success (i.e. at no charge). Please refer to **Special Hints** below for more information on this topic.

Adapt the dial sequence to your needs if required.

Adding a line with Repetitions = 0 will case the Routel to repeat this line with the interval time stated continuously.

Close the 'Dial Sequence' dialogue box by pressing 'OK'.

Save your settings with 'Save As...'. Enter a file name of your choice (e.g. the name of the island).

Then program an EPROM (EPROM 1Mb SBA order number 0385902000) using the 'Galep' programmer or similar. Fit this EPROM to the power transformer side of the Routel.

Special tips

1. **Routel without customised EPROM**
   It is possible to set up a Routel island without customising an EPROM. The default settings within the EPROM, as delivered from SBA, are OK to control a ZyXel or Olitec modem. The telephone number in this case should be programmed into the modem (place 0, activated with ATDS=0).
   Project-ID and ASNet-ID are sent to the Routel from the PC when it calls to initialise the addresses. This set-up will functioning as long as there is no power failure on the Routel (...UPS).
   There is no blacklisting prevention active (cf. below).

2. **ISDN, GSM, radio modem etc.**
   The Routel supports any type of switched DCE (data communication equipment) such as ISDN terminal adaptor, GSM phones, radio modem, etc) as long as it is controlled with string commands. Refer to the relevant manuals in order to find the appropriate 'Init string' and 'Dial string'.

3. **DTE speed**
   It is important to ensure that the modem is not in a mode where its baud rate on the COM port follows (auto-adapting) the baud rate on the telephone line. If the modem changes the DTE speed in this way, the Routel, which has a fixed DTE speed, is not able to communicate with the modem any more.
   The following parameters prevent the adaptation of the DTE speed:-

ZyXel: No particular command required. It's OK per default
3COM: The Init command "AT&F1S0=1" (instead "AT&F0S0=1")
Olitec: The Init command "AT&FS0=1&WZ" (instead "AT&FS0=1")

4. **Blacklisting**
   The law in some countries requires the modem to blacklist telephone numbers that are dialled to frequently with no subsequent connection (free of charge). The modem therefore automatically blacklists those numbers (e.g. when the same number is called more than 5 times in 15 minutes with no answer).
   To avoid blacklisting, the dial sequence (see above) shoulg be set conservatively enough to follow the country's rules.
   Another way to cope with blacklisting is to add (illegal?) commands to the modem strings which disable its blacklisting function:-

ZyXel: Use the US modem firmware from www.zyxel.com
3COM: The Init command "AT&FS0=1S40.1=0"
Olitec: The dial string "AT%X3D[phone number]<"

   For more information about blacklisting, refer to www.wahlsperre.de.

3

EY3600

3.3 Routel mode

The EYZ291 F001 novaNet Router has to be set to Routel mode and the baud rate needs be set (38400 Baud recommended):-
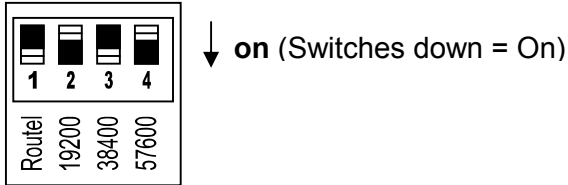
 ↓ **on** (Switches down = On)

Setting switch 1 to 'on' (Switches down = On) enables the Routel mode (dialling enabled).

Select the speed with the appropriate speed switch. (Setting none of the speed switches sets the speed to 9600.)

The modem will auto-adapt to the baud rate of the Routel at Power-On of the Routel or of the modem (the Routel sends the Init string to the modem when DSR goes active). (Only if the 291 is in 'Routel' mode. If the 'Routel' switch is not set, the Router will not send any Init string to the modem and the baud rate of the modem has to be configured (cf. Ch. 4.3.)

You may find that your EYZ291 has a label such as this:-
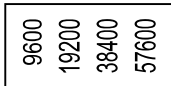
This is an old label (fits with 'a' EPROM) and should be replaced.
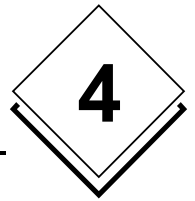
4 Modem set-up

The following modems have been tested by SBA and are thus recommended for standard telephone connections:-
- **3Com/US-Robotics (e.g. 56k message modem)**
- **Olitec (e.g. Speedcom 2000)**
- **ZyXel (e.g. Omni 288S)**

This manual is based on the use of these modems, and all proper parameters for them are listed in the sections concerned.

We strongly advise against using modems of internet starter kits, or so-called Internet modems. These modems are often configured fixed for the use with a particular provider and often there is no documentation available, which makes a successful application within a Routel installation impossible.

Furthermore, we advise you to use identical modem types within any modem link (i.e. within a project).

4.1 PC-side modem

Cable: Standard PC-to-modem cable, which is provided with the modem.

The PC-side modem needs to be installed within Windows.

Problems were experienced with novaPro32 not recognising modems with (too) long names or names including special characters like ' or + (e.g. the modem name *ZyXEL Omni 288s Modem(V.90)+Fax+Voice, Plug&Play* does not work)

This problem can be solved in two ways:-
1. Either change the name in the registry by executing search and replace, replacing all entries with the bad name by a good name (e.g. *ZyXEL_Omni288s_V90*)
2. Or by uninstalling the modem, then editing the modem name within the *.inf file concerned, then re-installing the modem.

4.2 Routel modem & remote supervision

Cable: Standard PC-to-modem cable, which is provided with the modem.

There is no need for any modem configuration since the Routel initialises the modem with the Init string that the Routel sends when DSR goes active. (Except if you use the 'Routel without customised EPROM' method as described in **Special hints** above.)

4.3 Router modem & remote access

This configuration is **not required for Routel operations.**

This configuration has to be made only if the EYZ291 is set to Router mode (Routel switch not set). In this case, the Router will not send any Init command to the modem, which means in particular, that the modem will not be able to auto-adapt to the baud rate of the Router and therefore needs to be configured manually.

Cable: Standard PC-to-modem cable, which is provided with the modem.

→ This modem does not have to be installed within Windows.
→ The examples (screen shots) are for a ZyXEL Omni288

1. Attach the modem concerned to your PC.

2. Set up a Hyper Terminal to use for this configuration:-

   Click: Start | Programs | Accessories (WIN98: 'Communication'), 'Hyper Terminal' and open 'Hyperterminal.exe' (If the Hyper Terminal program is missing on your PC, you have to install it first. To do so, click Start | Settings | Control panel | Software | Windows Set-up | Communication | Details and add 'Hyper Terminal'.)

3. Name e.g.: 'Config-RModem', 'OK', 'Connect using': 'Direct to COMx' (where x is the COM port to which the modem is connected) 'OK'.

   N.B.: This configuration has to be made only if the EYZ291 is set to Router mode (Routel switch not set). See above.

4. 'Bits per second': Here you have to set the baud rate so as to be **identical** to the one of the novaNet router!, then press 'OK'. This is very important.
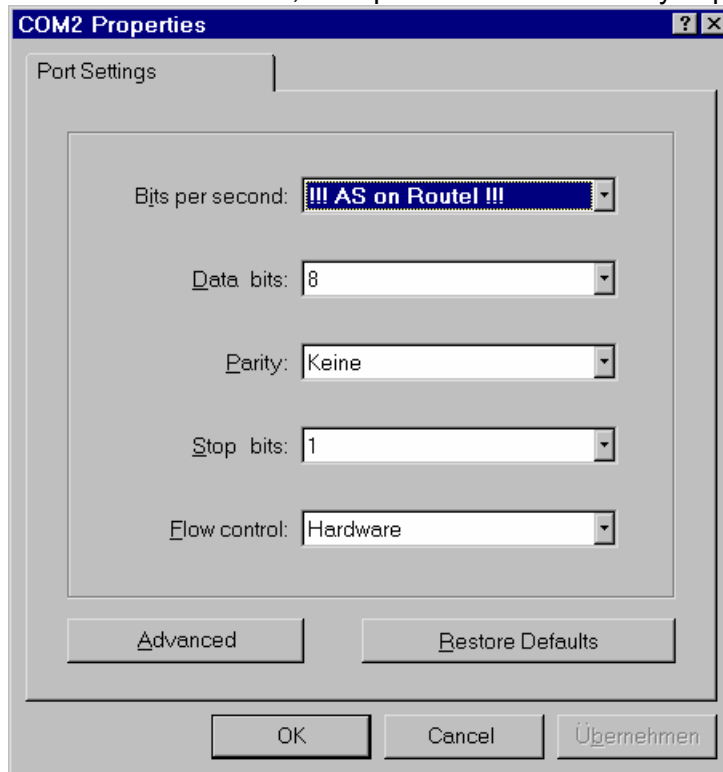
5. Test the connection with your modem:-
    Type 'at' and press the *Enter* key and check whether the modem answers with 'OK'.
    (If not, try 'at&f', probably at&f0, at&f1, depending on the modem brand, followed by the Enter key. If the modem still doesn't answer with 'OK', you need to find the cause of the problem.)
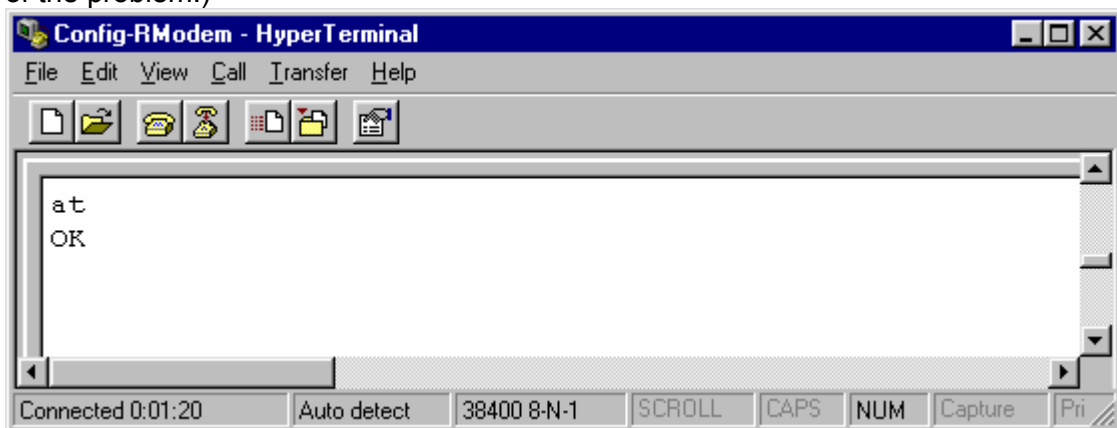
6. Configuring the modem
    Type the following commands each followed by the Enter key:-
    - 'at&f'   (3COM: 'at&f1', Olitec: 'AT&F&WZ'), Answer 'OK'. Sets factory defaults
    - 'ats0=1'   Answer 'OK'. Sets 'Auto-Answer'.
    - 'atq1'   No 'OK' displayed anymore! Sets 'no result code'.
    - 'ate0'   Nothing displayed anymore! Disables 'command echo'.
    - 'at&w0'   Nothing displayed anymore! Saves settings in profile 0.
    - 'atz0'   Nothing displayed anymore! Sets 'Load profile 0 on power on'.
                 (Olitec: 'at&y0', 3COM: 'aty0')

```
Config-RModem - HyperTerminal                    _ □ ×
File  Edit  View  Call  Transfer  Help

at
OK
at&f
OK
ats0=1
OK
atq1

Connected 0:01:20   Auto detect   38400 8-N-1   SCROLL  CAPS  NUM  Capture  Pri
```
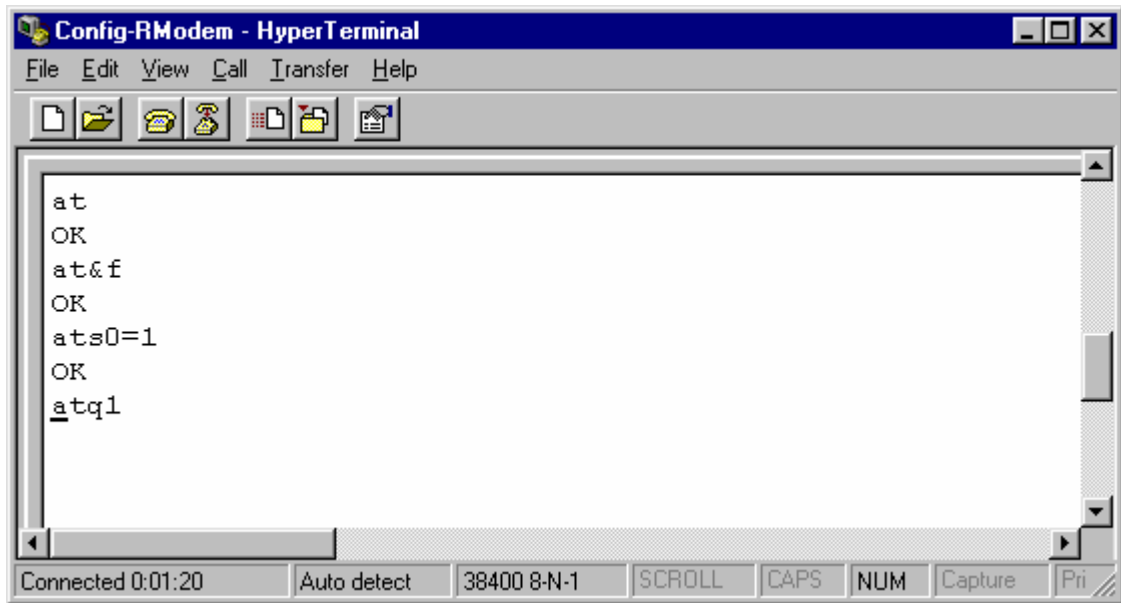
7. Typing 'at&v' ('at&v0', 'at&v1', 3COM: 'ati4', 'ati5') displays the current configuration and stored profiles:-

```
Config-RModem - HyperTerminal                    _ □ ×
File  Edit  View  Call  Transfer  Help

OK
ats0=1
OK
ate0
ACTIVE PROFILE:
B0 E0 L1 M1 N1 P Q1 V1 W0 X4 Y0 &C1 &D2 &G0 &J0 &K3 &Q5 &R1 &S1
S00:002 S01:000 S02:043 S03:013 S04:010 S05:008 S06:004 S07:060
S10:014 S11:090 S12:050 S18:000 S25:005 S26:001 S36:007 S37:000
S46:138 S48:007 S95:002

STORED PROFILE 0:
B0 E0 L1 M1 N1 P Q1 V1 W0 X4 Y0 &C1 &D2 &G0 &J0 &K3 &Q5 &R1 &S1
S00:002 S02:043 S06:004 S07:060 S08:001 S09:006 S10:014 S11:090
S36:007 S37:000 S40:232 S41:131 S46:138 S95:002

STORED PROFILE 1:
B0 E1 L1 M1 N1 Q0 T V1 W1 X4 Y0 &C1 &D2 &G2 &J0 &K3 &Q5 &R1 &S0
S00:002 S02:043 S06:004 S07:060 S08:001 S09:006 S10:014 S11:090
S36:007 S37:000 S40:232 S41:131 S46:138 S95:002

TELEPHONE NUMBERS:
0=                                    1=
2=                                    3=

Connected 0:04:20   Auto detect   38400 8-N-1   SCROLL  CAPS  NUM  Capture  Print echo
```

8. Now disconnect this modem from your PC and connect it to the Router.

5   novaPro32 set-up

Since novaPro32 will be running permanently on the Supervision PC, we strongly recommend you to use WIN-NT-SP6 or WIN2000 as the operating system for this PC. The WIN98 operating system is not suitable for long-term operation.

5.1   Connections

Using Top-Tree Wizard you have to set-up a connection for each Routel island (Follow the novaPro32 installation manual for general information on Top-Tree Wizard):-

All entries within the 'This Dial-up Connection' field except the 'Phone Number' are the working parameters for the Routel. These are sent to the Routel when the PC calls the Routel to initialise the island.

They need to be identical to the parameters programmed into the EPROM of the Routel. If the Routel loses its power supply, the parameters are re-loaded from the Routel EPROM.

Some of these parameters in addition determine how novaPro32 treats the messages concerned:-

novaNet PC
- This is the PC address. It has to be set identical to the one in the Routel. Refer to Chapter 3.2.

Phone Number
- The phone number of the Routel island concerned.
  Refer to your modem manual for special commands (e.g. ',' makes the modem wait for 1 or 2 seconds, 'w' makes the modem wait for the dial tone before continuing).

Remote Supervision Mode (Routel)
- Tick needs to be set to enable the Routel mode.

Message AS and ASNet Supervision
- If set, the Routel supervises the number of AS communicating on novaNet as well as the presence of the AS net itself. If there is any change, the Routel will call the Supervision PC.

  → novaPro32 will make use of this message only from Version 4.1.

Message after Power Failure novaNet291
- Causes the Routel to call the Supervision PC after a return of the Supply Power to the Routel.
- The received "Supply Supervision Messages" are logged into the Routel logfile.

Message and Refresh after 3rd Party PC-Access
- If ticked, the Routel will report to the Supervision PC any access from a Remote Access PC (mode Router) to the Routel. This, on one hand for security reasons, but also because alarms occurring during the access of the Remote PC would be lost on the Supervision PC (Routel memory flushed by the data reading from the Remote Access PC).
- After the reception of a Remote Access message, the Supervision PC will automatically call the island concerned, refreshing and thus reading all the addresses concerned and then displaying them in the alarm list.
- The 'Remote Access' messages received are logged into the Routel logfile.

Screen Pop-Up after 3rd Party PC Access
- A Remote PC Access Message as described above will in addition be displayed as a Pop-Up message on screen.

Time-out for connection from PC (min.)
- This entry does not concern the Routel connections. It activates a time-out on a Remote Access Connection (PC called 291).
- The time-out is armed at the moment of the connection (not after the last keyboard/mouse activity).
- After the time-out, a message is displayed to warn the user that the connection will be disconnected in 60 seconds. A button is available with this warning, which can be used to re-arm the time-out if desired.
- A time-out value of 0 minutes disables the time-out feature.

Select Routel Modems

This box is to specify the PC Routel modem with which the PC will receive Routel calls:-

5.2   EP server

The configuration of the EP server determines which addresses are supervised with the Routel function (which addresses are activated within the AS (DW34) for the spontaneous uploading).

Clicking the 'Result' button within the EP server configuration will display a list of the addresses included.

5.3   HDB server

Basically, there is no difference to the HDB treatment by the HDB server between the Routel and the non-Routel mode.

The AS sends a message (via Routel/phone connection) at 25% of the AS-HDB-RAM (depending on the MFA60 settings, refer to chapter 2.2). The HDB server of nP32 will read the data if configured in the HDB server.

6 Operation (technical)

(This is not an 'Operating Instructions' manual for end users)

6.1 Start/stop of nP32

When stopping novaPro32 for the first time, the system will ask:-
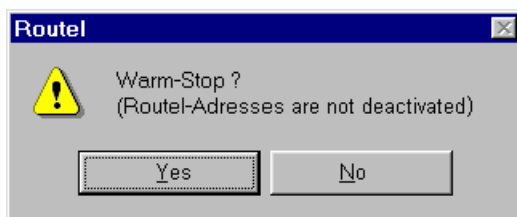
Pressing 'Yes' will cause novaPro32 to stop without de-activating the Routel-addresses, i.e. without calling the islands.

This means, in particular, that the islands will still report events by modem. The PC will not take the phone. The 'dial sequence' (cf. Ch. 3.2) will determine the frequency of the retries.

When starting novaPro32 following a 'warm' stop, the system will ask:-
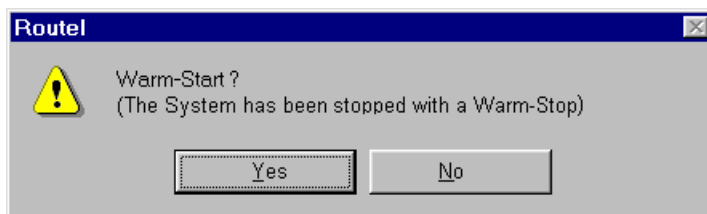
Clicking '**No**' will cause novaPro32 to start with a 'cold' start. This means all islands will be called, the Routel (EP) addresses concerned will be re-activated in the AS and thus be read.

Pressing 'Yes' will cause novaPro32 to start without re-activating the Routel addresses, i.e. without calling the islands.

This means, in particular, that the data base of the current alarms on the PC is not refreshed, which leads to no alarms being displayed in the alarm list thereafter. Therefore, it's possible to make a cold start even after a warm stop. In any case, the data base of the current alarms will be refreshed at the next following messaging of an event from the island and the alarms of this island are then displayed in the alarm list thereafter.

6.2 Manual connections

Open the 'Connections' menu by clicking 'File', 'Connections', or by pressing the [icon] icon:-
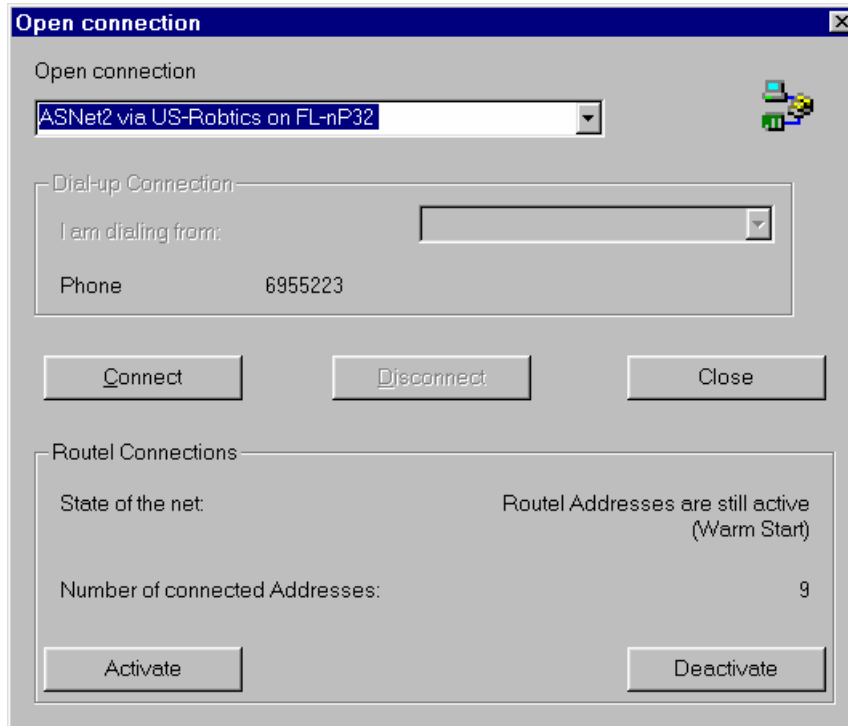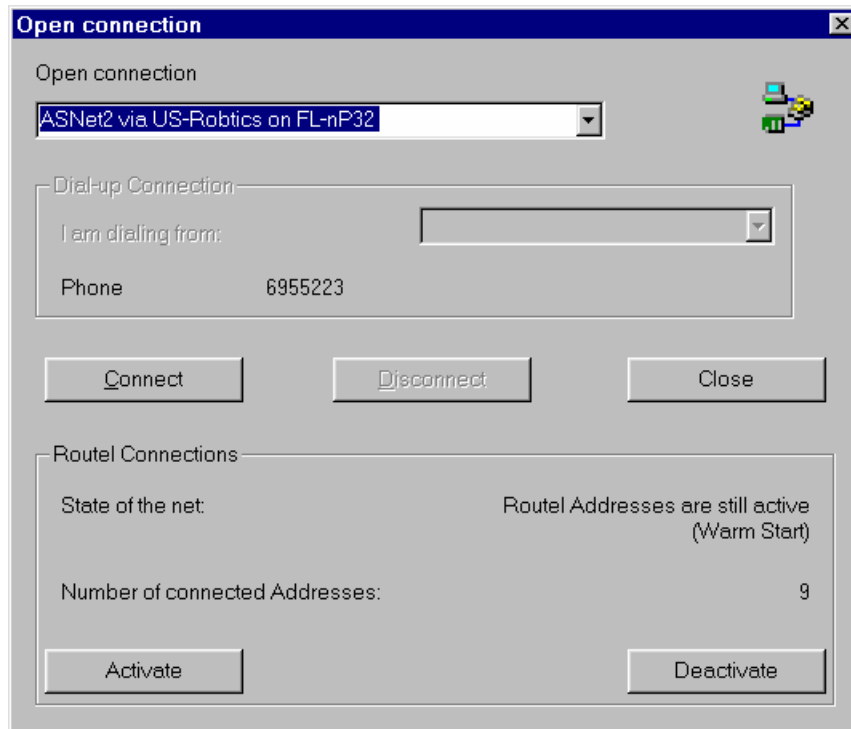

Connect

- 'Connect' establishes a connection to the island selected.
- This connection, since initiated from the PC, is a 'Router' connection. The EYZ291 will be set to Router mode. The mode will be reset to 'Routel mode' by the EYZ291 itself at the moment of the disconnection.
- All addresses from opened pictures, address lists and trends will be activated in DW35.
- It is important to open any pictures, address lists and trends only after the connection to the island concerned has been established. Otherwise, no values are displayed (because the addresses are not activated).
- When closing the connection, it is good practice to close the pictures, address lists and trends first, in order to de-activate the addresses concerned. (However, the addresses are de-activated at the next garbage collection otherwise.)

6.3 Treatment of manual addresses

Open the 'Connections' menu by clicking 'File', 'Connections', or by pressing the [icon] icon:-

Routel Connections
 - '**State of the net**' displays whether the Routel addresses are activated or not.
 - '**Number of connected addresses**' displays the number of Routel addresses for this island.
 - '**Activate**' activates or re-activates the Routel addresses (the island is called, if not connected anyway). Activating the Routel addresses also refreshes the addresses concerned within the nP32 Event Publisher (and thus within the alarm list).
 - '**De-activate**' de-activates or re-de-activates the Routel addresses (the island is called, if not connected anyway).

Opening the menu 'File', 'Connection States' opens an overview for all Routel islands:-

Connection Status		☒
Name	**Netstate**	**Addresses**
ASNet2 via US-Robtics on FL-nP32	Routel Addresses are still active (Warm Start)	9
ASNet3 via US-Robotics on FL-nP32	Routel Addresses are still active (Warm Start)	10

OK

6.4 HDB display

Please refer to chapter 5.3 for information on the HDB server.

The HDB server generally holds data up to the last HDB upload (25% message). To display HDB data for a time range ('From', 'Within the last' (up to now)), the AS island concerned therefore needs to be connected manually (cf. Ch. 6.2) before calling the HDB display.

We would generally recommend you to connect the island manually before displaying HDB data. If the island is not connected, there is a time-out of two minutes before the data available will actually be displayed (this will be fixed with SR2).

6.5 Routel logfile

novaPro32 operating in Routel mode will create and maintain a logfile (RoutelLog.txt), within 'Private_Data\System\'. This logfile contains entries for each connection as well as their trigger.

7 Important information concerning Routel functions

7.1   Useable program version

Access to the Routel islands must be obtained using the following programs:-

NovaPro32   Version 4 SR2-2
HWC   Version 2.40

Problems may occur if other versions of the programs are used.

All the PCs of an installation, such as Supervisor, Local PC, Servicing PC (also FBD), that have at least one Routel island must be run with the same version of novaPro32/FBD and HWC.
The PC number from the topology of the project (32512(Ilot1Routel1)-13(Ilot1Routel2)-14(Ilot1Routel3)-15(Ilot1Routel4) 32516(Ilot2Routel1) etc.) is the number that is set by the Routel in order to guarantee the connection with the supervisor (1 of 4 per island).
The topology of all PCs that are connected with a Routel island **must** be identical.
N.B.: The number should not also be replaced with the HWC, otherwise the spontaneous messages can no longer be reported on the Supervisor PC.

7.2 Changes in the system groups of the EP server and HDB server groups

For installations with a low number of islands, we recommend that, after each modification to the configuration of the EP server and/or the HDB server, the system be ended with a 'cold' stop and then re-started with a 'cold' start.

For installations with a high number of islands, proceed as follows:-

- Using the 'De-activate' button from the 'Connections' dialog box, de-activate the addresses of the island(s) affected by the changes.
- The changes are then made in the EP server and/or in the HDB server.
- Close the novaPro32 program with a 'cold' stop.

There are two ways of re-starting:-

- Either with a 'warm' start and by manually activating each of the islands that have been changed (using the 'Activate' button from the 'Connections' dialog box).
- Or with an automatic 'cold' start of all connections.

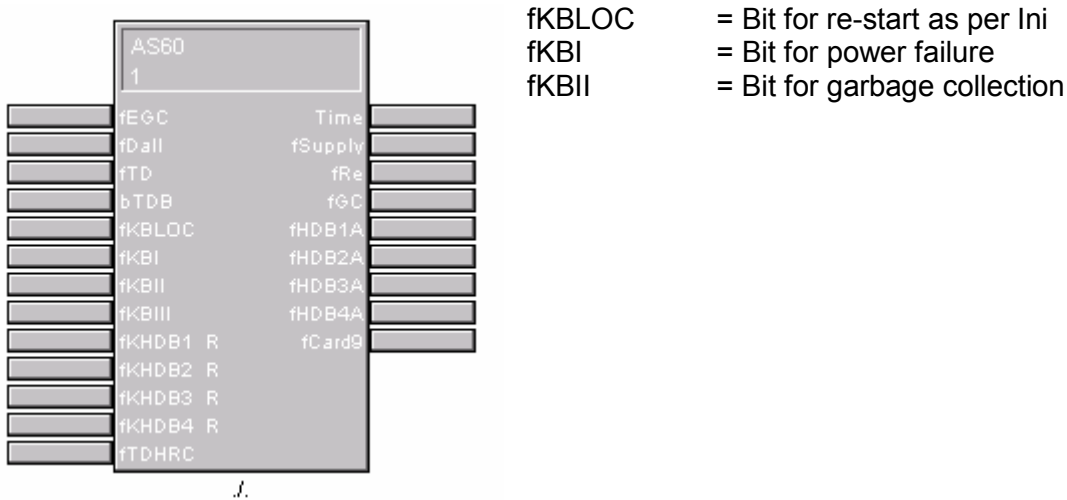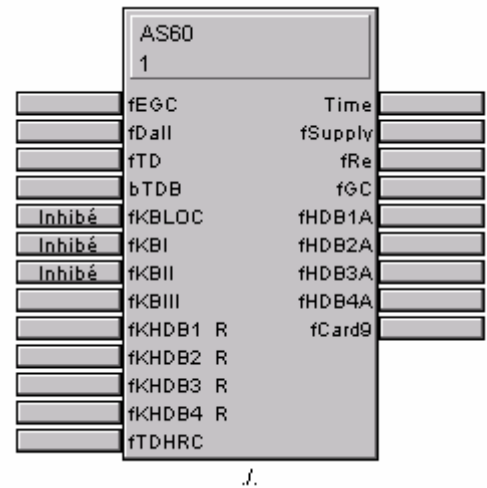The above-mentioned functions are carried out in the following window:-
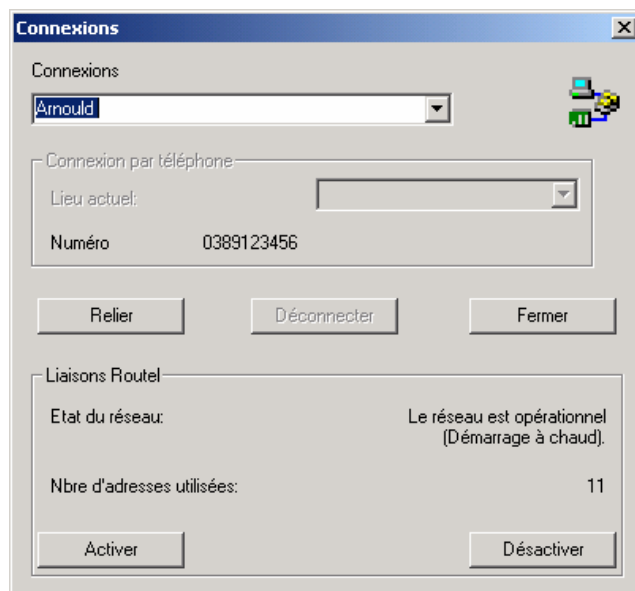
7.3 Changes in the FBD

The AS 60 module must be inserted in all FBDs of all ASs in the Routel islands **if, in the AS, at least one address is being edited by the HDB server**.

If this module is not inserted, the inputs fKBLOC, fKBI and fKBII are set to 0 when the AS is initialised by the FBD, which may cause undesirable connections.

fKBLOC	= Bit for re-start as per Ini
fKBI	= Bit for power failure
fKBII	= Bit for garbage collection

In order to prevent the calls in Routel mode, it is essential that the three bits are set to 'Killed'.