The main enhancements to the PL7-NET software reference TXT L PL7-NET V6E since the PL7-NET software reference TXT L PL7-NET V5E are :

- Inclusion in the NET PACK software package, which also comprises NETDIAG.
- The FIPWAY network module, TSX MPM100 is now taken into account.

Documentation referred to :

Setting up a PL7-NET application may require reference to one of the following manuals :

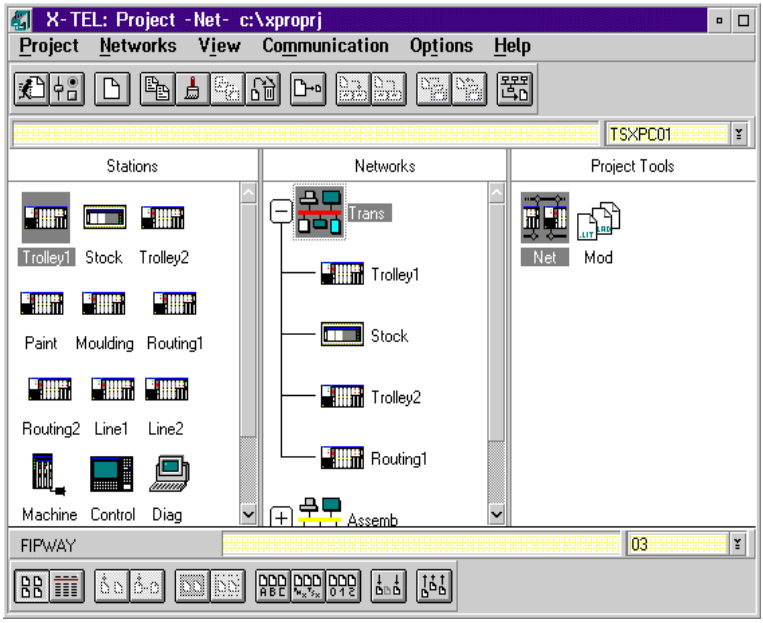
- "V6 software installation", for the installation procedure.
- "XTEL Software workshop", reference TXT DM XTEL V4E for managing software keys and using MEM and TRANSFER station tools (when creating a V4 level bridge),
- "PL7-3 Programming languages, Operating Modes V4" for configuring the I/O (when creating a V4 level bridge),
- "XTEL Software Workshop", reference TXT DM XTEL V5E for managing software keys and using CONF and TRANSFER station tools (when creating a V5 level bridge and managing software keys).
- "XTEL Software Workshop", reference TXT DM XTEL V6E.

1.1 PL7-NET Program Presentation

PL7-NET is an X-TEL Software Workshop option for design, configuration, coherence checking and documentation of TSX 7, PMX 7, TSX Micro, TSX Premium and Series 1000 PLC network architectures. It is designed to run in the X-TEL environment on an FTX 507, FTX 417, CCX 57/77, IBM PC-AT or compatible terminal.

Indispensable for configuring multinetwork system architectures, PL7-NET enables :

- Complete description of a multinetwork architecture :
  - Network selection (802-3, MAPWAY, FIPWAY, ETHWAY or TELWAY) and entry of the name (1 to 8 characters) and number (0 to 127) assigned to each segment,
  - Selection of stations on a segment and station address (0 to 63) assignment,
  - Interconnection of segments by selecting bridge PLC stations (a bridge ensures the routing of messages between network segments),
  - Assignment for each bridge of its network modules to the different network segments (up to four network modules per bridge PLC, including the integrated FIP module).



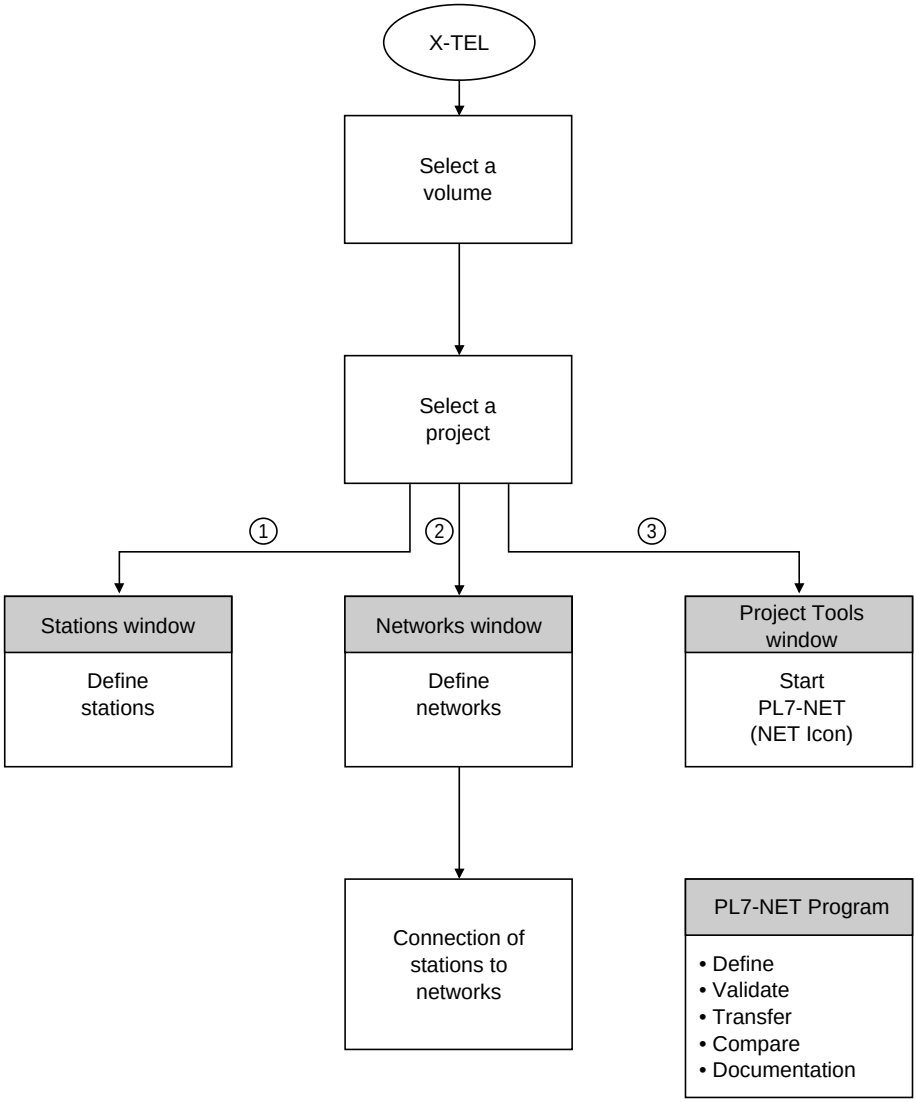
This data is used by PL7-NET to automatically generate the routing tables for each bridge in the network architecture.

- Transfer of files generated by PL7-NET describing the network architecture to the bridge PLCs :
  - This data is stored in the user memory zone of the bridge PLC processor,
  - The compare function lets the user check coherence between the network description entered on the terminal and that stored in the bridges.
- Network architecture documentation :
  A text file can be generated after the network architecture description. This file can also be printed out. It lists all of the elements in the network architecture (and their links) :
  - Networks,
  - Stations,
  - Bridges.

The PL7-NET program is protected and is supplied with a software key. Refer to the Key Manager documentation in the X-TEL Software Workshop documentation.

1.2 PL7-NET Integration with X-TEL

1.2-1 Diagram

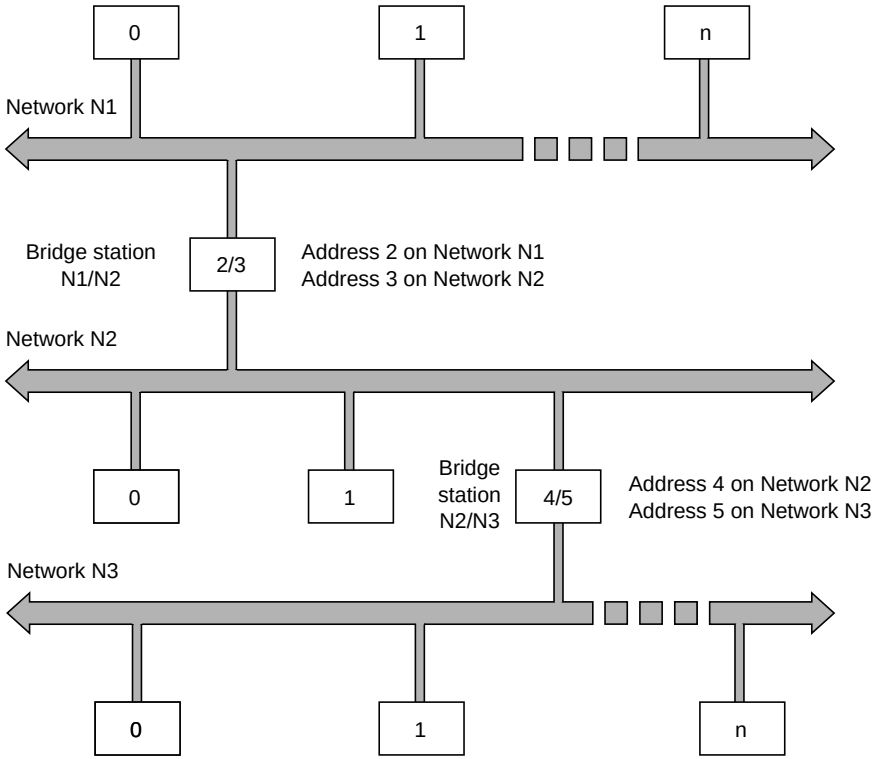


1.3 General Concepts

1.3-1 Network Architecture Design Rules

When an automation system network architecture is designed, there should be only one path from one station to another.

Example :

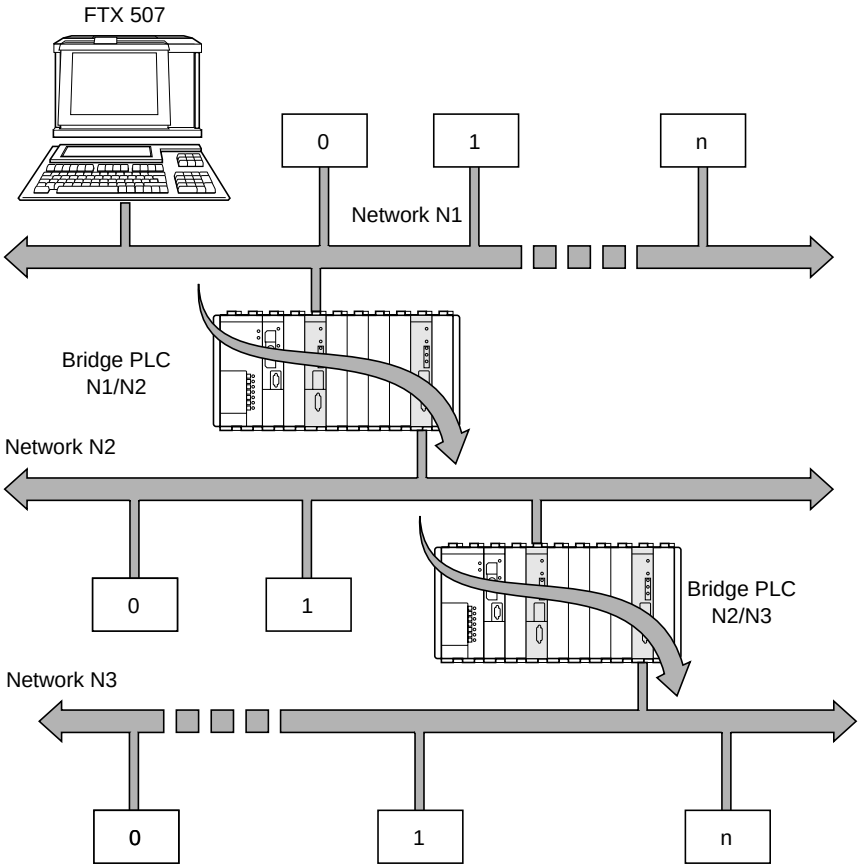


Important

All of the stations and networks that form a multinetwork architecture must be defined in the same X-TEL project.

When the configuration of a bridge PLC is modified using PL7-NET, the sequence must proceed so that the bridge, **seen from the terminal**, is crossed from left to right (from the module with the lowest address in the rack to the module with the highest address).

Example :



Architecture modification

When a multinetwork architecture is modified, the following sequence must always be followed :

- Disable the architecture using PL7-NET,
- Make hardware modifications (installation of a new PLC, creation of a new network, etc.),
- Define new stations, new networks and their connections,
- Validate then transfer the new network architecture using PL7-NET.

1.3-2 Reminders on Bridges

A bridge is a device that can interconnect up to four segments (or networks) transparently at data link level. There is addressing continuity between the two network segments on either side of the bridge.

The primary function of a bridge is to ensure proper control of the data flow.

Telemecanique TSX and PMX 67/87/107 Model 40 PLCs can be used as bridges in a multinetwork architecture.

These PLCs can be fitted with the following network interfaces :

- TSX MAP 1074 module for connection to a MAPWAY network,
- TSX MPT 104 module for connection to a TELWAY network,
- TSX ETH 200 module for connection to a 802-3 network,
- TSX ETH 107 module for connection to an ETHWAY network,
- A processor comprising a built-in FIP link for connection to a FIPWAY network,
- TSX MPM 100 module for connection to a FIPWAY network.

The table below lists the maximum number of modules that can be installed in a PLC :

TSX and PMX 67-40	Slots 0 to 7	2 modules max. (inc. FIPWAY CPU daughter board)
TSX and PMX 87-40	Slots 0 to 7	4 modules max. (inc. FIPWAY CPU daughter board)
TSX and PMX 107-40	Slots 0 to 7	4 modules max. (inc. FIPWAY CPU daughter board)

Once the network architecture is defined, PL7-NET automatically generates the routing tables required by the bridge PLC.

Important

A bridge PLC must be dedicated to data routing between the various networks. No application programs can be loaded.

In a PLC with several types of communication module, TELWAY modules must be located to the right of the other modules.

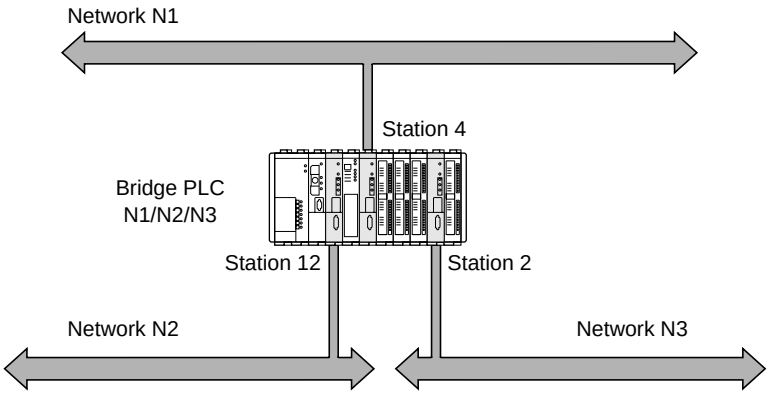
A Telemecanique V4 level PLC must be a V4.4 or higher version in order to operate as a bridge.

Bridge PLC addresses

A bridge PLC is connected to more than one network. It therefore has as many network addresses as connected networks. A "primary address" is used to identify the bridge. The primary address is the address (network/station) of the module used for routing that is located closest to the PLC processor (even if the processor comprises a built-in network module).

This address is used by the PLC for all application message handling. Once a station becomes a bridge, the PLC will always respond to any question sent by returning a response to the primary address.

Example :



In this example, the primary address of the bridge PLC is : Network 2, Station 12.

TELWAY network special case

The TSX MPT10 module and its terminal block do not support hardware definition of a TELWAY network address. The address must be defined using PL7-NET (Network Definition).

The TELWAY network address will only be known to the bridge station after the network architecture has been uploaded. The bridge PLC must then send this network address to all other TELWAY network stations. This action is user transparent.

A TELWAY module is an NSA (Network Server Agent) when it must send its own address to other TELWAY stations on the network. The other TELWAY modules are then NUAs (Network User Agents).

2.1 Hardware Description

To run PL7-NET software requires a machine with a 386 microprocessor as a minimum equipped with :

- The OS/2 operating system version 2.1, 2.11, 3.0, Blue or Red WARP or WARP Connect.
- The X-TEL Software Workshop, ref. TXT L BASE V6.

This means that you must have at least 12 MB of RAM and a 240 MB hard disk.

PL7-NET forms part of the NET PACK software package which comprises :

- Two 3 1/2" diskettes,
- A software key,
- This manual, ref. TXT DM PL7 NET V6E,
- The documentation associated with NETDIAG, ref. TXT L NTD V6E.

2.2 Software Installation

2.2-1 Fitting the Software Key

Fit the software key into the empty location in the software key holder.

Ensure that the microcomputer is powered-down before inserting the software key.

Note

The software key contains the right of use required to access the PL7-NET program. The Key Manager tool, supplied with X-TEL, lets the user transfer this right of use to the working key, freeing the corresponding key holder slot. For further information on the use of the Key Manager tool, refer to the X-TEL operating modes manual.

2.2-2 Initial Preparations

Before installing the NET PACK software package on the hard disk, it is recommended that the user :

- Read the licence and guarantee certificate concerning copying and installation restrictions on the software.
- Makes copies of the disks required for installation in order to protect against accidental damage, and only work with the copy.

Important

The PL7-NET program diskettes are supplied write protected. Do not change the position of the write protect tab on the diskette.

2.2-3 Installation Procedure

The installation procedure for the software packages is standard regardless of the type of package being installed.

However, the NET PACK software package must be installed on a station already equipped with the X-TEL V6 Software Workshop.

To install the NET PACK software package, the terminal must be running under OS/2, preferably with all applications closed.

The installation procedure for V6 software packages is detailed in full in the "V6 Software Installation" manual.

3.1 General

3.1-1 Summary of Operations to Perform

Before launching PL7-NET the user must be sure that the complete network architecture that is to be used is fully defined. Depending on the versions of the PLCs used, which will be defined as bridges, there are two possible cases.

A TSX or PMX Model 40 V5 or higher bridge PLC

The following procedure applies :

- In X-TEL, define the multinetwork architecture as described in this section,
- Launch the "conf" station tool for each of the bridges, to define their processor type and I/O etc. This operation is described in the X-TEL Software Workshop V5 and V6 manuals,
- Launch PL7-NET to generate the routing information required for each of the bridges. This operation is described in section 4 of this manual, Define and Validate functions,
- Launch the "conf" station tool once again for each of the bridges, to generate the Bridge space and take into account the routing information provided by PL7-NET (menu Generate, item Automatic),
- Launch the Transfer station tool for each of the bridges, to transfer all the data to the bridges. This operation is described in the X-TEL Software Workshop V5 and V6 manuals (Transfer tool, Complete Transfer),
- Launch PL7-NET once again to transfer the network architecture (see section 4).

A TSX or PMX Model 40 V4.4 bridge PLC

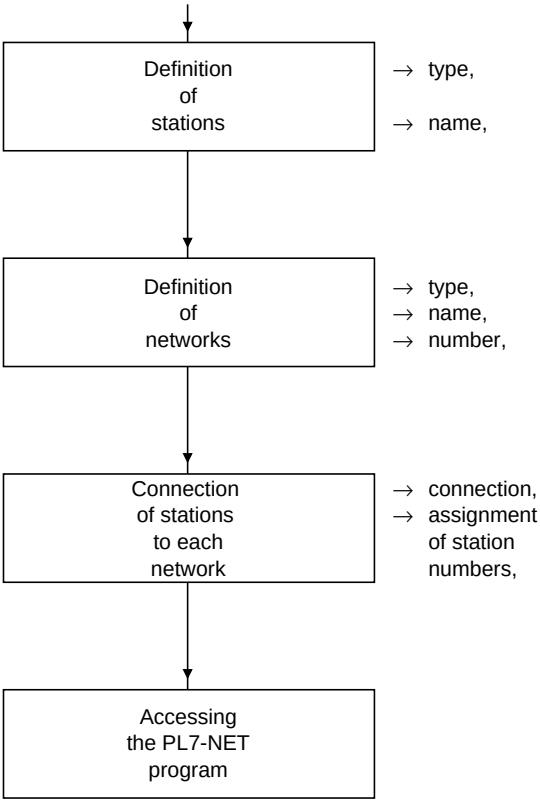
The following procedure applies :

- In X-TEL, define the multinetwork architecture as described in this section,
- Launch the "mem" tool for each of the V4 level bridges, to define their PLC processor type. This operation is described in the X-TEL Software Workshop V4 manual,
- Launch PL7-3 for each of the V4 level bridges, to define their I/O. This operation is described in the PL7-3 Language Operating Modes V4 manual,
- Launch PL7-NET to generate the routing information required for each of the bridges. This operation is described in section 4 of this manual, Define and Validate functions,
- Launch "mem" station tool once again for each of the V4 level bridges, to generate the Bridge field and take into account the routing information provided by PL7-NET,
- Launch the Transfer station tool for each of the bridges, to transfer all of the data to the bridges. This operation is described in the X-TEL Software Workshop V4 manual (Transfer tool, Disk --> Station transfer function),
- Launch PL7-NET once again to transfer the network architecture (see section 4).

Creating the multinetwork architecture

The multinetwork architecture is created in X-TEL and comprises the following steps :

- Definition of each station in the network architecture
  - Station type,
  - Station name.
- Definition of each network in the architecture
  - Network type,
  - Network name,
  - Network number.
- Connection of stations to each network
  - Assigning an address to each connected station.



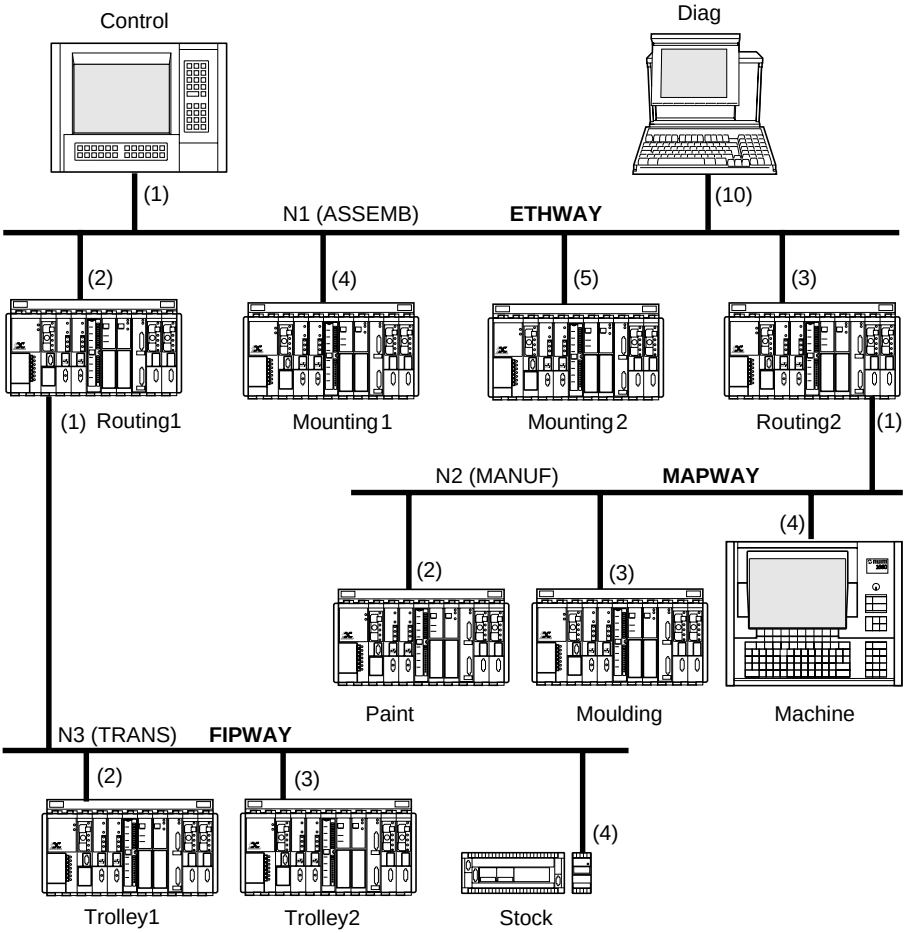
Each of these procedures is described in detail in the following sections.

3.1-2 Example

The network example described below is used solely as an example and will be used throughout this manual to illustrate how to use PL7-NET.

The factory shown produces component parts. The network architecture comprises a CCX 77 supervisor and an FTX 507 terminal (for programming, diagnostics, debug, etc.). The network architecture comprises three networks :

- An ETHWAY network for assembly,
- A MAPWAY network for manufacturing,
- A FIPWAY network for parts handling.



The Paint and Moulding stations are TSX Model 40 V4.3 PLCs, the Router2 bridge is a TSX Model 40 V4.4 PLC, the Stock station is a TSX 17-20 Micro-PLC, the other PLCs are TSX Model 40 V5 stations.

3.2 Defining Stations

3.2-1 Accessing the function

Network stations are defined from the Station presentation zone in the XTEL:Project main window.

X-TEL

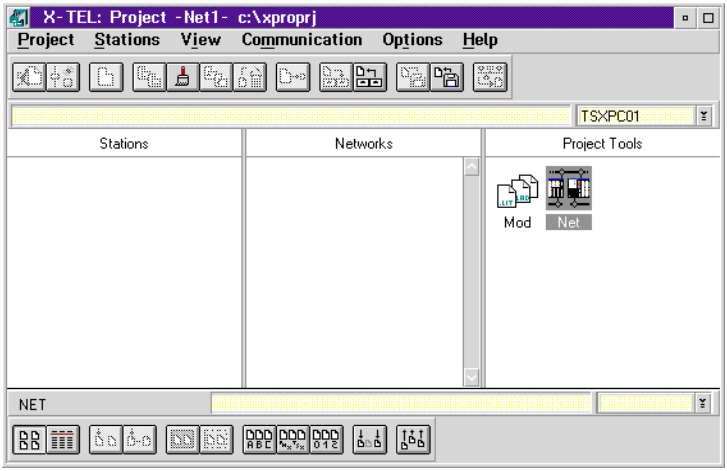
XTEL : Software Workshop

XTEL : Volume

XTEL:Project Stations presentation zone

Since this window is already described in the X-TEL Operating Modes manual, this manual only describes how to name a station and define its type.

Primary window



As no stations have been created, the Stations zone is blank.

3.2-2 Defining Station Type and Name

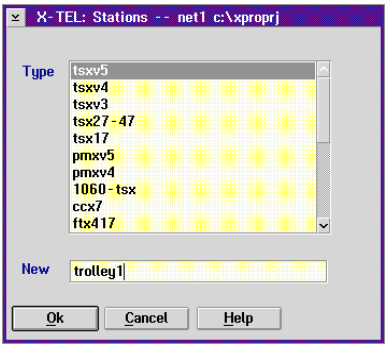
For each station, its type and name is defined from the Stations presentation zone. Select <Stations> on the menu bar and then <Create> in the associated sub-menu. Under the Type heading, the different types of station available in the X-TEL Software Workshop are displayed.
Select a type of station from the list. Only TSX and PMX 67/87/107 V4.4 or higher stations can be declared as bridges.

The station name is entered in the dialog box under the New heading. The station name is a string of up to 8 alphanumeric characters.

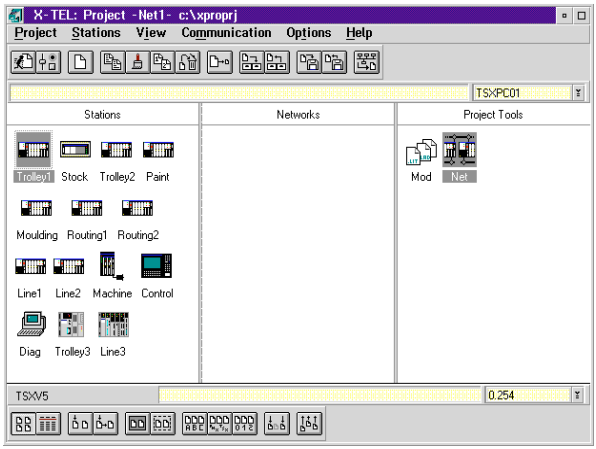
OK Creates the station.

Cancel Cancels the operation and returns the user to the primary window.

Example : Creating the TSX V4 station called Trolley1 :



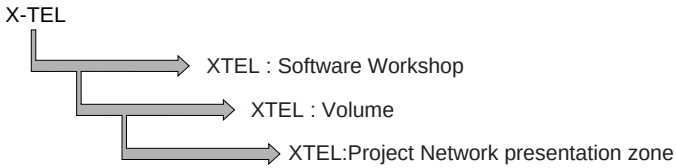
Repeat this operation for all the stations to be created in the network architecture example shown in section 3.1-2. Once all the stations have been created, the Stations window displays the icons and names of each of the stations present :



3.3 Defining Networks

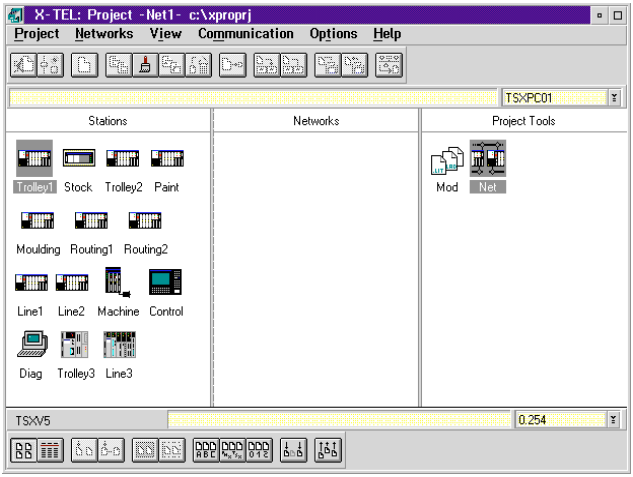
3.3-1 Accessing the function

Networks are defined from the Networks presentation zone in the XTEL:Project main window.



This zone is only displayed if PL7-NET is already installed.

Primary window



As no networks have been created yet, the Networks zone is still blank.

3.3-2 Defining the Network Type and Name

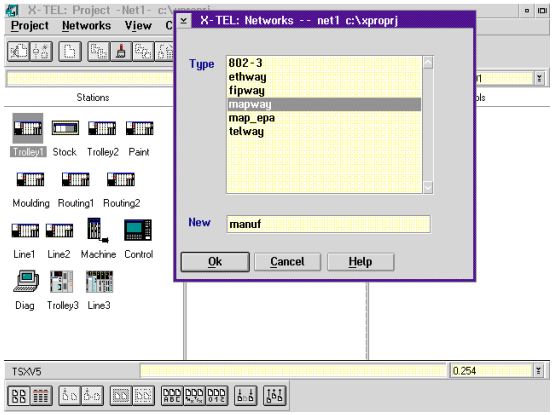
The type and name of each network is defined in the Networks presentation zone. Select <Networks> on the menu bar and then <Create> in the associated sub-menu. The Type field in this window lets the user select from the types of network available in the X-TEL workshop (802-3, ETHWAY, FIPWAY, MAPWAY or TELWAY).

Select a type of network from the list, then enter the network name in the New entry field.

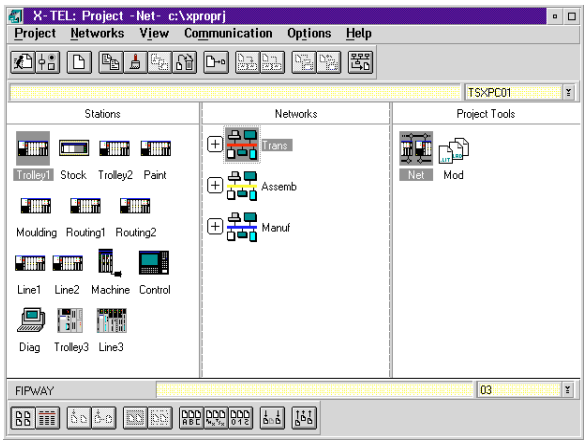
OK Creates the new network.

Cancel Cancels the operation and returns the user to the primary window.

Example : Creating the MAPWAY network called Manuf :



Repeat this sequence for all other networks to be created in the architecture.
In the architecture example shown in section 3.1-2, once all of the stations and networks have been created, the following screen is displayed :

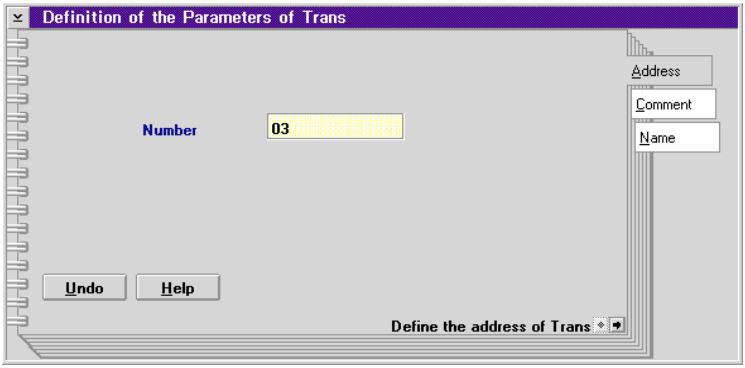


3.3-3 Defining the Network Number

The network number is assigned once the network is created (type and name).

Accessing the Function

The network number is defined from the Network presentation zone in the XTEL:Project window.
Click once (right mouse button) on the icon of a network to select it. Select <Configure parameters> in the menu or select the icon and press the F4 key on the keyboard, enter the address, then close the window via the system menu or Alt F4 and confirm the modifications made.



Address Assigns the network number.

Description Enables a comment to be entered.

Name Enables a the network name to be modified.

Important

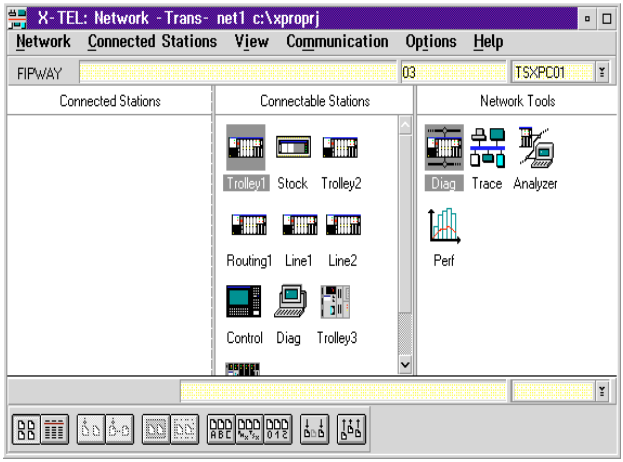
In a multinetwork architecture, network number 0 is not allowed.

3.4 Connecting Stations to Each Network

3.4-1 Accessing the function

Stations are connected to networks from the XTEL: Networks window.

Double click on the icon of the network where the connections are to be made. The following screen then appears :



It consists of three zones :

- Connectables, which gives access to the selection of connectable stations,
- Connections, which shows stations connected to the network,
- Network Tools, which displays all the network tools available to the user.

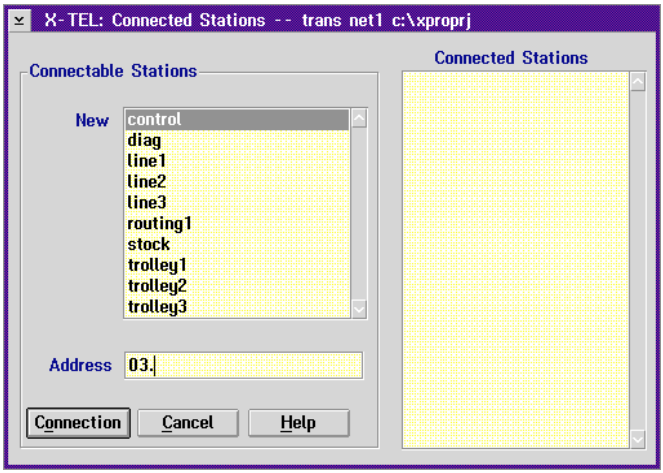
3.4-2 Selecting Connectable Stations

From the Connections menu, select the Create function :

Screen description

The screen is split into two parts :

- "Connectable Stations", displays the names of the stations that can be connected to the selected network,
- "Connected Stations", displays a list of stations that are already connected to the selected network.



Selecting a station and its network address

A station is selected by clicking on its name. The network address of the selected station is entered in the Address field. The network number is entered first followed by the station address.

Example :

Connecting the stations defined in the example of architecture defined in section 3.1-2, to the Trans network (network number 03).

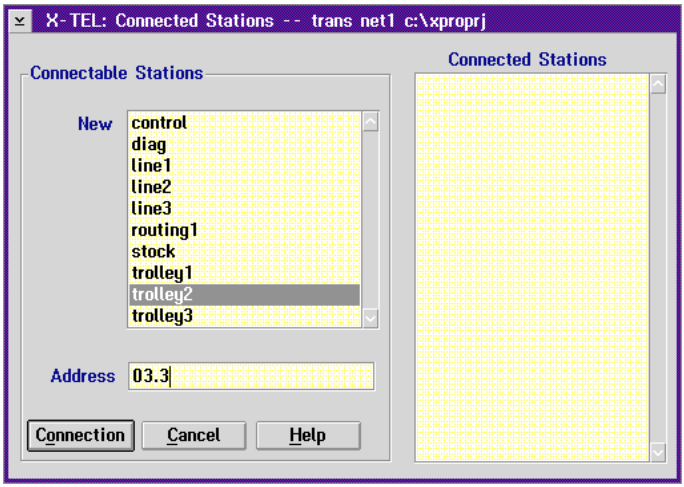
The stations to connect to this network are Routing1 (address 01), Trolley1 (address 02), Trolley2 (address 03) and Stock (address 04).

In the Connections menu :

Delete Disconnects the selected station from the network.

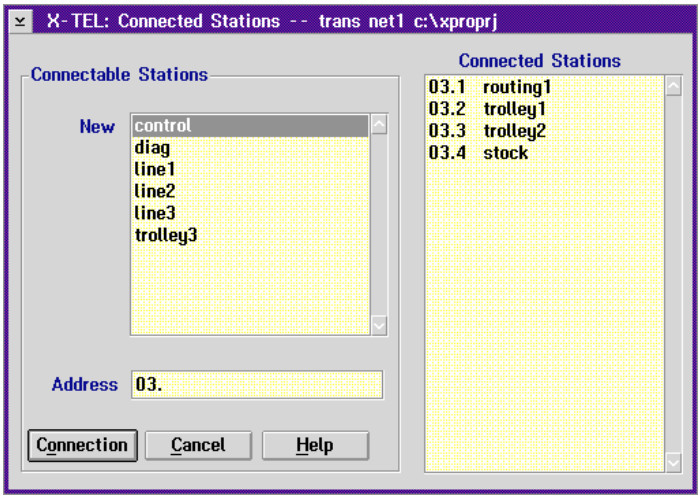
Modify Allows the address of the selected station to be modified.

After selecting the station Trolley2 and entering its network address, the following screen is displayed :



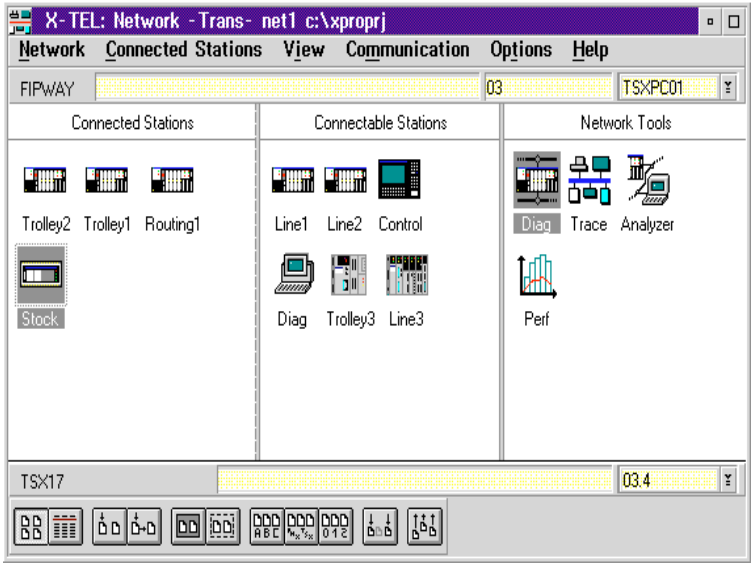
Connection Validates connection of the station Trolley2.

Repeat the procedure for the other three stations. Once all stations are defined, the following screen is displayed :

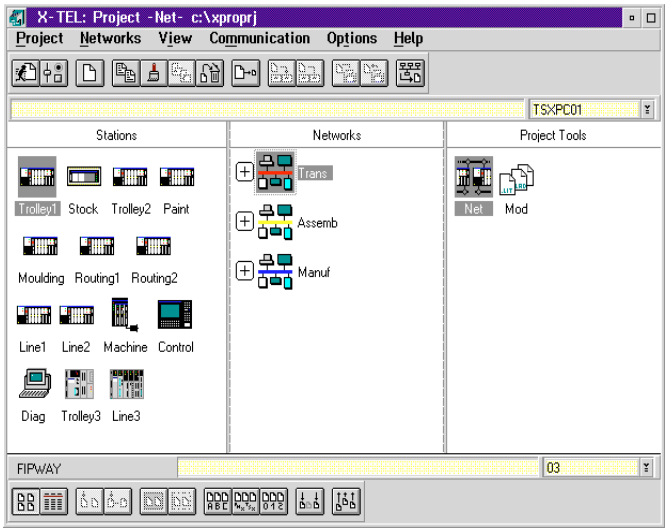


Exit Returns to the XTEL: Network window.

The Connections zone will then display the icons of the stations connected to the Trans network :

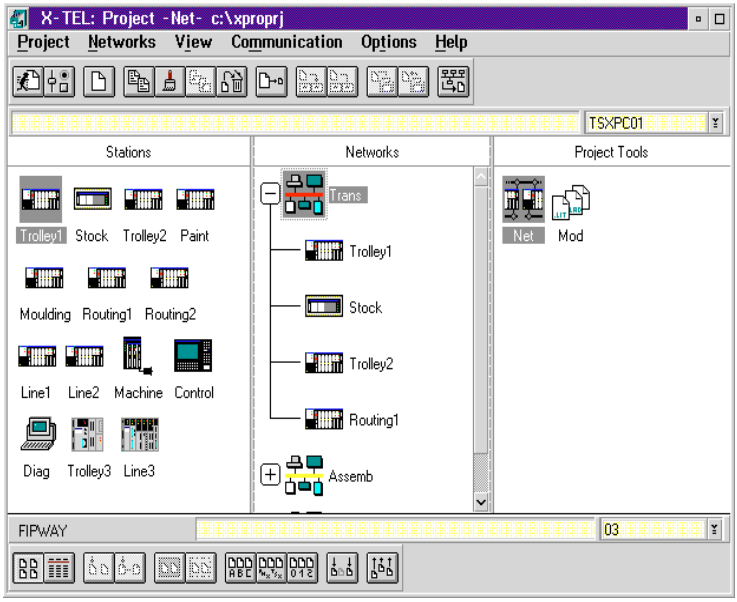


The XTEL: Project window is then :



The "+" sign to the left of the network icon means that there are stations connected to this network.

By clicking once on the "+" sign, the stations connected to the Trans network are displayed in the Networks presentation zone which now looks like this :



By clicking once on the "-" sign, the Trans network icon returns to its original form.

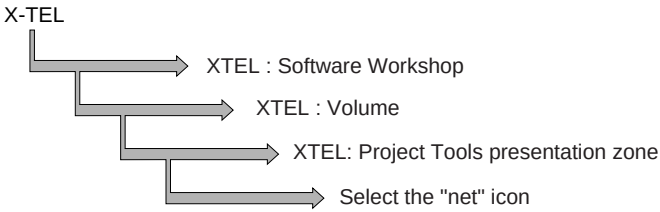
Comment :

> A station can be connected by dragging its icon onto the icon of the selected network. The connection dialog box will then open.
> A station icon can also be dragged from the "Connectables" zone to the "Connected" zone of an XTEL: Network window.

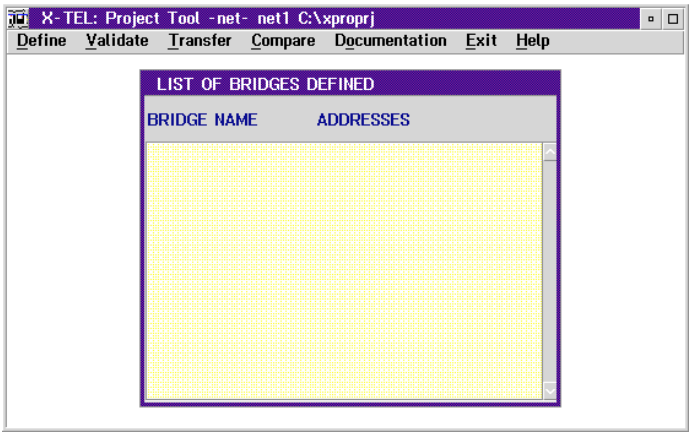
4.1 General

4.1-1 Accessing PL7-NET

PL7-NET is launched from the "Project Tools" window.



Primary window



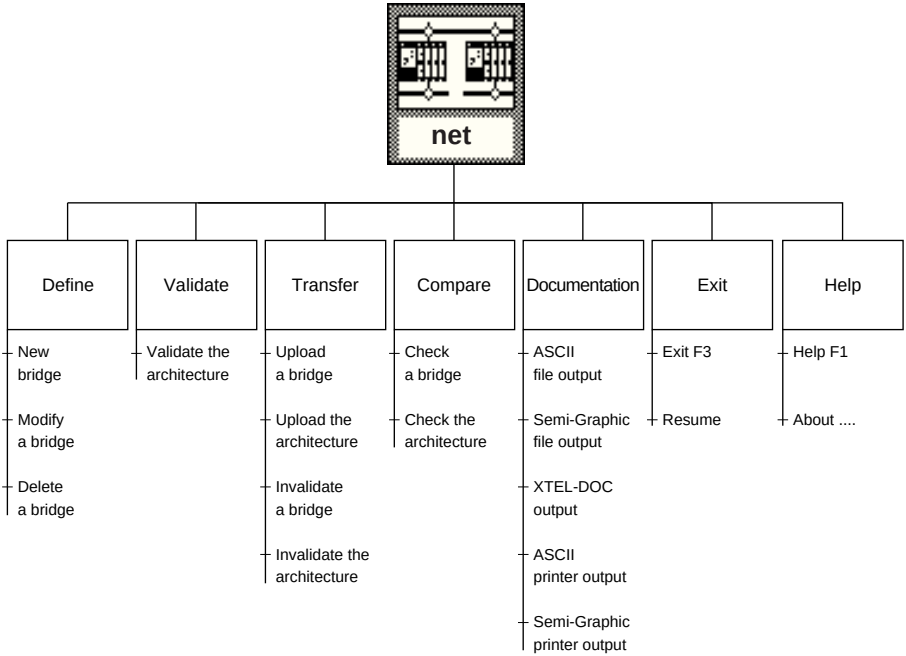
This window displays the list of defined bridges for the selected project. If no bridges are defined, the screen is blank.

The user can select the function to be performed from the five pulldown menus accessible from the selection bar.

Important

PL7-NET can only be accessed by users with Program min. or Program Max. access rights. For further information on access levels, refer to the X-TEL Software Workshop manual.

4.1-2 Diagram



Creation, modification or deletion of bridges is only effective after validation by the Validate the Architecture action in the VALIDATE menu.

4.2 Using PL7-NET

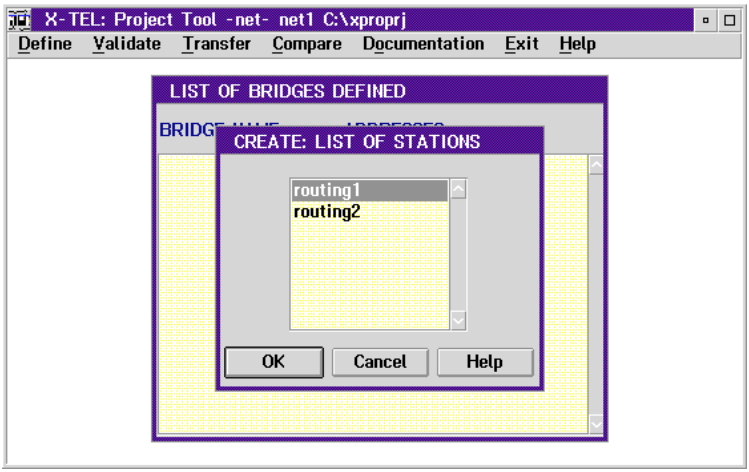
4.2-1 Define Menu

This menu lets the user create, modify and delete bridge stations.

New bridge function

This function is used to generate bridge stations from the list of stations connected to more than one network.

By clicking on this function, a list of stations able to become bridge stations is displayed. In the network architecture example described in section 3.1-2 the display would be :



Once a station is selected to become a bridge :

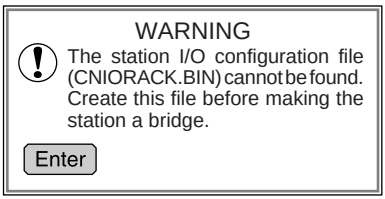
OK Calls up a screen where the user can connect a network to each module in the selected station.

Cancel Cancels the action and returns the user to the PL7-NET primary window.

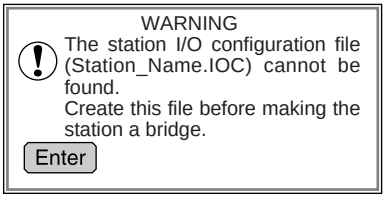
PL7-NET controls the creation of a bridge to the I/O description file for the selected station (station .IOC file generated by PL7-3 for V4 level stations or cniorack.BIN file generated by the "Conf" tool for V5 level stations).

If these files do not exist, an error message is generated :

For a V5 level PLC



For a V4 level PLC

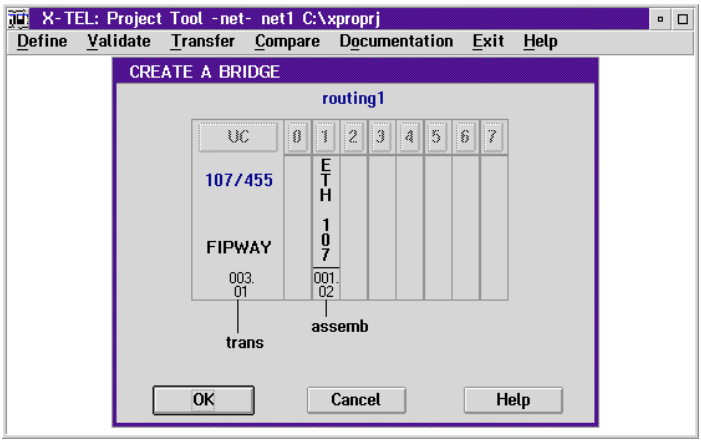


If these files are present, PL7-NET will, wherever possible, ensure consistency between the I/O description and the station network connections as defined previously in X-TEL (see section 3).

The modules for which network connection was performed automatically are shown grayed out (no action can be performed on them). In the architecture example used, the configuration described in the cniorack.BIN file for bridge station Routing1 comprises :

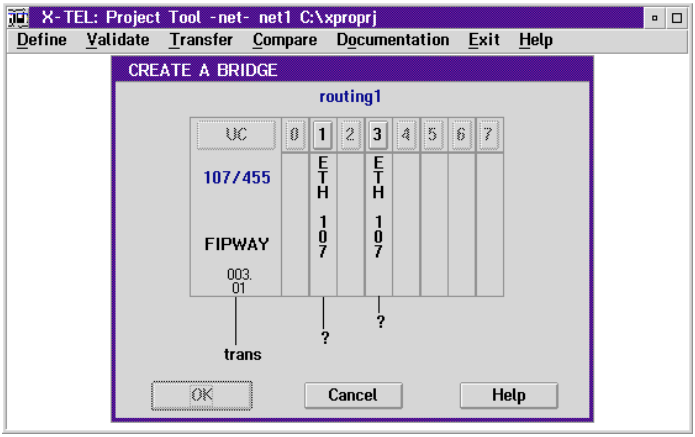
- FIPWAY module integrated into the PLC processor,
- TSX ETH 107 module in module 1.

The resulting screen is displayed below :

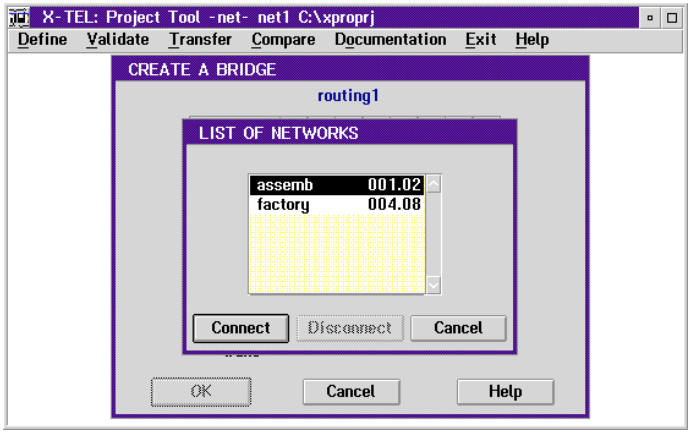


Note that PL7-NET automatically connected the Trans network to the processor with the FIPWAY link and the Assemb. network to module 1.

When the correspondence cannot be ensured in only one way, a question mark is displayed to warn the user that action is required. If for example, a new ETHWAY network (network 4 called Factory) is added along with a TSX ETH 107 module in slot 3 of station Routing1, the following screen is displayed :



PL7-NET leaves the user the option of connecting this module to either of the two ETHWAY networks present (Assemb or Factory). To do this, simply click on the module numbers that are not grayed out to display the list of networks that can be connected to these modules :



Connect Connects the network to the selected module, the network name and its address are displayed under the module.

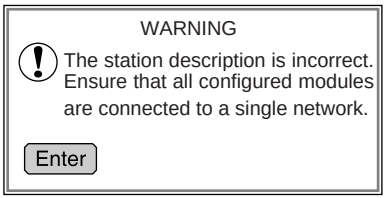
Disconnect Disconnects the network, its address is deleted and a question mark is displayed in place of the network name.

Cancel Closes the list of networks display and makes no changes to the connections.

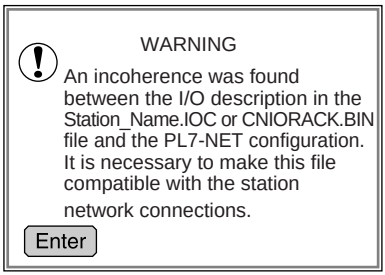
OK This option is given once all the modules are connected to a network. A check is performed to ensure that each connection made is different.

Cancel Cancels any entries made and returns the user to the primary window.

If a network is connected to at least two modules, a message indicates the error :

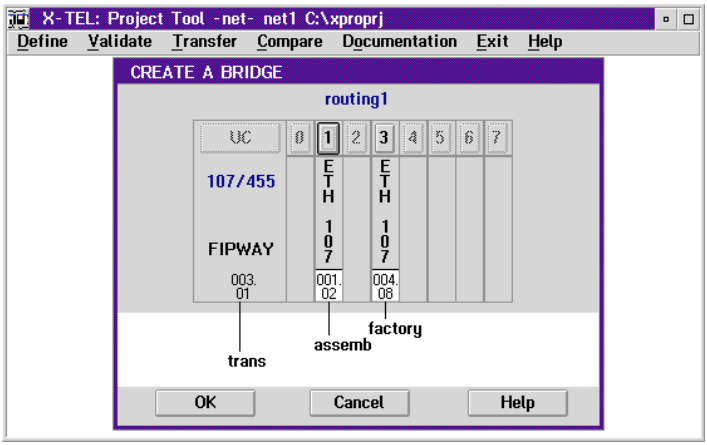


If one or more errors are encountered during the coherence test, a message warns the user. The Create a Bridge window is not displayed and the affected station cannot be designated a bridge until the incoherence is resolved.

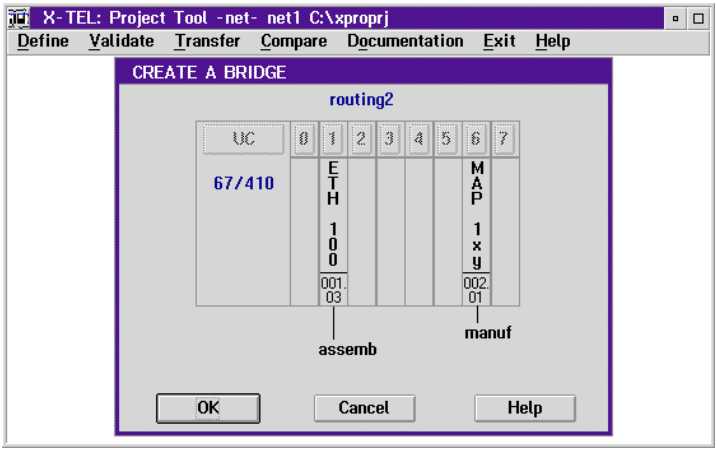


Incoherence example : A station is connected to an 802.3 network and no TSX ETH 200 module is defined in the I/O configuration file.

If all the operations performed are correct, the following screen is displayed :



For the example used, the Create a Bridge screen that is specific to the Routing2 station is shown below :



Modify a bridge function

This function lets the user modify the network connections of modules whose number is not grayed out. The connection and confirm procedure is the same as that described previously.

Delete a bridge function

This function lets the user delete the selected bridge.

OK Confirms the delete action and returns the user to the PL7-NET primary window.

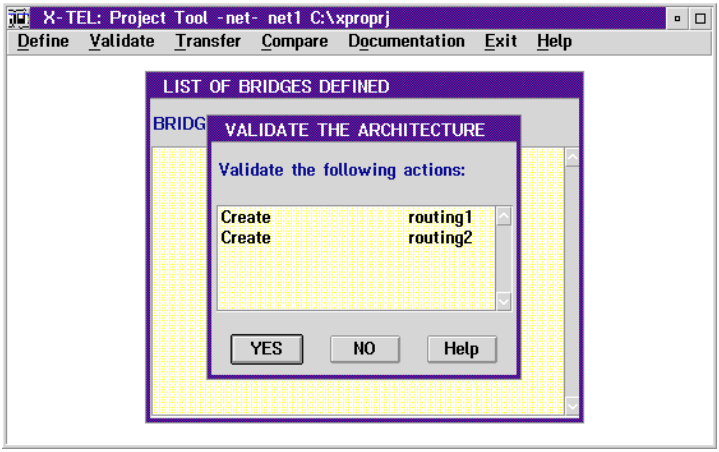
Cancel Cancels the delete action and returns the user to the PL7-NET primary window.

4.2-2 Validate Menu

This function validates actions performed from the Define menu.

Reminder : All Create, Modify or Delete actions must be validated using this menu before they are accepted in the architecture.

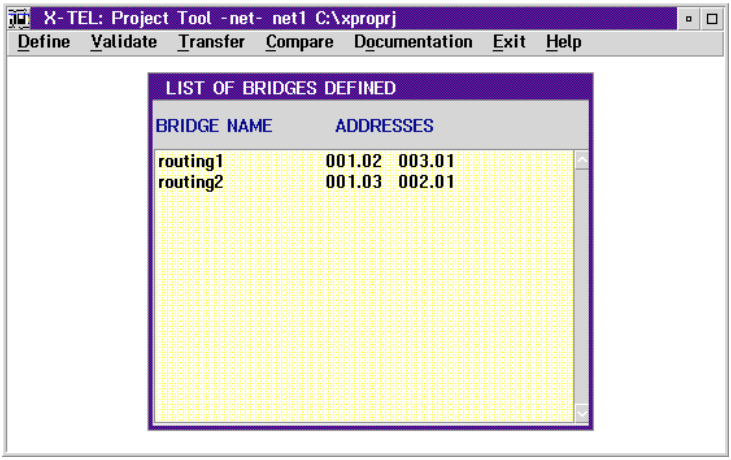
The new screen displayed shows a list of operations performed :



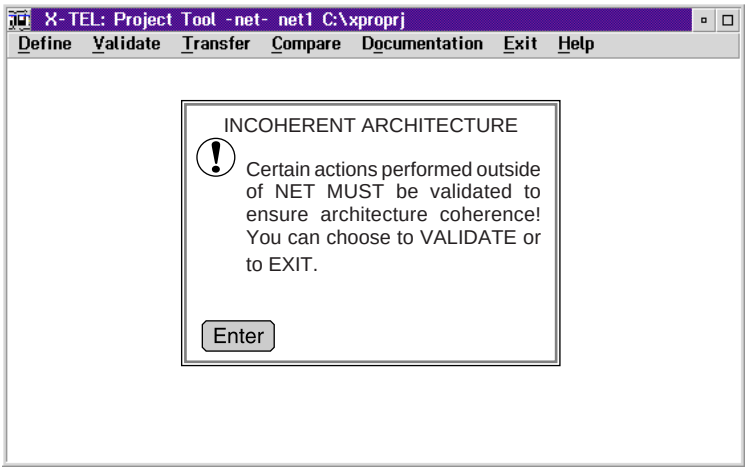
YES Validates the operations performed.

NO Cancels the operations performed and makes no changes to the current network architecture.

Once the actions are validated, the "List of Defined Bridges" screen is displayed.



In some cases, PL7-NET will request that the user validate the network architecture as soon as PL7-NET is launched. This occurs if actions that affect the coherence of the network architecture in the X-TEL environment have been performed since the end of the last PL7-NET session. In this case, the program requests user validation to restore architecture coherence.



If validation is requested by the user (Validate the Architecture action in the Validate menu), the previously stored configuration is replaced by the current configuration as read by PL7-NET in the X-TEL Software Workshop.

When the user quits PL7-NET, (Exit action in the Exit menu), the previous configuration is restored.

4.2-3 Transfer Menu

To perform actions from this menu, on-line connection with the network architecture is required.

Before starting the transfer of a bridge or of the network architecture, check that the bridge PLCs can be accessed from the terminal and that they have already been configured using the "mem" and "transfer" station tools in the X-TEL Software Workshop for a V4 level PLC or using the "conf" and "transfer" station tools for a V5 level PLC (creation of an .APP file that contains the bridge function).

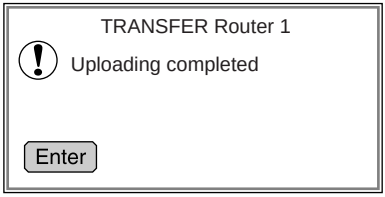
This menu lets the user access upload and download functions and the ability to invalidate the configuration of a bridge or of all bridges in the network architecture.

Upload a bridge function

This function is used to upload a single bridge selected from the list of bridges in the network architecture. Once the bridge to upload is selected :

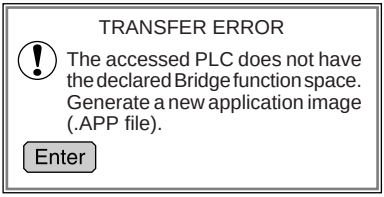
Cancel Cancels uploading and returns the user to the PL7-NET primary window.

Ok Starts uploading of the selected bridge. When uploading is completed, the following message is displayed :



Enter Returns the user to the primary window of the program.

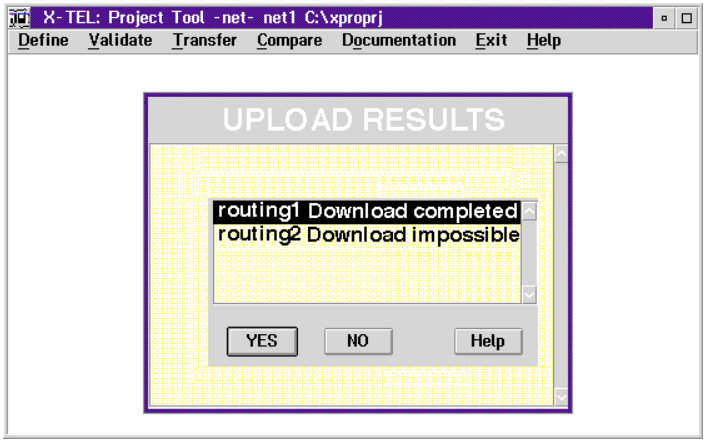
If the PLC to upload to does not have a declared bridge function field, the following message is displayed :



The user must first generate the bridge field as described in section 3.1-1.

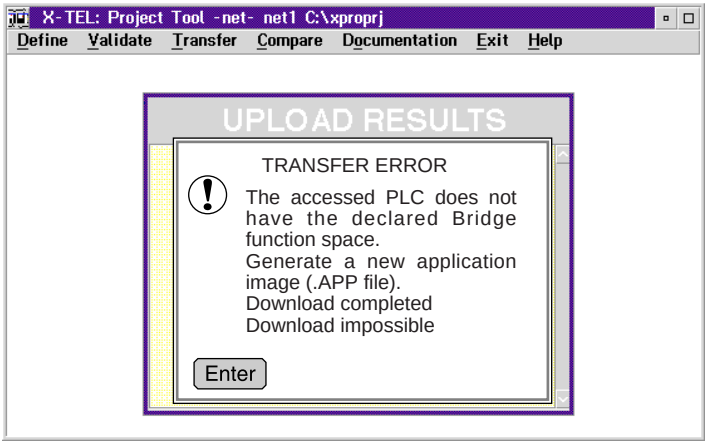
Upload architecture function

This action uploads all of the bridges in the architecture. Messages are displayed giving the results of each upload action performed (they are performed automatically, one after another). Once the procedure is complete, the "Upload Results" menu is displayed, summarizing the results achieved. In the architecture example shown previously, the following screen is displayed :



Cancel Returns the user to the PL7-NET primary window.

Zoom When a problem is encountered when uploading a bridge, this button can be selected to display a screen that lists the cause of failure when transferring to the selected station.



If a problem occurs while uploading one of the bridges in the architecture, uploading of the other bridges is still completed normally (if the bridge stations are accessible).

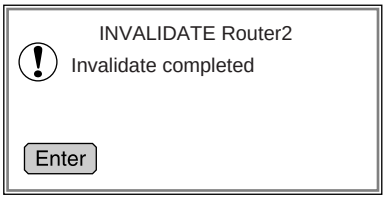
Reminder : When uploading the network architecture, bridge PLCs must be crossed, as seen from the terminal, from left to right (from the module with the lowest hardware address in the rack to the one with the highest hardware address in the rack).

Invalidation of a bridge function

This function cancels the configuration of a single bridge selected from the list of bridges in the architecture. Once the bridge to invalidate is selected,

Cancel Cancels invalidation and returns the user to the PL7-NET primary window.

OK Invalidates the selected bridge. An invalidated bridge becomes a "multiple module" PLC and continues to operate without dialog between networks. Once invalidation is complete, the following dialog box is displayed :



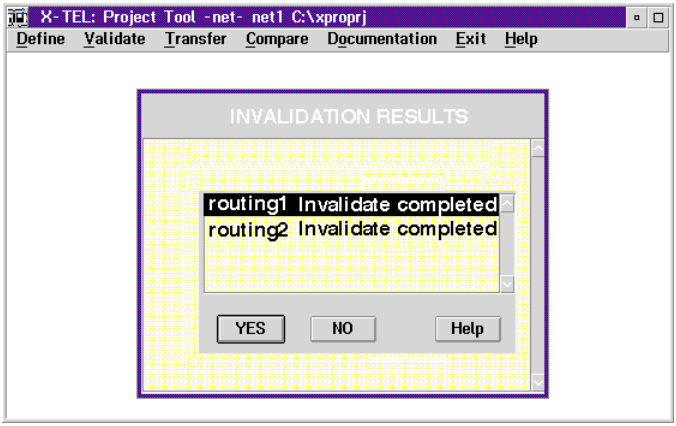
Enter Returns the user to the PL7-NET primary window.

Invalidation of the architecture function

This function cancels the configurations of all of the bridges in the architecture. Messages show the result of each invalidation. The invalidations are performed automatically, one after the other.

Cancel Cancels invalidation and returns the user to the PL7-NET primary window.

OK Invalidates the architecture. Once the procedure is complete, the "Invalidation Results" menu is displayed, summarizing the results achieved and displaying error messages if invalidation could not be completed. In the architecture example shown previously, the following screen will be displayed :



Cancel Returns the user to the PL7-NET primary window.

Zoom When a problem is encountered, this button can be selected to display a screen that gives the reasons why the selected station could not be invalidated.

Reminder : When invalidating the architecture, bridge PLCs must be crossed, as seen from the terminal, from left to right (from the module with the lowest hardware address in the rack to the one with the highest hardware address in the rack).

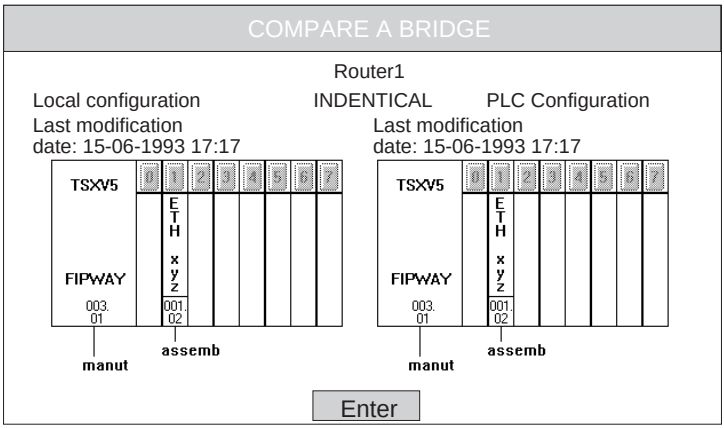
4.2-4 Compare Menu

This function compares the configuration of a bridge or of the architecture in the terminal memory with the configuration currently loaded in the specified bridge or in the network architecture.

Check a bridge function

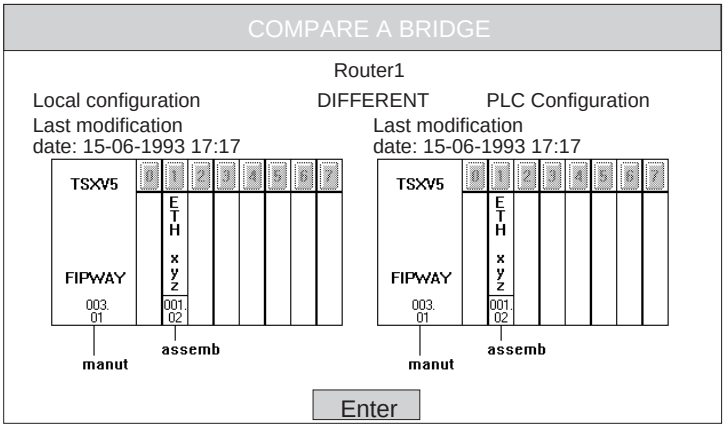
This function checks a single bridge selected from the list of bridges in the architecture. When the check is completed, there are two possible results :

- The configurations in the terminal and the bridge are identical :



Enter Returns the user to the PL7-NET primary window.

- The configurations in the terminal and the bridge are different :



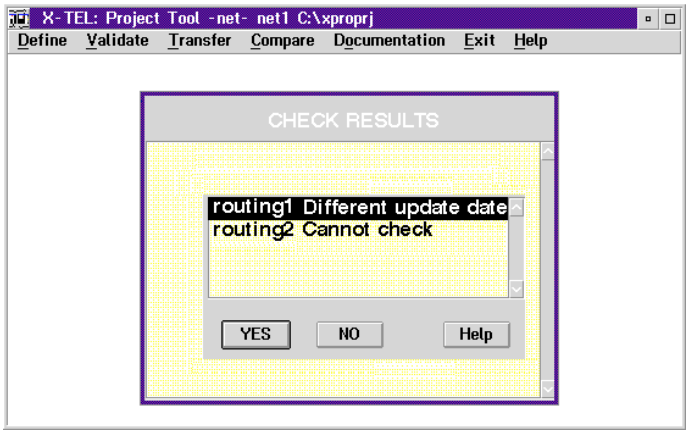
The configurations can be slightly different, as shown in the example (where the update dates are different, etc.) or completely different (different modules, different slots, etc.).

Depending on the case and the user's requirements, it will be necessary to transfer the affected bridge so that their configurations become identical.

Checking the architecture function

This function checks all of the bridges in the architecture. Messages are displayed with the results of each check performed. These are performed automatically, one after another. The "Check Results" screen summarizes the results achieved and displays details of the configurations. In the same way as when checking a bridge, there are two possible cases,

- The configurations of the terminal and the bridge are identical,
- The configurations of the terminal and the bridge are different (as in the example shown below) **:**



Zoom Displays the details of the two configurations for the selected station. The screen displayed is the same as the one displayed by the Check a Bridge function.

Cancel Returns the user to the PL7-NET primary window.

4.2-5 Documentation Menu

This function lets the user document single or multinetwork architectures. The documentation generated forms a part of the general application file.

Documentation comprises :

- A title page that is the header of the documentation file where general information on the application is entered.
- Description of each network in the architecture :
  - Network name,
  - Network number,
  - Network type,
  - Number of stations connected,
  - List of stations connected.
- Description of each bridge in the architecture :
  - Bridge name,
  - Bridge type,
  - Primary bridge address,
  - Number of connections and parameters assigned to the connections.
- A footer across the bottom of each page, comprising :
  - Application name,
  - Section name,
  - Documentation creation date,
  - Page numbering,
  - Three fields available to the user.

ASCII file output function

This function outputs the document in ASCII format for printing from the file :
D :\XPROPRJ\Project_Name\NET\ARCHITEC.DOC

XTEL-DOC or SEMI-GRAPHIC output file function

This function outputs the document in extended ASCII format for printing from the file :
D:\XPROPRJ\Project_Name\NET\ARCHITEC.DOC

ASCII printer function

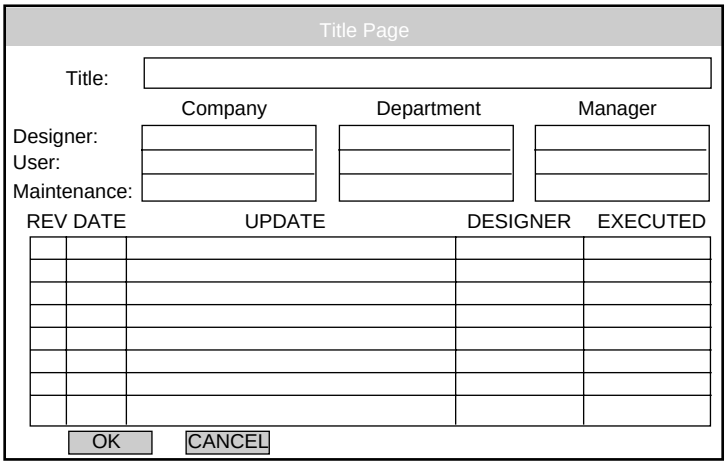
This function prints the document to an ASCII printer.

SEMI-GRAPHIC printer function

This function prints the document to a semi-graphic printer.

Title page entry

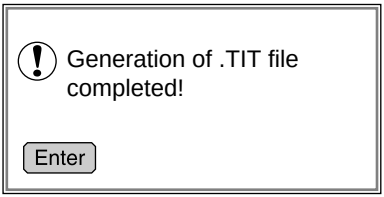
Title page data is entered after selecting the type of document output required (printer print-out or output to file). When Documentation is selected for the first time, the title page is displayed blank :



Once the various fields are filled-in,

Cancel Cancels the entries made and calls-up the footer entry screen.

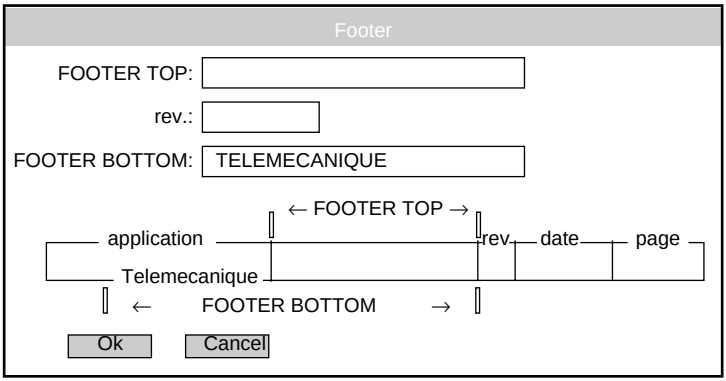
OK Saves the data entered to the GARDE.TIT file. If this file already exists, the user is asked to confirm the replacement action before the file is overwritten. The following screen is displayed once the title page data has been saved :



Enter Lets the user access the footer entry screen.

Footer entry

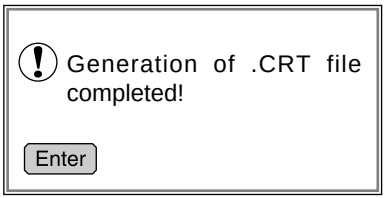
The footer data is entered after the user validates (or exits) the title page. When Documentation is selected for the first time, the footer screen is blank :



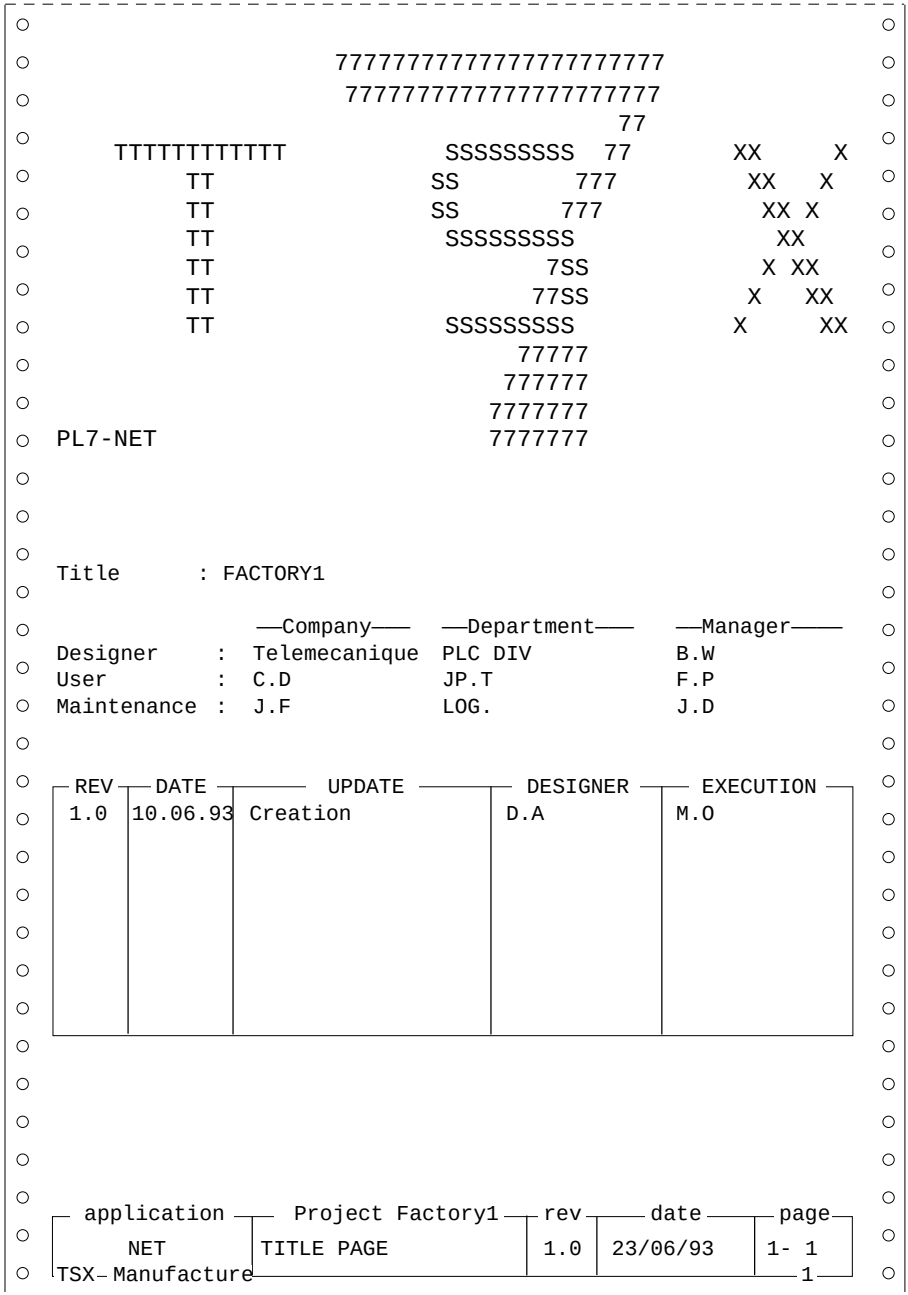
After filling in the two available fields (top and bottom of the footer) :

Cancel Cancels the modifications made and returns the user to the PL7-NET primary window.

OK Saves the data entered to the CARTOUCH.CRT file. If this file already exists, the user is asked to confirm the replacement action before the file is overwritten. The following screen is displayed once footer data is stored :



Enter Returns the user to the PL7-NET primary window.


PL7-NET
Title : FACTORY1
Company
Department
Manager
Designer : Telemecanique PLC DIV B.W
User : C.D JP.T F.P
Maintenance : J.F LOG. J.D
REV
DATE
UPDATE
DESIGNER
EXECUTION
1.0
10.06.93
Creation
D.A
M.O
application
Project Factory1
rev
date
page
NET
TSX Manufacture
TITLE PAGE
1.0
23/06/93
1- 1

```
Network                          :   assemb
Network number                   :   001
Type of network                  :   ETHWAY
Number of connected stations     :   4
List of connected stations       :

   Name       Address      Type

   routing1   001.02       TSXV5
   routing2   001.03       TSXV4
   line1      001.04       TSXV5
   line2      001.05       TSXV5
```

Application	Project Factory1	rev	date	page
NET TSX Manufacture	NETWORK	1.0	23/06/93	2- 1 2

```
Network                          :   Assemb
Network number                   :   002
Type of network                  :   MAPWAY
Number of stations connected     :   4
List of connected stations       :

   Name       Address      Type

   routing2   002.01       TSXV4
   paint      002.02       TSXV4
   moulding   002.03       TSXV4
   machine    002.04       NUM1060
```

Application	Project Factory1	rev	date	page
NET TSX- Manufacture	NETWORK	1.0	23/06/93	2- 2 3

Network : trans
Network number : 003
Type of network : FIPWAY
Number of stations connected : 4
List of stations connected :

Name	Address	Type
trolley1	003.02	TSXV5
routing1	003.01	TSXV5
stock	003.04	TSX17
trolley2	003.03	TSXV5

```
Bridge                              :   routing1
Type of bridge                      :   TSXV5
Primary address                     :   001.02
Number of connections               :   2

Connection Network Address Type of connection Rack/Module AddressStatus
    0        001.02        ETHWAY             01
    1        003.01        FIPWAY             FF




Bridge                              :   routing2
Type of bridge                      :   TSXV4
Primary address                     :   001.03
Number of connections               :   2

Connection Network Address Type of connection Rack/Module AddressStatus
    0        001.03        ETHWAY             01
    1        002.01        MAPWAY             06
```

Application	Project Factory1	rev	date	page
NET	BRIDGE	1.0	23/06/93	3- 1
TSX- Manufacture				5

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