1 About this Document

Purpose

This document provides instructions, procedures and information for the operation of the **Network Element Manager UCST R5C**. Since the UCST serves all UMUX systems and DSL equipment, this document provides only the description of the generic application and functions of the UCST with the various NEs; details are provided with the corresponding user guides.

For information on the UCST installation and commissioning, refer to [402].

The UCST is the basic management tool for the commissioning, operation and performance monitoring of the **UMUX Multiservice Access Systems** and the **DSL systems** family with **xDSL Line Terminals** and systems for the transmission on copper pairs and optical fibres.

The UCST can locally directly connect to the NE (from the local PC/computer) or remotely via modem or a dedicated management communication network. The UCST is required for the initial commissioning to establish the basic configuration of the NE, including the part of the NE configuration that allows the NE suitable communication with a management network.

The new **UCST R5C**

- supports the UMUX Multiservice Access products as well as the legacy multiplexers of the UMUX platform (UMUX 1100/1300) and the DSL systems including the desktop units.
- supports the new UMUX 900 network element.
- supports the new R4 control units.
  The new R4 control units support the
  - UMUX 900 (COBUX only)
  - SW download and inventory for remote units.
- is released for operation with the following operating systems:
  - Windows® 98
  - Windows® ME
  - Windows® XP
  - Windows® 2000
  - Windows® NT
- uses an improved and unified concept for the **Instance Naming**. Since the UCST uses the same Instance Naming as the UNEM, the names of

the instances remain consistent between UCST and UNEM and allow the UNEM to implement the Networking Package.

- supports UCST polling functions. The UCST polling functions allow the UCST to automatically monitor the managed NEs for alarms. The alarms are collected and available for inspection via a dedicated UCST alarm list. The UCST polling functions are compatible with the corresponding UNEM functions.
- supports SW download and inventory function for the new remote units (i.e. for the MUSIC 200 together with the LOMI8 and SLID1).

After the initial commissioning of NEs you can use the UCST for the management and performance control of the NEs in small networks. The **Element Management System UNEM** offers additional functions, such as

- **Network Management**
- substantially more **performance**
- **automatic polling** of the NEs
- options for **value adding functionalities**

The UNEM is required to manage and control the performance of medium to large networks.

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Getting Started with the UCST 2

Operation modes UCST

With respect to management access, you can operate the UCST in one of three generic modes:

- **Off Lin**e (no management access)
- **Local Access**
- **Remote Access**

Off Line

You use the UCST in the **Off Line** mode to create or modify configurations for NEs without a live management access to the NEs. Typically, you will download the configurations created off line later to the NEs.

The NE configurations created off line are saved as configuration files to the memory of your PC/computer. If you store the configuration files additionally on exchangeable memory devices such as floppy diskettes, PCMCIA cards etc. you can load the configuration files to some other PC/computer for local download or modification.

The Off Line mode is recommended to prepare the initial commissioning of the UMUX Access Systems with various units (defining their position or slot numbers in the chassis) and to set the initial parameters of operation for the units.

You can use the Off Line mode to modify existing configurations for later partial download. It is however absolutely necessary that the Customer Id and Configuration Id are matching. This is only the case if the configuration file processed stand alone is directly derived from the configuration of the corresponding NE.

Local Access

You use the UCST in the **Local Access** mode to configure the NE, normally for commissioning. The Local Access is characterised by a point to point connection between the EM and the NE.

You load the configuration for the NE from the memory of your local PC/computer (e.g. the result of an Off Line session) to the NE or you directly create the configuration during the commissioning and progressively download it. You use the Local Access normally, when local intervention is required.

For Local Access, the EM and the NE are normally at the same physical place. It is however possible to establish a point to point connection to the NE via modems or similar devices (e.g. for dial-up or leased lines for the F-interface, LANs for the Q_X-interface).

This type of access is not a generic remote management access as defined in the paragraphs following!

You may use Local Access for

- initial commissioning
- diagnostics (such as setting of loops)
- testing of configurations etc.
- down loading of configuration data (full and partial)
- interactive access to alarm information for the localisation of failures.

Remote Access

You use the Remote Access mode for the supervision of the operation and the maintenance of the NEs. The communication structure characterises the Remote Access. The EOC and ECC (UMUX 1500/1200/900 only) provide communication structures which allow you to connect multiple NEs for inband management accesses.

While the main use of the remote management access is the supervision of operation, you can modify configurations for maintenance purposes as long as there is no need for immediate local intervention. The remote management access also provides software upgrades for the new units with SW download for the unit SW.

Full configuration download for NEs via the ECC and EOC (for applications with legacy UMUX) is dangerous for the management communication!

Errors in the set-up of the new configuration can destroy the integrity of the management communication channel in such a way that the remote access gets lost. If this happens a local intervention for local system access will be required.

Since a point to point access via a modem is considered as a (generic) local access (refer to paragraphs above), a full download of the configuration is possible for this type of remote access.

UCST basics

Starting UCST and User Class identification

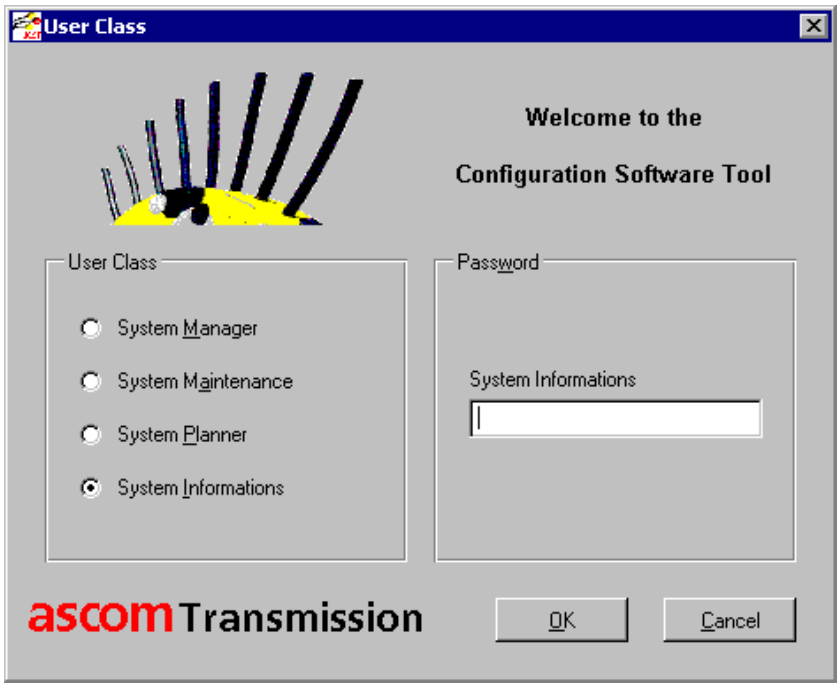
You can start the UCST SW on your PC/computer by

- Double clicking the UCST icon on your desktop (if such a shortcut has been established).
- Starting UCST in the corresponding program group (via the [START] button → Programs etc.)
- Double clicking the program ucst.exe in the directory with the UCST program files.
- Clicking the [START] button and selecting the RUN dialogue. Starting the program ucst.exe in the directory with the UCST program files by use of the browser function.

The UCST provides control of the access to the UCST functions (and the NEs) and allows you to assign rights for four different types of management functions. The UCST provides four User Classes to control the rights.

Upon starting UCST, you have to specify a User Class for your session. The User Classes are password protected. Once in the session, you can change the User Class at any time, provided you can specify the corresponding password:

Figure 2-1: **User Class** and authorisation dialogue



In the field	User Class	
tag	User Class (1 ... 4)	for the appropriate User Class. The default is User Class 4: System Informations.
In the field	Password	

enter	the password	required (if any) for the selected User Class.
Press	[OK]	to continue
	[Cancel]	to quit and close UCST.

Please note that:

- If the User Classes have no passwords assigned, you do not need to specify a password for access; just press [OK].
- If you specify a wrong password, the UCST will produce an error dialogue. You have the choice to either
  - Select a new User Class and specify the corresponding password, or
  - leave UCST with the [Cancel] button.

Select the appropriate system

With the appropriate password, the UCST now shows the start dialogue for the system that was active, when the UCST closed the last session. Since you can manage various types of systems with the UCST and since the UCST is backward compatible to all the equipment and systems of the UMUX and DSL System families, the start dialogue may look differently to the dialogue you expected.

The unified GUI of UCST provides two basic types of start dialogues

- Start dialogue for subrack based equipment (UMUX, DSL Systems)
- Desktop equipment (DSL equipment)

Figure 2-2: Sample dialogue for subrack based equipment e.g. for UMUX, DSL System

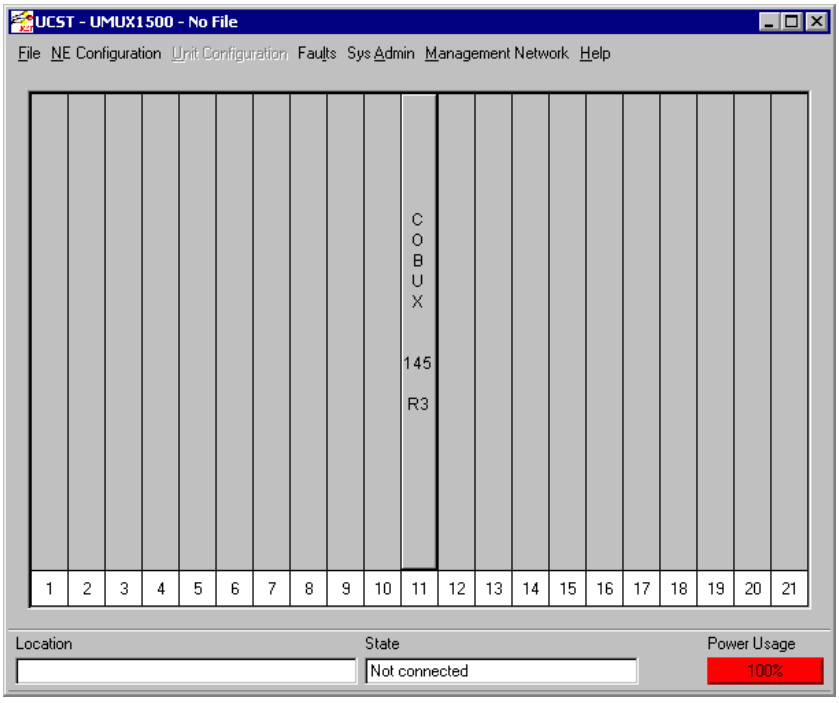
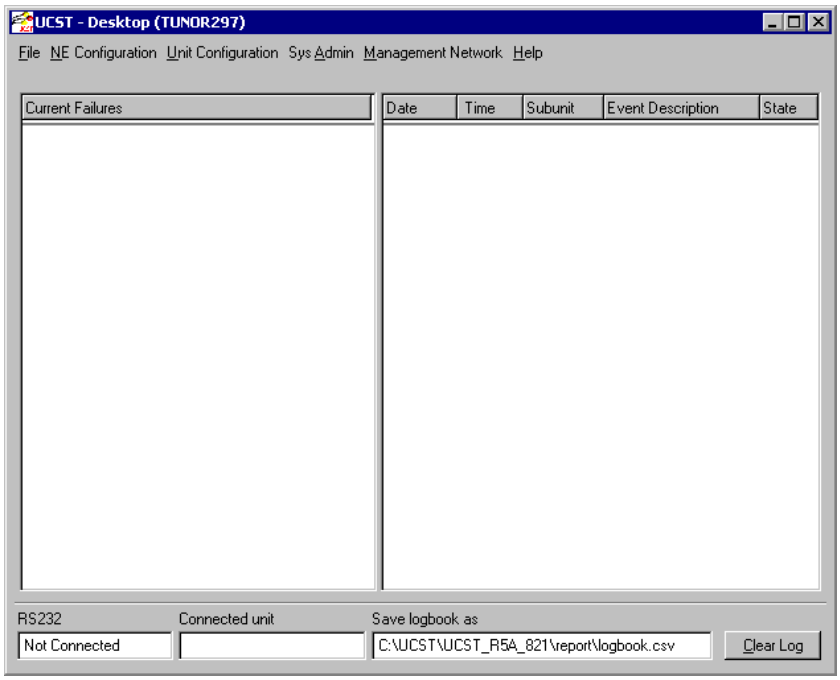


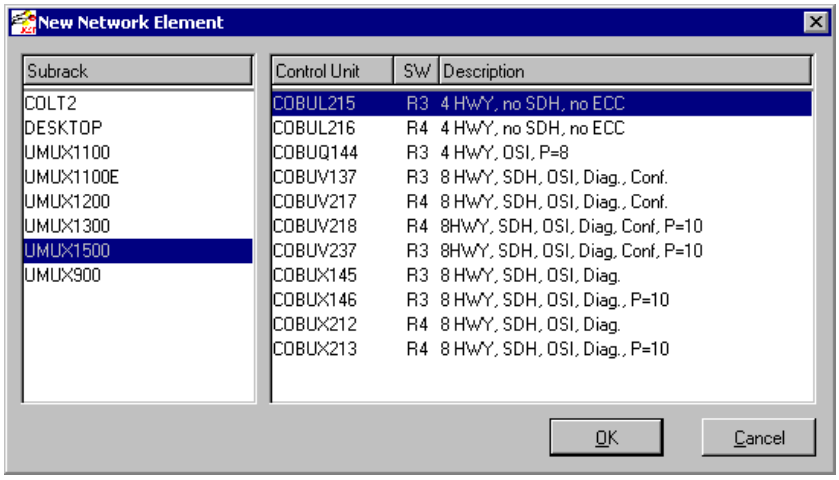
Figure 2-3: Sample dialogue for desktop based equipment e.g. for LECAR, TUNOR



The system's user guide provides detailed descriptions of the start dialogue and the subsequent menus. The following paragraphs show you how to select the appropriate start dialogue. The principles have been standardised and are the same for all systems:

The menu Files → New calls the dialogue for system selection.

Figure 2-4: **New Network Element** sample dialogue with selected subrack UMUX 1500

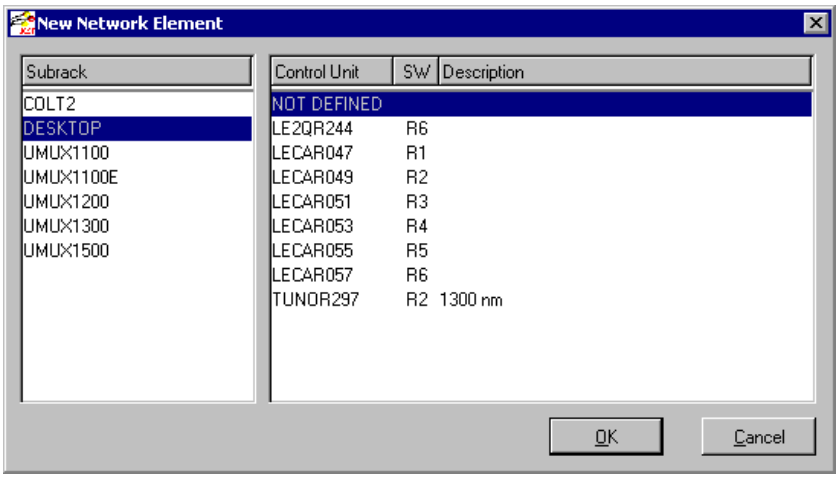


The **Subrack** field defines the basic system. The field is called Subrack since the subrack defines (except for the desktop type) the system. If you select a subrack, the **Control Unit** field provides a number of unit

templates that allow you to specify the control unit (except for the desktop units) for your subrack.

For the **Desktop** subrack type you can specify in the **Control Unit** field the exact type of your desktop unit (refer to figure below).

Figure 2-5: **New Network Element** sample dialogue with selected subrack DESKTOP



If applicable, the **SW** and **Description** fields provide information on the

- unit software or firmware required for the implementation of the selected template (type of desktop unit)
- comparable features provided by each unit and main differences between the control units

To select a new system

select Subrack	from the list as required	
	Control Unit	from the **Control Unit** column as required.
press	[OK]	to confirm and quit
	[Cancel]	to preserve the currently selected system.

For more information, refer to the system's user guides.

Closing the UCST

To close a UCST session, navigate back to the start menu.

Select the menu	Files → Exit	
or tag	the icon [X]	in the header of the main menu to the right.

When closing the EM, the UCST will ask you to save the present configuration. For the procedure and dialogues available to save the configuration refer to the paragraphs on „Save As ..." in the paragraphs on "UCST File Service and Printing".

When closing a session, the UCST memorises the type of system that has been active. The UCST will start the next session with the start dialogue of this system.

Working with UCST

The UCST is based on Microsoft Windows® with its well-known mouse operated pull-down menu and interactive dialogue technology. Although a pointing device (mouse) is highly recommended, it is possible to operate the UCST without one.

Syntax of UCST

By using the icons in the top bar of the start dialogue, the UCST window can be

 Reduced to an icon in the task bar

 Switched between full and partial screen representation

 Closed

You can close any subsequent dialogue with the icon  in the top bar of the dialogue or by using the "soft" buttons provided with the dialogues.

The GUI of the UCST provides features as follows:

- Structured dialogues
- Menus to navigate between dialogues
- Fields that can be selected for text entries
- Selection boxes for
  - [✓] Check box for multiple choice
  - (•) Toggle box with 1 selection among several choices
- Labelled soft buttons
  - [OK]
  - [NEXT]
  - [SET]
  - [CANCEL]
  - etc.
- Standard dialogues of the Windows® operating system for file services
- Standard (Windows®) navigation methods
- Selections not available are shaded grey
- The width of columns in table like dialogues can be adapted (not permanently)
- Graphic view of the subrack with slots/units for fast unit implementation and selection (start menu)
- Permanent status information (start menu)
- Graphic representation of loops in the signal path
- English language for UCST dialogues

Some of the dialogues, mainly the dialogues dedicated to file services, rely on the standard dialogues as provided by the Windows® 98/ME or NT/2000 operating system. The dialogues will pop up in the language of your Windows®.

The use of UCST without mouse

Although not recommended, it is possible to navigate in the menus and dialogues, select fields and press buttons without a pointing device.

Start dialogue	
- to select a slot/unit	
- if the menu bar is active	Press the ALT- or ESC-key.
- if the menu bar is not selected	Select the slot with the left/right arrow-keys.
- to select a menu	
- if the menu bar is active	Select the menu with the left/right arrow-keys.
- if the menu bar is not selected	Press simultaneously the ALT-key and the letter that is underlined in the corresponding menu or press the ALT-key and select the menu with the left/right arrow-keys.
To select an item from the menu	Use the up/down arrow-keys or press the letter that is underlined in the corresponding selection
To mark a field or button	
- if nothing is selected:	Press simultaneously the ALT-key and the letter that is underlined on the field or button you want to select
- with an item selected on the same level:	Press the letter that is underlined on the field or button you want to select or use the arrow-keys.
To mark another field or button:	Use the TAB-key and the four arrow-keys.
Tables (in layer tabs)	
- to select a table	Press simultaneously the SHIFT- and the TAB-key.
- to select items in a table	Use the four arrow-keys.
Pull-down menus (Combos)	
- to open a combo in a table:	Press simultaneously the CTRL- and the RETURN-key (or SPACE bar).
- to select in the combo:	Use the up/down arrow-keys.
- to confirm the selection:	Press the ENTER-key. The combo is reduced to one line but still open for selection. Use the up/down cursors to scroll through the combo.

to close the combo again:	Press the TAB- or the RETURN-key.
To activate (press) a button and select a field:	Select it using the above mentioned ways and press the RETURN-key.

Your keyboard mapping might map the corresponding functions to keys other than the keys given above.

Evolution of the UCST

UCST 3.3a/1 changes since UCST 2.5<x>

The new UCST is implemented as a 32-bit Software for the operating systems Windows® 95/98 and Windows® NT. Due to this upgrade of performance, differences appear between the 32-bit and 16-bit (UCST 2.5<x>) versions of the UCST:

- The new UCST defines all systems via subrack (where applicable) and control/function unit.
- The new GUI of the UCST corresponds to the Windows® 98/ME and NT/2000 standard.
- All start dialogues have been standardised for all systems and equipment. This means that the access (menus) to some of the functions do not correspond exactly to the menus of the UCST 2.5<x>.
- The new UCST provides a standard process for the management communication, which includes all UMUX and DSL system equipment.
- The new UCST uses layering by functions for all systems, levels and units.
- The new UCST uses Windows® dialogues for the functions related to file services (load/save files, print files etc.) This affects the language used for these dialogues.
- New functions and systems introduced since the release of UCST 2.5<x> are not available with UCST 2.5<x>.

UCST R4E changes since UCST 3.3a/1

The UCST R4<X> follows a logical evolution from the former UCST 3.3a/1 with e.g. new NE types. The visible difference between the new UCST and the UCST 3.3a/1 is the application of the UMUX 1500/1200/900 GUI standard to all UMUX and DSL system equipment:

- The new UCST defines all systems via the subrack (where applicable) and control/function unit.
- The start dialogues of the UMUX 1100(E)/1300 and DSL System equipment conform to the UMUX 1500/1200/900 standard. This means that the access (menus) to some of the functions do not correspond exactly to the menus of the UCST 3.3a/1.
- The new UCST provides a standard process for the management communication, which also includes the UMUX 1100(E)/1300 and DSL System equipment.

- The new UCST also uses layering by functions for the UMUX 1100(E) and DSL System equipment.
- New functions and systems introduced since the release of UCST 3.3a/1 are not available with the UCST 3.3a/1.

UCST R5A changes since UCST R4E

The UCST R5A follows a logical evolution from the former UCST R4E with a reduced number of NE types. The main changes are:

- New traffic **Layer Naming** and **Instance Naming Convention**. All the traffic layers and traffic signal instances have been adapted to present a consistent naming for the UCST and UNEM.

  Changes of menus and dialogues as a consequence of the unified layering and instance naming concept.

  Please note, that the new layering and Instance Naming concept have no influence on the UMUX and the unit functionalities.
- The **About UCST** dialogue provides detailed information on all the elements (production date, time) and the **service pack** level. You can print this information.
- New **UCST logo**.
- Enhanced **Cross Connections** dialogue with
  - **TTP** (Trail Termination Point) filter instead of the subunit filter.
  - New **internal** cross connect **model** to meet the requirements of the UNEM NP. New objects describe the cross connections (Matrix Connections **MC**) and connection points (Termination Points **TP**).
  - The cross connections for **UBUS units** with **1+1 protection** now creates only one single protected cross connection.
- Subunits are **disabled** by **default**.
  The exceptions (here are the subunits always enabled) are:
  - SYNAC
  - SYNAM (VC-12 layer only!)
  - SYNVA (FUTURE OPTION)
- Implementation of a menu for the **Manual creation of and deletion** of UBUS Connection Points (TPs).

  Via this menu you can create TPs on and remove TPs from the UBUS. This menu is only for units with partial highway access capabilities (**tributary units**).
- The **subunits** carry a **meaningful UCST name** (instead of a subunit number) and allow you to define "user labels".
  The exceptions are:
  - SYNAC, where the subunits have the fixed name "Termination-<x>" and do not allow "user labels".
  - SYNVA (FUTURE OPTION)
- The configuration of the **protection modes** for the **SYNAC** VC-12 layer and SYNVA (FUTURE OPTION) are not configurable as a unit parameter (display of status). However, the related parameters (Guard Time, Hold off Time, Protection Switch) are always active for configuration.

The protection is created with the corresponding cross connection.

- The **STM-1 structure dialogue** of the SYNI<X> AU4/VC4 layer is not configurable as a unit parameter.
  The corresponding display is updated according to the active cross connections (displays the status).
- Enhancement for the **ECC channel presentation** in the Cross Connect dialogue (according to the traffic signal layering):
  - P0 for E1, F1, E2
  - P0_nc for D1-D3, D4-D12

  If the ECC channels are grouped the wrong way in configurations created with the UCST R4<X>, the corresponding MCs are lost when you open such a configuration with the UCST R5A (Warning).
- **Conference** with **UMUX 1100(E)/1300**
  Connection Points (TPs) that are configured for a 1+1 protection mode are not selectable as a conference party.
- The **V5 customer parameter sets** are now stored in a dedicated directory.
  You can add and remove customer parameter sets as you wish (without affecting the ucst.ini file).
- Updated options for the **Custom** installation of the UCST.
  You can control the update of your installation by selecting types of information (Obsolete Unit Template files, Unit Template files, V5 customer parameter sets, Main Program files).

UCST R5B changes since UCST R5A

The UCST R5B follows a logical evolution from the former UCST R5A with new features and units. The main changes are:

- Support of **new traffic units**.
  For details, refer to the release note [044].
- Implementation of the **UCST Polling** functions
  The UCST polling function allows the UCST to continuously monitor managed NEs for alarms, events and status changes. The UCST automatically polls the NEs and updates the Alarm List accordingly.

  The UCST Polling offers fault management similar to UNEM for networks with up to 30 NEs. The dialogues for the configuration and operation of the UCST polling and the look & feel of the alarm list is the same as in the UNEM.
- **Flexible** allocation of the **SDH SOH bytes** D1 … D12 for ECC
  Up to the UCST R5A cross-connections for SDH ECCs via the SDH SOH bytes D1 … D12 were only possible for the two groups D1 … D3 (n=3) and D4 ... D12 (n=9) respectively.

  The implementation with the UCST R5B is more flexible. In the MS and RS layer respectively (SYNIO, SYNIF, SYNIC and SYNOT unit) it is now possible to

  - assign the overhead start byte to any of D1 … D12
  - define the length of the overhead channel (1 byte up to 12 bytes, depending on the start byte)

The SOH channel in the second layer automatically adapts start byte and bandwidth for its SOH channel according to the SOH parameters defined for the previously configured layer.

The cross connect configuration automatically adapts to the parameter definition in the SYNIO, SYNIF, SYNIC or SYNOT unit.

- **Enhancements for print functions**
  The print functions for **Unit Parameters** and **Subunits** allow you now to configure the printing of subunits. It is possible to print
  - **Enabled** subunits only (disabled subunits are not printed)
  - **All** (enabled and disabled) units

  For each selection of subunits you can additionally specify the range of subunits that you want to print. The lower and upper range limits are 1 and 9999 respectively.

  However, it is not possible to specify the layer for printing.

UCST R5C changes since UCST R5B

The UCST R5C follows a logical evolution from the former UCST R5B with new features and units. The main changes are:

- Support of the new UMUX 900 network element.
  The UMUX 900 is an extremely compact network element of medium traffic handling capacity aimed for deployments as a versatile transmission system in locations with very tight real-estate requirements particularly suited for wireline transport applications into GSM- and 3G/UMTS-networks.

  For details, refer to the release note [045].

- Support of new traffic units.
  For details, refer to the release note [045].

- Support of the new R4 control units
  The R3 control units are still supported. However, the R4 control units are required to support the UMUX 900 (COBUX only) and the SW download and inventory function for remote units.

  For details, refer to the release note [045].

- Support of the SW download and Inventory function for remote units
  The UCST R5C together with the control unit R4 releases support software download and inventory for the new generation remote units.

  Currently the new functions are available for the MUSIC 200 with the LESI8 and SLID1. New functions and units will be provided soon.

- Improved print function for Unit Parameters and Subunits.
  The print functions for Unit Parameters and Subunits allow you to configure the printing of subunits. The UCST print function supports parameter and subunit printing for local units and CPEs (Customer Premises Equipment). For both types it is possible to print
  - Enabled subunits only (disabled subunits are not printed)
  - Enabled & Disabled units

  The UCST takes the lowest and highest values matching the subunit Enabled/Disabled criterion as the range limiting default values.

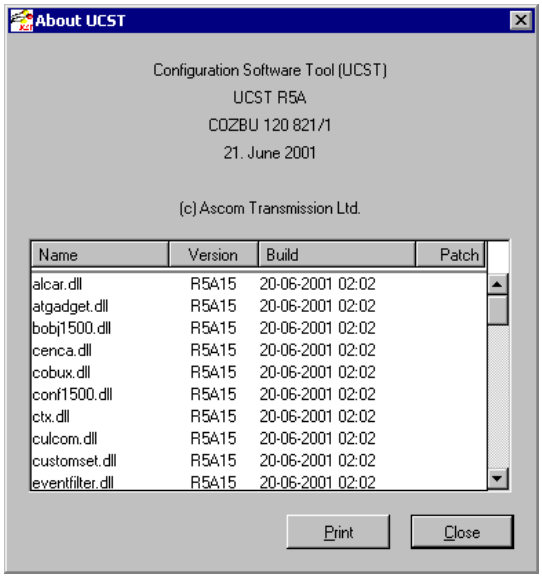
Help

So far Help just features the function **About...**. This function allows you to read important data and control the version of the UCST software.

Select the menu **Help → About** The **About UCST** dialogue will pop up.

The processing of the command may last some seconds, since the UCST reads the information back from the corresponding directories.

Figure 2-6: **About UCST** dialogue



The dialogue informs you (in this sequence) of the

- Name of the SW (Configuration Software Tool (UCST))
- Release and version of the UCST (e.g. R5C09).
- Part number (e.g. COZBU 120 821/1)
- Date of release
- Copyright information
- Window with the list of the unit library files (.dll) and the corresponding versions installed in the present UCST file system including
  - **Name** (name of the SW element)
  - **Version** (version of the SW element)
  - **Built** (Date and time of the SW compilation)
  - **Patch** (Service Pack) if applicable
  - The abbreviation SP<n> stands for Service Pack n. Additional letters may indicate the order of the patch implementation within the Service Pack <n> (refer to the figure above). This order is of no practical relevance.

Press [Close] to quit and recall the UCST main dialogue.

[Print] to print the list of library files (dll).

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