COMPAQ

Software Product Description

PRODUCT: TeMIP Access Module for Ericsson AXE10 AMPS Switch SPD 70.77.00

DESCRIPTION

TeMIP is a family of software products for the management of telecommunications and corporate networks, including fixed wire and mobile/cellular voice and data, multi-vendor, multi-technology networks. TeMIP V3.2 provides comprehensive off-the-shelf fault and trouble management functions such as Alarm Handling, Event Logging and Trouble Ticketing for telecommunications network management.

TeMIP supports the International Standards Organization (ISO) management standards ISO 10164-x and ISO 10165-x, the OMNIpoint 1 standards as defined by NMF and T1M1. TeMIP and its features are applicable in the context of the International Telecommunication Union-Telecom Standard Sector (ITU-T) X.73x and Telecommunications Management Network (TMN) M.3010 and M.3100 Recommendations. TeMIP gives network operators a global view of their networks, and enables them to activate management functions and operations from single or multiple workstations.

TeMIP is built on top of the TeMIP Framework and fully benefits from the object oriented and truly distributed software architecture.

The TeMIP AXE10 AMPS Access Module (AM) provides an interface to the Ericsson AXE10 AMPS Wireless Switch for the application system AS103 and the application products APT 210 08/663 and APZ 212 20/111. The AXE10 AMPS AM supports fault management capabilities, receiving and processing unsolicited messages (Level 1 AM).

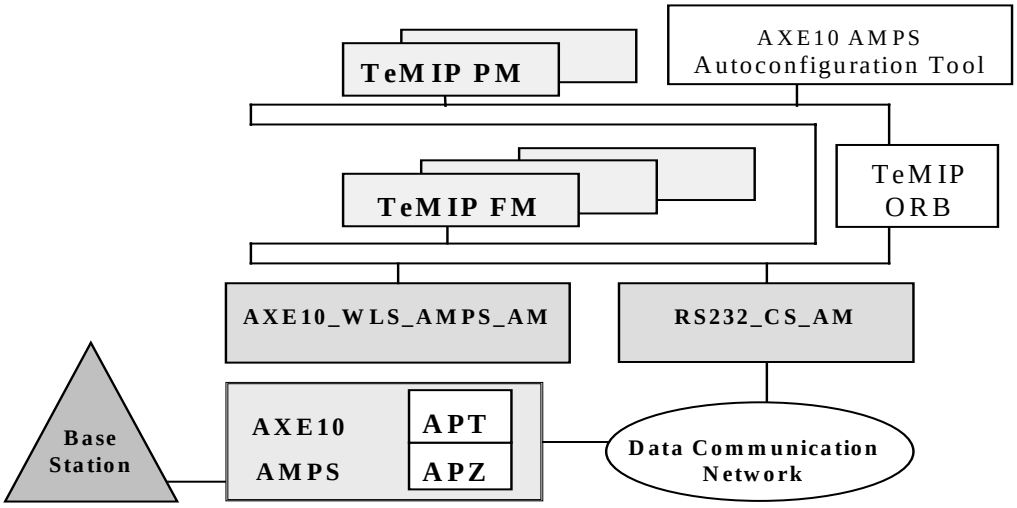
SOLUTION COMPONENTS

The AXE10 AMPS switch is directly interfaced to TeMIP by means of a combination of Management Modules:

- The RS232 Communication Server Access Module, responsible for establishing and maintaining the physical connection to the equipment. (As an alternative to the RS232 Communications Server, either the X.25 (SVC) or TCP (IP sockets) Communications Servers could also be envisioned),
- The AXE10 AMPS AM, responsible for the Information Model representing the management capabilities of the equipment as well as all associated semantic translations between its ASCII-based messaging interface and TeMIP data models.

The solution components are shown in Figure 1.

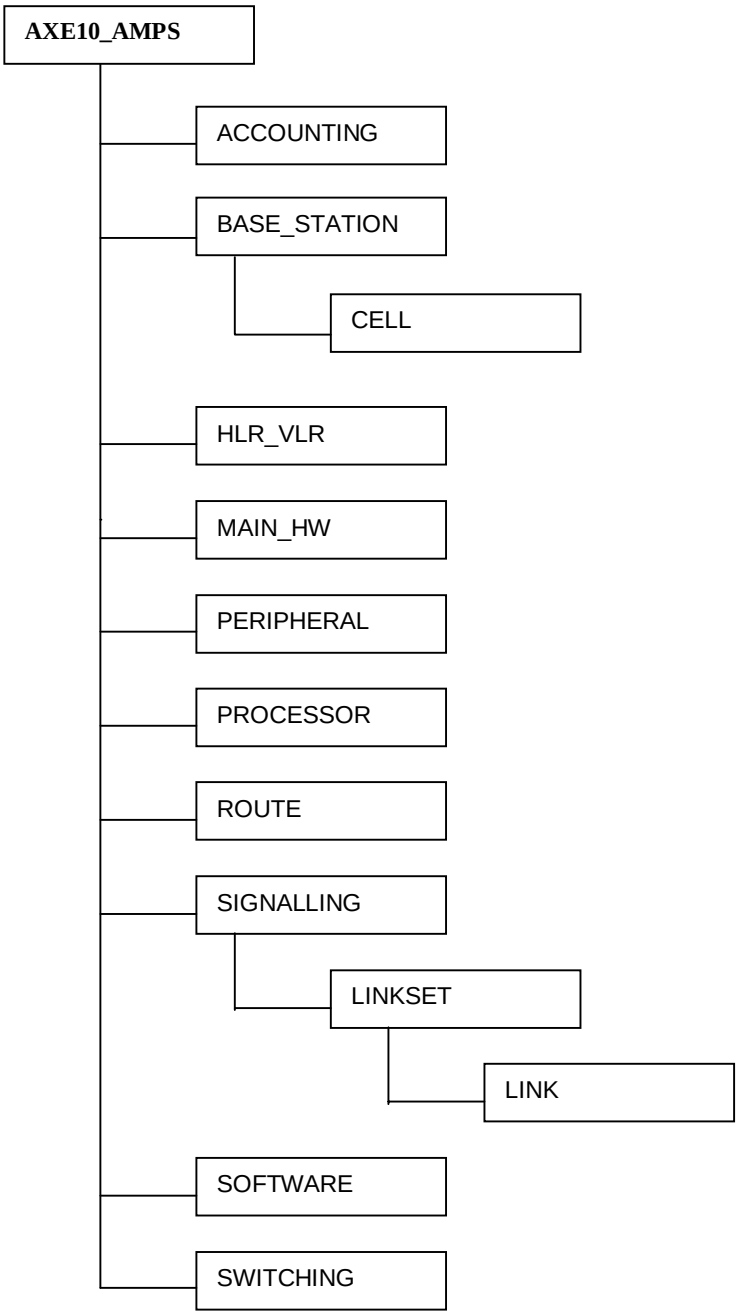
Figure 1: Solution Components



INFORMATION MODEL OUTLINE

The AXE10 AMPS is represented by the Information Model shown in Figure 2

Figure 2: Information Model



The Exchange is modelled as 10 subsystems, which present a standard view of cellular Mobile Telephonic system, independent of the technology used. This allows TMN managers to have a common view of different exchanges in a multi-vendor environment. The subsystems are represented by first level of child classes and may have one or more instances. The classes that show the specific hardware/software of the AXE10 AMPS are located below the subsystem level.

The switch itself is represented by the AXE10 AMPS global class and has one instance only. This class has 10 subsystem children classes.

The meaning of each child class is described in Table 1.

Table 1: AXE10 AMPS Child Classes Hierarchy Description

Child Class	Child Class	Description	Cardinality
ACCOUNTING		Exchange accounting (billing) subsystem.	1
BASE_STATION		Remote station that contains the Radio Units responsible for subscriber unit connection.	N
	CELL	Base Station sectors. Composed by the Base Station name with the character A, B or C added to the last character of the name.	N
HLR_VLR		Home Location Register / Visitor Location Register. Subscriber database register.	1
MAIN_HW		Fundamental hardware of the exchange (Main Memory, I/O Processors, etc).	1
PERIPHERAL		I/O subsystem (Disk, Tape, Printer, Terminal, etc) and other non fundamental hardware components of the exchange.	1
PROCESSOR		Regional, Support and Central Processors.	1
ROUTE		Routes of the exchange.	N
SIGNALLING		Signalling Subsystem: IS41 (SS7), TUP (CCITT7) and proprietary.	1
	LINKSET	Logical links (link set) of the exchange.	N
	LINK	Physical links (link) associated to the respective link set of the exchange.	N
SOFTWARE		Software failure detected by the exchange (Audit, Files, Libraries, …)	1
SWITCHING		Call Switching Subsystem – hardware parts responsible for temporal and spatial switching	1

MANAGEMENT CAPABILITIES SUMMARY

Unsolicited Messages Support

The AXE10 AMPS AM can handle **all** unsolicited alarms sent by the switch (according to “AXE AS103 Command & Printout Manual”), i.e., all 197 alarm types and external alarm variations sent by the switch will be captured by TeMIP.

- Alarm messages encountered in AXE10 AMPS Alarm Mapping Table generate the corresponding alarm to TeMIP,
- Alarm messages not encountered in AXE10 AMPS Alarm Mapping Table generate the correspondent alarm to TeMIP with the maximum possible information extracted from the message. In principle, the partial alarm mapping will only occur to undocumented alarms in "AXE AS103 Command & Printout Manual".

The mapping of the alarm fields to the ITU-T Standards complies with the following guidelines:

- Managed Object: The managed object class is driven from an Alarm Mapping Table. The managed object instance can be the "GEN" instance for the classes that have only one instance (refer to Table 1) or can be built from the information extracted from message body,
- Severity: The alarm severity is driven from the alarm message body,
- Event Type and Probable Cause: These fields are driven from the Alarm Mapping Table and depend only on the alarm type,
- Additional Text: The Additional Text contains the original alarm message with obtrusive messages and blank lines removed.

Alarm Clearance

Most alarms generated by AXE10 AMPS have a message that turns off the alarm condition.

According to ITU-T standards, the clearance of an alarm can be done based on the following rules:

- An alarm is cleared when another one with severity clear and with same event arguments for **Managed Object** and **Notification Id** is received.

In order to clear a previous alarm, the AXE10 AMPS sends a message similar to the original alarm, with the same alarm number and with a "CEASING" text in the message body. The AXE10 AMPS AM generates a **Notification Id** in every alarm message (original alarm and clearance).

Special Alarm Clearance

In some cases the AXE10 AMPS switch sends an alarm message similar to the original alarm, with the same alarm number and with an "escalation id" in the message body, indicating that the original alarm class (severity) INCREASED TO or DECREASED TO a new degree of urgency.

This can occur when certain measured values exceed the acceptable limits for a particular alarm. When the alarm values return to the acceptable limits the initial state is re-established. This is when the exchange actually sends the clear alarm and the remaining INCREASED, DECREASED or original alarm message is correlated by the TeMIP Alarm Handling facility.

With every INCREASED or DECREASED alarm message the AXE10 AMPS AM emits an alarm which clears the previous alarm with the same alarm number. It also attributes a different timestamp value to the new alarm which is lower than that of the current alarm. Consequently TeMIP Alarm Handling performs the clearing operation at the earliest possible time relative to each variation of the original alarm thus allowing the Iconic Map to better reflect the changes in severity in object instances.

Notification Messages – Non Alarm Messages

Notification Messages are informative messages – *non alarm messages* – sent by the AXE10 AMPS switches and handled by the AM in order to monitor certain particular conditions. It is necessary to configure the exchange to send these messages through the corresponding alarm port device.

Besides alarm message handling, the AXE10 AMPS AM also handles two kinds of *Notification Messages* generated by the switch and converted into alarm messages in TeMIP:

- *Subscriber Tracing Messages*

  Brings information about subscriber's telephone calls such as date, time, type of the call, routes used, etc. These messages can be used, for example, to trace subscriber's calls if required by legal authorities,

- *System Restarted Message*

  Generated by the exchange after a central processor *restart* occurrence. A system restart can be caused by a hardware (HW) fault, a software fault, a handling fault, or by a command issued by the operator.

The *Notification Messages* do not have a correlated clear alarm and must be "terminated" by the operator in the TeMIP Alarm Handling application.

Other *Notification Messages* are discarded by the AM.

Alarm Information

Table 2 lists the AXE10 AMPS alarm messages that are processed by the AXE10 AMPS Access Module.

Table 2: AXE10 AMPS Alarm Table

System	Message Slogan
APZ	EMG CONTROL DOWN
APZ	EMG FAULT
APZ	EXTERNAL ALARM
APT	MOBILE TELEPHONE CLEARING HOUSE ROAMER VALIDATION LOAD SUPERVISION
APT	MOBILE TELEPHONE VISITOR REGISTER LOAD SUPERVISION
APT	MOBILE TELEPHONY ACCESS CONTROL ACTIVATED
APT	MOBILE TELEPHONY BASE STATION CLOCK SYNC FAULT
APT	MOBILE TELEPHONY BASE STATION MAINS POWER FAULT
APT	MOBILE TELEPHONY BASE STATION TX ANTENNA FAULT
APT	MOBILE TELEPHONY CALCULATION CONGESTION
APT	MOBILE TELEPHONY CALCULATION PRIORITY LEVEL TIMEOUT SUPERVISION
APT	MOBILE TELEPHONY FRAUDULENT ACTIVITY DETECTION LOAD SUPERVISION
APT	MOBILE TELEPHONY RADIO RELATED CALL RELEASE INFORMATION FAULT
APT	MOBILE TELEPHONY RADIO RELATED CALL RELEASE INFORMATION OUTPUT ERROR
APT	MOBILE TELEPHONY RECORDING OF VOICE CHANNEL HANDLING OUTPUT ERROR
APT	MOBILE TELEPHONY ROAMER ROUTING NUMBER LOAD SUPERVISION
APT	RADIO INTERFACE LINE TERMINAL FAULT
APT	RADIO INTERFACE SYNCHRONIZATION SUPERVISION
APT	RADIO SELECTOR SUPERVISION
APT	SEMIPERMANENT CONNECTION
APT	MOBILE TELEPHONY CELL SERVICE SUPERVISION
APT	MOBILE TELEPHONY CONTROL CHANNEL DISTURBANCE SUPERVISION
APT	MOBILE TELEPHONY DIGITAL RANDOM ACCESS CHANNEL OVERLOAD
APT	MOBILE TELEPHONY VOICE CHANNEL SUPERVISION
APT	HLR AUTHENTICATION A-KEY TIMEOUT FAULT
APZ	DCS DISTURBANCE SUPERVISION
APZ	EM APT ALARM WORD
APZ	EM FAULT
APZ	EM MANUALLY BLOCKED
APZ	EMG EM MANUALLY BLOCKED
APZ	EMG EMRP MANUALLY BLOCKED
APZ	EMG STR MANUALLY BLOCKED
APZ	EMG TRANSMISSION FAULT
APZ	LINE UNIT BLOCKED
APT	NETWORK SYNCHRONIZATION CLOCK-REFERENCE MANUALLY BLOCKED
APT	NETWORK SYNCHRONIZATION FAULT
APZ	PORT BLOCKED
APZ	PVC SET-UP FAILURE
APZ	RTU AUTOMATICALLY BLOCKED
APZ	RTU MANUALLY BLOCKED
APZ	SP LINK FAULT
APZ	SP LINK MANUALLY BLOCKED
APZ	SP LINK MANUALLY SEPARATED
APZ	SP TRANSIENT FAULT SUPERVISION
APZ	SP UNIT FAULT
APZ	SP UNIT MANUALLY BLOCKED
APT	SUBSCRIBER CATEGORY STORE CONGESTION
APT	SUBSCRIBER LINE SUPERVISION
APT	SUBSCRIBER LINE SUPERVISION DATA
APT	ACCOUNTING DATA OUTPUT ERROR
APZ	ALI BLOCKED
APZ	ALI FAULT
APZ	BACKUP ACCESS SPEED REDUCTION
APT	BACK-UP FACILITY IS OUT OF SERVICE
APZ	BACKUP INFORMATION FAULT
APT	COMMON CHARGING OUTPUT ERROR
APT	COMMON CHARGING OUTPUT USER FILE MANUALLY BLOCKED
APZ	CPT FAULT
APT	DEVICE IS PLACED IN TEST ROUTE
APZ	DFO IO DEVICE FAULT
APT	DIGITAL PATH FAULT SUPERVISION
APT	DIGITAL PATH QUALITY SUPERVISION
APT	DIGITAL TRANSMISSION CONTINUOUS BREAK ENGAGED
APZ	EXTERNAL ALARM RECEIVER BLOCKED
APZ	EXTERNAL ALARM RECEIVER FAULT
APZ	IO BLOCKED
APZ	IO DATA LINK BLOCKED
APT	IO FAULT FOR MOBILE TELEPHONY CELL TRAFFIC RECORDING
APT	IO FAULT FOR MOBILE TELEPHONY RADIO DISTURBANCE RECORDING
APT	IO FAULT FOR MOBILE TELEPHONY RADIO ENVIRONMENT STATISTICS
APZ	IO TAPE QUALITY WARNING
APT	IO-FAULT FOR ALL CIRCUITS BUSY ON ROUTES
APT	IO-FAULT FOR CCITT7 SIGNALLING PERFORMANCE MEASUREMENT
APT	IO-FAULT FOR CCITT7 TRAFFIC MEASUREMENT
APT	IO-FAULT FOR CHARGING STATISTICS
APT	IO-FAULT FOR DATA RECORDING PER CALL
APT	IO-FAULT FOR MOBILE TELEPHONY CELL TRAFFIC STATISTICS
APT	IO-FAULT FOR NM COUNTER DATA OUTPUT
APT	IO-FAULT FOR TIME CONGESTION MEASUREMENT ON ROUTES
APT	IO-FAULT FOR TRAFFIC CHARACTER MEASUREMENT ON ROUTES
APT	IO-FAULT FOR TRAFFIC DISPERSION MEASUREMENT
APT	IO-FAULT FOR TRAFFIC MEASUREMENT ON ROUTES
APT	IO-FAULT FOR TRAFFIC TYPE MEASUREMENT
APT	IS-OUTPUT ERROR
APZ	OPERATOR DATA LINK BLOCKED
APT	SEIZURE QUALITY SUPERVISION
APZ	TEST SYSTEM (p) ACTIVATED FROM dev

System	Message Slogan
APT	TIME SUPERVISION INHIBITED
APT	TOO MANY PHRASES DESTROYED
APT	TRANSCODER EQUIPMENT FAULT
APZ	CP FAULT
APZ	CP STATE NOT NORMAL
APZ	MANY REGIONAL PROCESSORS BLOCKED
APZ	PHC-FUNCTION INHIBITED
APZ	RP FAULT
APZ	RP MANUALLY BLOCKED
APZ	RP PAIR FAULT
APZ	RPD RESTART DATA
APZ	SMALL RESTART IS PENDING
APZ	SP NODE AUTOMATICALLY BLOCKED
APZ	SP NODE FAULT
APZ	SP NODE MANUALLY BLOCKED
APZ	SP NODE RESTARTED
APZ	SPG NOT AVAILABLE
APZ	SYSTEM RESTART
APT	BLOCKING SUPERVISION
APT	CONTINUITY CHECK FAILURE
APT	DISTURBANCE SUPERVISION OF INDIVIDUAL DEVICES
APT	DISTURBANCE SUPERVISION OF INDIVIDUAL DEVICES DEACTIVATED
APT	DISTURBANCE SUPERVISION OF TRUNK ROUTES
APT	DISTURBANCE SUPERVISION OF TRUNK ROUTES DEACTIVATED
APT	MANUAL BACKUP OF NEW RECORDING NEEDED
APT	NM ALL CIRCUITS BUSY OBSERVATION
APT	NM COUNTER DATA OUTPUT TEMPORARILY DISCONNECTED
APT	NM DESTINATION %OFL SUPERVISION
APT	NM DESTINATION %OFL SUPERVISION AND OBSERVATION
APT	NM DESTINATION ASR SUPERVISION
APT	NM DESTINATION ASR SUPERVISION AND OBSERVATION
APT	NM DESTINATION BLOCKING
APT	NM RESTRICTION OF ACCESSIBLE OUTGOING CIRCUITS
APT	NM RESTRICTION ON DIRECT AND ALTERNATIVE ROUTING
APT	NM ROUTE %OFL SUPERVISION
APT	NM ROUTE %OFL SUPERVISION AND OBSERVATION
APT	NM ROUTE ASR SUPERVISION
APT	NM ROUTE ASR SUPERVISION AND OBSERVATION
APT	NM ROUTE LOAD STATE CHANGE
APT	NM TEMPORARY ALTERNATIVE ROUTING
APT	RECORDABLE PHRASE HAS BEEN DESTROYED
APT	ROUTE RESTRICTION ACTIVATED
APT	SEIZURE SUPERVISION
APT	CCITT7 DESTINATION INACCESSIBLE
APT	CCITT7 DISTURBANCE SUPERVISION LIMIT REACHED
APT	CCITT7 EVENT REPORTING THRESHOLD REACHED

System	Message Slogan
APZ	CONTROL SIGNALLING LINK MANUALLY BLOCKED
APT	SIGNAL FAULT SUPERV TEMPORARILY DISCONNECTED
APT	SIGNALLING FAULT SUPERVISION
APT	SS7 DESTINATION INACCESSIBLE
APT	CCITT7 LINK SET SUPERVISION
APT	CCITT7 SIGNALLING LINK FAILURE
APT	SS7 SIGNALLING LINK MANUALLY DEACTIVATED
APT	SS7 SIGNALLING LINK UNAVAILABLE
APT	CCITT7 SIGNALLING LINK MANUALLY DEACTIVATED
APT	CCITT7 SIGNALLING LINK MANUALLY INHIBITED
APZ	ALLOCATION FAULT
APT	ANALYSIS DATA FAULT
APZ	APPLICATION DETECTED SOFTWARE ERROR
APZ	AUDIT FUNCTION DETECTED ERROR
APZ	AUDIT FUNCTION THRESHOLD SUPERVISION
APZ	COMMAND LOG BLOCKED
APZ	COMMAND LOG START SUBFILE NOT ON-LINE
APZ	CONGESTION IN ALARM SYSTEM
APZ	CORRUPT FILE WARNING
APZ	CORRUPT VOLUME WARNING
APZ	DFO BACKUP FILE SUPERVISION
APZ	EXCHANGE INPUT LOAD SUPERVISION
APZ	FILE MANUALLY BLOCKED
APZ	FILE PROCESS UTILITY AUTOMATIC TRANSFER FAILURE
APZ	INFINITE FILE END WARNING
APZ	INFINITE SEQUENTIAL FILE NOT OPEN
APZ	LONG DURATION TIME FOR FORLOPP
APZ	MANUAL EXECUTION OF COMMAND LOG AFTER SWITCH-BACK
APZ	MANUAL EXECUTION OF COMMAND LOG REQUIRED
APZ	MCS AUTHORITY COMMAND INPUT RESTRICTED
APZ	MCS AUTHORITY ILLEGAL LOGON ATTEMPT
APZ	MCS TRANSACTION LOG FAULT
APZ	OPEN COMMUNICATION ERROR
APT	OPERATIONS SYSTEMS INTERFACE DATA STORE FILE ERROR
APT	OPERATIONS SYSTEMS INTERFACE RETENTION FILE ERROR
APZ	RELOAD OF THE SYSTEM IS PENDING
APZ	RELOAD PARAMETERS INVALID
APZ	REPAIR OF CP OR AMU
APZ	SOFTWARE ERROR
APZ	SP FUNCTION CHANGE ACTIVE
APZ	SP TRACE SYSTEM INACTIVE
APZ	SP WORKING STATE NOT NORMAL
APT	STATISTIC AND TRAFFIC MEASUREMENT SYSTEM STOPPED
APT	STATISTIC DATA FILE OUTPUT STANDARD FORMAT ERROR
APT	STATISTIC DATA MODIFIED REPORT GENERATOR OUTPUT ERROR
APZ	SYSTEM EVENT

System	Message Slogan
APZ	SYSTEM STATE
APT	USER PART DISTURBANCE RECORDING FAULT
APT	USER PART DISTURBANCE SUPERVISION
APZ	VOLUME END WARNING
APZ	VOLUME LIMIT EXCEEDED
APT	GENERATOR SUPERVISION
APT	GROUP SWITCH CLM CONTROL
APT	GROUP SWITCH FAULT
APT	GROUP SWITCH TEST PATH ESTABLISHED
APT	GROUP SWITCH TRAFFIC RESTRICTIONS

System	Message Slogan
APT	GROUP SWITCH UNIT MANUALLY BLOCKED
APZ	HEARTBEAT FAILURE
APT	LINE LOCKOUT SUPERVISION
APT	MALICIOUS CALL TRACING DATA HAS BEEN PRINTED
APT	SWITCHING NETWORK TERMINAL FAULT
APT	SWITCHING NETWORK TERMINAL MANUALLY BLOCKED
APT	SYSTEM ALARM STATE
APT	TEST TONE FAULT

MISCELLANEOUS MANAGEMENT CAPABILITIES

Autoconfiguration Tool

The Autoconfiguration Tool is used to ensure coherency between TeMIP object instances and internal switch data. The Autoconfiguration Tool queries the switch about the current state of the MSC components and updates the Management Information Repository (MIR) by creating new instances, deleting non existent instances or setting instance attributes according to new values.

AXE10 AMPS AM Object Instance alarm mapping conforms to the same naming convention used by the Autoconfiguration Tool.

The Autoconfiguration Tool is a Launched Application and can be started by the Operator. During regular operation it should be run once a day, due to the dynamic environment of a Cellular Service Provider. It is effective not only during regular operation but also for initial setup and configuration.

The Autoconfiguration Tool creates/deletes instances for the following Object Classes:

- BASE_STATION (Radio Base Station);
- CELL (Sectors of BaseStation);
- ROUTE (Routes of the exchange);
- SIGNALLING.LINKSET (Logical Links);
- SIGNALLING.LINKSET.LINK (Physical Links).

The Autoconfiguration Tool updates instances for the following Object Class:

- SIGNALLING.LINKSET (Logical Links).
- Signalling instances of type SS7 and CCITT7 will have updated the attribute that helps to find the Far End Point of the link and the attribute that identifies the correspondent signalling system (IS41,TUP).

HARDWARE REQUIREMENTS

Supported Alpha AXP Processors:

AlphaServer 8200
AlphaServer 8400
DEC/4600, DEC/4700
DEC/7600, DEC/7700
DEC/10600

AlphaServer 2000
AlphaServer 2100
AlphaServer 4000
AlphaServer 4100
AlphaStation 600
DEC/3500, DEC/3500S, DEC/3500X
DEC/3800, DEC/3800S
DEC/3900

AlphaServer 300 (Melmac)
AlphaServer 400
AlphaServer 800

AlphaServer 1000
AlphaStation 200
AlphaStation 250
AlphaStation 255
AlphaStation 400
AlphaStation 500
DEC/2300S
DEC/2500
DEC/3300, DEC/3300L,
DEC/3300X, DEC/3300LX
DEC/3400, DEC/3400S
DEC/3600, DEC/3600S
DEC/3700

PWS 433
PWS 500
PWS 600

Ultimate Workstation 533

Disk Space Requirements:

Disk space required for installation:
Subset copy: 22,500 Kbytes
Installation: /usr 76,800 Kbytes

Disk Space Required for Use (Permanent):
No specific requirement

Memory Requirements:

The minimum memory supported, due to a TeMIP Framework prerequisite, is 128 Mbytes.

However, the use of this software in conjunction with increased memory capability improves performance.

SOFTWARE REQUIREMENTS

DIGITAL UNIX Operating System V4.0D
TeMIP Framework V3.2
Tcl 8.0 or newer version
Tk 8.0 or newer version
Expect 5.25 or newer version

OPTIONAL SOFTWARE

TeMIP Graphical ASCII Toolkit V2.0

GROWTH CONSIDERATIONS

The minimum hardware/software requirements for any future version of this product may be different from the current version requirements.

YEAR 2000 READY

This product is Year 2000 Ready.

The testing used to confirm the Year 2000 readiness of this product included code assessment and system tests to verify transition dates.

DISTRIBUTION MEDIA

This software is available by electronic means, distributed directly by the Engineering Team in NSIS/CIS Telecom, who can be contacted through your local Compaq office, which sends an internal e-mail to vbetemipsupp@compaq.com (containing customer identification and proof of license purchase).

ORDERING INFORMATION

TeMIP Access Module for Ericsson AXE10 AMPS Switch

Software License:

- QL-6BGA9-AA,

Software Product Services:

- QT-6BG**-** or QR-SP6BG-A9

Notes:

1. * denotes variable fields. For additional information on available services, or hardware platform tiers, refer to the appropriate price book.
2. The QL number corresponding to the TeMIP Graphical ASCII Toolkit V2.0 (Run-Time) must also be purchased (QL-5SMAM-3B).

SOFTWARE LICENSING

This software is furnished under the licensing provisions of Compaq Computer Corporation's Standard Terms and Conditions.

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This product uses the FLEXlm Software License Key system.

The licensed software can be used up to the limit specified in the license file. The scheme is trust based, which means that it does not use any machine specific values or count of users to rigidly enforce license compliance.

A FLEXlm key must be obtained using the request form provided with the Cover Letter, *temip-license-form.txt*

SOFTWARE PRODUCT SERVICES

A variety of service options are available from COMPAQ. For more in formation, contact your local COMPAQ office.

SOFTWARE WARRANTY

This software product is provided by COMPAQ with a 90-day conformance warranty in accordance with the COMPAQ warranty terms and applicable to the license purchase.

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