CONTROL & INDICATION SPECIFICATIONS FOR AETHRA VIDEOCONFERENCE PRODUCT RANGE

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Table of Contents

1 General

This document describes the protocol and the messages used for the configuration and the control of the Vega, AVCxxx and so on (**AETE**), using an external Personal Computer (**C&I**).

There are 8 kinds of messages:

1) **Initialization**
2) **Terminal Configuration**
3) **Network Configuration**
4) **Phone Directory Configuration**
5) **Call Control**
6) **Multipoin Control**
7) **Control & Indication**
8) **Data**

The **initialization messages** enable the terminal to enter in talk mode between C&I and AETE using the following messages.

The **configuration messages** allow programming the parameters required for the good working of terminals. These messages are further divided into the following categories:

a) Terminal (preferences) Configuration
b) Network Configuration
c) Phone Directory Configuration

The **call control messages** enable to make phone calls, or to answer any incoming calls, or to disconnect the established ones.

The **multipoint control messages** enable to manage the multiconference activated on the terminal.

The **control & indication messages** show the status of calls and of the terminal operation; they also manage the local and remote camera control.

The **data messages** are used to open/close a service (ex. File Transfer) and exchange data.

2 Description of Messages

2.1 Message Format

The message exchange between the **AETE** and **C&I** is based on ASCII characters so that they can be sent using a simple PC based communication program (i.e. HyperTerminal).
The messages can also be used via TCP/IP proprietary protocol (not Telnet protocol) at the port 55003. In this case the max number of clients is five (5).
The protocol is very simple. The commands to use are the same used with RS232, but they must be all preceded by an header.
The header is six bytes long.
The first two bytes are always equal to 0xAA 0xAA and they point out the start of the packet.
The last four bytes are the length of the command, expressed in a long number in network format.
The header is also always present in the messages sent by the Vega, AVCxxx and so on systems.
For example if you want to send the AT[&IPV initialization command, you have to open a TCP client socket, connect it to the remote 55003 port on the system, and then send the following bytes:
Header 0xaa 0xaa 0x00 0x00 0x00 0x08
Command 0x41 0x54 0x5b 0x26 0x49 0x50 0x56 0x0d

It is necessary to use LAN (Ethernet) interface for NetMeeting when running a the same time a C&I to control the system and NetMeeting to have a T.120 session

The first message the C&I sends to the terminal is the initialization message, so that AETE could decode the following messages identified as an extension to the AT commands, which can be used in any case.
The commands format is the following:

AT [<mode><type><sub-type><data><cr>

<mode> : :=	<read>/<write>/<answer>
<type> : :=	<init>/<te-conf>/<net-conf>/<dir-conf>/<call-control>/<c&i>/<data>
<sub-type> : :=	It identifies a particular type field
<data> : :=	It includes the useful data for the configuration (255 characters max.)
<cr> : :=	Terminator chosen for the AT command.

<init> : :=	'I'
<te-conf> : :=	'T'
<net-conf> : :=	'N'
<dir-conf> : :=	'D'
<call-control> : :=	'C'
<c&i> : :=	'S'
<data> : :=	'U'

<read> : :=	'?'	Status Request
<write> : :=	'&'	Command/Storage Request
<answer> : :=	'<'	Reply to a status request (sent by AETE) or indication

2.1.1 Initialization Messages

The initialization message is the one the C&I must send during the initialization process, to enable the AETE to enter into the recognition status of the AT commands proprietor extension. When the connection with AETE starts and before sending any other message, it is thought right to send to AETE the AT "ATE0" command to set in OFF the commands echo.

There is an end session message to disable recognition of the AT commands proprietor extension.

2.1.1.1 Init Protocol (IP)

This message is sent by C&I in order to initialize the proprietor protocol. It is sent by AETE in reply and as confirmation.

Direction: C&I -> AETE
Type: 'I'
Sub-Type 'P'
Mode '&'
Data: Terminal Type:
'V'

Direction: AETE -> C&I
Type: 'I'
Sub-Type 'P'
Mode '<'
Data: BRI ISDN Board Detected
'0' = No additional boards (1 accesses)
'1' = 3 BRI Board detected (4 accesses)
'2' = 2 BRI Board (Gold Configuration) plus 3 BRI board (6 accesses)
'3' = Only 2 BRI Board detected (Gold configuration) (3 accesses)
'4' = No BRI detected (Maia IP) (0 accesses)
NIC Board Detected.
'0' = No
'1' = X21
'2' = V35
'3' = RS449
'4' = RS530
'5' = G703
'7' = No Cable inserted
MCU Enabled
'0' = No
'1' = Yes
Board Revision ("A"/"B" etc)
Video Camera:
'0' = Canon VC-C3
'1' = Sony D30

‘2’ = Zeus D30
‘3’ = Sony D100
‘4’ = Zeus D100
‘5’ = Canon VC-C4
TCU software version

Data Description:

MCU Enabled:
This field indicates if license for MCU (Multiconference Unit) is enabled.

Video Camera:
Local Video Camera type used for room.

Example:

C&I ---------- AT[&IPV<cr> ----------→ AETE (Initialize Interface)

C&I ←------ AT[<IP101A0VEGASTAR2.7 ---------- AETE (Interface init: 3 BRI, No NIC, MCU, Rev=A, Canon, Version VegaStar 2.7)
C&I ←---------- OK<cr> ---------- AETE

2.1.1.2 End Protocol (IE)

This message is sent by C&I in order to end session of the proprietor protocol. It is sent by AETE in reply and as confirmation.

Direction: C&I -> AETE
Type: ‘I’
Sub-Type ‘E’
Mode ‘&‘
Data: None

Direction: AETE -> C&I
Type: ‘I’
Sub-Type ‘E’
Mode ‘<‘
Data: None

Data Description:

Example:

C&I ---------- AT[&IE<cr> ----------→ AETE (End Session)
C&I ←--------- AT[<IE<cr> ---------- AETE (Session Ended)
C&I ←---------- OK<cr> ---------- AETE

2.1.1.3 Init Protocol Error (IR)

This message is sent by AETE to notify an error on the received message:

Direction: AETE -> C&I
Type: ‘I’
Sub-Type ‘R’
Mode ‘<‘
Data: Message Type
Sub-type
Error:
'1' = Bad parameter
'2' = Unknown message
'3' = wrong message length
‘4’ = Bad mode
‘5’ = Unable to execute command
Sub-code
If Unable to execute command
‘0’ = system timeout
‘1’ = system busy

Data Description:

2.1.2 Terminal Configuration

The terminal configuration messages can be used to change and/or read the configuration stored in the terminal.

The <mode> **&** command can be used to modify the configuration, while the <mode> **?** one enables to read the relative values.

NOTE: Usually, the configuration messages must not be sent during an in progress call.

2.1.2.1.1 Terminal Generic Command (TA)

This message is sent by C&I to request to store/read different parameters of different types.
This message is sent by AETE to reply to a reading request.

Direction: C&I -> AETE
Type: 'T'
Sub-Type 'A'
Mode '&' / '?'
Data: Types of parameter:
- 'P' = Pip on dual monitor
- 'D' = Confirm disconnection
- 'S' = Screen saver
- 'I' = Show local info
- 'V' = VGA resolution
- 'F' = Full screen

If types of parameter is 'P'
- Display pip also on dual monitor:
  - '0' = no
  - '1' = yes

If types of parameter is 'D'
- Confirm disconnection:
  - '0' = no
  - '1' = yes

If types of parameter is 'S'
- Automatic screen saver:
  - '0' = no
  - '1' = yes
- Timeout (2 bytes) in minutes:
- Screen saver status:
  - '0' = no active
  - '1' = active

If types of parameter is 'I'
- Show local info:
  - '0' = no
  - '1' = yes

If types of parameter is 'V'

VGA Resolution (only for GOLD systems):

‘1’ = 1024x768
‘2’ = 800x600
‘3’ = 640x480

If types of parameter is 'F'

Full screen:

‘0’ = no
‘1’ = yes

Direction: AETE -> C&I
Type: ‘T’
Sub-Type ‘A’
Mode ‘<‘
Data: See above

Data Description:

Display PIP also on dual monitor:
If the second monitor is detected and this parameter is equal to '0', then the pip is not displayed because the local image is visible in one of the two monitors, but for some particular applications it can be useful.

Confirm disconnection:
If this parameter is selected then when the user push the disconnect button a dialog box appears to ask a confirm.

Screen saver:
It is possible to set the screen saver in automatic mode setting also the value of the timeout.

Show local info:
It is possible to show in all pages the own system name, IP address and ISDN number.

Full screen:
It is possible to hide tha graphical interface showing video input selected in full screen mode.

2.1.2.1.2 Terminal Display Status Bar (TB)

This message is sent by C&I to request to store/read parameters on the status bar
This message is sent by AETE to reply to a reading request.

Direction: C&I -> AETE
Type: ‘T’
Sub-Type ‘B’
Mode ‘&’ / ‘?’
Data: Status Bar:

‘0’ = disable
‘1’ = enable
‘2’ = auto hide

The following fields are considered only if Status Bar Enable or Auto hides
Display Date/Time :
‘0’ = disable
‘1’ = enable
Display connection status: (black/yellow/green spots) :
‘0’ = disable
‘1’ = enable
Display data channel status:
‘0’ = disable
‘1’ = enable
Display selected camera:
‘0’ = disable
‘1’ = enable
Display Charges:
‘0’ = disable
‘1’ = enable

Direction:	AETE -> C&I
Type:	‘T’
Sub-Type	‘B’
Mode	‘<‘
Data:	See above

Data Description:

In the right part of the terminal display some information about date, charges etc. are showed.
This information can be removed or inserted with this message.

Date/Time:
Date and time information can be displayed at the top right of the display selecting ‘1’ in the format:
dd/mm hh:mm. It is removed by selecting ‘0’.

Connection Status:
The connection status is shown down on the right hand side of the display. Black spot means disconnected, the yellow one means waiting synchronization and the green one means connection in progress.

Data Channel Status:
Computer Icon displayed at middle right of the screen means data channel available.

Selected Camera:
The selected camera (local/remote) can be displayed at the bottom right of the screen by selecting ‘1’ and removed by selecting ‘0’.

Charges:
The call cost up to the present time can be displayed at the bottom right of the screen by selecting ‘1’ and removed by selecting ‘0’.

2.1.2.1.3 Terminal Date & Time (TT)

This message is sent by C&I to request to store/read parameters of date & time
This message is sent by AETE to reply to a reading request.

Direction: C&I -> AETE
Type: ‘T’
Sub-Type ‘T’
Mode ‘&’ / ‘?’
Data: Day (“01”..”31”)
Month (“01”..”12”)
Year (4 digit)
Hour (“00”..23”)
Minute (“00”..”59”)

Direction: AETE -> C&I
Type: ‘T’
Sub-Type ‘T’
Mode ‘<‘
Data: See above

Data Description:

2.1.2.1.4 Terminal Local Image (PIP) Position (TP)

This message is sent by C&I to request to store/read parameters of Local Image position
This message is sent by AETE to reply to a reading request.

Direction: C&I -> AETE
Type: ‘T’
Sub-Type ‘P’
Mode ‘&’ / ‘?’
Data: Local Image (PIP) position:
‘0’ = disable
‘1’ = up left
‘2’ = up right
‘3’ = down right
‘4’ = down left

Direction: AETE -> C&I
Type: ‘T’
Sub-Type ‘P’
Mode ‘<‘
Data: See above

Data Description:

Local Image (PIP):
During a call, the local image of your own camera can be displayed at one corner of the screen by selecting ‘1’..’4’ and removed by selecting ‘0’.

2.1.2.1.5 Terminal Call/Answer Mode (TC)

This message is sent by the C& to request to store/read parameters about the terminal call/answer mode.

Direction: C&I -> AETE
Type: 'T'
Sub-Type 'C'
Mode '&' / '?'
Data: Audio Number = Video Number:
'0' = No
'1' = Yes
Mute on power up:
'0' = No
'1' = Yes
Automatic Answer:
'0' = No
'1' = Yes
Additional Calls:
'0' = Manual
'1' = Automatic
Mode:
'0' = 64K
'1' = 56K

Direction: AETE -> C&I
Type: 'T'
Sub-Type 'C'
Mode '<'
Data: See above

Data Description:

Audio number = Video number
The 2^ call has the same ('1') or different ('0') number of the first call.

Automatic Answer:
The terminal receiving 1^ incoming call can answer automatically ('1') or wait user operation ('0').

Additional Calls:
The additional calls can be executed manually by the user or automatically by the terminal.

Mode:
Force a call at 56K ('1') in a network at 64K.

Mute on power up:
The terminal after the power on is set in mute ('1') or no ('0').

2.1.2.1.6 Terminal User Setting (TU)

This message is sent by C&I to request the storage/reading some parameters of Using Setting page.

This message is sent by AETE to reply to a reading request.

Direction: C&I -> AETE
Type: 'T'
Sub-Type 'U'
Mode '&' / '?'
Data: Volume Ringing Tone (1 byte):
'0'..'9'
Volume Audio Rx (3 bytes):
"-44".."20"
Video Quality/Speed (2 bytes):
"32".."64"
Camera Remote Control
'0' = Disable
'1' = Enable

Direction: AETE -> C&I
Type: 'T'
Sub-Type 'U'
Mode '<'
Data: See above

Data Description:

Volume Ringing Tone
Volume of Ringing Tone during an incoming call

Volume Audio Rx
Volume of audio received

Video Quality/Speed
Select a big value of Video Quality/Speed for a better reproduction of moving images; select a low value for a better definition of the image details.

Camera Remote Control
Enabling ("1") or disabling ("0") the remote control of the local cameras.

2.1.2.1.7 Terminal Video Camera Parameters (TV)

The C&I send this message to request to store/read parameters on video camera.
This message is sent by AETE to reply to a reading request.

Direction: C&I -> AETE
Type: 'T'
Sub-Type 'V'
Mode '&' / '?'
Data: Contrast ("00".."64")
Brightness ("00".."64")
Colour ("00".."64")
Default Video Input:
'0' = Room

‘1’ = Document (Input1 for AVC8XXX)
‘2’ = VCR (Video Cassette Recorder) (Input4 for AVC8XXX)
‘3’ = Document 2 (Input2 for AVC8XXX)
‘4’ = Document 3 (Input3 for AVC8XXX)
‘5’ = Input 5 (only for AVC8400)
‘6’ = Input 6 (only for AVC8400)
‘7’ = VGA Input (only for VegastarGOLD e AVC8400)
Autotracking Audio (Only for SONY & ZEUS Video Camera)
‘0’ = No
‘1’ = Yes
Autotracking Video (Only for SONY & ZEUS Video Camera)
‘0’ = No
‘1’ = Yes

Direction: AETE -> C&I
Type: ‘T’
Sub-Type ‘V’
Mode ‘<‘
Data: See above

Data Description:

Adjust **Contrast**, **Brightness** and **Colour** to obtain the best video image possible.

Default Video Input
Select the input video camera for the system on the power on.

Autotracking Audio
The camera follow (“1”) the speaker.

Autotracking Video
The camera follow (“1”) the selected colour.

2.1.2.1.8 Terminal Monitor Settings (TG)

The C&I send this message to request to store/read the number of the monitors in the system.
This message is sent by AETE to reply to a reading request.

Direction: C&I -> AETE
Type: ‘T’
Sub-Type ‘G’
Mode ‘&’ / ‘?’
Data: Monitor
‘0’ = Auto Detect
‘1’ = 1 monitor (TV1)
‘2’ = 2 monitor (TV1 + TV2)
‘3’ = 1 monitor (VGA) (only for GOLD systems)
‘4’ = 2 monitor (TV1 + VGA) (only for GOLD systems)
‘5’ = 2 monitor (TV1 + TV2 + VGA) (only for GOLD systems)

Direction: AETE -> C&I
Type: ‘T’
Sub-Type ‘G’
Mode ‘<‘
Data: See above

Data Description:

If the "Auto Detect" option is selected and there is a monitor connected with the monitor 2 output, then system automatically detects this monitor and then shows in it graphic interface with always selfview video. In the monitor connected with the 1 output, you can see selfview or remote video in accordance with the connection state, without any graphic interface.
If the "1 monitor" option is selected and there are two monitors connected then you can see in the first one the graphic interface with local or remote video in accordance with the connection state, in the second always the local video.
If the "2 monitor" option is selected and there is only one monitor connected with the one output then you can see local or remote video in accordance with the connection state, without any graphic interface.

2.1.2.1.9 Terminal Data Channel (TD)

This message is sent by the C&I to request store/read parameters about the terminal data channel..
This message is sent by the AETE to reply to reading request.

WARNING: the data serial port of the AVC terminal is the same port where it is connected the C&I, so the storage should always be Modem enabled.

Direction: C&I -> AETE
Type: ‘T’
Sub-Type ‘D’
Mode ‘&’ / ‘?’
Data: Data Channel:
‘0’ = disable
‘1’ = enable
Modem:
‘0’ = disable
‘1’ = enable
MLP:
‘0’ = T120
‘1’ = Owner
‘2’ = Internet
Serial Rate: (note: not used because the port is the same to connect C&I)
‘1’ = 1200
‘2’ = 2400
‘3’ = 4800
‘4’ = 9600
‘5’ = 19200
‘9’ = 38400;
‘6’ = 56000
‘7’ = 57600
‘8’ = 115200;
Bit Stop: (at present fixed at 1)

‘1’ = 1
‘2’ = 2
Parity :(at present fixed to none)
‘0’ = None
‘1’ = Odd
‘2’ = Even
Data: (at present fixed at 8)
‘7’ = 7 bit
‘8’ = 8 bit
Transparent Data:
‘0’ = Not request
‘1’ = Request

Direction: AETE -> C&I
Type: ‘T’
Sub-Type ‘D’
Mode ‘<‘
Data: See above

Data Description:

Data Channel:
Data channel (MLP/H-MLP) during connection can be enabled selecting ‘1’ or disabled selecting ‘0’.

Modem:
The serial link to exchange data can be programmed to emulate modem interface (‘1’) or not (‘0’).
Selecting modem interface, AT command and criteria are used.

MLP:
Protocol in MLP data channel can be owner, T.120 or Internet.

Serial Rate, Bit Stop, Parity and Data:
Those parameters select value for external RS232 serial link.

Transparent data:
Emulating modem is possible to enter in data phase and receiving data from data channel (MLP/H-MLP/LSD) selecting ‘1’
It is possible to remain always in command phase (‘0’) discharging data from data channel.
Remaining always in command phase may be useful to control AETE and receiving indication message from it.

2.1.2.1.10 Terminal Audio Delay (TY)

This message is sent by C&I to request to store/read parameters about audio delay parameters.
This message is sent by AETE to reply to a reading request.

Direction: C&I -> AETE
Type: ‘T’
Sub-Type ‘Y’
Mode ‘&’ / ‘?’
Data: Automatic Audio Delay:

‘0’ = No
‘1’ = Yes
Audio Delay (3 bytes):
“000”..”999”

Direction: AETE -> C&I
Type: ‘T’
Sub-Type ‘Y’
Mode ‘<‘
Data: See above

Data Description:

Audio Delay:
This parameter is useful to synchronize lip and voice of remote user. This delay can be automatic (evaluate by the system) or manual (set by the user)

2.1.2.1.11 Terminal Audio Configuration (TN)

The C&I send this message to request to store/read parameters for audio inputs, outputs and echo canceller. This message is sent by AETE to reply to a reading request.

Direction: C&I -> AETE
Type: ‘T’
Sub-Type ‘N’
Mode ‘&’ / ‘?’
Data: Module:
'I' = Inputs
'O' = Outputs
'H' = Echo canceller
'D' = Load Default values
If Module = 'I'
Input: (2 bytes)
'01' = POD1
'02' = POD2
'03' = External Microphone (Line1 for AVC8200/AVC8400)
'04' = Line In (Line2 for AVC8200/AVC8400)
'05' = Videorecorder (Line3 for AVC8200/AVC8400)
'06' = Microphone 1 (only for AVC8200/8400)
'07' = Microphone 2 (only for AVC8200/8400)
'08' = Microphone 3 (only for AVC8200/8400)
Enable:
'0' = Disabled
'1' = Enabled
Gain: (2 bytes) '00' …'24'
Echo:
'0' = Not Cancelled
'1' = Cancelled
Phantom (**is considered only for AVC8200/8400 and only for "Mic1", "Mic2" and "Mic3" inputs**):

'0' = Disabled
'1' = Enabled

VCR (**is considered only for AVC8200/8400 and only for "Line2" and "Line3" inputs**):
'0' = The audio input is not associated with the Input4 video input
'1' = The audio input is associated with the Input4 video input

If Module = 'O'

Output: (2 bytes)
'01' = Monitor (Out 1 for AVC8200/8400 not configured, Handsfree for Maia)
'02' = Videorecorder (Out 3 for AVC8200/8400, Line-Out for maia and vegapro)
'03' = Out 2 (**only for AVC8200/8400**)
'04' = Out 4 (**only for AVC8200/8400**)

Received signals:
'1' = on
'0' = off

Transmitted signals:
'1' = on
'0' = off

Videorecorder (Line 3 for AVC8200/8400)
'1' = on
'0' = off

Line 2 (**only for AVC8200/8400**)
'1' = on
'0' = off

If Module = 'H'

Echo Canceller:
'1' = Enabled
'0' = Disabled

Automatic Gain Control:
'1' = Enabled
'0' = Disabled

Noise Reduction (Post Filter):
'1' = Enabled
'0' = Disabled

Echo Suppressor:
'1' = Enabled
'0' = Disabled

Spare (for future implementation):

If Module = 'D'

Type:
'1' = Load default values for audio input configuration
'2' = Load default values for audio output configuration

Direction: AETE -> C&I
Type: 'T'
Sub-Type 'N'
Mode '<'
Data: See above

Data Description:

Inputs:
The input parameter selected the audio input to configure.
There are four basically different systems that have the following audio inputs

1. Vegastar/AVC200:
   - POD1
   - POD2
   - External Microphone
   - Line-In
   - Videorecorder
2. AVC8200/8400:
   - POD1
   - POD2
   - Line1
   - Line2
   - Line3
   - Microphone 1
   - Microphone 2
   - Microphone 3
3. MaiaNX/MaiaIP:
   - Line-In
   - Handsfree (**is not configurable**)
4. VegaPro:
   - External Microphone
   - Line-In

The enable parameter enables or disables the audio from that source.
The gain increase or decrease the source volume.
The echo parameters allow to choice if the source can be cancelled by echo canceller or not. It's useful to enable the canceller for those inputs that can capture the remote signals, like a microphone.
The phantom parameter allows enabling an extra 24 voltage for microphone inputs.
The VCR parameter is used only for AVC8200/AVC8400 systems and only for Line 2 and Line 3 inputs.
This allows the audio source to act as a videorecorder in which the audio has to be listen only if the video is selected.

Outputs:
The output parameter selected the audio output to configure.
There are four basically different systems that have the following audio inputs

1. Vegastar/AVC200:
   - Monitor
   - Videorecorder
2. AVC8200/8400:
   - OUT1 (**is not configurable**)
   - OUT2
   - OUT3
   - OUT4
3. MaiaNX/MaiaIP:
   - Handsfree
   - Line-Out
4. VegaPro:
   - Monitor
   - Line-Out

The input parameter allows to select which audio input can be heard from the selected audio outputs.

Echo Canceller:
Echo canceller can be enabled by selecting '1' or disabled by selecting '0'.
WARNING: if you select '0', the remote user might hear a troublesome echo during the conversation.
The Automatic Gain Control (AGC) can be enabled selecting '1' or disabled selecting '0'.
The Noise Reduction can be enabled selecting '1' or disabled selecting '0'.
This echo chancellor component performs Noise Reduction and Echo Shaping.
The Suppressor can be enabled selecting '1' or disabled selecting '0'.
Disabling suppressor you have audio full duplex but you might hear a troublesome echo during the conversation.

Load default values
Allows to load the factory default values for the audio inputs or outputs configuration.

2.1.2.1.12 Terminal Mode Settings (TH)

The C&I send this message to request to store/read parameters on H.320/H.323 working mode
This message is sent by AETE to reply to a reading request.

Direction: C&I -> AETE
Type: 'T'
Sub-Type 'H'
Mode '&' / '?'
Data: Network:
'0' = ISDN/CAU
'1' = IP
'2' = NIC (G.703,X.21,V35,RS449,RS530)
Audio Coding:
'0' = Automatic
'1' = G.722
'2' = G.728
'3' = G.711
'4' = G.723 (only for IP)
'5' = G.722.1
'6' = MP4 AAC-LD
Video Coding:
'0' = automatic
'1' = H.261
'2' = H.261 QCIF
'3' = H.263
'4' = H.263 QCIF
'5' = H.263 4CIF
'6' = H.264
'7' = H.264 QCIF
Rate: (not significant for NIC)
'1' = 64
'2' = 128
'3' = 192
'4' = 256
'5' = 320
'6' = 384

‘7’ = 448
‘8’ = 512
‘9’ = 576 (for ISDN) 1152 (for IP)
‘A’ = 640 (for ISDN) 1472 (for IP)
‘B’ = 704 (for ISDN) 1536 (for IP)
‘C’ = 768
'D' = 1920
'E' = 1152 (for ISDN)
'F' = 1472 (for ISDN)
'G' = 1536 (for ISDN)
'H' = 2560 (for IP)
'I' = 3072 (for IP)
'J' = 3584 (for IP)
'K' = 4096 (for IP)

Aggregate channels: (not significant for IP and NIC)
‘0’ = No
‘1’ = Yes

Direction: AETE -> C&I
Type: ‘T’
Sub-Type ‘H’
Mode ‘<‘
Data: See above

Data Description:

Audio Coding:
Audio coding used in communications with video.
G.711: 4kHz audio at 64/56 kbit/s
G.722: 7kHz audio at 48/56 kbit/s
G.728: audio at 16 kbit/s
G.723: audio (300 to 3400 Hz) at 5.3 or 6.3 kbit/s
Selecting G.728 you can increase bandwidth for video signal

Aggregate Channels:
When Aggregate Channel is selected (“1”) all data channels connected are aggregate into a single data channel.
For example 4 data channels at 64kbit/sec are aggregate to produce a single data channel at 256 kbit/sec.
In the other case (“0”) the system works using Nx64 (or Nx56) rate.

Example:

C&I ---------- AT[?TH<cr> ----------→ AETE
C&I <-------- AT[<TH02361<cr> ---------- AETE (Isdn, G.728, H.263, 384, Bonding)
C&I ←------- AT[<TH12371<cr> ---------- AETE (IP, G.728, H.263, 448, unused)
C&I ←------------ OK<cr> ------------------ AETE

The NIC configuration is not sent because the NIC board is not present.

2.1.2.1.13 Terminal Capabilities Settings (TI)

The C&I send this message to enable parameters on H.320/H.323 working mode

This message is sent by AETE to reply to a reading request.

Direction: C&I -> AETE
Type: ‘T’
Sub-Type ‘I’
Mode ‘&’ / ‘?’
Data: Network:
‘0’ = ISDN/CAU
‘1’ = IP
‘2’ = NIC (G.703,X.21,V35,RS449,RS530)
Types of parameter:
‘A’ = H.264 capability
‘B’ = H.239 capability
‘C’ = DuoVideo capability
‘D’ = G.722.1 capability
'E' = MP4 AAC-LD capability

If types of parameter is 'A'
Send H.264 capability
‘0’ = no
‘1’ = yes
If types of parameter is 'B'
Send H.239 capability
‘0’ = no
‘1’ = yes
If types of parameter is 'C'
Send DuoVideo capability
‘0’ = no
‘1’ = yes
If types of parameter is 'D'
Send G.722.1 capability
‘0’ = no
‘1’ = yes
If types of parameter is 'E'
Send MP4 AAC-LD capability
‘0’ = no
‘1’ = yes

Direction: AETE -> C&I
Type: ‘T’
Sub-Type ‘I’
Mode ‘<‘
Data: See above

Data Description:

Network:
The network for which you can define the subset of audio and video capabilities that the system can send to remote site.

Types of parameter:

Identify the type of capability that the system can or cannot send to remote site. For example if the system has not to send the G.722.1 audio capability to remote site, then you have to use the 'E' parameter.

Example:

C&I ---------- AT[&TI0E0<cr> ----------→ AETE disable the MP4 AACLD capability

2.1.2.1.14 Terminal Broadcast Settings (TZ)

The C&I send this message to request to store/read parameters for broadcast in H.320 working mode
This message is sent by AETE to reply to a reading request.

Direction: C&I -> AETE
Type: 'T'
Sub-Type 'Z'
Mode '&' / '?'
Data: Broadcast:
- '0' = Disable
- '1' = Enable

Audio Coding:
- '0' = Audio off
- '1' = G.711 A law
- '2' = G.711 μ law
- '3' = G.722 m2 (56 kbit/sec)
- '4' = G.722 m3 (48 kbit/sec)
- '5' = G.728
- '6' = G.722.1 32K
- '7' = G.722.1 24K
- '8' = MP4 AAC-LD 56K
- '9' = MP4 AAC-LD 48K

Video Coding:
- '0' = Video Off
- '1' = H.261
- '2' = H.261 (QCIF)
- '3' = H.263
- '4' = H.263 (QCIF)
- '5' = H.264
- '6' = H.264 (QCIF)

Video Frame/sec:
- '1' = 30
- '2' = 15
- '3' = 10
- '4' = 7.5

Rate LSD:
- '0' = LSD Off
- '1' = 6400 bit/sec
- '2' = 8000 bit/sec
- '3' = 14400 bit/sec
- '4' = 40 kbit/sec

Rate:
- '1' = 64
- '2' = 128

‘3’ = 192
‘4’ = 256
‘5’ = 320
‘6’ = 384
‘7’ = 448
‘8’ = 512
‘C’ = 768

Aggregate channels:
‘0’ = No
‘1’ = Yes

Direction: AETE -> C&I
Type: ‘T’
Sub-Type ‘Z’
Mode ‘<‘
Data: See above

Data Description:

Broadcast:
The broadcast mode is used generally when there is a connection with only one direction (TX or Rx). The mode audio, video etc. is the H.320 working mode used in TX direction.

Audio Coding:
Audio coding used in communications with video.
G.711: 4kHz audio at 56 kbit/s
G.722 m2: 7kHz audio at 56 kbit/s
G.722 m3: 7kHz audio at 48 kbit/s
G.728: audio at 16 kbit/s

Aggregate Channels:
When Aggregate Channel is selected (“1”) all data channels connected are aggregate into a single data channel. For example 4 data channels at 64kbit/sec are aggregate to produce a single data channel at 256 kbit/sec.
In the other case (“0”) the system works using Nx64 (or Nx56) rate.

2.1.2.1.15 Terminal MCU Settings (TM)

The C&I send this message to request to store/read parameters on MCU (Multiconference Unit) H.320 working mode
This message is sent by AETE to reply to a reading request.

Direction: C&I -> AETE
Type: ‘T’
Sub-Type ‘M’
Mode ‘&’ / ‘?’
Data: Audio Coding :
‘0’ = Auto
‘1’ = G.722
‘2’ = G.728
‘3’ = G.711

‘4’ = G.723 (**not implemented**)
‘5’ = G.722.1
Video Coding :
‘0’ = Auto
‘1’ = H.261
‘2’ = H.261 (QCIF) **(not implemented)**
‘3’ = H.263
Conference Type
‘1’ = 2B
‘2’ = 4B
‘3’ = 128
‘4’ = 256
‘5’ = 6B
‘6’ = 384
‘7’ = 512
‘8’ = 768
‘9’ = 64
Mode:
‘0’ = 64K
‘1’ = 56K

Direction: AETE -> C&I
Type: ‘T’
Sub-Type ‘M’
Mode ‘<‘
Data: See above

Data Description:

Audio Coding:
Audio coding used in communications with video.
G.711: 4kHz audio at 64/56 kbit/s
G.722: 7kHz audio at 58/56 kbit/s
G.728: audio at 16 kbit/s
G.723: audio (300 to 3400 Hz) at 5.3 or 6.3 kbit/s
Selecting G.728 you can increase bandwidth for video signal

Conference Type:
It is possible to select the terminal rate working mode. The number of terminal for the selected rate is decided by the system itself.

Mode:
Force a call at 56K (‘1’) in a network at 64K.

2.1.2.1.16 Terminal MCU Settings Extended (TQ)

The C&I send this message to request to store/read parameters on MCU (Multiconference Unit) working mode. This message is sent by AETE to reply to a reading request.

Direction: C&I -> AETE
Type: ‘T’

Sub-Type ‘Q’
Mode ‘&’ / ‘?’
Data: MCU Type:
'1' = MCU ISDN
'2' = MCU IP
'3' = MCU MIXED
Audio Coding :
‘0’ = Auto
‘1’ = G.722
‘2’ = G.728
‘3’ = G.711
‘4’ = G.723 **(not implemented)**
‘5’ = G.722.1
Video Coding :
‘0’ = Auto
‘1’ = H.261
‘2’ = H.261 (QCIF) **(not implemented)**
‘3’ = H.263
Conference Type
‘1’ = 2B
‘2’ = 4B
‘3’ = 128
‘4’ = 256
‘5’ = 6B
‘6’ = 384
‘7’ = 512
‘8’ = 768
‘9’ = 64
Mode:
‘0’ = 64K
‘1’ = 56K
Role:
‘0’ = Master
‘1’ = Slave
Continuos Presence Tx:
‘0’ = No
‘1’ = Yes
Automatic Coding:
‘0’ = No
‘1’ = Yes

Direction: AETE -> C&I
Type: ‘T’
Sub-Type ‘Q’
Mode ‘<‘
Data: See above

Data Description:

Audio Coding:
Audio coding used in communications with video.

G.711: 4kHz audio at 64/56 kbit/s
G.722: 7kHz audio at 58/56 kbit/s
G.728: audio at 16 kbit/s
G.723: audio (300 to 3400 Hz) at 5.3 or 6.3 kbit/s
Selecting G.728 you can increase bandwidth for video signal

Conference Type:
It is possible to select the terminal rate working mode. The number of terminal for the selected rate is decided by the system itself.

Mode:
Force a call at 56K (‘1’) in a network at 64K.

2.1.2.1.17 Terminal Location Parameters (TL)

This message is sent by C&I to request to store/read parameters about the terminal localization/Country.

Direction: C&I -> AETE
Type: ‘T’
Sub-Type ‘L’
Mode ‘&’ / ‘?’
Data: Country Code (“000” …”999”)
Audio Coding:
European = ‘0’ (a law)
U.S.A = ‘1’ (μ law)
Video Standard :
‘0’ = PAL
‘1’ = NTSC
Dial Tone:
‘0’ = Standard
‘1’ = Continuous
Language:
‘1’ = Italian
‘2’ = English
‘3’ = French
‘4’ = Spanish
‘5’ = German
‘6’ = Portuguese
‘7’ = Norwegian
‘8’ = Chinese
‘9’ = Swedish
Terminal Name (max 30 chars)

Direction: AETE -> C&I
Type: ‘T’
Sub-Type ‘L’
Mode ‘<‘
Data: See above

Data Description:

Audio Coding:
Audio coding used in communications without video and generally used in one's own Country.
A-law PCM coding -> European
MU-law PCM coding -> U.S.A

Video Standard:
Video coding used in one's own Country. Generally PAL in Europe and NTSC in U.S.A.

Dial Tone:
The Dial Tone can be Normal or forced to Continuous.

Language:
Select the language used in the terminal.

Terminal Name:
Name of terminal may be useful during connections with 3 or more terminals (multipoint conference) to identify own terminal.

Example:

C&I ---------- AT[?TL<cr> ----------→ AETE (Terminal Location Request)
C&I <-------- AT[<TL0011502VEGA2<cr> ---------- AETE (CC=001, μlaw, NTSC,NI1,normal,English,name)
C&I ←---------- OK<cr> ---------- AETE

2.1.2.1.18 Terminal Video Camera Control (TF)

This message is sent by C&I to AETE to request to store/read parameters about local video-camera.
It is sent by AETE to C&I as an answer to reading request.

Direction: C&I -> AETE
Type: 'T'
Sub-Type 'F'
Mode '&' / '?'
Data: VideoCameraNumber ("01" .. "08")
Enabled:
'0' = No
'1' = Yes
Pan & Tilt:
'0' = No
'1' = Yes
Preset Number: (**not used yet and always set to C**)
'0'..'F' (hexadecimal value)
Name (max 15 ASCII chars)

Direction: AETE -> C&I
Type: 'T'
Sub-Type 'F'
Mode '<'
Data: See above

Data Description:

VideoCameraNumber:
Number associated to video-camera.
The possible numbers are 01..08 because the maximum number of video inputs is 8 (for AVC8400):
‘1’ = room
‘2’ = document (Input 1 for AVC8XXX)
‘3’ = VCR (Input 4 for AVC8XXX)
‘4’ = document2 (Input 2 for AVC8XXX)
‘5’ = document3 (Input 3 for AVC8XXX)
‘6’ = Input 5 for AVC8400
‘7’ = Input 6 for AVC8400
‘8’ = VGA Input for Vega star GOLD and AVC8400

Present:
This parameter indicates if video-camera connected to video input is present (‘1’) or not (‘0’)

Pan & Tilt:
This parameter indicates pan & tilt functions available (‘1’) or not (“0”) for video-camera.

Preset Number:
Number of preset supported by video-camera.

Name:
Name assigned to video-camera.

2.1.2.1.19 Terminal Streaming Configuration (TS)

This message is sent by C&I to AETE to request to store/read parameters about streaming configuration.
It is sent by AETE to C&I as an answer to reading request.

Direction: C&I -> AETE
Type: ‘T’
Sub-Type ‘S’
Mode ‘&’ / ‘?’
Data: Command Type:
'G' = Generic Command

If command type 'G'
IP Address of client:
xxx.xxx.xxx.xxx (fixed len = 15 chars)
Enabled (**only read**)
‘0’ = No
‘1’ = Yes
Announcements:
‘1’ = Message on activation
‘2’ = Only status
‘3’ = Ask a confirm on activation
Video Source selection
‘1’ = Automatic
‘2’ = Only local
Rate (2 bytes):

'01' = 64K
'02' = 128K
'03' = 192K
TTL or Hops (2 bytes)
Audio port (5 bytes)
IP Address to send streaming:
xxx.xxx.xxx.xxx (fixed len = 15 chars)

Direction: AETE -> C&I
Type: 'T'
Sub-Type 'S'
Mode '<'
Data: See above

Data Description:

IP Address of client:
IP address of client who want to change the streaming configuration. It is used by the system to control if the client is enabled to modify the streaming configuration.

Enabled:
Flag to enable the system to send the streaming. It can be only read: only in local system it can be modified.

Announcements:
If it is equal to '1' then when the streaming is activated, in the graphical interface appears a message box to advise the user.

VideoSource:
If it is equal to '1' then when the streaming shows the same thing that the local user is viewing.
If it is equal to '2', then the streaming is enabled to view only the local image also if the system is connected to a remote site.

TTL:
Is used for Multicast addresses. It rapresents the number of routers that the IP video or audio packet can cross.

Audio Port:
The RTP audio streaming is sent toward this UDP port. The video is automatically sent in the port equal the audio port plus 2.

Rate:
Is the bandwidth of streaming.

IP Address to send:
The system sends the audio and video streaming towards this address.

2.1.2.1.20 Terminal Reload Default parameters (TR)

This message is sent by C&I to restore the terminal default parameters.

Direction: C&I -> AETE
Type: 'T'

Sub-Type ‘R’
Mode ‘&‘
Data: None

Data Description:

2.1.2.1.21 Terminal Error Indication (TE)

This message is sent by AETE to notify an error on the received message:

Direction: AETE -> C&I
Type: ‘T’
Sub-Type ‘E’
Mode ‘<‘
Data: Message Type
Sub-type
Error:
'1' = Bad parameter
'2' = Unknown message
'3' = wrong message length
‘4’ = Bad mode
‘5’ = Unable to execute command
Sub-code
If Unable to execute command
‘0’ = system timeout
‘1’ = system busy

Data Description:

Example:

C&I ---------- AT[&IPV<cr> ----------→ AETE (Initialize Interface)
C&I ←--------- AT[?IP10142.7 ---------- AETE (Interface initialized)
C&I ←---------- OK<cr> ---------- AETE

C&I ----- AT[?TD<cr> ----------→ AETE (Terminal Data Channel)
C&I ←-- AT[<TD11031001<cr> ---------- AETE (Answer:Enable,Modem,Owner,9600,n,8,1,Transp)
C&I ←---------- OK<cr> ---------- AETE

C&I ------ AT[&TD11031000<cr> ----------→ AETE (Disable data in transparent mode)
C&I ←---------- OK<cr> ---------- AETE

C&I ------ AT[&TB111111<cr> ----------→ AETE (Terminal Status Bar Display: Enable, Date/Time,
C&I ←---------- OK<cr> ---------- AETE connection status, data channel, near & far camera, Charge)

C&I ------ AT[&TN11111<cr> ----------→ AETE (Terminal Echo Canc.: Echo canc.,AGC,
C&I ←---------- OK<cr> ---------- AETE Post filter & Suppressor enable, Line In with echo canc.)

C&I ---------- AT[?TH<cr> ----------→ AETE (Terminal Mode Setting request)

C&I <-------- AT[<TH02361<cr> ---------- AETE (Isdn, G.728, H.263, 384, Bonding)
C&I ←------- AT[<TH12371<cr> ---------- AETE (Isdn, G.728, H.263, 448, unused)
C&I ←---------- OK<cr> ---------- AETE

C&I --------- AT[&TH02320<cr> ----------→ AETE (Isdn, G.728, H.263, 128, No Bonding)
C&I ←---------- OK<cr> ---------- AETE

C&I ---------- AT[?TL<cr> ----------→ AETE (Terminal Location Request)
C&I <-------- AT[<TL0011502VEGA2<cr> ---------- AETE (CC=001, μlaw, NTSC,normal,English,name)
C&I ←---------- OK<cr> ---------- AETE

C&I ------ AT[&TM000000000<cr> --------→ AETE (Terminal Call/Answer mode: Audio=Video num,Mute off,

Answer 1^ call & additional call Manual, Mode=64K, Call test disable, repeat time = 0)
C&I ←---------- OK<cr> ---------- AETE

2.1.3 Network Configuration

The Network Configuration messages can be used to change and/or to read the configuration stored in the terminal.

The <mode> & command can be used to modify the configuration, while the <mode> ? command enables to read the relative values

The storage of one configuration will be completed after having received the message “Network Store Configuration”

2.1.3.1.1 Network Isdn Common Parameters Configuration (NI)

This message is sent by the C&I to request to store/read some parameters about the Isdn Network Configuration, which are the same for all the accesses.
This message is sent by the AETE to reply to a reading request.

Direction: C&I -> AETE
Type: ‘N’
Sub-Type ‘I’
Mode ‘&’ / ‘?’
Data: Isdn Main Software Protocol:
‘0’ = ETSI
‘1’ = NI1
1TR6 network protocol : (valid only for ETSI)
‘0’ = No
‘1’ = Yes
5ESS network protocol : (valid only for NI1)
‘0’ = No
‘1’ = Yes
Unrestricted network:
‘0’ = No
‘1’ = Yes
CLIR:
‘0’ = No
‘1’ = Yes
COLR:
‘0’ = No
‘1’ = Yes
FallBack :
‘0’ = Disable
‘1’ = Enable
Number of Spid for access 1:
‘1’ = 1
‘2’ = 2
Number of Spid for access 2
‘1’ = 1
‘2’ = 2

Number of Spid for access 3
‘1’ = 1
‘2’ = 2
Number of Spid for access 4
‘1’ = 1
‘2’ = 2

Direction: AETE -> C&I
Type: ‘N’
Sub-Type ‘I’
Mode ‘<‘
Data: See above

Data Description:

Isdn Main Software Protocol :
A system is released with an isdn main software protocol. This protocol can be ETSI (European Standard) or NI1 (U.S.A. Standard).

1TR6 Network Protocol:
This parameter permits, in case of ETSI as ISDN main software protocol, to select 1TR6 ISDN protocol Network (old isdn standard used principally in Germany)

5ESS Network Protocol:
This parameter permits, in case of NI1 as ISDN main software protocol, to select 5ESS ISDN protocol Network.

Unrestricted Network:
Terminal can be connected to 64 or to 56 kbit/sec ISDN network. In 1^ case you have to select 64k; in 2^ case 56k.
For further information consult your network provider.

CLIR:
Calling Line Identification Restricted.
Your own phone number can be displayed on the display of the terminal called by enabling CLIR.

COLR:
Connected Line Identification Restricted.
Your own phone number can be displayed on the display of the calling terminal by enabling COLR.

FallBack:
Automatic conversion of a call with a non video terminal (conventional telephone) will occur by selecting ‘1’ or not by selecting ‘0’.

Number of SPID:
ISDN base access can have 1 or 2 Service Profile Identification (SPID).
This setting is applicable only in NI1 network. In ETSI insert always ‘1’

Example:

C&I ---------- AT[?NI<cr> ----------→ AETE (Network Isdn Common Parameters Configuration)
C&I ←------- AT[<NI0001001111111<cr> ------ AETE (ETSI,1TR6 disabled, 5ESS disabled, 64K,

CLIR & COLR no, Fallback yes)

C&I ←---------- OK<cr> ---------- AETE

Disable fallback:

C&I -------- AT[<NI0001000111111<cr> ------→ AETE (ETSI,1TR6 disabled, 5ESS disabled, 64K,
C&I ←---------- OK<cr> ---------- AETE CLIR & COLR no, Fallback yes)

2.1.3.1.2 Network Isdn Common Parameters Configuration Extended (NB)

This message is sent by the C&I to request to store/read some parameters about the Isdn Network Configuration, which are the same for all the accesses.
This message is sent by the AETE to reply to a reading request.

Direction: C&I -> AETE
Type: 'N'
Sub-Type 'B'
Mode '&' / '?'
Data: Isdn Software Protocol:
'0' = ETSI
'1' = NI1
1TR6 network protocol: (valid only for ETSI)
'0' = No
'1' = Yes
5ESS network protocol: (valid only for NI1)
'0' = No
'1' = Yes
Unrestricted network:
'0' = No
'1' = Yes
CLIR:
'0' = No
'1' = Yes
COLR:
'0' = No
'1' = Yes
FallBack:
'0' = Disable
'1' = Enable
DownSpeed:
'0' = Disable
'1' = Enable
Access type:
'1' = BRI
'2' = PRI

Direction: AETE -> C&I
Type: 'N'
Sub-Type 'B'

Mode ‘<‘
Data: See above

Data Description:

Isdn Software Protocol:
This protocol can be ETSI (European Standard) or NI1 (U.S.A. Standard). The selection of one of these types causes a system reset.

1TR6 Network Protocol:
This parameter permits, in case of ETSI as ISDN main software protocol, to select 1TR6 ISDN protocol Network (old isdn standard used principally in Germany)

5ESS Network Protocol:
This parameter permits, in case of NI1 as ISDN main software protocol, to select 5ESS ISDN protocol Network.

Unrestricted Network:
Terminal can be connected to 64 or to 56 kbit/sec ISDN network. In 1^ case you have to select 64k; in 2^ case 56k.
For further information consult your network provider.

CLIR:
Calling Line Identification Restricted.
Your own phone number can be displayed on the display of the terminal called by enabling CLIR.

COLR:
Connected Line Identification Restricted.
Your own phone number can be displayed on the display of the calling terminal by enabling COLR.

FallBack:
Automatic conversion of a call with a non video terminal (conventional telephone) will occur by selecting '1' or not by selecting '0'.

Down Speed:
Automatic channel decrease if one or more channels are not yet synchronized. Will occur by selecting '1' or not by selecting '0'.

Access Type:
BRI is basic ISDN access type. PRI is primary ISDN access type. The selection of one of these types causes a system reset.

2.1.3.1.3 Network PRI Access Configuration (NP)

This message is sent by the C&I to request to store/read some parameters about the PRI Network Configuration.
This message is sent by the AETE to reply to a reading request.

Direction:	C&I -> AETE
Type:	'N'
Sub-Type	'P'
Mode	'&' / '?'
Data:	CableLength1 :
	'1' = 0…133 meters
	'2' = 133…266 meters
	'3' = 266…399 meters
	'4' = 399…533 meters

‘5’ = 533…655 meters
CableLength2 :
‘1’ = 0…133 meters
‘2’ = 133…266 meters
‘3’ = 266…399 meters
‘4’ = 399…533 meters
‘5’ = 533…655 meters
NetworkInterface :
‘1’ = E1
‘2’ = T1
MaxChannels : (2 bytes)
'01'…'30'
LowChannel : (2 bytes)
'01'…'30'
HighChannel : (2 bytes)
'01'…'30'
Search :
'0' = Low
'1' = High
CRC4Enabled:
'0' = Disabled
'1' = Enabled
B-Channel Selection:
'0' = Network
'1' = Terminal

Direction: AETE -> C&I
Type: ‘N’
Sub-Type ‘P’
Mode ‘<‘
Data: See above

Data Description:

CableLength
CableLength1 and CableLength2 are considered only if the Network Interface is N1. CableLength1 specifies the distance to the CSU connected to the system. CableLength2 specifies the cascading distance between two systems.

Network Interface
If the network type is ETSI, at the moment the network interface can be only E1. If the network type is National, at the moment the network interface can be only T1.

MaxChannels
This parameter specifies the max number of the PRI access channels that the system can use. If the network type is E1 (ETSI), max channels can be at most 30. If the network type is N1 (National), max channels can be at most 23. If the B-Channel selection parameter is equal to terminal, then MaxChannels has to be equal to (HighChannel - LowChannel + 1).

LowChannel

This parameter specifies the low channel that the system can use. It makes sense only if B-Channel selection parameter is equal to terminal.

HighChannel
This parameter specifies the high channel that the system can use. It makes sense only if B-Channel selection parameter is equal to terminal.

Search
If it is set to 0 the system searches the first available channel from the first channel. Otherwise it searches from the last one.

CRC4
At the moment it is fixed to '1'.

B-Channel selection
If it is equal to network, then the channels to use are chosen by the network itself. Otherwise if it is equal to terminal then the channels to use are chosen by the Low and high parameters.

2.1.3.1.4 Network NIC Configuration (NN)

This message is sent by the C&I to request to store/read some parameters about the NIC Network Configuration.
This message is sent by the AETE to reply to a reading request.

Direction: C&I -> AETE
Type: 'N'
Sub-Type 'N'
Mode '&' / '?'
Data: NIC interface : (can be only read)
'0' = no cable
'1' = X21
'2' = V35
'3' = RS449
'4' = RS530
'5' = G703
Rate :
'1' = 64
'2' = 128
'3' = 192
'4' = 256
'5' = 320
'6' = 384
'7' = 448
'8' = 512
'C' = 768
'D' = 1152
'E' = 1472 (only for G.703 interface)
'F' = 1536
'G' = 1920
Network:
'0' = 64 kbit/sec

‘1’ = 56 kbit/sec

Automatic Call:

‘0’ = No

‘1’ = Yes

If Software Interface G703

Crc4 :

‘0’ = Disable

‘1’ = Enable

Alarms:

‘0’ = Disable

‘1’ = Enable

Mode :

‘0’ = Slave

‘1’ = Master

If Software Interface X21/V35/RS449/RS530

Termination:

‘0’ = No

‘1’ = Yes

Clocks :

‘0’ = Tx equal Rx

‘1’ = Tx not equal Rx

DTR:

‘0’ = On

‘1’ = Off

‘2’ = On/Off/On

RTS:

‘0’ = On

‘1’ = Off

DSR:

‘0’ = On

‘1’ = Off

CD:

‘0’ = On

‘1’ = Off

‘2’ = Ring

CTS:

‘0’ = On

‘1’ = Off

RING:

‘0’ = On

‘1’ = Off

RS366 : (valid only for V35/RS449/RS530)

‘0’ = Disable

‘1’ = Enable

DLO:

‘0’ = On

‘1’ = Off

PWI:
‘0’ = On
‘1’ = Off
ACR:
‘0’ = On
‘1’ = Off

Direction: AETE -> C&I
Type: ‘N’
Sub-Type ‘N’
Mode ‘<‘
Data: See above

Data Description:

2) Software Interface NIC
Using NIC board it is possible to have the following interfaces (depend on the cable inserted):
X21, V35, RS449, RS530, G703

Rate :
This option allows to set the max rate for an audio-video call.

Network :
The network connected to NIC board can have a rate multiple of 64 kbit/sec (‘0’) or a rate multiple of 56 kbit/sec (‘1’).

Clock:
Clock of transmitting data may be equal (standard) or not (particular case) to clock of receiving data.

Automatic Call:
The terminal can generate an automatic call when (hang-up) when detect that the connection is up.

Termination:
Select ‘1’ to insert automatically the terminations on the interface signals.

RS366 :
This option can be selected only for V35, RS449, RS530 interfaces. With RS366 enabled (‘1’) it is possible to have an interface in switched mode; in the other case the interface is in leased mode.

DTR:
Select DTR On for normal signal management; select DTR Off to set an “active” value for the signal; select DTR On/Off/On for an always active DTR with an impulse generated during each disconnection.

RTS:
Select RTS On for normal signal management; select RTS Off to set an “active” value for the signal.

DSR:
Select DSR On to treat this signal; select DSR Off to disable detection of this signal.

CD:

Select CD On to treat this signal as an indication of connection up; select CD Off to disable detection of this signal; select CD Ring to treat this signal as an indication of an incoming call.

CTS:
Select CTS On to treat this signal; select CTS Off to disable detection of this signal.

RING:
Select RING On to treat this signal as an indication of an incoming call; select RING Off to disable detection of this signal.

RS366 Config:

DLO (Data Line Occupied):
Select DLO On to treat this signal; select DLO Off to disable detection of this signal.

PWI (Power Indication):
Select PWI On to treat this signal; select PWI Off to disable detection of this signal.

ACR (Abandon Call):
Select ACR On to treat this signal; select ACR Off to disable detection of this signal.

Software Interface G703

CRC4:
CRC4 in frame can be enabled '1' or disabled '0'

Alarms:
It is possible disable all alarms (LFA, LOS, RAI, AIS) detection to determine if a connection is up.

Mode:
The NIC board can generate clock (Master) or receiving it (Slave).

Example: Using a RS530, rate 384, network 64K, no automatic call, insert termination, same clock in Tx and Rx, DTR impulse, RTS On, DSR On, CD Ring, CTS Off, RING Off,RS366 Disable, DLO Off, PWI Off, ACR Off

C&I ---------- AT[?NN<cr> ----------→ AETE (Network NIC Setting)
C&I ←--- AT[<NN4610102002110000<cr> --------- AETE
C&I ←---------- OK<cr> ---------- AETE

2.1.3.1.5 Network IP Configuration (NL)

This message is sent by the C&I to request to store/read some parameters about the IP Configuration.
This message is sent by the AETE to reply to a reading request.

Direction: C&I -> AETE
Type: 'N'
Sub-Type 'L'
Mode '&' / '?'

Data: Automatic IP address:
‘0’ = No
‘1’ = Yes
IP address:
xxx.xxx.xxx.xxx (fixed len = 15 chars)
Subnet mask:
xxx.xxx.xxx.xxx (fixed len = 15 chars)
Gateway IP address:
xxx.xxx.xxx.xxx (fixed len = 15 chars)

Direction: AETE -> C&I
Type: ‘N’
Sub-Type ‘L’
Mode ‘<‘
Data: See above

Data Description:

Automatic IP Address:
Select Yes (“1”) to get a IP address from a DHCP server; select No (“0”) for a static IP address assigned to own terminal.

Example: Static IP address, IP address 192.168.110.017, subnet mask 255.255.255.000, gateway IP address 192.168.110.001

C&I ---------- AT[?NL<cr> ----------→ AETE (Network IP)
C&I ←--- AT[<NL0192.168.110.017255.255.255.000192.168.110.001<cr> --------- AETE

2.1.3.1.6 Network IP Configuration Extended (ND)

This message is sent by the C&I to request to store/read some parameters about the IP Configuration.
This message is sent by the AETE to reply to a reading request.

Direction: C&I -> AETE
Type: ‘N’
Sub-Type ‘D’
Mode ‘&’ / ‘?’
Data: Network type:
'1' = Fixed network
'2' = Wireless network
'3' = PPPoE network
Command type:
'C' = Configuration
'M' = MacAddress (**only for read operation for Fixed network**)

If command type 'C'
Automatic IP address:
‘0’ = No
‘1’ = Yes

IP address:
xxx.xxx.xxx.xxx (fixed len = 15 chars)
Subnet mask:
xxx.xxx.xxx.xxx (fixed len = 15 chars)
Gateway IP address:
xxx.xxx.xxx.xxx (fixed len = 15 chars)
DNS IP address:
xxx.xxx.xxx.xxx (fixed len = 15 chars)

If command type 'M'
MAC-address:
xx : xx : xx : xx : xx : xx (fixed len = 17 chars)

Direction: AETE -> C&I
Type: 'N'
Sub-Type 'D'
Mode '<'
Data: See above

Data Description:

Automatic IP Address:
Select Yes ("1") to get an IP address from a DHCP server; select No ("0") for a static IP address assigned to own terminal.

2.1.3.1.7 Network Wireless IP Configuration (NF)

This message is sent by the C&I to request to store/read some parameters about the wireless IP Configuration.
This message is sent by the AETE to reply to a reading request.

Direction: C&I -> AETE
Type: 'N'
Sub-Type 'F'
Mode '&' / '?'
Data: Command Type:
'G' = Generic Command
'K' = Key Command
'W' = Save

If command type 'G'
Default Network:
'1' = Fixed network
'2' = Wireless network
Card status: (only read)
'0' = Not inserted
'1' = Inserted
Working Mode:
'1' = Ad-Hoc
'2' = Managed

Encryption Mode:
'0' = No encryption
'1' = 64 bit
'2' = 128 bit
Active Encryption Key (2 bytes):
'01'…'04'
SSID (max 30 ASCII chars):

If command type 'K'
Key index (2 bytes):
'01'…'04'
Key value (max 30 ASCII chars)

If command type 'W' (Save data) :

Attention: without this command no one of previous commands will be saved

Direction: AETE -> C&I
Type: 'N'
Sub-Type 'F'
Mode '<'
Data: See above

Data Description:

2.1.3.1.8 Network PPPoE Configuration (NG)

This message is sent by the C&I to request to store/read some parameters about the PPPoE Configuration.
This message is sent by the AETE to reply to a reading request.

Direction: C&I -> AETE
Type: 'N'
Sub-Type 'G'
Mode '&' / '?'
Data: Command Type:
'G' = Generic Command
'N' = User Name
'P' = Password
'S' = Server Name
'C' = Service Name
'W' = Save

If command type 'G'
Connection status: (only read)
'0' = Disconnected
'1' = Connected
PPPoE active:
'0' = No
'1' = Yes
Connection Mode:

'1' = Always connected
'2' = On call

If command type 'N'
UserName (max 52 ASCII chars)

If command type 'P'
Password (max 20 ASCII chars)

If command type 'S'
Server Name (max 32 ASCII chars)

If command type 'C'
Service Name (max 32 ASCII chars)

If command type 'W' (Save data) :

Attention: without this command no one of previous commands will be saved

Direction: AETE -> C&I
Type: 'N'
Sub-Type 'G'
Mode '<'
Data: See above

Data Description:

2.1.3.1.9 Protocol SIP Configuration (NM)

This message is sent by the C&I to request to store/read some parameters about the SIP Configuration.
This message is sent by the AETE to reply to a reading request.

Direction: C&I -> AETE
Type: 'N'
Sub-Type 'M'
Mode '&' / '?'
Data: Command Type:
'G' = Generic Command
'N' = Name
'P' = Password
'R' = Registrar parameters
'X' = Proxy parameters
'A' = Registrar Name
'B' = Proxy first part domain name
'C' = Proxy second part domain name
'W' = Save

If command type 'G'
Use UDP:
'0' = no **(not yet used)**

'1' = Yes
UDP SIP Port (ASCII digit of fixed len = 5)
TCP SIP Port (ASCII digit of fixed len = 5)

If command type 'N'
System Name (max 31 ASCII chars)

If command type 'P'
Password (max 30 ASCII chars)

If command type 'R'
Use Registrar:
'0' = no
'1' = Yes
Registrar Port (ASCII digit of fixed len = 5)
Duration (ASCII digit of fixed len = 5)
Registrar IP address:
xxx.xxx.xxx.xxx (fixed len = 15 chars)

If command type 'X'
Use Proxy:
'0' = no
'1' = Yes
Proxy Port (ASCII digit of fixed len = 5)
Proxy IP address:
xxx.xxx.xxx.xxx (fixed len = 15 chars)

If command type 'A'
Registrar Name (max 32 ASCII chars)

If command type 'B'
Proxy Name (max 32 ASCII chars)

If command type 'C'
Proxy first part domain name (max 64 ASCII chars)

If command type 'D'
Proxy second part domain name (max 64 ASCII chars)

If command type 'W' (Save data) :

Attention: without this command no one of previous commands will be saved

Direction: AETE -> C&I
Type: 'N'
Sub-Type 'M'
Mode '<'
Data: See above

Data Description:

Command type 'C' and 'D'
The Proxy domain name can be 128 characters long, so if this appens, then the name has to be divided into two parts. The first part is sent with command type 'C', the second part is sent with command type 'D'. The command type 'D' has to be sent always after the command type 'C' and it has to be used only the name is longer then 64 characters.

2.1.3.1.10 Network NAT Configuration (NT)

This message is sent by the C&I to request to store/read some parameters about the NAT (Network Address Translation) Configuration.
This message is sent by the AETE to reply to a reading request.

Direction: C&I -> AETE
Type: 'N'
Sub-Type 'T'
Mode '&' / '?'
Data: Command Type
'G' = Generic

If command type 'G'
NAT enable:
'0' = No
'1' = Yes
NAT Type:
'1' = Automatic
'2' = Aethra
'3' = Others
TCP Port init number (ASCII digit of fixed len = 5)
UDP Port init number (ASCII digit of fixed len = 5)
Public IP address or Aethra NAT address (max 15 ASCII chars):

Direction: AETE -> C&I
Type: 'N'
Sub-Type 'T'
Mode '<'
Data: See above

Data Description:

NAT:
Select Yes ("1") if a NAT (Network Address Translation) is used to exit form local network.

Local IP Address:
IP address of Aethra NAT device. The Aethra NAT device communicate at the system the public IP address and ports range to be used in an H.323 connection.
If the Aethra NAT device is not present set this value with 000.000.000.000.

Public IP Address:
IP address to be used in an H.323 connection for the calls out of local network. If an Aethra NAT device is used this value can be only read and not set.

TCP Port init:
Init TCP port value used in an H.323 connection for the calls out of local network. If an Aethra NAT device is used this value can be only read and not set.

UDP Port init:
Init TCP port value used in an H.323 connection for the calls out of local network. If an Aethra NAT device is used this value can be only read and not set.

2.1.3.1.11 Network LAN H.323 Setting (NH)

C&I send this message to ask to store/read the configuration of a part of H.323 configuration
It is sent by AETE to answer a reading request.

Direction: C&I -> AETE
Type: 'N'
Sub-Type 'H'
Mode '&' / '?'
Data: Item:
'A' = Name H.323
'B' = Number H.323
'G' = Gatekeeper
'N' = NetMeeting
'W' = Save All

If item A (Name H.323) :

Name string (max 30 chars)

If item B (Name H.323) :

Number value (max 30 digit)

If item G (Gatekeeper) :

Use Gatekeeper:
'0' = No
'1' = Yes
Automatic Gatekeeper IP address:
'0' = No
'1' = Yes
Gatekeeper IP address:
xxx.xxx.xxx.xxx (fixed len = 15 chars)

If item N (NetMeeting) :

Use NetMeeting:
'0' = No
'1' = Yes
NetMeeting IP address:
xxx.xxx.xxx.xxx (fixed len = 15 chars)

If item W (Write data) :

Attention: without this command no one of previous commands will be saved

Direction: AETE -> C&I
Type: 'N'
Sub-Type 'H'
Mode '<'
Data: See above

Data Description:

Name H.323
Name used by the terminal to register in the gatekeeper

Number H.323
Identification number used by the terminal to register in the gatekeeper

Gatekeeper
A gatekeeper is a very useful, but optional, component of an H.323-enabled network. Gatekeepers are needed to ensure reliable, commercially feasible communications. A gatekeeper is often referred to as the brain of the H.323 enabled network because of the central management and control services it provides. When a gatekeeper exists all endpoints (terminals, gateways, and MCUs) must be registered with it. Registered endpoints' control messages are routed through the gatekeeper. The gatekeeper and the endpoints it administers form a management zone.
A gatekeeper provides several services to all endpoints in its zone. These services include:

- **Address translation**: A gatekeeper maintains a database for translation between aliases, such as international phone numbers, and network addresses.
- **Admission and access control of endpoints**: This control can be based on bandwidth availability, limitations on the number of simultaneous H.323 calls, or the registration privileges of endpoints.
- **Bandwidth management**: Network administrators can manage bandwidth by specifying limitations on the number of simultaneous calls and by limiting authorization of specific terminals to place calls at specified times.
- **Routing capability**: A gatekeeper can route all calls originating or terminating in its zone. This capability provides numerous advantages. First, accounting information of calls can be maintained for billing and security purposes. Second, a gatekeeper can re-route a call to an appropriate gateway based on bandwidth availability. Third, re-routing can be used to develop advanced services such as mobile addressing, call forwarding, and voice mail diversion.

Example:

C&I ---------- AT[?NH<cr> ----------→ AETE
C&I <---------- AT[<NHAVEGA2<cr> ---------- AETE (Name H.323: VEGA2)
C&I <---------- AT[<NHB1234<cr> ---------- AETE (Number H.323: 1234)
C&I <---- AT[<NHG00000.000.000.000<cr> ---------- AETE (Gatekeeper: No)
C&I <------ AT[<NHN1192.168.110.015<cr> ---------- AETE (NetMeeting: Yes, IP=192.168.110.015)
C&I ←---------- OK<cr> ---------- AETE

2.1.3.1.12 Network Web Management (NW)

C&I send this message to ask to store/read the configuration of a part of Web Management configuration
It is sent by AETE to answer a reading request.

Direction: C&I -> AETE
Type: 'N'
Sub-Type 'W'
Mode '&' / '?'
Data: Use Web:
'0' = Disable
'1' = Enable
Notebook Management from Web:
'0' = Disable
'1' = Enable
Enable all IP addresses:
'0' = No
'1' = Yes
IP Address Enabled
xxx.xxx.xxx.xxx (fixed len = 15 chars)
IP Sub-net mask for Address Enabled
xxx.xxx.xxx.xxx (fixed len = 15 chars)
Password (max 30 ASCII chars)

Direction: AETE -> C&I
Type: 'N'
Sub-Type 'W'
Mode '<'
Data: See above

Data Description:

Use Web
The use of the Web in the system can be enabled ("1") or disable ("0")

Notebook Management from Web
The Notebook Management from Web can be enabled ("1") or disable ("0")

IP Address
All terminals can access to the system using a Web Browser; it is possible to enable only a set of IP addresses to access at the Web server.

Password
Password to login in the system using Web Browser.

2.1.3.1.13 Network SNMP Management (NS)

C&I send this message to ask to store/read the configuration of a part of SNMP Management configuration
It is sent by AETE to answer a reading request.

Direction: C&I -> AETE
Type: ‘N’
Sub-Type ‘S’
Mode ‘&’ / ‘?’
Data: Item:

‘A’ = IP address set
‘N’ = Administrator Name
‘L’ = Location
'R' = Read config parameters
'S' = Write config parameters
‘W’ = Save All

If item A (IP address) :
SNMP active:
‘0’ = No
‘1’ = Yes
SNMP manager IP address
xxx.xxx.xxx.xxx (fixed len = 15 chars)

If item N :
Administrator name (max 30 ASCII chars)

If item L :
Location (max 30 ASCII chars)

If item R (Read Config parameters) :
Enable all addresses:
‘0’ = No
‘1’ = Yes
Address
xxx.xxx.xxx.xxx (fixed len = 15 chars)
Address mask
xxx.xxx.xxx.xxx (fixed len = 15 chars)

If item S (Save Config parameters) :
Enable all addresses:
‘0’ = No
‘1’ = Yes
Address **(for compatibility with old systems this is the same of "SNMP manager IP address" in item A)**
xxx.xxx.xxx.xxx (fixed len = 15 chars)
Address mask
xxx.xxx.xxx.xxx (fixed len = 15 chars)

If item W (Write data) :

Attention: without this command no one of previous commands will be saved

Direction: AETE -> C&I
Type: ‘N’
Sub-Type ‘S’
Mode ‘<‘

Data: See above

Data Description:

SNMP Active
It is possible enable SNMP (Simple Network Management Protocol) in the system.

Administrator name
The textual identification of the contact person for managed node

Location
The physical location of this node (e.g., “telephone closet, 3rd floor”)

Location
The physical location of this node (e.g., “telephone closet, 3rd floor”)

2.1.3.1.14 Network ISDN/CAU Access Setting (NA)

C&I send this message to ask to store/read the configuration of a part of the access in case of ISDN/CAU network interface.
In a three ISDN accesses terminal all the accesses have to be configured setting time by time the different access components (General, TEI etc.)
It is sent by AETE to answer a reading request.

Direction: C&I -> AETE
Type: ‘N’
Sub-Type ‘A’
Mode ‘&’ / ‘?’
Data: Access Number :
‘1’ .. ‘6’
Spid Number :
‘1’..‘2’
Item:
‘G’ = General
‘T’ = TEI
‘N’ = Number
‘P’ = SPID
‘S’ = SubAddress
‘W’ = Save

If item G (General) :

MultiNumber :
‘0’ = Disable (MonoNumber)
‘1’ = Enable

If item T (TEI) :

Mode:

‘0’ Manual
‘1’ Automatic
TEI Value (max 2 digits)

If item N (Number) :

Number Value (max 20 digits)

If item S (SubAddress) :

Sub-Address Value (max 4 digits)

If item P (SPID) :

SPID Value (max 20 digits)

If item W (Save data) :

Attention: without this command no one of previous commands will be saved

Direction: AETE -> C&I
Type: ‘N’
Sub-Type ‘A’
Mode ‘<‘
Data: See above

Data Description:

Access Number :
Access Number ‘1’, ‘2’, ‘3’, ‘4’, ‘5’ or ‘6’ to select

SPID Number :
ISDN (NI1) base access can have ‘1’ or ‘2’ Service Profile Identification (see Network Interface Setting).
An object or item (General, TEI, sub-address etc) is identified by the pair Access Number, SPID Number.
SPID ‘1’ or ‘2’ to select. In ETSI protocol SPID Number has to be set in ‘1’.

MultiNumber :
The terminal can be connected to a basic rate ISDN access with mono or MultiNumber option; in the last case up to 8 terminals my be connected to one access and each will answer as a different number. The user needs to know the type of access provided and if MultiNumber, the number the phone must answer.
The number in a MultiNumber case must be entered without the initial 0.

TEI:
Generally, the TEI (Terminal Endpoint Identifier) must be set in automatic (‘1’).
In some cases, for example when using a PABX, the TEI must be set to fixed (Fixed) and its value must be set between 00 and 63.
For further information consult your network provider.

Number Value:
Number which the terminal must answer. The number must be entered without the initial 0.

SPID Value:

The SPID is composed of 9 to 20 numeric characters. The SPID allows a user to uniquely identify their terminal to the Network Provider Company when reporting troubles or requesting service changes.

Sub-Address Value:
Normally a SubAddress is not allocated.
It is used as an extension to the phone number when more than one equipment is connected to the same access and with the same number.
For further information consult your network provider.

Note: If C&I needs to know the parameters of all the accesses the "AT[?NA" command must be sent.

```
C&I     <----------------- AT[?NA<cr> --------------------→ AETE
C&I     <---------------- AT[?NA11G….<cr> -------------- AETE
C&I     <---------------- AT[?NA11T….<cr> -------------- AETE
C&I     <---------------- AT[?NA11N….<cr> -------------- AETE
C&I     <---------------- AT[?NA11S….<cr> -------------- AETE
C&I     <---------------- AT[?NA11P….<cr> -------------- AETE

C&I     <---------------- AT[?NA21G….<cr> -------------- AETE
C&I     <---------------- AT[?NA21T….<cr> -------------- AETE
C&I     <---------------- AT[?NA21N….<cr> -------------- AETE
C&I     <---------------- AT[?NA21S….<cr> -------------- AETE
C&I     <---------------- AT[?NA21P….<cr> -------------- AETE

C&I     <---------------- AT[?NA31G….<cr> -------------- AETE
C&I     <---------------- AT[?NA31T….<cr> -------------- AETE
C&I     <---------------- AT[?NA31N….<cr> -------------- AETE
C&I     <---------------- AT[?NA31S….<cr> -------------- AETE
C&I     <---------------- AT[?NA31P….<cr> -------------- AETE

C&I     <---------------- AT[?NA41G….<cr> -------------- AETE
C&I     <---------------- AT[?NA41T….<cr> -------------- AETE
C&I     <---------------- AT[?NA41N….<cr> -------------- AETE
C&I     <---------------- AT[?NA41S….<cr> -------------- AETE
C&I     <---------------- AT[?NA41P….<cr> -------------- AETE
C&I     <--------------------- OK<cr> ----------------------- AETE

C&I     <---------------- AT[?NA41G….<cr> -------------- AETE
C&I     <---------------- AT[?NA41T….<cr> -------------- AETE
C&I     <---------------- AT[?NA41N….<cr> -------------- AETE
C&I     <---------------- AT[?NA41S….<cr> -------------- AETE
C&I     <---------------- AT[?NA41P….<cr> -------------- AETE
C&I     <--------------------- OK<cr> ----------------------- AETE

C&I     <---------------- AT[?NA41G….<cr> -------------- AETE
C&I     <---------------- AT[?NA41T….<cr> -------------- AETE
C&I     <---------------- AT[?NA41N….<cr> -------------- AETE
C&I     <---------------- AT[?NA41S….<cr> -------------- AETE
C&I     <---------------- AT[?NA41P….<cr> -------------- AETE
C&I     <--------------------- OK<cr> ----------------------- AETE
```

If on the contrary it needs to know the setting of a single access the "AT[?NAns" command must be sent (where

n is the access number and s the spid number).

Example for access 1, spid 1

C&I ---------- AT[?NA11<cr> ----------→ AETE
C&I <---------- AT[?NA11G….<cr> ---------- AETE
C&I <---------- AT[?NA11T….<cr> ---------- AETE
C&I <---------- AT[?NA11N….<cr> ---------- AETE
C&I <---------- AT[?NA11S….<cr> ---------- AETE
C&I <---------- AT[?NA11P….<cr> ---------- AETE
C&I ←---------- OK<cr> ---------- AETE

2.1.3.1.15 Network ISDN/CAU Access Setting Extended (NC)

C&I send this message to ask to store/read the configuration of a part of the access in case of ISDN/CAU network interface.
It is sent by AETE to answer a reading request.

Direction: C&I -> AETE
Type: 'N'
Sub-Type 'C'
Mode '&' / '?'
Data: Access Type
'1' = BRI
'2' = PRI
Access Number (2 bytes):
'01' … '06'
Spid Number :
'1'..'2'
Item:
'G' = General
'T' = TEI
'N' = Number
'P' = SPID
'S' = SubAddress
'W' = Save

If item G (General) :

Enable:
'0' = Disable
'1' = Enable
MultiNumber:
'0' = Disable (MonoNumber)
'1' = Enable

If item T (TEI) :

Mode:
'0' Manual
'1' Automatic
TEI Value (max 2 digits)

If item N (Number) :

Number Value (max 20 digits)

If item S (SubAddress) :

Sub-Address Value (max 4 digits)

If item P (SPID) :

SPID Value (max 20 digits)

If item W (Save data) :

Attention: without this command no one of previous commands will be saved

Direction: AETE -> C&I
Type: 'N'
Sub-Type 'C'
Mode '<'
Data: See above

Data Description:

Access Type :
There is a different access configuration depends on the type of access. If the access is PRI there is only one access in the system (at moment). If the access is BRI there can be six accesses maximum (depends on systems types).

Access Number :
Access Number '01', '02', '03', '04', '05' or '06' to select

SPID Number :
ISDN BRI (NI1) base access can have '1' or '2' Service Profile Identification (see Network Interface Setting).
An object or item (General, TEI, sub-address etc) is identified by the pair Access Number, SPID Number.
SPID '1' or '2' to select. In ETSI protocol or Pri access SPID Number has to be set in '1'.

Enable:
A single access (or a single SPID for the NI1 network) can be enabled or disabled.

MultiNumber :
The terminal can be connected to a basic rate ISDN access with mono or MultiNumber option; in the last case up to 8 terminals my be connected to one access and each will answer as a different number. The user needs to know the type of access provided and if MultiNumber, the number the phone must answer.
The number in a MultiNumber case must be entered without the initial 0.

TEI:
Generally, the TEI (Terminal Endpoint Identifier) must be set in automatic ('1').
In some cases, for example when using a PABX, the TEI must be set to fixed (Fixed) and its value must be set between 00 and 63.
For further information consult your network provider.

Number Value:
Number that the terminal must answer. The number must be entered without the initial 0.

SPID Value:
The SPID is composed of 9 to 20 numeric characters. The SPID allows a user to uniquely identify their terminal to the Network Provider Company when reporting troubles or requesting service changes.

Sub-Address Value:
Normally a SubAddress is not allocated.
It is used as an extension to the phone number when more than one equipment are connected to the same access and with the same number.
For further information consult your network provider.

Note: If C&I needs to know the parameters of all the accesses the "AT[?NC1" or "AT[?NC2" command must be sent.

2.1.3.1.16 Network Error Indication (NE)

AETE sends this message to show an error on the received message:

Direction: AETE -> C&I
Type: 'N'
Sub-Type 'E'
Mode '<'
Data: Message Type
Sub-type
Error:
'1' = Bad parameter
'2' = Unknown message
'3' = wrong message length
'4' = Bad mode
'5' = Unable to execute command
Sub-code
If Unable to execute command
'0' = system timeout
'1' = system busy

Data Description:

Example:

Configuration of a terminal with a CAU interface board installed, ETSI network, connected to ISDN numbers

0712181701
0712181702
0712181703

MonoNumber accesses, automatic TEI, max rate allowed 1x384 and unrestricted network; NIC board not present.

C&I ---------- AT[?NI<cr> ----------→ AETE (Network Isdn Common Parameters Configuration)
C&I ←------- AT[<NI00010011111<cr> ------ AETE (ETSI,1TR6 disabled, 5ESS disabled, 64K,
C&I ←---------- OK<cr> ---------- AETE CLIR & COLR no, Fallback yes)

C&I ---- AT[&NA11G0<cr> ----------→ AETE (Access Setting: Access 1, General: mononumber)
C&I <---------- O K<cr> ---------- AETE

C&I ---- AT[&NA11T100<cr> ----------→ AETE (Access 1, TEI, automatic)
C&I <---------- OK<cr> ---------- AETE

C&I ---- AT[&NA11N712181701<cr> ----→ AETE (Access 1, Number = 712181701)
C&I <---------- OK<cr> ---------- AETE

C&I ---- AT[&NA11W<cr> ----------→ AETE (Access 1, Save)
C&I <---------- OK<cr> ---------- AETE

C&I ---- AT[&NA21G0<cr> ----------→ AETE (Access Setting: Access 2, General: mononumber)
C&I <---------- OK<cr> ---------- AETE

C&I ---- AT[&NA21T100<cr> ----------→ AETE (Access 2, TEI, automatic)
C&I <---------- OK<cr> ---------- AETE

C&I ---- AT[&NA21N712181702<cr> ---→ AETE (Access 2, Number = 712181702)
C&I <---------- OK<cr> ---------- AETE

C&I ---- AT[&NA21W<cr> ----------→ AETE (Access 2, Save)
C&I <---------- OK<cr> ---------- AETE

C&I ---- AT[&NA31G0<cr> ----------→ AETE (Access Setting: Access 3, General: mononumber)
C&I <---------- OK<cr> ---------- AETE

C&I ---- AT[&NA31T100<cr> ----------→ AETE (Access 3, TEI, automatic)
C&I <---------- OK<cr> ---------- AETE

C&I ---- AT[&NA31N712181703<cr> ---→ AETE (Access 3, Number = 712181703)
C&I <---------- OK<cr> ---------- AETE

C&I ---- AT[&NA31W<cr> ----------→ AETE (Access 3, Save)
C&I <---------- OK<cr> ---------- AETE

C&I ---- AT[&NA41G011<cr> ----------→ AETE (Access Setting: Access 4, General: mononumber)
C&I <---------- OK<cr> ---------- AETE

C&I ---- AT[&NA41T100<cr> ----------→ AETE (Access 4, TEI, automatic)
C&I <---------- OK<cr> ---------- AETE

C&I ---- AT[&NA41N<cr> ----------→ AETE (Access 4, Number = none - disabled)
C&I <---------- OK<cr> ---------- AETE

C&I ---- AT[&NA41W<cr> ----------→ AETE (Access 4, Save)
C&I <---------- OK<cr> ---------- AETE

Note: If the terminal configuration has already be set it could not be necessary to always repeat at the beginning the terminal reconfiguration.

2.1.4 Phone Directory Configuration Messages

The Phone Directory Configuration messages can be used to change and/or read the Phone Directory stored in the terminal.
In the terminal the Phone Directory keeps the stored data making a sort compared with respect to the name, so it is difficult to manage it referring to an index unless the C&I program does not make itself a sort for each change made.

A Phone Directory record is composed of a Name, Company, speech flag, Type of call, Rate, and eight number fields: Number1,Number2,..,Number8.
The File Descriptor gives these fields size back.

Use the <mode> & to change the configuration and the <mode> ? to read its values.

2.1.4.1.1 File Descriptor (DF)

C&I sends this message to ask the max number of records that can be stored in the Phone Directory (General information) and how many records have already been stored in the each group. One record is inserted in a group depending of the first letter of the name. There are ten (10) groups.

Direction: C&I -> AETE
Type: 'D'
Sub-Type 'F'
Mode '?'
Data: Request :
'0' = General information
'A' = a/b group
'C' = c/d group
'E' = e/f/g group
'H' = h/i/j group
'K' = k/l/m group
'N' = n/o group
'P' = p/q/r group
'S' = s/t group
'U' = u/v/w group
'X' = x/y/z group

Direction: AETE -> C&I
Type: 'D'
Sub-Type 'F'
Mode '<'

Data: Request :
See above
if (request '0')
MaxRecord (3 chars)
NameSize (3 chars)
CompanyNameSize (3 chars)
NumberSize (3 chars)
if (request 'A'..'X')
NumRecord (3 chars)

Data Description:

MaxRecord:
Max number of record that can be stored in the Phone Directory

NumRecord:
Number of record already stored in the Phone Directory

NameSize:
Max number of characters in Name

CompanyNameSize:
Max number of characters in Company Name

NumberSize:
Max number of characters of Number fields.

2.1.4.1.2 Read Record with index (DR)

C&I send this message to ask the i-th record stored in the required group.

Direction: C&I -> AETE
Type: 'D'
Sub-Type 'R'
Mode '?'
Data: Group:
'A'..'X'
Index (3 chars) :
0.. NumRecord

Direction: AETE -> C&I
Type: 'D'
Sub-Type 'R'
Mode '<'
Data: Item:
'0' = General information
'N' = User Name
'C' = Company Name
'A' = Other Flags
'1' = 1^ number
'2' = 2^ number

…….
‘8’ = 8^ number

if item “0” (General Information)
Group:
‘A’..’X’
Index (3 ASCII chars)
Found:
‘1’ = Yes
‘2’ = No
SpeechFlag:
‘0’ = Audio/Video Call
1’ = Speech Call
Type of Call:
‘I’ = ISDN/CAU
‘L’ = IP (LAN)
‘N’ = NIC
‘S’ = SIP
‘M’ = MCU
Rate:
‘1’ = 64
‘2’ = 128
‘3’ = 192
‘4’ = 256
‘5’ = 320
‘6’ = 384
‘7’ = 448
‘8’ = 512
‘9’ = 576
‘A’ = 640
‘B’ = 704
‘C’ = 768
'D' = 1152
'E' = 1472
'F' = 1536
'G' = 1920
'H' = 2560 (for IP)
'I' = 3072 (for IP)
'J' = 3584 (for IP)
'K' = 4096 (for IP)
Additional numbers (‘0’..’7’)

if item “N” (User Name)
Name (NameSize of ASCII chars)

if item “C” (Company Name)
Company (CompanyNameSize of ASCII chars)

if item “A” (Other Flags)
Aggregated Rate
'0' = no
'1' = yes

Restricted call
'0' = no
'1' = yes
Spare1 (1 bytes) **must be 0**
Spare2 (1 bytes) **must be 0**

if item "1" (1^ number)
Number1 (NumberSize of ASCII chars)

If (Additional numbers not equal '0')
Item = '2'
AddNumber1 (NumberSize of ASCII chars)
…..
item = '8'
AddNumber8 (NumberSize of ASCII chars)

Note : If Found = '2' the other parameters are left out.

Data Description:

Group:
Group of the records. One record is inserted in a group depending of the first letter of the name. There are ten (10) groups.

Index:
Record index in group

Found:
Flag to indicate if record is founded.

Name:
User Name.

CompanyName:
Company Name.

SpeechFlag:
Select if the call is for audio/video ('0') or for only speech (1')

Type of Call:
Select the network interface where to make the call.

Rate:
Select the rate wished for the call.

Number1:
Number used to make 1^ call

AdditionalNumber:
Number of additional numbers for the additional calls to do

Example:

C&I ---------- AT[?DRR001<cr> ----------→ AETE Read the 2^ record of group R in the directory
C&I <---------- AT[<DR0R00110I10<cr> ---------- AETE General: group R, index 1, found, audio-video Call, net ISDN, rate 64, no additional numbers
C&I <---------- AT[<DRNrossi<cr> ---------- AETE User name: rossi
C&I <---------- AT[<DRCaethra<cr> ---------- AETE Company Name: aethra
C&I <---------- AT[<DR10390712189701<cr> ----- AETE First Number: 0390712189701
C&I <---------- OK<cr> ---------- AETE

2.1.4.1.3 Read Record with Name (DN)

Note: not yet implemented

C&I send this message to ask the record whose name is the same of the given one.

Direction: C&I -> AETE
Type: 'D'
Sub-Type 'N'
Mode '?'
Data: NameSrc (NameSize of ASCII chars)

Direction: AETE -> C&I
Type: 'D'
Sub-Type 'N'
Mode '<'
Data:
Data:
Item:

'0' = General information
'N' = User Name
'C' = Company Name
'A' = Other Flags
'1' = 1^ number
'2' = 2^ number
…….
'8' = 8^ number

if item "0" (General Information)
Group:
'A'..'X'
Index (3 ASCII chars)
Found:
'1' = Yes
'2' = No
SpeechFlag:
'0' = Audio/Video Call
1' = Speech Call
Type of Call:

‘I’ = ISDN/CAU
‘L’ = IP (LAN)
‘N’ = NIC
‘S’ = SIP

Rate:

‘1’ = 64
‘2’ = 128
‘3’ = 192
‘4’ = 256
‘5’ = 320
‘6’ = 384
‘7’ = 448
‘8’ = 512
‘9’ = 576
‘A’ = 640
‘B’ = 704
‘C’ = 768
'D' = 1152
'E' = 1472
'F' = 1536
'G' = 1920
'H' = 2560 (for IP)
'I' = 3072 (for IP)
'J' = 3584 (for IP)
'K' = 4096 (for IP)

Additional numbers (‘0’..’7’)

if item “N” (User Name)
Name (NameSize of ASCII chars)

if item “C” (Company Name)
Company (CompanyNameSize of ASCII chars)

if item “A” (Other Flags)
Aggregated Rate
'0' = no
'1' = yes
Restricted call
'0' = no
'1' = yes
Spare1 (1 bytes) **must be 0**
Spare2 (1bytes) **must be 0**

if item “1” (1^ number)
Number1 (NumberSize of ASCII chars)

If (Additional numbers not equal ‘0’)
Item = ‘2’
AddNumber1 (NumberSize of ASCII chars)
…..
item = ‘8’
AddNumber8 (NumberSize of ASCII chars)

Note : If Found = ‘2’ the other parameters are left out.

Data Description:

NameSrc:
User Name to search.
It is possible to enter the incomplete name ending with * to find the first record whose name starts with the indicated one.

Group:
Group of the records. One record is inserted in a group depending of the first letter of the name. There are ten (10) groups.

Index:
Record index in list

Found:
Flag to indicate if record is found.

Group:
Group of the records. One record is inserted in a group depending of the first letter of the name. There are ten (10) groups.

Index:
Record index in group

Found:
Flag to indicate if record is founded.

Name:
User Name.

CompanyName:
Company Name.

SpeechFlag:
Select if the call is for audio/video (‘0’) or for only speech (1’)

Type of Call:
Select the network interface where to make the call.

Rate:
Select the rate whised for the call.

Number1:
Number used to make 1^ call

AdditionalNumber:
Number of additional numbers for the additional calls to do

AddNumberN:
Number used to make additional call N.

2.1.4.1.4 Delete Record with index (DD)

C&I send this message to delete the i-th record stored in the required list.
Note: after the update the list indexes must be calculated again.

Direction: C&I -> AETE
Type: 'D'
Sub-Type 'D'
Mode '&'
Data: Group:
'A'..'X'
Index (3 ASCII chars)

Data Description:

Index:
Record index in group

Example:

1) Delete with success

C&I ---------- AT[&DDA000<cr> ----------→ AETE Delete 1^ record on the directory
C&I <---------- OK<cr> ---------- AETE Record deleted

2) Delete with error

C&I ---------- AT[&DDA000<cr> ----------→ AETE Delete 1^ record on the directory
C&I <---------- AT[<DEDD50<cr> ---------- AETE Error: unable to execute command.

2.1.4.1.5 Insert New Record (DI)

C&I send this message to ask the entering of a new record. To modify a record need a procedure of delete and Insert of the record

Direction: C&I -> AETE
Type: 'D'
Sub-Type 'I'
Mode '&'
Data: Item:
'0' = General information
'N' = User Name
'C' = Company Name
'A' = Other Flags
'1' = 1^ number
'2' = 2^ number

…….
‘8’ = 8^ number
‘W’ = Save record

if item “0” (General Information)
SpeechFlag:
‘0’ = Audio/Video Call
1’ = Speech Call
Type of Call:
‘I’ = ISDN/CAU
‘L’ = IP (LAN)
‘N’ = NIC
‘S’ = SIP
Rate:
‘1’ = 64
‘2’ = 128
‘3’ = 192
‘4’ = 256
‘5’ = 320
‘6’ = 384
‘7’ = 448
‘8’ = 512
‘9’ = 576
‘A’ = 640
‘B’ = 704
‘C’ = 768
‘D’ = 1152
‘E’ = 1472
‘F’ = 1536
‘G’ = 1920
'H' = 2560 (for IP)
'I' = 3072 (for IP)
'J' = 3584 (for IP)
'K' = 4096 (for IP)
Additional numbers (‘0’..’7’)

if item “N” (User Name)
Name (NameSize of ASCII chars)

if item “C” (Company Name)
Company (CompanyNameSize of ASCII chars)

if item “A” (Other Flags)
Aggregated Rate
'0' = no
'1' = yes
Restricted call
'0' = no
'1' = yes
Spare1 (1 bytes) **must be 0**
Spare2 (1bytes) **must be 0**

if item “1” (1^ number)
Number1 (NumberSize of ASCII chars)

If (Additional numbers not equal ‘0’)
Item = ‘2’
AddNumber1 (NumberSize of ASCII chars)
…..
item = ‘8’
AddNumber8 (NumberSize of ASCII chars)

Data Description:

C&I	---------- AT[&DI00I10<cr> ----------→	AETE	General: audio-video call, net ISDN, rate 64, no additional numbers
C&I	<---------- OK<cr> ----------	AETE	
C&I	---------- AT[&DINrossi<cr> ----------→	AETE	User name: rossi
C&I	<---------- OK<cr> ----------	AETE	
C&I	---------- AT[<DICaethra<cr> ----------→	AETE	Company Name: aethra
C&I	<---------- OK<cr> ----------	AETE	
C&I	---------- AT[<DI10390712189701<cr> ---→	AETE	First Number: 0390712189701
C&I	<---------- OK<cr> ----------	AETE	
C&I	---------- AT[&DIW<cr> ----------→	AETE	Save record
C&I	<---------- OK<cr> ----------	AETE	

2.1.4.1.6 Delete all Records (DL)

C&I send this message to ask to delete all the existing record.

Direction: C&I -> AETE
Type: ‘D’
Sub-Type ‘L’
Mode ‘&‘
Data: None

Data Description:

Note: not yet implemented.

2.1.4.1.7 Generic LDAP information (DG)

This message is sent by C&I to request some genric parameters about LDAP server configuration.

Direction: C&I -> AETE
Type: ‘D’
Sub-Type ‘G’
Mode ‘?’
Data: None

Direction: AETE -> C&I
Type: ‘D’
Sub-Type ‘G’
Mode ‘<‘
Data: Index of LDAP server selected (3 bytes)
Number of servers configurated (3 bytes)
Index of last LDAP server connected (3 bytes)

Data Description:
This command is used to know if is selected the local phonebook or a remote (LDAP) phonebook (if index of server selected is 0, tha phonebook is local, if it is a positive number, it is the index of LDAP server loaded and it is equal to the index of last LDAP server connected). If the index of LDAP server connectd is equal to 0 then no server is connected. Other useful information is the max number of server configurated in the system.

C&I	---------- AT[?DG<cr> ----------→	AETE	
AETE	---------- AT[<DG000002001<cr> ----------→	C&I	Local phonebook selected, two server configurated, server 1 is the last connected
AETE	<---------- OK<cr> ----------	AETE	

2.1.4.1.8 Insert new LDAP server (DS)

This message is sent by C&I to request to store a new LDAP server configuration.

Direction: C&I -> AETE
Type: ‘D’
Sub-Type ‘S’
Mode ‘&’
Data: Command type:

‘N’ = Server name (**at the moment it can be only the server IP address**)
‘P’ = Server Password
‘B’ = Server first part bind value
‘C’ = Server second part bind value
‘L’ = Server first part base value
‘M’ = Server second part base value
‘Q’ = Server first part filter value
‘R’ = Server second part filter value
‘W’ = Save all

If Command type is 'N':
Name (NameSize of ASCII chars)
If Command type is 'P':
Password (PasswordSize of ASCII chars)
If Command type is 'B':
Server first part bind value (max 83 ASCII chars)
If Command type is 'C':
Server second part bind value (max 80 ASCII chars)
If Command type is 'L':
Server first part base value (max 83 ASCII chars)

If Command type is 'M':
Server second part base value (max 80 ASCII chars)
If Command type is 'Q':
Server first part filter value (max 83 ASCII chars)
If Command type is 'R':
Server second part filter value (max 80 ASCII chars)
If Command type is 'W':
Attention: without this command no one of previous commands will be saved

Data Description:
Command type 'N'
At the moment the server name can be only the server IP address.
Command type 'B' and 'C'
The LDAP server bind value can be 163 characters long, so if this appens, then the bind has to be divided into two parts. The first part is sent with command type 'B', the second part is sent with command type 'C'. The command type 'C' has to be sent always after the command type 'B' and it has to be used only the bind is longer then 83 characters. The most common bind value of the Aethra LDAP server is "*cn=Admin,dc=aethra,dc=com*".
Command type 'L' and 'M'
The LDAP server base value can be 163 characters long, so if this appens, then the base has to be divided into two parts. The first part is sent with command type 'L', the second part is sent with command type 'M'. The command type 'M' has to be sent always after the command type 'L' and it has to be used only the base is longer then 83 characters. The most common base value of the Aethra LDAP server is "*ou=h323identity,dc=aethra,dc=com*".
Command type 'Q' and 'R'
The LDAP server filter value can be 163 characters long, so if this appens, then the filter has to be divided into two parts. The first part is sent with command type 'Q', the second part is sent with command type 'R'. The command type 'R' has to be sent always after the command type 'Q' and it has to be used only the filter is longer then 83 characters. The most common filter value of the Aethra LDAP server is "*(CommUniqueId=*)*".

C&I ---------- AT[&DSN192.168.114.197<cr> ----------→ AETE Name = 192.168.114.197
C&I <---------- OK<cr> ----------> AETE
C&I ---------- AT[&DSP123456<cr> ----------→ AETE Password = 123456
C&I <---------- OK<cr> ---------- AETE
C&I ---------- AT[&DSBcn=Admin,dc=aethra,dc=com<cr> -----→ AETE Bind = cn=Admin,dc=aethra,dc=com
C&I <---------- OK<cr> ---------- AETE
C&I ---------- AT[&DSLou=h323identity,dc=aethra,dc=com <cr> ---→ AETE Base = ou=h323identity,dc=aethra,dc=com
C&I <---------- OK<cr> ---------- AETE
C&I ---------- AT[&DSQ(CommUniqueId=*)<cr> ----------→ AETE Filter = (CommUniqueId=*)
C&I ---------- AT[&DSW <cr> ----------> AETE Save new server
C&I <---------- OK<cr> ---------- AETE

2.1.4.1.9 Read LDAP server configuration (DP)
This message is sent by C&I to request a LDAP server configuration.
This message is sent by AETE to reply to a reading request.

Direction: C&I -> AETE
Type: ‘D’
Sub-Type ‘P’
Mode ‘?’
Data: Index (3 bytes)

Direction: AETE -> C&I
Type: ‘D’
Sub-Type ‘P’
Mode ‘<‘
Data: Item:

‘G’ = Generic Server info
‘N’ = Server name (**at the moment it can be only the server IP address**)
‘P’ = Server Password
‘B’ = Server first part bind value
‘C’ = Server second part bind value
‘L’ = Server first part base value
‘M’ = Server second part base value
‘Q’ = Server first part filter value
‘R’ = Server second part filter value

If Command type is 'G':
Index of LDAP server (3 bytes)
Spare (5 bytes) (**not yet used**)

If Command type is 'N':
Name (NameSize of ASCII chars)

If Command type is 'P':
Password (PasswordSize of ASCII chars)

If Command type is 'B':
Server first part bind value (max 83 ASCII chars)

If Command type is 'C':
Server second part bind value (max 80 ASCII chars)

If Command type is 'L':
Server first part base value (max 83 ASCII chars)

If Command type is 'M':
Server second part base value (max 80 ASCII chars)

If Command type is 'Q':
Server first part filter value (max 83 ASCII chars)

If Command type is 'R':
Server second part filter value (max 80 ASCII chars)

Data Description:

AETE	<---------- AT[?DP001<cr> ----------	C&I	Request to view the LDAP server configuration with index 1
AETE	---------- AT[<DPG00100000<cr>---------->	C&I	Index 1
AETE	---------- AT[<DPN192.168.114.197<cr> --→	C&I	Name: 192.168.114.197
AETE	---------- AT[<DPP123456<cr>----------→	C&I	Password: 123456

AETE ---------- AT[<DPBcn=Admin,dc=aethra,dc=com<cr>------→ C&I First part Bind: = cn=Admin,dc=aethra,dc=com
AETE ---------- AT[<DPC <cr>----------→ C&I Second part Bind:
AETE ---------- AT[<DPLou=h323identity,dc=aethra,dc=com<cr>-→C&I First part Base: = ou=h323identity,dc=aethra,dc=com
AETE ---------- AT[<DPM <cr>----------→ C&I Second part Base:
AETE ---------- AT[<DPQ(CommUniqueId=*)<cr>-→C&I First part Filter: = (CommUniqueId=*)
AETE ---------- AT[<DPR <cr>----------→ C&I Second part Filter:
AETE <---------- OK<cr> ---------- C&I

2.1.4.1.10 Delete LDAP server (DB)

This message is sent by C&I to request to delete a LDAP server configuration.

Direction: C&I -> AETE
Type: 'D'
Sub-Type 'B'
Mode '&'
Data: Index of LDAP server to delete (3 bytes)

Data Description:

2.1.4.1.11 Connect a LDAP server (DC)

This message is sent by C&I to request to connect a LDAP server.
To known the phonebook entries of a connected LDAP server, you have to use the usual command DR.
You can't insert, delete or modify a record in a remote LDAP server (the DI and DD commands fail).

Direction: C&I -> AETE
Type: 'D'
Sub-Type 'C'
Mode '&'
Data: Index of LDAP server to connect (3 bytes)

Data Description:
This command is used to connect a LDAP server so you can read all it's records. This operation can require some times. The index value of "000" must be used to select the local phonebook.

2.1.4.1.12 Phone Directory Configuration Error Message (DE)

This message is sent by AETE to notify an error on the received message:

Direction: AETE -> C&I
Type: 'D'
Sub-Type 'E'
Mode '<'
Data: Message Type
Sub-type
Error:
'1' = Bad parameter
'2' = Unknown message
'3' = wrong message length
'4' = Bad mode
'5' = Unable to execute command
Sub-code
If Unable to execute command
'0' = system timeout
'1' = system busy

Data Description:

2.1.5 Call Control Messages

The call control messages can use or the AT (ATD, ATA etc) messages format or the proprietor one hereafter mentioned.

2.1.5.1.1 Make a call (CD)

C&I send this message to make a call.

Direction: C&I -> AETE
Type: 'C'
Sub-Type 'D'
Mode '&'
Data: Call:
'1'..'F' (**hexadecimal value**)
CallType:
'1' = Speech
'2' = Unrestricted audio
'4' = Unrestricted video
'8' = Unrestricted undefined
Interface :
'0' = ISDN/CAU
'1' = IP
'2' = NIC
'3' = MCU ISDN (activation)

‘4’ = MCU IP (activation)
‘5’ = MCU mixed (activation)
‘6’ = SIP
Number (ASCII string)

Data Description:

Call:
Call progressive number: first, second etc.. For additional calls this number must be different from 1, but it can be any number.

CallType:
It is possible select type of call: speech or unrestricted digital. Unrestricted digital must be audio type for 1^ call and video for additional call.

Number:
Number to be called.
To make a call through the Phone Directory the first character must be a ‘@’ and the following one the name of the user to be called.

Examples:

1) Make a unrestricted digital call to 2189701 number using ISDN interface

AT[&CD1202189701<cr>

2) Make the 1^ call using records in phone directory with name ‘ROSSI’

AT[&CD180@ROSSI<cr>

2.1.5.1.2 Make a set of calls (CS)

C&I send this message to make a set of calls.

Direction: C&I -> AETE
Type: ‘C’
Sub-Type ‘S’
Mode ‘&‘
Data: CallType:
‘1’ = Speech
‘2’ = Unrestricted audio
‘4’ = Unrestricted video
‘8’ = Unrestricted undefined
Interface :
‘0’ = ISDN/CAU
‘1’ = IP
‘2’ = NIC
‘6’ = SIP
1^ Number (ASCII string)
Separator (=’.’)
2^ Number (difference with the 1^ Number)

…..
Separator (=’.’)
N^ Number (difference with the 1^ Number)

Data Description:

CallType:
It is possible select type of call: speech or unrestricted digital. Unrestricted digital must be audio type for 1^ call and video for additional call.

Numbers:
The length of all numbers must be the same. The difference is referred to first number (radix).
When the numbers are equal repeat the last digit.

Example:

1) Make a 6xB unrestricted digital call to 2189701 / 2189702 / 2189703 numbers using ISDN interface

AT[&CS802188701.1.2.2.3.3<cr>

2.1.5.1.3 Make call at a specified rate (CM)

C&I send this message to make a call at a specified rate, without change the rate of the system.

Direction: C&I -> AETE
Type: ‘C’
Sub-Type ‘M’
Mode ‘&‘
Data: CallType:
‘1’ = Speech
‘2’ = Unrestricted audio
‘4’ = Unrestricted video
‘8’ = Unrestricted undefined
Interface :
‘0’ = ISDN/CAU
‘1’ = IP
‘2’ = NIC
‘6’ = SIP
Rate :
‘1’ = 64
‘2’ = 128
‘3’ = 192
‘4’ = 256
‘5’ = 320
‘6’ = 384
‘7’ = 448
‘8’ = 512
‘9’ = 576
‘A’ = 640
‘B’ = 704
‘C’ = 768

‘D’ = 1152
‘E’ = 1472
‘F’ = 1536
‘G’ = 1920
‘H’ = 2560 (for IP)
‘I’ = 3072 (for IP)
'J' = 3584 (for IP)
'K' = 4096 (for IP)

Aggregate channels: (not significant for IP and NIC)
‘0’ = No
‘1’ = Yes

1^ Number (ASCII string)
Separator (=’.’)
2^ Number (difference with the 1^ Number)
…..
Separator (=’.’)
N^ Number (difference with the 1^ Number)

Data Description:

CallType:
It is possible select type of call: speech or unrestricted digital. Unrestricted digital must be audio type for 1^ call and video for additional call.

Rate:
It is possible select the rate to make the call. If the rate is not aggregated, then it is necessary to specified all the numbers to call.

Numbers:
The length of all numbers must be the same. The difference is referred to first number (radix).
When the numbers are equal repeat the last digit.

Example:

1) Make a 6xB unrestricted digital call to 2189701 / 2189702 / 2189703 numbers using ISDN interface

AT[&CS80602188701.1.2.2.3.3<cr>

2.1.5.1.4 Send a DTMF digit (CF)

C&I send this message to make a call.

Direction: C&I -> AETE
Type: ‘C’
Sub-Type ‘F’
Mode ‘&‘
Data: ‘0’..’9’,’#’,’*’

Data Description:

2.1.5.1.5 Answer an incoming call (CA)

C&I send this message to answer to an incoming call.

Direction: C&I -> AETE
Type: 'C'
Sub-Type 'A'
Mode '&'
Data: Call:
'1'..'N'
Interface:
'0' = ISDN/CAU
'1' = IP
'2' = NIC

Data Description:

Call:
Call progressive number: first, second etc. (**at present the only call accepted is the first**).

2.1.5.1.6 Disconnect a call (CH)

C&I send this message to disconnect a call.

Direction: C&I -> AETE
Type: 'C'
Sub-Type 'H'
Mode '&'
Data: Call:
'1'..'N'
Interface:
'0' = ISDN/CAU
'1' = IP
'2' = NIC

Data Description:

Call:
Call progressive number: first, second etc. (**at present the whole connection is disconnected**).

2.1.5.1.7 Connection Status (CB)

C&I send this message to know the status of connection.

Direction: C&I -> AETE
Type: 'C'
Sub-Type 'B'
Mode '?'
Data:

Direction: AETE -> C&I
Type: ‘C’
Sub-Type ‘B’
Mode ‘<’
Data: Current network type for the call:
‘0’ = ISDN
'1' = SIP
‘4’ = NIC
‘5’ = IP
'6' = MCU
Call status (2 bytes):
"02" = idle
"05" = started first call
"06" = sent first setup to network
"07" = the remote system is ringing after the first call
"08" = first incoming call
"09" = first call connected
"10" = started a following call
"11" = sent a following setup to network
"12" = the remote system is ringing after a following call
"13" = following incoming call
"14" = following call connected
"20" = waiting the complete disconnection
"30" = MCU ISDN active
"31" = MCU IP active
"32" = MCU mixed active
Video active:
‘0’ = no
‘1’ = yes
Data channel active:
‘0’ = no
‘1’ = yes
Connected number (ASCII string).

Data Description:

This command can be used to know the connection status of system in every time.

Example: System has four channel connected in an ISDN call with video and data active. The number connected is 071218981

C&I ---------- AT[?CB<cr> ----------→ AETE Ask for connection status
C&I ←---------- OK<cr> ---------- AETE
C&I ---------- AT[<CB0141104071218981<cr> ----------→ AETE Answer about connection status
C&I ←---------- OK<cr> ---------- AETE

2.1.5.1.8 Connection H320 Status (CI)

C&I send this message to know the parameters of the active H.320 connection.

Direction: C&I -> AETE
Type: ‘C’
Sub-Type ‘I’
Mode ‘?’
Data:

Direction: AETE -> C&I
Type: ‘C’
Sub-Type ‘I’
Mode ‘<’
Data: Audio Coding (2 bytes):
- ‘00’ = Off
- ‘01’ = MuLaw,0U
- ‘02’ = MuLaw,0F
- ‘03’ = MuLaw,F6
- ‘04’ = G722 m1
- ‘05’ = G722 m2
- ‘06’ = G722_m3
- ‘07’ = AU 16K
- ‘08’ = ALaw,0U
- ‘09’ = ALaw,0F
- ‘10’ = ALaw,F6
- ‘11’ = G.722.1 32K
- ‘12’ = G.722.1 24K
- ‘13’ = MP4 AAC-LD
- ‘14’ = MP4 AAC-LD 48K
- ‘15’ = MP4 AAC-LD 56K
- ‘16’ = MP4 AAC-LD 64K
- ‘17’ = MP4 AAC-LD 128K

Video Coding (2 bytes):
- ‘00’ = Off
- ‘01’ = H.261
- ‘02’ = H.263

Restricted:
- ‘0’ = no
- ‘1’ = yes

Rate (2 bytes):
- ‘01’ = 64k
- ‘02’ = 2x64k
- ‘03’ = 128k
- ‘04’ = 3x64k
- ‘05’ = 192k
- ‘06’ = 4x64k
- ‘07’ = 256k
- ‘08’ = 5x64k
- ‘09’ = 320k
- ‘10’ = 6x64k
- ‘11’ = 384k
- ‘12’ = 7x64k
- ‘13’ = 8x64k
- ‘14’ = 512k

‘15’ = 768k
‘16’ = 448k
‘17’ = 9x64k
‘18’ = 576k
‘19’ = 10x64k
‘20’ = 640k
‘21’ = 11x64k
‘22’ = 704k
‘23’ = 12x64k
'24' = 1152k
'25' = 1472k
'26' = 1536k
'27' = 1920k

MLP data rate (2 bytes):

‘00’ = Off
‘01’ = 4k
‘02’ = 6.4k
‘03’ = 8k
‘04’ = 14.4k
‘05’ = 16k
‘06’ = 22.4k
‘07’ = 24k
‘08’ = 30.4k
‘09’ = 32k
‘10’ = 38.4k
‘11’ = 40k
‘12’ = 46.4k
‘13’ = 62.4k
‘14’ = 64k
‘15’ = var

LSD data rate (2 bytes):

‘00’ = Off
‘01’ = 300
‘02’ = 1200
‘03’ = 4800
‘04’ = 6400
‘05’ = 8000
‘06’ = 9600
‘07’ = 14400
‘08’ = 16k
‘09’ = 24k
‘10’ = 32k
‘11’ = 40k
‘12’ = 48k
‘13’ = 56k
‘14’ = 62.4k
‘15’ = 64k

HMLP data rate (2 bytes):

‘00’ = Off
‘01’ = 62.4k
‘02’ = 64k
‘03’ = 128k

‘04’ = 192k
‘05’ = 256k
‘06’ = 320k
‘07’ = 384
‘08’ = var

HSD data rate (2 bytes):
‘00’ = Off
‘01`’ = 64k
‘02’ = var

T.120:
‘0’ = no
‘1’ = yes

H.224:
‘0’ = no
‘1’ = yes

Data Description:

This command can be used to know some current H.320 connection parameters.

2.1.5.1.9 Connection H323 Status (CL)

C&I send this message to know the parameters of the active H.323 connection.

Direction: C&I -> AETE
Type: ‘C’
Sub-Type ‘L’
Mode ‘?’
Data:

Direction: AETE -> C&I
Type: ‘C’
Sub-Type ‘L’
Mode ‘<’
Data: Audio Coding (2 bytes):
‘01’ = G.723
‘02’ = G.711 48k A-law
‘03’ = G.711 56k A-law
‘04’ = G.711 64 A-law
‘05’ = G.711 48k Mu-law
‘06’ = G.711 56k Mu-law
‘07’ = G.711 64 Mu-law
‘08’ = G.728
‘09’ = G.722 48k
‘10’ = G.722 56k
‘11’ = G.722 64k
'12’ = PT 724
‘13’ = PT 716
‘14’ = G.722.1 24K
‘15’ = G.722.1 32K

‘16’ = G.722.1
‘18’ = MP4 AAC-LD
‘19’ = MP4 AAC-LD 48K
‘20’ = MP4 AAC-LD 56K
‘21’ = MP4 AAC-LD 64K
‘22’ = MP4 AAC-LD 128K

Video Coding (2 bytes):
‘01’ = H.261 CIF
‘02’ = H.261 QCIF
‘03’ = H.263 CIF
‘04’ = H.263 QCIF
‘05’ = H.263 SQCIF
‘06’ = H.263 4CIF
‘07’ = H.263 1024x768
‘08’ = H.263 800x600
‘09’ = H.263 640x480
‘10’ = H.263 SIF
‘11’ = H.263 4SIF
‘12’ = H.263 ICIF
‘13’ = H.263 ISIF
‘14’ = H.264 CIF
‘15’ = H.264 QCIF

Number of channels connected (2 bytes):

Data Description:

This command can be used to know some current H.323 connection parameters.

2.1.5.1.10 Change rate (CR)

C&I send this message to change the rate of the active connection (**at the moment it is possible only for an H.323 call**).

Direction: C&I -> AETE
Type: ‘C’
Sub-Type ‘R’
Mode ‘&’
Data: Rate Tx (2 bytes)
‘01’ = 64
‘02’ = 128
‘03’ = 192
‘04’ = 256
‘05’ = 320
‘06’ = 384
‘07’ = 448
‘08’ = 512
‘09’ = 576 (at the moment decreased to 512)
‘10’ = 640 (at the moment decreased to 512)
‘11’ = 704 (at the moment decreased to 512)
‘12’ = 768
‘13’ = 1152
‘14’ = 1472

‘15’ = 1536
'16' = 1920
'17' = 2560
'18' = 3072
'19' = 3584 (for IP)
'20 = 4096 (for IP)

Rate Rx (2 bytes)
(See Rate Tx definition)

Data Description:

2.1.5.1.11 Dual Video Management (CV)

C&I send this message to start/stop or change the video source for Dual-Video streaming.

Direction: C&I -> AETE
Type: ‘C’
Sub-Type ‘V’
Mode ‘&’
Data: Action (1 bytes)
‘0’ = Stop dual video
‘1’ = Start dual video
‘2’ = Change video source

Video Source Index (2 bytes)
'01' = Room
'02' = Doc1 (Input 1 for AVC8XXX)
'03' = VCR (Input 4 for AVC8XXX)
'04' = Doc2 (Input 2 for AVC8XXX)
'05' = Doc3 (Input 3 for AVC8XXX)
'06' = Input 5 (only for AVC8400)
'07' = Input 6 (only for AVC8400)
'08' = VGA Input (only for Vegastar GOLD and AVC8400)

Data Description:

Action
If you want to start the dual video streaming, you have to set the action to 1, and the video source to one of the available video input. If you want to change the video source, you have to set the action to 2 and the video source to the one wished for.
If you want stop the dual vdeo stream, you have to set the action to 0.

2.1.5.1.12 Dual Video Status (CC)

C&I send this message to known the Dual-Video streaming status.

Direction: C&I -> AETE
Type: ‘C’
Sub-Type ‘C’
Mode ‘?’
Data:

Direction: AETE -> C&I
Type: ‘C’
Sub-Type ‘C’
Mode ‘<’
Data: Status (1 bytes):
‘0’ = Inactive
‘1’ = Active
Video Source Index (2 bytes)
'01' = Room
'02' = Doc1 (Input 1 for AVC8XXX)
'03' = VCR (Input 4 for AVC8XXX)
'04' = Doc2 (Input 2 for AVC8XXX)
'05' = Doc3 (Input 3 for AVC8XXX)
'06' = Input 5 (only for AVC8400)
'07' = Input 6 (only for AVC8400)
'08' = VGA Input (only for Vegastar GOLD and AVC8400)

Data Description:

Status
If dual video is disconnected the status is equal to 0.
If dual video is active, the status is equal to 1 and the video source index is the video input selected for this stream.

2.1.5.1.13 Call Error Indication (CE)

AETE sends this message to show an error on the received message:

Direction: AETE -> C&I
Type: ‘C’
Sub-Type ‘E’
Mode ‘<‘
Data: Message Type
Sub-type
Error:
'1' = Bad parameter
'2' = Unknown message
'3' = wrong message length
‘4’ = Bad mode
‘5’ = Unable to execute command
Sub-code
If Unable to execute command
‘0’ = system timeout
‘1’ = system busy

Data Description:

2.1.6 Multipoint Control Messages

This set of messages is useful to configure and control a multipoint call session.

2.1.6.1.1 Connect a terminal (MD)

C&I send this message to connect a terminal to a conference.

Direction: C&I -> AETE
Type: ‘M’
Sub-Type ‘D’
Mode ‘&‘
Data: Conference: '00'.....'NN' (**2 bytes**)
Terminal: '00'.....'NN' (**2 bytes**)
Call type:
‘0’ = Speech
‘8’ = Unrestricted undefined
Interface:
‘0’ = ISDN/CAU
‘1’ = IP
‘2’ = NIC (only in mixed mode)
‘6’ = SIP
1^ Number (ASCII string)
Separator (=’.’)
2^ Number (difference with the 1^ Number)
…..
Separator (=’.’)
N^ Number (difference with the 1^ Number)

Data Description:

Conference:
It is the number of the conference. At the moment it can be only '00'.

Terminal:
It is the number of the terminal. '00' is the local terminal that is always connected. At the moment the maximum number is 7.

CallType:
It is possible to select type of call: speech or unrestricted undefined.

Interface:
If the multiconference is ISDN, only ISDN network is accepted. If the multiconference is IP, only IP network is accepted. If the conference is mixed only one NIC interface can be selected and this type of interface is alternative for the ISDN interface. Yet if there is at least one terminal already connected with ISDN interface, the conference can't accept a new connection with a NIC interface, and vice versa if there is at least one terminal already connected with NIC interface, the conference can't accept a new connection with a ISDN interface.

Number:

Number to be called.
If there are more than one number (in a not aggregate channel rate call), the length of all numbers must be the same. The difference is referred to first number (radix).
When the numbers are equal repeat the last digit.

2.1.6.1.2 Disconnect a terminal (MH)

C&I send this message to disconnect a terminal from a conference.

Direction: C&I -> AETE
Type: 'M'
Sub-Type 'H'
Mode '&'
Data: Conference: '00'.....'NN' (**2 bytes**)
Terminal: '00'.....'NN' (**2 bytes**)

Data Description:

Conference:
It is the number of the conference. At the moment it can be only '00'.

Terminal:
It is the number of the terminal. '00' is the local terminal that is always connected. At the moment the maximum number is 7.

2.1.6.1.3 Close a conference (MO)

C&I send this message to close the conference.

Direction: C&I -> AETE
Type: 'M'
Sub-Type 'O'
Mode '&'
Data: Conference: '00'.....'NN' (**2 bytes**)

Data Description:

Conference:
It is the number of the conference. At the moment it can be only '00'.

2.1.6.1.4 Terminal status (MT)

C&I send this message to ask the status of a terminal in a multiconference.
AETE send this message to reply.

Direction: C&I -> AETE
Type: 'M'
Sub-Type 'T'
Mode '?'

Data: Conference: '00'.....'NN' (**2 bytes**)
Terminal: '00'.....'NN' (**2 bytes**)

Direction: AETE -> C&I
Type: 'M'
Sub-Type 'T'
Mode '>'
Data: Conference: '00'.....'NN' (**2 bytes**)
Terminal: '00'.....'NN' (**2 bytes**)
Connection status:
'0' = disconnected
'1' = connected
Audio status:
'0' = disconnected
'1' = connected
'2' = connected, but disabled (in mute)
Video status:
'0' = disconnected
'1' = connected
'2' = active speaker
'3' = previous active speaker
'4' = chairman (broadcast video)
Channel status 1 (**1 byte**):
'0' = disconnected
'1' = connected synchronized
'2' = connected, but not synchronized
.....
Channel status 12 (**1 byte**):
'0' = disconnected
'1' = connected synchronized
'2' = connected, but not synchronized
Terminal Name: (ASCII string)

Data Description:

Conference:
It is the number of the conference. At the moment it can be only '00'.

Terminal:
It is the number of the terminal. '00' is the local terminal that is always connected. At the moment the maximum number is 7.

Channel status:
There are maximum 12 channels for each terminal.

2.1.6.1.5 Terminal audio status (MA)

C&I send this message to set the terminal audio status

Direction: C&I -> AETE

Type: ‘M’
Sub-Type ‘A’
Mode ‘&‘
Data: Conference: '00'.....'NN' (**2 bytes**)
Terminal: '00'.....'NN' (**2 bytes**)
Audio status:
'0' = disabled
'1' = not disabled

Data Description:

Conference:
It is the number of the conference. At the moment it can be only '00'.

Terminal:
It is the number of the terminal. '00' is the local terminal that is always connected. At the moment the maximum number is 7.

2.1.6.1.6 Terminal information (MG)

C&I send this message to ask some information about the terminal.

Direction: AETE -> C&I
Type: ‘M’
Sub-Type ‘G’
Mode ‘?’
Data: Conference: '00'.....'NN' (**2 bytes**)
Terminal: '00'.....'NN' (**2 bytes**)
Information:
'C' = Some connection information

Direction: AETE -> C&I
Type: ‘M’
Sub-Type ‘G’
Mode ‘>’
Data: Conference: '00'.....'NN' (**2 bytes**)
Terminal: '00'.....'NN' (**2 bytes**)
Information:
'C' = Some connection information

if Some connection information:
Call network:
'0' = ISDN
'1' = LAN
'2' = NIC
'6' = SIP
Encryption status:
'0' = no encryption
'1' = disactivated
'2' = activated
'3' = asymmetric

H243 status:
'0' = none
'1' = chairman
'2' = on floor requested

Data Description:

Conference:
It is the number of the conference. At the moment it can be only '00'.

Terminal:
It is the number of the terminal. '00' is the local terminal that is always connected. At the moment the maximum number is 7.

Call network:
It is the network used by terminal for the connection. The information is correct only if the terminal is connected.

2.1.6.1.7 Terminal video status (MV)

C&I send this message to set the terminal video status

Direction: C&I -> AETE
Type: 'M'
Sub-Type 'V'
Mode '&'
Data: Conference: '00'.....'NN' (**2 bytes**)
Terminal: '00'.....'NN' (**2 bytes**)
Video status:
'0' = normal
'1' = broadcast

Data Description:

Conference:
It is the number of the conference. At the moment it can be only '00'.

Terminal:
It is the number of the terminal. '00' is the local terminal that is always connected. At the moment the maximum number is 7.

2.1.6.1.8 Terminal incoming call configuration (MI)

C&I send this message to ask or save the incoming call configuration for a terminal.
AETE send this message to reply.

Direction: C&I -> AETE
Type: 'M'
Sub-Type 'I'
Mode '&' / '?'

Data: Conference: '00'.....'NN' (**2 bytes**)
Terminal: '00'.....'NN' (**2 bytes**)
Incoming call management:
'1' = accept all
'2' = control the calling number
'3' = reject all
Number to accept: (ASCII string)

Direction: AETE -> C&I
Type: 'M'
Sub-Type 'I'
Mode '>'
Data: See above

Data Description:

Conference:
It is the number of the conference. At the moment it can be only '00'.

Terminal:
It is the number of the terminal. '00' is the local terminal that is always connected. At the moment the maximum number is 7.

Incoming call management:
If it is equal to '1', then the terminal is set as "meet-me". If it is equal to '3' the terminal is set as "dial-out". If it is equal to '2' then is accepted only the call from the number specified in the "Number to accept".

2.1.6.1.9 Conference finish time configuration (MF)

C&I send this message to ask or save the finish time configuration for a conference.
AETE send this message to reply.

Direction: C&I -> AETE
Type: 'M'
Sub-Type 'F'
Mode '&' / '?'
Data: Conference: '00'.....'NN' (**2 bytes**)
Unlimited time:
'0' = finish at the time and date specified
'1' = never finish
Hour: (**2 bytes**)
Minutes: (**2 bytes**)
Day: (**2 bytes**)
Month: (**2 bytes**)
Year: (**4 bytes**)

Direction: AETE -> C&I

Type: ‘M’
Sub-Type ‘F’
Mode ‘>’
Data: See above

Data Description:

Conference:
It is the number of the conference. At the moment it can be only '00'.

Unlimited time:
If it is equal to '1', then the conference never ends and the other parameters not have any sense.
If it is equal to '0', then the conference ends at time and date specified in the others parameters

2.1.6.1.10 Conference local video (MP)

C&I send this message to ask or save the local video layout.
AETE send this message to reply.

Direction: C&I -> AETE
Type: ‘M’
Sub-Type ‘P’
Mode '&' / ‘?’
Data: Conference: '00'.....'NN' (**2 bytes**)
Video layout:
'1' = continuos presence
'2' = voice switching

Direction: AETE -> C&I
Type: ‘M’
Sub-Type ‘P’
Mode ‘>’
Data: See above

Data Description:

Conference:
It is the number of the conference. At the moment it can be only '00'.

Video layout:
If it is equal to '1', then in the local video can see all the participants.
If it is equal to '2', then in the local video can see only that active speaker

2.1.6.1.11 Conference indication messages (MS)

AETE send this message to notify some conference and terminal states .

Direction: AETE -> C&I
Type: 'M'
Sub-Type 'S'
Mode '<'
Data: Message Type:
- '1' = Terminal name indication
- '2' = Terminal video status
- '3' = Terminal audio status
- '4' = Terminal channel status
- '5' = Terminal connection status
- '6' = Terminal encryption status
- '7' = Terminal H243 status
- '8' = Conference video status
- '9' = Conference close indication

if Terminal name indication:
Data: Conference: '00'.....'NN' (**2 bytes**)
Terminal: '00'.....'NN' (**2 bytes**)
Terminal Name: (ASCII string)

if Terminal video status:
Data: Conference: '00'.....'NN' (**2 bytes**)
Terminal: '00'.....'NN' (**2 bytes**)
Video status:
- '0' = disconnected
- '1' = connected
- '2' = active speaker
- '3' = previous active speaker
- '4' = chairman (broadcast video)

if Terminal audio status:
Data: Conference: '00'.....'NN' (**2 bytes**)
Terminal: '00'.....'NN' (**2 bytes**)
Audio status:
- '0' = disconnected
- '1' = connected
- '2' = connected, but disabled (in mute)

if Terminal channel status:
Data: Conference: '00'.....'NN' (**2 bytes**)
Terminal: '00'.....'NN' (**2 bytes**)
Number of channels: '00'.....'NN' (**2 bytes, actually this value is "12"**)
1^ Channel Status:
- '0' = disconnected
- '1' = connected synchronized
- '2' = connected, but not synchronized

2^ Channel Status:

'0' = disconnected
'1' = connected synchronized
'2' = connected, but not synchronized

.....

NN^ Channel Status:
'0' = disconnected
'1' = connected synchronized
'2' = connected, but not synchronized

if Terminal connection status:

Data: Conference: '00'.....'NN' (**2 bytes**)
Terminal: '00'.....'NN' (**2 bytes**)
Connection status:
'0' = disconnected
'1' = connected

if Terminal encryption status:

Data: Conference: '00'.....'NN' (**2 bytes**)
Terminal: '00'.....'NN' (**2 bytes**)
Encryption status:
'0' = no encryption
'1' = disactivated
'2' = activated
'3' = asymmetric

if Terminal H243 status:

Data: Conference: '00'.....'NN' (**2 bytes**)
Terminal: '00'.....'NN' (**2 bytes**)
H243 status:
'0' = none
'1' = chairman
'2' = on floor requested

if Conference video status:

Data: Conference: '00'.....'NN' (**2 bytes**)
Video status:
'1' = continuos presence
'2' = voice switching

if Conference close indication:

Data: Conference: '00'.....'NN' (**2 bytes**)

Data Description:

Conference:
It is the number of the conference. At the moment it can be only '00'.

Terminal:
It is the number of the terminal. '00' is the local terminal that is always connected. At the moment the maximum number is 7.

Message Type:
If the message type is Encryption, than the information is never available for the local terminal

2.1.6.1.12 Multipoint Error Indication (ME)

AETE sends this message to show an error on the received message:

Direction: AETE -> C&I
Type: 'M'
Sub-Type 'E'
Mode '<'
Data: Message Type
Sub-type
Error:
'1' = Bad parameter
'2' = Unknown message
'3' = wrong message length
'4' = Bad mode
'5' = Unable to execute command
Sub-code
If Unable to execute command
'0' = system timeout
'1' = system busy

Data Description:

2.1.7 Control & Indication Messages

The control & indication messages are used by AETE to show the status or calls changes to C&I.
C&I use them to manage the local and/or remote cameras.

2.1.7.1 Autotracking Command/Status (SA)

This message is sent by AETE to C&I to indicate the status of autotracking audio or video of video camera.
C&I send this message to modify or know the status of autotracking audio or video of video camera.

Direction: C&I -> AETE
Type: 'S'
Sub-Type 'A'
Mode '&' / '?'
Data: Autotracking type:
'1' = Audio
'2' = Video (only for SONY video camera)
Mode:
'0' = Disable
'1' = Enable

Start : (only valid for autotracking video)
‘0’ = No
‘1’ = Yes

Direction: AETE -> C&I
Type: ‘S’
Sub-Type ‘A’
Mode ‘<’
Data: Autotracking status:
‘0’ = disable
‘1’ = Audio active
‘2’ = Video active

Data Description:

This command can activate the autotracking function for automatic framing on the speaker.
In autotracking video is necessary to select a particular of video that the video camera has to follow.

Example: Enable, select and start autotracking video

C&I	---------- AT[&SA110<cr> ----------→	AETE	Enable Autotracking video
C&I	←---------- OK<cr> ----------	AETE	
C&I	---------- AT[&SF0101R<cr> ----------→	AETE	Move square of the video selected to right
C&I	←---------- OK<cr> ----------	AETE	
C&I	---------- AT[&SF0101R<cr> ----------→	AETE	Move square of the video selected to right
C&I	←---------- OK<cr> ----------	AETE	
……			
C&I	---------- AT[&SA111<cr> ----------→	AETE	Start Autotracking video
C&I	←---------- OK<cr> ----------	AETE	

2.1.7.2 Aggregator Unit (Bonding) Indication (SB)

This message is sent by AETE to C&I as indication of a change into the aggregator unit.

Direction: AETE -> C&I
Type: ‘S’
Sub-Type ‘B’
Mode ‘<’
Data: Item:
‘G’ = General information
‘C’ = Channel information

if item ‘G’ (General Information)
ISDN Access Mask (“00”..”FF”)
Bit 1 = ISDN Access 1
Bit 2 = ISDN Access 2
Bit 3 = ISDN Access 3
Bit 4 = ISDN Access 4
Bit 5 = ISDN Access 5
Bit 6 = ISDN Access 6

Bonding Mode in Tx:
- ‘1’= Bonding mode 1
- ‘2’ = Bonding mode 3
- ‘3’ = Bonding disable (transparent mode)
- ‘4’ = Automatic mode

Rate requested in Tx:
- ‘2’ = 128 kbit/sec
- ‘3’ = 192 kbit/sec
- ‘4’ = 256 kbit/sec
- ‘5’ = 320 kbit/sec
- ‘6’ = 384 kbit/sec
- ‘7’ = 448 kbit/sec
- ‘8’ = 512 kbit/sec
- ‘9’ = 576 kbit/sec
- ‘A’ = 640 kbit/sec
- ‘B’ = 704 kbit/sec
- ‘C’ = 768 kbit/sec

Restricted mode:
- ‘0’ = no
- ‘1’ = yes

Bonding Mode in Rx:
- ‘1’= Bonding mode 1
- ‘2’ = Bonding mode 3
- ‘3’ = Bonding disable (transparent mode)
- ‘4’ = Automatic mode

Rate requested in Rx:
- ‘2’ = 128 kbit/sec
- ‘3’ = 192 kbit/sec
- ‘4’ = 256 kbit/sec
- ‘5’ = 320 kbit/sec
- ‘6’ = 384 kbit/sec
- ‘7’ = 448 kbit/sec
- ‘8’ = 512 kbit/sec
- ‘9’ = 576 kbit/sec
- ‘A’ = 640 kbit/sec
- ‘B’ = 704 kbit/sec
- ‘C’ = 768 kbit/sec

Bonding state: (“00”..”FF”)
- Bit 1..5 = Internal state
  - 0 = Idle
  - 2 = Waiting negotiation
  - 3 = Exchange numbers step 1
  - 4 = Exchange numbers step 2
  - 5 = Waiting additional channels
  - 6 = Waiting equalization
  - 7 = Call active
  - 9 = Disconnection in progress
  - 13 = Exchange numbers step 3
- Bit 6 = Error Flag
  - 0 = No error
  - 1 = Error
- Bit 7 = Remote Synchronization

0 = no
1 = yes
Bit 8 = Local Synchronization
0 = no
1 = yes

if item 'C' (Channel information)
Channel Number ('1'..'F') **Hexadecimal value**
ISDN Access ('0'..'6') :
'0' = undefined - don't display the informations
'1'..'6'
Channel status (2 digit) :
00 = Idle
01 = Incoming call
02 = Incoming call accepted
10 = Incoming call active
16 = Starting Outgoing call
17 = Leaving Outgoing call
18 = Setup acknowledge received
19 = Call proceeding
20 = Alerting
26 = Outgoing call active
32 = Disconnect indication
33 = Release Request
B channel connected:
'0' = undefined - don't display the informations
'1' = B1
'2' = B2
Disconnection cause ("00".."FF"):
0x00 = cause not available
0x01 = isdn level 1 disactive
0x02 = isdn level 2 disactive
0x03 = isdn level 3 active but not connected.
0x04 = change access
0x10 = restart isdn level 3
0x20 = automatic mode
0x21 = remote unrecognized
0x30 = lack of incoming call
0x31 = remote configuration
0x32 = insufficient accesses enabled
0x33 = local configuration
0x55 = not remote synchronization
0x40..0x4F = anomalous disconnection
0x60..0x6F = in band disconnection
0x80..0xFF = bit 1..7 network disconnection
Connected number (ASCII string max 32 digit)

Data Description:

ISDN Access Mask
Each bit set in this mask indicates an isdn access enable. Bit 1 for access 1, bit 2 for access 2 etc.
Example: access 1 & 2 enable; access 3 & 4 disable -> Access Mask = 03

2.1.7.3 Call Status (SC)

AETE sends this message to C&I to show a status change on the call.

Direction: AETE -> C&I
Type: ‘S’
Sub-Type ‘C’
Mode ‘<’
Data: Call:
‘1’..’F’ (**Hexadecimal number**)
Interface :
‘0’ = ISDN/CAU
‘1’ = IP
‘2’ = NIC
‘6’ = SIP
CallType:
'1' = Release Indication with Progress Indicator
‘2’ = Setup acknowledge
‘3’ = Call proceeding
‘4’ = Information element
‘5’ = Alerting
‘6’ = Incoming call
‘7’ = Outgoing call connected
‘8’ = Incoming call connected
‘9’ = Release Indication
‘A” = Release Confirmation
‘B’ = Display Information Element
‘C” = Charge advise information element
‘D’ = Suspend Confirm
‘E’ = Resume Confirm
‘F’ = Call Advice

if Release Indication with progress indicator:

SourceRelease:
‘0’ = Internal Error
‘1’ = Timeout
‘2’ = Network
Cause : (3 chars - See ETS 300 Table 4.13)
Progress Indicator (3 chars)
000 = ISDN to ISDN
008 = in band info

if Incoming Call:
CallType:
‘1’ = Speech
‘2’ = Unrestricted audio
‘4’ = Unrestricted video

‘8’ = Unrestricted undefined
Calling Number (ASCII string)

if Outgoing call connected :

CallType:
‘1’ = Speech
‘2’ = Unrestricted audio
‘4’ = Unrestricted video
‘8’ = Unrestricted undefined
Number of aggregate channels (1..F **Hexadecimal**) **Note:** is not working. The rate is notified by the SN or CL messages.
Called Number (ASCII string)

if Incoming call connected :

CallType:
‘1’ = Speech
‘2’ = Unrestricted audio
‘4’ = Unrestricted video
‘8’ = Unrestricted undefined
Number of aggregate channels (1..F **Hexadecimal**)
Calling Number (ASCII string)

if Release Indication :

SourceRelease:
‘0’ = Internal Error
‘1’ = Timeout
‘2’ = Network
Cause : (3 chars - See ETS 300 Table 4.13)

if Display Indication :

ASCII string to display

if Charge Advise :

Charge advice string to display

if Information element :

information (ASCII string)

if Call Advice:
CallType:
‘1’ = Speech
‘2’ = Unrestricted audio
‘4’ = Unrestricted video
‘8’ = Unrestricted undefined
Calling Number (ASCII string)

Data Description:

Examples:

Make an unrestricted digital call at number 2181701 in interface ISDN/CAU

```
C&I     ------- AT[&CD1202181701<cr> ------→ AETE   (Make 1^ call at number 2181701)
C&I     ←----------------- OK<cr> ------------------ AETE
C&I     <------ AT[<SC102<cr> ---------------------- AETE   (Setup ack at call 1)
C&I     <------ AT[<SC103<cr> ---------------------- AETE   (Call proceeding at call 1)
C&I     <------ AT[<SC10720712181701<cr> -- AETE   (Outgoing call 1 connected)
```

Make a unrestricted digital call at number 2181701 busy in interface ISDN/CAU

```
C&I     ------- AT[&CD1202181701<cr> -----→ AETE   (Make 1^ call at number 2181701)
C&I     ←----------------- OK<cr> ------------------ AETE
C&I     <------ AT[<SC102<cr> ---------------------- AETE   (Setup ack at call 1)
C&I     <------ AT[<SC1092017<cr> ------------ AETE   (Release Indication: Src=Net, User Busy )
C&I     ------- AT[&CH10<cr> ------------------→ AETE   (Disconnect 1^ call)
C&I     ←----------------- OK<cr> ------------------ AETE
C&I     <------ AT[<SC10A<cr> ---------------------- AETE   (Release Confirmation 1^ call)
```

Incoming Call:

```
C&I     <---- AT[<SC10620712181701<cr> ---- AETE   (Incoming Call 1, cal-type=unrest.,
                                                    number calling = 0712181701)
C&I     ------- AT[&CA10<cr> ------------------→ AETE   (Answer at call 1)
C&I     ←----------------- OK<cr> ------------------ AETE
C&I     <--- AT[<SC10820712181701<cr> ----  AETE   (Incoming call 1 connected)
```

2.1.7.4 Data Status (SD)

AETE sends this message to C&I to indicate the status of data channel.

Direction:	AETE -> C&I
Type:	'S'
Sub-Type	'D'
Mode	'<'
Data:	Status: '0' = Closed '1' = Open

Data Description:

2.1.7.5 Video Camera Command/Status (SF)

C&I send this message to select/manage local or remote cameras.
It is sent by AETE to indicate camera selection as an answer to C&I request or to indicate an action executed by the remote terminal.

Direction: C&I -> AETE
Type: ‘S’
Sub-Type ‘F’
Mode ‘&’ / ‘?‘
Data: VideoCameraNum (2 ASCII digits)
Site:
‘0’ = local
‘1’ = remote
Command:
‘0’ = select
‘1’ = pan with timeout
‘2’ = tilt with timeout
‘3’ = zoom with timeout
‘4’ = focus with timeout
‘5’ = preset
‘6’ = store preset
‘!’ = stop action
‘7’ = pan continually
‘8’ = tilt continually
‘9’ = zoom continually
‘A’ = focus continually
‘B’ = preset extended
‘C’ = store preset extended

if pan ('1' or '7'):
‘R’ = Right
‘L’ = Left
if tilt ('2' or '8'):
‘U’ = Up
‘D’ = Down
if zoom ('3' or '9'):
‘+’ = zoom in
‘-‘ = zoom out
if focus ('4' or 'A'):
‘+’ = far
‘-‘ = near
if preset or memory ('5' or '6')
‘0’..’F’ (**Hexadecimal Number**)
if preset or memory extended ('B' or 'C')
3 bytes (**Decimal Number**)

Direction: AETE -> C&I
Type: ‘S’
Sub-Type ‘F’
Mode ‘<‘
Data: VideoCameraNum (2 ASCII digits)

Site:
‘0’ = local
‘1’ = remote

Data Description:

VideoCameraNum:
Number associated to the camera.
In local environment the numbers possible are 01..08 because the maximum number of video inputs is 8.
If the number is equal to 00, then the action is referred to the current selected camera.
01 = Room
02 = Doc1 (Input 1 for AVC8XXX)
03 = VCR (Input 4 for AVC8XXX)
04 = Doc2 (Input 2 for AVC8XXX)
05 = Doc3 (Input 3 for AVC8XXX)
06 = Input 5 (only for AVC8400)
07 = Input 6 (only for AVC8400)
08 = VGA Input (only for Vegastar GOLD and AVC8400). For this camera the only command possible is the selection.

The number of the camera of remote terminal may be obtained receiving camera information message.

Site:
This parameter indicates if message is for local (‘0’) or remote (‘1’) camera.

Command:
Command to execute: select (select video-camera), pan, tilt, zoom, focus, preset and memory.
The commands with timeout move camera with a fixed timeout (500 ms), than stop it.
Instead commands pan, tilt, zoom and focus continually move camera until the stop command will be sent

Example: move the main camera (01) to right

C&I ---------- AT[&SF0101R<cr> ----------→ AETE
C&I <---------- OK<cr> ---------- AETE

2.1.7.6 Video Camera Command (SY)

C&I send this message to move local cameras without change the current video source. It is useful to move cameras into conference rooms where the video input is always the same because there is a video matrix.

Direction: C&I -> AETE
Type: ‘S’
Sub-Type ‘Y’
Mode ‘&’ / ‘?‘
Data: VideoCameraNum (2 ASCII digits)
Command:
‘1’ = pan with timeout
‘2’ = tilt with timeout
‘3’ = zoom with timeout
‘4’ = focus with timeout

‘5’ = preset
‘6’ = store preset
‘!’ = stop action
‘7’ = pan continually
‘8’ = tilt continually
‘9’ = zoom continually
‘A’ = focus continually

if pan :
‘R’ = Right
‘L’ = Left
if tilt:
‘U’ = Up
‘D’ = Down
if zoom:
‘+’ = zoom in
‘-‘ = zoom out
if focus:
‘+’ = far
‘-‘ = near
if preset or memory (3 bytes)

Data Description:

VideoCameraNum:
Number associated to the camera.
In local environment the numbers possible are 01..07 because the maximum number of moveable video inputs is 7.
If the number is equal to 00, then the action is referred to the current selected camera.
01 = Room
02 = Doc1 (Input 1 for AVC8XXX)
03 = VCR (Input 4 for AVC8XXX)
04 = Doc2 (Input 2 for AVC8XXX)
05 = Doc3 (Input 3 for AVC8XXX)
06 = Input 5 (only for AVC8400)
07 = Input 6 (only for AVC8400)

Command:
Command to execute: pan, tilt, zoom, focus, preset and memory.
The commands with timeout move camera with a fixed timeout (500 ms), than stop it.
Instead commands pan, tilt, zoom and focus continually move camera until the stop command will be sent.

Example: move the main camera (01) to right

C&I ---------- AT[&SY011R<cr> ----------→ AETE
C&I <---------- OK<cr> ---------- AETE

2.1.7.7 Board Reset (SG)

C&I send this message to reset or shutdown the board.
AETE send this message to notify a reset or shutdown system.

Direction: C&I -> AETE
Type: 'S'
Sub-Type 'G'
Mode '&' / '>'
Data: Command:
'1' = reset
'2' = shutdown

Data Description:

Example: reset the board

C&I ---------- AT[&SG1<cr> ----------→ AETE
C&I <---------- OK<cr> ---------- AETE

2.1.7.8 Conference Control (SH)

NOTE: **Not yet implemented.**

This message is sent by C&I to AETE to control a conference in a multi-point connection.
This message is sent by AETE to AETE to indicate a status or ack in a conference in a multi-point connection.

Direction: C&I -> AETE
Type: 'S'
Sub-Type 'H'
Mode '&' / '?'
Data: Command:
'1' = Request for Conductorship
'2' = Conductorship Relinquished
'3' = Select Conducted Mode
'4' = Select Not Conducted Mode
'5' = Floor Granted
'6' = Floor Request
'7' = Confirmation of port number
'8' = Drop terminal
'9' = Drop all terminals
'A' = Video Source Command
'B' = Set Video Mode

if command '1' (Request for Conductorship)
none
if command '2' (Conductorship Relinquished)
none
if command '3' (Select Conducted Mode)
none

if command '4' (Select Not Conducted Mode)
none
if command '5' (Floor Granted)
MCU ("000"…"999" number of MCU)
TE ("000"…"999" number of Terminal in MCU)
PAR ("000"…"999" number of participant in Terminal)
if command '6' (Floor Request)
MCU ("000"…"999" number of local MCU)
TE ("000"…"999" own number of Terminal in local MCU)
PAR ("000"…"999" number of participant in Terminal)
if command '7' (Confirmation of port number)
none (can be only read)
if command '8' (Drop Terminal)
MCU ("000"…"999" number of MCU of Terminal to disconnect)
TE ("000"…"999" number of TE in MCU of Terminal to disconnect)
if command '9' (Drop all Terminals)
none

Direction: AETE -> C&I
Type: 'S'
Sub-Type 'H'
Mode '<'
Data: Indication
'1' = Request for Conductorship
'2' = Conductorship Relinquished
'3' = Select Conducted Mode
'4' = Select Not Conducted Mode
'5' = Floor Granted
'6' = Floor Request
'7' = Confirmation of port number
'8' = Terminal Dropped
'A' = Video Source Command
'B' = Set Video Mode

'C' = Request for Conductorship ack

if indication '1' (Request for Conductorship)
MCU ("000"…"999" number of MCU)
TE ("000"…"999" number of Terminal in MCU)
PAR ("000"…"999" number of participant in Terminal)
if indication 'C' (Request for Conductorship ack)
'1' = ACK
'0' = NACK
if indication '2' (Conductorship Relinquished)
MCU ("000"…"999" number of MCU)
TE ("000"…"999" number of Terminal in MCU)
PAR ("000"…"999" number of participant in Terminal)
if indication '3' (Select Conducted Mode)
MCU ("000"…"999" number of MCU)
TE ("000"…"999" number of Terminal in MCU)
PAR ("000"…"999" number of participant in Terminal)
if indication '4' (Select Not Conducted Mode)

none

if indication '5' (Floor Granted)

MCU ("000"…"999" number of MCU)
TE ("000"…"999" number of Terminal in MCU)
PAR ("000"…"999" number of participant in Terminal)

if indication '6' (Floor Request)

MCU ("000"…"999" number of MCU)
TE ("000"…"999" number of Terminal in MCU)
PAR ("000"…"999" number of participant in Terminal)

if indication '7' (Confirmation of port number)

MCU ("000"…"999" number of local MCU)
TE ("000"…"999" number of Terminal in MCU associated to own terminal)
PAR ("000")

if indication '8' (Terminal Droped)

MCU ("000"…"999" number of MCU)
TE ("000"…"999" number of Terminal in MCU)

Data Description:

Request for Conductorship
This message is generated at remote terminal by participant wishing to become conductor. This information will be displayed on the C&I.
The message can also be generated locally at the C&I when conductorship is required.

Conductorship Relinquished
In the conducted mode, when the conductor at the local C&I wishes to relinquish the conductorship, this message is sent to the local AETE (and subsequently to the remote terminals).
In the case of the conductor at the remote terminal relinquishing the conductorship then this information will also be received at the C&I for display.

Select Conducted Mode
This message can be generated at the local C&I (assuming the conductorship token is possessed locally) to set all terminals to the conducted state. In the case where the conductorship token is remote then this message will be received by the C&I to inform the operator of the new conducted state and name of the conductor.

Select Non Conducted Mode
This message is similar to Select Conducted Mode and sets the MCUs and Terminals to the non conducted mode. It may also be used by an MCU if the loss of conductor's Terminal is detected.

Floor Granted
This message can be generated from the local C&I by the conductor (assumes conductorship token) to enable a participant to intervention in conference.
In the case where this message is received at the C&I the state of particular participant is displayed.

Floor Request
This message is received by the C&I and is used to indicate a particular participant's floor request.
The message can also be generated locally at the C&I when floor is required.

Confirmation of port number
Inform C&I of the port number associated with the local terminal.

This port number (MCU+TE) must be subsequently used to exchange message with MCU and with other terminals.

2.1.7.9 Video Camera Information (SI)

This message is sent by AETE to C&I to give information on remote cameras.

Direction: AETE -> C&I
Type: 'S'
Sub-Type 'I'
Mode '<'
Data: VideoCameraNumber
"00".."15"
Present:
'0' = No
'1' = Yes
Pan & Tilt:
'0' = No
'1' = Yes
PresetNumber:
'00'..'15' (according to H.281)
Name (max 16 ASCII chars according to H.281)

Data Description:

See Video Camera Parameters in Terminal Configuration.

2.1.7.10 Link Status (SL)

AETE sends this message to C&I to inform it of the current working mode (audio, video, etc).

Direction: AETE -> C&I
Type: 'S'
Sub-Type 'L'
Mode '<'
Data: Point-to-Point:
'0' (connected with MCU)
'1'
Restricted Mode :
'0'
'1'
Request of Conductior-ship :
'0' (not possible)
'1' (possible)
Terminal status with MCU :
bit 1 = 1 secondary,
0 primary
bit 2 = 1 no other terminals connected

0 other terminal(s) connected

Mlp active :

‘0’ No

‘1’ Yes (X.25 proprietary)

‘2’ Yes (Transparent for T.120 etc.)

Audio in Tx :

‘0’ = G711 A-Law

‘1’ = G711 Mu-Law

‘2’ = G722 m1

‘3’ = G722 m2

‘4’ = G722_m3

‘5’ = AU 16K

‘6’ = AU Off F

‘7’ = G.722.1 32K

‘8’ = G.722.1 24K

‘9’ = MPEG 48K

‘A’ = MPEG 48K

‘B’ = MPEG 56K

‘C’ = MPEG 64K

Video in Tx :

‘0’ = Video Off

‘1’ = H.261

‘2’ = H.263

‘3’ = H.264

Rate in Tx :

‘1’ = 64

‘2’ = 128

‘3’ = 192

‘4’ = 256

‘5’ = 320

‘6’ = 384

‘7’ = 448

‘8’ = 512

‘9’ = 576

‘A’ = 640

‘B’ = 704

‘C’ = 768

‘D’ = 1152

‘E’ = 1472

‘F’ = 1536

‘G’ = 1920

Aggregate Channels in Tx :

‘0’ = No

‘1’ = Yes

Mlp in Tx :

‘0’ = Mlp Off

‘1’ = Mlp 4K

‘2’ = Mlp 6.4K

‘3’ = var Mlp

‘4’ = Mlp 14400

‘5’ = Mlp 22.4K

‘6’ = Mlp 30.4K

‘7’ = Mlp 38.4K
‘8’ = Mlp 46.4K
‘9’ = Mlp 16K
‘A’ = Mlp 24K
‘B’ = Mlp 32K
‘C’ = Mlp 40K
‘D’ = Mlp 62.4K
‘E’ = Mlp 64K

Lsd in Tx :

‘0’ = Lsd OFF
‘1’ = Lsd 300
‘2’ = Lsd 1200
‘3’ = Lsd 4800
‘4’ = Lsd 6400
‘5’ = Lsd 8000
‘6’ = Lsd 9600
‘7’ = Lsd 14400
‘8’ = Lsd 16K
‘9’ = Lsd 24K
‘A’ = Lsd 32K
‘B’ = Lsd 40K
‘C’ = Lsd 48K
‘D’ = Lsd 56K
‘E’ = Lsd 62.4K
‘F’ = Lsd 64K

Hsd in Tx :

‘0’ = Hsd Off
‘1’ = Hsd 64

H-Mlp in Tx :

‘0’ = HMlp Off
‘1’ = HMlp 62.4
‘2’ = HMlp 64
‘3’ = HMlp 128
‘4’ = HMlp 192
‘5’ = HMlp 256
‘6’ = HMlp 320
‘7’ = HMlp 384
‘8’ = Var HMlp

Audio in Rx :

‘0’ = G711 A-Law
‘1’ = G711 Mu-Law
‘2’ = G722 m1
‘3’ = G722 m2
‘4’ = G722m3
‘5’ = AU 16K
‘6’ = AU Off F
‘7’ = G.722.1 32K
‘8’ = G.722.1 24K
‘A’ = MPEG 48K
‘B’ = MPEG 56K
‘C’ = MPEG 64K

Video in Rx :

‘0’ = Video Off
‘1’ = H.261
‘2’ = H.263
‘3’ = H.264

Rate in Rx :

‘1’ = 64
‘2’ = 128
‘3’ = 192
‘4’ = 256
‘5’ = 320
‘6’ = 384
‘7’ = 448
‘8’ = 512
‘9’ = 576
‘A’ = 640
‘B’ = 704
‘C’ = 768
‘D’ = 1152
‘E’ = 1472
‘F’ = 1536
‘G’ = 1920

Aggregated Channels in Rx :

‘0’ = No
‘1’ = Yes

Mlp in Rx :

‘0’ = Mlp Off
‘1’ = Mlp 4K
‘2’ = Mlp 6.4K
‘3’ = var Mlp
‘4’ = Mlp 14400
‘5’ = Mlp 22.4K
‘6’ = Mlp 30.4K
‘7’ = Mlp 38.4K
‘8’ = Mlp 46.4K
‘9’ = Mlp 16K
‘A’ = Mlp 24K
‘B’ = Mlp 32K
‘C’ = Mlp 40K
‘D’ = Mlp 62.4K
‘E’ = Mlp 64K

Lsd in Rx :

‘0’ = Lsd Off
‘1’ = Lsd 300
‘2’ = Lsd 1200
‘3’ = Lsd 4800
‘4’ = Lsd 6400
‘5’ = Lsd 8000
‘6’ = Lsd 9600
‘7’ = Lsd 14400
‘8’ = Lsd 16K
‘9’ = Lsd 24K
‘A’ = Lsd 32K

‘B’ = Lsd 40K
‘C’ = Lsd 48K
‘D’ = Lsd 56K
‘E’ = Lsd 62_4K
‘F’ = Lsd 64K

Hsd in Rx :
‘0’ = Hsd Off
‘1’ = Hsd 64

H-Mlp in Rx :
‘0’ = HMlp Off
‘1’ = HMlp 62.4
‘2’ = HMlp 64

H.320 / Broadcast mode :
‘0’ = H.320
‘1’ = Broadcast

2.1.7.11 Mute Command/Status (SM)

This message is sent by AETE to C&I to indicate the status of mute.
C&I send this message to modify or know the status of mute.

Direction:	C&I -> AETE
Type:	‘S’
Sub-Type	‘M’
Mode	‘&’ / ‘?’
Data:	Mute:
	‘0’ = Disable
	‘1’ = Enable

Direction:	AETE -> C&I
Type:	‘S’
Sub-Type	‘M’
Mode	‘<’
Data:	Mute:
	‘0’ = Disable
	‘1’ = Enable

Data Description:

2.1.7.12 Rate/Data Change Indication (SN)

This message is sent by AETE to C&I as indication of a rate change during a connection.

Direction:	AETE -> C&I
Type:	‘S’
Sub-Type	‘N’
Mode	‘<’
Data:	Item

‘0’ = Number of channels Change
‘1’ = Data Rate Change
‘2’ = Data Protocol Change
if item ‘0’ Number of channels Change
Number of channels used in the connection: ‘00’..’30’
if item ‘1’ Data Rate Change
Data Channel Type
‘0’ = LSD
‘1’ = HSD
‘3’ = MLP
‘4’ = HMLP
Direction
‘0’ = Tx
‘1’ = Rx
Rate
if item ‘2’ Data Protocol Change
Connection Type:
‘0’ = H.320
‘1’ = H.323
Protocol change indication
‘0’ = T.120 Released
‘1’ = T.120 Active
‘2’ = T.120 Requested from remote site
‘A’ = H2.24 Released
‘B’ = H.224 Active
‘C’ = H.224 Requested from remote site

Data Description:

2.1.7.13 Remote Video Indication (SO)

This message is sent by AETE to C&I as indication of a remote video status.
This message may be useful to know when the remote video is displayed or not on the monitor.

Direction: AETE -> C&I
Type: ‘S’
Sub-Type ‘O’
Mode ‘<’
Data: Remote Video:
‘0’ = Off
‘1’ = On

Data Description:

2.1.7.14 Privacy Command/Status (SP)

This message is sent by AETE to C&I as response to a Privacy Status Request (SP).
C&I send this message to modify or know the status of video privacy.

Direction: C&I -> AETE
Type: ‘S’
Sub-Type ‘P’
Mode ‘&’ / ‘?’
Data: Privacy:
‘0’ = Disable
‘1’ = Enable

Direction: AETE -> C&I
Type: ‘S’
Sub-Type ‘P’
Mode ‘<’
Data: Privacy:
‘0’ = Disable
‘1’ = Enable

Data Description:

2.1.7.15 Photo Command/Status (SQ)

This message is sent by AETE to C&I as response to a Photo Command or as indication of a photo received. C&I send this message to send or read a photo or to know if a photo is available to be read (displayed).

Direction: C&I -> AETE
Type: ‘S’
Sub-Type ‘Q’
Mode ‘&’ / ‘?’
Data: Photo: (valid only for mode &)
‘0’ = Read (Display)
‘1’ = Send
‘2’ = Normal view

Direction: AETE -> C&I
Type: ‘S’
Sub-Type ‘Q’
Mode ‘<’
Data: Photo:
‘0’ = Read (Display) (as response to SQ status request)
‘1’ = Send (as response to SQ status request)
‘2’ = Normal view (as response to SQ status request)
‘3’ = Not available
‘4’ = Received
‘5’ = Sent
‘6’ = Send error

Data Description:

Example: Display of a received photo.

C&I	<---------- AT[<SQ1<cr> ----------	AETE	Photo received
C&I	---------- AT[&SQ0<cr> ----------→	AETE	Display the photo on the screen
C&I	<---------- OK<cr> ----------	AETE	
……..			
C&I	---------- AT[&SQ2<cr> ----------→	AETE	Display the normal video on the screen
C&I	<---------- OK<cr> ----------	AETE	

2.1.7.16 Remote Terminal Status (SR)

AETE sends this message to C&I to inform it the current rate in use and the result of capabilities exchange.

Direction: AETE -> C&I
Type: 'S'
Sub-Type 'R'
Mode '<'
Data: 1) Rate in use :
- '1' = 64
- '2' = 128
- '3' = 192
- '4' = 256
- '5' = 320
- '6' = 384
- '7' = 448
- '8' = 512
- '9' = 576
- 'A' = 640
- 'B' = 704
- 'C' = 768
- 'D' = 1152
- 'E' = 1472
- 'F' = 1536
- 'G' = 1920
- 'H' = 2560 (for IP)
- 'I' = 3072 (for IP)
- 'J' = 3584 (for IP)
- 'K' = 4096 (for IP)

2) Aggregate Channels
- '0' = No
- '1' = Yes

3) Restricted Mode
- '0' = No
- '1' = Yes

4) Audio in Working Terminal ('00'..'FF'):
- bit 1 = G.711 A Law
- bit 2 = G.711 μ Law
- bit 3 = G.722
- bit 4 = G.728
- bit 5 = G.722.1 32K
- bit 6 = G.722.1 24K

5) Spare :

0

6) Rate(1) & Video coding possibilities (‘00’..’FF’):
- bit 1 = H.261
- bit 2 = QCIF(0) / CIF(1)
- bit 3 = 2B
- bit 4 = 128
- bit 5 = 192
- bit 6 = 256
- bit 7 = 320
- bit 8 = 384

7) Rate(2) possibilities (‘00’..’FF’):
- bit 1 = 3B
- bit 2 = 4B
- bit 3 = 5B
- bit 4 = 6B
- bit 5 = 7B
- bit 6 = 8B
- bit 7 = 512
- bit 8 = Still Image

8) MLP (1) possibilities (‘00’..’FF’):
- bit 1 = var MLP
- bit 2 = 6.4 kbit/sec
- bit 3 = Set1
- bit 4 = Set2
- bit 5 = T.120

9) MLP(2) possibilities (‘00’..’FF’):
- bit 1 = 14.4 kbit/sec
- bit 2 = 16 kbit/sec
- bit 3 = 22.4 kbit/sec
- bit 4 = 24 kbit/sec
- bit 5 = 30.4 kbit/sec
- bit 6 = 32 kbit/sec
- bit 7 = 40 kbit/sec
- bit 8 = 46.4 kbit/sec

10) LSD(1) possibilities (‘00’..’FF’):
- bit 1 = var Lsd
- bit 2 = 4800 bit/sec
- bit 3 = 6400 bit/sec
- bit 4 = 8000 bit/sec
- bit 5 = 9600 bit/sec
- bit 6 = 14.4 bit/sec
- bit 7 = 32 kbit/sec
- bit 8 = 40 kbit/sec

11) LSD(2) possibilities (‘00’..’FF’):
- bit 1-8 spare

12) HSD(1) possibilities (‘00’..’FF’):
- bit 1 = var Hsd
- bit 2 = 64 kbit/sec
- bit 3 = 128 kbit/sec
- bit 4 = 192 kbit/sec
- bit 5 = 256 kbit/sec
- bit 6 = 320 kbit/sec

bit 7 = 384 kbit/sec
13) HSD(2) possibilities (‘00’..’FF’):
bit 1-8 spare
14) H_MLP(1) possibilities (‘00’..’FF’):
bit 1 = var HMlp
bit 2 = 62.4 kbit/sec
bit 3 = 64 kbit/sec
bit 4 = 128 kbit/sec
bit 5 = 192 kbit/sec
bit 6 = 256 kbit/sec
bit 7 = 320 kbit/sec
bit 8 = 384 kbit/sec
15) H_MLP(2) possibilities (‘00’..’FF’):
bit 1-8 spare

2.1.7.17 Remote Terminal Command (SX)

C&I send this message to know the status of capabilities exchange.

Direction: C&I -> AETE
Type: ‘S’
Sub-Type ‘X’
Mode ‘?’
Data: None

Direction: AETE -> C&I
Type: ‘S’
Sub-Type ‘X’
Mode ‘<’
Data: None

2.1.7.18 Streaming Command (SZ)

C&I send this message to activate or disactivate the streaming.
C&I send this message also to know the status of streaming.

Direction: C&I -> AETE
Type: ‘S’
Sub-Type ‘Z’
Mode ‘&’
Data: Action:
‘0’ = Stop
‘1’ = Start
‘2’ = Change View
Video:
‘0’ = Local
‘1’ = Automatic
IP address (**15 bytes**):

xxx.xxx.xxx.xxx

Direction: C&I -> AETE
Type: ‘S’
Sub-Type ‘Z’
Mode ‘?’
Data: None

Direction: C&I -> AETE
Type: ‘S’
Sub-Type ‘Z’
Mode ‘>’
Data: Status:
‘0’ = Stop
‘1’ = Start
IP address (**15 bytes**):
xxx.xxx.xxx.xxx

Data Description:

This command is used to start or stop the streaming and also to select the video to view.
The IP address is used by the system to control if the request can be accepted.
The ? command is used to know if the streaming is already active and the IP address towards the streaming is sent.

2.1.7.19 SelfView Command/Status (SS)

This message is sent by AETE to C&I to indicate the status of self-view.
C&I send this message to modify or know the status of self-view.

Direction: C&I -> AETE
Type: ‘S’
Sub-Type ‘S’
Mode ‘&’ / ‘?’
Data: SelfView:
‘0’ = Disable
‘1’ = Enable

Direction: AETE -> C&I
Type: ‘S’
Sub-Type ‘S’
Mode ‘<’
Data: SelfView:
‘0’ = Disable
‘1’ = Enable

Data Description:

2.1.7.20 Picture In Picture Command/Status (ST)

This message is sent by AETE to C&I to indicate the status of picture in picture (PIP).
C&I send this message to modify or know the status of picture in picture.

Direction:	C&I -> AETE
Type:	'S'
Sub-Type	'T'
Mode	'&' / '?'
Data:	Picture in picture: '0' = Disable '1' = Enable

Direction:	AETE -> C&I
Type:	'S'
Sub-Type	'T'
Mode	'<'
Data:	Picture in picture: '0' = Disable '1' = Enable

Data Description:

During a call, the local image of your own camera can be displayed at one corner of the screen by selecting '1' and removed by selecting '0'.

2.1.7.21 Volume Command/Status (SV)

This message is sent by C&I to AETE to change/request the value of audio volume in Rx during a connection.
AETE send this message as response to a status request.

Direction:	C&I -> AETE
Type:	'S'
Sub-Type	'V'
Mode	'&' / '?'
Data:	Volume Audio Rx (3 bytes): "-44"..."20"

Direction:	AETE -> C&I
Type:	'S'
Sub-Type	'V'
Mode	'<'
Data:	Volume Audio Rx (3 bytes): "-44"..."20"

Data Description:

2.1.7.22 Infrared remote control emulation (SW)

This message is sent by C&I to AETE to emulate a remote control key pressure.

Direction: C&I -> AETE
Type: ‘S’
Sub-Type ‘W’
Mode ‘&’
Data: Key (3 bytes):
'000' = key '0'
'001' = key '1'
'002' = key '2'
'003' = key '3'
'004' = key '4'
'005' = key '5'
'006' = key '6'
'007' = key '7'
'008' = key '8'
'009' = key '9'
'010' = key ' * '
'011' = key ' # '
'012' = key 'Home'
'013' = key 'Power'
'014' = key '?'
'015' = key 'Call"
'016' = key 'Disconnect'
'017' = key 'C'
'018' = key 'Phonebook
'019' = key 'Slide'
'020' = key 'Send'
'021' = key 'Main'
'022' = key 'DOC'
'023' = key 'VCR'
'024' = key 'View'
'025' = key 'Self'
'026' = key 'Pip'
'027' = key 'ArrowUp'
'028' = key 'ArrowRight'
'029' = key 'ArrowDown'
'030' = key 'ArrowLeft'
'031' = key 'Ok'
'032' = key 'MEMO'
'033' = key 'SEL'
'034' = key 'AUTO'
'035' = key 'LOC'
'036' = key 'REM'
'037' = key 'ZOOM -'
'038' = key 'ZOOM +'
'039' = key 'Videoprivacy'

'040' = key 'Volume -'
'041' = key 'Volume +'
'042' = key 'MUTE'

Data Description:

2.1.7.23 Control & Indication Error Message (SE)

This message is sent by AETE to notify an error on the received message:

Direction: AETE -> C&I
Type: 'S'
Sub-Type 'E'
Mode '<'
Data: Message Type
Sub-type
Error:
'1' = Bad parameter
'2' = Unknown message
'3' = wrong message length
'4' = Bad mode
'5' = Unable to execute command
Sub-code
If Unable to execute command
'0' = system timeout
'1' = system busy

Data Description:

2.1.8 Data Messages

The data messages are used by AETE to request a service (ex. File Transfer), close a service and send/receive data.
The data can be of different types: T.120 or Proprietor.

For T.120 data it is not necessary to request a service (set MLP as T.120 in Terminal Data Channel message–TD-); instead for Proprietor it is necessary request the opening of the service (set MLP as Owner in Terminal Data Channel message–TD-)

2.1.8.1 Register to Data Service (UR)

This message is sent by C&I to AETE register it to a data service.

Direction: C&I->AETE
Type: 'U'
Sub-Type 'R'
Mode '&'
Data: Service:
'1' = Application Sharing
'2' = not used
'3' = Generic Data
'4' = File Transfer
'5' = Still picture
'6' = not used
'7' = pointer (not used)
'8' = Telewriter
'9' = Transparent data
'A' = Symposium
'B' = Video Survey
'C' = Tele-upgrade
'D' = WEB
Register:
'0' = No
'1' = Yes

Data Description:

Service:
Specify the service to register/deregister. (**note: the services are available only in H.320 mode and using MLP proprietor mode**).

Register:
Setting Register='1' all of the registered service will be sent to user.

2.1.8.2 Open Data Service (UO)

This message is sent by C&I to AETE open a data service.

Direction: C&I->AETE
Type: ‘U’
Sub-Type ‘0’
Mode ‘&‘
Data: Service:

- ‘0’ = fax 3 (not used)
- ‘1’ = Editing (not used)
- ‘2’ = not used
- ‘3’ = Generic Data
- ‘4’ = File Transfer
- ‘5’ = Still picture
- ‘6’ = not used
- ‘7’ = pointer (not used)
- ‘8’ = Telewriter
- ‘9’ = Transparent data
- ‘A’ = Symposium
- ‘B’ = Video Survey
- ‘C’ = Tele-upgrade
- ‘D’ = WEB

Channel:

- ‘0’ = LSD
- ‘1’ = HSD
- ‘2’ = MLP
- ‘3’ = H-MLP

Rate (2 bytes):

LSD/MLP	H-MLP/HSD
“00” = riservato	riservato
“01” = 300 bit/sec	var-HSD
“02” = 1200 bit/sec	**H-MLP 62.4 kbit/sec**
“03” = 4800 bit/sec	H-MLP 64 kbit/sec
“04” = 6400 bit/sec	H-MLP 128 kbit/sec
“05” = 8000 bit/sec	H-MLP 192 kbit/sec
“06” = 9600 bit/sec	H-MLP 256 kbit/sec
“07” = 14400 bit/sec	H-MLP 320 kbit/sec
“08” = 16 kbit/sec	H-MLP 384 kbit/sec
“09” = 24 kbit/sec	
“10” = 32 kbit/sec	
“11” = 40 kbit/sec	
“12” = 48 kbit/sec	
“13” = 56 kbit/sec	
“14” = 62.4 kbit/sec	
“15” = 64 kbit/sec	
“16” = reserved	reserved
“17” = reserved	HSD 64 kbit/sec
“18” = reserved	HSD 128 kbit/sec
“19” = reserved	HSD 192 kbit/sec
“20” = reserved	HSD 256 kbit/sec
“21” = reserved	HSD 320 kbit/sec
“22” = reserved	HSD 384 kbit/sec

“23” = reserved	HSD 512 kbit/sec	
“24” = reserved	HSD 768 kbit/sec	
“25” = reserved	HSD 1152 kbit/sec	
“26” = reserved	HSD 1536 kbit/sec	
....	...	

“31 = var
“32” = the MCU will get the high common rate value
“33” = the MCU will get the low common rate value
“34” = use the current rate value of data channel

	MLP	**+**	**HMLP**
“40” = 68.8	(6.4		62.4)
“41” = 70.4	(6.4		64 (H0))
“42” = 76.8	(14.4		62.4)
“43” = 78.4	(14.4		64 (H0))
“50” = 108.8 kbit/sec	(46.4		62.4)
“51” = 110.4 kbit/sec	(46.4		64 (H0))
“60” = 124.4 kbit/sec	(62.4		62.4)
“70” = 128 kbit/sec	(x		128 -H0)
“71” = 192 kbit/sec	(x		192 -H0)
“72” = 256 kbit/sec	(x		256 -H0)
“73” = 320 kbit/sec	(x		320 -H0)
“74” = 384 kbit/sec	(x		384 -H0)

Direction: AETE -> C&I
Type: ‘U’
Sub-Type ‘O’
Mode ‘<’
Data: Ret Code:
‘0’ Request sent
‘1’ Service not available
‘A’ Generic error

Data Description:

Service:
Specify the service to open. (**note: the services are available only in H.320 mode and using MLP proprietor mode**).

Channel :
Specify the channel used to exchange data.

Rate :
Specify the rate wished for the service.

2.1.8.3 Close Data Service (UC)

This message is sent by C&I to AETE to close a data service.

Direction: C&I -> AETE

Type: ‘U’
Sub-Type ‘C’
Mode ‘&‘
Data: Service:
‘1’ = Editing (not used)
‘2’ = not used
‘3’ = Generic Data
‘4’ = File Transfer
‘5’ = Still picture
‘6’ = not used
‘7’ = pointer (not used)
‘8’ = Telewriter
‘9’ = Transparent data
‘A’ = Symposium
‘B’ = Video Survey
‘C’ = Tele-upgrade
‘D’ = WEB
Channel:
‘0’ = LSD
‘1’ = HSD
‘2’ = MLP
‘3’ = H-MLP

Data Description:

See Open Data Service message

2.1.8.4 Data Service Opened (UA)

This message is sent by AETE to C&I as indication that service is opened.

Direction: AETE->C&I
Type: ‘U’
Sub-Type ‘A’
Mode ‘<‘
Data: Service:
‘1’ = Editing (not used)
‘2’ = not used
‘3’ = Generic Data
‘4’ = File Transfer
‘5’ = Still picture
‘6’ = not used
‘7’ = pointer (not used)
‘8’ = Telewriter
‘9’ = Transparent data
‘A’ = Symposium
‘B’ = Video Survey
‘C’ = Tele-upgrade
‘D’ = WEB
Channel:

‘0’ = LSD
‘1’ = HSD
‘2’ = MLP
‘3’ = H-MLP

Data Description:

See Open Data Service message

2.1.8.5 Data Service Closed (UX)

This message is sent by AETE to C&I as indication that service is closed.

Direction: AETE->C&I
Type: ‘U’
Sub-Type ‘X’
Mode ‘<‘
Data: Service:
‘1’ = Editing (not used)
‘2’ = not used
‘3’ = Generic Data
‘4’ = File Transfer
‘5’ = still picture
‘6’ = not used
‘7’ = pointer (not used)
‘8’ = Telewriter
‘9’ = Transparent data
‘A’ = Symposium
‘B’ = Video Survey
‘C’ = Tele-upgrade
‘D’ = WEB
Channel:
‘0’ = LSD
‘1’ = HSD
‘2’ = MLP
‘3’ = H-MLP

Data Description:

See Open Data Service message

2.1.8.6 Exchange Data Message (UU)

This message is sent by AETE to C&I to inform C&I that AETE is going to send a data packet.
Also this message is sent by C&I to AETE to inform that C&I is going to send a data packet.

Direction: C&I -> AETE
Type: ‘U’
Sub-Type ‘U’

Mode ‘&‘
Data: Data Type:
‘0’ = T.120
‘1’ = Proprietor
Length (Max 4 byte)

Direction: AETE -> C&I
Type: ‘U’
Sub-Type ‘U’
Mode ‘<’
Data: Data Type:
‘0’ = T.120
‘1’ = Editing (not used)
‘2’ = not used
‘3’ = Generic Data
‘4’ = File Transfer
‘5’ = still picture
‘6’ = not used
‘7’ = pointer (not used)
‘8’ = Telewriter
‘9’ = Transparent data
‘A’ = Symposium
‘B’ = Video Survey
‘C’ = Tele-upgrade
‘D’ = WEB
Length (Max 4 byte)

Data Description:

Data Type:
Specify the type of data to send or received.

Lenght :
It’s the length of the data packet that AETE or C&I is going to send.
It’s suggested a lenght around 250 bytes.

2.1.8.7 Set Mode Data Service (UB)

This message is sent by C&I to AETE to set mode of data service.

Direction: C&I -> AETE
Type: ‘U’
Sub-Type ‘B’
Mode ‘&‘
Data: Service:
‘1’ = Application Sharing
‘2’ = not used
‘3’ = Generic Data
‘4’ = File Transfer
‘5’ = Still picture

‘6’ = not used
‘7’ = pointer (not used)
‘8’ = Telewriter
‘9’ = Transparent data
‘A’ = Symposium
‘B’ = Video Survey
‘C’ = Tele-upgrade
‘D’ = WEB

Mode:
‘0’ = Unused
‘1’ = Not Auto Opening
‘2’ = Auto Opening

Data Description:

Service:
Specify the service. (**note: the services are available only in H.320 mode and using MLP proprietor mode**).

Mode Opening
Setting Mode Opening=’1’ terminal not open automatically the data service but it will be the extern appication that
will request to open it.

2.1.8.8 Data Service Requested (UT)

This message is sent by AETE to C&I to notify a request of data service

Direction: C&I -> AETE
Type: ‘U’
Sub-Type ‘T’
Mode ‘<‘
Data: Service:
‘1’ = Application Sharing
‘2’ = not used
‘3’ = Generic Data
‘4’ = File Transfer
‘5’ = Still picture
‘6’ = not used
‘7’ = pointer (not used)
‘8’ = Telewriter
‘9’ = Transparent data
‘A’ = Symposium
‘B’ = Video Survey
‘C’ = Tele-upgrade
‘D’ = WEB

Channel:
‘0’ = LSD
‘1’ = HSD
‘2’ = MLP
‘3’ = H-MLP

Data Description:

Service:
Specify the service. (**note: the services are available only in H.320 mode and using MLP proprietor mode**).

Channel :
Specify the channel used to exchange data.

2.1.8.9 Data Service Request Confirmation (US)

This message is sent by C&I to AETE to confirm request of data service

Direction: C&I -> AETE
Type: 'U'
Sub-Type 'S'
Mode '&'
Data: Service:
'1' = Application Sharing
'2' = not used
'3' = Generic Data
'4' = File Transfer
'5' = Still picture
'6' = not used
'7' = pointer (not used)
'8' = Telewriter
'9' = Transparent data
'A' = Symposium
'B' = Video Survey
'C' = Tele-upgrade
'D' = WEB
Channel:
'0' = LSD
'1' = HSD
'2' = MLP
'3' = H-MLP

Value:
'0' = Nor Accepted
'1' = Accepted

Data Description:

Service:
Specify the service. (**note: the services are available only in H.320 mode and using MLP proprietor mode**).

Channel :
Specify the channel used to exchange data.

Value:
Specify if opening of data service is accepted or not.

2.1.8.10 Data Service Error Message (UE)

This message is sent by AETE to notify an error on the received message:

Direction: AETE -> C&I
Type: ‘U’
Sub-Type ‘E’
Mode ‘<‘
Data: Message Type
Sub-type
Error:
'1' = Bad parameter
'2' = Unknown message
'3' = wrong message length
‘4’ = Bad mode
‘5’ = Unable to execute command
Sub-code
If Unable to execute command
‘0’ = system timeout
‘1’ = system busy

Data Description: