Telecommunication Standardization Sector
Study Group 15
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SOURCE : JAPAN
TITLE : Logical Channel Set-up Procedure
PURPOSE : Proposal

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1. Introduction

The logical channel set-up procedure is being discussed after the Kamifukuoka meeting. There are two proposals; one uses the procedure in Annex A to H.222.1, the other uses H.245 procedure. This document first discusses a protocol configuration and a function allocation of higher layer modules in the H.310 terminal. We propose a logical channel set-up procedure, which uses both the H.222.1 signalling and the H.245 message.

2. Protocol configuration and allocation of function

There are three modules in the H.310 terminal being related to logical channel set-up and mode switching procedure, which are Call Management (H.310), H.222.1 SE and H.245. Functions to handle communication mode are allocated to each module. Fig 1 illustrates an example of mapping PIDs and presentation devices with elementary stream decoders, according to the function allocation described below.

2.1 Functions of H.245

a) Exchange terminal capabilities, communication mode setting and C&I messages.
b) Provide end-to-end protocol for secure transmission of these messages.
c) Not concerned about the contents of the message, only compose the message according to the defined syntax.
d) What should be sent is indicated by the upper layer.
e) Provide a procedure for each message transmission as a tool, but do not address combined usage of those procedures.

2.2 Functions of H.222.1 SE

a) Set-up logical channel and map PID to each channel.
b) Assign the channel to the corresponding media processing module (i.e. codec).
c) Do not check the validity of the media combination with the declared terminal capability.
d) Signal the receiving multiplex status to the upper layer (receiving side).
e) Logical channel is opened/closed according to the indication from the upper layer.

2.3 Functions of Call Management (H.310)

a) Control terminal and application status and procedure.
b) Recognize both remote and local terminal capabilities, and identify possible modes of communication.
c) Decide and set-up a mode of communication using services provided by lower layers.
d) Indicate logical channel set-up and the combination of media to H.222.1 SE.
e) Invoke the message transmission and control a transition from one procedure to another defined in H.245.

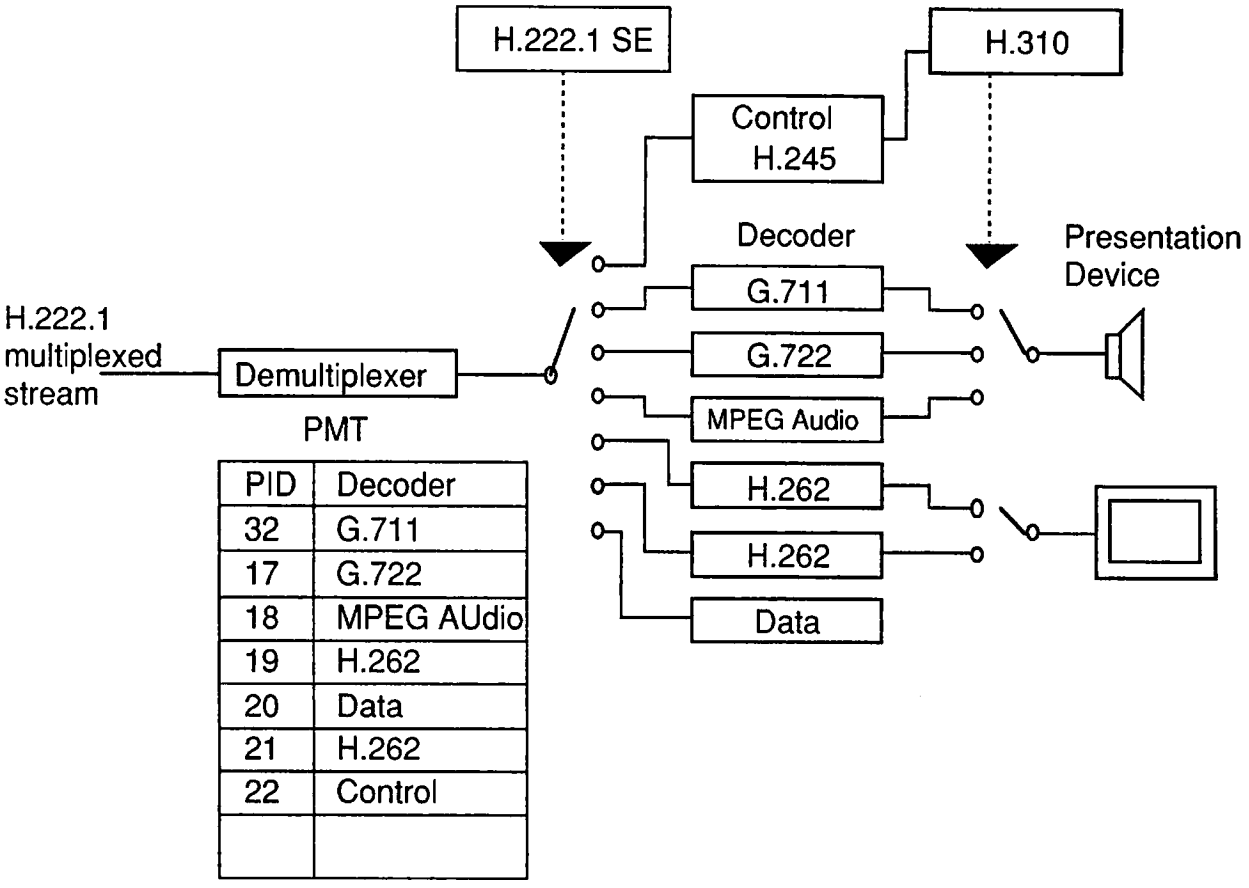


Figure 1 Mapping PID and presentation device.

3. Logical channel set-up and mode switching protocol

According to the function allocation described above, the procedure in H.222.1 and that in H.245 have different impacts on the H.310 terminal procedure. H.222.1 SE acknowledged procedure "logically" provides the channel definition, i.e. mapping of PIDs to respective media. Logical channel status can exceed the declared terminal capability, if it is guaranteed by the Call Management that all the logical channels will not been used at the same time. The Call Management (H.310) is responsible for a valid mode of communication, which is negotiated with and indicated to the remote Call Management entity through the H.245 message exchange mechanism.

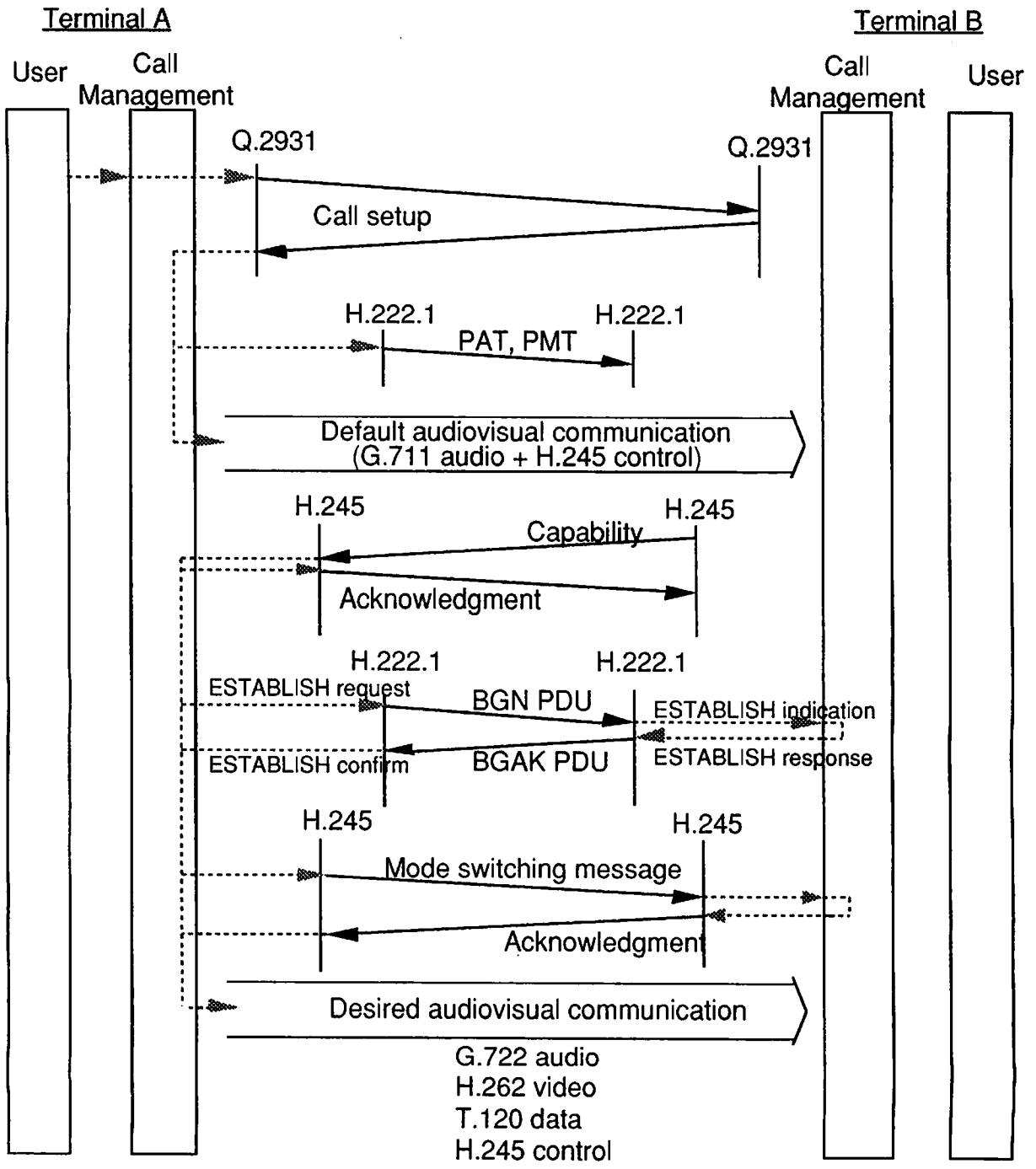
We propose to apply both H.222.1 SE procedures and H.245 mode switching procedures to H.310 application control procedure as tools. H.222.1 can provide reliable logical channel set-up by the confirmation from remote terminal as well as repetition of PMT in H.222.0. H.245 will provide the procedure for exchanging several kinds of messages, e.g. capability, mode setting and C&I, syntax and coding of those messages and collision control of those procedures. Fig.2 shows the proposed mode switching procedure. In this figure, the procedure is indicated from the start of the call until the establishment of a desired mode of audiovisual communication.

4. Conclusions

This document has discussed an allocation of functions to higher layer modules to clarify the protocol configuration for logical channel set-up. We have proposed to use both H.222.1 SE and H.245 procedures, because they are considered to have different functionalities, and application dependent control should be managed by the Call Management (H.310) module.

Reference
[1] AVC-744 Draft H.222.1, February 1995.
[2] AVC-745 Draft H.245, April 7, 1995.
[3] Correspondence between M. Nilsson and S. Dunstan on the mode switching, February 1995.
[4] Annex 9 to AVC-743R "H.32x Protocol Reference Model", January 1995.
[5] AVC-769 "A case study for H.310 communication procedures", Japan, April 1995.

END



Note - Communiction from Terminal B to A proceeds simultatneously, but not indicated here.

Figure 2 Proposed mode switching procedure.