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TITLE : Considerations of loss priority between H.22x (Multimedia Multiplex including MPEG-2 Systems) and AAL type 1/2.

ABSTRACT

It would be efficient to provide the transport priority capability on the MPEG-2 systems in order to maintain their service qualities while they are communicated through the ATM network. Now, we propose to consider the primitives between H.22x and AAL type 1/2 for the MPEG-2 systems with loss priority. It notes that the loss priority capability could be utilized the transport priority field in the transport stream layer of H.22x.

1. INTRODUCTION

In I.371 and I.361, the ATM network could support the priority service capability by using the cell loss priority (CLP) bit. The ATM cells with low priority may be discarded if the network would be congested.

ITU-T SG15 ATM video coding and systems' experts group and MPEG actively investigate to support real time multimedia audiovisual services into the ATM network. It notes that the MPEG-2 system could support the Constant Bit Rate (CBR) and Variable Bit Rate (VBR) into the transport stream (TS). About the source characteristics of multimedia audiovisual services, H.262 encoder can maintain the CBR from the encoder buffer to the MPEG-2 systems. The MPEG-2 systems

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transfer the transport stream generated from H.262 to AAL layer. It may assume based on the ITU-T SG 15 activities that the H.262 could support the VBR by controlling the buffer output stream of the encoder. It notes that the VBR service could maintain the equal quality of video services and offer high bandwidth efficiency.

One form of H.262 is divided into two part. The first one is the base encoder which is for the main portions of video sources, and the other is the enhancement encoder which contains the edge components. The MPEG-2 systems could assign the transport priority for the transport stream with the two layer coding of source components. That is, the main portion of video source may be intended to assign the high priority into the ATM network.

2. PROPOSAL FOR INTERFACE BETWEEN H.22X AND AAL TYPE 1/2

As shown in Fig. 1, the transport streams with 188 bytes are transferred to AAL through H.22x (if necessary) in order to interface the MPEG-2 systems into the ATM network. One bit in the field format of the transport stream is assigned for the transport priority. When the transport priority field set to '1' it indicates that the associated packet has high priority. When the network congestion occurs, the transport stream with high priority should not be discarded inside the network and then the deterioration of video quality due to discarding the cells could be protected within the acceptable level.

When the transport streams are transferred to AAL via H.22x specific (if necessary), there are no primitive to send their transport priority in AAL-PDUs at service access point (SAP) between H.22x and AAL type 1/2. It may also need the priority primitive mapping between AAL 1/2 and ATM layer. An example is that the transport streams with high priority are generated into the cell streams with high priority (CLP=0).

3. CONCLUSIONS

This contribution propose to consider the primitives for the transport priority between H.22x and AAL type 1/2 as follows :

- The insertion of priority primitive between H.22x and AAL 1/2.

In this case, it should consider whether the CLP bit in the ATM layer is used to support transport priority in transport stream layer.

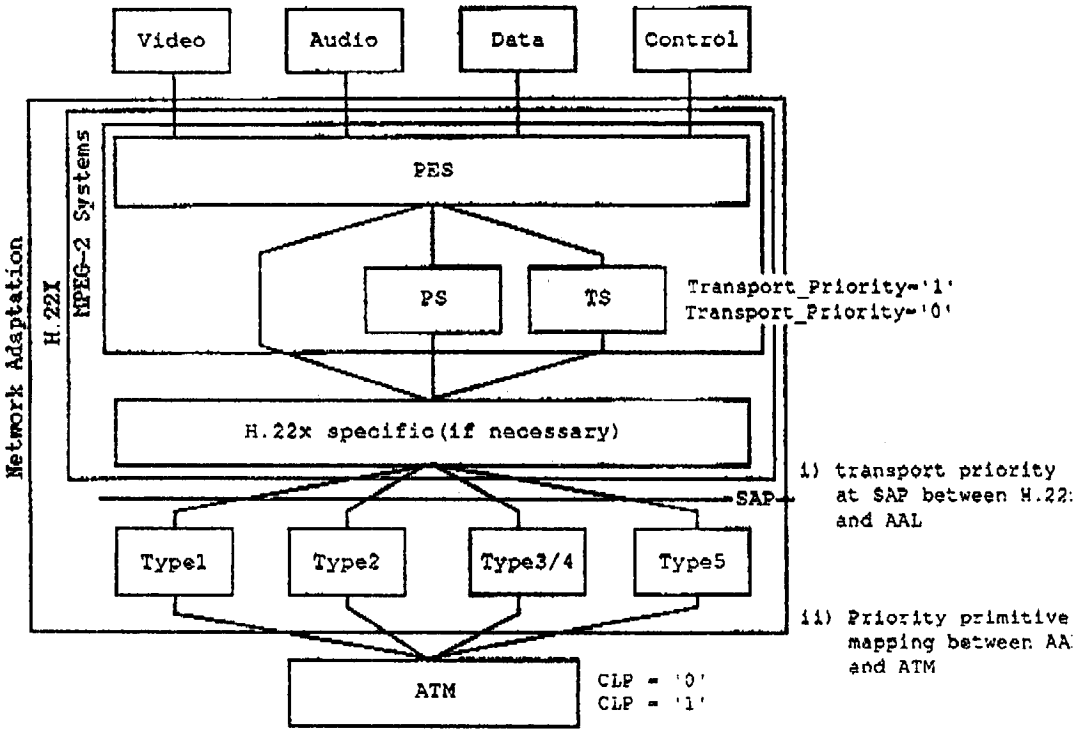

Figure 1. Protocol configuration in the audiovisual communication terminal

References

[1] Recommendation H.262: Generic Coding of Moving Pictures and Associated Audio, Sep., 1993.

[2] H.22x/IEC 13818-1 (MPEG-2 Systems), March, 1994.

[3] TD32(WP2/13) Status report on the study of network adaptation, March 8, 1994.