ITU-T TELECOMMUNICATION STANDARDIZATION SECTOR

Document AVC-848

Study Group 15

October 1995

Experts Group for Video Coding and Systems
in ATM and other Environments

(Rapporteur's Group on part of Q.2/15)

Study Group 15 - CONTRIBUTION

Question: 2/15

SOURCE: IBM

TITLE: **ATM Forum AMS Status**

Purpose: Information

ABSTRACT: At the October 1 - 6th ATM Forum meeting, the Audiovisual and Multimedia Services (AMS) group (Service Aspects and Applications (SAA) SWG) focused on preparing the AMS Video-on-Demand Specification for final approval by the general membership of the ATM Forum. The big issue was the reopened MPEG-2 AAL5 packing issue. After two days of debate and 22 contributions, the group voted (43 YES, 22 NO, and 4 ABSTAIN) to change the MPEG-2 Encapsulation scheme from PCR aware to a 1 to N fixed packing scheme

After a section by section review of the document to resolve all of the major and minor comments, the AMS Group voted (28 FOR, 1 AGAINST, 1 ABSTAIN) to forward the AMS Video-on-Demand. Specification to the general ATM Forum membership for final vote. The final document is currently out of letter ballot.

Attached is the revised text for Section 5 describing the new 1-N fixed packing scheme.

REVISED 1-N FIXED PACKING SCHEME.

The following is the text from Section 5 as modified and adopted in the October, 1995 ATM Forum SAA Meeting:

5. Network Adaptation [Normative]

All equipment conformant with this AMS Implementation Agreement shall support the following network adaptation.

The MPEG-2 Single Program Transport Stream (SPTS) packets shall be mapped into the ATM Adaptation Layer Type 5 (AAL5) with a NULL Service Specific Convergence Sublayer. In the mapping, one to N MPEG-2 Transport Streams (TS) packets are mapped into an AAL5-SDU.

For Switched Virtual Circuits (SVCs), the value of N is established via ATM Signaling 4.0 at call setup using the AAL5 Maximum CPCS-SDU negotiation procedure. The AAL5 Maximum CPCS-SDU size that is signaled is N*188 bytes (N being the number of TS packets). This procedure is defined in the ATM Forum Signaling 4.0 specification. N used to form the AAL5-SDUs shall be the Maximum CPCS-SDU Size / 188.

For Permanent Virtual Circuits (PVCs), the default value of N is two (Maximum CPCS-SDU size = 376 bytes). Other values of N may be selected by bilateral agreement between the settop user and the server via network provisioning. Furthermore, in order to insure a base level of interoperability, all equipment shall support N = 2 (CPCSSDU size = 376 bytes).

In summary, the mapping shall be:

1. Each AAL5-SDU shall contain (the negotiated) N MPEG-2 SPTS packets, unless there are fewer than N packets left in the SPTS. In the case when there are fewer than N packets left in the SPTS, the final CPCS-SDU contains all of the remaining packets.
2. The value of N is established via ATM signaling using N = the AAL5 CPCS-SDU size divided by 188. The default AAL5 CPCS-SDU size is 376 octets, which is two TS packets (N = 2).
3. In order to ensure a base level of interoperability, all equipment shall support the value N=2 (AAL5 CPCS-SDU size of 376 octets).

5.1 Base level of N=2 [Normative]

When N=2, the Network Adaptation shall be as follows:

- ATM Adaptation Layer Type 5 (AAL5) with a NULL Service Specific Convergence Sublayer shall be used.
- An AAL5 PDU shall contain two TS Packets unless it contains the last TS Packet of the SPTS.
- An AAL5 PDU shall contain one MPEG2 SPTS Packet if that MPEG-2 TS Packet is the last TS Packet of the SPTS.
- When an AAL5 PDU contains two SPTS Packets, which have length 188 octets, the AAL5 CPCS-SDU has length 376 octets. This AAL5 CPCS-SDU, together with the CPCS-PDU Trailer of 8 octets, requires 384 octets and maps into 8 ATM cells with zero CPCS padding octets. This is illustrated Figure 1.

[See AMS VOD Specification for figure]

Figure 1 Format of AAL-5 PDU Containing 2 TS Packets

5.2 AAL-5 Action on Corrupted PDUs [Normative]

When a receiver receives a corrupted AAL5 CPCS-PDU that has a correct length field, system performance may be improved by passing the corrupted data, together with an indication that it is corrupted, from the adaptation layer to the demultiplexer layer, rather than simply discarding the data in the adaptation layer. This is an end station implementation option.