ITU-T Telecommunication Standardization Sector **Document AVC-658**
Study Group 15 **July, 1994**
Experts Group for Video Coding and Systems
in ATM and Other Network Environments

Source : JAPAN
Title : A study of the H.22X interaction with the AAL for the ATM transmission of TS packets
Purpose : Information

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1. Introduction

In ITU-T Rec.H.22X, a section which specifies the primitives at the AAL-SAP will be provided.. (AVC-660) This document describes to the parameters of primitives in case of sending the TS packets with AAL type 1 or 5.

2. Primitives in case of AAL type1 modified

Using AAL type1, a TS packet can be transported in four ATM cells as shown in Figure 1. The first byte of each TS packet header is located at the first byte of every four SAR-PDU payloads.

[Mapping a TS packet to ATM cells]
- Indication of a TS packet boundary
- Information of transport_priority bit in TS packet in order to set the CLP bit in ATM header (AVC-636)

Note: Current AAL type1 specifications don't support the use of the CLP bit.

[Mapping ATM cells to a TS packet]
- Indication of the boundary of every four cells consisting of one TS packet
- Error indication of every four cells consisting of one TS packet in order to set the transport_error_indicator bit in TS packet

Note: To detect the cell loss, the Sequence Number (SN) in the SAR-PDU header can be used. Regarding to the detection of the random byte errors on each TS packet, neither the long interleaver nor the short interleaver method in I.363 supports this function. The error detecting function such as Method #3 in AVC-617 may be desirable (See Annex).

3. Primitives in case of AAL type5

Supposing that the CPCS-PDU payload is constructed by two TS packets, one CPCS-PDU corresponds exactly to 8 ATM cells as shown in Figure 2. (TD10 of Paris meeting, 1994)

[Mapping a TS packet to ATM cells]
- Information of transport_priority bit in TS packet in order to set the CLP bit in ATM header
- Indication of a CPCS-PDU boundary in order to set the PT bit in ATM header

[Mapping ATM cells to a TS packet]
- Error indication of the CPCS-PDU

Note: To detect the error, the CRC bit in CPCS-PDU trailer is available.

- Indication of a CPCS-PDU boundary by the PT bit in ATM header

4. Conclusion

We picked up the parameters of the primitives in case of sending the TS packets with AAL type 1 or 5. More specific study will be expected based on this.

Reference

[1] AVC-660 Draft Recommendation H.22X, July 1994, Grimstad.
[2] AVC-636 Considerations of loss priority between H.22x (Multimedia Multiplex including MPEG-2 Systems) and AAL type 1/2 (Korea), May 1994, Geneva.
[3] AVC-617 Cell loss correction method in AAL for the transmission of MPEG-2 Transport packets (Japan), March 1994, Paris.
[4] TD-10 Comparison of alternative ATM mappings for MPEG-2 (Telia Research), March 1994, Paris.

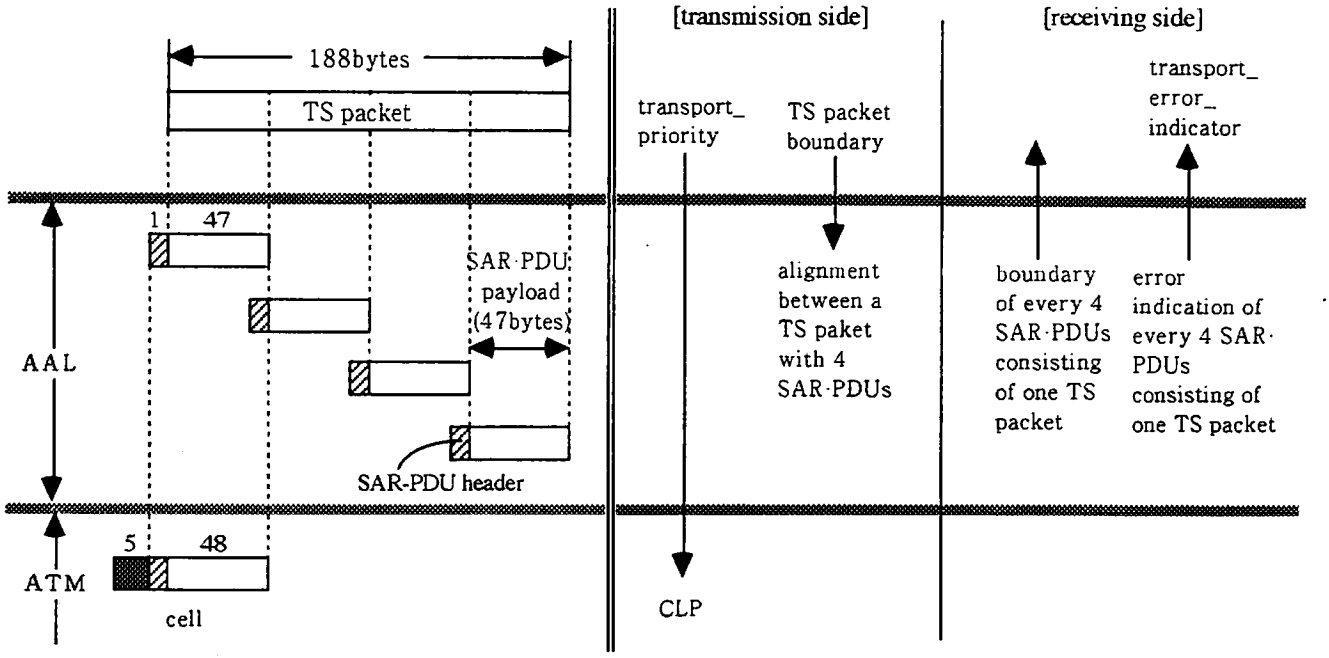


Figure 1 The primitives at the AAL-SAP in case of sending the TS packets with AAL type 1 modified

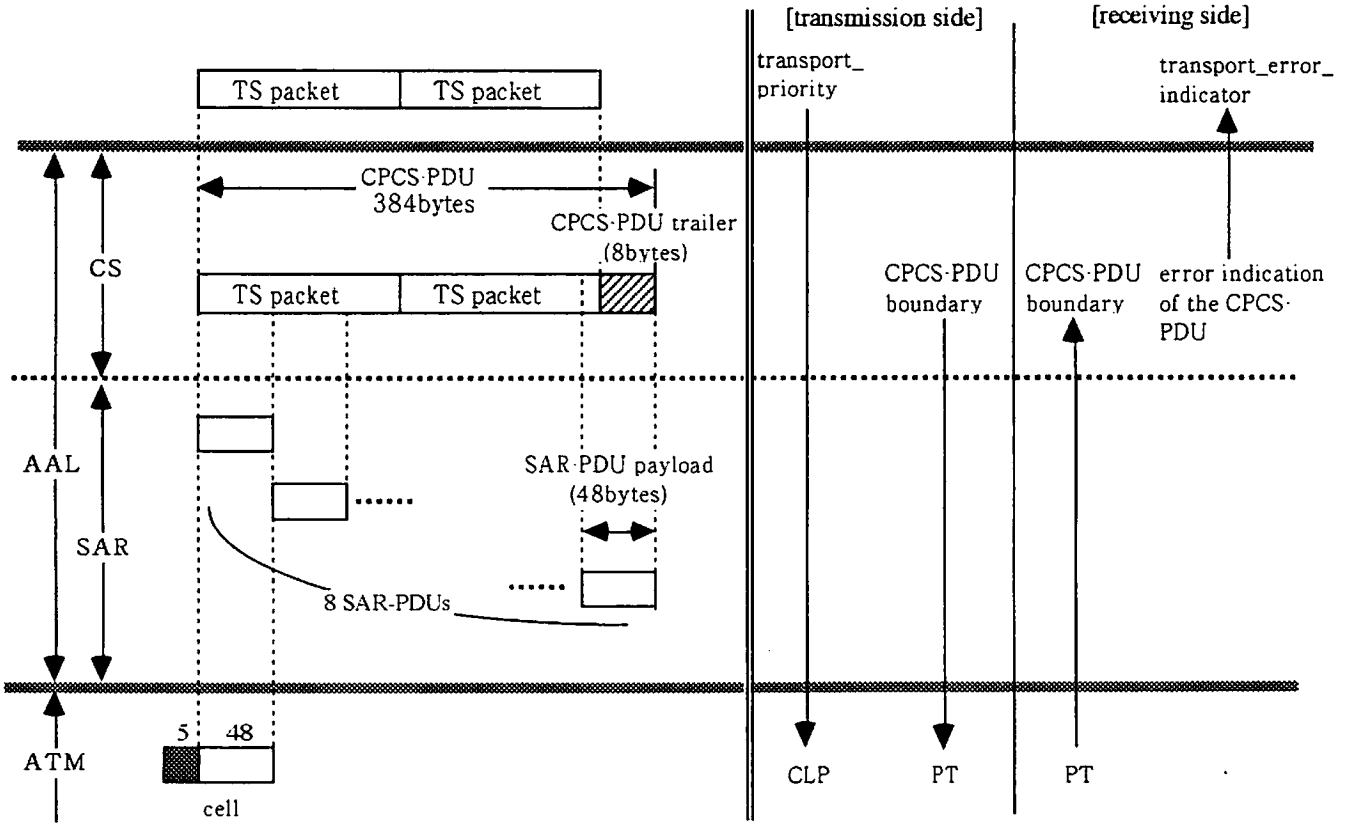
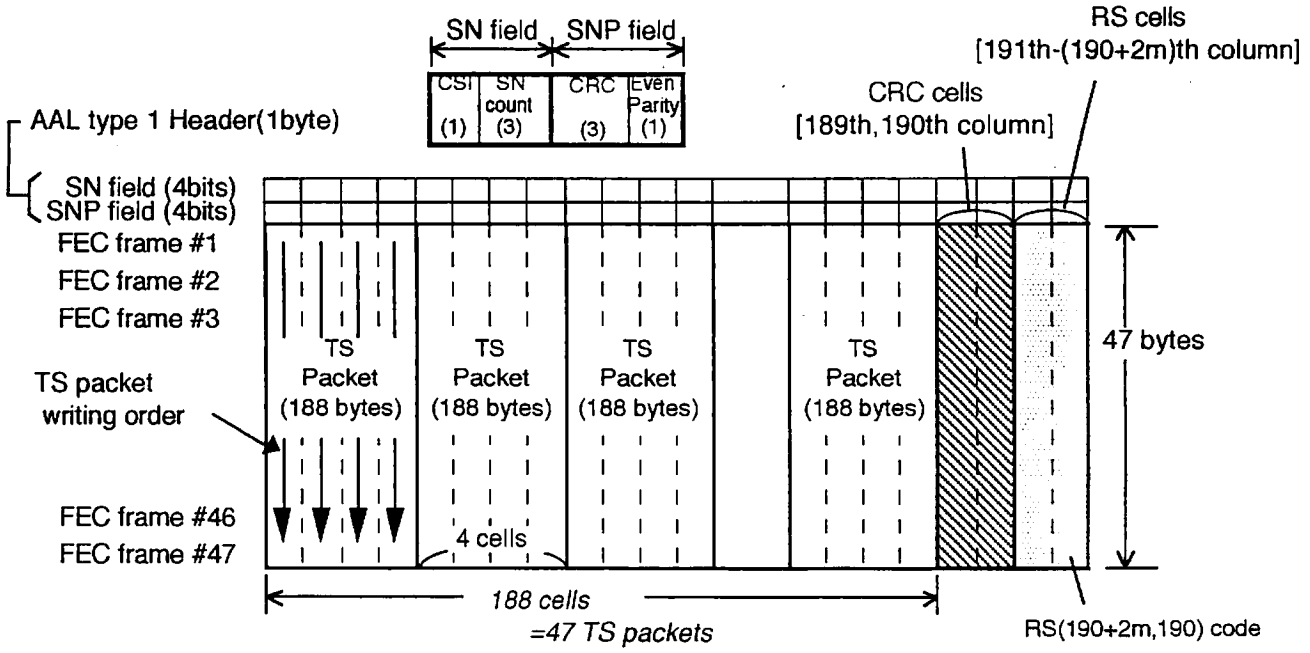


Figure 2 The primitives at the AAL-SAP in case of sending the TS packets with AAL type 5

Annex to AVC-658 : Error correction method for Transport Stream packet transmission (Method #3) in AVC-617



CRC-16 is caluculated for each TS packets.
RS code is caluculated for each row data.