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Title : Comments on the decision of H.222.1 TS PDU

- Reduced mapping of H.222.0 TS packet header in deciding H.222.1 TS PDU

Purpose: Discussion

1. Introduction

There were some discussions about similarity between the TS packet and ATM[1,2]. we assume that TS packets should be carried within ATM cells with an appropriate simple AAL. According to this assumption, this document discusses that some fields of the TS packet header should be changed to a simplified form in deciding H.222.1 TS PDU and in order to include H.222.1 TS specific functions.

2. Overlapping fields of the MPEG-2 TS packet header with ATM cell header

The following fields in the MPEG-2 TS packet header are overlapped with ATM cell header.

sync_byte: This is a fixed 8bit field whose value is "0x47(01000111)" and used to synchronize, to randomly access each TS packet which is squentially transmitted. But, in order to deliver one TS packet into ATM layer, TS packet must be mapped into ATM cell. Thus, since the actual transmission unit in ATM is ATM cell, this field may be considered as one of the unnecessary fields.

PID: This is a 13bit field, indicating the type of the data stored in the packet payload. But, each elementary streams(e.g. 2-layer coded video) may require to be conveyed in different VCs to satisfy different QoS. To do so, the PID must be associated with a specific VPI and VCI used in the ATM cell header and this PID mapping information can be sent to the destination terminal when calls are set-up.

transport_priority: This is a 1bit field indicating the importance of the data stored in the packet payload. This filed can be associated with the CLP field of the ATM cell header.

In addition to these fields, transport_error_indicator, payload_unit_start_indicator, transport_scrambling_control and adaptation_field_control can also be associated with AAL-SAR and AAL-CS. And the continuity_counter is an overlapping functionality with the sequence number(SN) which exists within AAL-SAP. But, some confusions may be occurred in demultiplexing if these fields are removed or simplified. Based on the above discussion, Figure.2 shows one example of the reduced mapping structures in deciding H.222.1 TS PDU.

3. Conclusion

In deciding H.222.1 TS PDU, unnecessary or useless fields in MPEG-2 TS packet header must be removed or changed to a simplified form to achieve high transmission efficiency.

4. References

[1]. AVC-464, "Relation between MPEG-2 transport MUX and ATM/AAL," ITU-T Study Group 15 Experts Group for Video and Systems in ATM and Other Network Environments, March 1993.

[2]. AVC-703, "Multiplexing protocol for H.222.1," ITU-T Study Group 15 Experts Group for Video and Systems in ATM and Other Network Environments, October 1994.

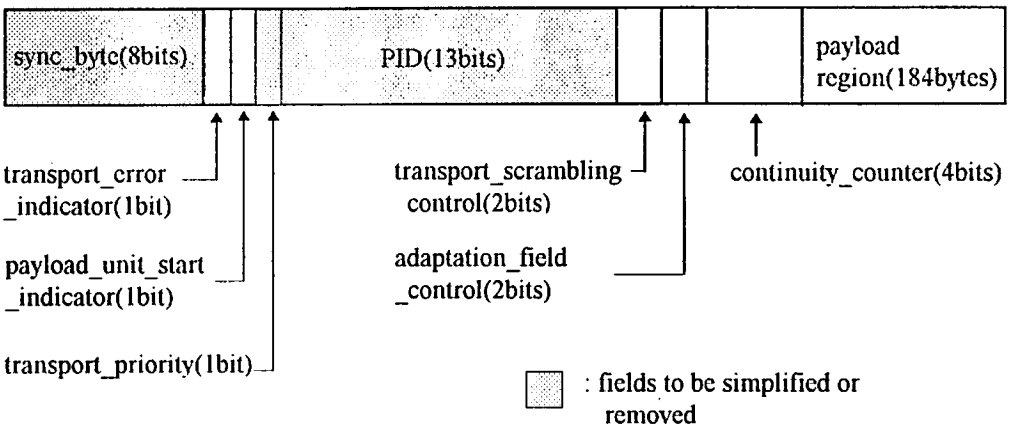

Figure.1 MPEG-2 TS packet header's fields having an overlapping functionality with ATM cell header

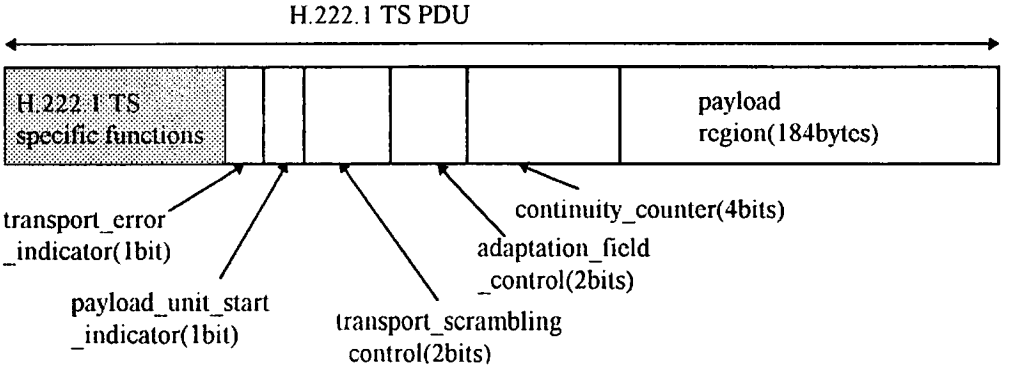

Figure.2 one of the possible structures for H.222.1 TS PDU