

Source: Japan
Title: Report of the H.310 hardware trial in Japan
Purpose: Information

1. Introduction

A working group (Chair: Mr. Keiichi Hibi, Sharp) has been established in Japan to perform hardware trial for the purpose of verifying the draft recommendations H.262, H.222.0, H.222.1 and H.310. Hardwares from seven organizations (Fujitsu, GCL, KDD, Mitsubishi, NEC, NTT, Sharp) are interconnected via NTT experimental ATM network. This document reports the results obtained in the trial.

2. Experimental results

The trial was performed in 3 periods as follows:

- 1st period : From September 11 to 14 (Picking up bugs and prepare remedies)
- 2nd period : From October 9 to 13 (Verification of the remedies)
- 3rd period : From October 24 (Interconnection)

Figure 1 below shows the simplified system configuration used in the trial and table 1 shows the main parameters used in the trial. The trial was performed mainly focusing on verifying the core part of H.310 recommendation (H.262 and H.222.0).

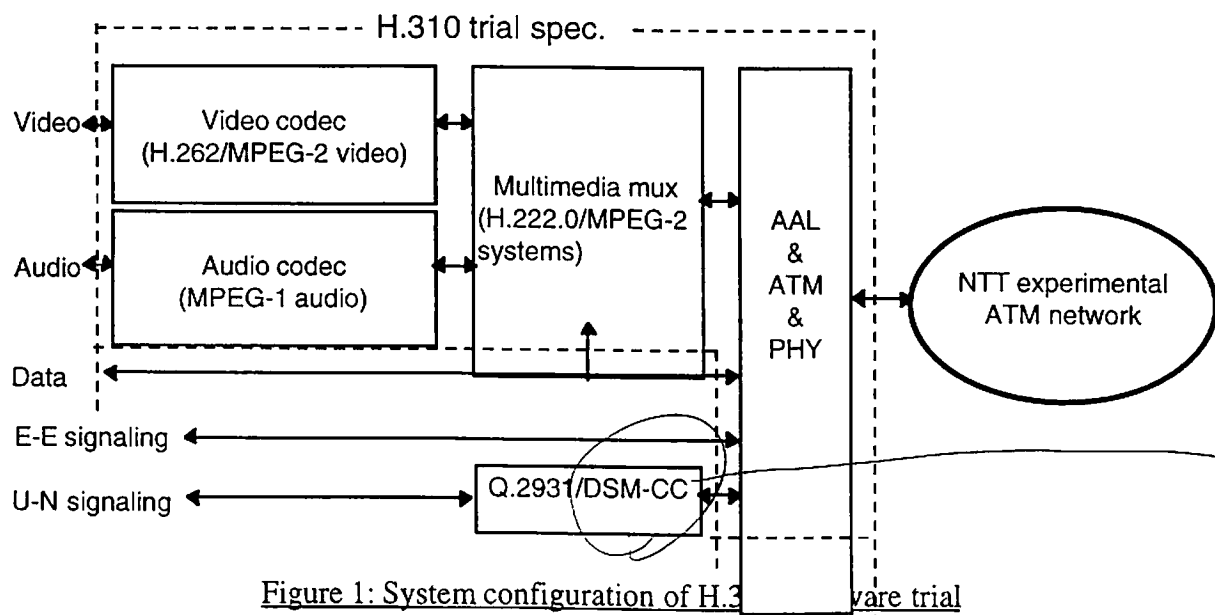


Figure 1: System configuration of H.310 hardware trial

In the 1st period, only two combinations(encoder/decoder) out of more than 20 possible combinations were confirmed to work well. At the end of the 2nd period, however, more than 20 combinations were successfully connected, owing to the bitstream exchange done after the 1st period. Table 2 summarizes the problems found in the trial in relation to the protocol layers. Those problems are regarded as implementation matters and they do not require correction in draft recommendations (H.262, H.222.0, H.222.1, H.310).

3. Conclusion

The core part of the H.310 draft recommendation has been verified through hardware experiments. The results did not reveal any essential problem in H.310 series draft recommendations, however, further discussion may be necessary to improve the interoperability of H.310 terminal. Some demonstration will be performed at the meeting (see Figure 2).

END

Table 1: Specification of H.310 hardware trial

Items	Mandatory spec.	Optional spec.
Video codec		
Coding scheme	H.262	H.262
Picture format (ENC)	525/60 720(pixel) x 240 (line) x 60 (field)	625/50
Profile/Level (ENC)	SP@ML (Field and Frame)	MP@ML
Picture format(DEC)	525/60	625/50
Profile/Level (DEC)	SP@ML (Field and Frame)	MP@ML
Coding rate	CBR	
Audio codec		
Coding scheme	MPEG-1 Layer-2	
The number of channel	2 channel (stereo)	
Coding rate	384kbps (192kbps x 2 channel)	
Sampling rate	48.0 kHz	44.1 kHz
Multimedia MUX		
MUX scheme	H.222.0 TS	
Information rate at AAL-SAP	n/m of network clock (n,m) = (47,1215): 6.016Mbps	(n,m) = (47,2430), (47,810) : 3.008, 9.024 Mbps
CSPS	-	-
System clock/Network clock synchronicity	none	sync
Number of program	single	
AAL		
Type	Type 1 or Type 5	
Timing recovery	none	
Error correction	none	
Others		
Interface point	none	AAL-SAP, ATM-SAP
Data channel	none	
C&I	none	

Table 2: Interferences found in H.310 hardware trial

Related protocol Layers	Problems	Comments
H.262 (MPEG-2 ES)	• Some decoder didn't work properly with dual' prediction • Some decoder didn't start display process when receiving P-picture only stream with intra-slice refresh • Some MP@ML decoder couldn't decode SP@ML bitstream	
H.222.0 (MPEG-2 TS)	• Some encoder generated wrong PCR values and/or Timestamp values • PES packet length values for audio were not true at some encoder output • CRC values were wrong in some encoder • Continuity counter values were wrong at some encoder • Some decoder couldn't start decoding unless it receive PAT and PMT • Some decoder could't start video decoding unless video PES and sequence header are aligned • Some decoder could handle stuffing of PAT and PMT only at the adaptation field • Some decoder could't decode PCR values inserted among audio data	
AAL	none	
ATM	• Some encoder produces burst of cells even in CBR mode which is not accepted by some decoder • Mismatch of VCI	• Traffic shaping in case of AAL5 should be defined in detail in H.310?
Physical layer	• Mismatch of the light level due to the mixed use of single mode fibers and multimode fibers for UNI (?) • Mismatch between SONET and SDH framing between some machines	

Figure 2: Configuration of the H.310 interconnection demonstration

