

Question(s):	VQEG	Meeting, date:	Boston, April 24-28, 2006
Study Group:	Working Party:	Intended type of document (R-C-D-TD):	
Source:	NTT (Nippon Telegraph and Telephone Corporation), Japan		
Title:	Proposal of using anchor video sequences to make processed video sequences.		
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Please don't change the structure of this table, just insert the necessary information.

1. Summary

In making PVSs (Processed Video Sequences), conditions in which deteriorations become detectable/unacceptable are very different depending on SRCs and the systems (See Appendix I, II). This becomes serious especially, under the condition of a transmission error. For example, one system is acceptable at a packet loss rate of 30%, other system only at a rate of 1% (See Appendix I).

Because many organizations independently make PVSs, we need to agree on the types and degrees of deteriorations at this meeting. We suggest introducing anchor video sequences, which would be used as a criterion of deterioration to make PVSs efficiently and appropriately.

2. Proposal

We suggest determining PVSs by comparing them with anchor video sequences, which have various types and degrees of degradations. In this way, we can choose PVSs so that the quality distribution of PVSs appropriately covers a MOS range between 1 and 5.

Step 1: Agreement on the types of deteriorations [in Boston Meeting]

First, we should agree on the types of deteriorations in PVSs. NTT thinks the following degradations should be taken into account,

- A. Spatial coding distortion (bit rate)
- B. Temporal coding distortion (frame rate)
- C. Spatial packet-loss/bit-error distortion

D. Temporal packet-loss/bit-error distortion

Step 2: Agreement on the degrees of deteriorations [in Boston Meeting]

We should agree on the degrees of deteriorations that was considered in STEP 1. NTT provides anchor video sequences with various degradation levels for each of the degradations proposed in STEP1. Here, we need to have common criteria for low/middle/high quality PVSs as shown in Fig.1.

Step 3: Making PVSs [when each organization makes PVSs]

ILG and the proponent laboratories should take responsibility in making PVSs by referring to anchor video sequences that we selected in Step 2.

[Note] We believe that these anchor video sequences can be used as common PVS conditions in the subjective experiments by different organizations.

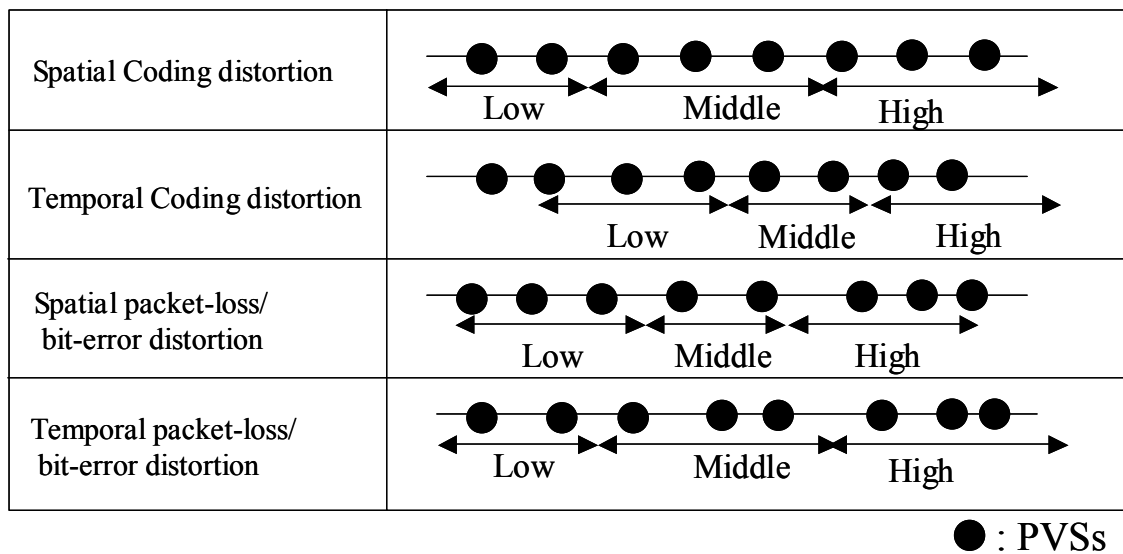


Fig. 1. The types and degrees in deteriorations.

Appendix I: System dependence of the tolerance threshold in packet loss (see contribution "Proposed ranges of packet-loss rate for various video codecs" in Rome, June 14 – 18, 2004 meeting)

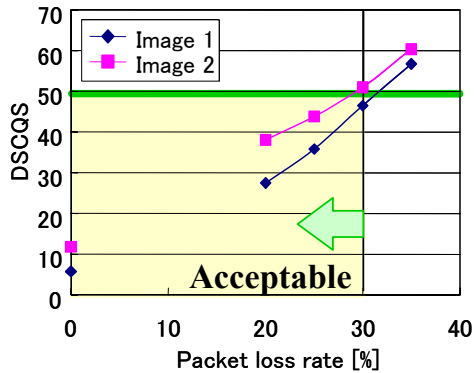


Fig. 2. Subjective results for WMT degraded by packet loss.

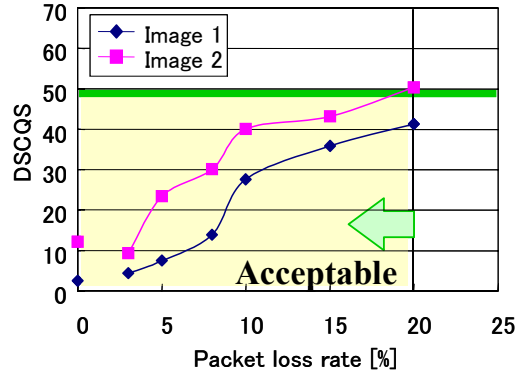


Fig. 3. Subjective results for Real degraded by packet loss.

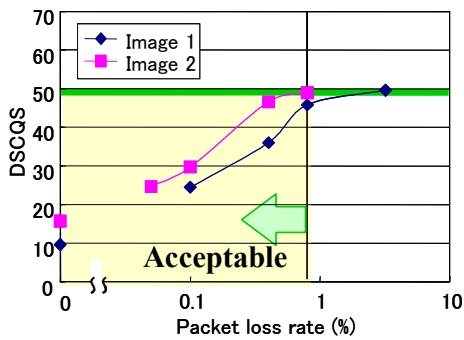


Fig. 4. Subjective results for MPEG-4 degraded by packet loss.

Appendix II: Scene dependence of the tolerance threshold in encoding and packet loss (see contribution "Results of preliminary tests at NTT and proposed subjective assessment method" in Seoul October 18 – 22, 2004 meeting)

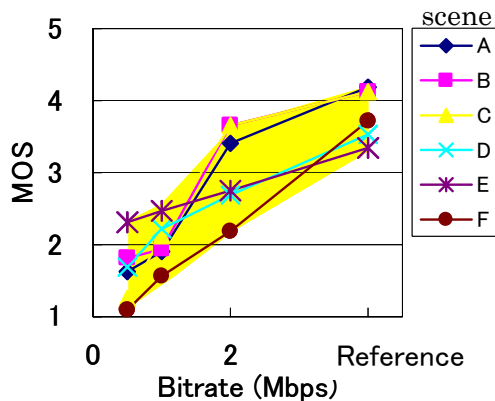


Figure 5. Effect of bit-rate

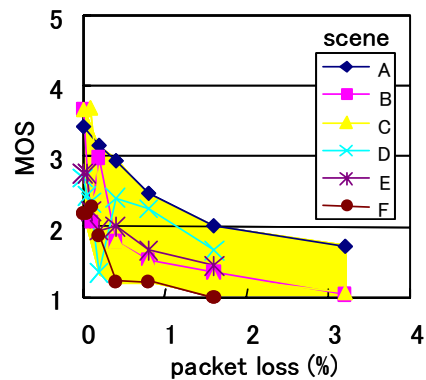


Figure 6. Effect of packet loss