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Study Group 15
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CODING OF MOVING PICTURES AND ASSOCIATED AUDIO

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Title : New results on spatial scalability

Purpose : Information

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1. Introduction

The purpose of this contribution is to compare in terms of coding efficiency the spatial scalable and the simulcast approaches for the transmission of TV and HDTV programs.

2. Description of the experiments

The base TV layer is encoded using the MP@ML with the following combination of parameters : M = 3 and N = 12.

The HDTV signal is processed by using

- either the hierarchical approach according to the spatial scalable syntax defined in TM5,
- or the simulcast approach according to the MP@HL.

In each of the two cases, 'M = 1, N =12' has been selected for the HD level.
The HDTV sequence ***Ski*** was processed. The total bitrate (for the transmission of TV and HDTV) was imposed to be the same in both cases; two bitrates have been tested :

	BR 1	BR2
Total BR (TV & HD)	20 Mbit/s	25 Mbit/s
BR of the base layer	6 Mbit/s	6 Mbit/s

3. Results

The TV and HDTV results are recorded on D1 and exabyte tapes. The following tables summarizes the SNR obtained for each situation :

3.1 Base TV layer :

TV Bit rate 6 Mbit/s			
	I	P	B
SNR - Y	35.5 dB	35.1 dB	34.3 dB
SNR - Cb	40.1 dB	39.6 dB	39.0 dB
SNR - Cr	41.8 dB	41.2 dB	41.0 dB

3.2 HDTV layer :

Total Bit rate 20 Mbit/s SIMULCAST		
	I	P
SNR - Y	31.9 dB	31.1 dB
SNR - Cb	34.5 dB	33.9 dB
SNR - Cr	36.8 dB	36.5 dB

Total Bit rate 20 Mbit/s HIERARCHICAL		
	I	P
SNR - Y	32.4 dB	31.7 dB
SNR - Cb	34.8 dB	34.4 dB
SNR - Cr	37.0 dB	36.7 dB

Total Bit rate 25 Mbit/s SIMULCAST		
	I	P
SNR - Y	32.8 dB	32.1 dB
SNR - Cb	35.3 dB	34.9 dB
SNR - Cr	37.3 dB	37.1 dB

Total Bit rate 25 Mbit/s HIERARCHICAL		
	I	P
SNR - Y	33.3 dB	32.5 dB
SNR - Cb	35.4 dB	36.1 dB
SNR - Cr	37.5 dB	37.3 dB