

CCITT SG XV
Working Party XV/1
Experts Group for ATM Video Coding

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TITLE: Result of the compatibility experiment 1(c):
H.261 SIF based Prediction of the Prediction Error
versus
Prediction of Input in Frame Structure Picture

PURPOSE: Information

This document gives some preliminary results regarding "Experiment 1(c)" on compatibility. The target of this experiment is to compare the effectiveness of two techniques allowing compatible schemes: "Prediction of the Prediction Error" and "Prediction of Input". There is a supporting D1 tape presentation.

DESCRIPTION:

- the total bit rate is 4 Mbit/s
- the base layer scheme is H.261 (RM8) applied on SIF odd fields
- the upper layer scheme is TM2 Frame Structure mode applied on CCIR 601 fields
- there is no intra pictures.

The "Prediction of Input" compatible scheme is also compared with the simulcast mode at 2.85 Mbit/s.

RESULTS:

The attached tables give the SNR of the luminance signal and the distribution of the MB types in compatible mode for the base layer, TM2 compatible case and the simulcast mode on SUSIE and FLOWER GARDEN.

The "Prediction of Input" technique gives a 0.56 dB gain over the simulcast mode for Flower Garden and +0.37 for Susie.

The "Prediction of the Prediction Error" technique seems to perform worst than the simulcast mode. Further studies are in progress on this prediction scheme

A D1 tape demonstration showing the base layer, TM2 compatible case and the TM2 simulcast mode will be shown during the meeting.

Results for FLOWER GARDEN sequence of 125 frames			
	RM8	TM2 compatible	TM2 simulcast
RATE	1.15 Mbps	1.15+2.85 Mbps	2.85 Mbps
SNR on Lum	25.45 dB	27.00 dB	26.44 dB
SNR on Chro	30.47 dB	30.50 dB	30.28 dB
Mean step size	34.49	14.56	
Mbs comp not coded		26	
Mbs Field1 comp		461	
Mbs Field2 comp		27	
Mbs all comp		65	

Results for SUSIE sequence of 125 frames			
	RM8	TM2 compatible	TM2 simulcast
RATE	1.15 Mbps	1.15+2.85 Mbps	2.85 Mbps
SNR on Lum	40.62 dB	40.83 dB	40.46 dB
SNR on Chro	45.77 dB	44.64 dB	44.53 dB
Mean step size	06.40	03.80	03.81
Mbs comp not coded		15	
Mbs Field1 comp		717	
Mbs Field2 comp		75	
Mbs all comp		75	