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Study Group 15
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CODING OF MOVING PICTURES AND ASSOCIATED AUDIO

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TITLE: Effectiveness of Data Extraction for Interlaced Source Material

PURPOSE: Information

Abstract

The use of data extraction as a mean of providing error resilience was proposed at the Rome meeting. This approach also has the attractive feature that it allows service Interworking as the extracted data subset can be used to produce a lower resolution version of the original service. This contribution looks at the quality of this lower resolution service when the source material has a strong interlace structure.

Introduction

Data extraction operates by using a subset of the total transmitted data to form the reconstructed image. In this contribution, two approaches (field mode with simple extraction and frame mode with 4x3 + 4x1 extraction) are compared. The results will be available for viewing on D1 tape at the meeting.

Experimental Method

The coding parameters used in each case are shown below.

Coder Parameters - Field Mode Extraction

Chroma sub-sampling:	4:2:0
Bit Rate:	4.0 Mbit/s
I-frame Spacing:	15
P-frame Spacing:	3
DCT coding:	Field Mode
Data Extraction Method:	Simple extraction on field based DCT blocks
Motion Compensation:	Adaptive Field/Frame mode
Motion Vectors:	Half Pixel accuracy at scale-8
Run/Amplitude VLC Tables:	As defined in TM4 Appendix D

Coder Parameters - Frame Mode Extraction

Chroma sub-sampling:	4:2:0
Bit Rate:	4.0 Mbit/s
I-frame Spacing:	15
P-frame Spacing:	3
DCT coding:	Frame Mode
Data Extraction Method:	Method A on frame based DCT blocks
Motion Compensation:	Adaptive Field/Frame mode
Motion Vectors:	Half Pixel accuracy at scale-8
Run/Amplitude VLC Tables:	As defined in TM4 Appendix D

A minimum drift decoder was used to ensure the best possible quality in each case.

Test Sequences:	Bus (704 x 480)
Number of Frames:	150

Conclusions

Using field based decimation leads to a better quality extracted image compared to the frame based approach for the interlaced Bus sequence. This conclusion will be supported by a D1 tape demonstration at the meeting.