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TITLE : Data partitioning and the main profile

PURPOSE : Discussion

1. Introduction

Data partitioning has been proposed as a means to facilitate resilience of the MPEG2 bitstream to cell loss and bit errors. Data partitioning was introduced in MPEG93/231. MPEG93/236 presents syntax for handling one data partition. MPEG93/240 presents syntax for handling many data partitions. Results for Test Model 4 core experiment F.5 are given in MPEG93/395, and show that data partitioning provides superior error performance.

This document considers data partitioning in relation to the main profile. If main profile error resilience is to be facilitated by data partitioning, then two partitions are required.

2. Error resilience and main profile

It is required that the main profile be error resilient. Data partitioning can only provide this if a minimum of two partitions are supported by the main profile. This document proposes the use of only two partitions in the main profile.

Figure 1 shows the decoder architecture to handle two data partitions. The increase in complexity is small, being a second buffer, and a buffer output selection switch. The switch is controlled by the variable length decoder through the variable *p_num*.

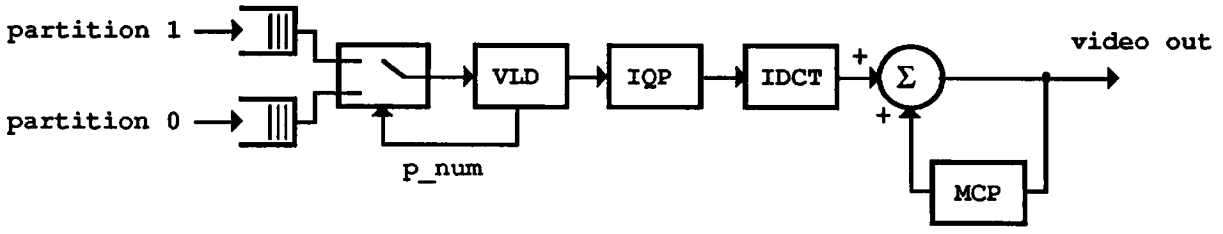

Figure 1. Decoder architecture for two data partitions

3. Channel quality

Data partitioning allows partitions to be mapped to channels of appropriate quality, in such a way that the most important information is protected. However even where multiple channel qualities are not available, data partitioning can still provide increased error resilience, due to the rearrangement of coefficients within the slice.

4. Conclusion

It is desirable that the main profile decoder be able to handle two data partitions. This will provide improved error performance at a small increase in decoder complexity.