

INTERNATIONAL ORGANISATION FOR STANDARDISATION

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ISO-IEC/JTC1/SC29/WG11

CODED REPRESENTATION OF PICTURE AND AUDIO INFORMATION

ISO-IEC/JTC1/SC29/WG11
MPEG 92/...

Title: TM1 pyramid coding for the scalability requirement
Source: PTT Research, The Netherlands
Status: Information, Proposal
Groups: Video

Introduction

In the current stage of the joint CCITT and MPEG/Video work scalability is a important topic. Many different codec structures are being investigated and assessed. Some of the scalable structures are suitable of also meeting the full MPEG1/H.261 compatibility requirement and some not.

It would be beneficial for the coming standard to be as simple and efficient as possible in performance and complexity. Therefore it is important to consider common solutions which meet as many requirements as possible, and that convergence is made on the separate topics.

To demonstrate that it is possible to get a single solution for the scalability and compatibility requirements, below an example of a technical solution is in the form of a scalable encoder and decoder.

Scalable codec being fully compatible

A proposal is made and depicted in the figures 1 and 2 for an scalable encoder and decoder respectively, which can meet at the same time the compatibility requirement.

Simulations have already performed on a two layered scalable and compatible structure see also AVC-286. These simulations show promising results.

It should be noted that these structures or in their simplified form, shown in Appendix G in figure G.1 and G.2 of the Test Model 1, can also meet the CTV/HDTV compatibility requirements.

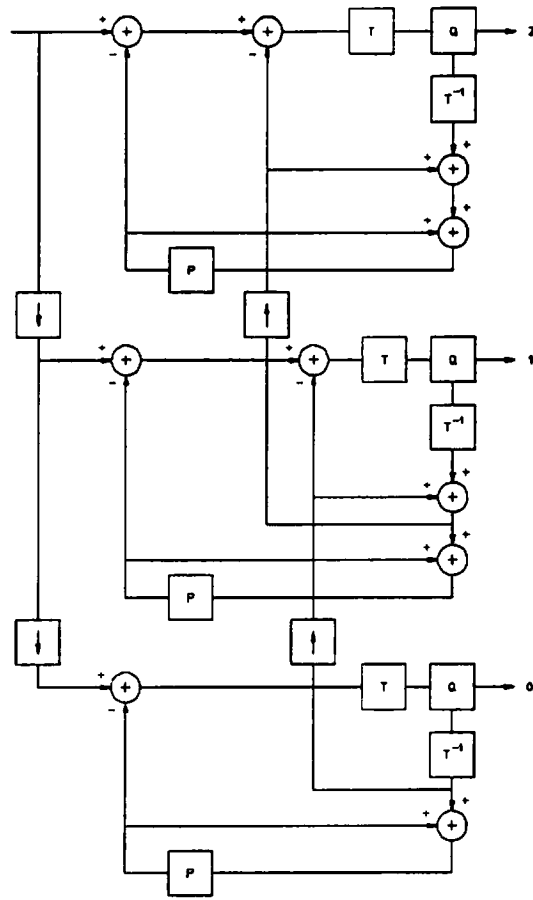


Figure 1: Scalable Encoder Structure

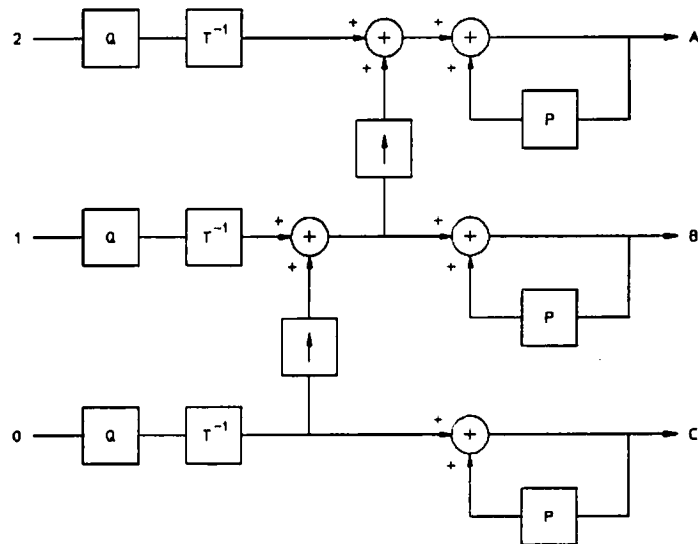


Figure 2: Scalable Decoder Structure

Conclusion

A proposal is made for a compatible and scalable codec structure, which can form a starting point to reach a common technical solution.