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Task Group CMTT/3

LIAISON STATEMENT TO CCITT WORKING PARTY XVIII/8

Integrated Video Services (IVS) baseline document

Purpose : Action

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Task Group CMTT/3 has studied the IVS baseline document with interest, and considers that it is a useful summary of the various factors to be taken into account in further work.

The Task Group thought in particular that Annex 4 (Video Service Interworking) could usefully be expanded and it offers the following text to replace the existing short paragraph. It should be noted that the existing paragraph is incorporated in the new expanded text.

Annex 4 - Video service interworking

Video service interworking is desirable and has advantages for a wide range of applications, e.g. conversational, distributive services and multi-media applications.

Attention must be paid to the fact that ensuring interworking within a hierarchy of resolution standards may impose some constraints, on the production techniques. These constraints include limitations like resolution, aspect ratio, ~~and other aspects of production.~~ *(in particular)*

*(e.g. simulcasting, embedded bit stream)*  
Interworking may be achieved by several compatibility techniques, e.g.:

- simulcasting, in which two or more encoded signals are transmitted in parallel, and which can be decoded separately;
- embedded bit stream (layered coding);

- syntactic extension, in which a new decoder can interpret a new syntax as well as a sub-set of that syntax generated by an existing encoder;
- switchable encoder.

These techniques will result in different levels of compatibility and will constrain the design of coding algorithms.

Layered coding has been identified in draft Recommendation I.211 as a promising means of facilitating interworking between video services, as well as providing protection in the event of cell loss. For comparison, however, non-layered coding methods should be considered.

Some of the advantages of a layered coding system are:

- ease of extension to future video systems (e.g. from HDTV to super HDTV with e.g. 4000 x 4000 pixels);
- ease of compatibility among various video systems (e.g. conventional TV and HDTV);
- ease of interworking among various video services.

Some of the disadvantages of layered coding are:

- possible reduced coding efficiency when compared to non-layered systems if motion compensation is applied;
- possible increase of the complexity of encoder and decoder.

The main objective for contribution applications is to achieve the best picture quality. As compatibility approaches may cause some constraints on the performance of the algorithm it is not clear whether these approaches are suitable for contribution applications. Due to possible post-processing applications it is not desirable to lose any information. Therefore, it is not appropriate to assign a lower priority to some cells of the bit stream as is possible with, e.g. layered coding.

At the present time further studies are needed to define preferred solutions.