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CODING OF MOVING PICTURES AND ASSOCIATED AUDIO

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Title: **Multi-channel Information Carried by Systems Layer**

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Purpose: Information

Relevant Groups: Systems, Video, Requirements

In a multi-layer video application which uses video encoding tools such as data partitioning, frequency scalability, and spatial scalability, each layer will be carried within a distinct elementary stream. It is anticipated that certain basic information describing the multi-layer video will be carried in the Systems layer. This information may be carried in the transport and/or program layer, in a fashion that is yet to be determined.

At the very minimum, a *service mapping table*, or similar construct, will exist with entries indicating each layer in the multi-channel video. It is understood that such a table will already exist for the purpose of identifying different elementary streams of video, audio, and data within the systems layer. Each of the multi-layer entry types must indicate the position of that layer in the multi-layer hierarchy and the form of hierarchical coding used to generate it. At this time it appears that three types of entries are necessary:

FSn: frequency scalable layer n
SSn: spatial scalable layer n
DPn: data partitioning layer n

Although three separate designations are indicated here, it may be sufficient to use one.

Example 1: A two layer data partitioned bitstream would be represented by two entries in the table.

DP0: base partition (high priority)
DP1: second partition (low priority)

Example 2: Consider a three-layer hybrid frequency/spatial scalable scheme, with a CCIR 601 high resolution layer, which has a spatial scalable SIF layer. The SIF layer is further layered with two frequency scalable layers, with the lowest layer QSIF. There would be three entries in the table.

FS0: frequency scalable base layer
FS1: frequency scalable second layer
SS2: spatially scalable third layer

It is implicit in this suggested format, that most of the attributes of the layers (*e.g.* picture sizes, bit rates) are transmitted only in the video elementary streams.