

EBU Technical Statement D82-1998 M-JPEG in Future Networked Television Production

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The joint EBU/SMPTE Task Force on “Harmonised Standards for the Exchange of Programme Material as Bit Streams” is completing its studies. These include a review of digital video compression systems for that may be suitable for the exchange of programme material in the form of compressed bit streams in a generalised networked environment for television programme production.

The Task Force has identified two families as contenders for this application:

- DV based compression,
- 422P@ML MPEG2 based compression.

Although its initial remit was to try to recommend a single compression family, the Task Force has found that it is not possible to adopt one family over the other. It has therefore decided to recommend the adoption of either of the compression families.

Each family has a number of members at various bit-rates. Each member is designed to operate in a different programme production scenario. The Task Force requires each family to have a single “agile” decoder, which will decode all the members of the family. (Transcoding between members of different families requires decompressing the signal to the Rec. 601[1] level.)

The Task Force is satisfied that the specifications of both compression families meet this requirement and that products in each family will be able to meet the requirements for the exchange of digital television programme material in the form of bit streams, already established by the EBU in Statements D79[2] and D80[3].

Products conforming to the specifications of both compression families are on the market today and more are expected in the future. Eventually, each compression family is expected to cover the complete range of devices needed for television programme production.

At a late stage in its studies, the Task Force was approached with a request that the M-JPEG compression system, currently used by the majority of non-linear editing devices, should also be adopted as a third family.

Having considered this request, **the EBU strongly discourages the adoption of the M-JPEG family in future networked television systems** because:

- yet another compression family would confuse the market and severely hamper a timely and orderly introduction of the exchange of digital television programme material in the form of compressed bit streams.

- The M-JPEG family would not add any features that at least one of the other two contenders could not supply

- The M-JPEG system is already used in several variations that are generally not compatible even with each other. A single agile decoder will not decode all variations of M-JPEG and this will not be possible unless there is universal agreement on severe bounds to the coding parameters.

- Even the manufacturers of M-JPEG equipment for programme production do not expect that M-JPEG compression will extend to cover the complete range of devices needed for television programme production.

The EBU believes that the Task Force should limit their considerations to the two compression families that they have already identified as appropriate, namely the DV family and the 422P@ML MPEG2 family.

The EBU commends the Task Force on their activity and energetic pursuit of their aims.

Bibliography

- [1] ITUR Recommendation BT.601-5 (1995): **Studio encoding parameters of digital television for standard 4:3 and wide-screen 16:9 aspect ratios**
 - [2] EBU Technical Statement D79-1996: **Open standards for interfaces for compressed television signals**
 - [3] EBU Technical Statement D80-1996: **Compression in Television Programme Production**
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