

EBU Statement D97_revised-2005

HDTV PROGRAMME PRODUCTION: THE NEED FOR FORMAT-AGILE TELEVISION PRODUCTION EQUIPMENT

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1. HDTV will have an increasing role in broadcasting throughout the world.
2. The future domestic environment will be characterised by the widespread use of non-CRT, flat panel displays, for all quality levels. All flat-panel displays and HDTV projectors will be progressively scanned.
3. In general, the highest domestic picture quality will be achieved if there is no need for de-interlacing in consumer equipment.
4. Investigations and tests made in the EBU have shown that a standard with progressive scanning is preferred for emission of HDTV, and that the 720p/50¹ standard is recommended by the EBU Technical Committee as currently the optimum solution, taking into account the available compression technology, available bit-rates in the transmission channels, and European HDTV display characteristics. The 1080p/50 standard may be an attractive solution in the longer term, if equipment and compression technologies become available.
5. There are production equipment manufacturers whose equipment supports several 60Hz elements of the SMPTE 296M specifications for HDTV formats including 720p/60, but not specifically the 720p/50 format from SMPTE 296M.
Content for HDTV delivery will come in a range of source formats, dictated by legacy systems, equipment costs, and other factors. Therefore conversion, prior to delivery, will inevitably often be necessary.
6. IT equipment is being widely adopted within television production, among other reasons, for its flexibility and programmability. This flexibility will be required in future HDTV production equipment. In an IT environment, different formats can often be supported by software rather than additional hardware. Thus IT based HDTV equipment should readily provide for a multiplicity of HDTV formats at minimal additional equipment cost.

¹ The format description convention used in this document is number of active lines per frame + scanning algorithm/frame rate, e.g. 576i/25; 720p/50, 1080i/25, 1080p/25, 1080p/50

Concludes that:

1. EBU Members need to take measures to ensure that they can start broadcasting HDTV when production and delivery are economically feasible, and when a reasonable proportion of consumers are able to display HDTV broadcasts.
2. Legacy equipment, commercial and other requirements indicate that there will be no single and unique HDTV format for production. In general, HDTV production equipment is required that will support a range of formats for Europe.
3. HDTV production equipment, including servers and digital recorders must be able to accept and play out an adequate range of standardised formats, and EBU Members should make equipment purchases with this in mind. The formats (HDTV Systems) to be supported are specified in EBU Tech 3299 and should include, at minimum, systems 1 to 3 in Tech 3299:
 - **System 1: 720p/50:** 1280 x 720-line based progressive scan format at 50 Hz frames rate (according to SMPTE 296M)
 - **System 2: 1080i/25:** 1920 x 1080-line based interlaced scan format at 50 Hz field rate (according to SMPTE 274M)
 - **System 3: 1080p/25:** 1920 x 1080-line based progressive scan format at 25 Hz frame rate (according to SMPTE 274M)
4. HDTV production equipment in the longer term will need to include all of the above and the 1080p/50 format².

² The EBU is currently investigating the user requirements and technology of the 1920 x 1080 progressive image format at 50 Hz frame rate (1080p/50) and will issue a further statement on this.