Full motion HDTV

High definition is here, and the future should be progressive scanning.

High Definition must be excellent…
the world expects it of us.

Over the past two years, the EBU has been giving **HDTV demonstrations at IBC** drawing record crowds. They centred on a core question for the broadcasting world: **what image format standard should be chosen for the future of HDTV?**

The future is progressive

All cameras and all displays, whether in broadcasting organizations or in private households, are either already using, or will use, progressive scanning. Technically speaking, nothing justifies an intermediate stage with interlaced scanning. Converting a scanning system from interlace to progressive can never be perfect. We have everything to gain from moving on to progressive.

In addition, modern compression technologies that adapt to the picture content are less efficient with an interlaced signal. All computer and flat panel television screens use progressive scanning. It would be incoherent not to adopt the same principle for new broadcast services. Finally, manufacturers of HD-DVD and Blu-Ray DVD equipment use progressive scanning for virtually all their products.

It is logical, and self-evident, that broadcasters' **migration plans should involve the use of progressive scanning, 720p or 1080p, both in production and broadcasting.**

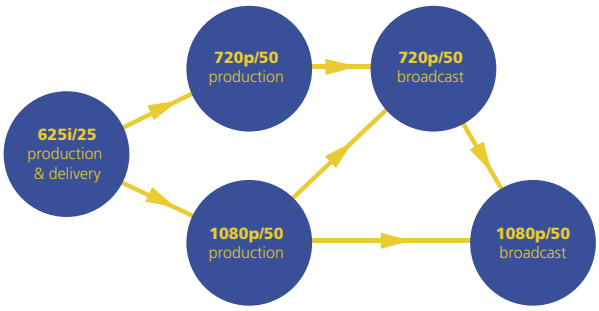
Does practice confirm the theory?

This is the purpose of the EBU demonstration. The physical set-up is similar to the earlier years. Three screens positioned very precisely in relation to the viewer will show the same sequences in 1080i/25, 720p/50, and 1080p/50. New sequences will be shown, and what is new too, is that each screen will be divided into two demonstrating the impact of the production process on the HDTV image quality: on one side of the screen, visitors will see the original image, on the other, the same image that was impaired by the production process.

For the purpose of the technology demonstration the **open standard compression system** JPEG2000 will be used.

Later the impact of the production process on the image quality after broadcasting at a variety of bit rates compressed with H.264/AVC, will be demonstrated.

As visitors will notice, **this experiment shows which path is best for a migration.**



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- **The optimal migration from the current 625i/25 is to 1080p/50, though an intermediate stage of 720p/50 may be needed.** Producing programmes in 1080p/50 now means that the quality is ready for when consumers can watch 1080p, and it ensures a longer life for productions. The downside is that it is twice as demanding in terms of uncompressed data rate as the 720p or the 1080i. Consequently there are still some years to go until an end-to-end 1080p/50 chain will become available.

- **For today, 720p/50** transmission gives an image quality better than 1080i/25 at the same or less use of spectrum, for consumer screens of up to about 50-inch diameter.

- **For the future**, perhaps with much larger screens and even higher resolutions than 1920 x 1080 pixels, transmission in **1080p/50** gives much better results than in 1080i/25 with the same or lower bit rate.

For broadcasters, the best route ahead with full motion progressive HDTV is very clearly marked.

The EBU

EBU Members are playing a crucial role in the development of digital broadcast technology and in the switch-over from analogue to digital. The EBU helps public service broadcasters to offer their audiences high-quality programming, on all available platforms, anytime.

The EBU provides its members with technical, operational and legal services. It coordinates research and development in a bid to improve technical facilities and working methods for radio, television and new media platforms. It strives to secure the recognition of the crucial role of public service broadcasters in the digital audiovisual environment.

– 75% of EU citizens watch EBU members' main channels.

– EBU members' TV channels reach 375 million individuals in the EU.

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