EBU Technical Recommendation R104-2001
Digital Sound Broadcasting in the bands below 30 MHz

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The EBU welcomes the development of digital sound broadcasting in the frequency bands below 30 MHz. The existing AM radio services still command large audiences, especially on the HF bands. However, given the rapidly changing expectations of the public, it will become increasingly difficult for analogue radio services to remain competitive in the longer term.

Digital transmission provides an important opportunity for AM broadcasters to offer much enhanced audio quality, as well as overcoming the interference, fading and distortion often experienced on sky-wave services. These potential benefits have been amply illustrated by field trials of the Digital Radio Mondiale (DRM) system (http://www.drm.org/system/globsample.htm).

In October 2000, ITU-R Study Group 6 issued a Draft New Recommendation entitled "System for digital sound broadcasting in the broadcasting bands below 30 MHz" (Document 6/63). This refers to two incompatible systems: namely, the systems developed by DRM and by iBiquity.

Given that HF broadcasts need to be received on a worldwide basis, the EBU believes that a single standard is essential for use in the HF bands. The EBU also believes that there are also major advantages in adopting a common system for LF, MF and HF bands.

The transition from analogue to digital broadcasting in the bands below 30 MHz will not occur overnight because of the need for the public to replace their AM receivers with digital receivers. As the digital broadcasts will have to co-exist with AM services during this transition period, the digital transmissions must be compatible with the existing frequency assignments for AM broadcasting. Of the two systems outlined in the ITU-R Draft Recommendation, the DRM system has the advantage that it has been designed so that it can fit within channels of 9 kHz or 10 kHz bandwidth. On the other hand, the iBiquity system envisages use of wider channels: the total occupied bandwidth is 30 kHz in the hybrid analogue/digital mode or 20 kHz in the all-digital mode. Such use of bandwidth is obviously incompatible with current use of the HF bands – and of the LF and MF bands in Europe and North Africa, where there is widespread congestion and high levels of interference during hours of darkness.

Taking these factors into account, the EBU recommends that the DRM system, as described in Annex A of the ITU-R Draft New Recommendation (Document 6/63), should be the only system used for digital sound broadcasting in the LF, MF and HF bands.