

## QUESTION ITU-R 100/6

### Television and multimedia images quality levels

(1999)

The ITU Radiocommunication Assembly

*considering*

- a) that the development of broadcast, and non-broadcast, television systems is being widely undertaken, and, with their development, new levels of potential image quality are available;
- b) that with the development of new image transmission and presentation technologies in broadcast and non-broadcast television, television system parameters can be chosen on the basis of compromises between image quality and the cost of image transmission and presentation;
- c) that for the definition of the requirements for television systems and their parts the potential level of image quality to be provided by these systems is an important element;
- d) that Recommendation ITU-R BT.1127 proposes image quality levels for HDTV, EDTV, SDTV and LDTV for TV broadcasting services, and draft ITU-T Recommendation P.911 proposes image quality levels TV0-TV5, MM0-MM5 for multimedia communication applications, and it would be valuable to have a single unified classification of the image quality levels for broadcast and non-broadcast television, transmitted in TV and multimedia environment;
- e) that in the MPEG-1, MPEG-2 and MPEG-4 specifications, methods of video compression providing any levels of image quality are available;
- f) that use of digital methods of image processing allows a flexible trade-off of image quality, bit rate and complexity of hardware and software;
- g) that new technologies make possible to build of a unified basis for the systems, providing different levels of quality of image transmission - from high resolution imagery to multimedia images transmitted, for example, as a sequence of still pictures, with near zero frame rate;
- h) that in future the designers and users of TV systems and TV equipment will be interested in the levels of quality, provided by TV systems under development and in operation,

*decides* that the following Question should be studied

- 1 How can television systems including image transmission in broadcasting environments be classified in a coherent, logical, and useful way based on picture quality?
- 2 How do image systems for HRI, HDTV, EDTV, EQTV, SDTV, LDTV and MM relate to each other, and within equipment development margins, to compressed bit rates?

**3** Which guidelines can be given for coding algorithms, spatial format, delivered frame rate, delay variation, channel impairment for each level of quality?

**4** Which levels of colour quality, analogue quality and digital quality are appropriate for each level of image quality?

*further decides*

**1** that the results of above studies should be addressed to:

- update existing Recommendation(s);
- prepare new Recommendation(s);

**2** that the above studies should be completed by 2005;

**3** that Recommendation ITU-R BT.1127 can be used as a initial basis of this study.

NOTE 1 – This Question should be considered in conjunction with and in the light of Question ITU-R 99/6 “Relationship between quality, quality evaluation methodology and type of application, in a multimedia environment”.

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