

RECOMMENDATION ITU-R BS.1286

**METHODS FOR THE SUBJECTIVE ASSESSMENT OF AUDIO SYSTEMS
WITH ACCOMPANYING PICTURE**

(Question ITU-R 106/10)

(1997)

The ITU Radiocommunication Assembly,

considering

- a) that Recommendations ITU-R BS.1284, ITU-R BS.1116, ITU-R BT.710 and ITU-R BT.500 have established methods for assessing the subjective quality of audio and video systems respectively;
- b) that Recommendation ITU-R BS.775 specifies one universal multichannel stereophonic sound system with and without accompanying pictures;
- c) that perceptual interaction between sound and picture can affect the assessment of sound quality;
- d) that existing methods for subjective assessment of sound quality are sometimes inadequate for sound systems with accompanying pictures;
- e) that the use of standardized methods is important for the comparison, exchange, compatibility and correct interpretation of data, derived from subjective tests carried out at different times and/or places,

recommends

- 1 that the testing and evaluation procedures given in Annex 1 be used for the subjective assessment of sound systems with an accompanying picture.

ANNEX 1

1 General

This Annex is divided into the following sections, giving detailed requirements for various aspects of the tests:

- 1 General
- 2 Experimental design
- 3 Selection of the listening panel
- 4 Test method
- 5 Attributes
- 6 Programme material
- 7 Reproduction conditions
- 8 Statistical analysis and presentation of results.

Sound and picture are inseparably combined in TV and movie programmes. Under normal circumstances, the observers should perceive the sound and picture with a sense of unity. Therefore, the presentation of pictures may be indispensable for some subjective assessment of sound quality.

Visual stimuli often affect the perception of sound. For example, the apparent direction of a sound image is frequently shifted to that of the corresponding picture, which is well-known as the “ventriloquism effect”. Also, visual stimuli sometimes make aural impairments less noticeable.

The following fields of assessment require the presentation of a visual image:

- correlation between picture and sound images;
- basic audio quality as influenced by the presence of a visual image;
- harmony of spatial impressions of picture and sound;
- assessment of listening and viewing arrangements.

2 Experimental design

In designing the tests, the considerations of Recommendation ITU-R BS.1116, § 2, should be taken into account. The use of a reference is not always necessary.

3 Selection of the listening panel

For the selection of the listening panel, the considerations of Recommendation ITU-R BS.1284 should be taken into account. In cases where the impairments are small, the considerations of Recommendation ITU-R BS.1116, § 3, should also be taken into account.

4 Test method

To conduct subjective assessments with an accompanying picture, it is necessary to select appropriate methods.

If the subjective differences are expected to be small it is appropriate to use the double blind triple stimulus with hidden reference method as described in Recommendation ITU-R BS.1116, § 4.

If the subjective differences are not small and it is appropriate to use less sensitive methods than those of Recommendation ITU-R BS.1116, the test methods of Recommendation ITU-R BS.1284 should be used.

It should be noted that the reference signal need not be unimpaired in an absolute sense.

Subjects should be instructed to assess the sound quality in association with the video presentation, rather than to assess the sound quality alone.

It should be noted that the five-interval scale used for video assessment in Recommendation ITU-R BT.500 differs fundamentally from the five-point scales of ITU-R BS.1116 and ITU-R BS.1284.

5 Attributes

The following attributes may be assessed:

- Front image quality: for definition see Recommendation ITU-R BS.1116, § 5.3.
- Impression of surround quality: for definition see Recommendation ITU-R BS.1116, § 5.3.
- Basic audio quality: for definition see Recommendation ITU-R BS.1284, § 5.1.
- Correlation between sound and picture images.

The last attribute may include the following characteristics:

- correlation of source positions derived from visual and audible cues (including azimuth, elevation and depth);
- correlation of spatial impressions between sound and picture;
- time relationship between audio and video.