



ITUWRC

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Radiocommunication Bureau (BR)

Administrative Circular
CACE/1062

5 June 2023

**To Administrations of Member States of the ITU, Radiocommunication Sector Members,
ITU-R Associates participating in the work of the Radiocommunication Study Group 6
and ITU Academia**

Subject: **Radiocommunication Study Group 6 (Broadcasting Service)**
 – **Approval of 2 revised ITU-R Questions**

By Administrative Circular [CACE/1057](#) dated 29 March 2023, 2 draft revised ITU-R Questions were submitted for approval by correspondence in accordance with Resolution ITU-R 1-8 (§ A2.5.2.3).

The conditions governing this procedure were met on 29 May 2023.

The texts of the approved Questions are attached for your reference in Annexes 1 to 2 and will be published by the ITU.

Mario Maniewicz
Director

Annexes: 2

Annex 1

QUESTION ITU-R 109-1/6*

In-service monitoring of perceived audiovisual quality for broadcasting and distribution networks

(2003-2023)

The ITU Radiocommunication Assembly,

considering

- a) that digital audiovisual services continue to develop rapidly due to advances in digital signal compression and communication technologies;
- b) that the digital services are characterized by a multiplicity of signals including video signals, audio signals and programme-related data and metadata streams;
- c) that the synchronicity of all components of an audiovisual programme is an important issue;
- d) that broadcasting distribution and networks for digital systems are composed of a multiplicity of cascaded links such as satellites, terrestrial radio links, computer networks and wireless broadcasting or cable distribution to the end-user;
- e) that the end-to-end broadcasting supply chain is composed of a multiplicity of cascaded processing systems employing a mixture of hardware, software and virtual cloud-based processing such as converters, encoders, switches, multiplexers, modulators, receivers, etc;
- f) that different components of an audiovisual programme might be transported over different paths;
- g) that analogue and digital disturbances or errors on the delivery chain introduce different types of impairments;
- h) that some of these disturbances are unperceivable because of error concealment strategies built into the network and do not influence the perceived audiovisual quality;
- i) that Recommendation ITU-R BT.1790 describes broadcasters' requirements for operational monitoring in digital broadcasting chains;
- j) that Recommendation ITU-R BS.1387 offers ways to evaluate the perceived audio quality of mono and stereo signals in the presence of a full-bandwidth unimpaired reference signal;
- k) that complex digital broadcasting supply chains include processing by multiple organizations who may use different proprietary quality monitoring solutions that also report any issues in a variety of different ways

* This Question should be brought to the attention of Telecommunication Standardization Study Group 9.

l) that quality evaluation in general has been recognized both by ITU-R and ITU-T and they both have set up Questions on studies related to this topic;

m) that none of these Questions is related to in-service quality monitoring of perceived quality,
decides that the following Question should be studied

1 What are the appropriate methods and techniques for in-service monitoring of the perceived audio visual quality for broadcasting and distribution networks?

2 What common descriptors, programme-related data and metadata formats and information exchange mechanisms are appropriate for the exchange of the perceived quality data?

further decides

1 that cooperation with other the ITU-T and other relevant bodies is required to allow the selection of the appropriate methods and techniques;

2 that the studies above should result in ITU-R Recommendations;

3 that the studies should be completed by 2027

Category: S2

Annex 2

QUESTION ITU-R 102-5/6

Methodologies for subjective assessment of audio and video quality¹

(1999-2011-2014-2015-2019-2023)

The ITU Radiocommunication Assembly,

considering

- a)* that it is highly desirable to have standard methods of measuring image and sound quality in broadcasting, in a subjective way, permitting an appropriate comparison of the results obtained in different places;
- b)* that, while methods for the subjective assessments of the quality of images and sound have been established in a number of ITU-R Recommendations, new image and sound systems and technologies may require extensions to these methods;
- c)* that the perceptual interaction between the audio and visual modalities can affect their mutual qualities and the overall perceived quality;
- d)* that a wide range of broadcasting systems and audio-visual presentations in different viewing and listening environments needs to be supported by subjective assessment methods for audio and video quality;
- e)* that advanced sound systems may allow, within limits established by the programme producer, the end user to adjust some audio parameters to suit a listener's preference,

decides that the following Questions should be studied

- 1 What are the quality attributes including small, medium and large impairments for audio and/or visual perception?
- 2 What are the subjective test methodologies² required for different applications and quality levels for:
 - visual presentation without associated audio presentation?
 - visual presentation with associated audio presentation?
 - audio presentation without associated visual presentation?
 - audio presentation with associated visual presentation?
 - audio presentation with user interaction?
 - audio presentation without user interaction?

¹ This Question should be brought to the attention of ITU-T Study Group 12 and copied to IRG-AVQA.

² This should include, for example, the harmonization of grading scales employed in audio and visual testing at present (refer to present ITU-R BS and BT, and ITU-T Recommendations), test environments, viewing and listening distances, training procedures, etc.

3 How could such methodologies be used as criteria to identify quality attributes that are important for different application areas of audio and/or visual presentation?

4 How could they be used to express quality requirements for audio and/or visual modalities for different application areas and to assess their optimization?

5 What methods and criteria are required to assess if the “Quality of Experience” expectations of the intended audience of advanced immersive audio-visual content, are being met?

6 How the context dependent quality balance between audio and visual presentation should be considered?

further decides

1 that the results of the above studies should be included in (a) Recommendation(s) and/or Report(s);

2 that the above studies should be completed by 2027.

Category: S2
