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| **Radiocommunication Bureau (BR)** |
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| Administrative Circular**CACE/1062** | 5 June 2023 |
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| **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** |
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| Subject: | **Radiocommunication Study Group 6 (Broadcasting Service)****– Approval of 2 revised ITU-R Questions** |
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By Administrative Circular [CACE/1057](https://www.itu.int/md/R00-CACE-CIR-1057/en) 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[[1]](#footnote-1)\*

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

*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 quality[[2]](#footnote-2)

(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 methodologies[[3]](#footnote-3) 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?

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

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1. \* This Question should be brought to the attention of Telecommunication Standardization Study Group 9. [↑](#footnote-ref-1)
2. This Question should be brought to the attention of ITU-T Study Group 12 and copied to IRG‑AVQA. [↑](#footnote-ref-2)
3. 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. [↑](#footnote-ref-3)