



ITUWRC

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Radiocommunication Bureau (BR)

Administrative Circular
CACE/1057

29 March 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)**
 – **Proposed approval of 2 draft revised ITU-R Questions**

At the meeting of Radiocommunication Study Group 6 held on 17 March 2023, 2 draft revised ITU-R Questions were adopted according to Resolution ITU-R 1-8 (§ A2.5.2.2) and it was agreed to apply the procedure of Resolution ITU-R 1-8 (see § A2.5.2.3) for approval of Questions in the interval between Radiocommunication Assemblies. The texts of the draft ITU-R Questions are attached for your reference in the Annexes 1 to 2). Any Member State raising an objection to the approval of a draft Question is requested to inform the Director and the Chairman of the Study Group of the reasons for the objection.

Having regard to the provisions of § A2.5.2.3 of Resolution ITU-R 1-8, Member States are requested to inform the Secretariat (brsgd@itu.int) by 29 May 2023, whether they approve or do not approve the proposals above.

After the above-mentioned deadline, the results of this consultation will be announced in an Administrative Circular and the approved Questions will be published as soon as practicable (see: <http://www.itu.int/ITU-R/go/que-rsg6/en>).

Mario Maniewicz
Director

Annexes: 2

– 2 draft revised ITU-R Questions

Annex 1

(Document 6/308)

DRAFT REVISION OF 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 have rapidly to~~ developed ~~rapidly in the last few years, due based on 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 ~~metadata~~ 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 ~~and especially video services~~ 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 whole broadcasting supply -delivery~~ 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;
- j) that ~~state-of-the-art troubleshooting systems are adequate to detect long duration impairments, but have limited efficiency for in service detection of short breaks which are more frequent on digital services~~ Recommendation ITU-R BT.1790 describes broadcasters' requirements for operational monitoring in digital broadcasting chains;

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

k) 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;

~~l) that several methods to evaluate the perceived video quality in the presence of a full-bandwidth unimpaired reference signal have been proposed;~~

~~m) that in-service monitoring in general has no access to the full bandwidth unimpaired reference signal;~~

~~n) that for some channels a low bit rate side channel is available to be used for service quality monitoring;~~

~~o) that in-service monitoring has the requirements of low computational complexity and simple user interfaces;~~

p) 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 ~~are proposed but needs for a common standard have been expressed;~~

~~q) that commercial contracts impose that network operators must keep the perceived quality of the delivered services within agreed limits;~~

r) 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;

s) 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 2023⁷

Category: S2

Annex 2

(Document 6/309)

DRAFT REVISION OF QUESTION ITU-R 102-4/6

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 [imagepicture](#) 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 [imagespictures](#) 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 users to adjust audio, within limits established by the programme producer, the end user may 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 and 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 2023⁷.

Category: S2
