Radiocommunication Bureau (BR)

Administrative Circular
**CACE/863**

16 May 2018

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

Subject: **Radiocommunication Study Group 6 (Broadcasting Service)**

– **Proposed approval of 1 draft revised ITU-R Question**

At the meeting of Radiocommunication Study Group 6 held on 27 April 2018, 1 draft revised ITU-R Question was adopted according to Resolution ITU-R 1-7 (§ A2.5.2.2) and it was agreed to apply the procedure of Resolution ITU-R 1-7 (see § A2.5.2.3) for approval of Questions in the interval between Radiocommunication Assemblies. The text of the draft ITU-R Question is attached for your reference in the Annex to this letter. Any Member State who objects 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 1-7, Member States are requested to inform the Secretariat (brsgd@itu.int) by 16 July 2018, whether they approve or do not approve the proposal above.

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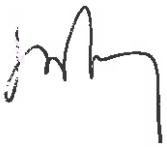
After the above-mentioned deadline, the results of this consultation will be announced in an Administrative Circular and the approved Question will be published as soon as practicable (see: https://www.itu.int/pub/R-QUE-SG06/en).



François Rancy
Director

**Annex**: 1

– 1 draft revised ITU-R Question

**Distribution:**

- Administrations of Member States of the ITU and Radiocommunication Sector Members participating in the work of Radiocommunication Study Group 6
- ITU-R Associates participating in the work of Radiocommunication Study Group 6
- ITU Academia
- Chairmen and Vice-Chairmen of Radiocommunication Study Groups
- Chairman and Vice-Chairmen of the Conference Preparatory Meeting
- Members of the Radio Regulations Board
- Secretary-General of the ITU, Director of the Telecommunication Standardization Bureau, Director of the Telecommunication Development Bureau

## Annex

(Document 6/226)

# DRAFT REVISION OF QUESTION ITU-R 139/6

## Methods for rendering of advanced audio formats

(2015)

The ITU Radiocommunication Assembly,

*considering*

*a)* that there is an increasing interest in the production of sound and television programmes in advanced sound systems, which can provide a listening experience that matches the enhanced viewing experience provided by image production in HDTV (see Recommendation ITU-R BT.709) and UHDTV (see Recommendation ITU-R BT.2020);

*b)* that Recommendation ITU-R BS.2051 specifies advanced sound systems that can provide an enhanced listening experience to a properly equipped radio or television audience;

*c)* that Recommendation ITU-R BS.1909 specifies as typical viewing environments theatre and large theatre environments as well as large-to-average size room environments, and mobile such as in-car or personal environments;

*d)* that consistency in sound production requires consistency in the sound reproduction system that is employed in the production environment and that this implies the need for consistency in the reproduction of the advanced sound system in the production chain;

*e)* that the rendering system that creates the loudspeaker signals from the advanced sound system signals is a critical component to provide the needed consistency in reproduction,

*further considering*

*a)* that a description of a ~~baseline~~ renderer[1] should be complete and self-contained. Ideally it abstracts from implementation details and provides those by using a reference implementation;

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[1] A renderer converts a set of audio signals with associated metadata to a different configuration of audio signals and metadata, based on the provided content metadata, and local environmental metadata. ~~A baseline renderer is an instance of a renderer which is~~It may be used for quality evaluation purposes ~~and~~ or in the programme production process~~. It being clearly defined does allow a comparison with other possible instances. It does not necessarily offer the best possible quality of the auditory scene and may not support all possible metadata, but can deliver a rendition which will preserve the artistic intent for a defined set of rendering conditions~~.

*b)* that the description should clearly describe the operations and signal processing to be carried out, based on the incoming audio data, metadata and the local metadata which configure the rendering process and not contain any ambiguities~~. Extensions to the specification can allow points of enhancement but this is not part of the baseline renderer specification~~;

*c)* that if a file format does exist, this can be referred to in terms of parameters and storage, but in general the specification should not be linked to specific implementations of such parameters in aforementioned file format;

*d)* that a ~~baseline rendering~~renderer should be able to support all speaker setups as proposed in Recommendation ITU-R BS.2051,

*decides* that the following Questions should be studied

1 What are the requirements for ~~a baseline~~ renderers for use in the production and monitoring of advanced sound programmes~~ and quality evaluation~~?

2 What are the requirements for renderers for use in quality evaluation?

3~~2~~ What ~~is~~ are the specifications of ~~a baseline~~ renderers that ~~is~~ are satisfactory for use in the production and monitoring of advanced sound programmes?~~ and quality evaluation?~~

4 What are the specifications for renderers that are satisfactory for use in quality evaluation?

5~~3~~ What signal processing and metadata inputs (environmental metadata, content related metadata) are ~~required~~ needed for ~~satisfactory~~ required operation of a ~~baseline~~ renderer?

6~~4~~ What algorithms should be used to derive the speaker signals based on all possible input formats (object-based, channel-based, scene-based and combinations thereof) according to Recommendation ITU-R BS.2051?

*further decides*

1 that the results of the above studies should be included in ~~a~~one or more Recommendations and other ITU-R texts;

2 that the above studies should be completed by ~~2016~~2019.

Category: S1