Radiocommunication Bureau (BR)

Administrative Circular
**CACE/799**

27 January 2017

**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 1 revised ITU-R Question**

By Administrative Circular CACE/788 of 23 November 2016, 1 draft revised ITU-R Question was submitted for approval by correspondence in accordance with Resolution ITU-R 1-7 (§ A2.5.2.3).

The conditions governing this procedure were met on 23 January 2017.

The text of the approved Question is attached for your reference in the Annex to this letter and will be published by the ITU.

François Rancy
Director

**Annex:** 1

**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

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## Annex

# QUESTION ITU-R 142-2/6

## High dynamic range television for broadcasting

(2015-2016-2017)

The ITU Radiocommunication Assembly,

*considering*

*a)* that high dynamic range television (HDR-TV) image formats are specified in Recommendation ITU-R BT.2100;

*b)* that digital television image formats for SDTV, HDTV and UHDTV with standard dynamic range (SDR) have been specified by the ITU-R in Recommendations ITU-R BT.601, BT.709 and BT.2020;

*c)* that Recommendation ITU-R BT.2022 provides general viewing conditions for subjective assessment of quality of SDTV and HDTV television pictures on flat panel displays;

*d)* that modern television displays are capable of reproducing images at a higher luminance, and with a greater contrast ratio and wider colour gamut (WCG) than is employed in conventional programme production;

*e)* that HDR-TV is capable of reproducing images at a significantly higher luminance and greater contrast ratio;

*f)* that many television programmes will continue to be produced and exchanged in the standard image dynamic range of SDTV, HDTV and UHDTV, and that SDR and HDR content will be inter-mixed in programme production and in broadcast playout;

*g)* that for a number of years, many television programmes broadcast in HDR-TV will be viewed on a large number of legacy consumer television displays which are only capable of displaying SDR pictures;

*h)* that it is desirable that HDR-TV should have, where appropriate, a degree of compatibility with existing workflows and broadcaster infrastructure as well as SDR displays;

*i)* that creative practices in HDR-TV production should be arranged to lead to no adverse effects such as visual fatigue or discomfort when viewed for a significant period of time,

*decides* that the following questions should be studied

1 Which methods for production and formatting for delivery to consumers, including any requirements for metadata, would enable degrees of compatibility with viewing on most television sets currently used in the homes of television audiences?

2 Which tone mapping[1] methods should be recommended to derive SDR versions from programmes produced in HDR-TV and to insert SDR programme material into HDR programmes?

3 What range of viewing conditions should be assumed, for home viewing of HDR-TV programmes?

4 What scientifically assessed relationship exists, in home viewing environments, between the amount of image dynamic range extension and the consumer viewing appreciation?

5 Which practices should be recommended in order that the television home audience does not perceive annoying jumps in the television image appearance at transitions between HDR-TV programmes and standard dynamic range television programmes?

*further decides*

1 that the results of the above studies should be included in one or more Recommendations or Reports;

2 that the above studies should be completed by 2019[2].

Category: S2

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[1] Tone mapping is an image processing technique used to map one set of image parameters to another set, e.g.: when versioning a high-dynamic-range television program for distribution in a standard-dynamic-range medium.

[2] Relevant results of the studies should in due course be brought to the attention of the IEC as appropriate.