



*Radiocommunication Bureau*  
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Administrative Circular  
CACE/344

6 April 2005

**To Administrations of Member States of the ITU and  
Radiocommunication Sector Members participating in the  
work of the Radiocommunication Study Groups and the Special  
Committee on Regulatory/Procedural Matters**

**Subject:** Radiocommunication Study Group 6  
– Approval of 2 new ITU-R Questions and 2 revised ITU-R Questions

By Administrative Circular CAR/183 of 17 December 2004, 2 draft new ITU-R Questions and 2 draft revised ITU-R Questions were submitted for approval by correspondence in accordance with Resolution ITU-R 1-4 (§ 3.4).

The conditions governing these procedures were met on 17 March 2005 and therefore the Questions are considered approved.

The texts of these Questions are attached for your reference and will be published in Addendum 3 to Document 6/1 which contains the ITU-R Questions approved by the 2003 Radiocommunication Assembly and assigned to Radiocommunication Study Group 6.

Valery Timofeev  
Director, Radiocommunication Bureau

**Annexes:** 4

Distribution:

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

## ANNEX 1

### QUESTION ITU-R 115/6

#### **“Registration”<sup>1</sup> methods for television and multimedia images**

(2005)

The ITU Radiocommunication Assembly,

*considering*

- a) that considerable effort and progress has been made in developing objective methods for video quality measurement (Question ITU-R 44/6, Recommendation ITU-R BT.1683);
- b) that the Radiocommunication Study Group is responsible for setting the overall quality performance of broadcasting chains;
- c) that video quality measurements are typically required for processed video sequences which are obtained by applying hypothetical reference circuits (HRC) to source video sequences;
- d) that quite often spatial and temporal shifts exist between source video sequences and processed video sequences;
- e) that video “registration” is required to compensate these spatial and temporal shifts between source video sequences and processed video sequences in most objective models for video quality measurements;
- f) that video “registration” can be treated separately from objective methods for video quality measurement;
- g) that video registration is also required in a test environment to ensure that processed video sequences meet the HRC requirement (e.g. maximum spatial and temporal shifts);
- h) that reliable and fast video registration is required in many other television applications,

*decides* that the following Question should be studied

- 1** What are the efficient parameters for reliable and fast video registration?
- 2** What are the necessary test materials and test signals required for the video registration of these applications and standards?
- 3** What methods should be used for measuring and monitoring the parameters defined in § 1 and 2?
- 4** What characteristics should be recommended for video registration which provides efficient and reliable registration?
- 5** What are the effects and limitations when limited samples are available for video registration?

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<sup>1</sup> The terminology, “registration,” means compensation of spatial and temporal shifts between source and processed video sequences.

- 6 What is the minimum number of samples for reliable and robust video registration?
- 7 What are the effects and limitations that impaired images have on the performance of video registration methods,  
*further decides*
  - 1 that the results of the above studies should be included in (a) Recommendation(s);
  - 2 that the above studies should be completed by 2006.

Category: S1

## ANNEX 2

### QUESTION ITU-R 116/6

#### **Parameters and tolerance limits for the technical quality of audio signals intended for international exchange**

(2005)

The ITU Radiocommunication Assembly,

*considering*

- a) that Recommendation ITU-R BS.644 specifies the audio-quality parameters for the performance of a high-quality sound-programme transmission chain;
- b) that Recommendation ITU-R BS.645 specifies the test signals and metering to be used on international sound programme connections;
- c) that further work is necessary to determine the subjective limits and the attainable and/or desirable objective global value at the end of the transmission chain;
- d) that by means of addition laws, the limits for the different transmission links can be derived from such global values;
- e) that it is necessary to standardize measuring methods for special parameters,

*decides* that the following question should be studied

- 1** What are the parameters and tolerances to characterize high-quality sound programmes for international exchange, for both analogue and digital techniques?
- 2** What are the test signals and metering to be used on international sound programme connections?
- 3** What are the attainable and/or desirable values of programme loudness for the whole transmission chain, especially with regard to the relationship between objective and subjective values?
- 4** What are the measuring methods, additional to those given by ISO and IEC that are especially appropriate to broadcasting use?

*further decides*

- 1** that the results of the above studies should be addressed to:
  - update and complement Recommendation ITU-R BS.644;
  - update and complement Recommendation ITU-R BS.645;
  - prepare new Recommendation(s);
- 2** that the above studies should be completed by 2006 at the latest.

Category: S1

## ANNEX 3

### QUESTION ITU-R 31-1/6

#### **Digital terrestrial television broadcasting**

(1992-1993-2002-2005)

The ITU Radiocommunication Assembly,

*considering*

- a) the rapid progress being made in techniques for bit-rate reduction and for digital modulation;
- b) that digital emission systems may offer advantages in terms of quality and of spectrum efficiency and that some administrations were planning their introduction in 1995;
- c) that bit-rate reduction coding of digital TV signals will find wide application for emission by terrestrial and satellite means, for secondary distribution by cable and optical fibre and for pre-recorded delivery media;
- d) that there are advantages in having a maximum of common elements for the bit-rate reduction codings in the various applications;
- e) that a number of Radiocommunication Groups are studying or are considering the use of bit-rate reduction techniques, including Study Group 6, Working Party 6S, Working Party 6R for a variety of related applications;
- f) that commonality with the bit-rate reduction techniques used in related applications (such as equipment for home use) considered by the International Electrotechnical Commission (IEC), the International Organization for Standardization (ISO) and the ITU-T may offer further advantages;
- g) that various kinds of applications, for example multi-channel TV, multi-channel sound applications, ancillary data applications, indoor/outdoor portable and **mobile reception of TV programs** will be introduced as new attractive applications with high flexibility and efficiency in multiplex operation;
- h) that high performance error protection methods will be introduced from the point of view of transmission efficiency and easy implementation in home, portable **and mobile** receivers;
- j) that digital modulation methods suitable for the terrestrial transmission paths will be used;
- k) that strategies of harmonization with existing terrestrial broadcasting will be adopted,

*decides* that the following Question should be studied

- 1** What are the appropriate methods to multiplex the required signals into the channel (including vision, sound, data, etc.)?
- 2** What are the appropriate methods for error protection?

**3** What are the appropriate modulation and emission methods and their relevant parameters, for the broadcasting of digitally encoded TV signals in terrestrial channels?

**4** What are the appropriate strategies to introduce and implement digital terrestrial TV broadcast services, taking account of existing terrestrial broadcast services?

**5** What are other applications that could be provided by digital terrestrial TV systems?

NOTE 1 – See also Questions ITU-R 12/6, ITU-R 80/6 and ITU-R 4/6,

*further decides*

**1** that the results of the above studies should be included in (a) Recommendation(s);

**2** that the above studies should be completed by 2006.

Category: S1

## ANNEX 4

### QUESTION ITU-R 77-1/6

#### **Methods and practices for digital recording of television programme material intended for international exchange**

(1990-1993-2005)

The ITU Radiocommunication Assembly,

*considering*

- a) that the use of digital techniques for the production and recording of television programmes has pervaded television operations;
- b) that digital recording techniques are continuing to improve in respect of recording density, digital compression methods and recording -infrastructure, which range from videotape cassettes to magnetic hard discs, optical discs and solid-state memories;
- c) that while the number of -recording formats for programme material intended for international exchange should desirably be kept to a minimum, it should cover the most widespread television recording technologies and -infrastructure;
- d) that some applications, such as coverage of news events in isolated locations where it is only practical to take lightweight and compact equipment, require camcorders allowing economic implementation in a small, lightweight and disposable package,

*decides* that the following Question should be studied

- 1 What specifications for digital recording (on magnetic tape cassettes, hard discs, optical discs or solid state memories), can be recommended for programme material intended for international exchange?
- 2 What operating practices can be recommended for these applications of television recording?

*further decides*

- 1 that the results of the above studies should be included in (a) Recommendation(s);
- 2 that the above studies should be completed by 2007.

Category: S2/AP