INTERNATIONAL TELECOMMUNICATION UNION

Radiocommunication Bureau
(Direct Fax N°. +41 22 730 57 85)

Administrative Circular
CACE/570

28 May 2012

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-R Academia

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

– **Proposed adoption by correspondence of 1 draft new ITU-R Question and 2 draft revised ITU-R Question**

At the meeting of Radiocommunication Study Group 6, held on 1 May 2012, the Study Group decided to seek adoption of 1 draft new Question and 2 draft revised Questions according to § 3.1.2 of Resolution ITU-R 1-6 (Adoption by a Study Group by correspondence).

The consideration period shall extend for two months ending on 28 July 2012. If within this period no objections are received from Member States, the approval by consultation procedure of § 3.1.2 of Resolution ITU-R 1-6 will be initiated.

Place des Nations
CH-1211 Geneva 20
Switzerland

Telephone +41 22 730 51 11
Telefax Gr3: +41 22 733 72 56
Gr4: +41 22 730 65 00

Telex 421 000 uit ch
Telegram ITU GENEVE

E-mail: itumail@itu.int
http://www.itu.int/

Any Member State who objects to the continuation of the approval procedure for the draft Questions is requested to inform the Director and the Chairman of the Study Group of the reasons for the objection.

François Rancy
Director, Radiocommunication Bureau

Annexes: 3

– 1 draft new ITU-R Question and 2 draft revised ITU-R Questions

Distribution:

- A dministrations 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-R Academia
- Chairmen and Vice-Chairmen of Radiocommunication Study Groups and the Special Committee on Regulatory/Procedural Matters
- 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 1

(Document 6/49)

At its April 2012 meeting, Working Party 6B considered an input contribution (Document 6B/6) proposing a draft new Question to address the issues of Internet Protocol (IP) interfaces for the transport of both real-time and non-real-time transfers of broadcast programme material as data across Internet Protocol (IP) based networks. The new Question aims to invite for studies of IP Interfaces for the transport of broadcast programmes.

DRAFT NEW QUESTION ITU-R [IP-IF]/6

Internet Protocol (IP) interfaces for the transport of broadcast programmes

The ITU Radiocommunication Assembly,

considering

a) that many broadcasting organizations have implemented file based storage and file transfer systems;

b) that streaming interfaces (SDI) have limited bandwidth and limited operational flexibility concerning non real time transfers;

c) that IP protocols have been developed for real time applications;

d) that high-speed IP transmission over wide area telecommunication networks is becoming a reality;

e) that as bandwidth requirements increase telecommunication network design can be adjusted;

f) that IP networks are image and sound format agnostic,

recognizing

a) that ITU-R has established Recommendation ITU-R BT.656 as the interface for digital component video signals operating at the 4:2:2 level of Recommendation ITU-R BT.601;

b) that ITU-R has established Recommendation ITU-R BT.1120 as the digital interfaces for HDTV studio signals for international exchange;

c) that ITU-R has established Recommendation ITU-R BT.1720 which specifies quality of service ranking and measurement methods for digital video broadcasting services,

decides that the following Questions should be studied

1 What IP protocol parameters should be chosen for transporting broadcasting programmes?

2 What are the performance requirements (e.g. network latency and transmission errors) for the IP network used in transporting broadcast programmes to ensure both real-time and non-real-time transfers of programme material as data?

3 What provision should be taken to ensure security in the transport of broadcast programme signals?

4 What system monitoring and network control should be employed?

5 What conversion latencies can be permitted at broadcast signal reconstruction points such as mixers and switchers?

6 Which provision should be taken to maintain synchronisation among various program component such as video, audio and closed caption signals when carried as data across IP based networks?

Further decides

1 that the results of the above studies should be included in (a) Report(s) and/or Recommendation(s);

2 that the Question should be brought to the attention of ITU-T Study Groups 9 and 17;

3 that the above studies should be completed by 2015.

Category: S3

Annex 2

(Document 6/14)

DRAFT REVISION OF QUESTION ITU-R 40-2/6*

Extremely high-resolution imagery

(1993-2002-2010-2011)

The ITU Radiocommunication Assembly,

considering

a) that TV technology at a number of levels of quality may find applications in both broadcast and non-broadcast services;

b) that the Radiocommunication Sector is studying a range of TV systems for broadcast uses;

c) that ITU-R has been studying extremely high-resolution imagery and expanded hierarchy of large screen digital imagery, and has established Recommendations ITU-R BT.1201-1 that provides the guideline of image characteristics for extremely high-resolution imagery and ITU-R BT.1769 that provides the parameter values for expanded hierarchy of image formats for LSDI applications;

d) that HDTV technology along with large screen displays has become the norm in homes, where audiences enjoy high-quality programme content;

e) that progress in display technologies will permit the use of large-screen and extremely high resolution television displays for home viewing;

f) that additional visual experiences beyond HDTV can be offered by presenting higher resolution images, which can give a stronger sensation of reality and a heightened feeling of presence to viewers;

g) that broadcast applications with such a feature, called ultra high definition television (UHDTV) can be considered as one of the forms of extremely high-resolution imagery;

h) that some administrations consider introducing broadcasting of UHDTV to the home associated with improved efficient coding and transmission technologies;

j) that in some broadcast-related applications (for example: computer graphics, printing, motion pictures, digital multimedia video information systems) an extremely high resolution is expected;

k) that studies on higher resolution digital image architecture are being conducted in some organizations,

---

* This Question should be brought to the attention of the International Electrotechnical Commission (IEC), the International Organization for Standardization (ISO) and the Telecommunication Standardization Sector.

decides that the following Questions should be studied

1 What kind of approach should be taken to realize such an extremely high-resolution imagery system for broadcasting and non-broadcasting applications?

2 What features such a system should have to allow for broadcasting applications and to assure harmonization between different applications, including digital multimedia video information system for collective, indoor and outdoor viewing?

3 What are the various technical characteristics that, in combination, contribute to the sense of presence experienced by viewers and what are the methods for its assessment?

43 What kind of parameters should be determined for these systems in programme origination and exchange?

45 What characteristics should be recommended in every part of the TV broadcasting chain using extremely high-resolution imagery, namely acquisition, recording, contribution, distribution, emission and display?

NOTE 1 – See Reports ITU-R BT.2042-3 and ITU-R BT.2053-2; see also Question ITU-R 15-2/6.

Further decides

1 that the results of the above studies should be included in (a) Report(s) and/or (a) Recommendation(s);

2 that the above studies should be completed by 2015.

Category: S2

Annex 3

(Document 6/22)

DRAFT REVISION OF QUESTION ITU-R 128-1/6*

Digital ~~three-dimensional (3D)~~TV systems for broadcasting~~broadcasting~~**

(2008-2011)

The ITU Radiocommunication Assembly,

considering

a) that existing TV broadcasting systems do not provide complete perception of reproduced pictures as natural three-dimensional scenes;

b) that viewers' experience of presence in reproduced pictures ~~may be~~is enhanced by 3DTV, which is anticipated to be an important future application of digital TV broadcasting for both conventional indoor viewing conditions and outdoor viewing conditions;

c) that 3DTV programmes are being produced for broadcasting purposes, and broadcasters are delivering those programmes to their audiences;

~~c) that the cinema industry is moving quickly towards production and display in 3D motion pictures;~~

d) that research into various applications of new technologies ~~(for example, holographic imaging)~~ that could be used in 3D-TV broadcasting is taking place in some countries;

~~e) that progress in new methods of digital TV signal compression and processing is moving toward the practical realization of multifunctional 3D TV broadcasting systems;~~

~~f~~*e)* that the development of uniform world standards for 3D-TV systems, covering various aspects of digital TV broadcasting, would encourage adoption across the digital divide and prevent a multiplicity of incompatible standards~~,~~;

~~g) the harmonization of broadcast and non-broadcast applications of 3D TV is desirable;~~

---

* Note: Question ITU-R 125/6 should be suppressed following the approval of this revision to Question ITU-R 128-1/6.

** This Question should be brought to the attention of ITU-T SG 9~~ and ITU-R Study Group 4~~.

decides that the following Questions should be studied

1 What are the user requirements for digital 3D-TV broadcasting systems for both ~~conventional~~ indoor viewing conditions and outdoor viewing conditions?

2 What are the requirements for image viewing and sound listening conditions ~~for~~ that 3D-TV should meet?

3 What are the psychophysical effects of viewing 3DTV images?

4 What are the various technical characteristics that combine to contribute to the sense of presence experienced by viewers and what are the methods for its assessment**?**

~~**3** What 3D TV broadcasting systems currently exist or are being developed for the purposes of TV programme production, post-production, recording, archiving, distribution and transmission for realization of 3D TV broadcasting?~~

5 What common video and audio systems should be used for 3DTV programme production and international exchange to maximize interoperability?

~~**4** What new methods of image capture and recording would be suitable for the effective representation of three-dimensional scenes?~~

~~**5** What are the possible solutions (and their limitations) for the broadcasting of 3D TV digital signals via the existing terrestrial 6, 7 and 8 MHz bandwidth channels or broadcast satellite service channels, for fixed and mobile reception?~~

~~**6** What methods for providing 3D TV broadcasts would be compatible with existing television systems?~~

~~**7** What are the digital signal compression and modulation methods that may be recommended for 3DTV broadcasting?~~

~~**8** What are the requirements for the 3D TV studio digital interfaces?~~

~~**9**~~6 What are appropriate picture and sound quality levels and quality of experience for various broadcast applications of 3D-TV?

~~**10**~~7 What methodologies of subjective and objective assessment of picture and sound quality and quality of experience may be used in 3D-TV broadcasting?

Also decides

1 that results of the above-mentioned studies should be analysed for the purpose of ~~the~~ prepa~~rar~~ring~~tion of~~ new Reports and Recommendation(s);

2 that the above-mentioned studies should be completed by 2015.

Category: S3