# RESOLUTION ITU-R 5-7

## Work programme and Questions of Radiocommunication Study Groups

(1993-1995-1997-2000-2003-2007-2012-2015)

The ITU Radiocommunication Assembly,

*considering*

*a)* those parts of Resolution ITU-R 1 concerning the Questions to be studied by the Radiocommunication Study Groups;

*b)* that, for efficient use of available resources, it is necessary for the Radiocommunication Study Groups to focus on core issues and not undertake studies on issues not within the mandate of ITU-R;

*c)* that the amount of work performed by the Bureau depends on the number of contributions made in response to the Questions assigned to the Study Groups;

*d)* that it is incumbent upon the Study Groups to conduct continual reviews of their work programme and assigned Questions;

*e)* that the duties of the Study Groups in fulfilling the purpose of the Union are described in various provisions of the ITU Constitution and Convention,

*resolves*

1 that the work programme of any Radiocommunication Study Group shall be:

1.1 studies, within the scope of the Study Group, on topics relevant to agenda items, Resolutions and Recommendations of Radiocommunication Conferences, or to ITU-R Resolutions;

1.2 the Questions listed in Annexes 1 to 6, referred to the Study Groups;

1.3 studies, within the scope of the Study Group, that will be carried out in accordance with § A1.3.1.2 of Annex 1 of Resolution ITU-R 1 without Questions;

The texts of the Questions listed in Annexes 1 to 6 are to be found in Document 1 of the series of documents for the next study period of the appropriate Study Group taking into account *considering d)*;

2 that the categories used to identify the priority and urgency of Questions to be studied should be:

C: Conference-oriented Questions associated with work related to specific preparations for, and decisions of, world and regional radiocommunication conferences:

- C1: very urgent and priority studies, required for the next World Radiocommunication Conference;
- C2: urgent studies, expected to be required for other radiocommunication conferences;

S: Questions which are intended to respond to:

– matters referred to the Radiocommunication Assembly by the Plenipotentiary Conference, any other conference, the Council or the Radio Regulations Board;

– advances in radiocommunication technology or spectrum management;

– changes in radio usage or operation:

S1: urgent studies which are intended to be completed within two years;

S2: important studies, necessary for the development of radiocommunications;

S3: required studies, expected to facilitate the development of radiocommunications;

If necessary, following a world or regional radiocommunication conference, the Director of the Radiocommunication Bureau, in consultation with the Chairmen of the Study Groups concerned, may assign appropriate categories to Questions which are related to the decisions of the conference or to the agendas of future world or regional radiocommunication conferences;

3 that each Question shall:

– be modified to take account of partial answers;

– identify relevant Study Groups working in closely related areas, to which the text of the Question should be sent for consideration;

4 that Study Groups shall consider all their Questions and make proposals to each Assembly:

– for the identification and categorization of Questions;

– for the deletion of Questions, where the study has been completed, where no contributions are expected within the next study period, or, in accordance with § A1.2.1.1 of Annex 1 of Resolution ITU-R 1, where no contributions have been made; such Questions shall be identified as category D;

5 that each Study Group shall report to each Radiocommunication Assembly the progress that has been made in respect of each Question allocated to it with categories C1, C2 or S1;

6 that a Study Group should inform the ITU-R membership about studies without Questions, as stated in *resolves* 1.3, through the ITU website.

# ANNEX 1

## Questions assigned to Radiocommunication Study Group 1

**Spectrum management**

| Question ITU-R | Title | Status | Category |
|---|---|---|---|
| 205-2/1 | Long-term strategies for spectrum utilization | NOC | (S2) |
| 208-1/1 | Alternative methods of national spectrum management | NOC | (S2) |
| 210-3/1 | Wireless power transmission | NOC | (S3) |
| 216-1/1 | Spectrum redeployment as a method of national spectrum management | NOC | (S2) |
| 221-2/1 | Compatibility between radiocommunication systems and high data rate telecommunication systems using wired electrical power supply | NOC | (S1) |
| 222/1 | Definition of the spectral properties of transmitter emissions | NOC | (S1) |
| 232/1 | Methods and techniques used in space radio monitoring | NOC | (S2) |
| 233-1/1 | Measurement of spectrum occupancy | NOC | (S3) |
| 235/1 | Spectrum monitoring evolution | NOC | (S3) |
| 236/1 | Impact on radiocommunication systems from wireless and wired data transmission technologies used for the support of power grid management systems | NOC | (S3) |
| 237/1 | Technical and operational characteristics of the active services operating in the range 275-1 000 GHz | NOC | (S2) |
| 238/1 | Characteristics for use of visible light for broadband communications | ADD | (S2) |

# ANNEX 2

## Questions assigned to Radiocommunication Study Group 3

**Radiowave propagation**

| Question ITU-R | Title | Status | Category |
|---|---|---|---|
| 201-5/3 | Radiometeorological data required for the planning of terrestrial and space communication systems and space research application | NOC | (S2) |
| 202-4/3 | Methods for predicting propagation over the surface of the Earth | NOC | (S2) |
| 203-6/3 | Propagation prediction methods for terrestrial broadcasting, fixed (broadband access) and mobile services using frequencies above 30 MHz | NOC | (S1) |
| 204-6/3 | Propagation data and prediction methods required for terrestrial line-of-sight systems | NOC | (S2) |
| 205-2/3 | Propagation data and prediction methods required for trans-horizon systems | NOC | (S2) |
| 206-4/3 | Propagation data and prediction methods for fixed and broadcasting-satellite services | NOC | (S2) |
| 207-5/3 | Propagation data and prediction methods for satellite mobile and radiodetermination services above about 0.1 GHz | NOC | (S2) |
| 208-5/3 | Propagation factors in frequency sharing issues affecting space radiocommunication services and terrestrial services | NOC | (S2) |
| 209-2/3 | Variability and risk parameters in system performance analysis | NOC | (S3) |
| 211-6/3 | Propagation data and propagation models in the frequency range 300 MHz to 100 GHz for the design of short-range wireless radiocommunication systems and wireless local area networks (WLAN) | NOC | (S3) |
| 212-3/3 | Ionospheric properties | NOC | (S3) |
| 213-4/3 | The short-term forecasting of operational parameters for trans-ionospheric radiocommunication and aeronautical radionavigation services | NOC | (S3) |
| 214-5/3 | Radio noise | NOC | (S3) |
| 218-6/3 | Ionospheric influences on satellite systems | NOC | (S3) |
| 222-4/3 | Measurements and data banks of ionospheric characteristics and radio noise | NOC | (S3) |
| 225-7/3 | The prediction of propagation factors affecting systems at LF and MF including the use of digital modulation techniques | NOC | (S3) |
| 226-5/3 | Ionospheric and tropospheric characteristics along satellite-to-satellite paths | NOC | (S3) |
| 228-2/3 | Propagation data required for the planning of space radiocommunication systems and space science service systems operating above 275 GHz | NOC | (C1) |

| Question ITU-R | Title | Status | Category |
|---|---|---|---|
| 229-3/3 | Prediction of sky-wave propagation conditions, signal intensity, circuit performance and reliability at frequencies between about 1.6 and 30 MHz, in particular for systems using digital modulation techniques | NOC | (S3) |
| 230-3/3 | Prediction methods and models applicable to power line telecommunications systems | NOC | (S2) |
| 231-1/3 | The effect of electromagnetic emissions from man-made sources on the radiocommunication systems and networks | NOC | (S2) |
| 232-1/3 | The effect of nanostructure materials on propagation | NOC | (S2) |
| 233-1/3 | Methods for the prediction of propagation path losses between an airborne platform and a satellite, ground terminal or another airborne platform | NOC | (S2) |

# ANNEX 3

## Questions assigned to Radiocommunication Study Group 4*

**Satellite services**

| Question ITU-R | Title | Status | Category |
|---|---|---|---|
| 42-1/4 | Characteristics of antennas at earth stations in the fixed-satellite service | NOC | (S1) |
| 46-3/4 | Preferred multiple-access characteristics in the fixed-satellite service | NOC | (S2) |
| 70-1/4 | Protection of the geostationary-satellite orbit against unacceptable interference from transmitting earth stations in the fixed-satellite service at frequencies above 15 GHz | NOC | (S3) |
| 73-2/4 | Availability and interruptions to traffic on digital paths in the fixed-satellite service | NOC | (S2) |
| 75-4/4 | Performance objectives of international digital transmission links in the fixed-satellite and mobile-satellite services | NOC | (S2) |
| 83-6/4 | Efficient use of the radio spectrum and frequency sharing within the mobile-satellite service | NOC | (S1) |
| 84-4/4 | Use of non-geostationary-satellite orbits in mobile-satellite services | NOC | (S2) |
| 87-4/4 | Transmission characteristics for a mobile-satellite communication system | NOC | (S2) |
| 88-1/4 | Propagation and mobile earth station antenna characteristics for mobile-satellite services | NOC | (S3) |
| 91-1/4 | Technical and operating characteristics of the radiodetermination-satellite service | NOC | (S2) |
| 109-1/4 | Global Maritime Distress and Safety System requirements for mobile-satellite systems operating in the bands 1 530-1 544 MHz and 1 626.5-1 645.5 MHz | NOC | (S1) |
| 110-1/4 | Interference to the aeronautical mobile-satellite (R) service | NOC | (S2) |
| 201-1/4 | Frequency sharing between mobile-satellite services and other services | NOC | (S2) |
| 203-1/4 | The impact of using small antennas on the efficient use of the geostationary-satellite orbit | NOC | (S2) |
| 205-1/4 | Frequency sharing between non-geostationary satellite feeder links in the fixed-satellite service used by the mobile-satellite service | NOC | (S2) |
| 208/4 | Use of statistical and stochastic methods in evaluation of interference between satellite networks in the fixed-satellite service | NOC | (S3) |

* Refer to footnote for this Study Group in Resolution ITU-R 4.

| Question ITU-R | Title | Status | Category |
|---|---|---|---|
| 209/4 | The use of frequency bands allocated to the fixed-satellite service for both the up and down links of geostationary-satellite systems | NOC | (S2) |
| 210-1/4 | Technical characteristics for mobile earth stations operating with global non-geostationary-satellite systems in the mobile-satellite service in the band 1-3 GHz | NOC | (S1) |
| 211-2/4 | Interference criteria and calculation methods for the mobile-satellite service | NOC | (S2) |
| 214/4 | Technical implications of steerable and reconfigurable satellite beams | NOC | (S1) |
| 217-2/4 | Interference to the radionavigation-satellite service in the ICAO global navigation satellite system | NOC | (S1) |
| 218-1/4 | Compatibility between on-board processing satellites in the fixed-satellite service and terrestrial networks | NOC | (S2) |
| 227/4 | Technical and operational characteristics of emergency communications in the mobile-satellite service | NOC | (S1) |
| 231/4 | Sharing between networks of the fixed-satellite service using non-geostationary satellites and other networks of the fixed-satellite service | NOC | (S2) |
| 233/4 | Dedicated user digital satellite communications systems and their associated architectures | NOC | (S2) |
| 236/4 | Interference criteria and calculation methods for the fixed-satellite service | NOC | (S2) |
| 244/4 | Sharing between feeder links of the mobile-satellite (non-geostationary) service in the band 5 091-5 250 MHz and the aeronautical radionavigation service in the band 5 000-5 250 MHz | NOC | (S2) |
| 245-1/4 | Out-of-band and spurious emission limits | NOC | (S1) |
| 248/4 | Frequency sharing between systems in the fixed-satellite service and wireless digital networks around 5 GHz | NOC | (S3) |
| 263-1/4 | Performance objectives of digital links in the fixed-satellite service for transmission of Internet or higher layer Protocol packets | NOC | (S1) |
| 264/4 | Technical and operational characteristics of networks of the fixed-satellite service operating above 275 GHz | NOC | (S2) |
| 266/4 | Technical characteristics of high-density fixed-satellite service earth stations operating with geostationary satellite orbit fixed-satellite service networks in the 20/30 GHz bands | NOC | (S2) |
| 267/4 | Technical and operational considerations relating to the advance publication, coordination and notification of fixed-satellite networks | NOC | (S2) |

| Question ITU-R | Title | Status | Category |
|---|---|---|---|
| 268/4 | Development of methodologies for the assessment of satellite unwanted emission levels before launch | NOC | (S3) |
| 270-1/4 | Fixed-satellite service systems using very wideband spreading signals | NOC | (S2) |
| 271/4 | Interference between satellite news gathering (SNG) carriers by unintentional access | NOC | (S1) |
| 272/4 | Frequency sharing between the FSS and the space research service in the 37.5-38 GHz and 40-40.5 GHz bands | NOC | (S2) |
| 273/4 | Support of the modernization of civil aviation telecommunication systems and the extension of telecommunication systems to remote and developing regions with current and planned satellite networks | NOC | (S1) |
| 274/4 | Technical methods for improving the spectrum/orbit utilization | NOC | (S1) |
| 275/4 | Performance objectives of digital links in the fixed-satellite and mobile-satellite services forming elements of the Next Generation Network | NOC | (S2) |
| 276/4 | Availability of digital paths in mobile-satellite services | NOC | (S2) |
| 277/4 | Performance objectives for digital mobile-satellite services | NOC | (S2) |
| 278/4 | Use of operational facilities to meet power flux-density limitation under Article 21 of the Radio Regulations | NOC | (S1) |
| 279/4 | Satellite broadcasting of high-definition television | NOC | (S1) |
| 280/4 | Receiving earth station antennas for the broadcasting-satellite service | NOC | (S1) |
| 281/4 | Digital techniques in the broadcasting-satellite service (sound and television) | NOC | (S1) |
| 282/4 | Frequency sharing issues related to the introduction of the broadcasting-satellite service (sound) in the frequency range 1-3 GHz | NOC | (S1) |
| 283/4 | Sharing studies between high-definition television in the broadcasting-satellite service and other services | NOC | (S1) |
| 284/4 | Spectrum management issues related to the introduction of the broadcasting-satellite service (sound) in the frequency range 1-3 GHz | NOC | (S1) |
| 285/4 | Digital broadcasting of multiple services and programmes in the broadcasting-satellite service | NOC | (S1) |
| 286/4 | Contributions of the mobile and amateur services and associated satellite services to the improvement of disaster communications | NOC | (S2) |

| Question ITU-R | Title | Status | Category |
|---|---|---|---|
| 287/4 | Technical and operational characteristics for packet network transmission in mobile-satellite services | NOC | (S1) |
| 288/4 | Characteristics and operational requirements of radionavigation-satellite service (space-to-Earth, space-to-space, Earth-to-space) systems | NOC | (S2) |
| 289/4 | Interactive satellite broadcasting systems (television, sound and data) | NOC | (S1) |
| 290/4 | Broadcasting-satellite means for public warning, disaster mitigation and relief | NOC | (S1) |
| 291/4 | System architecture and performance aspects on integrated MSS systems | NOC | (S2) |
| 292/4 | UHDTV satellite broadcasting systems | NOC | (S1) |
| 293/4 | Antenna radiation diagrams/patterns for small ($D/\lambda$ around 30) earth station antennas used in fixed-satellite and broadcasting-satellite systems | NOC | (S2) |

# ANNEX 4

## Questions assigned to Radiocommunication Study Group 5

**Terrestrial services**

| Question ITU-R | Title | Status | Category |
|---|---|---|---|
| 1-6/5 | Interference protection ratios and minimum field strengths required in the land mobile services | NOC | (S2) |
| 7-7/5 | Characteristics of equipment for the land mobile service between 30 and 6 000 MHz | NOC | (S2) |
| 37-6/5 | Digital land mobile systems for specific applications | NOC | (S2) |
| 48-7/5 | Techniques and frequency usage in the amateur service and amateur-satellite service | NOC | (S2) |
| 62-2/5 | Interference to the aeronautical mobile and aeronautical radionavigation services | NOC | (S2) |
| 77-7/5 | Consideration of the needs of developing countries in the development and implementation of IMT | NOC | (S2) |
| 101-4/5 | Quality of service requirements in the land mobile service | NOC | (S2) |
| 110-3/5 | Reference radiation patterns of point-to-point fixed wireless system antennas for use in sharing studies | NOC | (S2) |
| 205-5/5 | Intelligent transport systems | NOC | (S2) |
| 209-5/5 | Use of the mobile, amateur and amateur satellite services in support of disaster radiocommunications | NOC | (S2) |
| 212-4/5 | Nomadic wireless access systems including radio local area networks | NOC | (S2) |
| 215-4/5 | Frequency bands, technical characteristics, and operational requirements for fixed wireless access systems in the fixed and/or land mobile services | NOC | (S2) |
| 229-4/5 | Future development of the terrestrial component of IMT | NOC | (S1) |
| 235/5 | Protection criteria for aeronautical and maritime systems | NOC | (S2) |
| 238-2/5 | Mobile broadband wireless access systems | NOC | (S2) |
| 241-3/5 | Cognitive radio systems in the mobile service | NOC | (S2) |
| 242-2/5 | Reference radiation patterns of omnidirectional and sectoral antennas for the fixed and mobile services for use in sharing studies | NOC | (S2) |
| 246/5 | Technical characteristics and channelling requirements for adaptive HF systems | NOC | (S2) |

| Question ITU-R | Title | Status | Category |
|---|---|---|---|
| 247-1/5 | Radio-frequency arrangements for fixed wireless systems | NOC | (S2) |
| 248/5 | Technical and operational characteristics for systems in the fixed service used for disaster mitigation and relief | NOC | (S2) |
| 250-1/5 | Mobile wireless access systems providing telecommunications for a large number of ubiquitous sensors and/or actuators scattered over wide areas as well as machine to machine communications in the land mobile service | NOC | (S2) |
| 252/5 | Frequency sharing and compatibility between systems in the fixed service and systems in other services | NOC | (S1) |
| 253/5 | Fixed service use and future trends | NOC | (S2) |
| 254/5 | Operation of short-range radiocommunication public access system supporting hearing aid systems | NOC | (S2) |
| 255/5 | Performance and availability objectives and requirements for fixed wireless systems, including packet-based systems | NOC | (S2) |
| 256/5 | Technical and operational characteristics of the land mobile service in the frequency range 275-1 000 GHz | NOC | (S2) |
| 257/5 | Technical and operational characteristics of stations in the fixed service in the frequency range 275-1 000 GHz | NOC | (S2) |
| 258/5 | Technical and operational principles for HF sky-wave communication stations to improve the man-made noise HF environment | NOC | (S2) |
| 259/5 | Operational and radio regulatory aspects for planes operating in the upper level of the atmosphere | NOC | (S2) |

# ANNEX 5

## Questions assigned to Radiocommunication Study Group 6*

**Broadcasting service**

| Question ITU-R | Title | Status | Category |
|---|---|---|---|
| 4-2/6 | Planning parameters for digital television broadcasting using terrestrial channels | UNA | (S1) |
| 9/6 | Universal transmitters and retransmitters for both analogue and digital terrestrial TV broadcasting | NOC | (S2) |
| 11/6 | Polarization of emissions in the terrestrial broadcasting service | NOC | (S2) |
| 12-3/6 | Generic bit-rate reduction coding of digital video signals for production, for contribution, for primary and secondary distribution, for emission and for related applications | NOC | (S2) |
| 14/6 | Digital and analogue-digital TV receivers and receiving antenna characteristics required for the terrestrial TV broadcasting frequency planning | UNA | (S2) |
| 15-2/6 | Large screen digital imagery (LSDI) | UNA | (S2) |
| 16-2/6 | Digital interactive broadcasting | UNA | (S2) |
| 19-1/6 | Bit-rate reduction coding of audio signals for broadcasting applications | NOC | (S2) |
| 27/6 | Receivers for sound broadcasting below 30 MHz | UNA | (S1) |
| 29/6 | Transmission of supplementary information with a single transmitter in frequency-modulation sound broadcasting | UNA | (S2) |
| 30/6 | Transmitting and receiving antennas at VHF and UHF | NOC | (S2) |
| 32-1/6 | Protection requirements of broadcasting systems against interference from radiation caused by wired telecommunication systems, from emissions of industrial, scientific and medical equipment, and from emissions of short-range devices | NOC | (S1) |
| 34-2/6 | File formats and transport for the exchange of audio, video, data and metadata materials in the professional television and large screen digital imagery (LSDI) environments | NOC | (S2) |
| 40-3/6 | Extremely high-resolution imagery | NOC | (S2) |
| 44-4/6 | Objective picture quality parameters and associated measurement and monitoring methods for digital television images | NOC | (S3) |

* Refer to footnote for this Study Group in Resolution ITU-R 4.

| Question ITU-R | Title | Status | Category |
|---|---|---|---|
| 45-5/6 | Broadcasting of multimedia and data applications | NOC | (S2) |
| 46-1/6 | User requirements for metadata related to digital production, post production, recording and archiving of sound and television programmes in broadcasting | UNA | (S1) |
| 48/6 | In-service monitoring of perceived audio quality for distribution and broadcasting networks | UNA | (S1) |
| 49-1/6 | Conditional-access broadcasting systems | NOC | (S2) |
| 51/6 | Sky-wave reception in LF, MF and HF broadcasting | UNA | (S1) |
| 52-1/6 | Coverage in LF, MF and HF broadcasting | NOC | (S1) |
| 53/6 | Standards for the transmission of several sound signals in one television channel in terrestrial or satellite broadcasting including high-definition and enhanced definition television systems | UNA | (S2) |
| 55/6 | Subjective assessment of sound quality in broadcasting using digital techniques | UNA | (S2) |
| 56-1/6 | Characteristics of terrestrial digital sound broadcasting systems for reception by vehicular, portable and fixed receivers | NOC | (S1) |
| 59-1/6 | Archiving of sound programmes in broadcasting | UNA | (S2) |
| 60/6 | Digital broadcasting at frequencies below 30 MHz | UNA | (S2) |
| 62/6 | Subjective assessment of small, medium and large impairments in sound quality | NOC | (S2) |
| 64-1/6 | Planning parameters for digital broadcasting at frequencies below 30 MHz | UNA | (S1) |
| 65/6 | Spectrum requirements for sound broadcasting | NOC | (S1) |
| 69-1/6 | Conditions for a satisfactory television service in the presence of reflected signals | NOC | (S1) |
| 80/6 | Coding for the broadcasting of digitally-encoded TV signals in terrestrial narrow-band channels | NOC | (S1) |
| 88/6 | Subjective assessment of stereoscopic television pictures | UNA | (S3) |
| 89-1/6 | User requirements for electronic news gathering | UNA | (S2) |
| 93/6 | Frequency requirements for electronic news gathering | UNA | (S2) |
| 95/6 | Use of computer technology in television broadcasting applications | UNA | (S2) |
| 96-1/6 | User requirements in the area of media asset management and transfer protocols for television programme production, recording and archiving | UNA | (S3) |

| Question ITU-R | Title | Status | Category |
|---|---|---|---|
| 99/6 | Relationship between quality, quality evaluation methodology, and type of application, in a multimedia environment | UNA | (S2) |
| 100/6 | Television and multimedia images quality levels | UNA | (S1) |
| 102-3/6 | Methodologies for subjective assessment of audio and video quality | NOC | (S2) |
| 105/6 | Spectrum requirements for television broadcasting | NOC | (S1) |
| 108/6 | Digital sound broadcasting in band 7 (HF) in the Tropical Zone | UNA | (S1) |
| 109/6 | In-service monitoring of perceived audiovisual quality for broadcasting and distribution networks | NOC | (S1) |
| 111-1/6 | Technical methods for the protection of the privacy of end-users in interactive broadcasting systems (television, sound and data) | NOC | (S2) |
| 112-1/6 | Guidelines on functionalities of facilities based on the use of digital servers in broadcast programme recording, archiving and playout | UNA | (S2) |
| 113/6 | Delivery of interactive information to and from large screen digital imagery venues through broadcasting systems | UNA | (S2) |
| 114/6 | Characteristics of television receivers and receiving antennas essential for frequency planning | NOC | (S2) |
| 118-1/6 | Broadcasting means for public warning, disaster mitigation and relief | NOC | (S1) |
| 120/6 | Digital sound broadcasting in Region 2 | NOC | (S1) |
| 121/6 | Spectrum usage and user requirements for wireless microphones | UNA | (S1) |
| 122/6 | Objective perceptual audio quality measurement methods | UNA | (S1) |
| 123/6 | Approaches in programme production intended to improve the perceived image quality of broadcast digital SDTV and HDTV programmes | UNA | (S1) |
| 124/6 | Measurement methods for the verification and validation of digital television and sound broadcasting planning procedures | NOC | (S1) |
| 126-1/6 | Recommended operating practices to tailor television programme material to broadcasting applications at various image quality levels display sizes and aspect ratios | NOC | (S2) |
| 127/6 | Mitigation techniques required for the use of digital modulation in the “26 MHz” broadcasting band for local coverage | NOC | (S2) |
| 128-2/6 | Digital 3DTV systems for broadcasting | NOC | (S3) |

| Question ITU-R | Title | Status | Category |
|---|---|---|---|
| 129/6 | Impact of audio signal processing and compression techniques on terrestrial FM sound broadcasting emissions at VHF | NOC | (S2) |
| 130-2/6 | Digital interfaces for production, post-production and international exchange of sound and television programmes for broadcasting | NOC | (S2) |
| 131/6 | Common core data format for multimedia broadcasting | NOC | (S2) |
| 132-3/6 | Digital terrestrial television broadcasting technology and planning | NOC | (S3) |
| 133-1/6 | Enhancements of digital terrestrial television broadcasting | NOC | (S3) |
| 134/6 | Recording of digital sound programme signals for international exchange | NOC | (S2) |
| 135-1/6 | System parameters for and management of digital sound systems with and without accompanying picture | NOC | (S2) |
| 136-2/6 | Worldwide broadcasting roaming | NOC | (S2) |
| 137/6 | Internet Protocol (IP) interfaces for the transport of broadcast programmes | NOC | (S3) |
| 138/6 | Methods for signalling loudness compliance | NOC | (S2) |
| 139/6 | Methods for rendering of advanced audio formats | NOC | (S1) |
| 140/6 | Global platform for the broadcasting service | NOC | (S1) |
| **Doc.** 6/416 (Rev.1) | Draft new Question ITU-R [TELEVISION AND SOUND BROADCAST OVER IP]/6 – Internet delivery of sound and television broadcast originated soundtracks | UNA | (S2) |
| **Doc.** 6/419 (Rev.1) | Draft new Question ITU-R [HDR-TV]/6 – High dynamic range television systems for broadcasting | UNA | (S1) |

# ANNEX 6

## Questions assigned to Radiocommunication Study Group 7

**Science services**

| Question ITU-R | Title | Status | Category |
|---|---|---|---|
| 110-2/7 | Time codes | NOC | (S2) |
| 111-1/7 | Signal delays in antennas and other circuits and their calibration for high-accuracy time transfer | NOC | (S2) |
| 118-2/7 | Factors which affect frequency sharing between data relay satellite systems and systems of other services | NOC | (S2) |
| 129-2/7 | Unwanted emissions radiated from and received by stations of the science services | NOC | (S2) |
| 139-4/7 | Data transmission for Earth exploration-satellite systems | NOC | (S2) |
| 141-4/7 | Data transmission for meteorological satellite systems | NOC | (S2) |
| 145-2/7 | Technical factors involved in the protection of radioastronomical observations | NOC | (S2) |
| 146-2/7 | Criteria for evaluation of interference to radio astronomy | NOC | (S2) |
| 152-2/7 | Standard frequencies and time signals from satellites | NOC | (S2) |
| 207-3/7 | Time and frequency transfer using digital communication links | NOC | (S2) |
| 211/7 | Frequency sharing between the space research service and other services in the 37-38 GHz and 40-40.5 GHz bands | NOC | (S2) |
| 221/7 | Preferred frequency bands and protection criteria for space research service observations (passive) | NOC | (S2) |
| 222-2/7 | Radio links between earth stations and lunar and planetary missions by means of lunar and/or planetary data relay satellites | NOC | (S2) |
| 226-1/7 | Frequency sharing between the radio astronomy service and other services in bands above 70 GHz | NOC | (S2) |
| 230-1/7 | Preferred frequency bands and protection criteria for radio astronomy measurements in space | NOC | (S2) |
| 231/7 | Earth exploration-satellite service (active) and space research service (active) operating above 100 GHz | NOC | (S2) |
| 234/7 | Frequency sharing between active sensor systems in the Earth exploration-satellite service and systems operating in other services in the 1 215-1 300 MHz band | NOC | (S2) |
| 236-1/7 | The future of the UTC time scale | NOC | (C1) |
| 237/7 | Technical and operational factors relating to interference mitigation practices at radio astronomy stations | NOC | (S2) |

| Question ITU-R | Title | Status | Category |
|---|---|---|---|
| 238/7 | Trusted time source for time stamp authority | NOC | (S2) |
| 239/7 | Instrumentation time codes | NOC | (S2) |
| 242/7 | Radio quiet zones | NOC | (S2) |
| 244/7 | Interference between standard frequency and time signal services operating between 20 and 90 kHz | NOC | (S2) |
| 245/7 | Interference to the standard frequency and time signal service in the low-frequency band caused by noise from electrical sources | NOC | (S2) |
| 246/7 | Future bandwidth requirements for the space research service (deep space) | NOC | (S2) |
| 247/7 | Emergency radiocommunications for human space flight | NOC | (S2) |
| 248/7 | Timing Information from Global Navigation Satellite Systems (GNSS) and their augmentations | NOC | (S2) |
| 249/7 | Time and frequency information from “enhanced” LOng Range Aid to Navigation (eLORAN) | NOC | (S2) |
| 250/7 | Application and improvement of two-way satellite time and frequency transfer (TWSTFT) | NOC | (S2) |
| 251/7 | Ground-based passive sensors | NOC | (S2) |
| 252/7 | Parameters needed for the registration of distributed radio astronomy systems | NOC | (S2) |
| 253/7 | Relativistic effects in the transfer of time and frequency in the vicinity of the Earth and in the solar system | NOC | (S2) |
| 254/7 | Characteristics and spectrum requirements of satellite systems using nano and pico satellites | NOC | (C2) |
| 255/7 | Detection and resolution of radio frequency interference to Earth exploration-satellite service (passive) sensors | NOC | (S1) |
| 256/7 | Space weather observations | NOC | (S3) |