ITU and ITU-R

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Radiocommunication Bureau

ITU Overview

SINCE
17 May 1865

193 Member States
+700 Sector Members

ITU

Helping the World Communicate

ITU-T

Standardisation of telecommunication/ ICTs, regulation of numbering, international tariffs

ITU-D

Assisting implementation and operation of telecommunications in developing countries

ITU-R

Radiocommunication standardization and global radio spectrum management

ITU-R mandate

Establish and update international regulations governing use of the spectrum, through world and regional radiocommunication conferences adopting international treaties

Apply the international regulations governing use of the spectrum – Purpose: To ensure the most efficient use of the orbit/spectrum resource for operation of radiocommunication services free from harmful interference

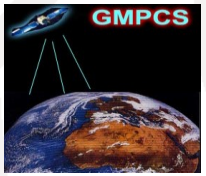
Produce global standards, Recommendations, reports and handbooks for wireless radiocommunication systems and applications

Inform and assist administrations on radiocommunication matters: organization of and participation in information and capacity-building seminars, participation in colloquiums and workshops

WRC success stories

International Mobile Telecommunications (IMT) (e.g., UMTS, began in 1985)

- **WARC-92: new MS allocation and identification in 2 GHz band for IMT**



Global Mobile Personal Communication by Satellite (GMPCS)

- **WARC-92: allocation of 1,6 (↑) / 2,5 GHz (↓) band for MSS**

Global Navigation Satellite System (GNSS)

- **WRC-2000:** allocation of additional spectrum in L-band and 5 GHz **RNSS (GPS, GALILEO, GLONASS,…)**

International Mobile Telecommunications (IMT)

- **WRC-2000: new MS allocation and identification in 2.6 GHz band for IMT (4G)**

WLAN additional spectrum (e.g., *WiFi 802.11a*)

- **WRC-2003: allocation of the 5 GHz on a global basis**

IMT additional spectrum (e.g., mobile broadband)

- **WRC-2007: new MS allocations of 450 and 700/800 MHz, 2.3 and 3.5 GHz bands IMT (4G)**

WRC-12 highlights

Mobile service

800 MHz: sharing problems resolved

700 MHz: allocation 694-790 MHz globally available from 2015

Satellite service

BSS in 22 GHz

improvement of regulation (date of bringing into use, suspension period, coordination arc, spacecraft movement

WRC-12 highlights

- Software-defined radio (SDR)
- Cognitive radio systems (CRS)
- Short-range devices (SRD)
- Free-space optical links

→ NOC to RR

- High-altitude platform stations (HAPS) gateway links
- Electronic news gathering (ENG)

→ NATIONAL ALLOCATIONS

Unmanned aircraft systems (UAS)

→ WORLDWIDE ALLOCATION 5 GHZ BAND

WRC-15 highlights

- ✓ Mobile broadband (IMT)
- ✓ PPDR (emergency comms)
- ✓ UAS satellite component
- ✓ New FSS allocations 7-8 GHz/10-17 GHz
- ✓ New MSS allocations in 22-26 GHz
- ✓ Aeronautical mobile: WAIC
- ✓ Radars for ITS in 78 GHz

Frequency Registration

- **Article 8**

International recognition of frequency assignments

Planned and non planned bands

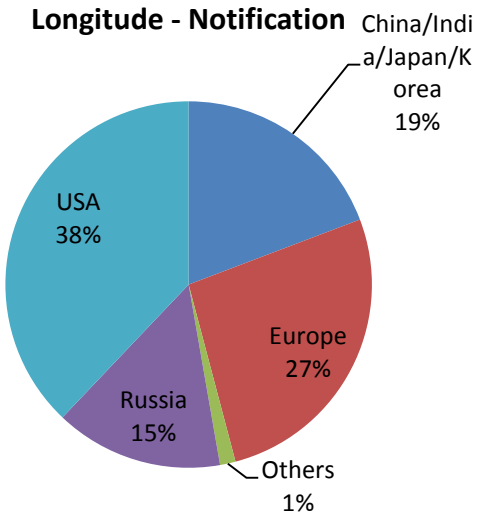
- **Planned bands**

Terrestrial- maritime mobile (App.25), aeronautical mobile (R and OR); Appendix 26 and 27

Space- BSS (App.30,30A) and FSS (App.30B)

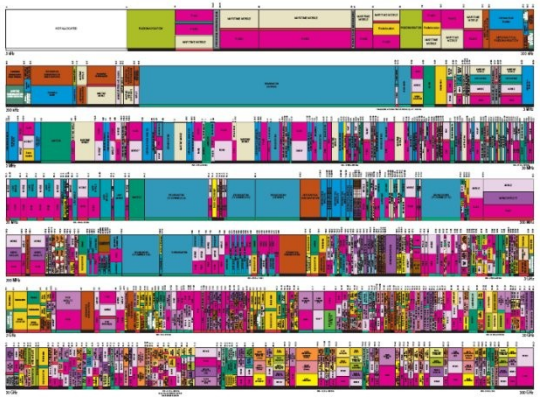
Frequency Registration

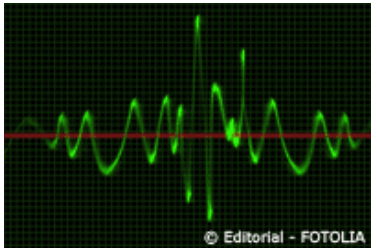
- **Non-planned bands Coordination (Article 9) and notification (Article 11)**
- **Terrestrial- shared with satellite services**
- **Satellite- about 4000 satellite filings**

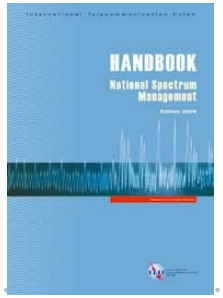


Study Group 1
Spectrum management

- Principles and techniques
- General principles of sharing
- Spectrum monitoring
- Long-term strategies for spectrum utilization
- Economic approaches to national SM





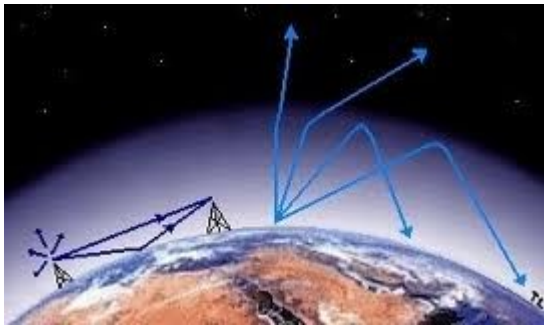


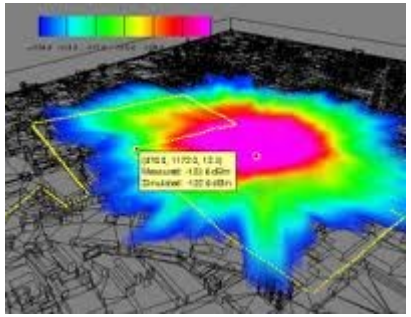
SG 1 SM serie

- **Handbook on Spectrum Monitoring**
- **Report ITU-R SM. 2012 - "Economic aspects of spectrum management"**
- **Reports ITU-R SM. 2158 and SM.2212 - PLT impact on radiocommunication systems**

Study Group 3 Radiowave propagation

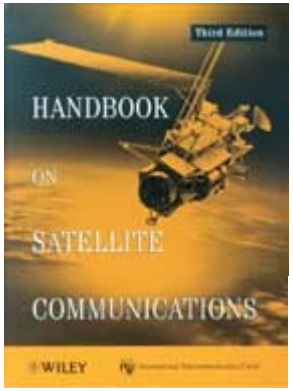
- Point-to-point and Earth-space propagation
- Modelling and development of prediction methods
- Radio noise
- Handbook "Radiowave propagation information for designing terrestrial point-to-point links"





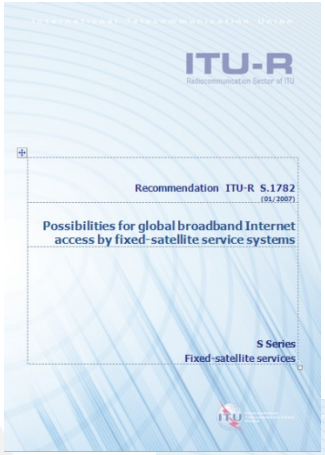
Study Group 4
Satellite services

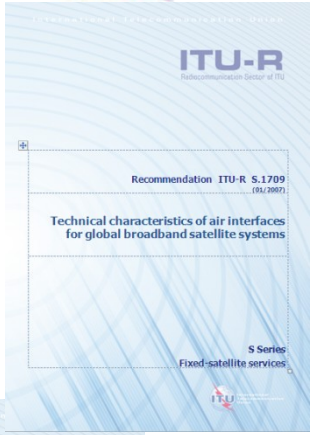
- Systems, air interfaces and performance in FSS, BSS, MSS and RDSS
- Efficient orbit/spectrum utilization for FSS, BSS, MSS and RDSS
- IP Global broadband Internet access via satellite
- Early warning and relief operations

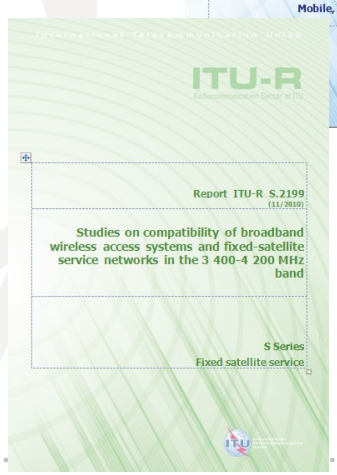


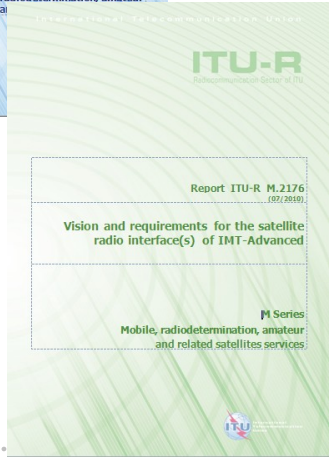
SG 4 Series BO, M, S, SF, SNG Series

- Recs. ITU-R S.1782 & S.1709- FSS Broadband
- Rec. ITU-R M. 1850 & Rep. ITU-R M.2176 Satellite IMT-advanced (vision, radio interface)
- Rep. ITU-R S.2199 Sharing BWA and FSS in 3.4-4.2 GHz

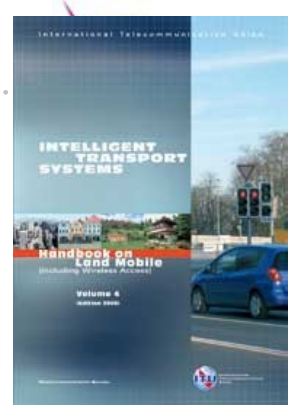








Study Group 5 Terrestrial services

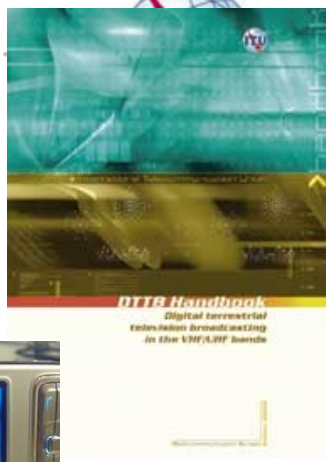


- IMT and IMT-Advanced
- Fixed, mobile, portable and nomadic communications, including BWA, RLANs, HAPS
- Maritime and aeronautical services
- Radiodetermination service
- Amateur & amateur-satellite services
- SDR and CRs

SG 5 M, F series

- Rec.ITU-R M.2012 - IMT-Adv
- Rec. ITU-R F.1763- FS WBA below 66 GHz
- Rec. ITU-R M.1801- MS WBA below 6 GHz
- Rec. ITU-R M.1457- IMT-2000
- Rep. ITU-R M.2116- WBA performance for sharing study
- Rep. ITU-R M.2198 IMT-adv

Study Group 6 Broadcasting service



- Emmy Award 2012 for new Audio Broadcast standard
- Transition to digital TV, DTTV planning and sharing criteria
- Broadcasting of multimedia for mobile reception
- 3D TV, UHDTV

Questions?