



Accessibility Matters

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ITU-R Objectives

- R.1 Meet, in a rational, equitable, efficient, economical, and timely way, the ITU membership's requirements for radio-frequency spectrum and satellite-orbit resources, while avoiding harmful interference
- R.2 Provide for worldwide connectivity and interoperability, improved performance, quality, affordability, and timeliness of service and overall system economy in radiocommunications, including through the development of international standards
- R.3 Foster the acquisition and sharing of knowledge and know-how on radiocommunications



ITU RADIO REGULATIONS



The
**INTERNATIONAL
TREATY**
for all
Radiocommunications



Key priorities for the ITU-R Sector

To establish and update international regulations on the use of the radio-frequency spectrum and satellite orbits

To implement and apply international regulations on the use of the radio-frequency spectrum and satellite orbits

To establish and update worldwide Recommendations, Reports and Handbooks for the most efficient use of the radio-frequency spectrum and satellite orbits

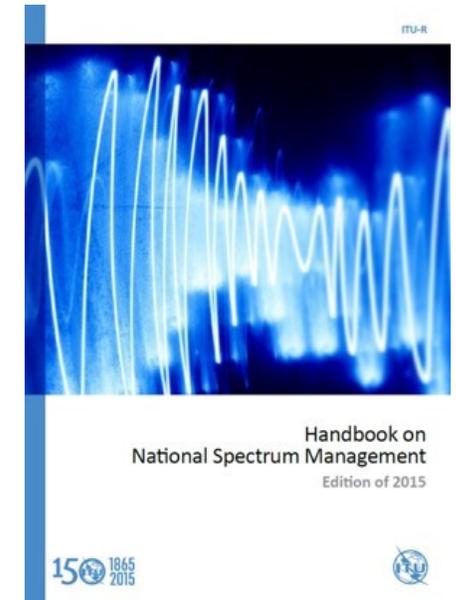
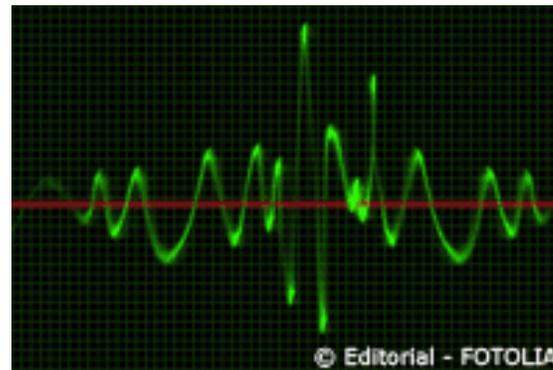
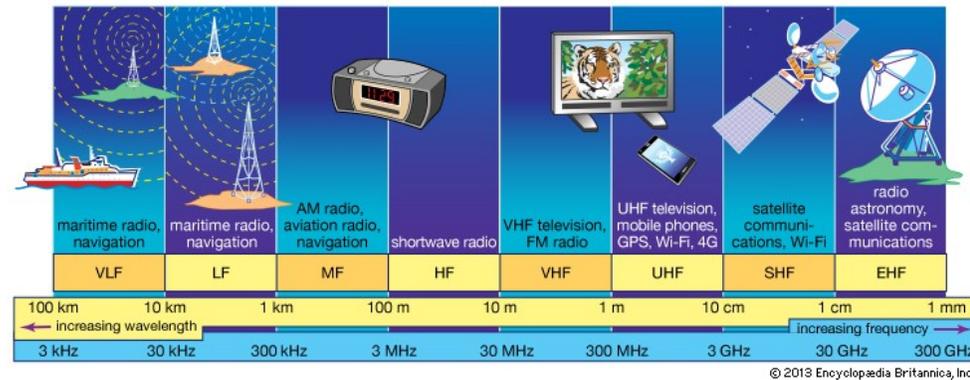
Supporting activities of the Radiocommunication Bureau

To inform and assist the ITU-R membership in radiocommunication matters



SPECTRUM MANAGEMENT

- Principles and techniques
- Spectrum sharing
- Spectrum monitoring
- Spectrum utilization strategies
- Economic approaches

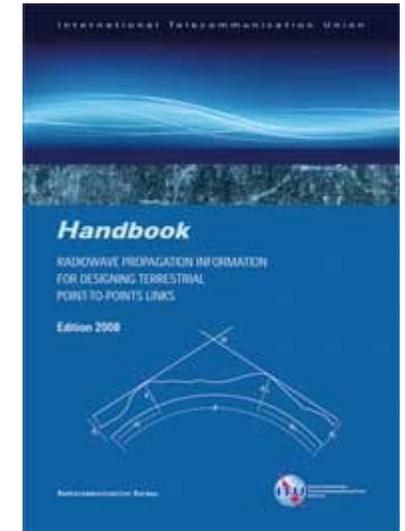
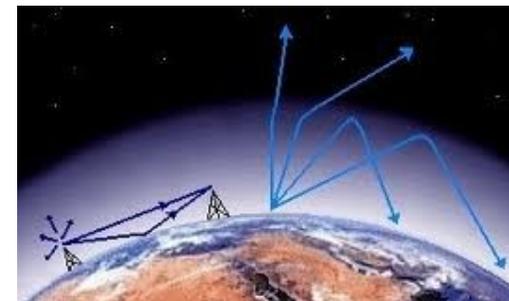
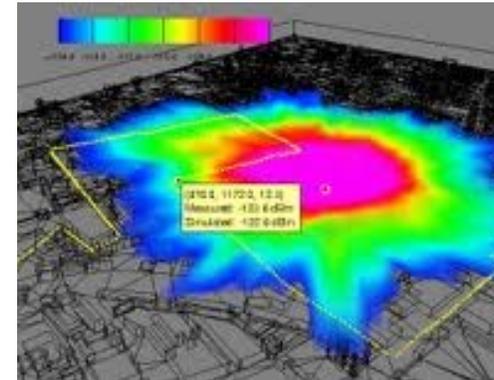


ITU-R STUDY GROUP 1



RADIOWAVE PROPAGATION

- Propagation in ionized and non-ionized media
- Point-to-point and Earth-space propagation
- Prediction methods
- Radio noise

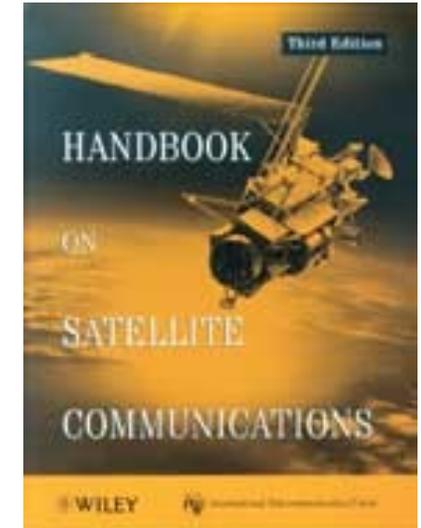
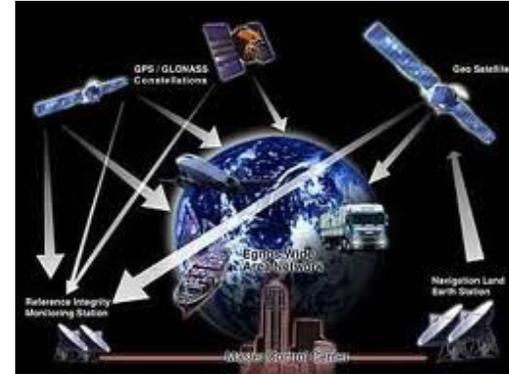


ITU-R STUDY GROUP 3



SATELLITE SERVICES

- Efficient orbit/spectrum utilization
- Early warning and relief operations
- Equipment and performance standards for:
 - fixed-satellite services (**FSS**)
 - broadcasting-satellite services (**BSS**)
 - mobile-satellite services (**MSS**)
 - radio-determination-satellite services (**RDSS**)



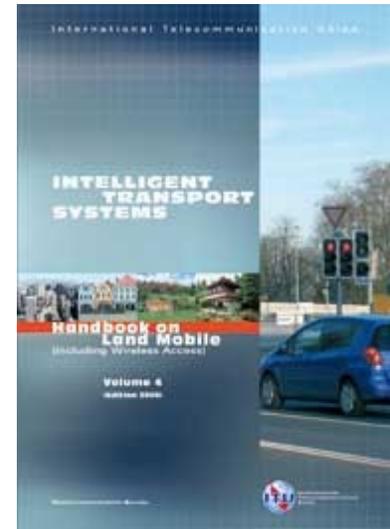
ITU-R STUDY GROUP 4





TERRESTRIAL SERVICES

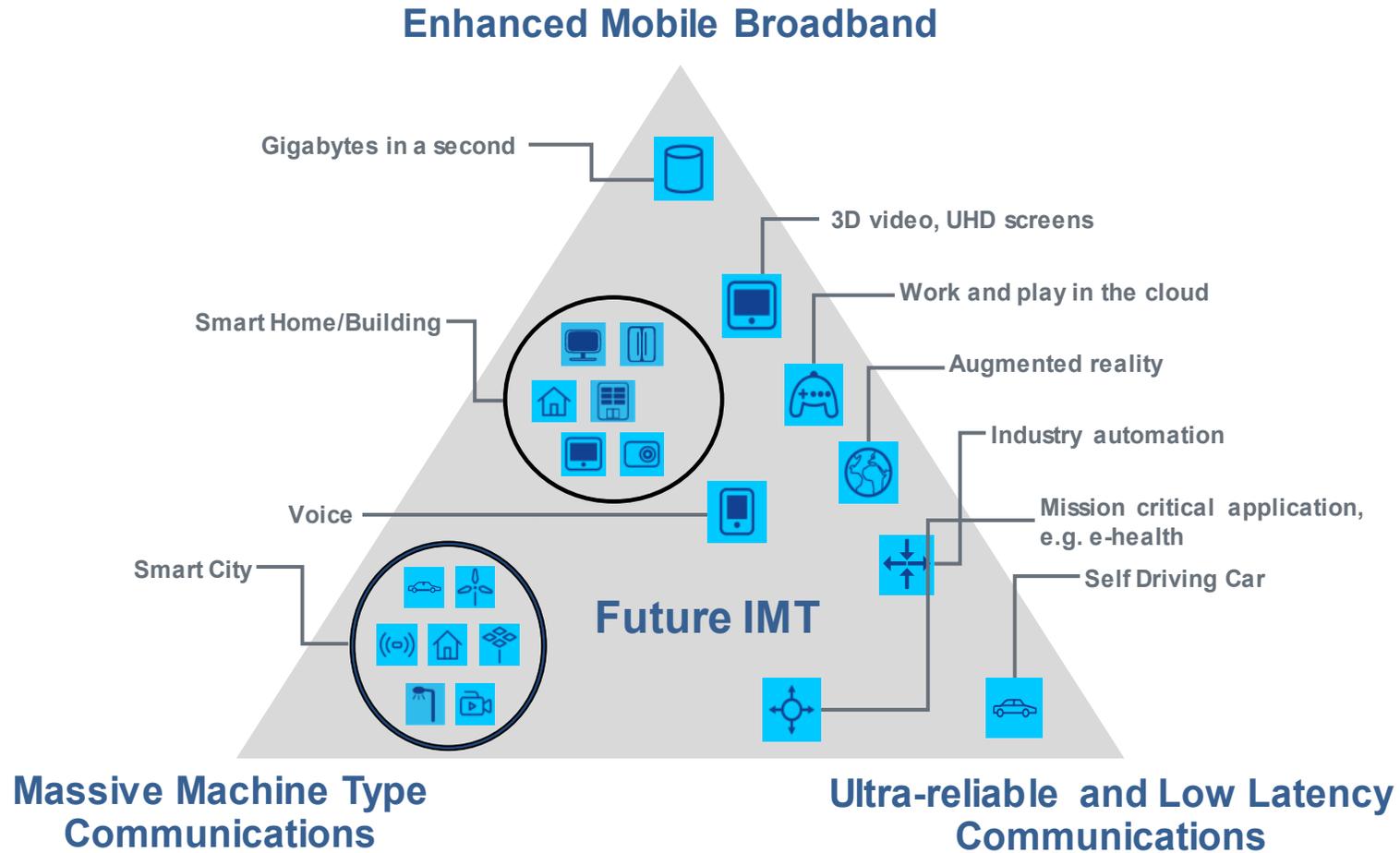
- Fixed
- Land mobile (3G, 4G, 5G)
- Maritime mobile
- Aeronautical mobile
- Radiodetermination
- Amateur



ITU-R STUDY GROUP 5



IMT-2020: 5G USAGE SCENARIOS





BROADBAND CONNECTIVITY VIA HAPS



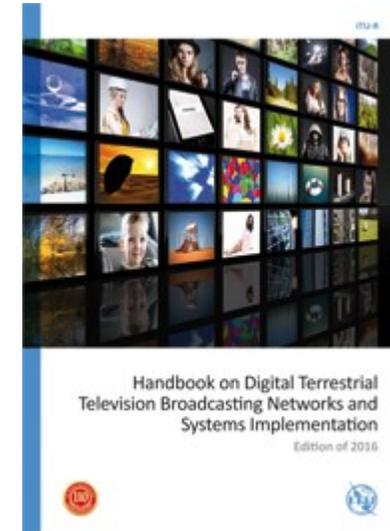


GLOBAL MARITIME DISTRESS AND SAFETY SYSTEM (GMDSS)



BROADCASTING SERVICE

- Programme production
- Programme assembly
- Terrestrial broadcasting delivery
- Quality of service



ITU-R STUDY GROUP 6

UHDTV : Recommendation ITU-R BT.2020-2 (10/2015) “Parameter values for ultra-high definition television systems for production and international programme exchange .”

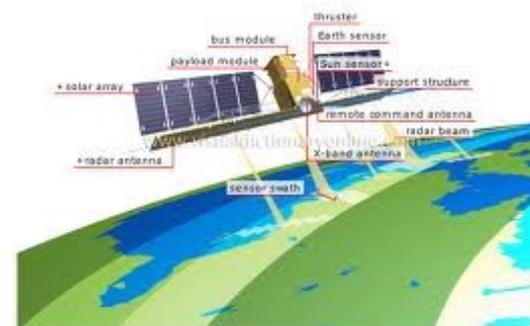
DTTB: Recommendation ITU-R BT.1306-7 (06/2015) “Error-correction, data framing, modulation and emission methods for digital terrestrial television broadcasting. ”

DSB: Recommendation ITU-R BS.1114-10 (12/2017) “Systems for terrestrial digital sound broadcasting to vehicular, portable and fixed receivers in the frequency range 30-3 000 MHz.”



SCIENCE SERVICES

- Space operation
- Space research
- Earth exploration
- Radio astronomy
- Standard frequency and time signals

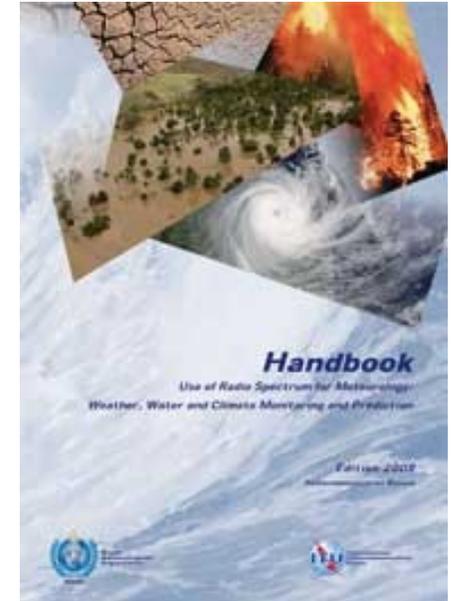
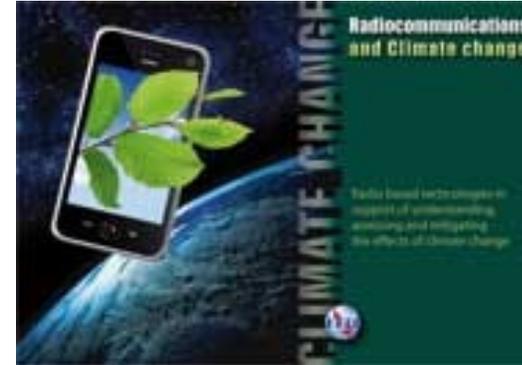


ITU-R STUDY GROUP 7



EMERGENCY COMMUNICATIONS

- Preparedness
- Disaster prediction
- Detection
- Early warning/Alerting
- Relief

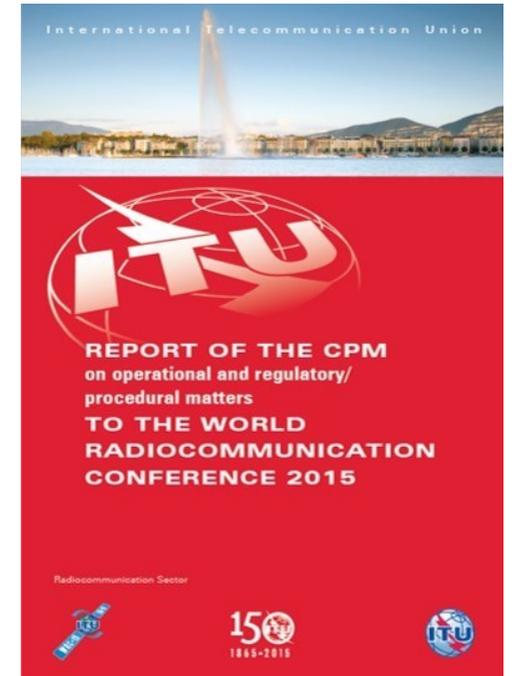
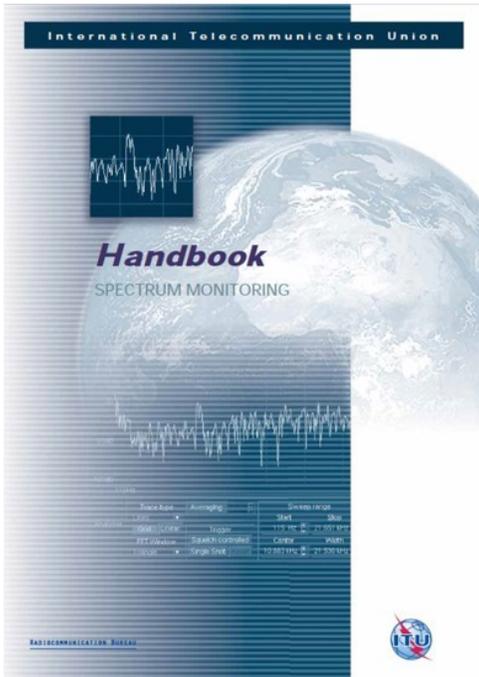


ITU-R STUDY GROUPS 5 ,6 & 7



ITU-R PRODUCTS - PUBLICATIONS

- ITU-R Recommendations
- ITU-R Reports and Handbooks
- Technical bases for radio conferences
- Service publications





Access to media is a right

ITU Resolutions

Resolution 175 (REV.DUBAI 2018)

instructs the Secretary-General, in consultation with the Directors of the Bureaux

...

- 7 to work collaboratively on accessibility-related activities with ITU-R, ITU-T and ITU-D, taking into account JCA-AHF, in particular concerning awareness and mainstreaming of telecommunication/ICT accessibility standards, and in developing programmes that enable developing countries to introduce services that allow persons with disabilities and persons with specific needs to utilize telecommunication/ICT services effectively;

...



Access to media is a right

ITU Resolutions

Resolution ITU-R 67 (Geneva 2015)

...resolves to invite ITU-R

to continue conducting studies, research, guidelines and recommendations, related to telecommunication/ICT accessibility for persons with disabilities and persons with specific needs, taking into account *recognizing b) and c)*, and in close cooperation with ITU-T and ITU-D,

instructs the Director of the Radiocommunication Bureau

- 1 to cooperate with the Directors of the Telecommunication Development Bureau and the Telecommunication Standardization Bureau in the sustainable development of devices and applications promoting compatibility of the new technologies with the current ones to benefit telecommunication/ICTs for persons with disabilities and persons with specific needs;
- 2 to encourage and promote representation by persons with disabilities and persons with specific needs so as to ensure that their experiences, views and opinions are taken into account when developing and progressing ITU-R work.



ITU-R Study Groups 1 ,4 and 5

- ❑ ITU-R SG1 is regularly updating the Report ITU-R [SM.2153-6](#) , this Report sets out common technical and non-technical parameters for short-range radiocommunication devices (SRDs) among that including wireless applications in healthcare, such as hearing aid, guiding system for the blind and medical implant communications systems (MICS). SG1 is also revising Recommendation ITU-R [SM.1896](#) to include a new harmonized band for “Telecoil Replacement Systems (TRS) for the hearing impaired”.
- ❑ Work in Study Group 4 Working parties 4A and 4B and Study Group 5 Working Party 5A with regard to improving access to digital hearing aids on a global basis, e.g., Recommendation ITU-R M.1076—*Wireless communication systems for persons with impaired hearing*.



ITU-R Study Group 6

Recommendations

- **ITU-R BT.2123** *Video Parameters for advanced immersive audio-visual systems*
- **ITU-R BT.2075** *Integrated broadcast-broadband systems*
- **ITU-R BT.2XXX** *ADM Renderer for advanced sound systems*





ITU-R Study Group 6

New Question ITU-R [AVA]/6 –

Systems for enabling access to broadcast and cooperative media for persons with disabilities on Accessibility on AV

decides that the following Questions should be studied

- 1 What systems can be used for delivering sub-titling/closed captioning, and systems to deliver audio into text, appropriate to the delivery of broadcast media and related services.
- 2 What systems can be used for delivering signing/closed signing appropriate to the delivery of broadcast media and related services?
- 3 What systems can be used for delivering audio description/described video for video content appropriate to the delivery of broadcast media and related services?
- 4 What systems can be used for delivering 'clean audio' (facility to improve the clarity of foreground sound) for the delivery of audio for broadcast media, and related services?
- 5 What systems can be used for delivering haptic information appropriate to the delivery of broadcast media, and related services?
- 6 What use of intelligent agents and related technologies could assist in the development and application of access systems and services?
- 7 What technologies could be used to enhance the understanding of broadcast media content for persons of differing abilities?
- 8 What are the preferred ways that can allow a person with different ranges of ability (vision, hearing, motor impairment) to take part in interactive programme content?





ITU-R Study Group 6

Reports

- **ITU-R BT.2448** *Technical Realisation of signing in digital television*
- **ITU-R BT.2420** *Use cases of advanced immersive audio-visual systems*
- **ITU-R BT.2400** *Usage scenarios, requirements, and technical elements of a global platform*
- **ITU-R BT.2342** *Production, emission and exchange of closed captions for all worldwide language character sets*
- **ITU-R BT.2267** *Integrated broadcast-broadband systems*
- **ITU-R BT.2207** *Accessibility to broadcasting services for persons with disabilities*





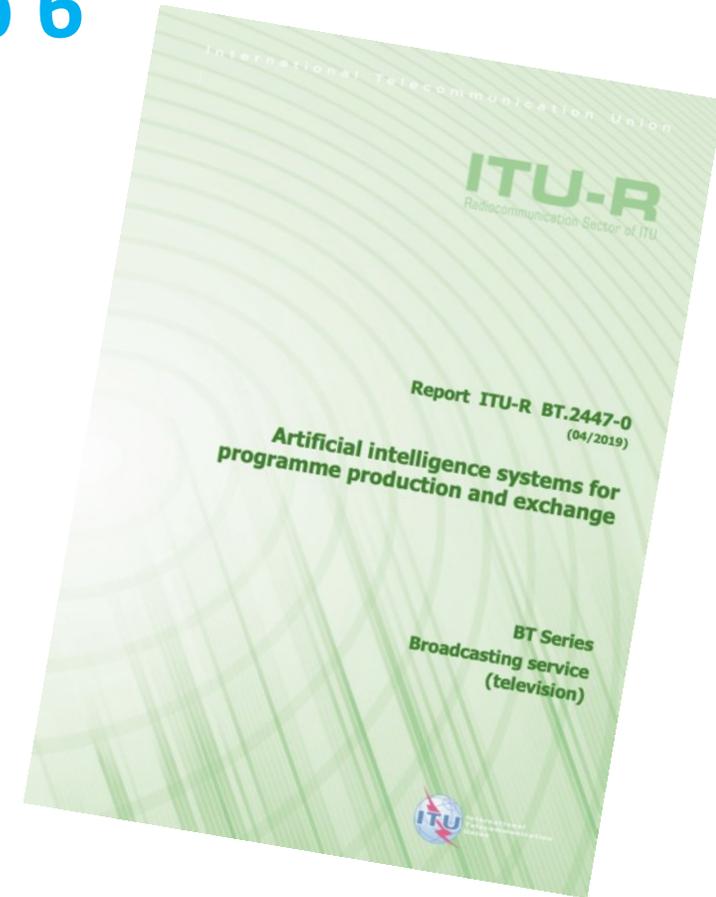
ITU-R Study Group 6

Tapping into the potential of AI for Accessibility

New released Report ITU-R BT.2447 (May 2019)

Automation of content recognition

- Speech to text and text to speech
- Dialogue tools for Audio Description
- Translation – eliminating then unintended
- Object and Scene recognition





Thank you

