Radio Spectrum and Technical Standards Advisory Committee

SSAC Paper 1/2018 for Information: World Radiocommunication Conference 2019

Office of the Communications Authority

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通訊事務管理局辦公室
OFFICE OF THE COMMUNICATIONS AUTHORITY

World Radiocommunication Conference (WRC)

- WRC is held every three to four years
- Tasked to review, and if necessary, revise the Radio Regulations (RR) of the International Telecommunication Union (ITU). RR is an international treaty governing the use of radio spectrum and satellite orbits
  - Revise RR and associated frequency allocation and allotment plans
  - Address worldwide radiocommunications matters
  - Instruct the Radio Regulation Board and Radiocommunication Bureau to take action on relevant matters, and review their activities
  - Determine Questions for study by the Radiocommunication Assembly and its Study Groups in preparation for future WRC

Relevance to Hong Kong

- Various industry sectors require radio frequency to develop wireless and innovative services
- Hong Kong follows RR on radio frequency allocations, frequency coordination with relevant administrations and coordination/notification of satellite orbits for domestic satellite networks
- The outcome of WRC may create new opportunities for radio users but at the same time it may affect some existing services
- WRC also seeks to harmonise the use of radio spectrum for specific applications, such as 5G services, wireless LAN, intelligent transport systems, and various satellite applications, etc.
  - ➢ Hong Kong will be benefited by, among other things, new service applications and wide equipment availability as a result of economy of scale brought by such WRC initiatives

Agenda items for WRC-19

- The last WRC was held in 2015 in Geneva
- WRC-15 adopted Resolution 809 (WRC-15), which determined the agenda items (AIs) for WRC-19

RESOLUTION 809 (WRC-15)

Agenda for the 2019 World Radiocommunication Conference

The World Radiocommunication Conference (Geneva, 2015),

considering

a) that, in accordance with No. 118 of the ITU Convention, the general scope of the agenda for a world radiocommunication conference should be established four to six years in advance and that a final agenda shall be established by the ITU Council two years before the conference;

b) Article 13 of the ITU Constitution relating to the competence and scheduling of world radiocommunication conferences and Article 7 of the Convention relating to their agendas;

c) the relevant resolutions and recommendations of previous world administrative radio conferences (WARCs) and world radiocommunication conferences (WRCs),

recognizing

a) that this conference has identified a number of urgent issues requiring further examination by WRC-19;

b) that, in preparing this agenda, some items proposed by administrations could not be included and have had to be deferred to future conference agendas,

resolves

to recommend to the Council that a world radiocommunication conference be held in 2019 for a maximum period of four weeks, with the following agenda:

1 on the basis of proposals from administrations, taking account of the results of WRC-15 and the Report of the Conference Preparatory Meeting, and with due regard to the requirements of existing and future services in the frequency bands under consideration, to consider and take appropriate action in respect of the following items:

1.1 to consider an allocation of the frequency band 50-54 MHz to the amateur service in Region 1, in accordance with Resolution **658 (WRC-15)**;

1.2 to consider in-band power limits for earth stations operating in the mobile-satellite service, meteorological-satellite service and Earth exploration-satellite service in the frequency bands 401-403 MHz and 399.9-400.05 MHz, in accordance with Resolution **765 (WRC-15)**;

1.3 to consider possible upgrading of the secondary allocation to the meteorological-satellite service (space-to-Earth) to primary status and a possible primary allocation to the Earth exploration-satellite service (space-to-Earth) in the frequency band 460-470 MHz, in accordance with Resolution **766 (WRC-15)**;

World Radiocommunication Conference 2019 (WRC-19)

- WRC-19 will be held on 28 Oct – 22 Nov 2019, preceded by the Radiocommunication Assembly (21 – 25 Oct 2019), in Sharm el-Sheikh, Egypt

- Cover **17 Specific Items** and a variety of regulatory issues and administrative matters

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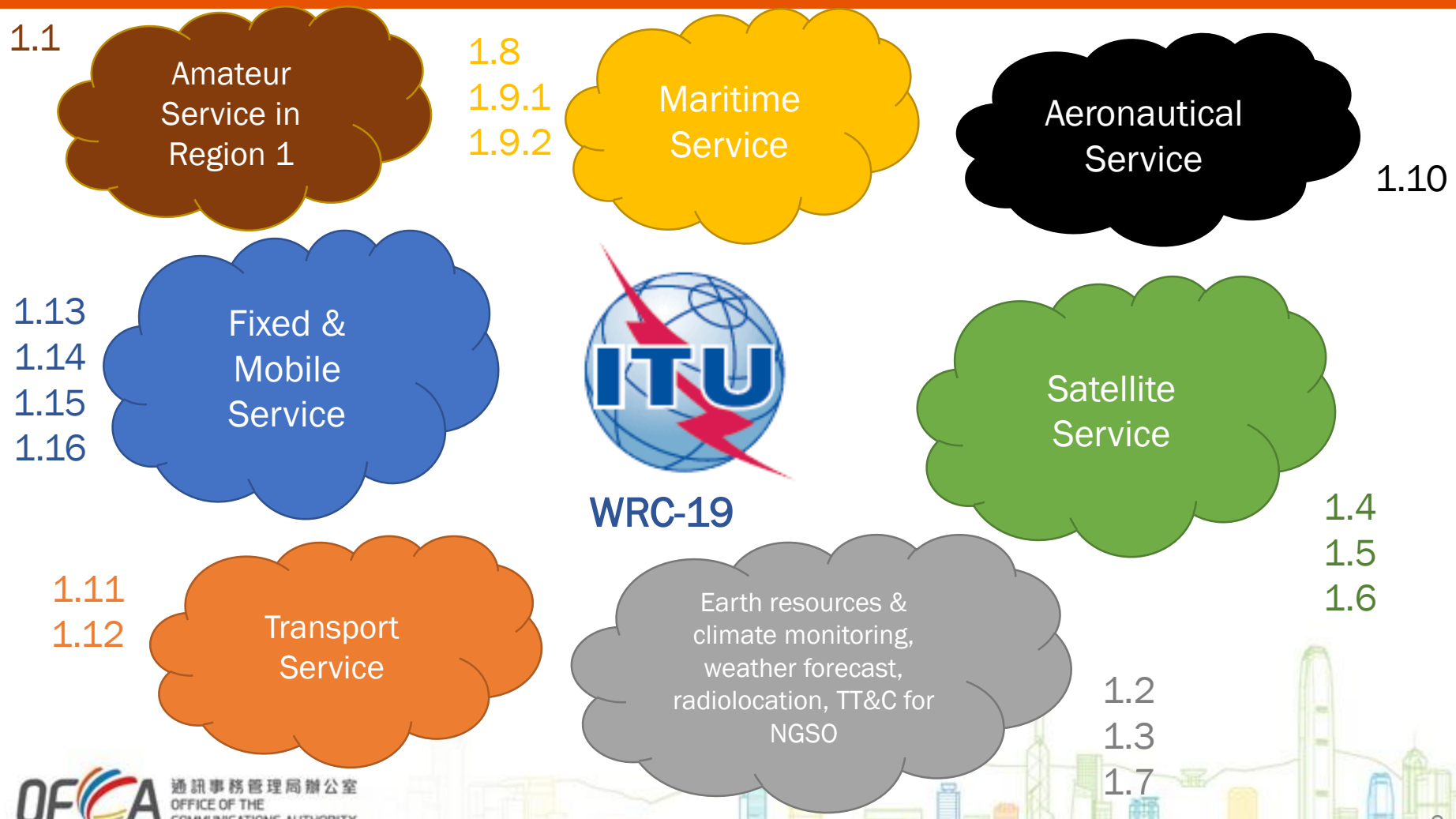
The 17 Specific Items



Amateur Service

- AI 1.1 - to consider an allocation of the frequency band 50-54 MHz to the amateur service in Region 1

Earth Resources & Climate Monitoring, Weather Forecast, Radiolocation, TT&C for NGSO

- AI 1.2 - to consider in-band power limits for earth stations operating in the mobile-satellite service, meteorological-satellite service and Earth exploration-satellite service in the frequency bands 401-403 MHz and 399.9-400.05 MHz
- AI 1.3 - to consider possible upgrading of the secondary allocation to the meteorological-satellite service (space-to-Earth) to primary status and a possible primary allocation to the Earth exploration-satellite service (space-to-Earth) in the frequency band 460-470 MHz
- AI 1.7 - to study the spectrum needs for telemetry, tracking and command in the space operation service for non-GSO satellites with short duration missions, to assess the suitability of existing allocations to the space operation service and, if necessary, to consider new allocations

Satellite Service

- AI 1.4 - to consider the results of studies and review, and revise if necessary, the limitations, assignments in the Plan and the List and the future development of the broadcasting-satellite service within the Plan, and existing and planned fixed-satellite service networks
- AI 1.5 - to consider the use of the frequency bands 17.7-19.7 GHz (space-to-Earth) and 27.5-29.5 GHz (Earth-to-space) by earth stations in motion communicating with geostationary space stations in the fixed-satellite service and take appropriate action
- AI 1.6 - to consider the development of a regulatory framework for non-GSO FSS satellite systems that may operate in the frequency bands 37.5-39.5 GHz (space-to-Earth), 39.5-42.5 GHz (space-to-Earth), 47.2-50.2 GHz (Earth-to-space) and 50.4-51.4 GHz (Earth-to-space)

Maritime Service

- AI 1.8 - to consider possible regulatory actions to support Global Maritime Distress Safety Systems (GMDSS) modernisation and to support the introduction of additional satellite systems into the GMDSS
- AI - 1.9 - to consider, based on the results of ITU-R studies
  - 1.9.1 regulatory actions within the frequency band 156-162.05 MHz for autonomous maritime radio devices to protect the GMDSS and automatic identifications system (AIS)
  - 1.9.2 modifications of RR, including new spectrum allocations to the maritime mobile-satellite service (Earth-to-space and space-to-Earth), preferably within the frequency bands 156.0125-157.4375 MHz and 160.6125-162.0375 MHz of Appendix 18, to enable a new VHF data exchange system (VDES) satellite component, while ensuring that this component will not degrade the current terrestrial VDES components, applications specific messages (ASM) and AIS operations and not impose any additional constraints on existing services in these and adjacent frequency bands

Aeronautical Service

- AI 1.10 - to consider spectrum needs and regulatory provisions for the introduction and use of the Global Aeronautical Distress and Safety System

Transport Service

- AI 1.11 - to take necessary actions, as appropriate, to facilitate global or regional harmonised frequency bands to support railway radiocommunication systems between train and trackside within existing mobile service allocations

- AI 1.12 - to consider possible global or regional harmonised frequency bands, to the maximum extent possible, for the implementation of evolving Intelligent Transport Systems (ITS) under existing mobile-service allocations

Fixed & Mobile Service

- AI 1.13 - to consider identification of frequency bands for the future development of International Mobile Telecommunications (IMT), including possible additional allocations to the mobile service on a primary basis
- AI 1.14 - to consider, on the basis of ITU-R studies, appropriate regulatory actions for high-altitude platform stations (HAPS), within existing fixed-service allocations
- AI 1.15 - to consider identification of frequency bands for use by administrations for the land-mobile and fixed services applications operating in the frequency range 275-450 GHz
- AI 1.16 - to consider issues related to wireless access systems, including radio local area networks (WAS/RLAN), in the frequency bands between 5 150 MHz and 5 925 MHz, and take the appropriate regulatory actions, including additional spectrum allocations to the mobile service

Regulatory Issues

- AI 7 - to consider possible changes, and other options, in response to Resolution 86 (Rev. Marrakesh, 2002) of the Plenipotentiary Conference, an advance publication, coordination, notification and recording procedures for frequency assignments pertaining to satellite networks in order to facilitate rational, efficient and economical use of radio frequencies and any associated orbits, including the geostationary-satellite orbit

- AI 8 - to consider and take appropriate action on requests from administrations to delete their country footnotes or to have their country name deleted from footnotes, if no longer required

Administrative Matters

- AI 2 - to examine the revised ITU-R Recommendations incorporated by reference in RR communicated by the Radiocommunication Assembly, and to decide whether or not to update the corresponding references in RR
- AI 3 - to consider such consequential changes and amendments to RR as may be necessitated by the decisions of the conference
- AI 4 - to review the resolutions and recommendations of previous conferences with a view to their possible revision, replacement or abrogation
- AI 5 - to review, and take appropriate action on, the Report from the Radiocommunication Assembly

Administrative Matters (2)

- AI 6 - to identify those items requiring urgent action by the radiocommunication study groups in preparation for the next WRC
- AI 9 - to consider and approve the Report of the Director of the Radiocommunication Bureau, in accordance with Article 7 of the Convention
  - 9.1 on the activities of ITU-R since WRC in 2015
  - 9.2 on any difficulties or inconsistencies encountered in the application of RR
  - 9.3 on action in response to Resolution 80 (Rev. WRC in 2007)
- AI 10 - to recommend to the Council items for inclusion in the agenda for the next WRC, and to give its views on the preliminary agenda for the subsequent conference and on possible agenda items for future conferences, in accordance with Article 7 of the Convention

Other ITU-R Studies

Nine issues have been identified in the relevant Resolutions of WRC in 2015 (WRC-15) for the preparation of AI 9.1

- 9.1.1 Resolution 212 (Rev. WRC-15) – Implementation of IMT in the frequency bands 1 885-2 025 MHz and 2 110-2 200 MHz
- 9.1.2 Resolution 761 (WRC-15) – Compatibility of IMT and broadcasting-satellite service (sound) in the frequency band 1 452-1 492 MHz in Regions 1 and 3
- 9.1.3 Resolution 157 (WRC-15) – Study of technical and operational issues and regulatory provisions for new non-geostationary-satellite orbit systems in the 3 700-4 200 MHz, 4 500-4 800 MHz, 5 925-6 425 MHz and 6 725-7 025 MHz frequency bands allocated to the fixed-satellite service

Other ITU-R Studies (2)

- 9.1.4 Resolution 763 (WRC-15) – Stations on board sub-orbital vehicles
- 9.1.5 Resolution 764 (WRC-15) – Consideration of the technical and regulatory impacts of referencing Recommendations ITU R M.1638 1 and ITU R M.1849 1 in Nos. 5.447F and 5.450A of the Radio Regulations
- 9.1.6 Studies concerning Wireless Power Transmission (WPT) for electric vehicles: a) to assess the impact of WPT for electric vehicles on radiocommunication services; b) to study suitable harmonised frequency ranges which would minimise the impact on radiocommunication services from WPT for electrical vehicles. These studies should take into account that the International Electrotechnical Commission (IEC), the International Organization for Standardization (ISO) and the Society of Automotive Engineers (SAE) are in the process of approving standards intended for global and regional harmonisation of WPT technologies for electric vehicles

Other ITU-R Studies (3)

- 9.1.7 Studies to examine: a) whether there is a need for possible additional measures in order to limit uplink transmissions of terminals to those authorised terminals in accordance with No. 18.1; b) the possible methods that will assist administrations in managing the unauthorised operation of earth station terminals deployed within its territory, as a tool to guide their national spectrum management programme, in accordance with Resolution ITU-R 64 (RA-15)

Other ITU-R Studies (4)

- 9.1.8 Studies on the technical and operational aspects of radio networks and systems, as well as spectrum needed, including possible harmonised use of spectrum to support the implementation of narrowband and broadband machine-type communication infrastructures, in order to develop Recommendations, Reports and/or Handbooks, as appropriate, and to take appropriate actions within ITU-R scope of work

- 9.1.9 Studies relating to spectrum needs and possible allocation of the frequency band 51.4-52.4 GHz to the fixed-satellite service (Earth-to-space)

Way Forward

- OFCA will keep in view
  - ➢the progress of the ITU-R studies concerned and
  - ➢the development on individual AIs
- Attend preparatory meetings of Asia-Pacific Telecommunity and ITU
- Join the Mainland delegation team to attend WRC-19

Way Forward (2)

- Members are welcome to offer to OFCA their views and comments on the relevant WRC-19 AIs

- OFCA will consolidate all inputs including Members' input and formulate the Hong Kong preliminary positions for discussion in SSAC in due course
- OFCA will set out the Hong Kong positions on WRC-19 AIs and coordinate with the Ministry of Industry and Information Technology to facilitate its formulation of the China positions for WRC-19

WRC-19

Thank You