For Discussion **SSAC Paper 11/2014**
On 17 December 2014

Hong Kong's Preliminary Positions on Agenda Items for World Radiocommunication Conference 2015

Purpose

This paper seeks Members' views on Hong Kong's preliminary positions on the agenda items for the World Radiocommunication Conference 2015 (WRC-15) of the International Telecommunication Union (ITU), which will take place in Geneva from 2 to 27 November 2015.

Background

2. At the 5th meeting of the Radio Spectrum and Technical Standards Advisory Committee (SSAC) held in September 2013, the Office of the Communications Authority (OFCA) circulated SSAC Paper 11/2013 informing Members of the WRC-15 and relevant agenda items. At the 6th SSAC meeting held in January 2014, OFCA further discussed with Members the suitable frequency ranges for International Mobile Telecommunications services in relation to agenda item 1.1 of the WRC-15.

3. During these SSAC meetings, OFCA reported that the following parties had offered their views on the WRC-15 agenda items -

- Asia Satellite Telecommunications Company Limited (AsiaSat)
- Civil Aviation Department (CAD)
- Hong Kong Observatory (HKO)
- Hong Kong amateur societies (Amateur)

4. In May 2014, OFCA met with the Ministry of Industry and Information Technology (MIIT) of the Mainland China to exchange views on the WRC-15 agenda items. In September 2014, the ITU Radiocommunication Sector (ITU-R) issued the draft Conference Preparatory

Meeting (CPM)[1] Report on the basis of the latest study results developed by the responsible ITU-R groups, comprising six chapters in accordance with the following structure -

Chapter		**WRC-15 agenda items**
1	Mobile and amateur issues	1.1, 1.2, 1.3, 1.4
2	Science issues	1.11, 1.12, 1.13, 1.14
3	Aeronautical, maritime and radiolocation issues	1.5, 1.15, 1.16, 1.17, 1.18
4	Satellite issues	
	4.1 − fixed satellite service	1.6, 1.7, 1.8, 1.9.1
	4.2 − mobile satellite service	1.9.2, 1.10
5	Satellite regulatory issues	7, 9.1 (9.1.1, 9.1.2, 9.1.3, 9.1.5, 9.1.8), 9.3
6	General issues	2, 4, 9.1 (9.1.4, 9.1.6, 9.1.7), 10

Hong Kong's Preliminary Positions

5. Taking into account the received views, the outcome of discussion with MIIT and the draft CPM Report incorporating the latest results of ITU-R studies, OFCA sets out at Annex to this paper Hong Kong's preliminary positions on the WRC-15 agenda items.

Advice Sought

6. Members are invited to give their views on Hong Kong's preliminary positions.

Office of the Communications Authority
December 2014

1 The CPM shall prepare a consolidated Report on the ITU-R preparatory studies and possible solutions to the World Radiocommunication Conference (WRC) agenda items, to be used in support of the work of WRC. The draft CPM Report can be downloaded from ITU-R website at http://www.itu.int/md/R12-CPM15.02-C-0001/en

Annex

Agenda Item 1.1 (Res. 233)

*to consider additional spectrum allocations to the mobile service on a primary basis and identification of additional frequency bands for International Mobile Telecommunications (IMT) and related regulatory provisions, to facilitate the development of terrestrial mobile broadband applications, in accordance with Resolution **233 (WRC-12)***

Key Issue

WRC-15 will consider additional spectrum allocations to the mobile service on a primary basis and identification of additional frequency bands for IMT and related regulatory provisions, to facilitate the development of terrestrial mobile broadband applications.

Background

ITU-R Report M.2290 indicates that the estimated total spectrum requirement for IMT by year 2020 is 1340-1960 MHz, depending on the user density settings. Adequate and timely availability of spectrum is essential to support future growth of IMT and other mobile broadband systems. The spectrum already identified in the Radio Regulations for deployment of IMT in all three ITU Regions are the bands 450-470 MHz, 790-960 MHz, 1710-2025 MHz, 2110-2200 MHz, 2300-2400 MHz and 2500-2690 MHz. The bands 610-790 MHz and 3400-3600 MHz are also identified for IMT in some countries including the Mainland China, Japan and Korea.

ITU-R Preparatory Studies

A number of new ITU-R reports/recommendations are under development to address the sharing and compatibility between mobile systems and systems of other services in various freqeuncy bands. The draft CPM Report indicates a list of "potential candidate frequency bands" for this agenda item as no consensus has been reached on the candidature of any of these bands for mobile broadband, including IMT. These potential bands are: 470-698 MHz, 1350-1400 MHz, 1427-1525 MHz, 1695-1710 MHz, 2700-2900 MHz, 3300-3400 MHz, 3600-4200 MHz, 4400-4500 MHz, 4500-4800 MHz, 4800-4990 MHz, 5350-5470 MHz, 5725-5850 MHz and 5925-6425 MHz.

Views Received

AsiaSat supports considering the bands 3300-3400 MHz, 4400-4500 MHz and 4800-4990 MHz to be candidate bands subject to satisfactory results of compatibility studies. AsiaSat does not support any allocation/identification of the bands 3600-4200

MHz, 4500-4800 MHz and 5850-6700 MHz, which are heavily used by the fixed satellite service in the Asia Pacific region.

CAD opposes any new allocation to the mobile service in or adjacent to the bands allocated for aeronautical purposes unless no impact on aeronautical services is ascertained through agreed studies.

HKO opposes any identification of the bands 1675-1710 MHz, 2025-2110 MHz, 2200-2290 MHz, 2700-2900 MHz and 5350-5470 MHz, which are globally used by meteorological applications. HKO requests to maintain relevant fixed satellite service capacity and availability in the band 3400-4200 MHz, while stressing that meteorological sensors in the band 1400-1427 MHz should be protected from unwanted emissions of terrestrial mobile broadband applications including IMT in the bands adjacent to 1400-1427 MHz.

Hong Kong Allocation

Regarding the list of potential candidate frequency bands, the corresponding frequency allocation in Hong Kong is tabulated below –

Frequency Bands	**Primary Allocation unless otherwise stated**
470-698 MHz, 1466-1480 MHz	Broadcasting service
678-686 MHz, 1466-1480 MHz, 4940-4990 MHz	Mobile service
1350-1400 MHz, 3300-3400 MHz	Radiolocation service
1427-1429 MHz	To be planned
1429-1466 MHz, 1480-1525 MHz, 3700-4200 MHz, 4400-4990 MHz, 5925-6425 MHz	Fixed service
1518-1525 MHz	Mobile satellite service (space-to-Earth)
1695-1710 MHz	Meteorological satellite service (space-to-Earth)
2700-2900 MHz	Meteorological aids service
2700-2900 MHz, 5350-5470 MHz	Aeronautical radionavigation service
3600-4200 MHz	Fixed satellite service (space-to-earth)
5725-5850 MHz	*Primary allocation*: Industrial, scientific and medical *Secondary allocation*: Amateur service
5925-6425 MHz	Fixed satellite service (Earth-to-space)

Hong Kong's Preliminary Position

Hong Kong supports the identification of additional frequency bands for IMT.

Agenda Item 1.2 (Res. 232)

*to examine the results of ITU-R studies, in accordance with Resolution **232 (WRC-12)**, on the use of the frequency band 694-790 MHz by the mobile, except aeronautical mobile, service in Region 1 and take the appropriate measures*

Key Issue

This agenda item covers the spectrum requirement and channelling arrangements for the MS and its compatibility with other services currently allocated in the band 694-790 MHz. WRC-15 is expected to specify the technical and regulatory conditions applicable to the mobile service allocation in this band in Region 1.

Background

According to Article 12.6 of the GE06 Agreement, the transition from analogue to digital television shall end on 17 June 2015 in all Region 1 countries. As a result of the transition, the band 694-862 MHz, or parts of it, in some Region 1 countries may be available for applications in the mobile service including International Mobile Telecommunications.

Hong Kong's Preliminary Position

Hong Kong's preliminary position on this agenda item is neutral.

Agenda Item 1.3 (Res. 648)

*to review and revise Resolution **646 (Rev.WRC-12)** for broadband public protection and disaster relief (PPDR), in accordance with Resolution **648 (WRC-12)***

Key Issue

Resolution 648 (Rev. WRC-12) invites ITU-R to study technical and operational issues relating to broadband PPDR and its further development, and to develop recommendations, as required, on technical requirements for PPDR services and applications, the evolution of broadband PPDR through advances in technology, as well as the needs of developing countries. WRC-15 will consider the results of the ITU-R studies and take appropriate action with regard to revision of Resolution 646 (Rev. WRC-12).

Background

As technologies advance, there has been emerging demand for broadband PPDR applications, including real-time mobile video applications. Further spectrum harmonisation would be required to increase interoperability and availability of equipment dedicated to broadband PPDR.

Resolution 646 (Rev.WRC-12) encourages administrations, for the purpose of harmonisation, to consider certain frequency bands identified on a regional basis for PPDR solutions. In Region 3, these frequency bands are identified as 406.1-430 MHz, 440-470 MHz, 806-824/851-869 MHz, 4940-4990 MHz and 5850-5925 MHz.

ITU-R Preparatory Studies

An ITU-R report is being developed to address the current and future use of narrow-band, wide-band and broadband technologies for PPDR services and applications. This new Report, when approved, will supersede Report ITU-R M.2033 on PPDR requirements. The latest results of the studies indicate a need for a spectrum of 20 MHz or more in some countries for broadband PPDR.

Hong Kong Allocation

The bands 406.1-430 MHz and 4940-4990 MHz are allocated for PPDR applications.

Hong Kong's Preliminary Position

Hong Kong supports WRC-15 to review the technical and operational issues relating to broadband PPDR and its further development.

Agenda Item 1.4 (Res. 649)

to consider possible new allocation to the amateur service (ARS) on a secondary basis within the band 5250-5450 kHz in accordance with Resolution ***649 (WRC-12)***

Key Issue

WRC-15 will consider the possible allocation of an appropriate amount of spectrum to the ARS on a secondary basis within the band 5250-5450 kHz.

Background

Propagation characteristics of signals in high frequency bands vary with the time of day, season and other propagation factors. Additional allocation of spectrum in the 5250-5450 kHz band would enhance effective communications of the ARS.

ITU-R Preparatory Studies

A new ITU-R report on the compatibility of possible amateur systems with fixed, land mobile, maritime mobile and radiolocation systems in the band 5250-5450 kHz and aeronautical mobile systems in the adjacent band is being developed. Preliminarily, this report recognises that it would be difficult for the ARS to share the band 5250-5275 kHz with the existing radiolocation service for oceanographic applications. On the other hand, the report indicates compatibility of ARS stations operating in the band 5250-5450 kHz with aeronautical mobile stations operating above 5450 kHz.

Views Received

CAD is concerned about whether the proposed allocation would cause harmful interference to aeronautical mobile systems operating in the adjacent band 5450-5480 kHz.

The Amateur supports the proposed secondary allocation and opines that proper channelisation may allow compatibility of the proposed secondary ARS with the existing primary services.

Hong Kong Allocation

In Hong Kong, the band 5250-5450 kHz is allocated to the fixed service.

Hong Kong's Preliminary Position

Hong Kong is of the view that any allocation to the ARS in the band 5275-5450 kHz should be subject to satisfactory results of compatibility studies.

Agenda Item 1.5 (Res. 153)

*to consider the use of frequency bands allocated to the fixed satellite service (FSS) not subject to Appendices **30**, **30A** and **30B** for the control and non-payload communications (CNPC) of unmanned aircraft systems (UAS) in non-segregated airspaces, in accordance with Resolution **153 (WRC-12)***

Key Issue

WRC-15 will consider the possible regulatory actions to support the use of FSS frequency bands for the UAS CNPC links in non-segregated airspaces, based on the results of the ITU-R studies.

Background

Unmanned aircraft (UA) operations are restricted to segregated airspaces where separation from manned aircraft can be assured. To introduce UA in non-segregated airspace, continued safety of other airspace users as well as life and property on the ground needs to be maintained by ensuring the CNPC links between UA and unmanned aircraft control station through satellite in FSS frequency bands freedom from harmful interference.

ITU-R Preparatory Studies

A new ITU-R report is being developed to address technical and operational characteristics, interference and regulatory environments associated with the use of FSS frequency bands, except those allocated under Appendices 30, 30A and 30B of the Radio Regulations, in the ranges 10.7-14.5 GHz and 17.3-30 GHz for the UAS CNPC links in non-segregated airspaces.

Views Received

AsiaSat does not support the deployment of UAS CNPC links application in the FSS frequency band and is of the view that interference and compatibility with other services and applications for the safe and reliable operation of UAS CNPC links should be fully studied before any allocation is made.

CAD supports the use of FSS systems for UAS CNPC links in non-segregated airspace provided that the technical and regulatory actions to be identified must satisfy the requirements to provide communications for UAS.

Hong Kong's Preliminary Position

Hong Kong is of the view that the use of FSS frequency bands for UAS CNPC links in non-segregated airspaces should be subject to satisfactory results of compatibility studies.

Agenda Item 1.6 (Res. 151 & 152)

to consider possible additional primary allocations -

- *(Agenda Item 1.6.1) to the fixed satellite service (Earth-to-space and space-to-Earth) of 250 MHz in the range between 10 GHz and 17 GHz in Region 1;*
- *(Agenda Item 1.6.2) to the fixed satellite service (Earth-to-space) of 250 MHz in Region 2 and 300 MHz in Region 3 within the range 13-17 GHz;*

*and review the regulatory provisions on the current allocations to the fixed satellite service (FSS) within each range, taking into account the results of ITU-R studies, in accordance with Resolutions **151 (WRC-12)** and **152 (WRC-12)**, respectively*

Key Issue

WRC-15 will consider possible bands for a new primary allocation to the FSS of 250 MHz in both directions in Region 1 in the band 10-17 GHz, as well as 250 MHz in Region 2 and 300 MHz in Region 3 in the Earth-to-space direction in the band 13-17 GHz, taking into account the results of the ITU-R studies.

Background

The spectrum in the band 10-15 GHz allocated to the FSS in the Earth-to-space and space-to-Earth directions is respectively 750 MHz and 750 MHz in Region 1, 750 MHz and 1000 MHz in Region 2, and 750 MHz and 1050 MHz in Region 3. Considering satellite traffic is typically symmetrical, there is a need to consider allocating equal amounts of the Earth-to-space and space-to-Earth spectrum in the band 10-17 GHz.

ITU-R Preparatory Studies

A new ITU-R report assessing the use of spectrum in the 13-17 GHz range for the geostationary FSS in Regions 2 and 3 is being developed. The draft CPM Report proposes methods of allocating 300 MHz of spectrum in the bands 13.4-13.75 GHz, 14.5-14.8 GHz or 14.8-15.1 GHz to the FSS (Earth-to-space) in Region 3 to satisfy agenda item 1.6.2. Based on the latest results of the ITU-R studies, the FSS will not affect the fixed service (FS) in the band 14.8-15.1 GHz whereas further consideration needs to be taken so as to ensure protection for stations of the Earth exploration satellite service (EESS) (active) and feeder links of the broadcasting satellite service using the bands 13.4-13.75 GHz and 14.5-14.8 GHz respectively.

Views Received

AsiaSat is of the view that the new FSS allocation is preferable on a worldwide basis in the bands, in particular 14.5-14.8 GHz and 14.8-15.2 GHz, which are contiguous or near

contiguous with the existing FSS allocations.

CAD opposes any new FSS allocation unless no impact on aviation use of the relevant frequency band is identified through agreed studies.

HKO shares the view of World Meteorological Organization that allocation to the FSS in the band 13.25-13.75 GHz is not desirable because this band is already allocated to the EESS (active) in Region 3 and the sharing between the EESS (active) and the FSS around 13.5 GHz is known impracticable.

Hong Kong Allocation

In Hong Kong, there is no EESS (active) allocation in the band 13.25-13.75 GHz. Apart from the prohibited band 15.35-15.4 GHz, the band 13-17 GHz is mainly allocated to the FSS, the FS, the mobile service (MS), the radiolocation service (RLS) and the aeronautical radiolocation service. In particular, Hong Kong allocates the band 13.4-13.75 GHz to the RLS, and the bands 14.5-14.8 GHz and 14.8-15.1 GHz to the FS and the MS.

Hong Kong's Preliminary Position

Agenda item 1.6.1 covers additional allocation to the FSS within the band 10-17 GHz in Region 1. Being located in Region 3, Hong Kong's preliminary position on this agenda item is neutral.

As regards agenda item 1.6.2, Hong Kong supports the consideration of new allocation of the band 14.8-15.1 GHz to the FSS (Earth-to-space) subject to the availability of a practicable coordination method for protection of the MS.

Agenda Item 1.7 (Res. 114)

to review the use of the band 5091-5150 MHz by the fixed satellite service (FSS) (Earth-to-space) (limited to feeder links of the non-geostationary mobile-satellite systems in the mobile satellite service (MSS)) in accordance with Resolution ***114 (Rev.WRC-12)***

Key Issue

Resolution 114 (Rev.WRC-12) invites ITU-R to study the technical and operational issues relating to sharing of the band 5091-5150 MHz between new systems of the aeronautical radionavigation service (ARNS) and the FSS providing feeder links of the non-geostationary satellite (non-GSO) systems in the MSS (Earth-to-space). WRC-15 will review the allocation to these two services in this band.

Background

In order to protect the ARNS in the band 5091-5150 MHz, No. 5.444A of the Radio Regulations (RR) provides that the FSS providing feeder links for non-GSO systems in the MSS can use the band 5091-5150 MHz on a primary basis prior to 1 January 2018, and will become secondary to the ARNS after 1 January 2018. Taking into account the date limitations, it is necessary to review the allocation of services in this band.

ITU-R Preparatory Studies

ITU-R considers that the regulatory conditions contained in Resolution 114 (Rev. WRC-12) and the technical and operational requirements contained in Recommendation ITU-R S.1342 will continue to ensure the compatibility of FSS providing Earth-to-space feeder links in the band 5091-5150 MHz and international standard microwave landing systems in the band 5030-5091 MHz. To satisfy this agenda item, it is proposed to maintain FSS allocation in the band 5091-5150 MHz as a primary allocation without date limitations, revise RR No. 5.444A to ensure the protection of the ARNS, and revise Resolution 748 (WRC-12) to provide more flexibility for managing the potential interference from systems of the aeronautical mobile (route) service sharing the band 5091-5150 MHz with the FSS.

Views Received

CAD supports the removal of the date limitations given in RR No. 5.444A so that the FSS allocation in the band 5091-5150 MHz would be maintained after 1 January 2016, subject to the retention of the aeronautical protections contained in Resolution 114 (WRC-12) and the improvement in the flexibility for managing the allowed FSS satellite noise temperature increase due to operation of the aeronautical mobile service and the ARNS in this band.

Hong Kong Allocation

In Hong Kong, the band 5091-5150 MHz is allocated to the ARNS.

Hong Kong's Preliminary Position

Hong Kong supports maintaining the primary allocation to the FSS providing feeder links for non-GSO systems in the MSS in the band 5091-5150 MHz without date limitations.

Agenda Item 1.8 (Res. 909)

*to review the provisions relating to earth stations located on board vessels (ESVs), based on studies conducted in accordance with Resolution **909 (WRC-12)***

Key Issue

WRC-15 will review the provisions relating to ESVs which operate in the fixed satellite service (FSS) in the uplink bands 5925-6425 MHz and 14-14.5 GHz and consider possible modifications to the set of limitations on the operation of ESVs contained in Resolution 902 (WRC-03), by taking into account the results of the ITU-R studies.

Background

WRC-03 introduced provisions in Resolution 902 (WRC-03) relating to the use of ESVs in certain bands allocated to the FSS. This resolution sets the limitations (such as distances from the coastline and antenna diameters) on the operation of ESVs in order to protect terrestrial services operating in both 6 GHz and 14 GHz. In the light of the new ESV technologies (e.g. use of spread spectrum modulation), it is necessary to review these provisions.

ITU-R Preparatory Studies

A new ITU-R report on interference effect of transmissions from ESVs operating in FSS networks on terrestrial co-frequency stations is under development.

Views Received

AsiaSat supports updating Resolution 902 (WRC-03) for the sake of latest ESVs development and studying ways to allow ESV operation more flexibility while continuing to protect other services in the bands 5925-6425 MHz and 14-14.5 GHz.

Hong Kong Allocation

In Hong Kong, the band 5925-6425 MHz is allocated to the fixed service and the FSS (Earth-to-space) on a primary basis. Within the band 14-14.5 GHz, of which the secondary allocation is given to the mobile satellite service (Earth-to-space), the primary allocation of the spectrum below 14.4 GHz is given to the FSS and that of the spectrum above 14.4 GHz is given to the FSS, the fixed service and the mobile service.

Hong Kong's Preliminary Position

Hong Kong supports reviewing provisions relating to ESVs to cope with the latest technological development.

Agenda Item 1.9.1 (Res. 758)

*to consider, in accordance with Resolution **758 (WRC-12)**, possible new allocations to the fixed satellite service (FSS) in the frequency bands 7150-7250 MHz (space-to-Earth) and 8400-8500 MHz (Earth-to-space), subject to appropriate sharing conditions*

Key Issue

WRC-15 will consider the possible new allocations to the FSS except the very small aperture terminal (VSAT)-like FSS in the bands 7150-7250 MHz (space-to-Earth) and 8400-8500 MHz (Earth-to-space).

Background

The bands 7250-7750 MHz (space-to-Earth) and 7900-8400 MHz (Earth-to-space) are allocated worldwide to the FSS and other services such as the fixed service (FS), the mobile service (MS), the meteorological satellite service and/or Earth exploration satellite service (EESS) (space-to-Earth). The bands 7250-7375 MHz (space-to-Earth) and 7900-8025 MHz (Earth-to-space) are also allocated to the maritime mobile satellite service on a primary base, subject to agreement obtained under No. 9.21 of the Radio Regulations (RR) through RR No. 5.461.

ITU-R Preparatory Studies

Compatibility studies between the FSS and the terrestrial and other space services in the bands 7150-7250 MHz (space-to-Earth) and 8400-8500 MHz (Earth-to-space) are being conducted by ITU-R. According to the preliminary ITU-R study results, sharing between the FSS and the incumbent services in the 7 GHz band requires appropriate technical and regulatory measures while the incumbent services in the 8 GHz band can be protected from FSS earth station transmissions through coordination. In addition, sharing between FSS (space-to-Earth) and EESS (Earth-to-space) in the 7 GHz band can also be achieved through coordination.

Hong Kong Allocation

Hong Kong currently allocates the band 7150-7250 MHz to the FS and the MS and the band 8400-8500 MHz to the FS.

Hong Kong's Preliminary Position

Hong Kong is of the view that extension of allocations to the FSS (excluding the VSAT-like FSS) in the band 7150-7250 MHz (space-to-Earth) and 8400-8500 MHz (Earth-to-space) should be subject to satisfactory results of compatibility studies.

Agenda Item 1.9.2 (Res. 758)

*to consider, in accordance with Resolution **758 (WRC-12)**, the possibility of allocating the bands 7375-7750 MHz and 8025-8400 MHz to the maritime mobile satellite service (MMSS) and additional regulatory measures, depending on the results of appropriate studies*

Key Issue

WRC-15 will consider the possible new allocations to the MMSS in the bands 7375-7750 MHz (space-to-Earth) and 8025-8400 MHz (Earth-to-space).

Background

The bands 7250-7750 MHz (space-to-Earth) and 7900-8400 MHz (Earth-to-space) are allocated worldwide to the fixed satellite service and other services such as the fixed service (FS), the mobile service (MS), the meteorological satellite service (MetSat) and/or the Earth exploration satellite service (EESS) (space-to-Earth). The bands 7250-7375 MHz (space-to-Earth) and 7900-8025 MHz (Earth-to-space) are also allocated to the MMSS on a primary base, subject to agreement obtained under the Radio Regulations (RR) through RR No. 5.461.

ITU-R Preparatory Studies

ITU-R is evaluating possible allocations to the MMSS in the band 7-8 GHz. According to the preliminary ITU-R study results, the existing regulatory provisions or mitigation techniques are applicable to the protection of the existing terrestrial services or space services from the extension of allocations to the MMSS in the band 7-8 GHz. However, the latest study results show that there is uncertainty on how to effect coordination by MMSS earth stations to prevent interference into FS and EESS stations in the 8 GHz band.

Views Received

HKO is of the view that no new allocations to the MMSS should be made in the bands 7450-7550 MHz and 8025-8400 MHz unless acceptable sharing criteria with the EESS and the MetSat would be developed.

Hong Kong Allocation

Hong Kong currently allocates the band 7375-7750 MHz to the FS and the MS and the band 8025-8400 MHz to the FS and the EESS (space-to-Earth).

Hong Kong's Preliminary Position

Hong Kong is of the view that allocation in the bands 7375-7750 MHz and 8025-8400 MHz to the MMSS should be subject to satisfactory results of compatibility studies.

Agenda Item 1.10 (Res. 234)

*to consider spectrum requirements and possible additional spectrum allocations for the mobile satellite service (MSS) in the Earth-to-space and space-to-Earth directions, including the satellite component for broadband applications, including International Mobile Telecommunications (IMT), within the frequency range from 22 GHz to 26 GHz, in accordance with Resolution **234 (WRC-12)***

Key Issue

WRC-15 will consider allocations to the MSS in the Earth-to-space and space-to-Earth directions in the band 22-26 GHz by taking into account the results of ITU-R studies.

Background

ITU-R M.2077 and ITU-R M.2218 indicates that, by year 2020, there would be spectrum shortfalls of 19-90 MHz for the satellite component of IMT in the Earth-to-space direction, 144-257 MHz for the satellite component of IMT in the space-to-Earth direction, and 240-335 MHz for MSS broadband applications in both the Earth-to-space and space-to-Earth directions.

ITU-R Preparatory Studies

A new ITU-R report on sharing between geostationary MSS and other services in this band is under development. Some frequency bands in the range 22-26 GHz have been assessed for possible sharing with the MSS. Relevant studies indicate that allocation of the band 23.6-24 GHz to the MSS is unlikely.

Views Received

CAD opposes any new MSS allocation unless no impact on aviation use in 24.25-24.65 GHz in Region 2 and 3 is identified through agreed studies.

HKO opposes any MSS allocations in the band 23.6-24 GHz, the band 25.5-26.0 GHz and other portions that would affect the existing Earth exploration satellite service in the band 22-26 GHz.

Hong Kong Allocation

In Hong Kong, different portions of the band 22-26 GHz are allocated on a primary basis to different services: 22-23.6 GHz and 24.45-26 GHz to the fixed service, 24-24.25 GHz to the industrial, scientific and medical service, 24.05-24.25 GHz to the radiolocation service, 24.25-24.65 GHz to the radionavigation service, and 24.75-25.25 GHz to the fixed satellite

service (Earth-to-space). The band 24-24.25 GHz is also allocated to the amateur service on a secondary basis while all emissions in the band 23.6-24 GHz are prohibited.

Hong Kong's Preliminary Position

Hong Kong is of the view that additional allocation to the MSS in the band 22-26 GHz should be subject to the satisfactory results of compatibility studies.

Agenda Item 1.11 (Res. 650)

*to consider a primary allocation for the Earth exploration satellite service (EESS) (Earth-to-space) in the 7-8 GHz range, in accordance with Resolution **650 (WRC-12)***

Key Issue

WRC-15 will consider the worldwide primary allocation in the band 7-8 GHz to EESS in the Earth-to-space direction with priority to the band 7145-7235 MHz, taking into account the results of the ITU-R studies.

Background

There are more than 1100 satellite networks filed with ITU for operation in the bands 2025-2110 MHz and 2220-2290 MHz. A new allocation in the band 7-8 MHz to EESS (Earth-to-space) would allow its use for tracking, telemetry and control along with the existing EESS (space-to-Earth) allocation in the band 8025-8400 MHz, thereby alleviating the congestion in the 2 GHz band.

ITU-R Preparatory Studies

ITU-R has reported that the spectrum requirements for EEES operations in the band 7-8 GHz are in the range of 38-56 MHz. ITU-R has also conducted sharing studies between stations of the EESS (Earth-to-space) and those of the mobile service (MS), the fixed service (FS), the space research service and the space operation service in various portions of this band. The latest results of the studies show that sharing would be feasible in the band 7192-7250 MHz.

Views Received

CAD opposes any new allocation to the EESS in the band 7-8 GHz unless no impact on aviation use in the band 8750-8850 MHz is confirmed.

HKO shares the view of World Meteorological Organization, supporting a new EESS allocation in the band 7-8 GHz provided that compatibility with meteorological satellite service (MetSat) in the bands 7450-7550 MHz and 7750-7900 MHz is ensured.

Hong Kong Allocation

In Hong Kong, the band 7145-7235 MHz is allocated to the FS and the MS, but there is no MetSat allocation in the bands 7450-7550 MHz and 7750-7900 MHz.

Hong Kong's Preliminary Position

Hong Kong is of the view that allocation to the EESS (Earth-to-space) in the band 7190-7250 MHz should be subject to satisfactory results of compatibility studies.

Agenda Item 1.12 (Res. 651)

to consider an extension of the current worldwide allocation to the Earth exploration satellite service (EESS) (active) in the frequency band 9300-9900 MHz by up to 600 MHz within the frequency bands 8700-9300 MHz and/or 9900-10500 MHz, in accordance with Resolution ***651 (WRC-12)***

Key Issue

WRC-15 will consider the possible extension of the current worldwide allocation to the EESS (active) in the band 9300-9900 MHz by up to 600 MHz on a primary and/or secondary basis, as appropriate, within the bands 8700-9300 MHz and/or 9900-10500 MHz, taking into account the results of ITU-R studies.

Background

There is a growing demand for increasing radar image resolution to satisfy global environmental monitoring which can only be achieved with greater transmission bandwidth. It requests for additional spectrum around the existing allocation to the EESS (active) in the band 9300-9900 MHz.

ITU-R Preparatory Studies

The ITU-R has examined feasibility of allocation of the bands 8700-9300 MHz and 9900-10500 MHz to the EESS (active), by carrying out sharing studies with respect to incumbent services (including the fixed service (FS), the amateur service (ARS), the radiolocation service (RLS), the maritime radionavigation service (MRNS) and the amateur satellite service (ARSS)) as well as compatibility studies related to unwanted emissions into the radio astronomy service, the space research service and the EESS (passive). According to the preliminary ITU-R study results, the sharing in the bands 9200-9300 MHz and 9900-10400 MHz or in the band 9900-10500 MHz is feasible subject to various mitigation measures, whereas spectrum in 8700-9200 MHz would no longer be considered due to unresolved compatibility issues.

Views Received

CAD is concerned about the impact of any additional EESS allocations on the aviation use in the band 9000-9200 MHz.

HKO is of the view that an additional EESS (Earth-to-space) allocation in the 9 GHz frequency range should ensure adequate protection of meteorological applications, in particular, meteorological radars in the band 9300-9500 MHz and passive sensors in the

band 10.6-10.7 GHz.

Hong Kong Allocation

Hong Kong currently has the primary allocation of the bands 8500-8750 MHz and 10450-10500 MHz to the RLS, the bands 8750-8850 MHz and 9000-9200 MHz to the aeronautical radionavigation service, the bands 8850-9000 MHz and 9200-9300 MHz to the MRNS, the band 10150-10300 MHz to the FS while the allocation of the bands 9800-10150 MHz and 10300-10450 MHz is to be planned. The secondary allocation of the band 10450-10500 MHz is made to the ARS and the ARSS.

Hong Kong's Preliminary Position

Hong Kong is of the view that additional allocations of spectrum to the EESS (active) in the bands 9200-9300 MHz and/or 9900-10500 MHz should be subject to satisfactory results of compatibility studies.

Agenda Item 1.13 (Res. 652)

to review No. ***5.268*** *with a view to examining the possibility for increasing the 5 km distance limitation and allowing space research service (SRS) (space-to-space) use for proximity operations by space vehicles communicating with an orbiting manned space vehicle, in accordance with Resolution* ***652 (WRC-12)***

Key Issue

WRC-15 will review No. 5.268 of the Radio Regulations (RR) in respect of the possible removal or relaxation of the 5 km distance limitation without modifying the current power flux density (pfd) limits and the possible use of the band 410-420 MHz for SRS (space-to-space) systems beyond extra-vehicular activities, taking into account the results of ITU-R studies.

Background

The band 410-420 MHz is allocated to the fixed service (FS), the mobile service (MS) (except aeronautical mobile) and SRS (space-to-space) on a primary basis subject to RR No. 5.268, which identifies the use of this band by SRS (space-to-space) for extra-vehicular activities to operate within 5 km of an orbiting manned space vehicle within the specified pfd limits.

ITU-R Preparatory Studies

The ITU-R has developed a report on sharing and compatibility studies between space research proximity operations links and stations of the FS and the MS in the band 410-420 MHz. The latest results of ITU-R studies show that the distance limitation could be relaxed.

Hong Kong Allocation

In Hong Kong, the band 410-420 MHz is allocated to the FS and the MS.

Hong Kong's Preliminary Position

Hong Kong's preliminary position on this agenda item is neutral.

Agenda Item 1.14 (Res. 653)

to consider the feasibility of achieving a continuous reference time-scale, whether by the modification of coordinated universal time (UTC) or some other method, and take appropriate action, in accordance with Resolution ***653 (WRC-12)***

Key Issue

WRC-15 will consider the feasibility of achieving a continuous reference time-scale, whether by the modification of UTC or some other method, taking into account the results of ITU-R studies.

Background

In order to ensure that UTC does not differ by more than 0.9 seconds from the Universal Time determined by the rotation of the Earth (UT1), occasional insertion of leap seconds into UTC is required and hence creates difficulties for systems and applications that depend on accurate timing.

ITU-R Preparatory Studies

ITU-R has conducted studies on issues including impact of the leap second insertion in UTC on systems, requirements for access to UT1 and impact on civil time, considerations on retaining the name of UTC if a new definition is adopted and considerations for achieving a continuous reference time-scale.

Hong Kong's Preliminary Position

Hong Kong's preliminary position on this agenda item is neutral.

Agenda Item 1.15 (Res. 358)

*to consider spectrum demands for on-board communication stations in the maritime mobile service (MMS) in accordance with Resolution **358 (WRC-12)***

Key Issue

WRC-15 will identify possible additional UHF channels in the bands already allocated to the MMS for on-board communication stations, based on the results of ITU-R studies.

Background

Six channels are globally identified in No. 5.287 of the Radio Regulations (RR) for MMS on-board communication stations using 25 kHz or 12.5 kHz channel spacing. These channels are 457.525 MHz, 457.550 MHz, 457.575 MHz, 467.525 MHz, 467.550 MHz and 467.575 MHz. RR No. 5.287 also allows that where needed, 457.5375 MHz, 457.5625 MHz, 467.5375 MHz and 467.5625 MHz may be used for on-board communications using 12.5 kHz channel spacing.

ITU-R Preparatory Studies

ITU-R does not propose new frequency bands for MMS but introduces additional channel arrangement including channel numbering as well as channel spacing for on-board communication stations in the MMS. The proposed channel arrangement enables the use of 25 kHz, 12.5 kHz and 6.25 kHz channel spacing and hence more efficient use of the existing channels.

Hong Kong's Preliminary Position

Hong Kong supports proposed channel arrangement for on-board communication stations in the MMS.

Agenda Item 1.16 (Res. 360)

to consider regulatory provisions and spectrum allocations to enable possible new Automatic Identification System (AIS) technology applications and possible new applications to improve maritime radiocommunication in accordance with Resolution ***360 (WRC-12)***

Key Issue

WRC-15 will consider, based on the results of ITU-R studies, possible revision of regulatory provisions and addition of spectrum allocations to enable new AIS terrestrial and satellite applications and possible new applications to improve maritime radiocommunication.

Background

AIS can be used for surveillance and safety of navigation purposes, as well as other non-critical communications. Four channels have been designated in Appendix 18 of the Radio Regulations (RR) for AIS use worldwide; AIS 1 and AIS 2 for standard operation and channel 75 and channel 76 for transmission of long-range broadcast messages.

ITU-R Preparatory Studies

The preliminary result of the ITU-R studies proposes identifying some channels of RR Appendix 18 for data exchange of non-critical messages by AIS in order to reduce the loading of AIS 1 and AIS 2.

Views Received

CAD considers it essential to ensure that any change to the regulatory provisions and spectrum allocations resulting from this agenda item would not adversely impact on the capability of search and rescue aircraft to effectively communicate with vessels during disaster relief operations.

Hong Kong's Preliminary Position

Hong Kong supports WRC-15 to consider additional spectrum allocation for enhanced AIS applications and for enhanced maritime radiocommunication.

Agenda Item 1.17 (Res. 423)

to consider possible spectrum requirements and regulatory actions, including appropriate aeronautical allocations, to support wireless avionics intra-communications (WAIC), in accordance with Resolution ***423 (WRC-12)***

Key Issue

WRC-15 will consider, based on the results of ITU-R studies, possible regulatory actions, including appropriate aeronautical allocations, to support the implementation of WAIC systems. WRC-15 will also consider additional bands above 15.7 GHz currently allocated for aeronautical services if the frequency bands below 1 GHz cannot meet the spectrum requirements for WAIC systems.

Background

WAIC systems are designed to provide radiocommunications between two or more points installed on a single aircraft. WAIC systems are being developed to operate safely and efficiently in one or more non-contiguous frequency bands currently allocated to the aeronautical mobile service and the aeronautical radionavigation service (ARNS).

ITU-R Preparatory Studies

The latest results of ITU-R studies indicate that the sharing of proposed WAIC systems with systems of the existing services in the band 4200-4400 MHz is feasible.

Views Received

CAD supports any necessary aeronautical service allocation to facilitate the implementation of WAIC without causing harmful interference to existing or planned aeronautical systems.

HKO opposes the use of the band 2700-2900 MHz and 5350-5460 MHz for WAIC systems based on the previous studies in the band 5600-5650 MHz, which has concluded that mobile applications on board aircraft are not compatible with meteorological radars.

Hong Kong Allocation

In Hong Kong, the band 4200-4400 MHz is currently allocated to the ARNS.

Hong Kong's Preliminary Position

Hong Kong is of the view that spectrum allocation for WAIC systems should be subject to satisfactory results of compatibility studies.

Agenda Item 1.18 (Res. 654)

*to consider a primary allocation to the radiolocation service for automotive applications in the 77.5-78.0 GHz frequency band in accordance with Resolution **654 (WRC-12)***

Key Issue

WRC-15 will consider a primary allocation to the radiolocation service (RLS) in the band 77.5-78 GHz band, taking into account the results of ITU-R studies.

Background

The frequency bands 76-77.5 GHz and 78-81 GHz are already allocated to the RLS on a primary basis in all three ITU Regions. This agenda item aims to provide a contiguous spectrum of 5MHz in order to cater RLS equipment of the latest technologies.

ITU-R Preparatory Studies

The latest study results show that the allocation of the band 77.5-78 GHz to the RLS would not impose severe constraints on the amateur service (ARS) and the amateur satellite service (ARSS).

Views Received

The Amateur notes that a study report published by European Conference of Postal and Telecommunications Administrations in October 2004 indicated the low probability of interference between the RLS and the ARS in the band 77-81. The Amateur is also of the view that the potential interference from the ARS to the RLS needs to be considered especially in the band 77.5-78 GHz where amateur radio is a primary service.

Hong Kong Allocation

In Hong Kong, the band 77.5-78 GHz is allocated to the ARS and the ARSS on a primary basis.

Hong Kong's Preliminary Position

Hong Kong supports allocation of the band 77.5-78 GHz to the RLS subject to satisfactory results of compatibility studies.

Agenda Items 2, 3, 4, 5, 6, 8, 9.1.4, 9.1.6, 9.1.7, 9.2 and 10

Agenda items 2, 3, 4, 5, 6, 8, 9.1.4, 9.1.6, 9.1.7, 9.2 and 10 are mainly related to administrative work of the WRC-15.

Hong Kong's Preliminary Position

Hong Kong's preliminary positions on these agenda items are neutral.

Agenda Item 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 accordance with Resolution ***86 (Rev.WRC-07)*** *to facilitate rational, efficient, and economical use of radio frequencies and any associated orbits, including the geostationary-satellite orbit*

Key Issue

A number of issues have been proposed and discussed under Agenda Item 7. Five issues are consolidated in the draft CPM Report -

- Issue A – Informing the Bureau of a suspension under No. 11.49 of the Radio Regulations (RR) beyond six months

  WRC-12 modified RR No. 11.49 to allow administrations to suspend the use of frequency assignments of satellite networks for a maximum period of three years. While an administration needs to inform the Radiocommunications Bureau (BR) of such suspension no later than six months from the start date of the suspension according to RR No. 11.49, there is no mention of consequences for failing to meet the six-month deadline. Several methods such as suppression of the frequency assignments concerned by the BR or reduction in the overall suspension period have been identified to resolve this issue.
- Issue B – Publication of information on bringing into use of satellite networks at the ITU website

  This issue seeks to clarify the actions of the BR after it receives information from administrations on bringing into use (BIU) and suspension of frequency assignments of satellite networks and review the provisions in the RR regarding the publication of the information. Several methods such as amendments of relevant sections of the RR or inclusion of specific instructions to the BR have been proposed to resolve this issue.
- Issue C – Review of possible cancellation of the advance publication of information (API) mechanism for satellite networks subject to coordination under section II of Article 9 of the RR

  According to Article 9 of the RR, an administration shall, prior to the coordination procedure, send to the BR a general description of the satellite network or system for advance publication of information (API) in the International Frequency Information Circular. A coordination request (CRC) containing more detailed and complete technical information shall subsequently be submitted to the BR not earlier than six months after the receipt of the API. It then takes approximately another 9-10 months (3-4 months to publish the CRC, 4 months to comment and approximately 2 months to

publish the definitive list following the comments) to publish the definitive list for coordination. Since API contains very few information for administrations to review and comment upon it, WRC-15 will consider whether to cancel the API mechanism or reduce the six-month period in order to shorten the overall time for publishing the definitive list for coordination.

- Issue D – General use of modern electronic means of communications in coordination and notification procedures

  Telegram, telex or fax is still an official means of communications for satellite coordination between ITU and its Member States. Proposal in the draft CPM Report considers use of modern electronic communication means, whenever possible, for administrative correspondence related to advance publication, coordination and notification of satellite networks, earth stations and radio astronomy stations.

- Issue E – Failure of a satellite during the ninety-day bringing into use (BIU) period

  According to RR No. 11.44B, a frequency assignment to a space station in the geostationary-satellite orbit shall be considered as having been brought into use when a space station in the geostationary satellite orbit with the capability of transmitting or receiving that frequency assignment has been deployed and maintained at the notified orbital position for a continuous period of ninety days (the "90-day BIU period"). The current provisions in the RR regarding the BIU do not address a possible scenario concerning a satellite failure during the 90-day BIU period. One of the proposals is to allow a frequency assignment to be considered as having been brought into use under such a scenario.

Background

The advance publication, coordination, notification and recording procedures for frequency assignments pertaining to satellite networks are the regulatory foundation for space services. In the implementation of Resolution 86 (Rev. Marrakesh, 2002), WRC-15 is invited by Resolution 86 (Rev. WRC-07) to consider, under the standing Agenda Item 7, any proposals which deal with deficiencies and improvements in the regulatory/procedural matters for frequency assignments pertaining to space service, ensuring these procedures, and the related appendices of the RR reflect the latest technologies.

Views received

Comments are received from AsiaSat on Issue A and Issue B. On Issue A, AsiaSat is of the view that the permissiable three-year period of suspension of the use of frequency assignments concerned could be shortened as a means of penalty. On Issue B, AsiaSat considers that it would be the right of the BR to publish the information directly related to bringing into use of the satellite networks and the suspension of the use of frequency

assignments.

Hong Kong's Preliminary Position

On Issue A, Hong Kong supports ITU-R to conduct studies on regulatory measures, including reduction in current three-year period of suspension, which will encourage administrations to inform the RR of suspension of frequency assignment within the initial six-month period. On Issue B, Hong Kong supports ITU-R to conduct studies to identify measures that could increase the accessibility and transparency of information on BIU of frequency assignments.

Agenda Items 9.1.1, 9.1.2, 9.1.3, 9.1.5, 9.1.8

Agenda item (AI) 9.1 is to consider and approve the Report of the Director of the Radiocommunication Bureau, in accordance with Article 7 of the Convention, on the activities of the Radiocommunication Sector since WRC-12

Key Issue

Eight issues have been identified under AI 9.1 and five of them (AIs 9.1.1, 9.1.2, 9.1.3, 9.1.5 and 9.1.8) are satellite regulatory issues as outlined below -

- AI 9.1.1 – Protection of the systems operating in the mobile satellite service in the band 406-406.1 MHz

  The 406-406.1 MHz frequency band is exclusively allocated to the mobile-satellite service, which is currently used by the Cospas-Sarsat system for search and rescue space segment instruments. Under this issue, various measures and mitigation techniques are proposed to protect the system from transmissions near the 406-406.1 MHz frequency band.
- AI 9.1.2 – Studies on possible reduction of the coordination arc and technical criteria used in application of No. 9.41 in respect of coordination under No. 9.7

  The studies cover various methods to reduce the satellite coordination burden on administrations in frequency bands allocated for fixed satellite service. These methods include (i) replacement of the current noise temperature (ΔT/T) coordination criterion by a carrier to interference (C/I) ratio; (ii) reduction of the coordination arcs set out in Appendix 5 of the Radio Regulations and (iii) application of power flux density (pfd) masks.
- AI 9.1.3 – Use of satellite orbital positions and associated frequency spectrum to deliver international public telecommunication services in developing countries

  This AI aims to study whether it might be necessary to apply additional regulatory measures to enhance the availability of public mobile international telecommunication services delivered through satellite technology. ITU-R recommends that priority be placed on implementation of joint ITU-R and ITU-D activities to further support capacity building and knowledge sharing in the area of satellite telecommunications.
- AI 9.1.5 – Consideration of technical and regulatory actions in order to support existing and future operation of fixed satellite service earth stations within the band 3400-4200 MHz, as an aid to the safe operation of aircraft and reliable distribution of meteorological information in some countries in Region 1.

  The band 3.4-4.2 GHz has been allocated for mobile service, except aeronautical mobile, on a primary basis in 81 countries in Region 1 (i.e. Europe, Russia and Africa). WRC-12 invited the ITU-R to study possible technical and regulatory measures in some

countries in Region 1 to support the existing and future fixed-satellite service earth stations in the 3400-4200 MHz frequency band used for satellite communications related to safe operations of aircraft and reliable distribution of meteorological information.

- AI 9.1.8 – Regulatory aspects for nano- and pico-satellites
  This AI examines the procedures for notifying space networks and considering possible modifications to enable the deployment and operation of nano- and pico-satellites, taking into account their short development time, short mission time and unique orbital characteristics.

Background

According to Article 7 of the Convention of ITU, a world radiocommunication conference shall deal with instructions to the Radio Regulations Board and the Radiocommunication Bureau regarding their activities, and a review of those activities. AI 9.1 addresses the requirement of Article 7 of the Convention of the ITU.

Views received

Comments are received from AsiaSat, CAD and HKO on AIs 9.1.1, 9.1.2 and 9.1.5. On AI 9.1.1, CAD supports increasing protection of Cospas-Sarsat system in the frequency band 406 – 406.1 MHz while HKO supports that ITU-R should conduct studies and regulatory measures towards ensuring the adequate protection to Cospas-Sarsat receivers against emissions from adjacent bands, noting that, to a large extent, those receivers are implemented on meteorological satellites. On AI 9.1.2, AsiaSat supports applying appropriate pfd masks in the congested C (6/4 GHz) and Ku (14/12 GHz) bands to ease the coordination work. On AI 9.1.5, both CAD and HKO support technical and regulatory actions to protect the fixed satellite service in the band 3400-4200 MHz for the dissemination of aeronautical and meteorological data in Region 1.

Hong Kong's Preliminary Position

On AI 9.1.1 Hong Kong will keep in view the compatibility studies on impact on Cospas-Sarsat system in the frequency band 406 – 406.1 MHz due to transmissions in adjacent bands. On AI 9.1.2, Hong Kong supports ITU-R to conduct studies on reduction of coordination arc and application of pfd masks in congested bands, having regard to their possible impact. Hong Kong's preliminary position is neutral on AI 9.1.5 as Hong Kong is not in Region 1.

Agenda Item 9.3

to consider and approve the Report of the Director of the Radiocommunication Bureau, in accordance with Article 7 of the Convention, on action in response to Resolution ***80 (Rev.WRC-07)***

Key Issue

Resolves 1 of Res. 80 instructs ITU-R to, *inter alia*, conduct studies on procedures for measurement and analysis of the basic principles contained in Article 44 of the Constitution of ITU, which includes the requirements that (1) Member States shall endeavour to limit the number of frequencies and the spectrum used to the minimum essential to provide in a satisfactory manner the necessary services; and (2) Member States shall bear in mind that radio frequencies and any associated orbits, including the geostationary-satellite orbit, must be used rationally, efficiently and economically.

Background

Resolution **80** instructs the Radio Regulations Board (RRB) either to develop Rules of Procedure, conduct studies, or consider and review possible draft recommendations related to linking the principles concerning the notification, coordination and registration procedures in the Radio Regulations and to report to a subsequent WRC.

Hong Kong's Preliminary Position

Hong Kong supports ITU-R to conduct studies on the efficient use of radio frequencies and orbital resources under this agenda item.