Malaysian Communications and Multimedia Commission
Suruhanjaya Komunikasi dan Multimedia Malaysia

Public Consultation

Proposed Malaysia's Position for World Radiocommunication Conference 2019 (WRC-19) Agenda Items

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1. Background

The objective of this Public Consultation (PC) is to invite comments from industry experts, interested parties and members of the public on the Proposed Malaysia's Positions for World Radiocommunication Conference 2019 (WRC-19) Agenda Items.

The World Radiocommunication Conference (WRC) is a treaty-level forum where 193 International Telecommunication Union (ITU) Member States come together to review, and revise the Radio Regulations[1], an international treaty governing the use of radio frequency spectrum, geostationary satellite and non-geostationary satellite orbits. WRC is held every three (3) to four (4) years with the purpose of reaching consensus on changes in the Radio Regulations. The changes to the Radio Regulations will result in changes and/or updates to Malaysia's Spectrum Plan and possible changes to the policy and regulatory matters.

The next WRC, which is WRC-19, will be held in Sharm el-Sheikh, Egypt from 28 October to 22 November 2019. WRC-19 will address thirty-six (36) agenda items which will impact on Malaysia's use of spectrum and satellite orbits. The complete list of WRC-19 agenda items is provided in **Annex I**.

MCMC has formed National Preparatory Working Group for WRC-19 (NPWG-19) to discuss and develop Malaysia's positions on WRC-19 agenda items. There are six (6) Working Parties under NPWG-19 comprising members of the industry including (but not limited to) broadcasters, telecommunication companies, amateur radio operators, academicians, researchers as well as spectrum users from government bodies. The respective Working Parties of NPWG-19 have produced the output on Malaysia's Preliminary Views and Positions in the respective sections of this PC.

In order to strike a balance between market opportunities and national interest, a comprehensive working process needs to be planned, regularly improvised and diligently implemented and executed; hence, there is a requirement for this PC process.

This PC assumes some prior knowledge on spectrum issues. It also considers the outcome of the Second Session of the Conference Preparatory Meeting for WRC-19 (CPM19-2) that provides a basis for the discussions at the WRC-19.

The Report of the CPM19-2[2] (CPM Report) should be read together with this PC document.

[1] http://www.itu.int/pub/R-REG-RR-2016/
[2] https://www.itu.int/md/R15-CPM19.02-R-0001/en

2. Land Mobile and Fixed Services

2.1 Agenda Item 1.11

*"To take necessary actions, as appropriate, to facilitate global or regional harmonized frequency bands to support railway radiocommunication systems between train and trackside (RSTT) within existing mobile service allocations, in accordance with Resolution **236 (WRC-15)**."*

Background

Evolution of radiocommunication technologies facilitates the railway transportation, which contributes to global economic and social development. RSTT as one of the core infrastructure in train operations are vital for enhancement of railway traffic control, passenger safety and security.

The implementation of RSTT varies in different countries, leading to high operational cost for international railway transportation. International standards and harmonised spectrum will improve interoperability of RSTT and subsequently will reduce the railway infrastructure investment, which will provide economies of scale.

Resolution **236 (WRC-15)** calls for studies to facilitate global or regional harmonised frequency bands, to the extent possible, for implementation of RSTT within existing mobile service allocations. Further, Resolution **236 (WRC-15)** invites ITU-R to study the spectrum needs, technical and operational characteristics for implementation of RSTT.

Proposed Views and Positions for Agenda Item 1.11

Malaysia supports harmonisation of global or regional frequency for RSTT through the development of relevant ITU-R Recommendations and/or Reports and without specifying frequency ranges in the Radio Regulations.

2.2 Agenda Item 1.12

"To consider possible global or regional harmonized frequency bands, to the maximum extent possible, for the implementation of evolving Intelligent Transport Systems (ITS) under existing mobile service allocations, in accordance with Resolution ***237 (WRC-15)****."*

Background

ITS, including legacy ITS, have been deployed in some countries to improve traffic management and to assist with safer driving. Variety of ITS applications rely on radiocommunication technologies including the next generation of ITS applications.

Evolving ITS also become important in helping to reduce road traffic problems such as congestion and accidents. To address road safety and efficiency-related matters, ITS with vehicle-to-everything communication (e.g. WAVE, ETSI ITS-G5, LTE based V2X, ITS Connect) are studied by the ITU-R. It is recognised that the frequency bands within existing mobile service allocations being used by evolving ITS may also be utilised by other applications and services.

Resolution **237 (WRC-15)** calls for studies on possible global or regional harmonised frequency bands for the implementation of evolving ITS under existing mobile service allocations.

Proposed Views and Positions for Agenda Item 1.12

Malaysia supports harmonisation of global or regional frequency for ITS. Malaysia is of the view that harmonisation can be achieved by using ITU-R Recommendation as reference and without specifying frequency ranges in the Radio Regulations.

2.3 Agenda Item 1.14

*"To consider, on the basis of ITU-R studies in accordance with Resolution **160 (WRC-15)**, appropriate regulatory actions for high-altitude platform stations (HAPS), within existing fixed-service allocations."*

Background

Technological innovations and the growing urgency to expand the availability of broadband led to revision of current regulatory environment for delivery platforms such as HAPS. Stations operating in the stratosphere are high enough to provide service to a large area. Recent test deployments of stations delivering broadband from approximately 20 km above ground have demonstrated their maturity to provide connectivity to underserved communities with minimal ground-level infrastructure.

The use of HAPS, as one of the option for broadband delivery will be beneficial, especially for countries with less-developed infrastructures. HAPS can drive broadband rollout by providing an additional platform, which provides service that could enhance the capacity using innovative and easily deployable platforms positioned in the upper atmosphere.

Resolution **160 (WRC-15)** calls for a study to facilitate access to global broadband applications delivered by HAPS in the fixed service, including among others, on additional spectrum needs for gateway and fixed terminal links for HAPS.

Proposed Views and Positions for Agenda Item 1.14

Malaysia is of the view that existing provisions in the Radio Regulations are sufficient for HAPS applications in this country.

2.4 Agenda Item 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, in accordance with Resolution **767 (WRC-15)**."*

Background

High data rate wireless communication systems above 100 Gbit/s have been discussed within international standardisation organisations, and technology development in this area is growing. Several applications such as wireless links for data centres, close proximity wireless connections, intra-device communications and fronthaul/backhaul links which are expected to be operated in the band above 275 GHz are summarised in Report ITU-R SM.2352-0.

The land mobile and fixed services applications have been studied by the ITU-R based on Questions ITU-R 256/5 and 257/5, respectively. Reports ITU-R F.2416-0 and ITU-R M.2417-0 summarise the technical and operational parameters as well as the spectrum needs for each of the applications. The bands of interest to Earth exploration-satellite service (passive) and radio astronomy service from 275 to 3 000 GHz have been addressed in Report ITU-R RS.2194-0 and the sharing studies between the radio astronomy service and active services in the frequency range 275-3 000 GHz have been conducted in Report ITU-R RA.2189-1.

Resolution **767 (WRC-15)** calls for a study towards identification for use by administrations for the land mobile and fixed services applications operating in the frequency range 275-450 GHz, while maintaining protection of the passive services identified in the Radio Regulations No. **5.565**, and take appropriate action, taking into account the results of ITU-R studies on sharing and compatibility between passive and active services as well as spectrum needs for those services.

Proposed Views and Positions for Agenda Item 1.15

Malaysia supports identification for the land mobile and fixed services in the frequency range 275-450 GHz while ensuring protection to existing services.

3. Broadband Applications in the Mobile Service

3.1 Agenda Item 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, in accordance with Resolution ***238 (WRC-15)****."*

Background

IMT systems are evolving to provide diverse usage scenarios and applications such as enhanced mobile broadband (eMBB), massive machine-type communications (mMTC) and ultra-reliable and low-latency communications (URLLC) requiring larger contiguous blocks of spectrum than currently available as described in Recommendation ITU-R M.2083.

Resolution **238 (WRC-15)** calls for studies to determine the spectrum needs for the terrestrial component of IMT in the frequency range between 24.25 GHz and 86 GHz, as well as sharing and compatibility studies, taking into account the protection of services to which the frequency band is allocated on a primary basis, for the frequency bands:

- 24.25-27.5 GHz, 37-40.5 GHz, 42.5-43.5 GHz, 45.5-47 GHz, 47.2-50.2 GHz, 50.4-52.6 GHz, 66-76 GHz and 81-86 GHz, which have allocations to the mobile service on a primary basis; and
- 31.8-33.4 GHz, 40.5-42.5 GHz and 47-47.2 GHz, which may require additional allocations to the mobile service on a primary basis.

Proposed Views and Positions for Agenda Item 1.13

Malaysia supports identification of the terrestrial component of IMT in the following frequency bands:

i. 24.25 to 27.5 GHz;
ii. 37 to 40.5 GHz;
iii. 40.5 to 42.5 GHz;
iv. 42.5 to 43.5 GHz;
v. 47.2 to 50.2 GHz;
vi. 50.4 to 52.6 GHz; and
vii. 66 to 71 GHz.

Malaysia will not oppose identification of IMT in the following frequency bands:

i. 45.5 to 47 GHz;
ii. 47 to 47.2 GHz;
iii. 71 to 76 GHz; and
iv. 81 to 86 GHz.

Malaysia supports no change to the Radio Regulations in the 31.8 to 33.4 GHz frequency band.

3.2 Agenda Item 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, in accordance with Resolution **239 (WRC-15)**."*

Background

RLANs have proven to be a success in conjunction with other fixed and mobile networks at providing affordable and ubiquitous broadband wireless access to the internet. Introduced by some administrations in the 2.4 GHz frequency band and subsequently expanded into some of the 5 GHz frequency bands, RLANs, specifically Wi-Fi devices, now carry approximately half of all global Internet Protocol (IP) traffic.

Radio Regulations No. **5.446A** specifies that use of 5 150-5 350 MHz and 5 470-5 725 MHz frequency bands by the stations in the mobile, except aeronautical mobile service shall be in accordance with Resolution **229 (Rev.WRC-12)**.

Resolution **239 (WRC-15)**, calls for ITU-R to:

- study WAS/RLAN technical characteristics and operational requirements in the 5 GHz frequency range;
- perform sharing and compatibility studies between WAS/RLAN applications and incumbent services in 5 150-5 350 MHz, 5 350-5 470 MHz, 5 725-5 850 MHz and 5 850-5 925 MHz frequency bands while ensuring the protection of incumbent services including their current and planned use;
- consider enabling outdoor WAS/RLAN operations in 5 150-5 350 MHz frequency band;
- consider potential mobile service allocations to accommodate WAS/RLAN operations in 5 350-5 470 MHz and 5 725-5 850 MHz frequency bands; and
- identify potential WAS/RLAN use in 5 850-5 925 MHz frequency band.

Proposed Views and Positions for Agenda Item 1.16

For the 5 150-5 250 MHz frequency band, Malaysia supports revision to Resolution **229 (Rev.WRC-12)** to enable outdoor WAS/RLAN operations with associated conditions to protect the incumbent services.

For the 5 250-5 350 MHz, 5 350-5 470 MHz and 5 850-5 925 MHz frequency bands, Malaysia supports no change to the Radio Regulations.

For the 5 725-5 850 MHz frequency band, Malaysia supports regional primary mobile service allocation in the band to accommodate WAS/RLAN use.

3.3 Agenda Item 9.1 (Issue 9.1.1)

*"Resolution **212 (Rev.WRC-15)** on implementation of International Mobile Telecommunications (IMT) in the frequency bands 1 885-2 025 MHz and 2 110-2 200 MHz."*

Background

The 1 885-2 025 MHz and 2 110-2 200 MHz frequency bands have been identified in the Radio Regulations for use by IMT. Within these broader frequency ranges, the 1 980-2 010 MHz and 2 170-2 200 MHz frequency bands are allocated to the fixed, mobile and mobile-satellite services on a co-primary basis. Both the satellite and terrestrial components of IMT have been deployed or are being considered for further deployment within the 1 980-2 010 MHz and 2 170-2 200 MHz frequency bands.

Resolution **212 (Rev. WRC-15)** invites the ITU-R to study possible technical and operational measures to ensure coexistence and compatibility between the terrestrial component of IMT (in the mobile service) and the satellite component of IMT (in the mobile and mobile-satellite services) in the 1 980–2 010 MHz and 2 170–2 200 MHz frequency bands where those frequency bands are shared by the mobile and mobile-satellite services in different countries, in particular for the deployment of independent satellite and terrestrial components of IMT and to facilitate development of both the satellite and terrestrial components of IMT.

Proposed Views and Positions for Agenda Item 9.1 (Issue 9.1.1)

Malaysia is of the view that the scope of WRC-19 agenda item 9.1, issue 9.1.1 is limited to the study of possible technical and operational measures to ensure coexistence and compatibility between the terrestrial component of IMT and the satellite component of IMT in the 1 980-2 010 MHz and 2 170-2 200 MHz frequency bands deployed in different countries, in accordance with Resolution **212 (Rev.WRC-15)**. Regulatory measures or any changes to the Radio Regulations are outside the scope of this issue.

Malaysia is also of the view that bilateral/multilateral discussions between different administrations provide greater operational flexibility while ensuring coexistence between the two components of IMT deployed in different countries.

3.4 Agenda Item 9.1 (Issue 9.1.5)

*"Resolution **764 (WRC-15)** on 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."*

Background

WRC-03 allocated the 5 150-5 350 MHz and 5 470-5 725 MHz frequency bands to the mobile service on a primary basis for the implementation of wireless access systems (WAS) including radio local area networks (RLANs) subject to Resolution **229 (Rev.WRC-12)**.

WRC-03 also decided that the radiolocation service, the Earth exploration-satellite service (active) and the space research service (active) (Radio Regulations No. **5.447F**) and the radiodetermination service (Radio Regulations No. **5.450A**) shall not impose on the mobile service more stringent protection criteria, based on system characteristics and interference criteria, than those stated in Recommendations ITU-R M.1638-0 and ITU-R RS.1632-0, which were incorporated by reference.

During the WRC-15 study cycle, Recommendation ITU-R M.1638-0 was revised. Consistent with the provisions of Resolution **27 (Rev.WRC-12)**, for an ITU-R Recommendation (e.g. ITU-R M.1638), the reference in the Radio Regulations shall continue to apply to the earlier version incorporated by reference until such time as a competent WRC agrees to incorporate the new version.

Resolution **764 (WRC-15)** resolves to invite ITU-R to:

- investigate the technical and regulatory impacts on the services referred to in Radio Regulations Nos. **5.447F** and **5.450A** that would result from referencing Recommendation ITU R M.1638-1 in place of Recommendation ITU R M.1638-0 in those footnotes, while ensuring that no undue constraints are imposed on the services referenced in these footnotes; and
- investigate the technical and regulatory impacts on the services referred to in Radio Regulations Nos **5.447F** and **5.450A** that would result from adding a new reference to Recommendation ITU R M.1849-1 to these footnotes, while ensuring that no undue constraints are imposed on the services referenced in these footnotes.

If the references to either or both of the two Recommendations remain in the footnotes, the question of the revision of Radio Regulations Nos. **5.447F** and **5.450A** would have to be re-addressed in the future to consider any future updates of Recommendations ITU-R M.1638 and ITU-R M.1849, most probably with the same arguments as those currently developed under WRC-19 agenda item 9.1, issue 9.1.5.

Proposed Views and Positions for Agenda Item 9.1 (Issue 9.1.5)

Malaysia supports long-term solution that requires less regulation should Recommendations ITU-R M.1638 or M.1849 be updated again in the future, while also ensuring protection of the radiolocation service, and creating no additional constraints to the mobile service.

3.5 Agenda Item 9.1 (Issue 9.1.8)

*"Issue 3) in the Annex to Resolution **958 (WRC-15)** - Urgent studies required in preparation for the 2019 World Radiocommunication Conference*

3) Studies on the technical and operational aspects of radio networks and systems, as well as spectrum needed, including possible harmonized 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 the ITU Radiocommunication Sector (ITU-R) scope of work."

Background

Machine Type Communications (MTC), which are also known as Machine-to-Machine (M2M) communications or Internet of Things (IoT), describe communication between devices that do not require human intervention. An increasingly large number of MTC devices, with a range of performance and operational requirements, are expected to communicate due to further improvements of low-cost and low complexity device types requiring high reliability techniques, for instance in the field of traffic safety, traffic efficiency, smart grid, e-health, wireless industry automation, augmented reality, remote tactile control and tele-protection.

WRC-15 decided that urgent studies should be carried out to support the implementation of narrowband and broadband machine-type communication infrastructures under WRC-19 agenda item 9.1, issue 9.1.8, and that the Director of the Radiocommunication Bureau reports on these studies under agenda item 9.1 of WRC-19, based on the results of studies, as appropriate. This was decided taking into account the rapid growth expected for MTC and the advantages of wireless technologies instead of cabling, for instance, reduced complexity of installation, no damage to cables, increased machine deployment, mobility and flexibility.

The results of ITU-R studies on the current and future spectrum use for narrowband and broadband MTC, as expressed in Resolution **958 (WRC-15)**, concluded that there is no need for any regulatory action in the Radio Regulations with regard to specific spectrum intended for use by those applications. Nonetheless, there are other mechanisms, which could facilitate the harmonised use of spectrum to support the implementation of narrowband and broadband MTC infrastructures, including ITU-R Recommendations or Reports.

Proposed Views and Positions for Agenda Item 9.1 (Issue 9.1.8)

Malaysia is of the view that any regulatory action is not required in the Radio Regulations with respect to specific spectrum for the use of narrowband and broadband MTC in the Radio Regulations, as concluded in the CPM Report.

There may be other ways to address the harmonized use of spectrum to support the implementation of narrowband and broadband MTC.

The study of technical and operational aspects including the potential harmonized spectrum usage to support the implementation of narrowband and broadband MTC infrastructures could be further accomplished through the course of the work in ITU-R Study Groups including the development of ITU-R Recommendations, Reports and/or Handbooks, as appropriate.

4. Satellite Services

4.1 Agenda Item 1.4

*"To consider the results of studies in accordance with Resolution **557 (WRC-15)**, and review, and revise if necessary, the limitations mentioned in Annex 7 to Appendix **30 (Rev.WRC-15)**, while ensuring the protection of, and without imposing additional constraints on, 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."*

Background

Different regional allocations to fixed-satellite and broadcasting-satellite services in the 11.7-12.7 GHz frequency range are causing several inter-regional sharing situations between these services. Broadcasting-satellite and fixed-satellite networks from different Regions may operate simultaneously and share orbit resource in their respective Regions.

Annex 7 to Radio Regulations Appendix **30 (Rev.WRC-15)** is referred to in mitigating the above sharing situations. It contains several orbital position limitations for proposed new or modified assignments in the Regions 1 and 3 List and for proposed modifications to the Region 2 Plan, applicable to specific parts of the 11.7-12.7 GHz frequency band.

Possible revision of the limitations mentioned in Annex 7 to Radio Regulations Appendix **30 (Rev.WRC-15)** would ensure additional orbital resource for broadcasting-satellite service without giving any impact to the integrity of Radio Regulations Appendix **30** for Regions 1 and 3.

Proposed Views and Positions for Agenda Item 1.4

Malaysia is in favour of having the flexibility provided by the deletion of some limitations of Annex 7 to Radio Regulations Appendix **30** taking into account that protection and priority of frequency assignments in Region 3 List will be ensured by application of relevant new ITU-R Resolutions proposed under this agenda item.

4.2 Agenda Item 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 (ESIM) communicating with geostationary space stations in the fixed-satellite service and take appropriate action, in accordance with Resolution ***158 (WRC-15)****."*

Background

WRC-19 agenda item 1.5 considers the use of the 17.7-19.7 GHz (space-to-Earth) and 27.5-29.5 GHz (Earth-to-space) frequency bands by ESIM communicating with GSO space stations in the fixed-satellite service. This agenda item has studied three (3) types of ESIM, which are aeronautical, maritime, and land, depending on the type of vehicle on which they are installed.

In Malaysia, the 17.7-19.7 GHz (18 GHz) frequency band is extensively used by point-to-point fixed and fixed-satellite services while the 27.5-29.5 GHz (28 GHz) frequency band is being used by fixed-satellite service, devices using Ultra Wideband (UWB) technology in the unlicensed band and has been identified for 5G deployment.

In accordance with Resolution **158 (WRC-15)**, ESIM need to protect the existing services to which the 17.7-19.7 GHz and 27.5-29.5 GHz frequency bands are allocated, including fixed service, mobile service, Earth exploration-satellite service, meteorological-satellite service, GSO and non-GSO fixed-satellite service, non-GSO mobile-satellite service feeder links operating in the fixed-satellite service and the broadcasting-satellite service feeder links.

There are various aspects taken into account in developing framework for authorisation and operation of ESIM and their interference management. In this regard, studies have been carried out on sharing and compatibility between ESIM and space as well as terrestrial services allocated in the frequency bands above. However, not all ITU-R studies have been concluded.

From the studies carried out, it is concluded that there will be potential interference between ESIM and the existing services.

However, this may be managed through development of a new ITU-R Resolution. The new Resolution will specify the operational conditions and regulatory frameworks for ESIM operation, which will assist administrations wishing to deploy ESIM in territory under its jurisdiction.

Proposed Views and Positions for Agenda Item 1.5

Malaysia is of the view that deployment of ESIM in 17.7-19.7 GHz (space-to-Earth) and 27.5-29.5 GHz (Earth-to-space) frequency bands will enable expansion of fixed-satellite service type of applications in providing broadband services.

In view of the above, Malaysia is considering the following:

Maritime ESIM	:	May be considered with minimum distance from the low-water mark as officially recognised by the coastal State.
Aircraft ESIM	:	May be considered with maximum pfd limit and minimum altitude distance from ground.

Land ESIM	:	May not be considered. The 18 GHz band is extensively used by fixed and fixed-satellite services; while the 28 GHz band has been identified for 5G deployment in Malaysia.

In addition, Malaysia is of the view that, operation of ESIM, which complies with the mandated operational limits as stated in the new ITU-R Resolution should not release the relevant administrations and operators from their obligation to ensure protection of the existing services operating in 17.7-19.7 GHz and 27.5-29.5 GHz frequency bands.

4.3 Agenda Item 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), in accordance with Resolution **159 (WRC-15)**."*

Background

Advances in satellite design, manufacturing and launch service capabilities have enabled the deployment of non-GSO fixed-satellite service constellations. Additionally, the development in antenna and terminal technology has enabled the GSO fixed-satellite services/broadcasting-satellite service and non-GSO fixed-satellite service operations in the 50/40 GHz frequency bands.

There are currently no regulatory provisions for sharing between non-GSO systems and GSO networks in the 50/40 GHz frequency bands. Moreover, there are no existing mechanism in the Radio Regulations establishing coordination procedures applicable to non-GSO systems operating within the fixed-satellite service allocations in frequency bands in the 37.5 to 51.4 GHz range, such as the application of Radio Regulations No. **9.12**. This also contributes to uncertainty among potential operators of non-GSO satellite systems in these bands.

Agenda item 1.6 was established to addresses the development of technical, operational and regulatory provisions in the 50/40 GHz frequency bands to facilitate sharing between non-GSO systems and GSO fixed-satellite services/broadcasting-satellite service/mobile-satellite service networks.

There are two issues identified within this agenda item:

Issue 1: Developing a regulatory framework for non-GSO fixed-satellite service satellite systems that may operate in 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) frequency bands.

Issue 2: Modifying Resolution **750 (Rev.WRC-15)** for the protection of Earth exploration-satellite service (passive) in the 50.2-50.4 GHz frequency band.

Proposed Views and Positions on Agenda Item 1.6

In principle, Malaysia supports development of regulatory framework for non-GSO fixed-satellite service satellite systems that may operate in the 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) frequency bands while ensuring protection of existing services in the same and adjacent frequency bands.

Issue 1: <u>Development of regulatory framework for non-GSO fixed-satellite service satellite systems:</u>

It is noted that as to date, discussion on development of equivalent power flux-density limits to protect GSO fixed-satellite service satellite networks from non-GSO fixed-satellite service systems is still on-going. Malaysia is of the view that development of regulatory framework for non-GSO fixed-satellite service satellite systems that may operate in 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) frequency bands should ensure protection of existing services to which these bands are allocated.

Issue 2: Modification of Resolution **750 (Rev.WRC-15)**:

Malaysia may consider revision of limits only for non-GSO systems as modifications to Resolution **750 (WRC-15)** for GSO networks are not within the scope of this agenda item.

4.4 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)**, in order to facilitate rational, efficient and economical use of radio frequencies and any associated orbits, including the geostationary-satellite orbit."*

Background

In accordance with Resolution **86 (Rev.WRC-07)**, this agenda item considers proposals on issues dealing with measures for improvements of the advance publication, coordination, notification and recording procedures in the Radio Regulations for frequency assignments pertaining to satellite networks, which have been identified by the administrations, Radio Regulation Board or the Radiocommunication Bureau.

There are eleven (11) issues identified under this agenda item:

Issue	Title
A	Bringing into use of frequency assignments to all non-GSO systems, and consideration of a milestone-based approach for the deployment of non-GSO systems in specific frequency bands and services
B	Application of coordination arc in the Ka-band, to determine coordination requirements between the fixed-satellite service and other satellite services
C	Issues for which consensus was achieved in ITU-R and a single method has been identified
D	Identification of those specific satellite networks and systems with which coordination needs to be effected under Radio Regulations Nos. **9.12**, **9.12A** and **9.13**
E	Resolution related to Radio Regulations Appendix **30B**
F	Measures to facilitate entering new assignments into the Radio Regulations Appendix **30B** List
G	Updating the reference situation for Regions 1 and 3 networks under Radio Regulations Appendices **30** and **30A** when provisionally recorded assignments are converted into definitive recorded assignments
H	Modifications to Radio Regulations Appendix **4** data items to be provided for non-GSO satellite systems
I	Modified regulatory procedure for non-GSO satellite systems with short-duration missions
J	Pfd limit in Section 1, Annex 1 of Radio Regulations Appendix **30**
K	Difficulties for Part B examinations under § 4.1.12 or 4.2.16 of Radio Regulations Appendices **30** and **30A** and § 6.21 c) of Radio Regulations Appendix **30B**

4.4.1 Issue A - Bringing into use of frequency assignments to all non-GSO systems, and consideration of a milestone-based approach for the deployment of non-GSO systems in specific frequency bands and services

Currently, there are no provisions in the Radio Regulations that specifically address the bringing into use (BIU) of frequency assignments to space stations in non-GSO systems.

In order to complete the recording of frequency assignments to non-GSO systems, it has been the practice of the Radiocommunication Bureau to declare their BIU successfully completed when one satellite is deployed into a notified orbital plane and capable of transmitting and/or receiving those frequency assignments. Furthermore, it has been used irrespective of the number of satellites or of the number of orbital planes indicated in the notification information.

This issue proposes possible development of regulatory provisions beyond those under Radio Regulations Nos. **11.25** and **11.44** on the non-GSO fixed-satellite service/mobile-satellite service systems and the implications of the application of milestones to non-GSO fixed-satellite service/mobile-satellite service systems.

Proposed Views and Positions for Agenda Item 7, Issue A

Malaysia supports requirement for BIU of frequency assignments of non-GSO systems and introduction of milestone-based approach for specific services and frequency bands that recognises that constellations of non-GSO systems may generally take time to be developed and to complete their deployment.

In addition, Malaysia also supports a new ITU-R Resolution for implementation of milestone-based approach for deployment of non-GSO systems in certain frequency band and services.

4.4.2 Issue B - Application of coordination arc in the Ka-band, to determine coordination requirements between the fixed-satellite service and other satellite services

This issue proposes the introduction of the coordination arc with a value of 8 degrees as coordination criteria between fixed-satellite service and mobile-satellite service systems and between mobile-satellite service systems, in the 29.5-30 GHz (Earth-to-space)/19.7-20.2 GHz (space-to-Earth) frequency bands in all three (3) Regions, as substitution to the existing trigger of coordination $\Delta T/T > 6\%$.

Proposed Views and Positions for Agenda Item 7, Issue B

Malaysia supports use of coordination arc with a value of 8 degrees as coordination criteria to determine if coordination is required between fixed-satellite service and mobile-satellite service systems and between mobile-satellite service systems in the said Ka-band in all three (3) Regions, while keeping the possibility for administrations to request $\Delta T/T$ criteria.

4.4.3 Issue C - Issues for which consensus was achieved in ITU-R and a single method has been identified

There are seven (7) issues being considered under Issue C.

4.4.3.1 Issue C1

This issue proposes alignment of text in paragraph 8.13 of Article **8** of Radio Regulations Appendix **30B** with that of No. **11.43A** of Radio Regulations Article **11** due to regulatory inconsistency between the objectives of the two provisions/paragraph.

It is to be emphasized that the concept of the text of paragraph 8.13 of Article **8** of Radio Regulations Appendix **30B** was borrowed/taken from provisions of No. **11.43A** of Radio Regulations Article **11**. However, in so doing an important element as contained in Radio Regulations No. **11.43A** which referred to any change to the characteristics of an assignment that has been *recorded* and confirmed as having been brought into use was changed to *notified* and confirmed as having been brought into use, which is quite different.

ITU-R has analysed the implications and found no disadvantages with such alignment.

Proposed Views and Positions for Agenda Item 7, Issue C1

Malaysia supports to address the regulatory inconsistency identified by aligning the text of paragraph 8.13 of Article **8** of Radio Regulations Appendix **30B** with that of No. **11.43A** of Radio Regulations Article **11**.

4.4.3.2 Issue C2

This issue addresses unavailability of specific provision authorising the application from administrations when applying Article **6** of the Radio Regulations Appendix **30B** for additional use for either of two sub-bands of 250 MHz each in the 13-11 GHz frequency band.

ITU-R has analysed the implications of adding the text of paragraph **6.1*bis*** of Article **6** of Radio Regulations Appendix **30B** and found that an additional provision would be beneficial to the administrations.

Proposed Views and Positions for Agenda Item 7, Issue C2

Malaysia supports to add another footnote to paragraph 6.1 of Radio Regulations Appendix **30B** to address the issue.

4.4.3.3 Issue C3

This issue proposes modification to the Radio Regulations to clearly stipulate that an administration identified under § 6.6 of Appendix **30B** cannot be subject to § 6.13 – 6.15 of Appendix **30B**.

Under the current regulatory framework, there is a specific provision (§ 6.13) in Radio Regulations Appendix **30B** to seek the assistance of the Radiocommunication Bureau in case of a non-response of an affected administration identified under § 6.5 of Radio Regulations Appendix **30B** within the four-month comment period.

However, the inclusion of the territory of an administration identified under § 6.6 of Radio Regulations Appendix **30B** can only result from a formal agreement of this administration and, in no circumstance, results from a non-response to neither the original request for inclusion of its territory nor any subsequent letters from the Radiocommunication Bureau on this matter.

Proposed Views and Positions for Agenda Item 7, Issue C3

Malaysia supports to add new provision in Article **6** of Appendix **30B** to clearly stipulate that § 6.13 – 6.15 of Appendix **30B** do not apply in the context of requirements associated with § 6.6 of Radio Regulations Appendix **30B**.

4.4.3.4 Issue C4

Given that the Radio Regulations Appendix **4** information required for notices submitted under § 4.1.12 (for Regions 1 and 3) or § 4.2.16 (for Region 2) and § 5.1.1/5.1.2, are identical, this issue proposes possibility of allowing a single notice to be treated as and examined in respect of, the relevant provisions of Articles **4** and **5** of Radio Regulations Appendices **30/30A**.

This would reduce the workload of both administrations and the Radiocommunication Bureau if one physical submission could be treated as, and examined in respect of both provisions.

Proposed Views and Positions for Agenda Item 7, Issue C4

Malaysia supports modification of § 4.1.12*bis* and 4.2.16*bis* of Radio Regulations Appendices **30** and **30A** to allow administrations to request the Radiocommunication Bureau to have notices submitted under any of these two provisions also examined with respect to § 5.1.1 of Radio Regulations Appendix **30** and § 5.1.2 of Radio Regulations Appendix **30A** for Notification.

4.4.3.5 Issue C5

This issue addresses requirement for the Radiocommunication Bureau to send reminder to the notifying administration at any point during the 6-month period to resubmit their notified frequency assignments, which were returned due to an unfavourable finding with respect to Radio Regulations Nos. **11.32**, **11.32A** or **11.33**.

Any notification resubmitted beyond 6 months is considered as a new notification with a new date of receipt and would be subject to cost-recovery fees. Hence, this reminder would be beneficial to administrations who may have experienced difficulties receiving or addressing the Radiocommunication Bureau's return of notice and the need to ensure that frequency assignments that are in use are properly recorded in the Master Register.

Proposed Views and Positions for Agenda Item 7, Issue C5

Malaysia supports modification of Radio Regulations No. **11.46** requiring the Radiocommunication Bureau to remind the notifying administration of the 6-month deadline.

4.4.3.6 Issue C6

This issue proposes modification to the Radio Regulations to allow submission of one notice for entry into the List under § 6.17 and for notification under § 8.1 at the same time. This would simplify the processing and reduce the workload of the Radiocommunication Bureau and administrations.

However, this is not possible under the current provisions of Radio Regulations Appendix **30B** (§ 6.17). In addition, the required data items in Radio Regulations Appendix **4** for the submission under § 6.17 and for notification under § 8.1 are not the same.

Proposed Views and Positions for Agenda Item 7, Issue C6

Malaysia supports modification of § 6.17 of Radio Regulations Appendix **30B** to allow one submission to be treated in respect of both provisions (§ 6.17 and § 8.1 of Radio Regulations Appendix **30B**) and modification of Radio Regulations Appendix **4** to enable this.

4.4.3.7 Issue C7

This issue proposes amendment to Radio Regulations Appendices **30A** and **30B** for the possibility of obtaining agreement from affected administrations for a specified period, to be harmonised among Radio Regulations Appendices **30**, **30A** and **30B**.

Proposed Views and Positions for Agenda Item 7, Issue C7

Malaysia supports to add new provision § 6.15*bis* to Article **6** and a new provision § 8.16*bis* to Article **8** of Radio Regulations Appendix **30B** in order to recognise the possibility of obtaining agreement from affected administrations for a specified period.

Further, in order to harmonise Radio Regulations Appendices **30**, **30A** and **30B**, modification to § 5.2.6 to Article **5** of Appendix **30A** would be necessary.

4.4.4 Issue D - Identification of those specific satellite networks and systems with which coordination needs to be effected under Nos. 9.12, 9.12A and 9.13

This issue proposes the Radiocommunication Bureau to publish a list of potentially affected administrations and satellite networks and/or systems following the receipt of a coordination request for frequency assignments subject to Radio Regulations Nos. **9.12**, **9.12A** and **9.13.**

Currently, when an administration sends a coordination request for frequency assignments subject to Radio Regulations Nos. **9.12**, **9.12A** and **9.13**, the Radiocommunication Bureau publishes in the CR/C Special Section only a list of (potentially) affected administrations.

Proposed Views and Positions for Agenda Item 7, Issue D

Malaysia supports to add the requirements to have:

i. a pre-compiled list of potentially affected satellite networks and/or systems, published for information only, included in the CR/C Special Section for coordination under Radio Regulations Nos. **9.12**, **9.12A** and **9.13**, by stipulating it in Radio Regulations No. **9.36.1**; and
ii. the definitive list of affected satellite networks or systems to be considered when effecting coordination under Radio Regulations Nos. **9.12**, **9.12A** and **9.13** to be included in the CR/D Special Section by stipulating it in Radio Regulations No. **9.53A**.

4.4.5 Issue E - Resolution related to Radio Regulations Appendix 30B

ITU-R considered studies relating to the enhancement of regulatory provisions of Radio Regulations Appendix **30B** to observe the principles based on which it was initially established.

An administration which decides to convert its national allotment into assignments in an economically viable manner very often needs to modify the initial characteristics of its national allotments, taking into account the latest available development and advancement in technology as well as the most economically viable solution.

In so doing, a) when the request for conversion is submitted, the application would be queued at the end of the last submission received before it and b) once its turn to be processed is reached, due to the nature of those additional systems/uses it would be extremely difficult, if not totally impossible, to succeed coordination within the regulatory deadline.

Proposed Views and Positions for Agenda Item 7, Issue E

Malaysia supports establishment of special measures to be applied once with respect to the submission received from an administration having no frequency assignments in the Radio Regulations Appendix **30B** List the details of which are to be contained in a WRC Resolution to facilitate the tasks of those administrations to provide an economically viable satellite service to its national territory as initially considered when the allotment Plan was established in 1988.

4.4.6 Issue F - Measures to facilitate entering new assignments into the Radio Regulations Appendix 30B List

An administration, which wants to convert its national allotment of Radio Regulations Appendix **30B** into assignments in an economically viable manner very often, needs to modify the initial characteristics of its national allotments, taking into account the latest available development and advancement in technology.

For this purpose, the administration will make a submission and follow the procedures of Article **6** of Radio Regulations Appendix **30B**. In so doing, it may be difficult for an administration to successfully complete the coordination within the regulatory period.

This issue proposes possible methods to facilitate coordination of submissions of new networks and ease access of administrations to the frequency bands of Radio Regulations Appendix **30B**.

Proposed Views and Positions for Agenda Item 7, Issue F

Malaysia supports updating the coordination triggers to take into account technological advances that facilitates coordination of submission of new networks while assuring adequate protection of existing allotment and operational additional systems recorded in the List.

4.4.7 Issue G - Updating the reference situation for Regions 1 and 3 networks under Radio Regulations Appendices 30 and 30A when provisionally recorded assignments are converted into definitive recorded assignments

The protection criteria in the Regions 1 and 3 Radio Regulations Appendices **30** and **30A** frequency bands are based upon a reference situation, which takes into account the aggregation of interference from all other networks in the Plan and the List and prescribes a protection based upon an equivalent protection margin.

This issue proposed updating the reference situation for Regions 1 and 3 networks under Radio Regulations Appendices **30** and **30A** when provisionally recorded assignments are converted into definitive assignments after being four (4) months in use without complaint of harmful interference.

Depending on the initial reference situation of the affected network and what would be the reference situation if taking into account the interference from the network for which the agreement has not been given, it can be seen that updating or not updating the reference situation can have different effects on its protection against later submissions.

Proposed Views and Positions for Agenda Item 7, Issue G

Malaysia supports the reference situation of the interfered-with network should be updated in consultation with, and only with the agreement of the affected administration, with modification of § 4.1.18*bis* of Radio Regulations Appendices **30** and **30A**.

4.4.8 Issue H - Modifications to Radio Regulations Appendix 4 items to be provided for non-GSO systems

This issue relates to the need to ensure that enough Radio Regulations Appendix **4** data items are provided to facilitate modelling non-GSO satellite systems in order for:

- the administrations to be able to identify the potential impacts of these systems on their own systems and to formulate their comments to the notifying administration and the Radiocommunication Bureau based on the advance publication information (API) in the case of frequency assignments to non-geostationary satellite systems not subject to coordination under Section II of Radio Regulations Article **9** (see No. **9.3**) or the Coordination Request (CR/C) in the case of frequency assignments to non-GSO satellite systems subject to Section II of Radio Regulations Article **9** (see No. **9.52**); or
- the Radiocommunication Bureau to be able to perform an examination with respect to the compliance with the Radio Regulations Article **22** epfd limits based on the latest version of the algorithm contained in Recommendation ITU-R S.1503.

Proposed Views and Positions for Agenda Item 7, Issue H

Malaysia supports modifications to Radio Regulations Appendix **4** as follows:

i. extension of the requirement in Radio Regulations Appendix **4** for APIs and notifications for frequency assignments to non-GSO systems in frequency bands not subject to coordination under Section II of Radio Regulations Article **9**. Those requirements would apply only for constellation-type non-GSO systems.
ii. addition of new mandatory and optional items for APIs and notifications for frequency assignments to non-GSO systems in frequency bands not subject to coordination under Section II of Radio Regulations Article **9**.
iii. additional new data items in Radio Regulations Appendix **4** for the provision of information relating to the multiple orbital planes and their relationship with respect to the non-GSO system.
iv. additional new data items in Radio Regulations Appendix **4** or modify existing ones to implement changes associated with the revision of Recommendation ITU-R S.1503.

4.4.9 Issue I - Modified regulatory procedure for non-GSO satellite systems with short-duration missions

This issue addresses regulatory challenges for non-GSO satellite systems with short-duration missions. The successful and timely development and operation of non-GSO satellite systems with short-duration missions may require regulatory procedures that take into account the nature and timing for deployment of these systems.

Proposed Views and Positions for Agenda Item 7, Issue I

Malaysia supports modification to Radio Regulations Articles **9** and **11**, including addition of a new WRC Resolution.

4.4.10 Issue J - Pfd limit in Section 1, Annex 1 of Radio Regulations Appendix 30

In response to the requirements for providing new broadcasting-satellite service applications, Issue J deals with the possibility of the exceedance of the power flux-density (pfd) limit for the broadcasting-satellite service networks in the List.

In the case that an administration applies the relevant provisions of Radio Regulations Article **23** to request the exclusion of its territory from the service areas of broadcasting-satellite service networks of other administrations, such broadcasting-satellite service networks of other administrations are not entitled to be protected within the territory of the objecting administration.

It is proposed that the pfd limit of −103.6 dB (W/(m^2 · 27 MHz)) may be exceeded only within the national territory of the notifying administration providing that, on the border areas and other territory of another country, this pfd limit is not exceeded.

Proposed Views and Positions for Agenda Item 7, Issue J

Malaysia supports to allow List assignments to exceed the pfd limit given only within the national territory of the notifying administration under the condition that the assignment does not overlap with the Regions 1 and 3 guardbands as defined in § 3.9 of Annex 5 to Radio Regulations Appendix **30** and also under the condition that, on the border areas and other territory of another country, this pfd limit is not exceeded.

4.4.11 Issue K - Difficulties for Part B examinations under § 4.1.12 or § 4.2.16 of Radio Regulations Appendices 30 and 30A and § 6.21 c) of Radio Regulations Appendix 30B

This issue addresses difficulties encountered by the notifying administration in the examination for its notice submitted under § 4.1.12 or § 4.2.16 of Radio Regulations Appendices **30** and **30A** or § 6.17 of Radio Regulations Appendix **30B** (Network JR-Part B).

It is proposed to add one more examination under § 4.1.12 or § 4.2.16 of Radio Regulations Appendices **30** and **30A** and § 6.21 c) of Radio Regulations Appendix **30B**, which the Radiocommunication Bureau shall further examine if the remaining corresponding assignments in the List or Plan are still considered as being affected.

Proposed Views and Positions for Agenda Item 7, Issue K

Malaysia supports to add one more examination under § 4.1.12 and § 4.2.16 of Radio Regulations Appendices **30** and **30A** and § 6.21 *c)* of Radio Regulations Appendix **30B** such that should any remaining affected networks whose assignments have been entered in the List or Plan before the submission under § 4.1.12 and § 4.2.16 of Radio Regulations Appendices **30** and **30A** or § 6.17 of Radio Regulations Appendix **30B**, the Radiocommunication Bureau shall further examine if the remaining corresponding assignments in the List or Plan are still considered as being affected.

4.5 Agenda Item 9.1 (Issue 9.1.2)

*"Resolution **761 (WRC-15)** on compatibility of International Mobile Telecommunications and broadcasting-satellite service (sound) in the frequency band 1 452-1 492 MHz in Regions 1 and 3."*

Background

Pursuant to Resolution **761 (WRC-15)**, ITU–R has conducted regulatory and technical studies between International Mobile Telecommunications (IMT) and the broadcasting-satellite service (sound) in the 1 452-1 492 MHz frequency band in Regions 1 and 3.

Based on the ITU Radiocommunication Bureau database, there are many satellite network filings submitted for coordination in the 1 467-1 492 MHz frequency band in which the orbital positions of the space stations are distributed globally in the geostationary orbit. Some of these satellite networks are operational and their frequency assignments are already recorded in the Master International Frequency Register (MIFR).

Besides operational satellite systems, some other additional or succeeding broadcasting-satellite service (sound) satellite systems are also planned to be deployed in the geostationary orbit. Currently, the coordination procedures in Radio Regulations Nos. **9.11** and **9.19** are applied in order to reach the required sharing and compatibility conditions between the broadcasting-satellite service and terrestrial services.

Proposed Views and Positions for Agenda Item 9.1 (Issue 9.1.2)

Malaysia supports the protection of IMT in Regions 1 and 3.

4.6 Agenda Item 9.1 (Issue 9.1.3)

*"Resolution **157 (WRC-15)** on 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."*

Background

This issue invites the ITU-R to study technical and operational issues and regulatory provisions for new non-GSO systems in a number of frequency bands between 3 700 MHz and 7 025 MHz allocated to the fixed-satellite service, while ensuring that existing services are protected.

Specifically, in the 6 725-7 025 MHz frequency band, *resolves to invite the ITU Radiocommunication Sector d)* requests that the studies address the protection of feeder links for mobile-satellite service systems operating in the space-to-Earth direction from unacceptable interference, pursuant to existing criteria, from co-frequency, non-GSO fixed-satellite service system earth stations operating in the Earth-to-space direction.

One study indicates that circular orbit non-GSO fixed-satellite service operations in the 6/4 GHz frequency band could result in large exceedances (up to 40 dB) of the GSO protection criteria and concludes that it would be very difficult to operate a non-GSO circular orbit system for the purposes of a global broadband network in the 6/4 GHz frequency bands. Therefore, there is no need to review the values of the existing limits presented in Radio Regulations Article **22** (epfd) and Article **21** (pfd) for the 3 700-4 200 MHz, 4 500-4 800 MHz, 5 925-6 425 MHz, and 6 725-7 025 MHz frequency bands.

Another study suggested to establish a coordination procedure in the 3 700-4 200 MHz and 5 925-6 425 MHz frequency bands between non-GSO fixed-satellite service systems under Radio Regulations No. **9.12**. This study finds that there is no need to review the values of the existing limits presented in Radio Regulations Article **22** (epfd) and Article **21** (pfd) for the 3 700-4 200 MHz, 4 500-4 800 MHz, 5 925-6 425 MHz, and 6 725-7 025 MHz frequency bands.

Proposed Views and Positions for Agenda Item 9.1 (Issue 9.1.3)

Malaysia supports no change to the values of the existing limits presented in Radio Regulations Article **22** (epfd) and Article **21** (pfd) for the 3 700-4 200 MHz, 4 500-4 800 MHz, 5 925-6 425 MHz, and 6 725-7 025 MHz frequency bands.

4.7 Agenda Item 9.1 (Issue 9.1.9)

*"Resolution **162 (WRC-15)** on 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)."*

Background

This issue invites ITU-R to study the spectrum needs and possible allocation of the 51.4-52.4 GHz frequency band to the fixed-satellite service (Earth-to-space) limited to feeder links for geostationary satellite orbit use.

The spectrum needs were analysed and it was concluded that the additional allocation to the fixed-satellite service being considered is beneficial to make broadband connections accessible to communities as achieved by high throughput satellite (HTS) systems.

The conducted studies between fixed-satellite service (Earth-to-space) and incumbent services in the 51.4-52.4 GHz frequency band and in adjacent frequency bands have demonstrated the possibility of sharing and compatibility by the means of separation distances between the stations as well as by limiting the unwanted emissions into the passive 52.6-54.25 GHz frequency band.

It was concluded that the coexistence between the fixed-satellite and fixed services can be achieved through separation distances between fixed-satellite service earth stations and fixed service stations. In addition, the 51.4-52.4 GHz frequency band is being considered for IMT-2020 identification; therefore, sharing studies with this application have been conducted. Sharing through separation distances between fixed-satellite service earth stations and IMT-2020 stations is feasible.

Based on the results of studies and in order to ensure protection of the currently allocated Earth exploration-satellite service (passive) and space research service (passive) systems in the 52.6-54.25 GHz frequency band, it is proposed to apply unwanted emission power limits on fixed-satellite service earth stations, depending on the elevation angle of the fixed-satellite service earth station antenna. To address the possible allocation to fixed-satellite service limited to gateway links, a minimum earth station antenna size is also being considered. Regarding the protection of future GSO Earth exploration-satellite service (passive) sensors, a minimum orbital separation in the GSO arc between the fixed-satellite service and Earth exploration-satellite service space stations would be required.

Radio astronomy observations may be carried out in the 51.4-54.25 GHz frequency band under national arrangements under Radio Regulations No. **5.556**. Compatibility studies concluded that separation distances in the range 10-100 km would be necessary to protect radio astronomy observations according to a static worst case analysis and it may be feasible for GSO fixed-satellite service operators to protect radio astronomy stations in their own and neighbouring countries by choosing appropriate sites when planning the deployment of fixed-satellite service earth stations.

Proposed Views and Positions for Agenda Item 9.1 (Issue 9.1.9)

Malaysia is currently studying the possibility of allocation to International Mobile Telecommunications (IMT) in the 51.4-52.4 GHz frequency band.

5. Science Services

5.1 Agenda Item 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)**."*

Background

Taking into account the results of ITU-R studies, the objective of this agenda item is to consider establishing in-band power limits for earth stations transmissions in the 399.9-400.05 MHz and 401-403 MHz frequency bands, in order to ensure the operation of existing and future systems that usually implement low or moderate output powers for mobile-satellite service in 399.9-400.05 MHz, and Earth exploration-satellite service and meteorological satellite service systems in 401-403 MHz. Systems such as the data collection systems (DCS) which are deployed to gather information related to the Earth, the environment and scientific application, weather and environment observations, are operated with very low power to ensure extended life time of the platforms.

A growing number of satellite system operators are operating and/or planning to operate in these frequency bands for telemetry, tracking and command (TT&C) (Earth-to-space) operation for other than Earth exploration-satellite service/meteorological-satellite service/mobile-satellite service purposes. The output power levels at the antenna port of these telecommand links (Earth-to-space) of the corresponding earth stations, as well as the gain of these earth stations can be very much higher than the power/gain levels used for existing DCS applications. Consequently, the growing number of telecommand links is increasingly likely to cause harmful interference to the existing DCS receivers.

The Report ITU-R SA.2430-0 provides the studies and compiles elements related to background on WRC-19 agenda item 1.2 as well as technical considerations on Earth exploration-satellite, meteorological-satellite and mobile-satellite services and associated space operation functions in the 399.9-400.05 MHz and 401-403 MHz frequency bands. It includes guidance to derive the possible equivalent isotropic radiated power (e.i.r.p.) and e.i.r.p. density limits under this agenda item.

Proposed Views and Positions for Agenda Item 1.2

Malaysia supports the proposals to impose the relevant e.i.r.p. power limits to mobile-satellite services earth stations in the full frequency band of 399.9-400.05 MHz and to impose the relevant e.i.r.p. power limit only to meteorological-satellite and Earth exploration-satellite services earth stations in the 401-403 MHz frequency band.

5.2 Agenda Item 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)**."*

Background

Taking into account the results of studies, this agenda item aims at determining the possibility of upgrading the secondary meteorological-satellite service (space-to-Earth) allocation to primary status and adding a primary Earth exploration-satellite service (space-to-Earth) allocation in the 460-470 MHz frequency band. This has to be performed while providing protection and not imposing any additional constraint on existing primary services to which the frequency band is already allocated and in the adjacent frequency bands as well as maintaining the conditions contained in Radio Regulations No. **5.289**. Resolution **766 (WRC-15)** also states that future meteorological-satellite service (space-to-Earth) and Earth exploration-satellite service (space-to-Earth) earth stations will not claim protection from stations in the fixed and mobile services. Since Malaysia has allocated the 450-470 MHz frequency band for IMT, it is crucial to ensure that mobile service is protected and no additional constraint is imposed to it.

The ITU-R Report SA.2429-0 provides the studies and compiles elements related to background on WRC-19 agenda item 1.3 as well as technical considerations on Earth exploration-satellite and meteorological-satellite services in the 460-470 MHz frequency band and potential interference to incumbent systems operating under allocation to primary services in this band and adjacent bands (450-460 MHz in all regions and 470-585 MHz in Region 3), including systems in the mobile, maritime mobile, mobile-satellite, fixed, and broadcasting services. The studies resulted in the development of pfd limits for non-GSO satellites and separate pfd limits for GSO satellites that would protect the incumbent in-band and adjacent channel service operations, including IMT systems in the mobile service.

Proposed Views and Positions for Agenda Item 1.3

Malaysia supports the proposal to upgrade the allocation for meteorological-satellite service (space-to-Earth) from secondary to primary status and addition of primary allocation for Earth exploration-satellite service (space-to-Earth) in the 460-470 MHz frequency band. In addition, Malaysia also supports the introduction of a new ITU-R Resolution to address all regulatory actions and procedures.

5.3 Agenda Item 1.7

"To study the spectrum needs for telemetry, tracking and command in the space operation service for non-geostationary-satellite orbit (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, in accordance with Resolution ***659 (WRC-15)****."*

Background

Taking into account the results of ITU-R studies, the objective of this agenda item is to consider establishing spectrum requirements for telemetry, tracking and command (TT&C) in the space operation service for non-GSO satellites with short duration (non-GSO SD) missions, to assess the suitability of existing allocations to the space operation service and, if necessary to consider possible new allocations. New allocations to the space operation service in these possible frequency bands should not put undue constraints on any incumbent services.

The ITU-R Reports SA.2425-0, SA.2426-0 and SA.2427-0 contains studies to determine the amount of TT&C spectrum required for non-GSO SD missions, based on the protection criteria as outlined in Recommendation ITU-R SA.363-5. The studies show that the amount of spectrum required for non-GSO SD systems is from 0.625 MHz to 2.5 MHz for satellite downlink and from 0.682 MHz to 0.938 MHz for earth station uplink, depending on operational scenario.

In addition, adjacent band compatibility studies between aeronautical mobile (route) service systems below 137 MHz and space operation service non-GSO SD satellite systems in the proposed 137-138 MHz (downlink) and 148-149.9 MHz (uplink) frequency bands are being considered including identification of appropriate aeronautical mobile (route) service protection criteria.

Proposed Views and Positions for Agenda Item 1.7

Malaysia supports the proposal for an allocation of 1 MHz to the space operation service in the Earth-to-space direction, limited to non-GSO SD satellite systems in 404-405 MHz. However, this method also proposes the use of the band 137-138 MHz as its associated downlink space-to-Earth spectrum, which compatibility studies between aeronautical mobile (route) service systems below 137 MHz and non-GSO SD systems have not yet been completed within ITU-R. Therefore, if the result indicates that aeronautical mobile (route) service systems below 137 MHz will be negatively impacted by this allocation, Malaysia may support no change for this agenda item.

6. Amateur, Maritime and Aeronautical Services

6.1 Agenda Item 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)**."*

Background

In ITU Region 1, the 50-54 MHz frequency band is allocated to the broadcasting service on primary basis, with additional allocations to the amateur, fixed, mobile, and/or radiolocation (limited to wind profiler radars) services in some countries. Amateur service is already allocated in the said band in Regions 2 and 3 on primary basis.

WRC-19 agenda item 1.1 addresses a possible new Region 1 allocation to the amateur service in the 50-54 MHz frequency band by full or partial worldwide harmonisation with the existing 4 MHz primary allocations in Regions 2 and 3.

Noting that the 50-54 MHz frequency band is allocated to the amateur service on primary basis in ITU Regions 2 and 3, full or partial worldwide harmonization of the allocation to the amateur service in the 50-54 MHz frequency band would enhance radio amateurs' global efforts to fulfil the purposes of the amateur service, which include self-training, technical investigations and intercommunication for a variety of purposes including communication in support of disaster relief.

Proposed Views and Positions for Agenda Item 1.1

Noting this is Region 1 issue, Malaysia supports that any changes made to the Radio Regulations shall not adversely impact the incumbent services in the 50–54 MHz frequency band and adjacent frequency bands in Region 3.

6.2 Agenda Item 1.8

"To consider possible regulatory actions to support Global Maritime Distress Safety Systems (GMDSS) modernization and to support the introduction of additional satellite systems into the GMDSS, in accordance with Resolution ***359 (Rev.WRC-15)****."*

Background

GMDSS is a safety procedure, equipment and a set of communication protocols, which makes it easier to rescue boats, ships and other aircrafts in distress. Besides determining the position about the ship/boat in distress, GMDSS will also broadcast the maritime safety information.

Most of procedural requirements for GMDSS are a matter for the International Maritime Organisation (IMO). In Malaysia, Jabatan Laut Malaysia is the members of IMO and responsible for the maritime safety, while MCMC plays role in addressing spectrum matters for maritime usage including GMDSS.

WRC-19 agenda item 1.8 encompasses two separate issues as follows:

Issue A: GMDSS Modernization
International Maritime Organization (IMO) has adopted a modernization plan for the GMDSS containing a high-level review and a detailed review. The detailed review and the plan show that the use of some existing services is declining. Some new technologies are considered to be possibly introduced in the modernized GMDSS.

One of the technology is the NAVDAT system. NAVDAT is counted as an enhancement of existing NAVTEX and could be considered as a potential entity in the next generation of GMDSS.

WRC-12 addressed the allocation of the 495-505 kHz frequency band for the maritime mobile service. This band is regarded as the most suitable for MF NAVDAT application. However, regulatory provisions are still needed for both MF and HF NAVDAT applications.

Issue B: Additional Satellite in to the GMDSS
Currently, only one satellite system (Inmarsat) has been incorporated by the IMO in the GMDSS "system of systems". As of May 2018, IMO has recognized a non-GSO mobile-satellite service system (Iridium), operating in the 1 616-1 626.5 MHz frequency band as an additional provider of GMDSS communications which expected to come into operation in early 2020.

Proposed Views and Positions for Agenda Item 1.8

Issue A: GMDSS Modernization
Malaysia supports GMDSS modernization whereby the frequencies to be used for MF and HF NAVDAT systems should be included in the Radio Regulations.

Issue B: Additional Satellite in to the GMDSS
Malaysia supports the introduction of additional GMDSS satellite provider, which could provide enhancement of maritime safety in terms of availability and robustness.

6.3 Agenda Item 1.9.1

*"To consider, based on the results of ITU R studies: regulatory actions within the frequency band 156-162.05 MHz for autonomous maritime radio devices (AMRD) to protect the GMDSS and automatic identifications system (AIS), in accordance with Resolution **362 (WRC-15)**."*

Background

Consumer for the on-board objects which are not linked to a coast station or a vessel, such as systems used by scuba divers, life jackets and even fishing nets shows an interest in having an autonomous device that are reporting their location. Currently, these devices will make use of either GMDSS or AIS. As such, it has raised some concern that such autonomous use might cause issues for GMDSS where devices might continue to operate in an emergency; even when there is no such emergency occurrance. Due to the need to protect the integrity of GMDSS, there is a view that it is inappropriate for these kind of uses to be operated within the 156-162.05 MHz frequency band.

AIS is an automatic tracking system that uses transponders on ships and is used by vessel traffic services (VTS) that operates in the VHF mobile maritime band. It is use to identify, locate and monitor vessels.

An AMRD is a mobile station operating at sea and transmitting independently of a ship stations or a coast station. Two groups of AMRD are identified:

- Group A: AMRD that enhance the safety of navigation;
- Group B: AMRD that do not enhance the safety of navigation.

AMRD Group A that enhance the safety of navigation, are intended to use the frequencies of the current Radio Regulations Appendix **18** (Table of Transmitting Frequencies in the VHF Maritime mobile band which defines the channel numbering for maritime VHF communication based on 25kHz channel spacing).

AMRD Group B that do not enhance the safety of navigation, but do operate in the maritime environment, should not be permitted to use the frequencies, which cause any constraints on the existing mobile services. The signals or information originated by this group of AMRD do not concern the operation of vessels.

WRC-19 agenda item 1.9.1 aims to prevent unregulated operation of AMRD in order to enhance safety of navigation and to ensure the integrity of the GMDSS which is the only system for distress, urgency, safety and routine communication for general shipping.

Only the 156.4875-156.5625 MHz and 156.7875-156.8125 MHz frequency bands are allocated to maritime mobile service exclusively for transmitting distress signals and calling. All other frequency bands are allocated to maritime mobile service on a co-primary basis. In this regard, it is necessary to develop measures to ensure compatibility of suggested AMRD with systems of radio services operating in affected frequency bands. One of the measures could be the limitation of the AMRD transmitter e.i.r.p.

The frequency 160.900 MHz (Channel 2006) is already reserved for experimental use for future applications (see specific note *r)* of the Radio Regulations Appendix **18**). This frequency is intended to be used solely by AIS-technology for AMRD Group B.

AMRD Group B using other technologies may be operated on the frequencies 161.525 MHz (Channel 2078), 161.550 MHz (Channel 2019) and 161.575 MHz (Channel 2079).

Proposed Views and Positions for Agenda Item 1.9.1

AMRD Group A
Malaysia supports to allow AMRD Group A to operate on channels 70 (156.525 MHz), AIS 1 (161.975 MHz) and AIS 2 (162.025 MHz) of the Radio Regulations Appendix **18**.

AMRD Group B
Malaysia supports the use of channel 2006 (160.900 MHz) of the Radio Regulations Appendix **18** for AMRD Group B using AIS technology.

Malaysia may supports the use of channels 2078 (161.525 MHz), 2019 (161.550 MHz) and 2079 (161.550 MHz) of the Radio Regulations Appendix **18** for AMRD Group B using non-AIS technology.

6.4 Agenda Item 1.9.2

*"To consider, based on the results of ITU R studies: modifications of the Radio Regulations, 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 automatic identification system (AIS) operations and not impose any additional constraints on existing services in these and adjacents as stated in recognizing d) and e) of Resolution **360 (Rev.WRC-15)**."*

Background

VDES is a radiocommunication system that operates between ships, shore stations and satellites on Automatic Identification System (AIS), Application Specific Messages (ASM) and VHF Data Exchange (VDE) frequencies in the Maritime Mobile VHF band.

ITU through WRC-15 has allocated frequencies for the terrestrial component of VDES, including ASM satellite uplink, but requested further compatibility and sharing studies between VDE-SAT and other services in the same and in the adjacent frequency bands.

WRC-19 agenda item 1.9.2 considers the results of ITU-R studies on sharing and compatibility between VDES satellite components and services in the same (156.0125-157.4375 MHz and 160.6125-162.0375 MHz) and adjacent (154-156 MHz and 162-164 MHz) frequency bands to determine potential regulatory actions, including maritime mobile-satellite service allocations for VDES application.

Proposed Views and Positions for Agenda Item 1.9.2

Malaysia is of the view that the possible new allocation to the maritime satellite communication should be within the existing frequency bands allocated to the VHF maritime mobile service in accordance with the Radio Regulations Appendix **18**. As such, Malaysia may support new allocations to the maritime mobile-satellite service (Earth-to-space and space-to-Earth) within 156.0125-157.4375 MHz and 160.6125-162.0375 MHz of Appendix **18** to enable a new VHF data exchange system satellite components.

6.5 Agenda Item 1.10

*"To consider spectrum needs and regulatory provisions for the introduction and use of the Global Aeronautical Distress and Safety System (GADSS), in accordance with Resolution **426 (WRC-15)**."*

Background

The International Civil Aviation Organization (ICAO) has developed a concept of operations (ConOps) to support the future development of a GADSS.

The ConOps is the guideline for the development of ICAO performance-based standards, outlining specific technical and operational requirements that an aircraft must meet. Based on these requirements, the aircraft operators will determine which specific system(s) need to be installed on an aircraft.

ICAO intends to use systems operating under existing allocations in accordance with the provisions of the Radio Regulations, including the use of emergency position-indicating radio beacons (termed as emergency locator transmitters in ICAO) operating in the 406-406.1 MHz frequency band.

Overview and main function of GADSS:
- Aircraft Tracking
- Autonomous Distress Tracking
- Post Flight Localization & Recovery

WRC-19 agenda item 1.10 considers spectrum needs and regulatory provisions for the introduction and the use of the GADSS.

Summary and analysis of the results of ITU-R studies:
- no additional spectrum allocations are required for GADSS;
- modification of Radio Regulations Chapter VII to facilitate introduction of GADSS is required including modification of Article **30** General provision and addition of the Radio Regulations Article **34A**;
- the details of the GADSS elements are defined in Annexes to the ICAO Convention; and
- any studies on regulatory provisions required for the implementation of GADSS should take into account the GADSS concept provided by ICAO.

Proposed Views and Positions for Agenda Item 1.10

Malaysia supports recognition of GADSS in the Radio Regulations by:
i. Amendment of existing article on "Distress and Safety Communications"; and
ii. Addition of new article to describe GADSS.

6.6 Agenda Item 9.1 (Issue 9.1.4)

*"Resolution **763 (WRC-15)** on stations on board sub-orbital vehicles."*

Background

Sub-orbital vehicles is a vehicle that goes into space but does not reach the altitude where it can orbit Earth. It goes to the end of the atmosphere, or specifically, 100 km.

Sub-orbital vehicles, including space planes, have been developed to reach altitudes much higher than conventional aircraft. Some of them may be capable of reaching space. Sub-orbital vehicles may perform various missions (e.g. deploying a space vehicle, conducting scientific research, or providing transportation) and then return to the Earth's surface without completing a full orbit around the Earth.

Sub-orbital vehicles must safely share airspace used by conventional aircraft during their transition to and from high altitude, including those from space. There is a need to track and to be able to communicate and send commands to the sub-orbital vehicles for the entire duration of the flight. It is expected to use existing allocations, in particular, for systems and applications related to aviation safety and standardised by ICAO for harmonisation and interoperability.

ITU-R is studying the impact of the future deployments of sub-orbital vehicles on radiocommunication regulations and some aspects would require further consideration. Thus, there is no requirement for any change to the Radio Regulations at WRC-19.

ICAO has begun efforts to change some existing aviation equipment standards to support possible use of that equipment by craft flying at altitudes and speeds greater than those reached by conventional aircraft.

Proposed Views and Positions for Agenda Item 9.1 (Issue 9.1.4)

Malaysia supports no change to the Radio Regulations as concluded in the CPM Report.

7. General Issues

7.1 Agenda Item 2

*"To examine the revised ITU-R Recommendations incorporated by reference in the Radio Regulations communicated by the Radiocommunication Assembly, in accordance with Resolution **28 (Rev.WRC 15)**, and to decide whether or not to update the corresponding references in the Radio Regulations, in accordance with the principles contained in Annex 1 to Resolution **27 (Rev.WRC 12)**."*

Background

Agenda item 2 is a standing agenda item with the objective to ensure all ITU-R Recommendation incorporated by Reference in Volume 4 of the Radio Regulations remain updated.

Resolution **27 (Rev.WRC-12)** outlines the principles of incorporated by reference and Resolution **28 (Rev.WRC-15)** informs on the procedure for updating the corresponding reference. Incorporated by reference is a concept where the content of a particular ITU-R Recommendation be made mandatory by a specific provisions in the Radio Regulation to the extent as specified by the provision.

Proposed Views and Positions for Agenda Item 2

Malaysia supports examination and review of ITU-R Recommendations incorporated by reference and the corresponding references in the Radio Regulations in accordance with Resolution **28 (Rev.WRC-15)**.

Malaysia also supports the merging of Resolutions **27 (Rev.WRC-12)** and **28 (Rev.WRC-15)** in order to have a single Resolution that refers to incorporation by reference in the Radio Regulations.

7.2 Agenda Item 4

*"In accordance with Resolution **95 (Rev.WRC-07)**, to review the Resolutions and Recommendations of previous conferences with a view to their possible revision, replacement or abrogation."*

Background

This is a standing agenda item in every WRC agenda with aim to ensure all Resolutions and Recommendations of previous WRC contained in Volume 3 of the Radio Regulations remain updated. Resolution **95 (Rev.WRC-07)** invites administrations to review the Resolutions and Recommendations of previous conferences with a view of possible revision, replacement or abrogation.

The CPM Report contains list of suggestions on possible changes for WARC/WRC Resolutions and Recommendations. This list are developed during the CPM19-2 meeting based on report submitted by ITU-R Director of Radiocommunication Bureau. It is to be noted that the CPM was refrained from commenting on course of action to Resolutions and Recommendations that are explicitly on the agenda of WRC-19 other than agenda item 4.

Proposed Views and Positions for Agenda Item 4

Malaysia supports modification or suppression, as appropriate, the Resolutions and Recommendations contained in Volume 3 of the Radio Regulations to ensure Resolutions and Recommendations remain current and relevant.

Malaysia also supports modification to Resolution **95 (Rev.WRC-07)** to facilitate consideration when developing the positions on this agenda item for consideration of the conference.

7.3 Agenda Item 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, taking into account Resolution ***26 (Rev.WRC-07)****."*

Background

Agenda item 8 is a standing agenda item of WRC that requests administrations to review footnotes to the Table of Frequency Allocations and to propose the deletion of their country footnotes or of their country names from footnotes, if no longer required.

Footnotes are an integral part of the Table of Frequency Allocations in the Radio Regulations and form part of an international treaty text. Footnotes are used in Article **5** Volume 1 of the Radio Regulations to provide information related to frequency allocation of the specific band.

Proposed Views and Positions for Agenda Item 8

Deletion of country's footnote or country's name from footnotes
Malaysia supports for administrations to remove their country names associated with specific footnotes of the Table of Frequency Allocations in Article **5** of the Radio Regulations when no longer required.

Malaysia has reviewed the latest edition of the Radio Regulations and does not intend to modify any footnotes where Malaysia's name has been included in footnotes at previous conferences.

7.4 Agenda Item 9.1 (Issue 9.1.6)

*"Issue 1) in the Annex to Resolution **958 (WRC-15)** – Urgent studies required in preparation for the 2019 World Radiocommunication Conference*

1) 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 harmonized frequency ranges, which would minimize 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 harmonization of WPT technologies for electric vehicles."

Background

Resolution **958 (WRC-15)**, requested the ITU-R to study the impact of WPT for electric vehicles (WPT-EV) on radiocommunications and suitable harmonised frequency ranges.

WPT technologies are being developed to support easy and fast transfer of power wirelessly. WPT-EV is becoming an important charging technology, which aims to reduce the size of vehicle batteries and consequently improve their practical driving distance.

Due to the necessary power and capacities of the batteries, low-power WPT will not be relevant for WPT-EV charging purposes. The power level required to charge the battery of an electric vehicle depends on the vehicle's use case. Faster charging requirement for passenger vehicles and heavy duty vehicles (bus, trucks etc.) require higher power levels.

The results of the studies conducted within the ITU-R identified two frequency ranges for high-power WPT-EV and one frequency range for medium-power WPT-EV, as shown in Table 6/9.1.6-2.

Based on ITU-R studies, further work is necessary within the ITU-R and no change to the Radio Regulations is required at WRC-19.

Proposed Views and Positions for Agenda Item 9.1 (Issue 9.1.6)

Malaysia supports no change to the Radio Regulations as concluded in the CPM Report.

7.5 Agenda Item 9.1 (Issue 9.1.7)

*"Issue 2) in the Annex to Resolution **958 (WRC-15)** – Urgent studies required in preparation for the 2019 World Radiocommunication Conference*

2) Studies to examine:

*a) whether there is a need for possible additional measures in order to limit uplink transmissions of terminals to those authorized terminals in accordance with No. **18.1**;*

*b) the possible methods that will assist administrations in managing the unauthorized 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)**."*

Background

Resolution **958 (WRC-15)**, requested the ITU-R to examine whether there is a need for additional measures to limit uplink transmissions of earth stations to authorised ones and possible methods to assist administrations in managing unauthorised operation of earth stations.

This agenda addresses issues faced by some countries who have difficulties in managing deployment of unauthorised earth stations communicating with satellite notified by other countries.

Proposed Views and Positions for Agenda Item 9.1 (Issue 9.1.7)

Issue 2a)
Malaysia is of the view that existing international regulatory measures in the Radio Regulations are sufficient in addressing the issue of unauthorised earth stations in fixed-satellite service.

Issue 2b)
Malaysia is of the view that guidance and support for administrations in managing unauthorised operation of earth stations can be provided through publication of necessary guidelines on satellite monitoring capabilities, revision and development of ITU-R Reports and Handbook.

7.6 Agenda Item 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"*

Background

Resolution **810 (WRC-15)** includes five (5) provisional agendas for WRC-23. In the CPM Report for WRC-19, links to suggestion by administrations on additional agenda for WRC-23 are included for information. At WRC-19, a list of agenda for WRC-23, taking into account outcome of WRC-19, will be finalised for recommendation to the Council.

Proposed Views and Positions for Agenda Item 10

Malaysia is of the view that proposals for agenda item 10 could be supported subject to compatibility with existing services.

8. Responding to this Consultation

8.1 Submission of responses

MCMC invites submissions from industry experts, interested parties and members of the public on the proposed Malaysia's position on WRC-19 agenda items, on or before **12 noon, 9 August 2019 (Friday)**.

Summary of the proposed Malaysia's position on WRC-19 agenda items is provided in **Annex II**.

Please ensure the following:

- Responses must relate to the WRC-19 agenda items in the template provided in **Annex III**;
- Indicate the specific WRC-19 agenda items to which a comment relates to;
- Provide clear rationale for suggestions and opinions; and
- Provide evidence to support the views given, where applicable.

Submissions of the responses and comments should be made in electronic form via email and addressed to:

The Chairman
Malaysian Communications and Multimedia Commission
MCMC Tower 1
Jalan Impact, Cyber 6
63000 Cyberjaya
Selangor Darul Ehsan
Malaysia
(Attention: Spectrum Planning Division)

Email: npwg-19.sec@mcmc.gov.my

All submissions should be accompanied by a cover letter signed by an authorised person from the organisation providing the response. Joint responses by industry players are most welcome.

All responses and comments will be published and made available to the public in MCMC's website.

Confidential treatment may be requested on any part of the submission that is believed to be proprietary, confidential or commercially sensitive with supporting justification for MCMC's consideration. In such cases, the submission must be provided in a non-confidential form suitable for publication, with any confidential information redacted as necessary and placed instead in a separate annex and clearly marked as "**CONFIDENTIAL**".

If MCMC grants confidential treatment, it will consider, but will not publicly disclose the information. However, if MCMC rejects the request, the information will be returned and not be considered as part of the submission.

Any submission that requests confidential treatment for all, or a substantial part of the submission, will not be accepted by the MCMC.

A. Annex I

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);**

1.4 to consider the results of studies in accordance with Resolution **557 (WRC-15)**, and review, and revise if necessary, the limitations mentioned in Annex 7 to Appendix **30**

(Rev.WRC-15), while ensuring the protection of, and without imposing additional constraints on, 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;

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, in accordance with Resolution **158 (WRC-15)**;

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), in accordance with Resolution **159 (WRC-15)**;

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, in accordance with Resolution **659 (WRC-15)**;

1.8 to consider possible regulatory actions to support Global Maritime Distress Safety Systems (GMDSS) modernization and to support the introduction of additional satellite systems into the GMDSS, in accordance with Resolution **359** (**Rev.WRC-15**);

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), in accordance with Resolution **362 (WRC-15)**;

1.9.2 modifications of the Radio Regulations, 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 as stated in *recognizing d)* and *e)* of Resolution **360** (**Rev.WRC-15**);

1.10 to consider spectrum needs and regulatory provisions for the introduction and use of the Global Aeronautical Distress and Safety System (GADSS), in accordance with Resolution **426 (WRC-15)**;

1.11 to take necessary actions, as appropriate, to facilitate global or regional harmonized frequency bands to support railway radiocommunication systems between train and trackside within existing mobile service allocations, in accordance with Resolution **236 (WRC-15)**;

1.12 to consider possible global or regional harmonized frequency bands, to the maximum extent possible, for the implementation of evolving Intelligent Transport Systems (ITS) under existing mobile-service allocations, in accordance with Resolution **237 (WRC-15)**;

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, in accordance with Resolution **238 (WRC-15)**;

1.14 to consider, on the basis of ITU-R studies in accordance with Resolution **160 (WRC-15)**, appropriate regulatory actions for high-altitude platform stations (HAPS), within existing fixed-service allocations;

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, in accordance with Resolution **767 (WRC-15)**;

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, in accordance with Resolution **239 (WRC-15)**;

2 to examine the revised ITU-R Recommendations incorporated by reference in the Radio Regulations communicated by the Radiocommunication Assembly, in accordance with Resolution **28 (Rev.WRC-15)**, and to decide whether or not to update the corresponding references in the Radio Regulations, in accordance with the principles contained in Annex 1 to Resolution **27 (Rev.WRC-12)**;

3 to consider such consequential changes and amendments to the Radio Regulations as may be necessitated by the decisions of the conference;

4 in accordance with Resolution **95 (Rev.WRC-07)**, to review the Resolutions and Recommendations of previous conferences with a view to their possible revision, replacement or abrogation;

5 to review, and take appropriate action on, the Report from the Radiocommunication Assembly submitted in accordance with Nos. 135 and 136 of the Convention;

6 to identify those items requiring urgent action by the radiocommunication study groups in preparation for the next world radiocommunication conference;

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)**, in order to facilitate rational, efficient and economical use of radio frequencies and any associated orbits, including the geostationary-satellite orbit;

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, taking into account Resolution **26 (Rev.WRC-07)**;

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 the Radiocommunication Sector since WRC-15;

9.2 on any difficulties or inconsistencies encountered in the application of the Radio Regulations[*]; and

9.3 on action in response to Resolution **80 (Rev.WRC-07)**;

[*] This agenda item is strictly limited to the Report of the Director on any difficulties or inconsistencies encountered in the application of the Radio Regulations and the comments from administrations.

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,

resolves further

to activate the Conference Preparatory Meeting,

invites the Council

to finalize the agenda and arrange for the convening of WRC-19, and to initiate as soon as possible the necessary consultations with Member States,

instructs the Director of the Radiocommunication Bureau

to make the necessary arrangements to convene meetings of the Conference Preparatory Meeting and to prepare a report to WRC-19,

instructs the Secretary-General

to communicate this Resolution to international and regional organizations concerned.

B. Annex II

Summary of Propose Malaysia's Positions for WRC-19 Agenda Items

No.	Agenda Item	Proposed Malaysia (MLA) Views and Positions
Working Party 1: Land Mobile and Fixed Services		
1.	1.11	Malaysia supports harmonisation of global or regional frequency for RSTT through the development of relevant ITU-R Recommendations and/or Reports and without specifying frequency ranges in the Radio Regulations.
2.	1.12	Malaysia supports harmonisation of global or regional frequency for ITS. Malaysia is of the view that harmonisation can be achieved by using ITU-R Recommendation as reference and without specifying frequency ranges in the Radio Regulations.
3.	1.14	Malaysia is of the view that existing provisions in the Radio Regulations are sufficient for HAPS applications in this country.
4.	1.15	Malaysia supports identification for land mobile and fixed services applications in the frequency range 275-450 GHz while ensuring protection to existing services.
Working Party 2: Broadband Applications in the Mobile Service		
5.	1.13	Malaysia supports identification of the terrestrial component of IMT in the following frequency bands: i. 24.25 to 27.5 GHz; ii. 37 to 40.5 GHz; iii. 40.5 to 42.5 GHz; iv. 42.5 to 43.5 GHz; v. 47.2 to 50.2 GHz; vi. 50.4 to 52.6 GHz; and vii. 66 to 71 GHz. Malaysia will not oppose identification of IMT in the following frequency bands: i. 45.5 to 47 GHz; ii. 47 to 47.2 GHz; iii. 71 to 76 GHz; and iv. 81 to 86 GHz.

No.	Agenda Item	Proposed Malaysia (MLA) Views and Positions
		Malaysia supports no change to the Radio Regulations in the 31.8 to 33.4 GHz frequency band.
6.	1.16	For the 5 150-5 250 MHz frequency band, Malaysia supports revision to Resolution **229 (Rev.WRC-12)** to enable outdoor WAS/RLAN operations with associated conditions to protect the incumbent services. For the 5 250-5 350 MHz, 5 350-5 470 MHz and 5 850-5 925 MHz frequency bands, Malaysia supports no change to the Radio Regulations. For the 5 725-5 850 MHz frequency band, Malaysia supports regional primary mobile service allocation in the band to accommodate WAS/RLAN use.
7.	9.1 (Issue 9.1.1)	Malaysia is of the view that the scope of WRC-19 agenda item 9.1, issue 9.1.1 is limited to the study of possible technical and operational measures to ensure coexistence and compatibility between the terrestrial component of IMT and the satellite component of IMT in the 1 980-2 010 MHz and 2 170-2 200 MHz frequency bands deployed in different countries, in accordance with Resolution **212 (Rev.WRC-15)**. Regulatory measures or any changes to the Radio Regulations are outside the scope of this issue. Malaysia is also of the view that bilateral/multilateral discussions between different administrations provide greater operational flexibility while ensuring coexistence between the two components of IMT deployed in different countries.
8.	9.1 (Issue 9.1.5)	Malaysia supports long-term solution that requires less regulation should Recommendations ITU-R M.1638 or M.1849 be updated again in the future, while also ensuring protection of the radiolocation service, and creating no additional constraints to the mobile service.
9.	9.1 (Issue 9.1.8)	Malaysia is of the view that any regulatory action is not required in the Radio Regulations with respect to specific spectrum for the use of narrowband and broadband MTC in the Radio Regulations, as concluded in the CPM Report. There may be other ways to address the harmonized use of spectrum to support the implementation of narrowband and broadband MTC. The study of technical and operational aspects including the potential harmonized spectrum usage to support the implementation of narrowband and broadband MTC infrastructures could be further accomplished through the course of the work in ITU-R Study Groups including the development of ITU-R Recommendations, Reports and/or Handbooks, as appropriate.

No.	Agenda Item	Proposed Malaysia (MLA) Views and Positions
Working Party 3: Satellite Services		
10.	1.4	Malaysia is in favour of having the flexibility provided by the deletion of some limitations of Annex 7 to Radio Regulations Appendix **30** taking into account that protection and priority of frequency assignments in Region 3 List will be ensured by application of relevant new ITU-R Resolutions proposed under this agenda item.
11.	1.5	Malaysia is of the view that deployment of ESIM in 17.7-19.7 GHz (space-to-Earth) and 27.5-29.5 GHz (Earth-to-space) frequency bands will enable expansion of fixed-satellite service type of applications in providing broadband services. In view of the above, Malaysia is considering the following: Maritime ESIM : May be considered with minimum distance from the low-water mark as officially recognised by the coastal State. Aircraft ESIM : May be considered with maximum pfd limit and minimum altitude distance from ground. Land ESIM : May not be considered. The 18 GHz band is extensively used by fixed and fixed-satellite services; while the 28 GHz band has been identified for 5G deployment in Malaysia. In addition, Malaysia is of the view that, operation of ESIM, which complies with the mandated operational limits as stated in the new ITU-R Resolution should not release the relevant administrations and operators from their obligation to ensure protection of the existing services operating in 17.7-19.7 GHz and 27.5-29.5 GHz frequency bands.
12.	1.6	In principle, Malaysia supports development of regulatory framework for non-GSO fixed-satellite service satellite systems that may operate in the 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) frequency bands while ensuring protection of existing services in the same and adjacent frequency bands. Issue 1: <u>Development of regulatory framework for non-GSO fixed-satellite service satellite systems:</u> It is noted that as to date, discussion on development of equivalent power flux-density limits to protect GSO fixed-satellite service satellite networks from non-GSO fixed-satellite service systems is still on-going. Malaysia is of the view that development of regulatory framework for non-GSO fixed-satellite service satellite systems that may operate in 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-

No.	Agenda Item	Proposed Malaysia (MLA) Views and Positions	
			space) frequency bands should ensure protection of existing services to which these bands are allocated. Issue 2: <u>Modification of Resolution **750 (Rev.WRC-15)**</u>: Malaysia may consider revision of limits only for non-GSO systems as modifications to Resolution 750 (WRC-15) for GSO networks are not within the scope of this agenda item.
13.	7	A	Malaysia supports requirement for BIU of frequency assignments of non-GSO systems and introduction of milestone-based approach for specific services and frequency bands that recognises that constellations of non-GSO systems may generally take time to be developed and to complete their deployment. In addition, Malaysia also supports a new ITU-R Resolution for implementation of milestone-based approach for deployment of non-GSO systems in certain frequency band and services.
		B	Malaysia supports on use of coordination arc with a value of 8 degrees as coordination criteria to determine if coordination is required between fixed-satellite service and mobile-satellite service systems and between mobile-satellite service systems in the said Ka-band in all three (3) Regions, while keeping the possibility for administrations to request *ΔT/T* criteria.
		C1	Malaysia supports to address the regulatory inconsistency identified by aligning the text of paragraph 8.13 of Article **8** of Radio Regulations Appendix **30B** with that of No. **11.43A** of Radio Regulations Article **11**.
		C2	Malaysia supports to add another footnote to paragraph 6.1 of Radio Regulations Appendix **30B** to address the issue.
		C3	Malaysia supports to add new provision in Article **6** of Appendix **30B** to clearly stipulate that § 6.13 – 6.15 of Appendix **30B** do not apply in the context of requirements associated with § 6.6 of Radio Regulations Appendix **30B**.
		C4	Malaysia supports modification of § 4.1.12*bis* and 4.2.16*bis* of Radio Regulations Appendices **30** and **30A** to allow administrations to request the Radiocommunication Bureau to have notices submitted under any of these two provisions also examined with respect to § 5.1.1 of Radio Regulations Appendix **30** and § 5.1.2 of Radio Regulations Appendix **30A** for Notification.

No.	Agenda Item	Proposed Malaysia (MLA) Views and Positions	
13.	7	C5	Malaysia supports modification of Radio Regulations No. **11.46** requiring the Radiocommunication Bureau to remind the notifying administration of the 6-month deadline.
		C6	Malaysia supports modification of § 6.17 of Radio Regulations Appendix **30B** to allow one submission to be treated in respect of both provisions (§ 6.17 and § 8.1 of Radio Regulations Appendix **30B**) and modification of Radio Regulations Appendix **4** to enable this.
		C7	Malaysia supports to add new provision § 6.15*bis* to Article **6** and a new provision § 8.16*bis* to Article **8** of Radio Regulations Appendix **30B** in order to recognise the possibility of obtaining agreement from affected administrations for a specified period. Further, in order to harmonise Radio Regulations Appendices **30**, **30A** and **30B**, modification to § 5.2.6 to Article **5** of Appendix **30A** would be necessary.
		D	Malaysia supports to add the requirements to have: i. a pre-compiled list of potentially affected satellite networks and/or systems, published for information only, included in the CR/C Special Section for coordination under Radio Regulations Nos. **9.12**, **9.12A** and **9.13**, by stipulating it in Radio Regulations No. **9.36.1**; and ii. the definitive list of affected satellite networks or systems to be considered when effecting coordination under Radio Regulations Nos. **9.12**, **9.12A** and **9.13** to be included in the CR/D Special Section by stipulating it in Radio Regulations No. **9.53A**.
		E	Malaysia supports establishment of special measures to be applied once with respect to the submission received from an administration having no frequency assignments in the Radio Regulations Appendix **30B** List the details of which are to be contained in a WRC Resolution to facilitate the tasks of those administrations to provide an economically viable satellite service to its national territory as initially considered when the allotment Plan was established in 1988.
		F	Malaysia supports updating the coordination triggers to take into account technological advances that facilitates coordination of submission of new networks while assuring adequate protection of existing allotment and operational additional systems recorded in the List.

No.	Agenda Item	Proposed Malaysia (MLA) Views and Positions	
13.	7	G	Malaysia supports the reference situation of the interfered-with network should be updated in consultation with, and only with the agreement of the affected administration, with modification of § 4.1.18*bis* of Radio Regulations Appendices **30** and **30A**.
		H	Malaysia supports modifications to Radio Regulations Appendix **4** as follows: i. extension of the requirement in Radio Regulations Appendix **4** for APIs and notifications for frequency assignments to non-GSO systems in frequency bands not subject to coordination under Section II of Radio Regulations Article **9**. Those requirements would apply only for constellation-type non-GSO systems. ii. addition of new mandatory and optional items for APIs and notifications for frequency assignments to non-GSO systems in frequency bands not subject to coordination under Section II of Radio Regulations Article **9**. iii. additional new data items in Radio Regulations Appendix **4** for the provision of information relating to the multiple orbital planes and their relationship with respect to the non-GSO system. iv. additional new data items in Radio Regulations Appendix **4** or modify existing ones to implement changes associated with the revision of Recommendation ITU-R S.1503.
		I	Malaysia supports modification to Radio Regulations Articles **9** and **11**, including addition of a new WRC Resolution.
		J	Malaysia supports to allow List assignments to exceed the pfd limit given only within the national territory of the notifying administration under the condition that the assignment does not overlap with the Regions 1 and 3 guardbands as defined in § 3.9 of Annex 5 to Radio Regulations Appendix **30** and also under the condition that, on the border areas and other territory of another country, this pfd limit is not exceeded.
		K	Regulations Appendices **30** and **30A** and § 6.21 *c)* of Radio Regulations Appendix **30B** such that should any remaining affected networks whose assignments have been entered in the List or Plan before the submission under § 4.1.12 and § 4.2.16 of Radio Regulations Appendices **30** and **30A** or § 6.17 of Radio Regulations Appendix **30B**, the Radiocommunication Bureau shall further examine if the remaining corresponding assignments in the List or Plan are still considered as being affected.

No.	Agenda Item	Proposed Malaysia (MLA) Views and Positions
14.	9.1 (Issue 9.1.2)	Malaysia supports the protection of IMT in Regions 1 and 3.
15.	9.1 (Issue 9.1.3)	Malaysia supports no change to the values of the existing limits presented in Radio Regulations Article **22** (epfd) and Article **21** (pfd) for the 3 700-4 200 MHz, 4 500-4 800 MHz, 5 925-6 425 MHz, and 6 725-7 025 MHz frequency bands.
16.	9.1 (Issue 9.1.9)	Malaysia is currently studying the possibility of allocation to International Mobile Telecommunications (IMT) in the 51.4-52.4 GHz frequency band.
Working Party 4: Science Services		
17.	1.2	Malaysia supports the proposals to impose the relevant e.i.r.p. power limits to mobile-satellite services earth stations in the full frequency band of 399.9-400.05 MHz and to impose the relevant e.i.r.p. power limit only to meteorological-satellite and Earth exploration-satellite services earth stations in the 401-403 MHz frequency band.
18.	1.3	Malaysia supports the proposal to upgrade the allocation for meteorological-satellite service (space-to-Earth) from secondary to primary status and addition of primary allocation for Earth exploration-satellite service (space-to-Earth) in the 460-470 MHz frequency band. In addition, Malaysia also supports the introduction of a new ITU-R Resolution to address all regulatory actions and procedures.
19.	1.7	Malaysia supports the proposal for an allocation of 1 MHz to the space operation service in the Earth-to-space direction, limited to non-GSO SD satellite systems in 404-405 MHz. However, this method also proposes the use of the band 137-138 MHz as its associated downlink space-to-Earth spectrum, which compatibility studies between aeronautical mobile (route) service systems below 137 MHz and non-GSO SD systems have not yet been completed within ITU-R. Therefore, if the result indicates that aeronautical mobile (route) service systems below 137 MHz will be negatively impacted by this allocation, Malaysia may support no change for this agenda item.

No.	Agenda Item	Proposed Malaysia (MLA) Views and Positions
Working Party 5: Maritime, Aeronautical and Amateur Services		
20.	1.1	Noting this is Region 1 issue, Malaysia supports that any changes made to the Radio Regulations shall not adversely impact the incumbent services in the 50–54 MHz frequency band and adjacent frequency bands in Region 3.
21.	1.8	Issue A: GMDSS Modernization Malaysia supports GMDSS modernization whereby the frequencies to be used for MF and HF NAVDAT systems should be included in the Radio Regulations. Issue B: Additional Satellite in to the GMDSS Malaysia supports the introduction of additional GMDSS satellite provider, which could provide enhancement of maritime safety in terms of availability and robustness.
22.	1.9.1	AMRD Group A Malaysia supports to allow AMRD Group A to operate on channels 70 (156.525 MHz), AIS 1 (161.975 MHz) and AIS 2 (162.025 MHz) of the Radio Regulations Appendix **18**. AMRD Group B Malaysia supports the use of channel 2006 (160.900 MHz) of the Radio Regulations Appendix **18** for AMRD Group B using AIS technology. Malaysia may supports the use of channels 2078 (161.525 MHz), 2019 (161.550 MHz) and 2079 (161.550 MHz) of the Radio Regulations Appendix **18** for AMRD Group B using non-AIS technology.
23.	1.9.2	Malaysia is of the view that the possible new allocation to the maritime satellite communication should be within the existing frequency bands allocated to the VHF maritime mobile service in accordance with the Radio Regulations Appendix **18**. As such, Malaysia may support new allocations to the maritime mobile-satellite service (Earth-to-space and space-to-Earth) within 156.0125-157.4375 MHz and 160.6125-162.0375 MHz of Appendix **18** to enable a new VHF data exchange system satellite components.
24.	1.10	Malaysia supports recognition of GADSS in the Radio Regulations by: i. Amendment of existing article on "Distress and Safety Communications"; and ii. Addition of new article to describe GADSS.

No.	Agenda Item	Proposed Malaysia (MLA) Views and Positions
25.	9.1 (Issue 9.1.4)	Malaysia supports no change to the Radio Regulations as concluded in the CPM Report.
Working Party 6: General Issues		
26.	2	Malaysia supports examination and review of ITU-R Recommendations incorporated by reference and the corresponding references in the Radio Regulations in accordance with Resolution **28 (Rev.WRC-15)**. Malaysia also supports the merging of Resolutions **27 (Rev.WRC-12)** and **28 (Rev.WRC-15)** in order to have a single Resolution that refers to incorporation by reference in the Radio Regulations.
27.	4	Malaysia supports modification or suppression, as appropriate, the Resolutions and Recommendations contained in Volume 3 of the Radio Regulations to ensure Resolutions and Recommendations remain current and relevant. Malaysia also supports modification to Resolution **95 (Rev.WRC-07)** to facilitate consideration when developing the positions on this agenda item for consideration of the conference.
28.	8	Deletion of country's footnote or country's name from footnotes Malaysia supports for administrations to remove their country names associated with specific footnotes of the Table of Frequency Allocations in Article **5** of the Radio Regulations when no longer required. Malaysia has reviewed the latest edition of the Radio Regulations and does not intend to modify any footnotes where Malaysia's name has been included in footnotes at previous conferences.
29.	9.1 (Issue 9.1.6)	Malaysia supports no change to the Radio Regulations as concluded in the CPM Report.

No.	Agenda Item	Proposed Malaysia (MLA) Views and Positions
30.	9.1 (Issue 9.1.7)	Issue 2a) Malaysia is of the view that existing international regulatory measures in the Radio Regulations are sufficient in addressing the issue of unauthorised earth stations in fixed-satellite service. Issue 2b) Malaysia is of the view that guidance and support for administrations in managing unauthorised operation of earth stations can be provided through publication of necessary guidelines on satellite monitoring capabilities, revision and development of ITU-R Reports and Handbook.
31.	10	Malaysia is of the view that proposals for agenda item 10 could be supported subject to compatibility with existing services.

C. Annex III

Template for Response

The MCMC invites comments on proposed Malaysia's Positions for WRC-19 agenda items raised in this PC document.

Please specify your preferred method(s) based on the Report of the CPM19-2. The electronic copy of the Report is available at:

https://www.itu.int/md/R15-CPM19.02-R-0001/en

No.	Agenda Item	Proposed Malaysia (MLA) Views and Positions
Working Party 1: Land Mobile and Fixed Services		
1.	1.11	
2.	1.12	
3.	1.14	
4.	1.15	
Working Party 2: Broadband Applications in the Mobile Service		
5.	1.13	
6.	1.16	
7.	9.1 (Issue 9.1.1)	
8.	9.1 (Issue 9.1.5)	

No.	Agenda Item	Proposed Malaysia (MLA) Views and Positions	
9.	9.1 (Issue 9.1.8)		
Working Party 3: Satellite Services			
10.	1.4		
11.	1.5		
12.	1.6		
13.	7	A	
		B	
		C1	
		C2	
		C3	
		C4	
		C5	
		C6	
		C7	
		D	
		E	

No.	Agenda Item	Proposed Malaysia (MLA) Views and Positions	
13.	7	F	
		G	
		H	
		I	
		J	
		K	
14.	9.1 (Issue 9.1.2)		
15.	9.1 (Issue 9.1.3)		
16.	9.1 (Issue 9.1.9)		
Working Party 4: Science Services			
17.	1.2		
18.	1.3		
19.	1.7		
Working Party 5: Maritime, Aeronautical and Amateur Services			
20.	1.1		

No.	Agenda Item	Proposed Malaysia (MLA) Views and Positions
21.	1.8	
22.	1.9.1	
23.	1.9.2	
24.	1.10	
25.	9.1 (Issue 9.1.4)	
Working Party 6: General Issues		
26.	2	
27.	4	
28.	8	
29.	9.1 (Issue 9.1.6)	
30.	9.1 (Issue 9.1.7)	
31.	10	

D. Annex IV

Glossary of Terms

Abbreviations	Radio services
AIS	automatic identifications system
AMS	aeronautical mobile service
AMRD	autonomous maritime radio devices
AM(R)S	aeronautical mobile (route) service
AM(OR)S	aeronautical mobile (off-route) service
AMSS	aeronautical mobile-satellite service
AMS(R)S	aeronautical mobile-satellite (route) service
API	advance publication information
ARNS	aeronautical radionavigation service
ARNSS	aeronautical radionavigation-satellite service
ARS	amateur service
ARSS	amateur-satellite service
BIU	bringing into use
BS	broadcasting service
BSS	broadcasting-satellite service
CPM	conference preparatory meetingfev
DCS	data collection system
EESS	Earth exploration-satellite service
EIRP	effective isotropic radiated powecpmr
eMBB	enhanced mobile broadband
epfd	equivalent power flux density
ESIM	earth stations in motion
FS	fixed service
FSS	fixed-satellite service
GADSS	global aeronautical distress and safety system
GMDSS	global maritime distress and safety system
GSO	geostationary satellite orbit
HAPS	high altitude platform station
ICAO	International Civil Aviation Organization
IMO	International Maritime Organisation
IMT	International mobile telecommunications
ISS	inter-satellite service
ITS	intelligent transport system
ITU-R	international telecommunication union radiocommunication sector
LMS	land mobile service
LMSS	land mobile-satellite service
MetAids	meteorological aids service

MetSat	meteorological-satellite service
MMS	maritime mobile service
MMSS	maritime mobile-satellite service
MMTC	massive machine-type communication
MRNS	maritime radionavigation service
MRNSS	maritime radionavigation-satellite service
MS	mobile service
MSS	mobile-satellite service
NAVDAT	navigational data
NAVTEX	navigational text
NPWG-19	national preparatory working group for WRC-19
PFD	power flux density
RAS	radio astronomy service
RDS	radiodetermination service
RDSS	radiodetermination-satellite service
RLAN	radio local area network
RLS	radiolocation service
RLSS	radiolocation-satellite service
RNS	radionavigation service
RNSS	radionavigation-satellite service
RR	radio regulations
RSTT	railway radiocommunication system between train and trackside
SOS	space operation service
SRS	space research service
uRLLC	ultra reliable and low latency communication
VDES	VHF data exchange system
WAS	wireless access system
WPT	wireless power transmission
WRC	world radiocommunication conference


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