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| APTlogogreen3 | ASIA-PACIFIC TELECOMMUNITY | **Document:** |
| **The 3rd Meeting of the APT Conference Preparatory Group for WRC-19 (APG19-3)** | **APG19-3/OUT-19** |
| 12 – 16 March 2018, Perth, Australia | **16 March 2018** |

Working Party 4

**preliminary views on WRC-19 agenda item 1.3**

**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).*

1. **Background**

Data Collection Systems (DCS) operating on geostationary and non-geostationary orbits are currently allocated to the meteorological‑satellite service (MetSat) and the Earth exploration-satellite service (EESS) (Earth‑to-space) systems in the frequency band 401-403 MHz (uplink) and 460-470 MHz (downlink). DCS are essential for monitoring and predicting climate change, monitoring ocean, and water resources, weather forecasting and assisting in protecting biodiversity, as well as improving maritime security. DCS have been operating globally under a secondary allocation and on a primary basis in some countries under RR No. **5.290**, but this use is constrained by coordination under No. **9.21**. This has led to differing limitations and protection criteria and has posed a barrier to implementation of essential DCS components on a global basis.

Resolution **766 (WRC-15)** considers the possible upgrading of the secondary allocation to the MetSat (space-to-Earth) to primary status and a primary allocation to the EESS (space-to-Earth) in the frequency band 460‑470 MHz. The frequency band 460–470 MHz is currently allocated to the MetSat service (space-to-Earth) on a secondary basis. However, it is to be noted that the MetSat service is primary in a few countries according to RR No. **5.290**. In addition, according to RR No. **5.289**, EESS applications, other than the MetSat service, may also be used in the bands 460‑470 MHz and 1690-1710 MHz for *space-to-earth* transmissions subject to not causing harmful interference to stations operating in accordance with the Table of Frequency Allocations. It is noted that according to Resolution 766, the priority of MetSat over EESS in the frequency band 460-470 MHz should be retained.

**Recent ITU-R developments**

The WP 7B meeting in October 2017 produced following results:

* Further revisions were made to the preliminary draft new Report ITU-R SA.[460 MHZ METSAT-EESS] (Document 7B/238 Annex 17 of Chairman's Report)
* Progress was made on all sections of the draft CPM text (Document [7B/238 Annex 03),](https://www.itu.int/dms_ties/itu-r/md/15/wp7b/c/R15-WP7B-C-0238!N03!MSW-E.docx) including partial development of a single Method to satisfy this agenda item by proposing pfd limits for NGSO Metsat/EESS satellites to protect terrestrial services. The pfd limits for GSO Metsat/EESS systems are still to be determined.
* The work plan (Document [7B/238 Annex 04](https://www.itu.int/dms_ties/itu-r/md/15/wp7b/c/R15-WP7B-C-0238!N04!MSW-E.docx)) was updated including proposed work for the next meeting of WP 7B being completion of all necessary Reports and Recommendations and agreed draft CPM text.

1. **Documents**
   1. **Input Documents:**
2. India ([APG19-3/INP-13](file:///C:\DATA\Tel-U\APG19\APG19-3%20DG%20Chair\Input%20Documents%20AI%201.3\APG19-3-INP-13_IND_WP4_0.docx))
3. Korea ([APG19-3/INP-24](file:///C:\DATA\Tel-U\APG19\APG19-3%20DG%20Chair\Input%20Documents%20AI%201.3\APG19-3-INP-24_KOR-WP4.docx))
4. Iran ([APG19-3/INP-31](file:///C:\DATA\Tel-U\APG19\APG19-3%20DG%20Chair\Input%20Documents%20AI%201.3\APG19-3-INP-31_IRN_WP4.docx))
5. Australia ([APG19-3/INP-44](file:///C:\DATA\Tel-U\APG19\APG19-3%20DG%20Chair\Input%20Documents%20AI%201.3\APG19-3-INP-44_Australia_WP4.docx))
6. Japan ([APG19-3/INP-52](file:///C:\DATA\Tel-U\APG19\APG19-3%20DG%20Chair\Input%20Documents%20AI%201.3\APG19-3-INP-52_Japan_WP4.docx))
7. Thailand ([APG19-3/INP-62](file:///C:\DATA\Tel-U\APG19\APG19-3%20DG%20Chair\Input%20Documents%20AI%201.3\APG19-3-INP-62_Thailand_WP4_0.doc))
8. Singapore ([APG19-3/INP-68](file:///C:\DATA\Tel-U\APG19\APG19-3%20DG%20Chair\Input%20Documents%20AI%201.3\APG19-3-INP-68_Singapore_WP4.docx))
9. Malaysia ([APG19-3/INP-73](file:///C:\DATA\Tel-U\APG19\APG19-3%20DG%20Chair\Input%20Documents%20AI%201.3\APG19-3-INP-73_Malaysia_WP4.docx))
10. China ([APG19-3/INP-89](file:///C:\DATA\Tel-U\APG19\APG19-3%20DG%20Chair\Input%20Documents%20AI%201.3\APG19-3-INP-89_China_WP4_0.docx))
    1. **Information Documents:**
11. ITU-BR ([APG19-3/INF04\_ITU\_BR](file:///C:\DATA\Tel-U\APG19\APG19-3%20DG%20Chair\Information%20Documents%20AI%201.3\APG19-3-INF04_ITU_BR-Preparation_for_CPM19-2_RA-19__WRC-19.docx))
12. CEPT ([APG19-3/INF-06\_CEPT](file:///C:\DATA\Tel-U\APG19\APG19-3%20DG%20Chair\Information%20Documents%20AI%201.3\APG19-3-INF-06_CEPT_Preparation.pdf))
13. CITEL ([APG19-3/INF-08Rev.1\_CITEL](file:///C:\DATA\Tel-U\APG19\APG19-3%20DG%20Chair\Information%20Documents%20AI%201.3\APG19-3-INF-08Rev.1_CITEL_Preparation.pdf))
14. IARU ([APG19-3/INF-09\_IARU](file:///C:\DATA\Tel-U\APG19\APG19-3%20DG%20Chair\Information%20Documents%20AI%201.3\APG19-3-INF-09_IARU_INF.DOCX))
15. ASMG([APG19-2/INF-01](file:///D:\APG19-2%20DG%20Chair\AI1.3\AI1.3%20INFormation%20Documents\APG19-2-INF-01_Status_of_Preparation_of_Regional_Groups.docx)**)**
16. ATU([APG19-2/INF-07](file:///C:\DATA\Tel-U\APG19\APG19-2%20DG%20Chair\INF\apt-10072017-165205\APG19-2-INF-07_ATU.docx))
17. RCC([APG19-2/INF-05](file:///C:\DATA\Tel-U\APG19\APG19-2%20DG%20Chair\INF\apt-10072017-165205\APG19-2-INF-05_RCC.docx))
18. ICAO([APG19-2/INF-02](http://www.apt.int/sites/default/files/2017/07/APG19-2-INF-02_ICAO.docx))
19. **Summary of Discussion:**
    1. **Summary of Members’ view**
       1. **India - Document** [**APG19-3/INP-13**](file:///C:\DATA\Tel-U\APG19\APG19-3%20DG%20Chair\Input%20Documents%20AI%201.3\APG19-3-INP-13_IND_WP4_0.docx)

India supports sharing and compatibility studies to determine the feasibility of upgrading the MetSat (space-to-Earth) allocation to primary status, and the addition of a primary EESS (space-to-Earth) allocation in the frequency band 460-470 MHz, in accordance with Resolution 766 (WRC-15).

India could consider supporting the upgrading of the MetSat service and the addition of primary EESS (space-to-earth) in the band 460-470 MHz provided that the fixed and mobile services are protected; no additional constraint is imposed on the current and future fixed and mobile service; and stations of the EESS and MetSat services shall not claim protection from the fixed and mobile services.

* + 1. **Korea - Document** [**APG19-3/INP-24**](file:///C:\DATA\Tel-U\APG19\APG19-3%20DG%20Chair\Input%20Documents%20AI%201.3\APG19-3-INP-24_KOR-WP4.docx)

The Republic of Korea supports APT preliminary views developed at the APG19-2:

“APT members support the ITU-R studies in accordance with Resolution **766 (WRC-15)** to conduct and complete, in time for WRC-19, the necessary technical, operational and regulatory studies on the possibility to upgrade the secondary allocation of the meteorological-satellite service (space-to-Earth) to primary status and a primary allocation to the Earth exploration-satellite service (space-to-Earth) in the frequency band 460‑470 MHz. provided that the appropriate measures are taken to ensure the protection of, and also not imposing additional constraints on the existing primary services in the band 460-470 MHz and also in the adjacent bands.”

* + 1. **Iran - Document** [**APG19-3/INP-31**](file:///C:\DATA\Tel-U\APG19\APG19-3%20DG%20Chair\Input%20Documents%20AI%201.3\APG19-3-INP-31_IRN_WP4.docx)

Iran adopt the same view as the previous APG19-2’ view:

“APT Members support the ITU-R studies in accordance with Resolution 766 (WRC-15) to conduct and complete, in time for WRC-19, the necessary technical, operational and regulatory studies on the possibility to upgrade the secondary allocation of the meteorological-satellite service (space-to-Earth) to primary status and a primary allocation to the Earth exploration-satellite service (space-to-Earth) in the frequency band 460‑470 MHz. provided that the appropriate measures are taken to ensure the protection of, and also not imposing additional constraints on the existing primary services in the band 460-470 MHz and also in the adjacent bands.”

* + 1. **Australia - Document** [**APG19-3/INP-44**](file:///C:\DATA\Tel-U\APG19\APG19-3%20DG%20Chair\Input%20Documents%20AI%201.3\APG19-3-INP-44_Australia_WP4.docx)

Australia supports consideration of the upgrading of the secondary MetSat (space-to-Earth) allocation to primary, and adding a primary EESS (space-to-Earth) allocation in the frequency band 460-470 MHz, while providing protection and not imposing any additional constraints on existing primary services to which the frequency band is already allocated and in the adjacent frequency bands and maintaining the conditions contained in No. **5.289**, subject to appropriate ITU R sharing and compatibility studies.

* + 1. **Japan - Document** [**APG19-3/INP-52**](file:///C:\DATA\Tel-U\APG19\APG19-3%20DG%20Chair\Input%20Documents%20AI%201.3\APG19-3-INP-52_Japan_WP4.docx)

Japan is of the view that in the frequency band 460 – 470 MHz the existing co-primary services should be adequately protected from the possible addition of a primary EESS (space-to-Earth) allocation and possible upgrading the MetSat (space-to-Earth) allocation to primary status, while ensuring continuous operation of the existing systems of EESS (space-to-Earth) and MetSat (space-to-Earth).

* + 1. **Thailand - Document** [**APG19-3/INP-62**](file:///C:\DATA\Tel-U\APG19\APG19-3%20DG%20Chair\Input%20Documents%20AI%201.3\APG19-3-INP-62_Thailand_WP4_0.doc)

Thailand supports upgrading the MetSat (space-to-Earth) allocation from secondary to primary status and a new primary EESS (space-to-Earth) allocation in the frequency band 460-470 MHz with priority of MetSat over EESS as currently expressed in the RR. Moreover, the protection of primary services in this frequency band and in adjacent frequency bands is ensured. In addition, the primary services in this frequency band are not constrained by an upgrade of the MetSat allocation to primary status and the new allocation of EESS as primary service

* + 1. **Singapore - Document** [**APG19-3/INP-68**](file:///C:\DATA\Tel-U\APG19\APG19-3%20DG%20Chair\Input%20Documents%20AI%201.3\APG19-3-INP-68_Singapore_WP4.docx)

Singapore supports sharing and compatibility studies to determine the feasibility of upgrading the MetSat (space-to-Earth) allocation to primary status, and the addition of a primary EESS (space-to-Earth) allocation in the frequency band 460-470 MHz, in accordance with Resolution 766 (WRC-15).

Singapore may support the upgrading of the MetSat service and the addition of primary EESS (space-to-earth) in the band 460-470 MHz providing that the fixed and mobile services are protected; no additional constraint is imposed on the fixed and mobile service; and stations of the EESS and MetSat services shall not claim protection from the fixed and mobile services.

* + 1. **Malaysia - Document** [**APG19-3/INP-73**](file:///C:\DATA\Tel-U\APG19\APG19-3%20DG%20Chair\Input%20Documents%20AI%201.3\APG19-3-INP-73_Malaysia_WP4.docx)

Malaysia has allocated the frequency band 450 MHz to 470 MHz for IMT.

Malaysia is of the view that upgrade from secondary allocation of MetSat (space-to-Earth) to primary status and primary allocation to EESS (space-to-Earth) in the frequency band 460-470 MHz may be considered, provided that sharing and compatibility studies conducted by ITU-R WP7B conclude that sharing is feasible and does not impose constraint to IMT system.

* + 1. **China - Document** [**APG19-3/INP-89**](file:///C:\DATA\Tel-U\APG19\APG19-3%20DG%20Chair\Input%20Documents%20AI%201.3\APG19-3-INP-89_China_WP4_0.docx)

China supports the studies on this agenda item carried out in ITU-R WP 7B and supports the possible upgrading of MetSat (space-to-Earth) allocation from secondary to primary status and a primary EESS (space-to-Earth) allocation, maintain the priority of MetSat over EESS, and the protection of current primary services in this frequency band and in adjacent frequency bands

* 1. **Summary of issues raised during the meeting**
* Malaysia asks about pfd mask, whether the studies of ITU-R WP 7B is considering the protection of IMT system for mobile broadband in this particular frequency band.
* In response to the Malaysia’s inquiry, Japan suggests it is considered in relation with PPDR applications in the WP 7B’s studies. China advises that the sharing studies has been done by WP7B. In addition, CEPT informs that they have proposed that the pfd masking for NGSO in that band is never exceed -152 dBW/m2/4 kHz.
* The DG-2 for Agenda item 1.3 meeting has run smoothly and delegates contribute actively in the discussion lead to the formulation of the draft APT preliminary view on WRC-19of Agenda Item 1.3.

1. **APT Preliminary View(s)**

APT Members support the ITU-R studies in accordance with Resolution 766 (WRC-15) to conduct and complete, in time for WRC-19, the necessary technical, operational and regulatory studies on the possibility to upgrade the secondary allocation of the meteorological-satellite service (space-to-Earth) to primary status and a primary allocation to the Earth exploration-satellite service (space-to-Earth) in the frequency band 460-470 MHz, provided that the appropriate measures are taken to ensure the protection of existing fixed, mobile, and broadcasting services and not to constraint their future developments in the frequency band 460-470 MHz and in the adjacent bands, and stations of the EESS and MetSat services shall not claim protection from the fixed and mobile services. APT Members also note that the priority of MetSat over EESS should be maintained.

1. **Other Views:**

* None

1. **Issues for Consideration at Next APG Meeting**
   * APT members are encouraged to participate in and contribute to the works of WP7B in May 2018.
   * APT members are encouraged to consider the draft of CPM text for the next APG meeting
2. **Views from Other Organizations**
   1. **Regional Groups**
      1. **ASMG - Document (**[APG19-2/INF-01](file:///D:\APG19-2%20DG%20Chair\AI1.3\AI1.3%20INFormation%20Documents\APG19-2-INF-01_Status_of_Preparation_of_Regional_Groups.docx)**)**

* These frequency bands are widely used in Arab countries for mobile and fixed services.
* ASMG does not support the possible upgrading of the secondary allocation to the Meteorological satellite services (space to earth) to primary status, and a primary allocation to the Earth exploration satellite services (space to earth) in the frequency band 460 - 470 MHz.
* Follow up studies under this agenda item and ensure the protection of the existing services.
  + 1. **ATU- Document (**[APG19-2/INF-07](file:///C:\DATA\Tel-U\APG19\APG19-2%20DG%20Chair\INF\apt-10072017-165205\APG19-2-INF-07_ATU.docx))

No preliminary position on this agenda item yet.

* + 1. **CEPT- Document** ([APG19-3/INF-06\_CEPT](file:///C:\DATA\Tel-U\APG19\APG19-3%20DG%20Chair\Information%20Documents%20AI%201.3\APG19-3-INF-06_CEPT_Preparation.pdf))

CEPT supports that the MetSat (space-to-Earth) allocation should be upgraded from secondary to primary status and a primary EESS (space-to-Earth) allocation should be added in the frequency band 460-470 MHz provided that:

* priority of MetSat over EESS as currently expressed in the RR is retained;
* the protection of primary services in the frequency band and in adjacent frequency bands is ensured
* “MetSat and EESS earth stations will not claim protection from stations in the fixed and mobile services”, as stated in recognizing f) of Res 766.
  + 1. **CITEL- Document (**[APG19-3/INF-08Rev.1\_CITEL](file:///C:\DATA\Tel-U\APG19\APG19-3%20DG%20Chair\Information%20Documents%20AI%201.3\APG19-3-INF-08Rev.1_CITEL_Preparation.pdf)**)**
* To provide certainty for sensors critical for hurricane forecasting while protecting fixed and mobile services, including IMT.
  + 1. **RCC- Document (**[APG19-2/INF-05](file:///C:\DATA\Tel-U\APG19\APG19-2%20DG%20Chair\INF\apt-10072017-165205\APG19-2-INF-05_RCC.docx))
* The RCC Administrations consider that there is a need to harmonize frequency allocations used by data collection systems (DCS) in the meteorological-satellite service and the Earth exploration-satellite service.
* However, upgrading the secondary allocation to the meteorological-satellite service (space-to-Earth) to a primary status and a primary allocation to the Earth exploration-satellite service (space-to-Earth) in the frequency band 460-470 MHz are possible under the following conditions:
  + The protection of the terrestrial services to which the frequency band 460-470 MHz is allocated on a primary basis;
  + The proposed measures for the protection of the terrestrial services will not impose additional constraints on the existing satellite systems and the networks operated within meteorological-satellite service and the Earth exploration-satellite service;
  + Maintaining priority of the meteorological-satellite service over the Earth exploration-satellite service
  1. **International Organizations**
     1. **ICAO- Document (**[APG19-2/INF-02](http://www.apt.int/sites/default/files/2017/07/APG19-2-INF-02_ICAO.docx))

No impact on aeronautical services has been identified from WRC-19 Agenda Items 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.15, 2, 3, 5, 6, 7, 9.1 (Issue 9.1.1), 9.1 (Issue 9.1.2), 9.1 (Issue 9.1.5), 9.2 and 9.3 which are therefore not addressed in this position.

* + 1. **IARU- Document (**[APG19-3/INF-09](file:///D:\Information%20Documents%20AI%201.3\APG19-3-INF-09_IARU_INF.DOCX))

No preliminary position on this agenda item.

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