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CEPT BRIEF ON AGENDA ITEM 9: to consider and approve the Report of the Director of the Radiocommunication Bureau, in accordance with Article 7 of the Convention:

Agenda Item 9.1 on the activities of the Radiocommunication Sector since WRC‑12:

ISSUE 9.1.1 – RESOLUTION 205 (Rev.WRC-12)

# ISSUE

Resolution 205 (Rev.WRC-12) “Protection of the systems operating in the mobile-satellite service in the band 406-406.1 MHz”

“resolves to invite ITU-R

1. to conduct, and complete in time for WRC-15, the appropriate regulatory, technical and operational studies with a view to ensuring the adequate protection of MSS systems in the frequency band 406-406.1 MHz from any emissions that could cause harmful interference (see No. 5.267), taking into account the current and future deployment of services in adjacent bands as noted in considering f);
2. to consider whether there is a need for regulatory action, based on the studies carried out under resolves 1, to facilitate the protection of MSS systems in the frequency band 406-406.1 MHz, or whether it is sufficient to include the results of the above studies in appropriate ITU-R Recommendations and/or Reports,”

# CEPT position

CEPT supports a revision of Resolution 205 (Rev. WRC-12) containing protection measures such as the implementation of guard bands from 405.9 MHz to 406 MHz and from 406.1 to 406.2 MHz, as contained in the single method of the CPM Report to WRC-15.

# Background

Recently, some Administrations announced their intent to continue to deploy commercial land mobile systems operating in the vicinity of the 406-406.1 MHz MSS band to a greater extent, which has significantly enhanced concerns regarding possible harmful interference caused by adjacent band emissions. It is expected that other terrestrial operators (mainly in Europe but also anywhere in the world) ask for extended spectrum capacities in UHF band in the future. In any case, it is necessary to ensure compliance with RR No. 5.267, “Any emission capable of causing harmful interference to the authorized uses of the band 406-406.1 MHz is prohibited”.

According to Resolution 205 (Rev.WRC-12), the frequency band 406-406.1 MHz is constantly monitored. Measurements performed by the SARP (Search And Rescue Processor) instrument on-board the satellite Metop-A at 830 km of altitude show that the level of noise as seen by the instrument depends highly on the area where the beacon is deployed and is transmitting. For most of the areas on the Earth (mainly over oceans), a distress beacon can be correctly received and processed by the SARP even for low levels.

Three types of space segments (low Earth orbit (LEO), medium Earth orbit (MEO) and geostationary-satellite orbit (GSO)) are deployed for the search and rescue operations conducted in the frequency band 406-406.1 MHz. Several noise measurements have been performed using all these three space components and the corresponding results must be carefully examined, since Cospas-Sarsat has a general concern on the reception and processing of weak distress signals, in certain areas caused by an increase of noise especially in the Europe and Asia.

Analysis of observations show that over certain years, this noise (measured in the 406-406.1 MHz band) has increased by 15 to 20 dB above the permissible interference level in Europe and Asia. This noise might be caused by terrestrial systems deployed in many countries and transmitting in the frequency ranges between 390 MHz to 406 MHz and from 406.1 MHz to 420 MHz. Geostationary MSG-1 MSG-2 and MSG-3 meteorological satellites carry on-board 406 MHz transponders, which allowed the computation of radio noise levels in this band. The Galileo, GLONASS and GPS constellations will offer additional capability at 406 MHz.

Observations performed with GLONASS, GPS and Galileo confirm the presence of noise providing additional evidence of emissions near the 406-406.1 MHz band potentially causing harmful interference in the 406.0‑406.1 MHz band, further justifying the need for technical and regulatory studies, and ensuring that distress signals can continue to be detected and successfully processed by the Cospas-Sarsat system. Recommendation ITU-R M.1478-2 provides the latest protection requirements for the various types of instruments mounted on board operational satellites receiving EPIRB signals in the frequency band 406-406.1 MHz against both broadband out-of-band emissions and narrowband spurious emissions. This Recommendation should be the technical basis of all further calculation concerning the protection of the frequency band 406-406.1 MHz. A revision of this Recommendation was approved last September 2014 and contains most of the characteristics and the 406-406.1 MHz protection criteria of the Search-And-Rescue Repeaters/Processors on board the three space segments. Taking into account the larger footprints of MEO satellites, it is of the utmost importance to make sure that the instruments at 406 MHz that will be in operation will be able to process all kinds of beacons, even those transmitted in challenging situations and therefore having quite low levels.

Technical studies have been performed to adequately address the consequence of aggregate emissions from a large number of transmitters operating in adjacent bands and the consequent risk to space receivers intended to detect low-power distress-beacon transmissions. Emissions in adjacent bands, if not adequately controlled, could raise the level of noise captured by the Cospas-Sarsat systems and hinder their abilities to detect and/or relay signal from beacons. One goal of these studies is to indicate what should be the most appropriate regulatory regime to protect the 406-406.1 MHz frequency band.

The preliminary draft new Report developed within ITU-R WP 4C provides the permissible levels of interference for both narrow band emissions and wide band emissions, for the three categories of the space segment of the Cospas-Sarsat system: LEO (NOAA, METOP satellites), MEO (Galileo, GLONASS) and GSO (MSG).

Detailed analysis has shown that for data collection platforms in operation within the frequency band 401 to 403 MHz, the aggregate transmitter power does not exceed the broadband interference threshold, assuming a maximum load of the Earth exploration-satellite systems. The operation of the EESS (Earth-to-space) data collection system would contribute only with a small fractional to the wide band interference budget for the LEO satellites (0.0185%) and 3.435 % for the geostationary satellite receivers. The results are significantly different between the two MEO satellites systems Galileo and GLONASS. The report calculated that the data collection platforms only contribute up to 0.258% of the wideband interference threshold power value for the Galileo satellite, and 10.91% of the threshold power value in the frequency band 402.05-405.05 MHz for GLONASS. These values are valid only when there is no interference from other systems operating in these frequency bands.

Operation of radiosondes in the meteorological aids service will not exceed the broadband measured sensitivity levels of the search-and-rescue receivers for LEO, MEO or GEO satellites. In all cases the percentage of interference power to the SAR receivers is less than 6 x10-3 percent of the interference threshold. Older, less-stable, analogue radiosondes could have the carrier drift into the SAR receiver band. However, this does not contribute to the overall increase in the SAR receiver noise background.

The impact of mobile systems in operation above 406.1 MHz has been assessed performing simulation using deployment (based on answers provided through a questionnaire sent to CEPT administrations and sector members last April 2013) within the CEPT countries. Simulations show that the LEO component experiences interference due to mobile deployment from 406.1 to 407 MHz, while the MEO component receives interference up to 410 MHz depending on the MEO satellite constellations. The geostationary component shows severe interference due to mobile deployment within the 406.1 to 406.2 MHz band. Concerning the impact of spurious emissions in the 406-406.1 MHz band, no impact has been demonstrated.

The effect of increased land mobile system deployment in the 406.1-420 MHz band on the Cospas-Sarsat systems was studied by assuming land mobile system characteristics from Canada. Although the Canadian land mobile system characteristics are not representative of other Region 2 countries and the hypothetical baseline deployment and growth rate scenario are not representative of current and may not be representative of future deployment and growth rate in Canada or other parts of the Americas, this study provides an estimation of potential increase of interference level in the 406-406.1 MHz band due to increased deployment of land mobile systems under the hypothetical scenario. Stations in the 406.1-406.2 MHz band in this simulation were most likely to exceed the maximum permissible levels. MEOSAR (Galileo) within its larger footprint may be affected by an increase of land mobile systems in the 406.1-406.2 MHz band.

Concerning the impact of mobile service outside Europe, one administration made dynamic simulations based on realistic land mobile deployment, that show that interference levels in the frequency band 405.9‑406 MHz and 406.1-406.2 MHz provide a significant amount of noise that will be detrimental to the reception of distress signals in the 406-406.1 MHz frequency band. In the other frequency bands, the filtering pattern is sharp enough to eliminate all the out of band emissions. In addition, observations made through GLONASS, GPS and Galileo have shown that there are strong interferers very close to 406 MHz, in particular at the lower part of the MSS band. Examples illustrate how adjacent-channel interference can increase the effective noise floor for beacon transmissions within the 406 MHz band. These adjacent-channel emissions, although having lower amplitude than at frequencies higher than 406.1 MHz, can have a harmful impact on the reception of effective distress beacons in the 406 MHz band.

It is to be noted that the set of paired bands 380-385 MHz/390-395 MHz, are dedicated to Public Protection and Disaster Relief and the corresponding systems have been extensively implemented in many European countries. PPDR radio solutions are an essential element for Public Safety operations, they require reliable, available, secure systems provided by dedicated systems permanently available and covering all necessary wide areas (regional, country, and continent) on a permanent basis. PPDR systems need to be effective and adequate in their operation, nationally, cross border and regionally.

ITU-R Resolution 646, states that in Region 1: 380-470 MHz as the frequency range within which the band 380-385/390-395 MHz is a referred core harmonized band for permanent public protection activities within certain countries of Region 1, which have given their agreement. The implementation of PPDR systems could be constrained by proposals within the ITU-R Directors Report to WRC15 and the WRC15 outcomes. PPDR systems should be effective in their operation nationally, cross border and regionally. CEPT should be careful to ensure that in balancing the interference protection needs of Cospas-Sarsat that radio regulatory provisions do not then constrain PPDR. Specific technical studies have been undertaken to evaluate the impact of mobile systems on the MSS operation within the band 406 to 406.1 MHz.

1. ITU-R WP4C concluded that in order to protect the MSS systems in the 406-406.1 MHz, the following protection measures and mitigation techniques may be required: LEOSAR, GEOSAR and MEOSAR systems space receivers could be designed with improved filters, which are planned for future generation of satellites.
2. Guard bands of 100 KHz right below 406 MHz and right above 406.1 MHz improve the protection of the space receivers operating in the 406-406.1 MHz. Taking into account that there may be a large number of existing land mobile systems already operating above 406.1 MHz, this mitigation measure would only apply to new stations/systems for mobile and fixed services. Therefore, such a mechanism may be beneficial to MSS systems on a long-term basis, and administrations are invited to assign new stations/systems to mobile and fixed services to frequency bands outside this guard band. These guard bands are not applicable to existing stations/system but to new ones.
3. Reduction in e.i.r.p. levels radiated by terrestrial systems towards space may be another measure to protect MSS systems in the 406-406.1 MHz. However, taking into account that there are already thousands of terrestrial systems already in use throughout CEPT countries, it is not realistic to expect that the operators/users of these systems would/could modify their existing networks. Thus this mitigation measure is not feasible due to the high number of existing systems operating in the 406.1-410 MHz, but might be considered for existing systems operating over a very limited portion of that band such as 406.1-406.2 MHz in geographical locations where terrestrial deployment is low. Depending on the design of adjusted antenna pattern, the Cospas-Sarsat system may not entirely benefit from the e.i.r.p. reduction, since this mitigation technique may not be applied in every direction, and some MSS systems may still receive interfering signals from other directions that do not take advantage of antenna pattern improvement.
4. Administrations, on a voluntary basis, are encouraged to authorize new stations starting from channels that are further away from the band edges 406-406.1 MHz.
5. Concerning radiosondes in the meteorological aids service (see RR 1.109) below 406 MHz, it is recognized that they are not a significant contributor to the broadband interference levels to COSPAS-SARSAT receivers. However, it is acknowledged that a frequency drift of older less stable radiosondes could be a cause of narrowband interference to the SAR receiver for radiosondes operating above 405 MHz. It is therefore proposed that administrations have to take into account frequency drift characteristics of radiosondes when selecting their operating frequencies above 405 MHz to avoid transmitting in the 406-406.1 MHz frequency band.

During the CPM, an overall consensus was reached about the proposed revisions to Resolution 205 to protect MSS operations in the frequency band 406-406.1 MHz.

At its June 2015 meeting, ITU-R Study Group 4 approved Draft New Report ITU-R M.[AGENDA ITEM 9.1.1] - Protection of the 406-406.1 MHz band.

# List of relevant documents

ITU-Documentation (Recommendations, Reports, other)

* ITU-R Resolution 646 (WRC‑03) for Public Protection and Disaster Relief
* Recommendation ITU-R M.1478-3 “Protection criteria for Cospas-Sarsat search and rescue instruments in the band 406-406.1 MHz” (see also Annex 1 to Document 4C/289)
* Report ITU-R SM.2258 “Overview of interference source detection and geolocation affecting the 406.0-406.1 MHz band used by emergency beacons”
* Document 4/99 Draft new Report ITU-R M.[AGENDA ITEM 9.1.1] – Protection of the 406-406.1 MHz band

CEPT and/or ECC Documentation (Decisions, Recommendations, Reports)

* ECC Decision (04)06 The availability of frequency bands for the introduction of wideband digital land mobile PMR/PAMR in the 400 MHz and 800/900 MHz bands
* ECC Decision (08)05 on the harmonization of frequency bands for the implementation of digital Public Protection and Disaster Relief (PPDR) radio applications in the bands within 380-470 MHz
* ECC Decision (06)06 on the availability of frequency bands for the introduction of Narrowband Digital Land Mobile PMR/PAMR in the 80/160/400 MHz
* ECC Report 102 Public Protection and Disaster Relief Spectrum Requirements Helsinki January 2007

ETSI References

* ETSI TR 102 491 (TETRA TEDS system reference document) and ETSI TR 102 485 (PPDR system reference document), which are requests to develop spectrum requirements for Public Protection and Disaster Relief for wideband applications and/or broadband applications.
* EU Documentation (Directives, Decisions, Recommendations, other), if applicable
* COSPAS SARSAT relevant documentation
* Description of the Payloads Used in the Cospas-Sarsat LEOSAR System, T.003
* Description of the 406 MHz Payloads Used in the Cospas-Sarsat GEOSAR System, T.011

# Actions to be taken

None

# Relevant information from outside CEPT

## European Union (February 2015)

Under Agenda Item 9.1.1, Member States should support the protection of search and rescue communications in the band 406-406.1 MHz.

## Regional telecommunication organisations:

APT (July 2015)

APT Members developed a PACP supporting the single method as contained in the CPM text to WRC-15..

ATU (January 2015)

Method B[[1]](#footnote-1)

Arab Group (February 2015)

ASMG Position:

Support the revision of Resolution 205 (Rev. WRC-12) in order to protect the systems operating in the mobile-satellite service in the band 406-406.1 MHz, with consideration to other current and future services in the adjacent bands

CITEL (August 2015)

CITEL adopted an IAP supporting the single method as contained in the CPM text to WRC-15.

RCC (April 2015)

The RCC Administrations recognize the importance of COSPAS-SARSAT system used for search and rescue operations.

The RCC Administrations support activities ensuring appropriate protection of the COSPAS-SARSAT system in the frequency band 406-406.1 MHz from emissions which could cause harmful interference to the authorized uses in this frequency band (No. 5.267 and No. 5.266), taking into account existing and future deployment of services in adjacent (390-406 MHz and 406.1-420 MHz) frequency bands.

To satisfy the specified tasks, the RCC Administrations support modification to Resolution 205 (WRC-12) and inclusion in the Article 5 a footnote with reference to Resolution 205 (WRC-12).

## International organisations

IATA (date of proposal)

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ICAO (April 2015)

Support increased protection of COSPAS-SARSAT system in the frequency band 406-406.1 MHz.

IMO (November 2013)

It is essential to preserve the MSS frequency band 406-406.1 MHz free from any emissions that would degrade the operation of the 406 MHz satellite transponders and receivers, with the risk that satellite Emergency Position Indicating Radio Beacon (EPIRB) signals would go undetected.

NATO (May 2015)

NATO supports the adequate protection to the MSS band 406-406.1 MHz while not putting undue constraints to the radio services allocated in the adjacent frequency bands.

SFCG (July 2015)

In order to ensure adequate protection of MSS systems in the frequency band 406-406.1 MHz and to detect and successfully process 406 MHz distress signals, SFCG supports a revision of Resolution 205 (Rev WRC-12) in line with the single method as contained in the CPM text to WRC-15..

WMO (December 2014)

WMO supports studies and regulatory measures towards ensuring the adequate protection to Cospas-Sarsat receivers against emissions from adjacent bands, noting that, to a large extent, those receivers are implemented on meteorological satellites. Based on the results of ITU-R studies WMO supports revision of Resolution 205 (Rev. WRC-12) with a view of having adequate protection of the MSS systems in the frequency band 406-406.1 MHz in order to detect and successfully process distress signals, taking into account the current and future deployment of systems belonging to the services in adjacent frequency bands.

## Regional organisations

ESA (September 2014)

Support SFCG positions

EUMETNET (September 2014)

Support WMO positions

Eurocontrol (date of proposal)

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## OTHER INTERNATIONAL AND REGIONAL ORGANISATIONS

EBU (date of proposal)

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GSMA (date of proposal)

ISSUE 9.1.2 – RESOLUTION 756 (WRC-12)

# ISSUE

Resolution 756 (WRC-12) “Studies on possible reduction of the coordination arc and technical criteria used in application of No. 9.41 in respect of coordination under No. 9.7”

“resolves to invite ITU-R

1. to carry out studies to examine the effectiveness and appropriateness of the current criterion (ΔT/T > 6%) used in the application of No. 9.41 and consider any other possible alternatives (including the alternatives outlined in Annexes 1 and 2 to this Resolution), as appropriate, for the bands referred to in recognizing e);
2. to study whether additional reductions in the coordination arcs in RR Appendix 5 (Rev.WRC-12) are appropriate for the 6/4 GHz and 14/10/11/12 GHz frequency bands, and whether it is appropriate to reduce the coordination arc in the 30/20 GHz band”

# CEPT position

Regarding resolves 1 of Resolution 756 (WRC-12):

* CEPT does not support the proposal to include an option in the CPM text suggesting a criterion based on ΔT/T when carrying out the examination under No. 11.32A (see Doc. SC/17).
* CEPT proposes no changes to Article 9, including Nos. 9.7 and 9.41, or Appendix 5. However, in respect of Article 11, changes are proposed only for 6/4 GHz and 10/11/12/14 GHz and only in respect of No. 11.32A where the criterion is proposed to be changed from the application of a C/I-based criterion only, to providing the notifying administration with the choice between a criterion based on C/I and one based on pfd levels with regard to the examination vis-à-vis each of the satellite networks identified under No. 9.36.2. In the calculation of the pfd levels, it is proposed to retain the interference thresholds at similar levels as today (i.e., the equivalent to ΔT/T = 6%). Also, the examination of probability of harmful interference under No. 11.32A for frequency bands other than those specified above is proposed to remain as today, i.e. by using a criterion based on C/I as specified in the Rules of Procedure. Annex 1 contains the proposed values of the pfd masks mentioned above.
* CEPT proposes that at the stage of notification, the notifying administration request the BR to carry out the examination under RR 11.32A either by following the new pfd-based criterion or the C/I criterion as per Section B3 of the RoP. Such a choice should be made by the notifying administration for each of the satellite networks identified under No. 9.36.2.
* The approach suggested above should be applied for networks whose notification request is received by the Bureau after the date of enter into force of the final acts.

Regarding resolves 2 of Resolution 756 (WRC-12), CEPT supports reducing the coordination arc for coordination between geostationary FSS networks to ±6° in C-band and to ±5° in Ku-band. Currently the CEPT supports NOC of the coordination arc applicable to Ka-band because the use of that band by FSS systems is not considered developed enough for justifying a reduction of the size of the arc. CEPT then supports option 2A of the draft CPM text.

# Background

During the study cycle leading up to WRC-12, studies were performed within CEPT in order to facilitate coordination between geostationary FSS networks in the congested C- and Ku-bands.

CEPT submitted the following proposals under WRC-12 agenda item 7:

* To reduce the coordination arc from 10 to 6 degrees in C-band and from 9 to 5 degrees in Ku-band;
* To replace the ∆T/T criterion by a C/I ratio criterion in applying RR No. 9.41;
* To introduce pfd levels that, if not exceeded, lead to a favourable finding under No. 11.32A. In particular, CEPT developed pfd masks for C and Ku bands, which were based on a set of receiver parameters (both space and earth stations).

Several regional organisations supported a reduction of the coordination arc in these congested bands and the WRC-12 decided to reduce the coordination arc by 2 degrees in the targeted bands, resulting in 8 degrees in C-band and 7 degrees in Ku-band.

As many administrations felt that additional reductions were warranted, WRC-12 also adopted Resolution 756 (WRC-12) calling for further studies to clarify if it would be appropriate to introduce additional reductions in the coordination arcs in the above mentioned C- and Ku-bands, as well as introducing reductions in Ka-band (30/20 GHz). In addition, other alternatives to the ΔT/T criteria to trigger coordination (C/I or pfd) in the application of RR No. 9.41 are to be evaluated.

On the basis of Resolution 756, studies and discussions has taken place in ITU-R at WP 4A and to a minor extent at the Working Party of the Special Committee (SC-WP). The last WP 4A meeting in July 2014 concluded its development of draft CPM text and forwarded this text for inclusion in the draft CPM Report to CPM15-2 and four documents are attached to the WP 4A Chairman’s Report from the meeting (Annexes 10, 16, 32 and 37). Almost all the input contributions to the meeting addressed development of draft CPM text and that was the clear focus of the meeting. But in addition, it was agreed to elevate the Working Document of a Preliminary Draft New Report on this issue to a Preliminary Draft New Report and to carry that document forward for further development at the next meeting of WP 4A in June 2015. That WP 4A meeting will focus on finalizing any studies and relevant ITU-R Reports/Recommendations on this issue.

The BR Director contribution (document number 4A/579-E ) on 27 June 2014 to ITU WP4A meeting on “Technical criteria used in application of RR No. 9.41 in respect of coordination under RR No. 9.7”, represents BR analysis on the “effectiveness and appropriateness” of the current ΔT/T criterion used in the application of No. 9.41. In this document, the Bureau, after a detailed analysis of the matter, concludes that the C/I criterion alone for identifying potentially affected administrations / networks under RR Nos. 9.7 and 9.41 would not significantly reduce coordination requirement unless other issues as identified in section 2.3.2 of Annex 7 to Document 4A/468 (relating the representative range of the technical parameters) are considered as well.

Results of the simulation carried out clearly demonstrates that the orbital separation required to establish coordination requirement using C/I criterion would not significantly improve the situation in the absence of any other mechanism that could address issues of very heterogeneous link parameters; hence, consideration could be given to the appropriate means which would either directly or indirectly lead to the limitation of wide distribution of the characteristics of the filings. Without these measures properly considered and studied, the Bureau considers that a simple transition to another coordination trigger would not address the problem of “effectiveness and appropriateness” of the existing and proposed criteria while increasing the workload of the Bureau to implement the changes and the process.

The modification of the ΔT/T triggering criterion should be considered in association with other measures like the reduction of the coordination arc. At the WP 4A meeting held in February 2014, a document was produced based on inputs from the earlier meetings of WP 4A as per Annex 7 to the Chairman’s Report, Document 4A/468, a working document towards a preliminary draft new Report (mostly based on contributions from Russia, Telenor and Canada).

In that document, significant material for analysis is provided comparing the benefits of each regulatory measure. In addition, Document 4A/421 reports an example case study of CANSAT 107.3º W showing the number of distinct satellite networks that might be identified for different coordination arc cases (5º to 8º) and different ΔT/T triggering factors (6% to 20%) for several frequency ranges, concluding that the reduction of the number of satellite networks affected when reducing the coordination arc is more evident than when modifying the protection criteria ΔT/T. This case study is summarized in Section 4.1 of Annex 7 to Document 4A/468 (pages 25 to 29). The facts, based on the exercise studied by WP 4A, which support this conclusion, are based on the following comparative results:

* The reduction of the coordination arc for C band to 6º would reduce the number of affected networks by 27% (from 26 to 19 which amounts 7 networks) while the modification of the ΔT/T (from 6% to 12%) would represent an improvement of 6% (from 741 to 695 which amounts 46 networks) on the number of satellite networks.
* The reduction of the coordination arc for Ku band to 5º would reduce the number of affected networks by 50% (from 22 to 11 which amounts 11 networks) while the modification of the ΔT/T (from 6% to 12%) would represent an improvement of 31% (from 603 to 415 which amounts 188 networks) on the number of satellite networks.

On the issue of reduction of arc, CEPT is of the view that it is premature at this stage to reduce coordination arc at Ka-band from 8 degrees for FSS to FSS coordination as different studies at ITU-R WP4A mostly contradicting each other and so far no compelling reason on reducing coordination arc has been suggested.

At the last meeting of the Special Committee (Geneva, December 2014), the issue 9.1.2 was addressed by a very limited number of input contributions. Among them, Doc. SC/17 notes that the probability of harmful interference can currently be examined under RR No. 11.32A only for those frequency assignments containing the indication of the maximum transmit power but cannot be examined for all the other frequency assignments. Taking this into account, the document contains a proposal to include an option in the CPM text suggesting a criterion based on ΔT/T when carrying out the examination under No. 11.32A. Nevertheless, considering it too of a technical nature, the Special Committee noted the document and had no further comments in respect of the draft CPM text associated with WRC-15 agenda item 9.1, Issue 9.1.2.

The Special Committee also confirmed the observation by the December 2013 meeting of the Working Party of the Special Committee that RR No. 9.41 applies not only to geostationary satellites and that provision allowing administrations to request to be included in the coordination, similar to the current RR No. 9.41, existed even before the introduction of the coordination arc. In its view, the removal of the whole text of this provision could then have undesirable consequences (see [SC/8 (§3.2.1)](http://www.itu.int/md/R12-SC-C-0008/en)).

Intense discussion was held on the issues considered under this Agenda Item, in particular regarding resolves 1. Such debate led to the reduction in number and re-organisation of the proposed options under such resolves in the CPM text. At the same time, the CPM text was left unchanged regarding the options proposed under resolves 2.

DEVELOPMENT OF THE CPM Report

At every WP 4A meeting, the complexity of issue 9.1.2, and its several sub-issues, is acknowledged and it is recognized that there is an interconnection between the issue of reducing the coordination arc and increasing the coordination trigger level of interference, and therefore the implications of this interconnection should be considered while deciding on these issues.

At the WP 4A February 2014 meeting, two of the Working Documents annexed to the WP 4A Chairman’s report 4A/468 (Annex 7 and 33) used the same overall structure, including addressing resolves 1 and resolves 2 of Resolution 756 (WRC-12) separately in different sections.

The last WP 4A meeting in July 2014 concluded its development of draft CPM text and forwarded this text for inclusion in the draft CPM Report to CPM15-2. The structure of separating resolves 1 and 2 were kept and several Options as examples of regulatory solutions for each resolves were developed separately noting that the resolves are principally different and should thereby be addressed separately.

At the CPM the text was revised and after the relevant discussions, the Options which are available in the final CPM text are as below.

Options in response of resolves 1:

* Option 1A – it proposes no changes to RR Article 9, including Nos. 9.7 and 9.41, it proposes to retain the existing C/I-based criterion for the examination under No. 11.32A for frequency bands under consideration and also to base the examination on the same C/I assessment under Nos. 9.7 and 9.41 for the bands where the coordination arc criterion is not applicable and increasing the 6% level of permissible interference into corresponding DT/T less than or equal to 20%;
* Option 1B – it proposes no changes to RR Article 9, including Nos. 9.7 and 9.41, or RR Appendix 5. Furthermore, in respect of RR Article 11, changes are proposed only for the 6/4 GHz and 10/11/12/14 GHz bands and only in respect of No. 11.32A where the criterion is proposed to be changed from C/I to pfd levels. Furthermore, this option proposes to retain the interference thresholds at similar levels as today (i.e., the equivalent to ΔT/T = 6%);
* Option 1C – this Option is similar to Option 1B, but it proposes to apply pfd thresholds for the 6/4 GHz and 10/11/12/14 GHz bands only in respect of satellite networks outside the coordination arc; it also proposes to potentially consider values of ΔT/T different from 6%;
* Option 1D – No change to the RR.

Regarding Options 1A, 1B and 1C, regulatory procedures and timeframes for transition may also need to be developed in a Resolution established by WRC-15.

Options in response of resolves 2, reviewing a potential reduction of the coordination arc:

* Option 2A – it proposes to reduce the size of the coordination arc by 2 degrees in the 6/4 GHz and 10/11/12/14 GHz bands (i.e., items 1) and 2) of Table 5-1 of RR Appendix 5, respectively) and to leave unchanged the size of the arc elsewhere;
* Option 2B – it proposes to reduce the size of the coordination arc by 2 degrees in the 6/4 GHz and 10/11/12/14 GHz and 30/20 GHz bands (i.e., items 1), 2), 3) and 7) of Table 5-1 of RR Appendix 5, respectively) and to leave unchanged the size of the arc elsewhere;
* Option 2C – No change to the RR.
* Regarding resolves 2, one administration noted that this issue had already been discussed at previous WRCs, studied in previous study cycles and that WRC-15 therefore should decide definitively on the matter. It also noted that reducing the coordination arc would be a temporary, partial solution only beneficial to big satellite operators and that it should be reviewed together with other coordination provisions, for example RR No. 9.41.
* In general, it was also noted by the WP 4A meeting that there is need to keep the same criteria used in application of RR No. 9.41 and RR No. 9.7 for the bands and services covered in item 9) of the frequency band column of Table 5-1 of Appendix 5 under provision RR No. 9.7 (i.e. all frequency bands, other than those in 1), 2), 3), 4), 5), 6), 6bis), 7) and 8), allocated to a space service, and the bands in 1), 2), 3), 4), 5), 6), 6bis), 7) and 8) where the radio service of the proposed network or affected networks is other than the space services listed in the threshold/condition column, or in the case of coordination of space stations operating in the opposite direction of transmission). Consideration should also be given to the impact of such an approach on RR Article 11 (e.g. No. 11.32A).

# List of relevant documents

ITU-Documentation (Recommendations, Reports, other)

* At the WP 4A meeting in July 2014 the following documents were annexed to the WP 4A Chairman’s Report 4A/591:

Annex 16 – Preliminary Draft New Report ITU-R S.[RES756] presenting studies on possible reduction of the coordination arc and technical criteria used in application of RR No. 9.41 in respect of coordination under RR No. 9.7, compiling the content of a number of different input documents. This document was not discussed at the July 2014 WP 4A meeting, only elevated from the previous Working Document status.

Annex 37 – Working Document presenting the agreed work plan ahead which was reviewed by the Counsellor.

Annex 32 – Elements for future discussion and development of 9.1.2, summarising the key elements of the considerable discussion during the WP 4A earlier meetings was carried forward from Annex 37 in the previous Chairman’s Report (4A/468).

Annex 10 – Draft CPM text on Agenda item 9, Issue 9.1.2.

* Doc. SC/42 - Report on the meeting of the Special Committee (Geneva, 1-5 December 2014). At the Working Party of the Special Committee (SC-WP) meeting in December 2013, Issue 9.1.2 was briefly addressed in the SC-WP Chairman’s Report SC-WP/34, concluding that RR No. 9.41 applies not only to geostationary satellites and that provisions allowing administrations to request to be included in the coordination, similar to the current RR No. 9.41, existed even before the introduction of the coordination arc and that removal of the whole text of this provision could have undesirable consequences.
* Updated information/documentation on the ITU-R Preparatory Studies for WRC-15 is available at: <http://www.itu.int/ITU-R/go/rcpm-wrc-15-studies>

CEPT and/or ECC Documentation (Decisions, Recommendations, Reports)

CEPT documents from the previous WRC study cycle in Agenda item 7:

* The ECP submitted as the WRC-12 document 05; Addendum 6 to Addendum 28, also recognised as the ECC/CPG12(2011) 041 Annex 5 Revised draft ECP AI 7 Subpart B Issue 2A
* CEPT Brief on Agenda item 7, page 14-17, regarding Subpart B Issue 2A.

EU Documentation (Directives, Decisions, Recommendations, other), if applicable

# Actions to be taken

none

# Relevant information from outside CEPT

## European Union (date of proposal)

## Regional telecommunication organisations

APT (September 2015)

* No common regional position on either resolves.

ATU (September 2015)

With regard to resolves 1: Option 1B.

With regard to resolves 2: Option 2A.

Arab Group (September 2015)

With regard to resolves 1: Option 1D.

With regard to resolves 2: Option 2B.

CITEL (September 2015)

No common regional position on resolves 1.

With regard to resolves 2: Option 2B.

RCC (April 2015)

1. Application of С/I criterion for permissible single entry interference to geostationary networks:

The RCC Administrations support using C/I criterion instead of the ΔT/T criterion when justifying the inclusion/exclusion of networks outside the coordination arc in/from the list of affected administrations when applying RR No 9.41 and in application of RR No 9.7 in cases when the criterion of coordination arc is not used.

The C/I criterion continues to be in use when applying provisions of RR No11.32A.

Complies with Option 1A of CPM Report.

2. Modification of the ΔТ/Т criterion and corresponding modification of the С/I criterion:

The RCC Administrations propose to determine the value of C/I criterion taking into account the value ΔТ/Т increased by not more than 20%.The new criterion value

C/I = C/N – 10lg(ΔТ/Т) (dB) is proposed to be applied to new network assignments filed after the end of WRC-15:

* when applying RR No 9.41;
* when BR identifies affected administrations according to RR No 9.7 in cases when the coordination arc criterion is not used only in the 20/30 GHz frequency bands allocated to FSS and MSS;
* when applying RR No 11.32А.

Complies with Option 1A of CPM Report.

Possibility to apply the new value of the C/I criterion to existing satellite network assignments[[2]](#footnote-2) is being studied. In caseWRC-15 decides to apply new criterion to the frequency assignments filed before WRC-15, transition measures should be developed to ensure protection of existing frequency assignments.

3. Application of permissible power flux density (pfd) mask under No 11.32A examination:

The RCC Administrations oppose the application of the pfd mask based method within coordination arc.

Some of the RCC Administrations oppose the application of the pfd mask based method outside the coordination arc.

Some RCC Administrations support the application of pfd mask based method outside the coordination arc.

Some of the RCC Administrations are considering the possibility of application of the pfd mask when examining assignments under RR No 11.32A to new networks filed after the end of WRC-15. Should such pfd masks for any purposes be adopted, they shall be applied only to frequency assignments for satellite networks filed after the end of WRC-15.

4. Reduction of the coordination arc (CA) size:

The RCC Administrations support the reduction of the coordination arc (for frequency bands 4/6 GHz from ±8 to ±6 degrees, 11/12/13/14 GHz from ±7 to ±5 degrees and 20/30GHz from ±8 to ±7 degrees, and do not oppose CA reduction for frequency bands 20/30 GHz from ±8 to ±7 degrees. The RCC Administrations are in favour of retaining RR No 9.41.

Some of the RCC Administrations are in favour of consideration of the coordination arc reduction only together with modification of technical criteria applied under RR No 9.41.

The RCC Administrations consider that the modification of coordination criterion values does not reduce protection of existing satellite networks and does increase the efficient use of GSO spectrum/orbit resource while ensuring the required quality of satellite networks operation.

## International organisations

IATA (date of proposal); ICAO (date of proposal); IMO (date of proposal); NATO (date of proposal); SFCG (date of proposal)

-

WMO (December 2014)

Consider and approve the Report of the Director on the ITU-R activities on studies on possible reduction of the coordination arc and technical criteria used in application of RR No. 9.41 in respect of coordination under RR No. 9.7

## Regional organisations

ESA (January 2015)

ESA supports the current Options of 1 D and 2A as described in the draft CPM text in doc. WP 4A/591.

EUMETNET (date of proposal)

-

Eurocontrol (date of proposal)

-

For the 6 GHz and 14 GHz frequency bands

|  |  |  |  |
| --- | --- | --- | --- |
| Uplink pfd level | 6 GHz | 14 GHz |  |
| pfd level (dBW/m2 ∙ Hz) | −204.0 | −208.0 | (dBW/m2 ∙ Hz) |

Downlink pfd masks

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Downlink pfd mask at 4 GHz | | | | | | |
|  |  | θ | ≤ | 0.09 | −243.5 | (dBW/m2 ∙ Hz) |
| 0.09 | < | θ | ≤ | 3 | −243.5 + 20log(θ/0.09) | (dBW/m2 ∙ Hz) |
| 3 | < | θ | ≤ | 5.5 | −219.8 + 0.75∙θ2 | (dBW/m2 ∙ Hz) |
| 5.5 | < | θ | ≤ | 20.9 | −196.8 + 25log(θ/5.6) | (dBW/m2 ∙ Hz) |
| 20.9 | < | θ |  |  | −182.6 | (dBW/m2 ∙ Hz) |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Downlink pfd mask at 10/11/12 GHz | | | | | | |
|  |  | θ | ≤ | 0.05 | −238.0 | (dBW/m2 ∙ Hz) |
| 0.05 | < | θ | ≤ | 3 | −238.0 + 20log(θ/0.05) | (dBW/m2 ∙ Hz) |
| 3 | < | θ | ≤ | 5 | −210.0 + 0.95∙θ2 | (dBW/m2 ∙ Hz) |
| 5 | < | θ | ≤ | 20.9 | −187.2 + 25log(θ/5) | (dBW/m2 ∙ Hz) |
| 20.9 | < | θ |  |  | −171.9 | (dBW/m2 ∙ Hz) |

where θ denotes nominal geocentric separation (degrees) between interfering and interfered with satellite networks.

ISSUE 9.1.3 – RESOLUTION 11 (WRC-12)

# ISSUE

Resolution 11 (WRC-12) “Use of satellite orbital positions and associated frequency spectrum to deliver international public telecommunication services in developing countries”

“resolves

1. that ITU-R continue to collaborate with, and provide information when requested by, ITU-D, on satellite technologies and applications as defined in ITU-R Recommendations and Reports and on satellite regulatory procedures in the Radio Regulations that will help developing countries with development and implementation of satellite networks and services;
2. that ITU-R undertakes studies to determine whether it might be necessary to apply additional regulatory measures to enhance the availability of public international telecommunication services delivered through satellite technology,”

# CEPT position

CEPT notes that, while some challenges in building developing country capacities remain in order to fully take advantage of satellite services and the associated orbital resources, the current situation demonstrates availability of international public telecommunication services for developing countries through application of existing regulatory procedures.

CEPT therefore sees no need for regulatory changes to the Radio Regulations and is of the view that all satellite network filings should be treated in the same manner and on an equal basis and that Resolution 11 (WRC-12) should be suppressed as no additional regulatory measures and/or studies are required for ensuring availability of satellite orbital positions and resources to deliver international public telecommunication services in developing countries.

# Background

Following an African common proposal under WRC-12 agenda item 8.1.2, WRC-12 adopted Resolution 11 (WRC-12), which resolves “that ITU-R continue to collaborate with, and provide information when requested by, ITU-D, on satellite technologies and applications as defined in ITU-R Recommendations and Reports and on satellite regulatory procedures in the Radio Regulations that will help developing countries with development and implementation of satellite networks and services” and “that ITU-R undertakes studies to determine whether it might be necessary to apply additional regulatory measures to enhance the availability of public international telecommunication services delivered through satellite technology”.

At its February 2014 meeting, ITU-R Working Party 4A initiated drafting the CPM text on this issue. Initial considerations show that the current competitive satellite environment has allowed for growth and innovation in the provision of various satellite services. More and more countries, including developing countries, and more and more satellite operators get access to space or are currently conducting active planning to do so. The increased demand for satellite services, including international public telecommunications services, has led to an increased diversity in the number of satellite operators providing services in developing and developed countries. While some challenges remain in building developing country capacities in order to fully take advantage of satellite services and the orbital resources, the current situation demonstrates availability of international public telecommunication services for developing countries. Working Party 4A concluded by recommending that additional efforts be undertaken jointly by the ITU-R and ITU-D to further support capacity building in the area of satellite telecommunications, in association with Resolution 11 (WRC-12).

At its July 2014 meeting, ITU-R Working Party 4A completed the draft CPM text on this issue. The draft CPM text concludes that:

“The current satellite regulatory procedures in the Radio Regulations, coupled with privatization and competition in the global telecommunications environment, have provided developing countries an increase in the number of satellite operators, an increase in the number of satellites under development, an increase in demand for higher bandwidth satellite services and an increase in the diversity of services available to the public. While some challenges remain in building developing country capacities in order to fully take advantage of satellite services and the orbital resource, the current situation demonstrates availability of international public telecommunication services for developing countries through application of existing regulatory procedures.

After taking into account the tremendous success by the satellite sector to meet the growing and evolving needs of developed and developing countries under the current regulatory regime, it is the view of developing countries to receive greater benefits from satellite communications. ITU-R recommends, in accordance with Resolution 11 (WRC-12) and WTDC-14 Resolution 37 (Rev. Dubai, 2014), that priority be placed on implementation of joint ITU-R and ITU-D activities to further support capacity building and knowledge sharing in the area of satellite telecommunications. Such activities should particularly focus on use of satellite technologies and applications as defined in ITU-R Recommendations and Reports and on satellite regulatory procedures in the Radio Regulations that will help developing countries with development and implementation of satellite networks and services.”

The discussion on this issue was very brief at CPM. The ATU submitted a proposal suggesting amendments on Option A but they were rejected.

As a result, the CPM text on this issue contains two regulatory options:

Option A:

“No changes are required to the Radio Regulations.

Reasons: A great amount of information has been gathered during the study cycle between WRC‑12 and WRC-15 regarding the ITU-R and ITU-D achievements, practices and current activities that relates to Resolution 11 (WRC-12).

Since no studies have been submitted to ITU-R to address resolves 2 of Resolution 11 (WRC-12), it may be inferred that the current activities and practices of the ITU-R and the ITU-D are ensuring the enhancement of the availability of satellite services. As a result, some views are of the belief that current regulatory measures are adequate to ensure such availability, and that no additional regulatory measures are required for this particular issue. Moreover, the proposed elements of studies listed in Option B may require further analysis, as they may appear to be outside the scope of Resolution 11 (WRC-12).

The current satellite deployment in the geostationary orbit should satisfy the demand of international telecommunication public services and that the issue faced by the satellite operators is effectively the market access in the different countries, rather than the lack of orbital resources, and to urge administrations to develop a suitable national regulatory regime to accommodate international telecommunication public services.

Administrations should support the implementation of the Resolutions in section 5/9.1.3/3.1, in partnership with the ITU-D, including through more targeted support for developing countries in navigating the satellite filing process and to invite reporting by the BR and BDT on the capacity building activities undertaken in association with these Resolutions.”

Option B:

“Given that study elements, to facilitate resolves 2 of Resolution 11 (WRC-12) were submitted and considered by ITU-R only in July 2014, it is believed that studies should still need to be done in ITU-R in order to adequately respond to Resolution 11 (WRC-12) before WRC-15, and a provision should be made to revise Resolution 11 (WRC-12) in order to continue with the studies as it may be required for resolves 2 of Resolution 11 (WRC-12) to continue even after WRC-15 which may be performed through ITU inter-sectorial activities. All conducted studies in ITU-R would be performed within the current framework of the Radio Regulations, and the satellite network filings should be treated in the same manner and equal basis. In this context, possible study elements are elaborated further in the paragraph below.

The study elements may include, but are not limited to the following: the evolution of demand for international public telecommunication services provided through the use of satellite technology; identification of the orbital resources required to guarantee the provision of the international telecommunication services versus those that are currently being used for delivering these services; identification of the measures and conditions that are applicable to the use of these resources and how these resources have been recognized and registered at the international level; problems that may have arisen or been experienced as a result of the measures currently in place; whether there is a need for change, and if so what change and what evolution path for the change should be followed; how such changes in regulation can affect the competition in the telecommunication sector.”

# List of relevant documents

ITU-Documentation (Recommendations, Reports, other)

* CPM Report on WRC-15 agenda item 9.1, issue 9.1.3

CEPT and/or ECC Documentation (Decisions, Recommendations, Reports)

EU Documentation (Directives, Decisions, Recommendations, other), if applicable

# Actions to be taken

none

# Relevant information from outside CEPT (examples of these are below)

## European Union (date of proposal)

-

## Regional telecommunication organisations

APT (July 2015)

APT Members support that the satellite network filings should be treated in the same manner and equal basis.

APT Members support no changes to the Radio Regulations and retaion of Resolution 11 (WRC-15) as it is.

ATU (July 2015)

The African Common Proposal is to support Option B of the CPM text.

Arab Group (September 2015)

Option A and suppression of Res. 11 (WRC-12).

CITEL (September 2015)

No common proposal.

RCC (September 2015)

The RCC Administrations believes that additional regulatory measures are not required.

## International organisations

IATA (date of proposal); ICAO (date of proposal); IMO (date of proposal); NATO (date of proposal); SFCG (date of proposal); WMO (date of proposal)

-

## Regional organisations

ESA (date of proposal); EUMETNET (date of proposal); Eurocontrol (date of proposal)

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## OTHER INTERNATIONAL AND REGIONAL ORGANISATIONS

EBU (date of proposal); GSMA (date of proposal)

-

ISSUE 9.1.4 – Resolution 67 (WRC-12)

# ISSUE

Updating and rearrangement of the Radio Regulations. Resolution 67 resolves to initiate studies for possible updating, review and possible revision of outdated information, and rearrangement of certain parts of the Radio Regulations, except for Articles 1, 4, 5, 6, 7, 8, 9, 11, 13, 14, 15, 16, 17, 18, 21, 22, 23 and 59 and those parts which are being revised on a regular basis, as appropriate.

# CEPT position

CEPT note the consideration of the issue in WP 1B. CEPT is of the view that there is no need update and rearrange the Radio Regulations under this issue.

CEPT therefore propose NOC to the Radio Regulations under this issue.

# Background

WRC-12 adopted a Resolution which resolves to initiate studies for possible updating, review and possible revision of outdated information, and rearrangement of certain parts of the Radio Regulations, except for Articles 1, 4, 5, 6, 7, 8, 9, 11, 13, 14, 15, 16, 17, 18, 21, 22, 23 and 59 and those parts which are being revised on a regular basis, as appropriate.

At the first meeting WP1B considered one input document concerning updating and rearrangement of the Radio Regulations and developed a Working document towards a draft work plan, a Working document towards draft CPM text and Working document towards a preliminary draft new Report ITU-R.

It was decided to work out the Working document towards a preliminary draft new Report ITU-R SM.[RES.67] - Studies on the updating and rearrangement of the Radio Regulations in relation to Resolution 67 (WRC-12) in parallel with draft CPM text in order to have detailed explanations why it was decided to abrogate or revise this or that parts of RR Articles.

At the second meeting WP 1B considered one input document concerning updating and rearrangement of the Radio Regulations. The working document towards a preliminary draft new Report and the working document towards draft CPM text were updated.

WP 1B further produced a liaison statement to the Working Party of the Special Committee to draw the attention of the SC-WP to WP 1B progress in this regard and ask for feedback (Document [SC-WP/4](http://www.itu.int/md/R12-SCWP-C-0004/en)).

In response to this liaison, WP SC (December 2013) wrote that “in respect of the proposal to suppress RR No. 1.132 (the definition of radiotelemetry), the Working Party of the Special Committee observes that making changes to RR Article 1 would seem to be outside the scope of Resolution 67 (WRC-12) and issue 9.1.4. Moreover, the Working Party of the Special Committee questions if, even though radiotelemetry currently may not be referred to anywhere in the Radio Regulations, keeping the definition would create any difficulties”.

At the third meeting in January 2014 WP 1B decided to discontinue the development of the working document towards a preliminary draft new Report ITU-R SM.[Res.67], since it was found exactly duplicating the above-mentioned the draft CPM text, and hence not needed.

While drafting the working document towards draft CPM text on WRC‑15 agenda item 9.1, Issue 9.1.4, it was decided not to propose the suppression of RR No. 1.132 (the definition of radiotelemetry),

In addition, a liaison statement to the Special Committee (SC) was produced to draw the attention of the SC to the WP 1B progress in this regard.

At the fourth meeting in June 2014 WP 1B did not receive any input documents regarding agenda item 9.1, Issue 9.1.4. The working document was discussed and further updated a draft CPM text (contained in Doc. 1B/1 Annex 1) was agreed by WP 1B, and the work by the WP 1B was considered to be concluded.

SC noted the following in its report from the December meeting:

“4.2.3 WRC-15 agenda item 9.1, Issue 9.1.4: Resolution 67 (WRC-12) – Updating and rearrangement of the Radio Regulations

In considering Doc. SC/4, the Special Committee noted that, in line with the recommendations provided by the SC-WP at its December 2013 meeting (see Doc. 1B/113), WP 1B decided that keeping the definition radiotelemetry of Article 1 of the Radio Regulations would not create any difficulties, even though radiotelemetry currently may not be referred to anywhere in the Radio Regulations (see Annex 4 to Doc. 1B/132). Noting this, the SC had no comments in respect of the draft CPM text associated with WRC-15 agenda item 9.1, Issue 9.1.4.”

The CPM report contains two issues:

* Issue A: Modification to RR Article 2, and
* Issue B: Modification to the titles of some RR Articles for the purpose of better reflecting in the title the scope of these articles.

For Issue A, two options are proposed: Option A1 to keep unchanged RR Article 2 and Option A2 to modify RR No. 2.1 in order to delete the unused abbreviations provided in this provision.

For Issue B, two options are proposed: Option B1 to keep unchanged the RR and Option B2 to modify the title of RR Articles 37, 39, 40, 42, 43, 44, 47, 49, 50, 52 and 53.

# List of relevant documents

ITU-Documentation (Recommendations, Reports, other)

* Document 1B/181-E-Report of the meeting of Working Party 1B (Geneva, 2014)
* Document SC/42.

CEPT and/or ECC Documentation (Decisions, Recommendations, Reports)

EU Documentation (Directives, Decisions, Recommendations, other), if applicable

# Actions to be taken

None

# Relevant information from outside CEPT (examples of these are below)

## European Union (date of proposal)

## Regional telecommunication organisations:

APT (February 2015)

APT Members support or have no objection to Option A2 of Issue A and support Option B2 of Issue B as described in the draft CPM Report

ATU (January, 2015)

No view

Arab Group (February, 2015)

ASMG Position:

Issue A: Modification of RR Article 2

Support modification of RR No. 2.1 in order to delete the unused abbreviations provided in the provision.

Issue B: Modification to the titles of some RR Articles for the purpose of better reflecting in the title the scope of these articles

Support the proposed modification of the title of the RR Articles 37, 39, 40, 42, 43, 44, 47, 49, 50, 52 and 53.

CITEL (November 2014)

Canada

Will be participating and contributing, where appropriate, in ITU-R studies and within CITEL and will be reviewing the Director’s Report to WRC-15 on this issue in preparation for its proposals to the conference.

RCC (September 2015)

The RCC Administrations support modifications to the RR which are related to the removal of unused abbreviations in No 2.1. of Article 2 and modification of titles for Articles 37, 39, 40, 42, 43, 44, 47, 49, 50, 52 and 53 for the best reflection of the sense of these Articles.

The RCC Administrations consider that the proposed modifications do not change the content of the Radio Regulations provisions under review

International organisations

IATA (date of proposal)

IARU Position: The scope of ITU-R “studies for possible updating, review and possible revision of outdated information” in the Radio Regulations envisioned by Resolution 67 (WRC-12) does not exclude Article 25, Amateur services. Article 25 was last revised by WRC-03 and is not reviewed for possible revision on a regular basis.

Article 25 includes restrictions on communications by amateur stations on behalf of third parties that are clearly outdated in view of the vast array of telecommunications alternatives now available to individuals. Specifically, No. 25.3 states: “Amateur stations may be used for transmitting international communications on behalf of third parties only in case of emergencies or disaster relief. An administration may determine the applicability of this provision to amateur stations under its jurisdiction.”

Restrictions on international communications by amateur stations on behalf of third parties date to the 1932 International Radiotelegraph Conference held in Madrid and originally were intended to protect the revenues of telecommunications monopolies and to discourage “uneconomic bypass” of common carriers. Such concerns are no longer relevant, and No. 25.2 is sufficient to protect the non-commercial nature of the amateur service. No. 25.2 reads: “Transmissions between amateur stations of different countries shall be limited to communications incidental to the purposes of the amateur service, as defined in No. 1.56 and to remarks of a personal character.”

In the absence of a determination by an administration that the limitation on international communications on behalf of third parties to cases of emergencies or disaster relief does not apply to amateur stations under its jurisdiction, amateurs under the jurisdiction of that administration as well as amateurs communicating with them from other jurisdictions are prohibited from conducting even the most mundane and routine communication on behalf of friends, family members and the general public. This has a chilling effect on demonstrations of the amateur service to the public as well as on training exercises to develop skills for use in emergencies and disaster relief.

Accordingly, the IARU supports the revision of No. 25.3 to read: “Amateur stations may be used for transmitting international communications on behalf of third parties consistent with No. 25.2 as well as in case of emergencies or disaster relief.”

ICAO (date of proposal); IMO (date of proposal); NATO (date of proposal); SFCG (date of proposal); WMO (date of proposal)

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## OTHER INTERNATIONAL AND Regional organisations

ESA (date of proposal); EUMETNET (date of proposal); Eurocontrol (date of proposal)

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ISSUE 9.1.5 – RESOLUTION 154 (WRC-12)

# ISSUE

Resolution 154 (WRC-12) “Consideration of technical and regulatory actions in order to support existing and future operation of fixed satellite service earth stations within the band 3 400-4 200 MHz, as an aid to the safe operation of aircraft and reliable distribution of meteorological information in some countries in Region 1”

“considering

(…)

c) where an adequate terrestrial communication infrastructure is not available, fixed-satellite service (FSS) earth stations are the only viable option to augment the communication infrastructure in order to satisfy the overall communications infrastructure requirements of the International Civil Aviation Organization (ICAO) and to ensure distribution of meteorological information under the auspices of the World Meteorological Organization (WMO);

(…)

resolves to invite ITU-R

to study possible technical and regulatory measures in some countries in Region 1 to support the existing and future FSS earth stations in the 3 400-4 200 MHz band used for satellite communications related to safe operation of aircraft and reliable distribution of meteorological information referred to in considering c)”

# CEPT position

CEPT considers that the operation of FSS earth stations in the band 3 400-4 200 MHz does not require additional technical and/or regulatory measures, as contemplated in Resolution 154 (WRC-12), in CEPT countries.

CEPT will not object to proposals from other regional organisations or countries outside CEPT for modification of Resolution 154 (WRC-12), provided that these proposals do not contradict the CEPT position.

CEPT is of the view that the RR shall be limited to international issues and is not to be used for domestic issues, noting that the results of ITU-R studies can be relevant to both types of issues.

CEPT considers that regulatory procedures currently exist in the Radio Regulations to address the issues raised by Resolution 154 (WRC-12), i.e. to coordinate, with their neighbouring countries, and to notify their receiving earth stations as well as to use relevant ITU-R methodologies to ensure compliance with No. 5.430A. CEPT is of the view that this agenda item should not be used to obtain additional protection compared to the one currently provided by the application of the existing regulatory procedures. CEPT considers that these FSS applications should not be considered as falling within the scope of No. 4.10.

# Background

## General considerations

Allocations in the RR have to be differentiated from the actual implementation and use of systems and applications. It is up to each ITU Member State or group of Member States to decide on the actual use of the frequency bands in their countries taking into account the sharing conditions and coordination requirement defined in the RR in order to protect spectrum use, based on an allocation, in other countries. This is why frequency bands are often allocated to more than one radiocommunication service, even if they are not compatible, i. e. are not possible to use simultaneously in the same geographical area.

An allocation does not mean that a frequency will be used for that specific service in a country; it only provides an opportunity to use the frequencies. Each Member State need to decide on the use of a frequency band based on the user requirements. The condition for use within a country is a national decision.

CEPT finally notes that the use of FSS earth stations as an aid to the safe operation of aircraft and reliable distribution of meteorological information can be accommodated in parts of the band 3 400-4 200 MHz.

## reliable distribution of meteorological information

Through a chain of European support projects (PUMA and MESA) and initiatives (AMESD), a pan-African network of 53 countries and five regional centres has been established, equipped with the infrastructure, training and support required for receiving the latest space-based meteorological and environmental data, images and products from meteorological satellites.

The reception of the meteorological data through the EUMETCast distribution system and the corresponding network of C-Band reception stations in the African countries is fundamental for providing each county with the means to develop their own meteorological applications to enhance quality of life through, for example, better water and agricultural management. The initiative is enabling them to provide accurate weather forecasts, monitor extreme weather events, improve disaster management and forestall drought, starvation and other life-threatening events, saving lives and property.

For this purpose, Europe continuously supplies meteorological satellite data and products free of charge via the EUMETCast dissemination system using C-Band transponder capacity on European communication satellites and provides support in the maintenance and upgrading of the C-Band receiving stations operated by the individual African National Meteorological and Hydrological Service.

## safe operation of aircraft

The efficient provision of air navigation services requires the implementation and operation of ground communications infrastructure with high availability, reliability and integrity. In some countries in Africa, the difficulty of fulfilling these requirements, given the extent of the airspace and weakness in terrestrial communication infrastructure, has led to the extensive deployment of an aeronautical communication infrastructure based on VSAT systems operating in the fixed-satellite service (FSS). The frequency band of operation is the 3 400-4 200 MHz band (with the standard C-band frequency range being 3 700-4 200 MHz and the extended C-band frequency range being 3 400-3 700 MHz), which, due to more pronounced rain attenuation at higher frequency bands, is the most viable option for satellite links with high availability in tropical regions. This infrastructure currently spans the entire region and is crucial to ensure the continued growth of traffic while maintaining safe operation of aircraft.

In Resolution 154 (WRC-12) it is marked, that remote and rural areas often still lack a terrestrial communication infrastructure that meets the evolving requirements of modern civil aviation and the cost of providing and maintaining such an infrastructure could be expensive, particularly in remote regions. That’s why the use of FSS earth stations, deployed in some countries in Region 1 for aeronautical communications has the potential to significantly enhance communications between air traffic control centres as well as with remote aeronautical stations.

## Previous ITU-R Studies

Recommendation ITU-R SF.1486 addresses that the frequency band 3 400-3 700 MHz is allocated worldwide on a primary basis to the fixed service (FS) and the fixed-satellite service (FSS), particularly by systems using very small aperture terminals (VSATs). This band is used for terrestrial point-to-multipoint (P-MP) systems operating in the FS for providing fixed wireless access (FWA) and that this use is growing rapidly in many countries. There is a need to protect co-primary services and to assess further the sharing conditions between FWA systems and these services, Recommendation ITU-R SF.1486 says that co-frequency sharing between VSAT and P-MP systems may be difficult for VSATs operating at low elevation angles. It describes the methodology to facilitate sharing between VSAT earth stations in the FSS and FWA stations, as well as to use the interference mitigation methods for diminishing of the P-MP systems influence to VSATs.

Results of studies on compatibility of broadband wireless access systems and fixed-satellite service networks in the 3 400-4 200 MHz band are shown in Report ITU-R S.2199. It gives examples of FSS systems and FSS receive earth stations, FSS and BWA system parameters, sharing and compatibility studies and results.

According to Article 5 of Radio Regulations, in the majority of countries in Region 1, the frequency band 3 400-3 600 MHz is allocated to the mobile service (including IMT systems) on a primary basis. It should be noted that in Regions 2 and 3 the frequency band 3 400-3 500 MHz is allocated to the mobile service on a secondary basis and the frequency band 3 500-4 200 MHz is allocated to the mobile service on a primary basis As a consequence, the stations of the mobile service may interfere to the VSATs in the [neighbouring] countries.

Recommendation ITU-R S.1856 describes methodologies for determining whether an IMT station at a given location operating in the band 3 400-3 600 MHz would transmit without exceeding the power flux-density limits in the Radio Regulations Nos. 5.430A, 5.432A, 5.432B and 5.433A. It shows how the method may be used to determine the size and shape of the area just inside the border of a country outside of which operation of an IMT mobile terminal would meet the pfd limit at 3 m above ground at any point on that border.

Within the scope of ITU-R guidance on technical parameters and methodologies for sharing studies, related to systems in the land mobile service has been developed which describes mitigation techniques that can improve spectrum sharing (Recommendation ITU-R M.1825).

Report ITU-R M.2109 provides a summary of the sharing studies between IMT Advanced systems and geostationary satellite networks in the fixed-satellite service in the 3 400-4 200 and 4 500-4 800 MHz frequency bands. In preparation for WRC-07, these bands were identified as candidate bands for future development of IMT-2000 and IMT-Advanced systems, as described in Report ITU-R M.2079.

## Summary of ITU-R Studies performed in response to Resolution 154 (WRC-12)

ITU-R studies show a potential for interference from IMT and broadband wireless access stations into FSS earth stations at distances of up to several hundred kilometres. Such large separation distances would impose substantial constraints on the deployment of both the mobile service and the fixed-satellite service. The studies also show that interference can occur when IMT systems are operated in the adjacent frequency band.

Resolution 154 (WRC-12) could be modified, calling for relevant administrations in Region 1 to use special care in the coordination, assignment, and management of frequencies taking into consideration the potential impact on FSS earth stations used for satellite communications related to safe operation of aircraft and reliable distribution of meteorological information in the frequency band 3 400-4 200 MHz. In parallel to the modification of Resolution 154 (WRC-12), consideration may be given to modifying No. 5.430A to include a reference to the modified Resolution.

# List of relevant documents

ITU-Documentation (Recommendations, Reports, other)

* Resolution 20 (WRC-03) – Technical cooperation with developing countries in the field of aeronautical telecommunications.
* Resolution 154 (WRC-12) – Consideration of technical and regulatory actions in order to support existing and future operation of fixed-satellite service earth stations within the band 3 400-4 200 MHz, as an aid to the safe operation of aircraft and reliable distribution of meteorological information in some countries in Region 1.
* Recommendation 724 (WRC-07) – Use by civil aviation of frequency allocations on a primary basis to the fixed-satellite service
* Radio Regulations, Article 5, Nos. 5.430A, 5.431A, 5.432, 5.432A, 5.432B, 5.433A.
* Recommendation ITU-R SF.1486 – Sharing methodology between fixed wireless access systems in the fixed service and very small aperture terminals in the fixed-satellite service in the 3 400-3 700 MHz band.
* Report ITU-R S.2199 – Studies on compatibility of broadband wireless access systems and fixed-satellite service networks in the 3 400-4 200 MHz band.
* Recommendation ITU-R F.1488 – Frequency block arrangements for fixed wireless access systems in the range 3 400-3 800 MHz.
* Recommendation ITU-R S.1856 – Methodologies for determining whether an IMT station at a given location operating in the band 3 400-3 600 MHz would transmit without exceeding the power flux-density limits in the Radio Regulations Nos. 5.430A, 5.432A, 5.432B and 5.433A.
* Recommendation ITU-R M.1825 – Guidance on technical parameters and methodologies for sharing studies related to systems in the land mobile service.
* Report ITU-R M.2109 – Sharing studies between IMT Advanced systems and geostationary satellite networks in the fixed-satellite service in the 3 400-4 200 and 4 500-4 800 MHz frequency bands.
* Recommendation ITU-R M.1634 – Interference protection of terrestrial mobile service systems using Monte Carlo simulation with application to frequency sharing.
* Attachment 4.8 of Chapter 4 of Document 5D/726 – Working document towards a preliminary draft new Report “Compatibility study between FSS networks and IMT systems in the band 3 400-3 600 MHz for small cell deployments”
* CPM Report on WRC-15 agenda item 9.1, issue 9.1.5

CEPT and/or ECC Documentation (Decisions, Recommendations, Reports)

* ECC/DEC/(06)04 – The harmonised conditions for devices using Ultra-Wideband (UWB) technology in bands below 10.6 GHz.
* CEPT Report 009 – Harmonise radio spectrum use for Ultra-Wideband Systems in the European Union.
* CEPT Report 049 - Technical conditions regarding spectrum harmonisation for terrestrial wireless systems in the 3 400-3 800 MHz frequency band
* Report from CEPT to the European Commission (CEPT Report 017) in response to the Mandate: to identify the conditions relating to the harmonised introduction in the European Union of radio applications based on ultra-wideband (UWB) technology. Complementary report. Final Report on 30 March 2007.
* Report B from CEPT to European Commission (CEPT Report 034) in response to the Mandate 4 on Ultra-Wideband (UWB). Final Report on 30 October 2009.
* ECC Report 064 – The protection requirements of radiocommunications systems below 10.6 GHz from generic UWB applications.
* ECC Report 094 – Technical requirements for UWB LDC devices to ensure the protection of FWA systems.
* ECC Report 100 – Compatibility studies in the band 3 400-3 800 MHz between Broadband Wireless Access (BWA) systems and other services.
* ECC Report 120 – Technical requirements for UWB DAA (Detect And Avoid) devices to ensure the protection of Radiolocation services in the bands 3.1-3.4 GHz and 8.5-9 GHz and BWA terminals in the band 3.4-4.2 GHz.
* ECC Report 170 – Specific UWB Applications in the bands 3.4-4.8 GHz and 6-8.5 GHz Location Tracking Applications for Emergency Services (LAES), location tracking applications type 2 (LT2) and location tracking and sensor Applications for automotive and transportation environments (LTA).

EU Documentation (Directives, Decisions, Recommendations, other), if applicable

* 2014/276/EU: Commission Implementing Decision of 2 May 2014 on amending Decision 2008/411/EC on the harmonisation of the 3 400-3 800 MHz frequency band for terrestrial systems capable of providing electronic communications services in the Community
* 2008/411/EC: Commission Decision of 21 May 2008 on the harmonisation of the 3 400-3 800 MHz frequency band for terrestrial systems capable of providing electronic communications services in the Community

# Actions to be taken

none

# Relevant information from outside CEPT (examples of these are below)

## European Union (date of proposal)

## Regional telecommunication organisations

APT (February 2015)

APG preliminary views

APT Members support the outcomes within the ITU-R on this issue, in accordance with Resolution 154 (WRC-12). APT Members recognize that this agenda item is related to Region 1 and APT Members do not support any aspects of this Agenda item being applied to Region 3.

ATU (January 2015)

ONLY method proposed

Arab Group (February 2015)

ASMG Position Resolution 154 (WRC-12) could be modified, calling for relevant administrations in Region 1 to use special care in the coordination, assignment, and management of frequencies taking into consideration the potential impact on the FSS earth stations used for satellite communications related to safe operation of aircraft and reliable distribution of meteorological information in the frequency band 3 400-4 200 MHz.

CITEL (date of proposal)

RCC (September 2015)

In order to protect FSS earth stations from IMT networks in the band 3400-3600 MHz on a national basis it is possible to use technical conditions of RR No5.340A.

The conditions for protection of FSS earth stations in the band 3400-3600 MHz from new networks of fixed and mobile services including wireless access systems must be determined on the basis of ITU-R studies on compatibility between these systems and FSS earth stations, carried out in the framework of this issue.

The RCC Administrations consider that technical and regulatory measures under Resolution 154 (WRC-12) shall not limit the use of the band 3400-4200 MHz by other existing and planned systems and services in other countries, including SOS for the purpose of spacecraft control.

## International organisations

IATA (date of proposal)

-

ICAO (July 2013)

To support possible technical and regulatory measures to ensure protection of VSATs used for the transmission of aeronautical and meteorological information in the frequency range 3.4 – 4.2 GHz from other services operating in the same or adjacent frequency range.

IMO (date of proposal)

-

SFCG (June 2014)

SFCG supports technical and regulatory actions to protect the FSS operations in the band 3400-4200 MHz for the dissemination of meteorological data.

WMO (November 2014)

WMO highlights its requirement to maintain relevant fixed-satellite service capacity and availability in the 3 400-4 200 MHz frequency band. WMO supports technical and regulatory actions to protect the FSS operations in the band 3 400-4 200 MHz for the dissemination of meteorological data in Region 1 and supports a revision of Resolution 154 (WRC-12) calling for relevant administrations in Region 1 to use special care in the coordination, assignment, and management of frequencies as described in Draft CPM Report.

## Regional organisations

ESA (September 2014)

Support SFCG positions

EUMETNET (November 2014)

Support WMO positions

Eurocontrol (date of proposal)

-

EUMETSAT (February 2013)

EUMETSAT as operator of the European meteorological satellites and the organization which supplies through the framework of the PUMA, AMESD and MESA projects the meteorological satellite data and products free of charge via the EUMETCast dissemination system to the African National Meteorological and Hydrological Services, and who provides support in the maintenance and upgrading of the C-Band receiving stations, is of the view that African countries should not be hampered by any decision of WRC-15 in their aim to support existing and future operation of fixed satellite service earth stations receiving meteorological data within the band 3 400-4 200 MHz)

## OTHER INTERNATIONAL AND REGIONAL ORGANISATIONS

EBU (date of proposal); GSMA (date of proposal)

-

ISSUE 9.1.6 – Resolution 957 (WRC-12)

# ISSUE

Resolution 957 (WRC-12) resolves to review the definitions of fixed service, fixed station and mobile station for possible modification and invites ITU-R to conduct the necessary studies including on the potential impact of such modifications.

# CEPT position

CEPT is of the view that there is no need to modify the existing definitions of fixed service, fixed station and mobile station. Furthermore CEPT opposes any modification which may have any negative regulatory impact on existing allocations to radiocommunication services.

CEPT therefore propose NOC to the Radio Regulations under this issue.

# Background

## Introduction

WRC-12 adopted a Resolution which resolves to review the definitions of fixed service, fixed station and mobile station for possible modification. The implementation of any new or modified definition should be in agreement with the system of RR definitions to ensure absence of (logical) contradictions between existing and modified (new) definitions.

## WP 1B

WP 1B has developed a working document towards draft CPM text on WRC 15 agenda item 9.1, Issue 9.1.6. The latest version is in Annex 5 to the Chairman’s Report (source: Document 1B/TEMP/52) from the third meeting of WP 1B. This is carried forward to the forth WP 1B meeting.

WP 1B decided to discontinue the development of the working document towards a preliminary draft new Report on this issue, since it had not received enough contributions over the past WP 1B meetings and its content remained almost unchanged from the previous cycle outcome, and also taking into account that all of the contributions coming to WP 1B meeting were all proposing no change to the RR with regards to this issue.

At the fourth meeting in June 2014 WP 1B considered several contributions in this regard, and accordingly updated the working document towards draft CPM text, in order to reflect the current status of studies and the proposed option to satisfy this Issue.

As result of the discussion and update from this meeting, WP 1B agreed the draft CPM text contained in Doc. 1B/181 Annex 2, and the work by the WP 1B in this regard was considered to be concluded.

In the CPM report it is stated that “According to the contributions and liaison statements, after thorough discussions, ITU-R developed one regulatory and procedural consideration, i.e. to suppress Resolution 957 (WRC-12) to satisfy issue 9.1.6 of agenda item 9.1, with the consideration that retaining the current definitions for the fixed service, fixed station and mobile station in RR Article 1 is able to adapt to technology evolution and that there is sufficient flexibility within the present RR.

Furthermore, it was concluded that there was no need to develop a new ITU-R Report under this issue.”

# List of relevant documents

ITU-Documentation (Recommendations, Reports, other)

Document WRC-12/335

Document 1B/181-E-Report of the meeting of Working Party 1B (Geneva, 2014)

# Actions to be taken

none

# Relevant information from outside CEPT

## European Union (date of proposal)

## Regional telecommunication organisations:

APT (27 July – 1 August 2015)

APT Members fully support the ITU-R conclusions under Agenda Item 9.1, Issue 9.1.6, i.e. No change to the Radio Regulations apart from the suppression of Resolution 957 (WRC-12) due to the fact that the responsible working parties for satellite and terrestrial services have indicated that modifications to the definitions of fixed service, fixed station or mobile station would have adverse impact on the operation of various satellite radiocommunication services/systems

ATU (January, 2015)

1. Not in favour of any change to the current definitions.

2. To await the outcome of ongoing studies.

Arab Group (22-27 August 2015)

NOC

CITEL November 2014)

* SUP Resolution 957 as there is no other method identified in the draft CPM report, as a result of the study cycle.

RCC (November 2014)

The RCC Administrations consider that current definitions in the Radio Regulations do not prevent from using the existing applications in the fixed and mobile services.

The RCC Administrations oppose changing the definition of the terms fixed service, fixed station and mobile station.

## International organisations

IATA (date of proposal)

-

ICAO (17 June 2015)

To ensure that any change to the definitions as a result of a review of the studies referenced in Resolution 957, do not adversely impact aviation.

IMO (November 2014)

Ensure that measures taken at WRC-15 under this agenda item do not have an adverse impact on the maritime services and maritime applications.

NATO (20 June 2015)

NATO Military Position

NATO is of the view that it is unnecessary to change any Article 1 definitions.

SFCG (date of proposal)

-

WMO and EUMETNET (January 2015)

Agenda item 9.1.6: studies towards review of the definitions of fixed service, fixed station and mobile station

WMO supports maintaining a clear distinction in definitions of the fixed service and the mobile service, the fixed station and the mobile station in order to maintain availability and the relevant protection of meteorological and other relevant applications.

## OTHER INTERNATIONAL AND Regional organisations

ESA (date of proposal)

-

Eurocontrol (date of proposal)

European Aeronautical Spectrum Frequency Consultation Group (ASFCG) (no date)

EACP Position 9.1.6

To ensure that any change to the definitions as a result of a review of the studies referenced in Resolution 957 do not adversely impact aviation.

EBU (date of proposal); GSMA (date of proposal)

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ISSUE 9.1.7 – Resolution 647 (WRC-12)

# Issue

Resolution 647 (Rev.WRC-12) resolves to encourage administrations to communicate to BR, as soon as possible, the frequencies available for use for emergency and disaster relief; and to reiterate to administrations the importance of having frequencies available for use in the very early stages of humanitarian assistance intervention for disaster relief.

Furthermore ITU-R is invited to conduct studies as necessary, and as a matter of urgency, in support of the establishment of appropriate spectrum management guidelines applicable in emergency and disaster relief operations.

# CEPT position

CEPT proposes the suppression of Resolution 647 (Rev. WRC-12) and the consequential modification of Resolution 644 (Rev.WRC-12). CEPT will also propose consequential modification of ITU-R Resolution 646 (Rev.WRC-12) under their proposals for WRC-15 AI 1.3 in line with Method C of the CPM Report.

# Background

The evolution of emergency and disaster relief communications, generally included in PPDR, lead in the last years to a wider commonality of systems and applications in narrow, wide and broadband use. The current developments also indicate a closer interoperability of all future systems e.g. by using the same technologies. In addition CEPT countries are already aware of the importance to provide instant access to suitable spectrum to emergency and disaster relief organisations or even to dedicate spectrum to this purpose solely. Furthermore CEPT countries have already harmonised frequency bands for narrowband use for emergency and disaster relief and are currently planning to harmonise frequency bands for broadband use for the same purpose for a CEPT-wide use, the reporting of these frequency bands is also one subject of WRC-15 Agenda item 1.3.

The envisaged studies on appropriate spectrum management guidelines might also be resolved by the CEPT efforts on harmonisation of bands for PPDR use and, if necessary, will be then brought to the attention of ITU membership.

CEPT recognizes the importance of radiocommunications for use in emergency and disaster relief situations, but considers that

1. The contact information (including list of focal points) in ITU database should be maintained.
2. No operational frequency ranges are required in the ITU database as the specific frequencies and procedures would be provided and co-ordinated by the local focal point in any disaster situation. In addition information on frequency ranges for PPDR use in each ITU region are given in Resolution 646.
3. Handbooks although useful for pre-emptive guidance are not the relevant documentation to be read in emergency situations.

In addition CEPT recognises that

* the 2006 version of the ITU Handbook on emergency and disaster relief and its ITU-R Special Supplement is appropriate and still contains useful information, which may need further amendment based on relevant ITU-R studies after WRC-15, and if considered necessary, work on updating handbooks can be encouraged within Study Groups and/or by the BR
* Although Method A and Method C propose different methods for the agenda item the results of both methods are very similar in that they move some content from an existing resolution that is proposed to be suppressed into another existing Resolution.

# List of relevant documents

* ITU Handbook on Emergency and disaster relief including ITU-R special supplement
* <http://www.itu.int/en/publications/ITU-R/pages/publications.aspx?parent=R-HDB-48-2006&media=electronic>
* ECC Report 199 – User requirements and spectrum needs for future European broadband PPDR systems (Wide Area Networks)
* <http://www.erodocdb.dk/Docs/doc98/official/pdf/ECCREP199.PDF>
* ITU-R Resolution 646 (Rev.WRC 2012) – Public protection and disaster relief
* <http://www.itu.int/dms_pub/itu-r/oth/0A/06/R0A0600001A0001MSWE.docx>
* ITU-R Resolution 644 (Rev.WRC 2012) – Radiocommunication resources for early warning, disaster mitigation and relief operations

# Actions to be taken

none

# Relevant information from outside CEPT (examples of these are below)

## European Union (date of proposal)

## Regional telecommunication organisations:

APT (July 2015)

APT Members support Option B under this issue as described in CPM Report, i.e. to keep Resolution 644 (Rev. WRC-12) and modify Resolution 647 (Rev. WRC-12).

ATU (July 2015)

No common position although most countries or sub-regional organisations have indicated support for either Method A or Method B. Countries were urged to take into account comments made by the BR and CEPT as they continue to review this agenda item.

Arab Group (August 2015)

Support modification of Resolution 647 (Rev. WRC-12) and consequential suppression of Resolution 644 (Rev. WRC-12)

ACP: MOD Res. 647 (REV WRC-15), SUP Res. 644 (REC WRC-12)

CITEL (August 2015)

IAP: MOD Res 646 as per Method A of the CPM Report.

RCC (September 2015)

The RCC Administrations support the development of spectrum management guidelines applicable in emergency and disaster relief operations.

The RCC Administrations have no objections to the inclusion of contact data in the ITU database of persons responsible for spectrum use and interworking in emergency situations and disaster relief operations, as well as support optional (at the discretion of administrations) providing information on available radio frequencies for use in emergency and disaster relief.

## International organisations

IATA; ICAO; IMO; NATO

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## Regional organisations

ESA; EUMETNET

-

Eurocontrol

-

ISSUE 9.1.8 - Resolution 757 (WRC-12)

# Issue

Resolution 757 (WRC-12) – Regulatory aspects for nanosatellites and picosatellites – invites ITU-R “to examine the procedures for notifying space networks and consider possible modifications to enable the deployment and operation of nanosatellites and picosatellites, taking into account the short development time, short mission time and unique orbital characteristics” and instructs the Director of the Radiocommunication Bureau “to report to WRC 15 on the results of these studies”.

# CEPT POSITION

CEPT proposes that RR Articles 9 and 11 remain unchanged concerning publication, coordination and notification purposes for nanosatellites and picosatellites.

CEPT supports development of an ITU-R Resolution inviting ITU-R to prepare material containing detailed information that would help to improve the knowledge of the applicable procedures for submitting filings of satellite networks to the ITU, in particular among new entrants to the space sector.

CEPT recognizes the need to address the expected growing number of nanosatellites and picosatellites.

# Background

Many universities, space agencies and companies have an interest in nanosatellites and picosatellites. The increasing miniaturisation of electronics has enabled these satellites to offer a means to perform a variety of missions in space, from educational, research and experimentation to Earth observation and telecommunication missions.

Following proposals from 12 CEPT members, WRC-12 decided to put on the WRC-19 preliminary agenda the issue of nanosatellites and picosatellites: “2.2 the appropriate regulatory procedures for notifying satellite networks needed to facilitate the deployment and operation of nanosatellites and picosatellites, in accordance with Resolution 757 (WRC‑12);”. Resolution 757 (WRC-12) invites ITU-R to undertake the relevant studies and furthermore instructs the Director of the Radiocommunication Bureau to report to WRC-15 on the results of these studies.

Furthermore, Question ITU-R 254/7 ¨Characteristics and spectrum requirements of satellite systems using nanosatellites and picosatellites¨ was assigned to ITU Working Party 7B.

Question ITU-R 254/7 contains three questions to be studied:

1. What are the distinctive characteristics of nanosatellites and picosatellites and satellite systems in terms of their use of the radio spectrum as defined by data rates, transmissions time and bandwidths?
2. Taking into account such distinctive characteristics, what are the spectrum requirements for nanosatellite and picosatellite systems?
3. Under which radiocommunication services can satellite systems using nanosatellites and picosatellites operate?

## Work within ITU-R working Party 7B

Administrations participating in ITU-R Working Party 7B (WP7B) agree that the focus of the studies, in addition to answering Question 254/7, should be to identify difficulties in the application of Articles 9 and 11 of the Radio Regulations, and that the goal should not be to propose changes to Article 5 (table of frequency allocations).

WP7B produced two new Reports: ITU-R SA.2312 “Characteristics, definitions and spectrum requirements of nanosatellites and picosatellites, as well as systems composed of such satellites” and ITU-R SA.2348 “Current practice and procedures for notifying space networks currently applicable to nanosatellites and picosatellites“.

## **Definition of nanosatellites and picosatellites**

The conclusion of the new Report ITU-R SA.2312 states:

“Nanosatellite and picosatellite systems have provided unprecedented access to space by way of their reduced deployment timelines and costs. Further, standardization of certain physical aspects allows increased flexibility for their deployment as secondary payloads.

While nanosatellites and picosatellites are most often recognized by their small physical dimensions and mass, there are several other programmatic and technical aspects which make them different from more traditional satellite systems. These may include short development times and short operational life. It should be noted that most of these characteristics, as well as physical dimensions and mass, are not part of the information to be submitted under Appendix 4 of the RR. It is difficult under Appendix 4 of RR (edition 2012) to distinguish nanosatellites and picosatellites from others. Nevertheless, nanosatellites and picosatellites may be used for a variety of applications in a number of different satellite services. Currently, these applications are often, but not always, experiments, tests or technology demonstrations. As new concepts are continually being developed for nanosatellite and picosatellite applications, the differences between these satellites and traditional satellites may become less distinct.”

Taking the conclusion that “most characteristics are not part of the information to be submitted under Appendix 4 of the RR” into account, a definition of nanosatellites and picosatellites based on these characteristics would be irrelevant from a frequency management point of view. For this reason, a clear definition has not been developed.

## **Difficulties in the application of the Radio Regulations**

The following difficulties in application of the Radio Regulations on nanosatellites and picosatellites have been identified:

1. The typically short development time of nanosatellites and picosatellites is not in line with the usual timeline of the regulatory process according to Article 9 (Section I and Section II), especially if there are comments on the API/A;
2. Late knowledge of detailed orbital parameters as a result of the opportunistic launch arrangements. Furthermore, since many of these satellites are not equipped with a propulsion system their orbit will decay over mission time;
3. Limited experience with the applicable regulatory procedures by some of the administrations involved as well as some of the developers of nanosatellites and picosatellites, leading to:
   1. Inadequate Appendix 4 data provided to the Bureau which in turn leads to unnecessary administrative burden to the Bureau and administrations involved
   2. Nanosatellites and picosatellites which are not always operating in the appropriate frequency band or radiocommunication service
   3. Late initiation of the filing due to late knowledge of the orbital parameters

Issues related to the growth in numbers of small satellites launched and under development

1. Nanosatellite and picosatellite spectrum requirements are expanding along with their evolving applications;
2. The large growth in numbers of nanosatellites and picosatellites puts pressure on the available allocations and associated ITU filings create additional administrative burden on the Bureau as well as on administrations.

* Issue 1

In view of the difficulty in defining nanosatellites and picosatellites from a frequency management perspective, and in order to avoid unnecessary complication of the Radio Regulations, CEPT is of the view that articles 9 and 11 of the Radio Regulations should not contain any specific regulation regarding nanosatellites and picosatellites in order to solve this issue.

* Issue 2

The orbital parameters of nanosatellites and picosatellites are often known only shortly before launch. The launch contract is usually signed about 12-18 months before launch. Only when the launch contract is signed, the operator has final knowledge of the orbital parameters. For that reason, some operators hesitate to initiate the API procedure. During discussions at the ITU WP7B meeting in October 2014, it became apparent that there is a procedural method to initiate the filing without an exact knowledge of parameters, but this method may not be known to developers and administrations with little experience in the ITU procedures.

Therefore, WP7B has kindly asked the BR to clarify the following issues:

1. That it is appropriate for an administration that does not know exact orbital parameters until shortly before launch to submit the best estimated value for apogee, perigee and inclination for the API.
2. That it is appropriate to account for the natural decay of systems that lack propulsion by submitting a minimum orbit altitude (AP4 A. 4.b.4.f) lower than the value submitted as perigee under AP4 A.4.b.4.e and that this could be covered by a comment, explaining that the minimum orbit altitude is lower than the perigee because of the lack of propulsion.
3. During the May 2015 meeting of WP7B, the BR has provided an affirmative reply to both these questions in document 7B/342 and indicated that the text in this document will be included in the report of the Director to WRC-15.

* Issue 3

Since many developers of small satellites are newcomers to the space sector, their administrations are in many cases relatively uninvolved in informal spectrum management fora, or have little experience in the application of the regulatory procedures under Article 9 and 11 of the Radio Regulations. This could be solved by development and dissemination of material describing the applicable regulations, and the knowledge of the existence of informal fora for the consideration of specific frequency bands.

CEPT supports development of an ITU-R Resolution addressing this issue.

* Issue 4 and 5

These issues are related to the growth in numbers of nanosatellites and picosatellites. The growth in numbers of these small satellites has been a major contributing factor to the growth in numbers of satellites launched in general. It is apparent that it becomes important to consider this rapid growth of small satellites from a spectrum management perspective. And even though satellite size is considered to be not relevant from a spectrum management viewpoint, their small size has been a key factor enabling their growth and widespread adoption. Some developers and commercial operators are planning to launch as many as 100 on a single launch for a single application.

# List of relevant documents

ITU-Documentation (Recommendations, Reports, other)

* ITU WP7B doc 7B/365 Report of the May 2015 meeting of Working Party 7B
* Report of the CPM to WRC-15 - CPM text on Agenda item 9 issue 9.1.8
* ITU WP7B Annex 5 to doc 7B/365 Proposed modifications to Question ITU-R 254/7
* Report ITU-R SA.2312 Characteristics, definitions and spectrum requirements of nanosatellites and picosatellites, as well as systems composed of such satellites
* Report ITU-R SA.2348 Current practice and procedures for notifying space networks currently applicable to nanosatellites and picosatellites
* ITU WP7B doc 7B/342 Reply to Working Party 7B’s note to the Director

CEPT and/or ECC Documentation (Decisions, Recommendations, Reports)

EU Documentation (Directives, Decisions, Recommendations, other), if applicable

# Actions to be taken

none

# Relevant information from outside CEPT (examples of these are below)

## European Union (date of proposal)

## Regional telecommunication organisations:

APT (August 2015)

* Members support the study to examine the necessary procedures for notifying nano- and picosatellites taking into account their unique characteristics while any unacceptable impact on existing services and radio stations in operation or of planned operation in conformity with the RR is avoided.
* Members support that the issue related with nano- and picosatellites should be carried out under a certain Agenda Item deals with satellite regulatory issue of a future WRC for the consideration of regulatory procedures for notifying these satellite networks.
* APT Members also support retention of Resolution 757 (Rev.WRC-12) with some modifications, as appropriate.

ATU (July 2015)

Simplified regulatory procedures

Arab Group (August 2015)

* NOC

CITEL (August 2015)

* SUP Agenda Item 2.2 in Resolution 808 (WRC-12) for no dedicated WRC-19 agenda item to address filing procedures for nanosatellites and picosatellites that could be addressed under the standing WRC agenda item for issues pertaining to satellite networks.
* SUP Resolution 757 (WRC-12)

RCC (September 2015)

The RCC Administrations consider that any changes in the notification procedures of satellite networks operating nano-and picosatellites should not lead to complications in the notification, coordination and use of other satellite networks. Necessary changes could be included in the RR at WRC-19.

Appropriate changes should be confirmed by ITU studies.

## International organisations

IATA (date of proposal); ICAO (date of proposal); IMO (date of proposal); NATO (date of proposal)

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SFCG (August 2015)

SFCG supports contributions to studies under Question ITU-R 254/7.

SFCG favors the study of this issue, since it recognizes that a growing number of picosatellites/nanosatellites are under development in the world. At present many of these satellites operate in frequency bands allocated to the amateur-satellite service. Now there is an increasing demand for these satellites to operate in other satellite services. Many of these satellites are launched for scientific, experimental or educational purposes, sometimes in the form of constellations and there is a growing interest for commercial non-scientific applications. SFCG supports that the frequency bands used should align with the applications being supported. An investigation on how this growing number of satellites can be supported is needed.

SFCG noted the complexity in obtaining a common definition of which types of satellites should be classified under the category nanosatellites and picosatellites and the fact that these definitions tend to relate to elements that are not relevant from a frequency management perspective (size, mass, cost).

SFCG is of the opinion that any satellite, including nanosatellites and picosatellites, will have to be registered with the ITU-R and must adhere to the ITU-R Radio Regulations.

Any changes to the RR to facilitate development of nanosatellites and picosatellites should be carefully developed to ensure protection of all satellite missions.

WMO (November 2014)

Regulations for nano- and picosatellites shall not impact on the operation of EESS and MetSat satellite systems. To this respect nano- and picosatellite systems shall follow the same advanced publication, coordination and notification processes as other satellite systems and thus not be given advantage over other satellite systems.

IARU (September 2014)

Because of the possible implications of these studies for the amateur and amateur-satellite services, the IARU is following the progress of these studies attentively. Nanosatellites and picosatellites that are properly licensed in the amateur-satellite service and are operated consistent with the purposes of the amateur and amateur-satellite services as defined in Nos. 1.56 and 1.57 may utilize the provisions of Resolution 642.

## OTHER INTERNATIONAL AND REGIONAL ORGANISATIONS

ESA (September 2014)

Support SFCG positions

EUMETNET (September 2014)

Support WMO positions

Eurocontrol (date of proposal)

EUMETSAT

Support WMO positions

AGENDA ITEM 9.2 (satellite part)

9. to consider and approve the Report of the Director of the Radiocommunication Bureau, in accordance with Article 7 of the Convention:

9.2 on any difficulties or inconsistencies encountered in the application of the Radio Regulations

# ISSUE

Collection of difficulties or inconsistencies encountered in the application of the Radio Regulations (RR) that are identified by the administrations, the Radiocommunication Bureau (BR) and the Radio Regulations Board (RRB), as well as the suggestion of the BR and the RRB of modifications of the RR to alleviate such difficulties or inconsistencies.

# CEPT position

1. Regarding clarification of use of No. 5.526 (see section 3.1.1 of Part 2 of the Report of the Director), the CEPT supports changes to No. 5.526 relating to networks providing links to earth stations in motion. The changes proposed by the CEPT include (a) removing the requirement for these networks to be in the MSS as well as in FSS, (b) to extend the applicability of the footnote to the bands 19.7-20.2 GHz in all three regions, and (c) adopting a new Resolution specifying the technical requirements that should be met by such earth stations.
2. Concerning suggestions for improvement of the Resolution 49 procedure contained in section 2.5.5 of Part 1 of the Report of the Director, CEPT notes that proposals similar to the BR suggestions have been discussed in WRC-12 and not implemented in Resolution 49. However they led to the creation of Resolution 552 (WRC-12) that applies in the band 21.4-22 GHz. CEPT is of the view that more time is needed to assess the results of implementation of Resolution 552 before any extension to other frequency bands is considered.
3. Concerning Part 2 of the Report of the Director, CEPT has the following views:

|  |  |  |
| --- | --- | --- |
| Issues for which CEPT supports no change at WRC-15 | Issues for which CEPT supports endorsing the BR practice | Issues for which CEPT supports the BR clarifications to the RR |
| 3.2.1.4  3.2.2.1  3.2.2.4 (except 3.2.2.4.4)  3.2.3.4  3.2.3.7  3.2.5.2.1  3.2.5.2.3  3.2.5.2.7 a) and c)  3.2.6.8  3.3 | 3.2.3.2  3.2.3.5  3.2.3.9  3.2.4.1  3.2.4.2  3.2.5.2.2  3.2.5.2.7 b)  3.2.7.1  3.2.7.2  3.2.8.1 | 3.1.2  3.2.1.1 (Option 1)  3.2.1.2  3.2.2.3  3.2.3.1  3.2.5.2.4  3.2.5.2.5  3.2.5.2.6 (remove the limitation to 3°)  3.2.5.2.8  3.2.6.1  3.2.6.2  3.2.6.3  3.2.6.4  3.2.6.5  3.2.6.6  3.2.6.7  3.2.6.9 (no more protection of analog assignments)  3.2.6.10 (coordination arc of +/- 7°)  3.2.6.11  3.2.7.3 (Option 1)  3.2.7.4 (Option 1)  3.2.7.5  3.2.8.2  3.2.8.3 |

With respect to section 3.2.2.4.4 (Bringing into use of frequency assignments to non-GSO satellite systems), CEPT is of the view that studies should be carried out to develop appropriate regulations and modifications to No. 11.44, in particular in relation to NGSO systems with large numbers of satellites. Taking into account that some CEPT administrations may develop proposals to WRC-15 on this matter, CEPT does not exclude its support for a solution on this issue at WRC-15, but it would prefer to study the matter more in-depth in the next study cycle so that a proposal could be made to WRC-19. It is noted that some CEPT administrations may develop proposals to WRC-15 on this matter. In case where the CEPT position at WRC-15 would eventually be no change, it would in no way prejudge the position that CEPT may take in the future on the current BR’s practice regarding the bringing into use of non-geostationary satellite systems. Noting that CEPT supports that studies on this issue be finalized in time for WRC-19, CEPT considers that they have to take particular consideration of how to discourage and possibly avoid speculative bringing into use of non-GSO systems prior to WRC-19.

Concerning § 3.2.3.8 of Part 2 of the report of the Director, CEPT supports the possibility to notify typical earth stations provided that such publication is solely for the purposes of international recognition; nevertheless, the associated frequency assignments shall not have any status derived from such recording. Beside the finding made under No. 11.31, the only status that those frequency assignments shall have is where they have also been subject to the application of the relevant provisions of Articles 9 and 11 (in particular No. 11.32, 11.32A and No. 11.33) or of Appendices 30, 30A and 30B of the Radio Regulations, as applicable. Furthermore, CEPT wishes to highlight that the notification of typical earth stations would not in any case allow the notifying administration to claim spectrum rights on the territory of other countries.

# Background

Clarification of use of RR 5.526 (see section 3.1.1 of Part 2 of the Director’s Report)

In February 2014, the Radiocommunication Bureau (BR) has published Circular Letter CR/358 through which a new Class of Station (code UC) has been created for an earth station while in motion associated with a space station in the fixed-satellite service (FSS) in the bands listed under provision RR No. 5.526 (i.e. the 19.7 - 20.2 GHz and 29.5 - 30.0 GHz bands in Region 2 and 20.1 - 20.2 GHz and 29.9 - 30.0 GHz bands in Regions 1 and 3). Administrations are invited to use this class of station symbol when submitting to the Bureau a notice for a satellite network which is both in the FSS and MSS with links between a space station in the FSS and an earth station while in motion. CEPT developed ECC Report 184 and ECC/DEC/(13)01 in order to create a harmonized regime granting free circulation and exempting from individual licensing ESOMPs that comply with certain technical and operational criteria. CEPT views the publication of Circular Letter CR/358 as very positive for ESOMPs operations and notices that the guidance provided by the BR aligns with similar principles which in the CEPT led to the development of the regulatory framework for ESOMPs.

The draft BR Director’s Report to the WRC includes a discussion about No. 5.526 in section 3.1.1. This section confirms and elaborates on the content of CR/358. In particular, it clarifies that UC stations are treated as part of the FSS portion of the network and the requirement for the network to be in the MSS is met as long as there is at least one beam in one part of the No. 5.526 frequency ranges with frequency assignments associated to an EI class of space station (or EG, EJ, EU). The circular letter also clarifies that such a requirement is met regardless of whether there is an EI designation associated with the beam used by the UC station. Hence, the CEPT views the requirement for the network to be in the MSS as redundant.

Based on the discussion at WARC-92 No. 5.526 was adopted, allowing the use of links between earth stations at specified or unspecified points or while in motion in the bands 19.7 - 20.2 GHz and 29.5 - 30.0 GHz in Region 2 and 20.1 - 20.2 GHz and 29.9 - 30 GHz in Region 1 and 3. These bands are allocated to both FSS and MSS on a primary basis. As per Circular Letter CR/358 UC stations symbol has been defined as “earth station while in motion in the fixed-satellite service in the bands listed under provision No. 5.526”. This class of station symbol should be used for a satellite network which is both in the FSS and in the MSS with links between a space station in the FSS and an earth station while in motion using frequency assignments in the bands 19.7-20.2 GHz and 29.5-30 GHz in Region 2 and in the bands 20.1-20.2 GHz and 29.9-30 GHz in Regions 1 and 3 in conformity with the specific FSS allocations and conditions specified in No. 5.526. CR/358 also states that in the absence of any particular criteria, the establishment of coordination for such links will be based on existing criteria for FSS links. Since UC stations are intended to operate in FSS networks under conditions and coordination criteria for FSS links, CEPT is of the view that the requirement for a satellite network using UC stations to be also in the MSS is unnecessary, regardless of whether such a network operates in a band with or without an MSS allocation. Hence, the CEPT believes that UC stations could be used not only in portions of the bands 19.7 - 20.2 GHz and 29.5 - 30 GHz in Regions 1 and 3, but in the full bands under appropriate conditions which guarantee protection of existing and future FSS networks.

The limited application of No. 5.526 is also inconsistent with ECC/DEC/(13)01 and constrains the operation of ESOMPs, particularly compared to those operating in Region 2. CEPT proposes to modify 5.526 in order to allow ESOMPs to operate in the entire 19.7 - 20.2 GHz and 29.5 - 30.0 GHz bands in Regions 1 and 3, without requiring that earth stations in motion and their satellites operate in both the fixed-satellite service and in the mobile-satellite service. Considering the principles which led to the creation of RR Nos. 5.526 to 5.529 and the new class of earth station (code UC) recently created, those networks would only need to be in the fixed-satellite service, thus respecting the technical and regulatory conditions of FSS.

Studies in WP 4A around ESOMPs operating in the 29.5-30.0 GHz (Earth-to-space) and 19.7-20.2 GHz (space-to-Earth) bands have led to a new Report, Report ITU-R S.2357, which sets out the technical and operational conditions, in order to guarantee to those administrations wishing to authorize them that such terminals are compatible with other services and systems in the same frequency bands.

A modification to the RR is proposed, to further clarify the regulatory provisions surrounding the use of ESOMPs in these frequency bands, and to extend the provisions to the bands 29.5 - 30.0 GHz and 19.7 - 20.2 GHz to all three Regions consistently. The proposed changes include technical, operational and regulatory provisions in a Resolution incorporated by reference in RR No. 5.526. Such provisions are based on the content of Report ITU-R S.2357 and shall ensure that ESOMPs operating with FSS satellites would not cause harmful interference to other services and systems in the same frequency bands.

Other issues

Parts 1 and 2 of the Report of the Director were reviewed. CEPT generally supports the correction, or suppression, of errors, inconsistencies and out-of-date provisions listed in section 2.2 of Part 2 of the Report. Section 3.2.4.3 of Part 2 addresses Article 48 of the Constitution for which a CEPT position has been developed under WRC-15 agenda item 9.3.

The attached file contains a detailed analysis of Part 2 of the Report of the Director.



# List of relevant documents

ITU-Documentation (Recommendations, Reports, other)

* Report ITU-R S.2223 – “Technical and operational requirements for GSO FSS earth stations on mobile platforms in bands from 17.3 to 30.0 GHz”
* Report ITU-R S.2357-0 - “Technical and operational guidelines for earth stations on mobile platforms communicating with geostationary space stations in the fixed-satellite service in the frequency bands 19.7-20.2 GHz and 29.5-30.0 GHz”
* CPM Report on technical, operational and regulatory/procedural matters to be considered by the World Radiocommunication Conference 2015 (see WRC-15 Document 3 section 5/Application of RR 5.526)
* Addendum 1 to WRC-15 Document 4 - Report of the Director on the activities of the Radiocommunication Sector, Part 1: Activities of the Radiocommunication Sector in the period between WRC-12 and WRC-15
* Addendum 2 to WRC-15 Document 4 - Report of the Director on the activities of the Radiocommunication Sector, Part 2: Experience in the application of radio regulatory procedures and other related matters (section 3.1.1 specifically adresses the clarification of use of RR 5.526)

CEPT and/or ECC Documentation (Decisions, Recommendations, Reports)

* ECC Report 184 – “The Use of Earth Stations on Mobile Platforms Operating with GSO Satellite Networks in the Frequency Range17.3-20.2 GHz and 27.5-30.0 GHz”;
* ECC/DEC/(13)01 – “ECC Decision of 8 March 2013 on the use, free circulation, and exemption from individual licensing of Earth stations on mobile platforms (ESOMPs) in the frequency bands available for use by uncoordinated FSS Earth stations within the ranges 17.3-20.2 GHz and 27.5-30.0 GHz”.EU Documentation (Directives, Decisions, Recommendations, other), if applicable

EU Documentation (Directives, Decisions, Recommendations, other), if applicable

None

# Actions to be taken

None

# RELEVANT INFORMATION FROM OUTSIDE CEPT

## European Union (SEPTEMBER 2013)

## Regional telecommunication organisations

APT (August 2015)

APT members are of the view that WRC-15 needs, in the light of the various advantages of ESOMPs operations on one hand, and, the ambiguity of text in the footnote and regulatory aspects of the matter, on the other hand, to take necessary action to clarify the situation, enabling Administrations and satellite operators to implement and operate the ESOMPs and to provide necessary guidance to membership on how to operate such systems and manage the interference that may be caused to terrestrial and space services.

Clarification is envisaged in the form of a modification to RR No. 5.526 to harmonise use of the bands 19.7-20.2GHz and 29.5-30.0GHz in all three Regions and the removal of the requirement for the network to be both FSS and MSS, as ESOMP intends to operate under FSS..

In this regard, it is necessary to also approve a Resolution, cross referenced in the modified footnotes, to provide details on the use of the ESOMPs together with all operational, technical, if any, as well as procedures to operate them.

The above course of action will facilitate the licensing process for ESOMPs in accordance with Article 18 of the RR, while ensuring that transmission is kept to an acceptable level or ceased completely, should interference occur.

Moreover, any course of action taken to resolve the difficulties encountered in the application of this footnote shall be exclusively restricted or limited to the frequency bands 19.7-20.2GHz and 29.5-30.0GHz. Thus it shall in no way be extended to other frequency bands or other footnotes.

In addition, such course of action shall in no way modify the definition of the fixed station or mobile station and fixed and mobile Earth Station as contained in Article 1 of the RR.

Some APT Members intend to submit to WRC-15 an amendment to RR No.5.526 and, if necessary, other associate footnotes relating to the operation of ESOMPs, which points towards a new WRC Resolution. That Resolution should contain various aspects of ESOMPs as mentioned in bullet points 1-4 above.

ATU (July 2015)

Common African proposal adopted on ESOMPs to revise 5.526 and adopt a new associated Resolution.

Arab Group (August 2015)

Common ASMG proposal adopted to add a new footnote to permit operation of Earth stations in motion under the FSS in the bands 19.7-20.2 GHz and 29.5-30 GHz and to adopt a new associated Resolution.

CITEL (August 2015)

Inter-American Proposal adopted to:

* ADD new footnote in Article 5 to FSS bands in 19.7-20.2 GHz and 29.5-30 GHz to permit earth stations that are in motion to communicate with GSO space stations of the fixed-satellite service
* ADD new Resolution to regulate the authorization and operation of the ESOMPS

RCC (September 2015)

9.2.1 Definitions for stations of meteorological aids service

The RCC Administrations support inclusion of definitions for stations of meteorological aids service in the Article 1 of RR (the only Method).

9.2.2 Amending certain RR provisions on the usage of frequency assignments for deep space

The RCC Administrations support the clarification for using frequency assignments to SRS (deep space) near to the Earth (Method A).

Other issues:

The RCC Administrations consider that the proposed changes for No 5.526 on modification of radio frequency bands allocation to MSS do not refer to WRC-15 AI 9.2 because the issues of allocation shall be considered within the framework of appropriate WRC agenda items and based on the ITU-R studies.

The RCC Administrations do not support substantial changes to the Resolution 49 (Rev. WRC-12) and extension of Resolution 552 (WRC-12) applicability to other frequency bands.

The RCC Administrations do not oppose considering inclusion of the definition for “Different category of service” to RR.

It is supporting modifications of the Article 10 of the Appendix 30B with regard national allocations of same RCC countries.

## International organisations

IATA (date of proposal); ICAO (date of proposal); IMO (date of proposal); SFCG (date of proposal); WMO and EUMETNET (date of proposal)

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## Regional organisations

ESA (date of proposal); Eurocontrol (date of proposal)

## OTHER INTERNATIONAL AND REGIONAL ORGANISATIONS

EBU (date of proposal); GSMA (date of proposal)

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AGENDA ITEM 9.3 - RESOLUTION 80 (REV. WRC-07)

# ISSUE

Resolution 80 (Rev.WRC-07) “Due diligence in applying the principles embodied in the Constitution” resolves:

1. “to instruct the Radiocommunication Sector, in accordance with No. 1 of Article 12 of the Constitution, to carry out studies on procedures for measurement and analysis of the application of the basic principles contained in Article 44 of the Constitution;
2. to instruct the RRB to consider and review possible draft recommendations and draft provisions linking the formal notification, coordination and registration procedures with the principles contained in Article 44 of the Constitution and No. 0.3 of the Preamble to the Radio Regulations, and to report to each future World Radiocommunication Conference with regard to this Resolution;
3. to instruct the Director of the Radiocommunication Bureau to submit to each future World Radiocommunication Conference a detailed progress report on the action taken on this Resolution.”

# CEPT position

Concerning the part of the RRB Report on Resolution 80 related to Article 48 of the Constitution (section 4.4), CEPT notes that Article 48 refers to “military radio installations” and not to stations used for governmental purposes in general. Moreover, considering the three questions raised by the RRB, CEPT considers that:

* an administration should explicitly invoke Article 48 of the Constitution in order for this provision to apply to an inquiry under No. 13.6;
* there should be no restriction in terms of nature of service for a station eligible to operate under Article 48;
* stations in the broadcasting or broadcasting-satellite service, whose transmissions are by definition intended for direct reception by the general public, should in general not be operated under Article 48.

Concerning the part of the RRB Report on Resolution 80 related to modifications of RR Articles 13 and 15 (section 4.6.4), CEPT notes that this issue was already discussed during WRC-12 and does not support reopening such discussions. Therefore CEPT does not support the suggested modifications to RR Articles 13 and 15.

# Background

At its February 2014 meeting, ITU-R Working Party 4A initiated drafting the CPM text on this issue. Working Party 4A has listed the numerous ITU-R Recommendations and Reports that have been developed in the past to provide for equitable access to, and to promote efficient use of, the geostationary orbit.

At its February and July 2014 meetings, ITU-R Working Party 4A developed and completed the draft CPM text on this issue. After having recalled the various seminars and workshops on topics linked to Resolution 80 (Rev.WRC-07) and having listed the numerous ITU-R Recommendations and Reports that have been developed in the past to provide for equitable access to, and to promote efficient use of, the geostationary orbit, the draft CPM text concludes that:

“The Plans contained in RR Appendices 30, 30A and 30B have been analysed and updated since their inception. For example, in WRC-2000 and WRC-03, RR Appendices 30 and 30A were significantly revised to increase the capacity that is available to each ITU Member State. In WRC-07, the technical characteristics of the RR Appendix 30B Plan were modified to improve efficiency of the Plan. If the guarantee of access to the GSO has not been fulfilled by these Plans, then perhaps the Plans should be modified to better achieve such an objective.

(…)

Views were expressed that Resolution 80 (Rev.WRC-07) has been assigned to various groups such as the Radiocommunication Advisory Group, RRB, Working Party of the Special Committee, Working Party 4A and previous WRCs without specific results to address the issue raised in this Resolution. As such, it may be time to decide on the retention or otherwise of this Resolution.”

During the CPM, based on a contribution from APT countries, only this last paragraph was retained in the section related to regulatory and procedural considerations.

The Report by the Radio Regulations Board to WRC-15 on Resolution 80 (Rev.WRC-07) was reviewed. It was noted that sections 4.1, 4.2, 4.5.1, 4.5.2, 4.9, 4.10 of the Report are already addressed under WRC-15 agenda item 7 and that sections 4.3, 4.5.3, 4.6.1, 4.6.2, 4.6.3, 4.7, 4.8, 4.11 were not calling for any specific actions.

# List of relevant documents

ITU-Documentation (Recommendations, Reports, other)

* CPM Report on WRC-15 Agenda item 9.3 (see WRC-15 Document 3 section 5/9.3)
* Addendum2 to WRC-15 Document 4 - Report of the Director on the activities of the Radiocommunication Sector, Part 2: Experience in the application of radio regulatory procedures and other related matters (see section 3.2.4.3 related to Article 48 of the Constitution)
* WRC-15 Document 14 - Report by the Radio Regulations Board to WRC-15 “Resolution 80 (Rev.WRC-07)”

CEPT and/or ECC Documentation (Decisions, Recommendations, Reports)

EU Documentation (Directives, Decisions, Recommendations, other), if applicable

# Actions to be taken

None

# Relevant information from outside CEPT (examples of these are below)

## European Union (date of proposal)

## Regional telecommunication organisations

APT (July 2015)

APG preliminary views

The meeting supports the outcomes within the ITU-R on this issue, in accordance with Resolution 80 (Rev.WRC-07).

Some APT Members are of the view that Resolution 80 (Rev.WRC-07) could be suppressed.

Some other APT Members are of the view that Resolution 80 (Rev.WRC-07) could be retained, noting that the Reports by RRB to WRCs are based on this Resolution, and, therefore, further consideration is necessary if this Resolution is to be suppressed.

ATU (January 2015)

APM15-3 Outcome (African Preliminary Position)

None. APM15-4 to endeavour to agree on a common position.

Arab Group (August 2015)

ASMG Position:

Supports the retention of Resolution 80 (Rev.WRC-07)

ACP: NOC

CITEL (date of proposal)

None

RCC (April 2015)

Draft position is being developed.

## International organisations

IATA (date of proposal); ICAO (date of proposal); IMO (date of proposal); NATO (date of proposal); SFCG (date of proposal); WMO (date of proposal)

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## Regional organisations

ESA (date of proposal); EUMETNET (date of proposal); Eurocontrol (date of proposal)

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## OTHER INTERNATIONAL AND REGIONAL ORGANISATIONS

EBU (date of proposal); GSMA (date of proposal)

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1. Method B was in the previous draft CPM text and is similar to the unique method as adopted at the CPM. The ATU position will be updated after the ATU meeting in July 2015 [↑](#footnote-ref-1)
2. Note 1. Application of the new criterion value for permissible single entry inference only to new network assignments, notified after the WRC-15, will have a positive effect from the increased criterion only years (decades) afterwards, when the number of new networks will be a significant share of the total number of GSO networks. [↑](#footnote-ref-2)