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| **Radiocommunication Assembly (RA-19) Sharm el-Sheikh, Egypt, 21-25 October 2019** |  | |
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| **PLENARY MEETING** | | **Document RA19/PLEN/17-E** |
| **25 September 2019** |
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| Canada | | |
| Proposed Draft NEW ITU-R RESOLUTION ON STUDIES ON the IMPLEMENTATION AND use of radiocommunication systems operating above 275 GHz | | |

Background and discussion

While in the RR there are no frequency allocations above 275 GHz, some bands are identified for use by administrations for passive service applications (cf. 5.565). The use of the range 275-1 000 GHz by the passive services does not preclude use of this range by active services and all frequencies in the range 1 000-3 000 GHz may be used by both active and passive services. Furthermore, WRC-19 agenda item 1.15 calls for studies to identify frequency bands for use by administrations for land mobile and fixed services applications operating in the frequency range 275-450 GHz, in accordance with Resolution **767 (WRC-15)**, which may result in new frequency identifications.

There are also several ITU-R study questions addressing propagation aspects and technical and operational characteristics of systems operating above 275 GHz:

[Question ITU-R 237/1](https://www.itu.int/pub/R-QUE-SG01.237) – Technical and operational characteristics of the active services operating in the range 275-1 000 GHz.

[Question ITU-R 228/3](https://www.itu.int/pub/R-QUE-SG03.228) – Propagation data required for the planning of radiocommunication systems operating above 275 GHz.

[Question ITU-R 264/4](https://www.itu.int/pub/R-QUE-SG04.264) – Technical and operational characteristics of networks of the fixed-satellite service operating above 275 GHz.

[Question ITU-R 256/5](https://www.itu.int/pub/R-QUE-SG05.256) – Technical and operational characteristics of the land mobile service in the frequency range 275-1 000 GHz.

[Question ITU-R 257/5](https://www.itu.int/pub/R-QUE-SG05.257) – Technical and operational characteristics of stations in the fixed service in the frequency range 275-1 000 GHz.

[Question ITU-R 257/7](https://www.itu.int/pub/R-QUE-SG07.257) – Technical and operational characteristics of radio astronomy applications operating above 275 GHz.

Since the use of the frequencies above 275 GHz offers many opportunities for the medium to long term it is important to continue studying the use of these frequencies in a coordinated manner and an ITU-R Resolution will assist in focusing the activities of the study groups.

The approval of an ITU-R Resolution does not prevent the adoption/approval of ITU-R Question(s) by any study group to address any specific aspects of frequencies above 275 GHz relevant to the radiocommunication services falling under that study group’s responsibility. It should be noted that similar approaches have been followed in the past by the Radiocommunication Assemblies in 2007 and 2012 with the adoption of Resolution ITU-R 55 “ITU studies of disaster prediction, detection, mitigation and relief”and Resolution ITU-R 58 “Studies on the implementation and use of cognitive radio systems”, respectively.

Proposal

It is proposed that the draft ITU-R Resolution shown in [Annex 1](#annex1) be approved by the 2019 Radiocommunication Assembly.

[**Annex 1**](#annex1)**:** Draft New Resolution ITU-R [275-3 000GHz] “Studies on the implementation and use of radiocommunication systems operating within the range 275-3 000 GHz”

Annex 1

Draft New Resolution ITU-R [275-3 000GHz]

Studies on the implementation and use of radiocommunication systems operating within the range 275-3 000 GHz

(…)

The ITU Radiocommunication Assembly,

considering

*a)* that the use of the frequencies above 275 GHz offers many opportunities in the medium to long term;

*b)* that ITU-R has already initiated studies on radiocommunication service applications above 275 GHz (cf. Questions ITU-R [237/1](https://www.itu.int/pub/R-QUE-SG01.237),  [228/3](https://www.itu.int/pub/R-QUE-SG03.228),  [264/4](https://www.itu.int/pub/R-QUE-SG04.264) , [256/5](https://www.itu.int/pub/R-QUE-SG05.256), [257/5](https://www.itu.int/pub/R-QUE-SG05.257), and [257/7](https://www.itu.int/pub/R-QUE-SG07.257));

*c)* that there are plans to implement radiocommunication systems in frequencies above 275 GHz (cf. Reports ITU-R [F.2416](https://www.itu.int/pub/R-REP-F.2416), [M.2417](https://www.itu.int/pub/R-REP-M.2417), [RA.2189](http://www.itu.int/pub/R-REP-RA.2189), [RS.2194](http://www.itu.int/pub/R-REP-RS.2194),  [RS.2431](https://www.itu.int/pub/R-REP-RS.2431), [SM.2352](http://www.itu.int/pub/R-REP-SM.2352), and SM.2450);

*c)* that it is desirable to provide guidance to emerging applications regarding the protection of passive service applications, as well as on sharing between all service applications, and;

*d)* that the technological development of active services above 275 GHz is in its infancy and is therefore expected to evolve over a long time,

recognizing

*a)* that the frequency range 275-3000 GHz is not allocated;

*b)* that No. **5.565** of the Radio Regulations identifies certain frequency bands in the range 275-1 000 GHz for use by administrations for passive service applications, which must be protected in accordance with ITU-R studies, while the use for active systems is permitted in this range and all frequencies in the range 1 000-3 000 GHz may be used by both active and passive services;

*c)* that [Resolution 37](https://www.itu.int/pub/R-RES-R.37) resolves that propagation information should be referred to Radiocommunication Study Group 3, so that, in addition to the value of the contribution to the work of the other Study Group, the information may also be used in the future work of Radiocommunication Study Group 3,

noting

that studies are required to facilitate the use of frequencies above 275 GHz by all service applications, in a manner that addresses the evolving characteristics of all service applications and the need to protect passive service applications,

resolves to invite ITU‑R

1 to study the implementation and use of radiocommunication systems within the range 275‑3 000 GHz;

2 to study operational and technical characteristics, requirements, and performance associated with the use of the frequencies above 275 GHz;

3 to study the technical conditions associated with the implementation and use of radiocommunication systems operating within the range 275-3 000 GHz in order to facilitate, ensure and enhance coexistence and sharing among radiocommunication systems in specific frequency bands;

4 to develop relevant ITU-R Recommendations and/or Reports based on the aforementioned studies as appropriate,

invites the membership

to participate actively in the implementation of this Resolution, among others, by providing contributions to ITU-R and submitting relevant information from outside ITU-R.

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