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| **World Radiocommunication Conference (WRC-15) Geneva, 2–27 November 2015** |  |
| **INTERNATIONAL TELECOMMUNICATION UNION** |  |
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| PLENARY MEETING | **Revision 1 to Document 103(Add.24)-E** |
|  | **1 November 2015** |
|  | **Original: English** |
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| Japan | |
| Proposals for the work of the conference | |
|  | |
| Agenda item 10 | |

10to recommend to the Council items for inclusion in the agenda for the next WRC, and to give its views on the preliminary agenda for the subsequent conference and on possible agenda items for future conferences, in accordance with Article 7 of the Convention,

Background

Japan supports proposals of ASP/32A24 for WRC-19 Agenda in APT Common Proposal (Addendum 24 to Document 32). The *resolves 1.2* states to consider the appropriate regulatory measures to identify the land mobile and fixed services operating in the frequency range 275-1 000 GHz in accordance with Resolution [ASP-C10-MS&FS\_ABOVE\_275GHz] (WRC-15) (ASP/10/15).

The proposed agenda relates to two radiocommunication services, i.e. land mobile service and the fixed service. In the ITU-R Study Groups, these services are currently studied by Working Parties 5A and 5C, respectively. To identify the work specified in *invites ITU-R* of the draft new Resolution [ASP-C10-MS&FS\_ABOVE\_275GHz] (WRC-15) in Attachment 2 of Addendum 24 of Document 32 to the appropriate Working Parties, Japan proposes another new Resolution by slightly modifying the above draft new Resolution as follows:

− to add the related ITU-R Questions (i.e. Questions ITU-R 256-0/5 and ITU-R 257-0/5) under the scope of WP 5A and WP 5C, which were recently approved, as *noting e)* *and f)*;

− to editorially subdivide the study items under *invites* ITU-R into two categories according to the radiocommunication services, without changing the substance.

The above two points are the only differences from ASP/32A24/15 proposed by APT.

Proposal

ADD J/103A24/1

DRAFT NEW RESOLUTION [J-C10-MS&FS\_ABOVE\_275GHz] (WRC‑15)

Appropriate regulatory measures for the land mobile and fixed services operating in the frequency range 275‑1 000 GHz

The World Radiocommunication Conference (Geneva, 2015),

considering

*a)* that a number of bands in the frequency range 275-1 000 GHz are identified for use by administrations for passive services, such as the radio astronomy service, Earth exploration satellite service (passive), and space research service (passive);

*b)* that No. **5.565** states that the use of the range of 275-1 000 GHz by passive services does not preclude use of this range by active services;

*c)* that administrations wishing to make frequencies in the 275‑1 000 GHz range available for active service applications are urged to take all practicable steps to protect these passive services from harmful interference until the date when the Table of Frequency Allocation is established in the above-mentioned 275‑1 000 GHz frequency;

*d)* that the active devices which can operate at the room temperature in the band above 275 GHz becomes feasible due to the significant efforts of many R & D organizations;

*e)* that research and development organizations have demonstrated ultra-high-speed data communication systems up to 100 Gbps operating in the band above 275 GHz;

*f)* that the IEEE is developing their standards for devices using the frequency band above 275 GHz;

*g)* that the propagation characteristics of frequencies above 275 GHz have also been studied by ITU-R Study Group 3;

*h)* that the study on technical and operational characteristics of active services operating in the range 275‑1 000 GHz has been carried out by ITU-R;

*i)* that as a result of *considering h)*, the study on technical and operational characteristics of the land mobile and fixed services operating in the frequency range 275-1 000 GHz has been started in ITU-R;

*j)* that WP 7C noted that there is a potential interference from active services in the frequency range 275-1 000 GHz where atmospheric attenuation is low;

*k)* that coexistence of passive services identified by No. **5.565** with newly introduced active services is to be ensured;

*l)* that the technical and operational characteristics of the land mobile and fixed services operating in the frequency range 275-1 000 GHz have not been specified and further studies are required;

*m)* that the propagation models of the land mobile and fixed services operating in the frequency range 275-1 000 GHz are required;

*n)* that the sharing and compatibility studies between passive services and the land mobile and fixed services operating in the frequency range 275-1 000 GHz have not been studied,

noting

*a)* that Question ITU-R 228-2/3 “Propagation data required for the planning of radiocommunication systems operating above 275 GHz” addresses studies on propagation models best describing the relationship between atmospheric parameters and electromagnetic wave characteristics on terrestrial links operating at frequencies above 275 GHz;

*b)* that Question ITU-R 264/4 “Technical and operational characteristics of networks of the fixed-satellite service operating above 275 GHz” addresses studies on the technical and operational characteristics of Earth-to-space, space-to-Earth, and space-to-space links at frequencies above 275 GHz;

*c)* that Question ITU-R 235-1/7 “Technical and operational characteristics of applications of science services operating above 275 GHz” addresses guides studies on the technical and operational characteristics of systems operating at frequencies above 275 GHz within the science service;

*d)* that Question ITU-R 237/1 “Technical and operational characteristics of the active services operating in the range 275-1 000 GHz” addresses studies on the technical and operational characteristics of active services in the frequency range 275-1 000 GHz;

*e)* that Question ITU-R 256-0/5 “Technical and operational characteristics of the land mobile service in the frequency range 275-1 000 GHz” addresses studies on the technical and operational characteristics of the land mobile service in the frequency range 275-1 000 GHz;

*f)* that Question ITU-R 257-0/5 “Technical and operational characteristics of the fixed service in the frequency range 275-1 000 GHz” addresses studies on the technical and operational characteristics of the fixed service in the frequency range 275-1 000 GHz;

*g)* that Recommendation ITU-R [P.676](http://www.itu.int/rec/R-REC-P.676/en)-10 “Attenuation by atmospheric gases” provides methods to estimate the attenuation of atmospheric gases on terrestrial and slant paths using an estimate of gaseous attenuation computed by summation of individual absorption lines that is valid for the frequency range 1-1000 GHz and a simplified approximate method to estimate gaseous attenuation that is applicable in the frequency range 1-350 GHz;

*h)* that Recommendation ITU-R [P.838](http://www.itu.int/rec/R-REC-P.836/en)-3 “Specific attenuation model for rain for use in prediction methods” provides the prediction methods of the specific attenuation model for rain;

*i)* that Recommendation ITU-R [P.840](http://www.itu.int/rec/R-REC-P.840/en)-6 “Attenuation due to clouds and fog” provides methods to predict the attenuation due to clouds and fog on Earth-space paths;

*j)* that Report ITU-R RA.2189 “Sharing between the radio astronomy service and active services (Airborne system, non-GSO system) in the frequency range 275-3 000 GHz” provides that sharing between radio astronomy and active services in the range 275-3 000 GHz;

*k)* that Report ITU-R F.2323-0 “Fixed service use and future trends” provides guidance on the future development of the fixed service (FS) taking into account evolution of current use and technology development, application trends for fixed wireless systems and future requirements for fixed wireless systems;

*l)* that Report ITU-R SM.2352-0 “Technology trends of active services in the frequency range 275-3 000 GHz” provides technology trends of active services in the frequency range 275‑3 000 GHz,

resolves

to consider the appropriate regulatory measures to identify the land mobile and fixed services operating in the frequency range 275-1 000 GHz, taking into account the results of ITU-R studies,

invites ITU-R

1 to identify potential characteristics of systems in the land mobile service operating in the frequency range 275‑1 000 GHz;

2 to identify potential characteristics of systems in the fixed service operating in the frequency range 275‑1 000 GHz;

3 to study spectrum requirements of the land mobile service, taking into account technical and operational characteristics of the service operating in the frequency range 275‑1 000 GHz;

4 to study spectrum requirements of the fixed service, taking into account technical and operational characteristics of the service operating in the frequency range 275‑1 000 GHz;

5 to conduct sharing and compatibility studies between passive and the land mobile services, as well as among active services, operating in the frequency range 275‑1 000 GHz;

6 to conduct sharing and compatibility studies between passive and the fixed services, as well as among active services, operating in the frequency range 275‑1 000 GHz;

7 to study potential candidate frequency bands for use of the land mobile service, taking into account the results of the studies under invite ITU-R 1, 3 and 5 and the protection of passive services identified in No. **5.565**;

8 to study potential candidate frequency bands for use of the fixed service, taking into account the results of the studies under invite ITU-R 2, 4 and 6 and the protection of passive services identified in No. **5.565**,

encourages Member States, Sector Members, Academia, and Associates

to submit contributions during the study period on their assessment of the impact on the identified services, based on the studies carried out under this Resolution,

invites administrations

to participate in the studies by submitting contributions to ITU-R.

**Reasons:** To meet international spectrum needs in the frequency range 275‑1 000 GHz and IEEE requirements and implementation for terahertz wireless communication systems.

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