|  |  |
| --- | --- |
| **World Radiocommunication Conference (WRC-19) Sharm el-Sheikh, Egypt, 28 October – 22 November 2019** |  |
|  |  |
|  |  |
| PLENARY MEETING | **Addendum 12 to Document 92-E** |
|  | **7 October 2019** |
|  | **Original: English** |
|  | |
| India (Republic of) | |
| Proposals for the work of the conference | |
|  | |
| Agenda item 1.12 | |

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

# 1 Background

WRC-19 agenda item 1.12 seeks to identify possible global or regional harmonized frequency bands for the implementation of evolving Intelligent Transport Systems (ITS) under existing mobile service allocations. There is a need to consider harmonization of frequency bands for the implementation of evolving ITS. Evolving ITS are being deployed to assist safe driving and to support transportation system efficiency and environmental sustainability. It is recognized that the frequency bands within existing mobile service allocations being used by evolving ITS may also be utilized by other applications and services. Several ITU-R Reports and Recommendations have been developed in support of this agenda item. ITU-R studies indicated that some administrations in each of the three Regions have designated the frequency band of 5 850-5 925 MHz, or parts thereof, for the deployment of evolving ITS. Recommendation ITU‑R M.2121 recommends that several frequency bands within each Region, in whole or in part, be used for current and future ITS applications.

Evolving ITS, including vehicle-to-vehicle (V2V), vehicle-to-infrastructure (V2I), vehicle-to-network (V2N) and vehicle-to-pedestrian (V2P) communications have been deployed in some countries to assist with safer driving. Communicating with moving vehicles is one of the typical use cases for radiocommunications, and a variety of ITS applications rely on radiocommunication technologies including the next generation of ITS applications.

Evolving ITS also become important in helping to reduce road traffic problems such as congestion and accidents. To address road safety and efficiency-related matters, the ITS with vehicle-to-everything communication (e.g. WAVE, ETSI ITS-G5, LTE based V2X, ITS Connect) are being studied in ITU-R. Recognizing that harmonized spectrum and international standards would facilitate deployment of ITS radiocommunications, WRC‑19 agenda item 1.12 was approved by WRC-15 and Resolution **237 (WRC‑15)** requested to consider possible global or regional harmonized frequency bands for the implementation of evolving ITS under existing mobile service allocations. The mobile service bands being used by the evolving ITS may also be utilized by other applications and services and some of the frequency bands are also being considered under other agenda items.

# 2 Views

India is of the view that the new generation of co-operative ITS should operate within those frequency bands that are already being adopted for ITS use on a regional (or sub-regional) basis within existing mobile service allocations, or an immediately adjacent frequency band that is also appropriate for such use. For this reason, India supports the use of the frequency band 5 850-5 925 MHz, or parts thereof, when deploying ITS applications.

Therefore, India supports Method B as outlined in the CPM text for WRC-19 agenda item 1.12.

# 3 Proposal

NOC IND/92A12/1#49723

ARTICLES

NOC IND/92A12/2#49724

APPENDICES

SUP IND/92A12/3#49725

RESOLUTION 237 (WRC-15)

Intelligent Transport Systems applications

ADD IND/92A12/4#49726

Draft New Resolution [IND/-A112] (WRC-19)

Harmonization of frequency bands for evolving Intelligent Transport Systems applications under mobile service allocations

The World Radiocommunication Conference (Sharm el-Sheikh, 2019),

considering

*a)* that information and communication technologies are integrated in a vehicle system to provide evolving Intelligent Transport Systems (ITS) communication applications for the purpose of improving traffic management and assisting safer driving;

*b)* that there is a need for consideration of spectrum harmonization for evolving ITS applications, which are being used globally or regionally;

*c)* that there is a need to integrate various technologies, including radiocommunications, into land transportation systems;

*d)* that many new connected vehicles use intelligent technologies in the vehicles’ combined advanced traffic management, advanced traveller information, advanced public transportation management systems and/or advanced fleet management systems to improve traffic management;

*e)* that future vehicular radiocommunication technologies and ITS broadcast systems are emerging;

*f)* that some administrations have harmonized frequency bands for ITS radiocommunication applications;

*g)* that under certain circumstances, FSS earth station uplinks may create potential interference to ITS stations which may have operational issues while in close proximity;

*h)* that the compatibility between ITS stations and FSS space stations is achievable for certain ITS stations as an interferer,

recognizing

*a)* that harmonized spectrum and international standards would facilitate worldwide deployment of evolving ITS radiocommunications and provide for economies of scale in bringing evolving ITS equipment and services to the public;

*b)* that the designation of those harmonized frequency bands, or parts thereof, for evolving ITS does not preclude the use of these bands/frequencies by any other application of the services to which they are allocated and does not establish priority in applying and using the Radio Regulations;

*c)* that in those harmonized frequency bands or parts thereof for ITS, there are existing services whose protection needs to be ensured;

*d)* that a certain country in Region 3 operates an ITS system around 5.8 GHz as described in Recommendation ITU‑R M.1453;

*e)* that evolving ITS also becomes important in helping to reduce road traffic problems such as congestion and accidents;

*f)* that ITU-R studies on evolving ITS technologies (e.g. WAVE, ETSI ITS-G5, LTE‑based V2X, ITS Connect) are meant to address road safety and efficiency-related matters,

noting

*a)* that the guidelines for radio interface requirements of ITS are described in Recommendation ITU‑R M.1890;

*b)* that outlines of technologies and characteristics for dedicated short-range communications at 5.8 GHz are described in Recommendation ITU‑R M.1453;

*c)* that some administrations in each of the three Regions have deployed radiocommunication local area networks in the frequency band 5 725-5 850 MHz and some administrations are considering allowing radiocommunication local area networks in the frequency band 5 850-5 925 MHz;

*d)* that studies, feasibility tests, and actual operation of advanced evolving ITS radiocommunications have been actively conducted towards the realization of traffic safety and a reduction of environmental impact as described in Report ITU‑R M.2228;

*e)* that radio interface standards of vehicle-to-vehicle and vehicle-to-infrastructure communications for evolving ITS applications are described in Recommendation ITU‑R M.2084;

*f)* that ITS usage in ITU Member States is described in Report ITU‑R M.2445;

*g)* that some administrations have considered that ITS devices cannot claim protection from FSS earth station uplinks in 5 850-5 925 MHz in order to facilitate coexistence, in which case ITS devices deployed need to cope with the interference created by FSS earth station uplinks;

*h)* that some administrations in Region 1, in the spirit of Article **6**, have applied a coordinated approach by which when they deploy ITS stations, protection cannot be claimed from FSS earth station uplinks in 5 850-5 925 MHz;

*i)* that the latest version of Recommendation ITU‑R M.2121 provides frequency bands for evolving ITS systems,

emphasizing

that the provisions of Nos. **1.59** and **4.10** do not apply to evolving ITS applications under mobile-service allocations,

resolves

to encourage administrations to consider globally or regionally harmonized frequency bands or parts thereof, which are listed in the most recent version of Recommendation ITU‑R M.2121, when planning and deploying evolving ITS applications, taking into account *recognizing b)* above,

invites ITU-R

to continue the studies on different ITS aspects, including harmonization of spectrum,

instructs the Director of the Radiocommunication Bureau

1 to report to the Radiocommunication Assembly 2023 on the implementation of this Resolution through the relevant ITU-R Study Groups, for the adoption of any necessary actions;

2 to support administrations in their work towards the harmonization of spectrum for ITS applications pursuant to the *resolves* and this Resolution,

invites Member States and Sector Members

to take into account, as necessary, possible coexistence issues between ITS stations and FSS earth stations operating in the 5 850-5 925 MHz frequency band,

invites Member States, Sector Members, Associates and Academia

to actively contribute to the ITU‑R studies on ITS,

instructs the Secretary-General

to bring this Resolution to the attention of relevant international and regional organizations dealing with ITS.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_