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| **Radiocommunication Study Groups** |  |
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| Annex 8 to Working Party 5A Chairman’s Report |
| preliminary DRAFT CPM TEXT FOR WRC-19 Agenda item 1.12 |
| 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)****;*

Resolution **237 (WRC‑15)** – *Intelligent Transport Systems applications*

# 1/1.12/1 Executive summary

*[Text of the executive summary, not more than half a page of text to describe briefly the purpose of the agenda item, summarize the results of the studies carried out and, most importantly, provide a brief description of the method(s) identified that may satisfy the agenda item]*

# 1/1.12/2 Background

*[Text of the background, not more than half a page of text to provide general information in a concise manner, in order to describe the rationale of the agenda items (or issue(s))]*

Since 1995, research and development activities have been conducted in info-communication systems as core technologies of ITS. ITS, including ETC (Electronic Toll Collection) have been globally deployed. Evolving ITS, including vehicle-to-vehicle (V2V), vehicle-to-infrastructure (V2I) communications, vehicle-to-network (V2N) and vehicle-to-pedestrian (V2P) have been regionally deployed to assist safe driving. Communicating with moving vehicles is one of the typical use cases for radiocommunication, and a variety of ITS applications greatly depend on functionality of radiocommunication. Radiocommunication technology is essential to the next generation of ITS applications, especially to assist safe driving and potentially supports automated driving, etc.

Evolving ITS also becomes important in resolving road traffic problems such as congestion and accidents. To resolve such road safety and efficiency related matters, the ITS systems with vehicle-to-everything communication (e.g. WAVE, ETSI ITS-G5, LTE based V2X) are studied in ITU-R.

Recognizing that harmonized spectrum and international standards would facilitate deployment of ITS radiocommunication, agenda item 1.12 was approved by WRC-15 to study the 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.

# 1/1.12/3 Summary and Analysis of the results of ITU-R studies

*[This section should contain a summary of the technical and operational studies performed within ITU-R, including a list of relevant ITU-R Recommendations. Depending on the agenda item, this section could be divided in two parts, one part dealing with the summary of technical and operational studies and the other part dealing with the analysis of the results of studies.
The results of the ITU-R studies should also be analysed with respect to the possible methods of satisfying the agenda item, and presented in a concise manner.]*

## [1/1.12/3.1 Other studies]

*[Editor’s note: This text has been included here based upon current discussions.]*

Sharing studies have been undertaken regarding use of ITS in the bands 5 725‑5 850 MHz (in Region 1) and 5 850‑5 925 MHz (globally), where FSS systems have been deployed. This regional result show that there is a potential for harmful interference from FSS earth stations to ITS receivers. Preliminary studies also concluded that the probability of interference from ITS devices to FSS space receivers would be negligible (although this conclusion should be revisited once the full characterization of ITS systems is completed; i.e.: when the report on ITS.USAGE would provide sufficient information on the technical characteristics of ITS systems)

In order to ensure the proper operation of ITS devices in the band 5 855‑5 925 MHz, within the mobile service, administrations should ensure that the ITS receivers are designed in such a way as to accommodate the potential interference created by FSS earth stations and other incumbent co‑primary services.

## [1/1.12/3.1 ITU-R studies]

International standardization activities for ITS have been conducted by ITU-R and ISO at the global level, by ETSI, CEN, ARIB and others at the regional level, and by IEEE, SAE and other organizations in the private sector. In ITU-R, several recommendations and reports have been published, as follows:

– Recommendation [ITU-R M.1890](http://www.itu.int/rec/R-REC-M.1890/en), “Intelligent Transport Systems – Guidelines and Objectives”, 2011.

– Recommendation [ITU-R M.1453-2](http://www.itu.int/rec/R-REC-M.1453/en), “Intelligent Transport Systems – Dedicated Short Range Communications at 5.8 GHz”, 2005.

– Recommendation [ITU-R M.1452-2](http://www.itu.int/rec/R-REC-M.1452/en), “Millimetre wave radiocommunication systems for ITS applications”, 2012.

– Report [ITU-R M.2228](http://www.itu.int/pub/R-REP-M.2228), “Advanced Intelligent Transport Systems (ITS) radiocommunications”, 2012.

– Recommendation [ITU-R M.2084](http://www.itu.int/rec/R-REC-M.2084/en), “Radio interface standards of vehicle-to-vehicle and vehicle-to-infrastructure communications for intelligent transport systems applications”, 2015.

– Report ITU-R M.[ITS USAGE], “Intelligent transport systems usage Report in ITU Member States”, to be published in 2016.

# 1/1.12/4 Methods to satisfy the agenda item

*[This section should contain the brief description of the Method or Methods to satisfy the agenda item as per section 4 of Annex 2 to Resolution ITU-R 2-7]*

**Method A** – No change to the Radio Regulations.

Reason: The required harmonisation on frequencies for ITS pertaining to the exchange of information to improve traffic management and assisting safe driving can be achieved with an ITU‑R Recommendation.

# 1/1.12/5 Regulatory and procedural considerations

*[Example(s) of regulatory text relating to the Method(s) to satisfy the agenda item]*

## 1/1.12/5.1 For Method A

NOC for RR

SUP Resolution 237.