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| **Radiocommunication Study Groups** |  |
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| **English only** |
| Annex 34 to Working Party 5A Chairman’s Report |
| working document towards a preliminary draft new recommendation ITU-R M.[ITS\_FRQ] |
| Harmonization of frequency arrangements for Intelligent Transport Systemsin the mobile service |

Scope

This Recommendation provides guidance on harmonized frequency arrangements to be used by specific intelligent transportation systems (ITS) pertaining to the exchange of information to improve traffic management and assisting safe driving. The Recommendation encourages administrations to use harmonized frequency bands and arrangements throughout the ITU-R regions for those ITS applications. The relevant arrangements are addressed in the Annexes to this Recommendation.

The ITU Radiocommunication Assembly,

considering

*a)* that the growing radiocommunication needs of national and international road management can be satisfied through evolving intelligent transportation systems (ITS);

*b)* that national spectrum planning for ITS requires cooperation with other concerned administrations, in order to facilitate greater levels of spectrum harmonization;

*c)* that usage of the same frequencies of the same Service will enable administrations to benefit from harmonization while continuing to meet national planning requirements;

recognizing

*a)* that ITS are implemented under existing mobile-service allocations,

*b)* that the frequency bands harmonized by this Recommendation are allocated to a variety of services in accordance with the relevant provisions of the Radio Regulations,

*c)* that the following harmonized frequency ranges or parts thereof are considered by the administrations when undertaking their national planning:

* + - in Region 1:
		- ….,
		- in Region 2:
		- …,
		- in Region 3:
		- …;

*d)* the need for the development of harmonized frequency bands for the purposes of implementing ITS;

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

*f)* that ITS applications are not understood as an application of a safety service (**No 1.59**);

*g)* that other land mobile systems may effectively complement ITS;

*h)* that ITS is not intended to provide broadband connectivity to the drivers/passengers;

noting

*a)* that the benefits of spectrum harmonization for ITS are:

* + - increased potential for transportation operations, especially cross-border;
		- a broader manufacturing base and increased volume of equipment resulting in economies of scale and expanded equipment availability;
		- improved spectrum management and planning,

*b)* that spectrum planning for ITS is performed at the national level, taking into account the benefits of harmonized frequency bands used by neighbouring administrations;

*c)* the benefits of cooperation between countries providing effective transportation operations;

*d)* that the use of ITS applications will improve traffic management, assist safe driving and support automated driving;

*e)* that flexibility, when using ITS, should be afforded to administrations :

* + - to determine, at the national level, how much spectrum will be made available in order to meet their particular national requirements taking into account the existing applications and their evolution;
		- to have the harmonised bands being used by all services having allocations according to the provisions of the Radio Regulations, taking into account the existing applications and their evolution;

recommends

**1** that the band [5 855-5 925 MHz] should be used for current and future ITS applications;

**2** that the band [63-64 GHz] should be used for current and future ITS applications for close proximity and for redundancy purposes;

**3** that administrations use the frequency ranges in recommends 1 and 2 (or parts thereof), when undertaking their national planning for ITS applications pertaining to the exchange of information to improve traffic management and assisting safe driving;

**4** that administrations implementing a harmonized frequency arrangement as listed in the Annexes (and its Attachments) should ensure compatibility between ITS stations and stations of other services.

Annex 1

Harmonized frequency arrangements
for evolving intelligent transportation systems (ITS) in Region 1

Attachment 1

CEPT frequency arrangement for ITS

CEPT identified the band 5 855-5 925 MHz in 2008 for the use by ITS. In addition, the frequency range 63-64 GHz were identified by CEPT in 2009.

Those harmonization measures include the following arrangements:

1.1 Band 5 855-5 925 MHz

The frequency band 5 855-5 925 MHz for ITS applications is split into channels with a bandwidth of 10 MHz. The maximum spectral power density for ITS stations should be limited to
23 dBm/MHz e.i.r.p. but the total power should not exceed 33 dBm e.i.r.p. with a Transmit Power Control (TPC) range of 30 dB. The CEPT has defined the regulatory framework for the deployment of ITS stations. The lower part of the frequency band is intended for non-safety related ITS applications such as enhancing traffic-efficiency, while the upper part of the frequency band is intended for traffic-safety related ITS applications such as time critical status information exchange whose aim is to reduce the number of traffic fatalities or accidents using communications between ITS stations.

Table A1

 CEPT channel allocation

|  |  |  |
| --- | --- | --- |
|  | Channel type  | Frequency range [MHz] |
| Non-Traffic-Safety related  | Service Channel | 5 855 to 5 865 |
| Service Channel | 5 865 to 5 875 |
| Traffic-Safety related  | Service Channel | 5 875 to 5 885 |
| Service Channel | 5 885 to 5 895 |
| Control Channel | 5 895 to 5 905 |
| Service Channel | 5 905 to 5 915 |
| Service Channel | 5 915 to 5 925 |

1.2 Band 63-64 GHz

For ITS applications, to provide possibilities to exchange a large amount of data at close proximity, the band 63-64 GHz should be used. In addition, this band is essential to provide an additional redundancy in spectrum for ITS applications like C-ACC (cooperative adaptive cruise control), platooning, or other ITS applications to serve for ITS redundancy, where appropriate. The maximum radiated power for ITS stations should be limited to 40 dBm e.i.r.p. The CEPT has defined the regulatory framework for the deployment of ITS stations.

Attachment X

XXX frequency arrangement for ITS

XXX identified …

Annex 2

Harmonized frequency arrangements
 for intelligent transportation systems (ITS) in Region 2

CITEL identified …

Annex 3

Harmonized frequency arrangements
for intelligent transportation systems (ITS) in Region 3

APT identified …

Annex 4

Other frequency arrangements
for intelligent transportation systems (ITS)

[if considered necessary]