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| **Radiocommunication Study Groups** |  |
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| **Annex 21 to Working Party 5A Chairman’s Report** | |
| Working document towards a Preliminary  draft REVISION of report ITU-R M.2228 | |
| Advanced intelligent transport systems (ITS) radiocommunications | |

(Question ITU-R 205-5/5)

Summary of the revision

In this revision, update information on status of advanced ITS radiocommunications is introduced in Section 4.1.2 to reflect recent standardization activities in Japan.

*[Editor’s note: Further updates in the revision are expected to reflect recent activities in each region.]*

TABLE OF CONTENTS

1 Background

2 Characteristics of advanced ITS radiocommunications

2.1 Terms and definitions

2.2 Acronyms and abbreviations

2.3 Technical characteristics

3 Requirements for advanced ITS radiocommunications

3.1 General system requirements

3.2 Service requirements

3.2.1 Safety services

3.2.1.1 Incident alert

3.2.1.2 Emergency vehicle entry warning

3.2.2 Data communication services

3.2.2.1 Vehicle inter-communication service

3.2.2.2 Group communication service

4 Status of advanced ITS radiocommunications

4.1 Japan

4.1.1 Applications

4.1.2 Technical characteristics

4.2 Korea (Republic of)

4.2.1 Applications

4.2.2 Technical characteristics

4.2.3 TTA Standards related to advanced ITS radiocommunications

4.3 Europe

4.3.1 Standardization

4.3.2 Applications

4.3.3 Technical characteristics

5 References

*[Editor’s note: Proposed revision refers to 4.1.2.]*

*[Editor’s note: One Administration expressed a concern regarding the allocation of a portion of the 700 MHz for vehicle-to-vehicle (V-V) communications, as this band (and its associated “digital dividend”) is highly sought after for mobile broadband and IMT applications. Specifically, further clarification in this Section would be helpful in terms of providing and describing the 700 MHz band plan (i.e. channel plan), including the exact 10 MHz band allocated for V-V communications.  Additional information about whether such allocation is on a primary or secondary basis, as well as any regulatory provisions, would be helpful.]*

4.1.2 Technical characteristicsThis section provides examples of technical characteristic for the advanced ITS radiocommunications.

In Japan, technical characteristic of vehicle-to-vehicle and roadside-to-vehicle communications for safe driving support systems are shown in Table 2.

TABLE 2

Characteristics of the transmission scheme

|  |  |
| --- | --- |
| Item | Technical characteristic |
| Operating frequency | 700 MHz band (single channel) |
| Channel spacing | 10 MHz |
| Occupied bandwidth | Less than 9 MHz |
| Modulation scheme | BPSK OFDM/ QPSK OFDM/ 16QAM OFDM |
| Error correction | Convolution FEC R = 1/2, ¾ |
| Data transmission rate | 3 Mbit/s, 4.5 Mbit/s, 6 Mbit/s, 9 Mbit/s, 12 Mbit/s, 18 Mbit/s |
| Media access control | CSMA/CA |

Table 2 shows basic specifications of ARIB standard; ARIB STD-T109, 700 MHz band Intelligent Transport Systems(ITS) which has been developed in February 2012, based on “ITS Forum RC‑006”[[1]](#footnote-1) issued by the ITS Info-communications Forum as an experimental guideline for feasibility tests in Japan.

A 10 MHz channel width in the 700 MHz radio frequency band will be used for the safe driving support systems.

Data transmission rate is variable based on the selection of Modulation scheme and coding rate (R) as follows:

– 3 Mbit/s (BPSK OFDM, R = 1/2), 4.5 Mbit/s (BPSK OFDM, R = 3/4);

– 6 Mbit/s (QPSK OFDM/, R = 1/2), 9 Mbit/s (QPSK OFDM, R = 3/4);

– 12 Mbit/s (16QAM OFDM, R = 1/2), 18 Mbit/s (16QAM OFDM, R = 3/4).

The single channel accommodates both vehicle-to-vehicle and roadside-to-vehicle communications based on CSMA/CA media access control.

1. Ex[perimental guideline for vehicle communications system using 700 MHz band](http://www.itsforum.gr.jp/Public/J7Database/p35/ITSFORUMRC006engV1_0.pdf) (<http://www.itsforum.gr.jp/Public/J7Database/p35/ITSFORUMRC006engV1_0.pdf>). [↑](#footnote-ref-1)