IEEE P802.11  
Wireless LANs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| LB258: Resoltions for CIDs 2386 and 2387 | | | | |
| Date: 2022-05-10 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Yusuke Asai | NTT |  |  | yusuke.asai.ux@hco.ntt.co.jp |
| Shoko Shinohara |  |  | shoko.shinohara.et@hco.ntt.co.jp |
| Junichi Iwatani |  |  | junichi.iwatani.na@hco.ntt.co.jp |
| Tomoyuki Yamada |  |  | tomoyuki.yamada.pb@hco.ntt.co.jp |
| Yoshitaka Shimizu |  |  | yoshitaka.shimizu.bc@hco.ntt.co.jp |
| Yasushi Takatori |  |  | yasushi.takatori.rk@hco.ntt.co.jp |
| Duk Bai Kim | Newracom |  |  | db.kim@newracom.com |
| Aaron Jehun Lee |  |  | jehun.lee@newracom.com |
| David Halasz | Morse Micro |  |  | dave.halasz@morsemicro.com |
| Dave Goodall |  |  | dave@morsemicro.com |

Abstract

This submission proposes resolutions for the following 2 CIDs received for TGme LB258:

2386, 2387

Revisions:

- Rev 0: Initial version of the document.

- Rev 1: Revisions of the text on the discussion and the proposed changes. Adding authors.

- Rev 2: Adding authors.

**Comments**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **CID** | **PP.LL** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| 2386 | 5790.50 | D.2.2 | The parameters of "Frequency" and "Maximum BW allowed" on the "Geographic area" of "Japan" in Table D-4 should be revised according to the forthcoming changes of the reguratory rules in Japan. | The commentor is considering the revised document. | Revised.  See the resolution presenteded in 22/0719 (this document). |
| 2387 | 5809.19 | E.1 | The parameters on the "S1G operating Class" of "Japan" in Tables E-4 and E-5 should be revised according to the forthcoming changes of the reguratory rules in Japan. | The commentor is considering the revised document. | Revised.  See the resolution presenteded in 22/0719 (this document). |

**Discussion**

The technical conditions regarding S1G PHY/MAC (802.11ah) usage in the Japanese 920 MHz band have been approved by the council of the Japanese government (MIC: Ministry of Internal Affairs and Communications) on 22nd March 2022 [1]. The technical changes will expand the maximum channel bandwidth from 1 MHz to 4 MHz. If everything goes smoothly, the regulatory rules will change this summer.

As the CIDs 2386 and 2387 pointed out, the current REVme draft has some issues.

First, Annex D and E in the current REVme draft define some 1 MHz channels that S1G PHY/MAC cannot use due to the Japanese regulatory rules and the channel usage rules of the local Japanese standard for 920MHz (ARIB STD T-108 [2]).

Second, there is no concrete definition of the channelization of upcoming Japanese 2 or 4 MHz transmissions for 11ah in Annex E of REVme D1.0. To achieve interoperability among S1G devices targeted to Japanese market is indispensable to define the exact channelization for 2 or 4 MHz on Annex E.

The proposed channelization (on pages 3 and 4 in this document) includes partially overlapped allocations of 2 and 4 MHz channels. It may spoil efficient channel usage in cases of dense deployment because a packet header of a 2 or 4 MHz S1G PPDU cannot be decoded by only a higher or lower 1 MHz part. On the other hand, the merit of overlapped allocation is that it enhances the degree of freedom of channel allocation. In the current 920 MHz in Japan, narrow-band interference caused by the LPWA systems (e.g., LoRaWAN, Sigfox, or Wi-SUN) exists, and thus flexibility of channel allocation by overlapped allocation is beneficial, especially for the 4 MHz channel usage.

**Proposed Resolution**

**TGm Editor: *Change the following text on the Table D-4:* (#2386)**

**Table D-4—Maximum STA transmit power and maximum BW allowed for the S1G band**

|  |  |  |  |
| --- | --- | --- | --- |
| **Geographic area** | **Frequency (MHz)** | **Maximum BW allowed (MHz)** | **Maximum STA transmit**  **power**  **(Max EIRP (mW) except**  **where noted)** |
| …… | | | |
| Japan | 915.9-~~929.7~~916.9 | 1 | See NOTE ~~2~~6 |
| 920.5-929.7 | 4 | See NOTE 2 |
| 920.5-923.5 | 1 | See NOTE 3 |
| …… | | | |
| NOTE 2—1 or 20 mW transmitter output power plus up to 3 dBi antenna gain (maximum ~~power~~ EIRP is 1 or 20 mW + 3 dBi)  NOTE 3—250 mW transmitter output power plus up to 3 dBi antenna gain (maximum ~~power~~ EIRP is 250 mW + 3 dBi)  NOTE 6—1 mW transmitter output power plus up to 3 dBi antenna gain (maximum EIRP is 1 mW + 3 dBi) | | | |

**TGm Editor: *Change the following text on the Table E-4:* (#2387)**

**Table E-4—Global operating classes**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Operating Class** | **Nonglobal operating Class(es) (see NOTE 3)** | **Channel starting frequency (GHz)** | **Channel spacing (MHz)** | **Channel set** | **Channel center frequency index** | **Behavior limits set** |
| 1-~~65~~63 | — | Reserved | Reserved | Reserved | — | Reserved |
| 64 | E-5-9,  E-5-10 | 0.9225 | 2 | — | Reserved | — |
| 65 | E-5-11,  E-5-12 | 0.9065 | 4 | — | Reserved | — |
| …… | | | | | | |
| 73 | E-5-8 | 0.9165 | 1 | — | Reserved | — |
| …… | | | | | | |

**TGm Editor: *Change the following text on the Table E-5:* (#2387)**

**Table E-5—S1G operating classes**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **S1G Operating Class** | **Global operating Class (see Table E-4)** | **Channel starting frequency (GHz)** | **Channel spacing (MHz)** | **Channel center frequency index** | **CCA Level Classification** | **Behavior limits set** |
| 8 (Japan) | 73 | 0.9165 | 1 | ~~1, 3, 5, 7,~~ 9, ~~11,~~13, 15, 17, 19, 21 | Type 1  (~~916.5~~920.5-927.5 MHz) | — |
| 9 (Japan) | 64 | 0.9225 | 2 | 2, 6 | Type 1  (922.5-926.5 MHz) | — |
| 10 (Japan) | 64 | 0.9225 | 2 | 4, 8 | Type 1  (923.5-927.5 MHz) | — |
| 11 (Japan) | 65 | 0.9065 | 4 | 36 | Type 1  (922.5-926.5 MHz) | — |
| 12 (Japan) | 65 | 0.9065 | 4 | 38 | Type 1  (923.5-927.5 MHz) | — |
| ~~9-~~13 | — | Reserved | Reserved | Reserved | Reserved | Reserved |

**References:**

[1] Official release from MIC (Ministry of Internal Affairs and Communications) (*in Japanese*)

<https://www.soumu.go.jp/menu_news/s-news/01kiban14_02000540.html>

[2] ARIB (Association of Radio Industries and Businesses) STD T-108

<https://www.arib.or.jp/english/std_tr/telecommunications/std-t108.html>