IEEE P802.22  
Wireless RANs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| TGb SB Comment Resolution | | | | |
| Date: 2015-05-20 | | | | |
| Author(s): | | | | |
| Name | Company | Address | Phone | email |
| cwpyo | NICT | Kanagawa-ken Yokosuka, Japan | +81-46-847-5120 | [cwpyo@nict.go.jp](mailto:cwpyo@nict.go.jp) |
|  |  |  |  |  |

Abstract

This document includes resolutions for SB recirculation comment #1 and comment #2

**Notice:** This document has been prepared to assist IEEE 802.22. It is offered as a basis for discussion and is not binding on the contributing individual(s) or organization(s). The material in this document is subject to change in form and content after further study. The contributor(s) reserve(s) the right to add, amend or withdraw material contained herein.

**Release:** The contributor grants a free, irrevocable license to the IEEE to incorporate material contained in this contribution, and any modifications thereof, in the creation of an IEEE Standards publication; to copyright in the IEEE’s name any IEEE Standards publication even though it may include portions of this contribution; and at the IEEE’s sole discretion to permit others to reproduce in whole or in part the resulting IEEE Standards publication. The contributor also acknowledges and accepts that this contribution may be made public by IEEE 802.22.

**Patent Policy and Procedures:** The contributor is familiar with the IEEE 802 Patent Policy and Procedures

<[**http://standards.ieee.org/guides/bylaws/sb-bylaws.pdf**](http://standards.ieee.org/guides/bylaws/sb-bylaws.pdf)>, including the statement "IEEE standards may include the known use of patent(s), including patent applications, provided the IEEE receives assurance from the patent holder or applicant with respect to patents essential for compliance with both mandatory and optional portions of the standard." Early disclosure to the Working Group of patent information that might be relevant to the standard is essential to reduce the possibility for delays in the development process and increase the likelihood that the draft publication will be approved for publication. Please notify the Chair Apurva Mody <[apurva.mody@ieee.org](mailto:apurva.mody@ieee.org)> as early as possible, in written or electronic form, if patented technology (or technology under patent application) might be incorporated into a draft standard being developed within the IEEE 802.22 Working Group. **If you have questions, contact the IEEE Patent Committee Administrator at <**[**patcom@ieee.org**](mailto:patcom@ieee.org)**>**.

**This document includes resolutions for comment #1 and comment #2**

**Comment #1**

I am not sure I understand many of the editing instructions within this clause, if they are in fact editing instructions. For example, in 9.a7, the text reads "The procedures are followed by 9.7." and is set in the editing instruction font. Is this actually an editing instruction? If so, it is unclear. If should actually be text, it may need to be reworded for clarity.

**Must be satisfied**

Yes

**Proposed change**

Please clarify text in 9a.7 in its entirety

**Disposition Status**

**Revised.**

**Disposition Details:**

Remove “***The procedures are followed by 9.7.”*** from 9a.7

**9a.7 Channel coding**

***~~The procedures are followed by 9.7.~~***

Remove “***The procedures are followed by 9.7.1.”*** from 9a.7.1, and add the following sentence “The data scrambling of PHY OM1 is used for PHY OM2. The data scrambling procedures of PHY OM2 are followed by 9.7.1.” in 9a.7.1.

**9a.7.1 Data scrambling**

***~~The procedures are followed by 9.7.1.~~***  The data scrambling of PHY OM1 is used for PHY OM2. The data scrambling procedures of PHY OM2 are followed by 9.7.1.

Remove “***The procedures are followed by 9.7.2.1.1.***” from 9a.7.2.1, and add the following sentence “The BCC mode of PHY OM2 is used for PHY OM2. The BCC procedures are followed by 9.7.2.1.1.” in 9a.7.2.1.

**9a.7.2.1 Binary Convolutional code (BCC) mode (mandatory)**

***~~The procedures are followed by 9.7.2.1.1~~***. The BCC mode of PHY OM2 is used for PHY OM2. The BCC procedures are followed by 9.7.2.1.1.

Remove “***The procedures are followed by 9.7.2.1.2.”*** from 9a.7.2.2, and add the following sentence “The puncturing of PHY OM1 is used for PHY OM2. The puncturing procedures of PHY OM2 are followed by 9.7.1.2” in 9a.7.2.2

**9a.7.2.2 Puncturing**

***~~The procedures are followed by 9.7.2.1.2.~~*** The puncturing of PHY OM1 is used for PHY OM2. The puncturing procedures of PHY OM2 are followed by 9.7.1.2.

Remove “***The procedures are followed by 9.7.2.5.”*** from 9a.7.2.5, and add the following sentence “The MD-TCM for PHY OM1 is used for PHY OM2. The MD-TCM procedures of PHY OM2 are followed by 9.7.2.5.” in 9a.7.2.5.

**9a.7.2.5 Multidimensional Trellis Coded Modulation (MD-TCM) mode (optional)**

***~~The procedures are followed by 9.7.2.5.~~*** The MD-TCM for PHY OM1 is used for PHY OM2. The MD-TCM procedures of PHY OM2 are followed by 9.7.2.5.

Remove “***The procedures are followed by 9.8 except for the table 227.”*** from 9a.8.1, and add the following sentences “The data modulation procedures are followed by 9.8. The number of coded bits per slot (NCBPS) and the number of data bits per slot for the different modulation constellation and coding rate combinations for PHY OM2 are summarized in Table IF1.” in 9a.8.1.

**9a.8.1 Data modulation**

***~~The procedures are followed by 9.8 except for the table 227.~~*** The data modulation procedures are followed by 9.8. The number of coded bits per slot (NCBPS) and the number of data bits per slot for the different modulation constellation and coding rate combinations for PHY OM2 are summarized in Table IF1.

Remove “***The procedures are followed by 9.8.2.”*** from 9a.8.2, and add the following sentence “The pilot modulation procedures for PHY OM2 are followed by 9.8.2.” in 9a.8.2.

**9a.8.2 Pilot modulation**

***~~The procedures are followed by 9.8.2.~~*** The pilot modulation procedures for PHY OM2 are followed by 9.8.2.

Remove “***The procedures are followed by 9.9.1.”*** from 9a.9.1, and add the following sentences “The downstream synchronization procedures are followed by 9.9.1. A downstream synchronization process shall be performed by each CPE. All the CPEs shall be synchronized with the BS, A-BS or a distributed scheduling A-CPE.” in 9a.9.1.

**9a.9.1 Downstream synchronization**

***~~The procedures are followed by 9.9.1.~~*** The downstream synchronization procedures are followed by 9.9.1. A downstream synchronization process shall be performed by each CPE. All the CPEs shall be synchronized with the BS, A-BS or a distributed scheduling A-CPE.

Remove “***The procedures are followed by 9.9.4.”*** from 9a.9.4, and add the following sentence “The power control procedures for PHY OM1 (9.9.4) are used for PHY OM2.” in 9a.9.4.

**9a.9.4 Power control**

***~~The procedures are followed by 9.9.4.~~*** The power control procedures for PHY OM1 (9.9.4) are used for PHY OM2.

Remove “***The procedures are followed by 9.9.4.1.”*** from 9a.9.4.1, and add the following sentence “The procedures are followed by 9.9.4.1.” in 9a.9.4.1.

**9a.9.4.1 Transmit Power control boundaries and EIRP limits**

***~~The procedures are followed by 9.9.4.1.~~*** The procedures are followed by 9.9.4.1.

Remove “***The procedures are followed by 9.9.4.2.”*** from 9a.9.4.2, and add the following sentence “The procedures of transmit power control in PHY OM2 are followed by 9.9.4.2. The default normalized CNR values per modulation for the binary convolutional code (BCC) for PHY OM 2 is given in Table IG1.” in 9a.9.4.2.

**9a.9.4.2 Transmit Power control mechanism**

***~~The procedures are followed by 9.9.4.2.~~*** The procedures of transmit power control in PHY OM2 are followed by 9.9.4.2. The default normalized CNR values per modulation for the binary convolutional code (BCC) for PHY OM2 is given in Table IG1.

Remove “***The procedures are followed by 9.11.”*** from 9a.11, and add the following sentence “The frequency control requirements of PHY OM2 are followed by 9.11” in 9a.11.

**9a.11 Frequency Control requirements**

***~~The procedures are followed by 9.11.~~*** The frequency control requirements of PHY OM2 are followed by 9.11.

Remove “***The procedures are followed by 9.12.”*** from 9a.12, and add the following sentence “The antenna procedures of PHY OM2 are followed by 9.12.” in 9a.12.

**9a.12 Antenna**

***~~The procedures are followed by 9.12.~~*** The antenna procedures of PHY OM2 are followed by 9.12.

Remove “***The procedures are followed by 9.13.”*** from 9a.13, and add the following sentence “The receiver requirements of PHY OM2 are followed by 9.13.” in 9a.13.

**9a.13 Receiver requirements**

***~~The procedures are followed by 9.13.~~*** The receiver requirements of PHY OM2 are followed by 9.13.

**Comment #2**

I think the number of editing instructions relating to Table 273 is confusing. I think the changes would be better illustrated making the changes to the actual table.

**Must be satisfied**

No

**Proposed change**

I think the number of editing instructions relating to Table 273 is confusing. I think the changes would be better illustrated making the changes to the actual table.

**Disposition Status**

**Revised.**

**Disposition Details:**

***Change Table 273 as follows:***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| * **PHY parameters, timers, message IEs** | | | | | |
| **Entity/ Scope** | **Name** | **Reference** | **Min value** | **Default value** | **Max value** |
| BS | DCD Interval | Time between transmission of DCD messages |  |  | 10 s |
| BS | UCD Interval | Time between transmission of UCD messages |  |  | 10 s |
| BS | UCD  Transition | The time the BS shall wait after repeating a UCD message with an incremented  Configuration Change Count before issuing a US-MAP message referring to  Upstream\_Burst\_Profiles defined in that UCD message | 2 MAC frames |  |  |
| BS | DCD  Transition | The time the BS shall wait after repeating a DCD message with an incremented  Configuration Change Count before issuing a DS-MAP message referring to  Downstream\_Burst\_Profiles defined in that DCD message | 2 MAC frames |  |  |
| BS | Initial Ranging Interval | Time between Initial Ranging opportunities assigned by the BS |  |  | 2 s |
| BS | CLK-CMP  Interval | Time between the clock compare measurements used for the generation of CLK-CMP messages | 50 ms | 50 ms | 50 ms |
| CPE | Lost DSMAP Interval  (T56) | Time since last received DS-MAP message before downstream synchronization is considered lost |  |  | 600 ms |
| CPE | Lost USMAP Interval  (T57) | Time since last received US-MAP message before upstream synchronization is considered lost |  |  | 600 ms |
| CPE | Lost SCH  (T58) | Number of SCH on PHY OM 1 that can be lost until synchronization is considered lost |  |  | 15 |
| CPE | CDMA Ranging Retries | Number of retries on CDMA Ranging Requests | 1 |  | 4 |
| CPE, BS | Invited Ranging  Retries | Number of retries on inviting Ranging Requests | 16 |  |  |
| BS | US-MAP  Process  Time | Time provided between arrival of the last bit of a US-MAP at a CPE and effectiveness of that map | 5 symbols |  |  |
| BS | CPE  Ranging  Response  Processing  Time | Time allowed for a CPE following receipt of a ranging response before it is expected to reply to an invited ranging request | 10 ms |  |  |
| CPE | T1 | Wait for DCD timeout |  |  | 5 x DCD interval maximum value |
| CPE | T2 | Wait for broadcast ranging timeout |  |  | 5 x ranging interval |
| CPE | T3 | Ranging Response reception timeout following the transmission of a Ranging Request |  | 200 ms | 200 ms |
| CPE | T4 | Wait for unicast ranging opportunity. If the pending-until-complete field was used earlier by this CPE, then the value of that field shall be added to this interval. | 1 s | 30 min  (fixed)  10 min.  (portable) | 30 min |
| BS | T5 | Wait for Upstream Channel Change response |  |  | 2 s |
| CPE | T12 | Wait for UCD descriptor |  |  | 5 × UCD  Interval  maximum  value |
| CPE | T20 | Time the CPE searches for preambles on a given channel | 2 MAC  frames |  |  |
| CPE | T21 | Time the CPE searches for DS-MAP on a given channel |  |  | 10 s |
| BS | EIRPBS | EIRP of BS (DS) | –64 dBm |  | 63.5 dBm |
| BS | TTG | Transmit/Receive Transition Gap | 105 μs | 210 μs | 333 μs |
| BS | DIUC  Mandatory  Exit  Threshold | CINR at or below which this DIUC can no longer be used and where change to a more robust DIUC is required. | –64 dB |  | +63.5 dB |
| BS | DIUC  Mandatory  Entry  Threshold | The minimum CINR required to start using this DIUC when changing from a more robust DIUC is required | –64 dB |  | +63.5 dB |
| BS | Boosting | Boosting applied to a DS allocation | –12 dB | 0 dB | +9 dB |
| BS, CPE | BW Request  Backoff Start | Initial size of BW Request opportunity used by CPEs to contend to send BW requests to BS | 0 |  | 15 |
| BS, CPE | BW Request  Backoff End | Final size of BW Request opportunity used by CPEs to contend to send BW requests to BS | 1 |  | 15 |
| BS, CPE | UCS  notification  Backoff Start | Initial backoff window size in units of UCS notification opportunity used by CPEs to contend to send UCS notifications to BS. | 0 |  | 15 |
| BS, CPE | UCS  notification  Backoff End | Final size of UCS notification opportunity used by CPEs to contend to send UCS notification to BS | 1 |  | 15 |
| BS, CPE | Contention based  reservation  Timeout | Number of US-MAPs to receive before contention-based reservation is attempted again for the same connection | 1 |  | 255 |
| BS, CPE | BW Request  opportunity  size and CRZ BW Request opportunity size | Size (in OFDM slots) of PHY bursts, that a CPE may use to format and transmit a bandwidth request message in a contention request opportunity. | 1 |  | 255 |
| BS, CPE | UCS  notification  request  opportunity  size and CRZ UCS notification request opportunity size | Size (in OFDM slots) of PHY bursts that a CPE may use to transmit a UCS notification. | 1 |  | 255 |
| BS, CPE | # of initial  ranging  codes and CRZ initial ranging codes | Number of initial ranging CDMA codes (N) | 1 |  | 255 |
| BS, CPE | # of periodic  ranging  codes and CRZ periodic ranging codes | Number of periodic ranging CDMA codes (M) | 1 |  | 255 |
| BS, CPE | # of  bandwidth and CRZ bandwidth  request  codes | Number of bandwidth request CDMA codes (L) | 1 |  | 255 |
| BS, CPE | # of UCS  notification  and CRZ UCS notification codes | Number of UCS notification CDMA codes (I) | 1 |  | 255 |
| BS, CPE | Start of  CDMA  codes group | Indicates the starting number, S, of the group of codes used for the US | 0 | See 6.10.3 | 255 |
| BS, CPE | EIRP  Density  Level | EIRP Transmitted per subcarrier | –104 dBm |  | +23.5 dBm |
| BS, CPE | EIRP  Control | EIRP per subcarrier that the CPE should apply to correct its current transmission EIRP | –104 dBm |  | +23.5 dBm |
| BS | EIRP Per  subcarrier | EIRP transmitted per subcarrier | –104 dBm |  | +23.5 dBm |
| CPE | Lost FCH (T68) | Number of FCH on PHY OM2 that can be lost until synchronization is considered lost |  |  | Lost SCH x 16 |
| CPE | Lost DRZ-FCH (T69) | Number of DRZ-FCH that can be lost until synchronization in DRZ is considered lost |  |  | Lost SCH x 16 |