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Date Submitted	2005-10-11	
Source(s)	Phillip Barber Huawei	Voice: +1 (972) 365-6314 Fax: +1 (925) 396-0269 [mailto:pbarber@BroadbandMobileTech.com]
Re:	Reply Comments to Recirculation on 802.16e/D11	
Abstract	Reply Comments to Recirculation on 802.16e/D11	
Purpose	Provide identification of problems and propose remedies to address issues identified in the Commentary	
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Reply Comments to Recirculation on 802.16e/D11

Phillip Barber

Huawei

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Comment 8044

(Previously was Comment Late1)

Problem

There are two ACKs for HARQ, one in the UL, and one in the DL.

According to 8.4.5.3.22 DL HARQ ACK IE, page 331, line 42, '...HARQ_ACK_Delay_for UL Burst field in the DCD message.' The DL ACK is on a uplink burst, but the HARQ_ACK_Delay_for UL Burst is specified in the DCD. The correct entry for HARQ ACK Delay for UL Burst exists in Table 358—DCD channel encodings in Cor1/D5.

And according to 8.4.5.4.25 HARQ ACK Region Allocation IE, page 397, line 3, '...HARQ ACK Delay for DL Burst field in the UCD message.' The UL ACK is on a downlink burst, but the HARQ_ACK_Delay_for DL Burst is specified in the UCD. The correct entry for HARQ ACK Delay for DL Burst exists in Table 353—UCD channel encodings in Cor1/D5. Unnecessarily and incorrectly duplicated in Table 353a in 16e/D11.

Language and usage in the 163/D11, page 168, lines 30-38 is imprecise and could use some clarification.

Language and usage in 6.3.17.1 Subpacket generation, page 168, line 33-34, is inconsistent with language in 8.4.5.4.25.

Remedy

Remove duplicate, incorrect instance of HARQ ACK Delay for DL Burst from Table 353a.

Fix language in 6.3.17.1 to be consistent with 8.4.5.4.22 & 8.4.5.4.25 in 16e/D11, and with Cor1/D5, 6.3.17 MAC support for H-ARQ, page 75, lines 24-25.

Remedy 1:

In 802.1616e/D11, 11.3.1 UCD channel encodings, Table 353a, page 536, line 41-44, remove row for 'HARQ ACK delay for UL burst'

Remedy 2:

In 802.1616e/D11, 6.3.17.1 Subpacket generation, page 168, lines 30-38, replace the entire paragraph, including Editorial markup, with:

'The ~~HARQ-ARQ~~ scheme is basically a stop-and-wait protocol where the retransmissions are only sent after receiving a NACK signal for the previous transmission or the ACK has not been received within the duration defined by H ARQ ACK Delay for UL burst (i.e. HARQ data sent by SS) or by H ARQ ACK delay for DL burst (i.e. HARQ data sent by BS). As acknowledgement of DL HARQ burst sent by the BS, ~~the~~ the ACK is sent by the SS after a fixed delay (synchronous ACK) defined by ~~H-ARQ HARQ_ACK_Delay_for DL Burst~~ DL-ACK-delay-offset which is specified in ~~the~~ the UCD message (see Table 353). As acknowledgement of UL HARQ burst sent by the SS, the ACK is sent by the BS after a fixed delay (synchronous ACK) defined by HARQ ACK delay for UL Burst which is specified in DCD message (see Table 358). Timing of retransmission is, however, flexible and corresponds to the asynchronous part of the ~~HARQ-ARQ~~. The ACK/NAK is sent by the BS using the ~~HARQ-ARQ~~ Bitmap IE, and sent by a SS using the fast feedback UL subchannel.'

Comment 8006

Problem

Corrigenda made a minor change to the paragraph that was not reflected when paragraph was copied to 16e and sentence was appended. Change was from reference of ‘five best bands’ to ‘four best bands’. Note that a similar change was made in the following paragraph by Corrigenda.

This is probably just a copy/paste problem where 16e originally copied the paragraph from the base document not realizing that Corrigenda made a minor change to the paragraph, or Corrigenda subsequently made the change.

16e/D11 in 8.4.6.3.2 added support for ‘four or five selected best bands’; and in 11.12.

I cannot find any instance of improper use of MS in the section.

802.16-2004, section 6.3.17.4 CQICH Operations, page 268, lines 54-65:

‘The SS sends the REP-RSP message in an unsolicited fashion to BS to trigger Band AMC operation. The triggering conditions are given by TLV encodings in UCD messages. The REP-RSP (see 11.12 for the TLV encodings) includes the CINR measurements of five best bands. Only when an SS reports its BS the CINR measurements of Band AMC channels, its logical definition is differently made as follows. If the number of bands is 48 (2048 FFT in 20 MHz), the two contiguous bands are paired and renumbered the same as a 24 band system. Then, if the LSB of an SS MAC address is 1, it only uses the odd-numbered bands. If not, it only uses the even-numbered bands. Hence, for example, the LSB of an SS MAC address is 1, $(4m+2, 4m+3)$ bands are paired and the paired band is the m -th band of the SS. Similarly, for an even-numbered SS, $(4m, 4m+1)$ bands are paired and the paired band is the m -th band of the SS.’

802.16-2004Cor1/D5, section 6.3.18.2 Periodic CINR report with fast-feedback (CQICH) channel, page 77, lines 49-59:

‘The SS sends the REP-RSP message in an unsolicited fashion to BS to trigger Band AMC operation. The triggering conditions are given by TLV encodings in UCD messages. The REP-RSP (see 11.12 for the TLV encodings) includes the CINR measurements of ~~five~~four best bands. Only when an SS reports its BS the CINR measurements of Band AMC channels, its logical definition is made differently, as follows. If the number of bands is 48 (2048 FFT in 20 MHz), the two contiguous bands are paired and renumbered the same as a 24 band system. Then, if the LSB of an SS MAC address is 1, it only uses the odd-numbered bands. If not, it only uses the even-numbered bands. Hence, for example, the LSB of an SS MAC address is 1, $(4m+2, 4m+3)$ bands are paired and the paired band is the m -th band of the SS. Similarly, for an even-numbered SS, $(4m, 4m+1)$ bands are paired and the paired band is the m -th band of the SS.’

Remedy

Reflect Corrigenda revised paragraph change—‘five best bands’ changed to ‘four best bands’—in paragraph in 16e. Adjust to accommodate changes made in 16e/D11 to support ‘four or five selected best bands’ for MS.

Make changes to paragraph to support changes made in 8.4.6.3.2 in 16e/D11.

Make changes to the Table in 11.12 to support changes made in 8.4.6.3.2 in 16e/D11.

Remedy 3:

In 802.16e/D11, section 6.3.18.2 Periodic CINR report with fast-feedback (CQICH) channel, page 168, lines 51-64, replace current paragraph, including Editorial markup, with:

‘The SS sends the REP-RSP message in an unsolicited fashion to BS to trigger Band AMC operation. The triggering conditions are given by TLV encodings in UCD messages. For SS, the REP-RSP (see 11.12 for the TLV encodings) includes the CINR measurements of ~~five~~ four best bands. For MS, the REP-RSP (see 11.12 for the TLV encodings) includes the CINR measurements of four or five selected best bands (see 8.4.6.3.2). Only when an SS reports its BS the CINR measurements of Band AMC channels, its logical definition is made differently, as follows. If the number of bands is 48 (2048 FFT in 20 MHz), the two contiguous bands are paired and renumbered the same as a 24 band system. Then, if the LSB of an SS MAC address is 1, it only uses the odd-numbered bands. If not, it only uses the even-numbered bands. Hence, for example, the LSB of an SS MAC address is 1, $(4m+2, 4m+3)$ bands are paired and the paired band is the m -th band of the SS. Similarly, for an even-numbered SS, $(4m, 4m+1)$ bands are paired and the paired band is the m -th band of the SS. If the number of bands is 24, the two contiguous bands are just paired and renumbered the same as a 12 band system. If the original number of band is equal to or less than 12, the logical definition is not necessary.

The BS acknowledges the trigger from SS by sending a unicast MAC PDU to the SS using allocating Band AMC subchannels. From the next frame when the SS sent the REP-RSP, the SS starts reporting the differential of CINR from preamble for ~~five~~ four, or for MS the four or five, selected bands (increment: 1 and decrement: 0 with a step of 1 dB) on its CQICH. The CQICH shall then be used for differential Band-AMC reports, regardless of the report configuration specified in the CQICH IE that allocated the current CQI channel. If the BS does send a unicast MAC PDU to the SS using Band AMC subchannels or send REP-REQ to indicate reporting Band AMC CINR~~not allocate the Band AMC subchannels~~ within the specified delay (CQICH Band AMC Transition Delay) in the UCD message, the SS shall resume to report CINR according to the report configuration specified in the latest CQICH Allocation IE. In addition, if the BS send a unicast MAC PDU to the SS using non Band AMC subchannels, or the CQICH allocation IE indicates to report CINR on a zone other than Band AMC zone, the SS shall resume to report CINR according to the report configuration specified in the latest CQICH Allocation IE~~reports the updated average CINR of the preamble for normal subchannel allocations.~~’

Remedy 3a:

In 802.16e/D11, section 11.12 REP-RSP management message encodings, for both the text succeeding the Table and the Table itself, page 593, lines 31-61, replace text and table, including Editorial markup, and replace Editorial Instruction with (note that instruction includes deletion of the duplicate instance of ‘For the type 2.4, 2.5, 2.6, 2.x, the following 5-bit, CINR measurement encoding shall be used.’ at the bottom of page 593, line 60):

[Insert the following rows into the third Table in the section as:]

REP-REQ Channel Type request (binary)	Name	Type (1 byte)	Length (1 byte)	Value (variable-length)

<u>Channel Type</u> <u>= 01</u>	<u>Enhanced Band</u> <u>AMC Report</u>	<u>2.4</u>	<u>5</u>	<u>First 12 bits for the band indicating</u> <u>bitmap and next 25 bits for CINR</u> <u>measurement (5 bits per each band)</u>
<u>Channel Type</u> <u>= 11</u>	<u>Sounding Report</u>	<u>2.5</u>	<u>1</u>	<u>Average SINR.</u> <u>8 bits in the same format used in</u> <u>8.4.11.3</u>

For REP-REQ Channel Type request type 1.3, with value 0b01 = Band AMC Channel, enhanced CQICH enabled MS shall report with type 2.4, otherwise SS and MS shall report with type 2.2

Remedy 3b:

In 802.16e/D11, section 11.12 REP-RSP management message encodings, page 594, line 1, change text as:

For the type 2.4, 2.5, 2.6, 2.x, the following 5-bit, CINR measurement encoding shall be used.

Remedy 3c:

In 802.16e/D11, section 11.12 REP-RSP management message encodings, page 594, lines 8-13, replace equation with:

$$n = \begin{cases} 0 & CINR \leq -3dB \\ n & (n-4)dB < CINR \leq (n-3)dB, 0 < n < 31 \\ 31 & CINR \geq 27dB \end{cases}$$

Comment 8009

Problem

A problem with first paragraph. Missing reference to AAS_ IE (see 8.4.5.3.3) added in Corrigenda.

Zone_switch IE name changed to STC_DL_Zone IE.

Name of IE is AAS_DL_IE; name of section is AAS IE. Should use name of IE in message, not name of section (would have been good if Corrigenda had corrected the name of section 8.4.5.3.3 to AAS downlink IE, and 8.4.5.4.6 to AAS uplink IE).

The transition between zones may also be indicated in the UL-MAP by UL_Zone_IE and AAS_UL_IE.

The Figure 219 in 16e/D11 is a replacement for the one in Cor1/D5, and is entirely correct. No changes required to Figure 219 or its invoking editorial language. Need to change the Editorial instruction to more clearly indicate that Figure 219 in 16e/D11 replaces previous Figure.

Items ‘c)’ and ‘d)’ in the list below Figure 219 are continuation of the same sentence and have inappropriately been parsed into two list items.

Remedy

Fix editorial structure of paragraph to correctly show changes from base document.

Revise first paragraph to include specification added in Corrigenda.

Zone_switch IE name changed to STC_DL_Zone IE. Make instance of AAS_IE to AAS_DL_IE.

Add language to support identification of transition between zones using the UL-MAP by UL_Zone_IE and AAS_UL_IE.

Change the Editorial instruction to more clearly indicate that Figure 219 in 16e/D11 replaces previous Figure.

In the list below Figure 219, combine list items ‘c)’ and ‘d)’ into a single list item.

Remedy 4:

In 802.16e/D11, section 8.4.4.2 PMP frame structure, page 280, lines 9-13, replace current paragraph, including Editorial Markup, with:

The OFDMA frame may include multiple zones (such as PUSC, FUSC, PUSC with all subchannels, optional FUSC, AMC, ~~TUSC1, and TUSC2 and optional FUSC with all subchannels~~), the transition between zones is indicated in the DL-Map by the ~~STC_DL_Zone~~~~Zone_switch~~ IE (see 8.4.5.3.4) or AAS_DL_IE (see 8.4.5.3.3). No DL-MAP or UL-MAP allocations can span over multiple zones. Figure 219 depicts the OFDMA frame with multiple zones.

Remedy 4a:

In 802.16e/D11, section 8.4.4.2 PMP frame structure, page 280, line 14, **modify the Editorial Instruction**, with (note to include making instruction italicized):

*[Replace **Figure 219** with the following figure:]*

Remedy 4b:

In 802.16e/D11, section 8.4.4.2 PMP frame structure, page 280, lines 52-59, **replace the text**, with (note that this is in text with Editorial instruction to '*[Insert the following text in 8.4.4.2 after figure 219]*', so no need to underline):

- c) For each MS, the maximum number of bursts transmitted concurrently and directed to the MS is limited by the value specified in Max_Num_Bursts TLV (including all bursts without CID or with CIDs matching the MSs CIDs). Bursts transmitted concurrently are bursts that share the same OFDMA symbol. Before the MS completed capability exchange BS shall transmit data to the MS in the first concurrent data burst per symbol.

Comment 8011

Problem

Editorial instruction inappropriately adds text that duplicates text added in Corrigena. Probably a legacy from before same text was added to Corrigena; but before text modification in 16e.

Use of MS instead of SS in 802.16e/D11, page 284, line 11, inappropriately removes applicability of specification to SS established in baseline and Corrigena. Problem is new, MS specific restriction regarding 8.4.5.4.8 Mini-subchannel allocation IE added in 16e/D11. Should not have been added to same line as UIUC (1-10) general restriction.

Changes to last paragraph are imprecise and need clarification.

Remedy

Revise Editorial instruction to modify existing language in section from 802.16-2004 and Corrigena.

Break apart the restriction on BS uplink UL-MAP IE allocation into general specification for all SS, and specific specification for MS.

Add language to clarify specification in the final paragraph.

Remedy 5:

In 802.16e/D11, section 8.4.4.5 Uplink transmission allocations, page 284, lines 8-17, replace current paragraphs, including Editorial markup, and replace Editorial Instruction with:

[Change 8.4.4.5 as follows:]

In the uplink, the BS shall not allocate to any SS more than one UL-MAP_IE with data burst profile UIUC (1-10) in a single frame. In the uplink, the BS shall not allocate to any MS more than one Mini-subchannel allocation in a single frame. ~~This~~These limitations does not apply to H-ARQ data allocation regions.

The BS shall not allocate more than three ranging allocation IE_s (UIUC 12) per frame, one for initial ranging/handover ranging (Dedicated ranging indicator bit in UL-MAP IE is set to 0 and Ranging Method is set to 0b00 or 0b01), one for bandwidth request/periodic ranging (Dedicated ranging indicator bit in UL-MAP IE is set to 0 and Ranging Method is set to 0b10 or 0b11), and one for initial ranging for the paged MS and/or coordinated association (Dedicated ranging indicator bit in UL-MAP IE is set to 1).'

Comment 8012

Problem

Editorial instruction inappropriately specifies adding new term and description ‘Boosting’, which already exists in both the baseline and Corrigenda.

Revision of Description of ‘Boosting’ is inconsistent with revisions in Corrigenda.

Remedy

Change Editorial instruction to change existing text.

Change description of ‘Boosting’ to accommodate revision in Corrigenda.

Remedy 6:

In 802.16e/D11, section 8.4.5.3 DL-MAP IE format, page 285-286, lines 60-4, replace current paragraph, including Editorial markup, and replace Editorial Instruction with:

[Change the following in 8.4.5.3:]

Boosting

Power boost applied to the allocation's data subcarriers. ~~Indication whether the subcarriers for this allocation are power boosted.~~ The field shall be zero in AAS zone with AMC permutation, or in a zone with AMC or PUSC-ASCA permutation using 'Dedicated Pilots'

Comment 8014

Problem

Changes in 16e/D11 to not carry forward changes in same section in Cor1/D5.

‘IDCell’ was changed to ‘DL_PermBase’ in the Table in Cor1/D5 and reflected here in 16e/D11, but not carried over to the text and Descriptions.

Remedy

Modify the section to incorporate revisions from Cor1/D5.

Remedy 7:

In 8.4.5.3.4 Space-Time Coding (STC)/Zone switch IE format for DL, 802.16e/D11, page 289, lines 55-59, replace paragraph, including Editorial markup, with:

‘In the DL-MAP, a BS may transmit DIUC=15 with the STC_DL_ZONE_IE() to indicate that the subsequent allocations shall use a specific permutation, and/or be STC transmit diversity encoded use a specific transmit diversity mode. The downlink frame shall start in PUSC mode with IDcell=0 and no transmit diversity. Allocations subsequent to this IE shall use the permutation and transmit diversity mode it instructs, until the next STC_DL Zone IE or AAS_DL_IE. Allocation for a STC capable SS shall be done through either DL_MAP_IE() or any one of MIMO related IEs (MIMO_DL_Basic_IE() or MIMO_DL_Enhanced_IE()). If DL_MAP_IE() is used, the matrix indicator in STC_DL_Zone_IE() shall be used for the allocation. If any one of MIMO related IEs is used, the matrix indicator in these IEs shall override the matrix indicator in STC_DL_Zone_IE().’

Comment 8015

Problem

Changes in 16e/D11 to not carry forward changes in same section in Cor1/D5.

‘IDCell’ was changed to ‘DL_PermBase’ in the Table in Cor1/D5 and reflected here in 16e/D11, but not carried over to the text and Descriptions.

‘Permutation’ and ‘Use All SC indicator’ have been inappropriately copied, but not modified, to 16e/D11. Changes were made to these Descriptions in Cor1/D5 and are not reflected in 16e/D5. No need to keep those descriptions in 16e/D11 since 16e makes no changes to the paragraphs.

Remedy

Modify the section to incorporate revisions from Cor1/D5.

Remove description paragraphs for ‘Permutation’ and ‘Use ALL SC indicator’.

Remedy 8:

In 8.4.5.3.4 Space-Time Coding (STC)/Zone switch IE format for DL, 802.16e/D11, page 291-292, line 60-14, replace paragraphs, including Editorial markup, and include new Editorial instruction, with (Note that instruction includes removal of description paragraphs for ‘Permutation’ and ‘Use ALL SC Indicator’ from the 16e Draft):

[Change 8.4.5.3.4 as indicated:]

‘STC Transmit Diversity

Indicates the STC ~~Transmit Diversity~~ mode that shall be used by the transmitter for allocations following this IE (see 8.4.8). All allocations ~~without STC Transmit Diversity with STC='0b00'~~ shall be transmitted ~~only from one antenna (antenna 0) with non-STC pilot pattern~~. All allocations with STC ~~Transmit Diversity the BS shall transmit from both its antennas not setting to '0b00'~~ shall be transmitted with the corresponding pilot pattern in section 8.4.8. The STC mode change is allowed only on a zone boundary.

Remedy 8a:

In 802.16e/D11, 8.4.5.3.4 Space-Time Coding (STC)/Zone switch IE format for DL, page 290, line 1, in front of the table, insert the following Editorial instruction:

[Replace Table 279 with the following table:]

Remedy 8b:

In 802.16e/D11, 8.4.5.3.3 AAS IE format, page 288, line 48, modify the section heading as:

8.4.5.3.3 AAS downlink IE format

Comment 8016

Problem

Changes in 16e/D11 to Table 281 do not show proper Editorial markup from changes in Cor1/D5.

Remedy

Revise Table 281 to show proper Editorial markup from changes in Cor1/D5.

Remedy 15:

In 802.16e/D11, 8.4.5.3.6 Data location in another BS IE, Table 281 OFDMA Data location in another BS IE, page 293, replace Table, including Editorial markup, as:

Table 281 OFDMA Data location in another BS IE

Syntax	Size (bits)	Notes
Used subchannels	6 bits	Used subchannels <u>groups</u> at other BS Bit #0: 0-11 <u>Subchannel group 0</u> Bit #1: 12-19 <u>Subchannel group 1</u> Bit #2: 20-31 <u>Subchannel group 2</u> Bit #3: 32-39 <u>Subchannel group 3</u> Bit #4: 40-51 <u>Subchannel group 4</u> Bit #5: 52-59 <u>Subchannel group 5</u>

Comment 8025

Problem

The changes to this section were made to accommodate the addition of multiple of FFT sizes for PUSC OFDMA, in 16e/D11. It looks like the section was written to deliberately and completely overwrite the original section from the base standard and its modifications by Cor1/D5.

The equation format is flawed

Missing a few references to AAS_DL_IE in the section.

Remedy

Fix the equation.

Put 'AAS_DL_IE' into locations in section where missing.

Remedy 16:

In 802.16e/D11, 8.4.6.1.2.1.1 Downlink subchannels subcarrier allocation in PUSC, in the equation, page 426, lines 15-18, replace the equation as:

$$\text{Logical Cluster} = \begin{cases} \text{RenumberingSequence(PhysicalCluster)} & \text{First DL zone, or Use ALL SC indicator} = 0 \\ & \text{in STC_DL_Zone_IE} \\ \text{RenumberingSequence}((\text{PhysicalCluster}) + 13 \times \text{DL_PermBase}) \bmod \text{Nclusters} & \text{otherwise} \end{cases}$$

Remedy 16a:

In 802.16e/D11, 8.4.6.1.2.1.1 Downlink subchannels subcarrier allocation in PUSC, page 426, lines 18-21, modify the text as:

In the first PUSC zone of the downlink (first downlink zone) and in a PUSC zone defined by STC_DL_ZONE_IE() with 'use all SC indicator = 0', the default re-numbering sequence is used for logical cluster definition. For All other cases DL_PermBase parameter in the STC_DL_Zone_IE() or AAS_DL_IE() shall be used.

Remedy 16b:

In 802.16e/D11, 8.4.6.1.2.1.1 Downlink subchannels subcarrier allocation in PUSC, page 427, lines 13-14, modify the text as:

Otherwise the DL_PermBase parameter in the STC_DL_Zone_IE() or AAS_DL_IE() shall be used in the equation.

Comment 8040

Problem

In 802.16e/D11, 11.3.1 UCD channel encodings, Table 353a UCD PHY-specific channel encodings WirelessMAN-OFDMA, the editorial instruction on page 534, line 19 says, '*[Insert the following rows to Table 353:]*' when many of the TLV items in Table 353a already exist in Table 353 in 802.16-2004 and/or Cor1/D5. This would, in effect, create duplicate lines in the Table.

In the same Table, 'Start of ranging codes Group', Type 155 in the Table was not changed to reflect changes to Section 8.4.7.3 in 16e/D11.

In the same Table, 'Start of ranging codes Group', Type 155 does not include in its Description a line added in Cor1/D5.

In the same Table, 'Permutation base', Type 156, 'UL allocated subchannels bitmap', Type 157, 'Optional permutation UL Allocated subchannels bitmap', Type 158, and 'HARQ ACK delay for UL burst', Type 171 are copied into 16e/D11 here with no change from 802.16-2004, and fail to reflect changes made in Cor1/D5.

In the same Table, 'Band AMC Allocation Threshold', Type 159, 'Band AMC Release Threshold', Type 160, 'Band AMC Allocation Timer', Type 161, 'Band AMC Release Timer', Type 162, 'Band Status Reporting MAX Period', Type 163, and 'Band AMC Retry Timer', Type 164 all are copied from 802.16-2004, no changes in Cor1/D5, changes in 16e/D11 but with no editorial markup indicating the changes.

In the same Table, 'Initial ranging codes', Type 150, 'Periodic ranging codes', Type 151, 'Bandwidth request codes', Type 152, 'Periodic ranging backoff start', Type 153, 'Periodic ranging backoff end', Type 154, 'Safety Channel Allocation Threshold', Type 165, 'Safety Channel Release Threshold', Type 166, 'Safety Channel Allocation Timer', Type 167, 'Safety Channel Release Timer', Type 168, 'Bin Status Reporting MAX Period', Type 169, 'Safety Channel Retry Timer', Type 170, and 'Band AMC Entry Average CINR', Type 185 all are inappropriately copied into this Table either from 802.16-2004 or Cor1/D5 (according to the Editorial instruction in 16e/D11, to be inserted into Table 353 again) in 16e/D11 without any change whatsoever.

And wait, there's more....

There should not be PHY specific row items in the generic UCD TLV Table 349.

From 16e/D11, Table 349, 'Normalized C/N override 2', Type code 175, is already in Table 353 in Cor1/D5, but with different language. And it belongs in the OFDMA PHY specific Table 353 anyway.

I don't know why 'PHY Scope' was added to Table 349 in 16e/D11. It does not appear in 802.16-2004 or Cor1/D5. Anyway, it is inappropriate since we have PHY specific UCD Tables to take the PHY specific UCD parameters. Looking at it again, I think they did it to try to make the format similar to Table 358, DCD encoding parameters. But note that there are no PHY specific DCD parameter tables; unlike for UCD parameter tables. So DCD needed the column, UCD did not.

In 16e/D11, Table 358, 'MAC Version' it already exists in 802.16-2004 in the Table.

'DL allocated subchannel bitmap for optional AMC permutation', Type 30, from 16e/D11 Table 358 duplicates Type 22 in Cor1/D5, Table 358 (very closely, at least).

In 16e/D11, 11.4.1 DCD channel encodings, page 540, line 8, the sentence, 'The trigger TLV (type 54) in Table 358 is encoded using the following description.' should occur immediately prior to Table 358a Trigger TLV description, not in front of Table 358.

Remedy

Revise Table into two tables with different editorial instruction: Table 353 with instruction to make changes to TLV items in the existing Table 353, including any necessary carry forward of changes from Cor1/D5; and Table 353a with instruction to insert new TLV items in to Table 353.

Move PHY specific row items in the generic UCD TLV Table 349 to the OFDMA PHY specific Table 353. But we cannot reuse the Type codes 9-13. Those Type codes are reserved for use in the generic UCD TLV Table 349. Notice that all of the PHY specific UCD TLV Tables (350, 351, 352, 353) all start with Type code 150. So we have to start there and count up. The first code available is Type code 197. So 'Initial_ranging_backoff_start' should be Type code 198 and so on.

From 16e/D11, Table 349, 'Normalized C/N override 2', Type code 175, is already in Table 353 in Cor1/D5, but with different language. And it belongs in the OFDMA PHY specific Table 353 anyway. Move to Table 353 and change the Type code to 177.

Remove the 'PHY Scope' column from Table 349 in 16e/D11.

In 16e/D11, Table 358, remove 'MAC Version', Type 148 and 'DL allocated subchannel bitmap for optional AMC permutation', Type 30, from the Table. Update the language for 'DL AMC allocated physical bands bitmap', Type 22 in Table 358, in Cor1/D5, with language from 16e/D11.

In 16e/D11, 11.4.1 DCD channel encodings, page 540, line 8, move the sentence, 'The trigger TLV (type 54) in Table 358 is encoded using the following description.' to immediately preceding Table 358a Trigger TLV description, not in front of Table 358.

Remedy 9:

In 802.16e/D11, 11.3.1 UCD channel encodings, Table 349 UCD channel encodings, pages 533-534, lines 1-18, replace the existing Table 349 and text, including Editorial markup, with:

Table 349 UCD channel encodings

Name	Type (1 byte)	Length (1 byte)	Value (variable-length)
<u>HO_ranging_start*</u>	<u>7</u>	<u>1</u>	<u>Initial backoff window size for MS performing initial ranging during handover process, expressed as a power of 2. Range: 0-15 (the highest order bits shall be unused and set to 0).</u>
<u>HO_ranging_end*</u>	<u>8</u>	<u>1</u>	<u>Final backoff window size for MS performing</u>

			<u>initial ranging during handover process, expressed as a power of 2.</u> <u>Range: 0-15 (the highest order bits shall be unused and set to 0).</u>
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* SCa, OFDM, OFDMA (mobile only)

Remedy 10:

In 802.16e/D11, 11.3.1 UCD channel encodings, pages 534-537, lines 19-57, replace the existing text, including Editorial markup, and Tables, and replace Editorial instructions with:

[Change Table 353 as indicated:]

Table 353 UCD PHY-specific channel encodings WirelessMAN-OFDMA

Name	Type (1 byte)	Length (1 byte)	Value (variable-length)
Start of ranging codes group	155	1	Indicates the starting number, S, of the group of codes used for this uplink. <u>If not specified, the default value shall be set to zero.</u> All the ranging codes used on this uplink will be between S and $((S+O+N+M+L) \text{ mod } 256)$. Where, N is the number of initial-ranging codes M is the number of periodic-ranging codes L is the number of bandwidth-request codes <u>O is the number of handover-ranging codes</u> The range of values is $0 \leq S \leq 255$.
Band AMC Allocation Threshold	159	1	dB unit <u>threshold of the maximum of the standard deviations of the individual bands CINR measurements over time to trigger mode transition from normal subchannel to Band AMC</u>
Band AMC Release Threshold	160	1	dB unit <u>threshold of the maximum of the standard deviations of the individual bands CINR measurements over time to trigger mode transition from Band AMC to normal subchannel</u>
Band AMC Allocation Timer	161	1	Frame unit <u>Minimum required number of frames to measure the average and standard deviation for the event of Band AMC triggering</u>
Band AMC Release Timer	162	1	Frame unit <u>Minimum required number of frames to measure the average and standard deviation for the event triggering from Band AMC to normal subchannel</u>
Band Status Reporting MAX Period	163	1	Frame unit <u>Maximum period between refreshing the Band CINR measurement by the unsolicited REP-RSP</u>
Band AMC Retry Timer	164	1	Frame unit <u>Backoff timer between consecutive mode transitions from normal subchannel to Band</u>

			<u>AMC when the previous request is failed</u>
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[Insert the following rows to Table 353:]

Table 353a UCD PHY-specific channel encodings WirelessMAN-OFDMA

Name	Type (1 byte)	Length (1 byte)	Value (variable-length)
<u>Normalized C/N override 2</u>	<u>177</u>	<u>8</u>	<u>Bit#0~7: It shall be interpreted as signed integer in dB. It corresponds to the normalized C/N value in the first line (counting except for header cell of table)</u> <u>Bit#8~63: This is a list of numbers, where each number is encoded by one nibble, and interpreted as a signed integer. The nibbles correspond in order to the list define by Table 334, starting from the second line (counting except for the header cell of table), such that the LS nibble of the first byte corresponds to the second line in the table. The number encoded by each nibble represents the difference in normalized C/N relative to the previous line in the table.</u>
<u>UpperBound_{AAS_PREAMB} LE</u>	<u>186</u>	<u>1</u>	<u>Signed in units of 0.25 dB</u>
<u>LowerBound_{AAS_PREAM} BLE</u>	<u>187</u>	<u>1</u>	<u>Signed in units of 0.25 dB</u>
<u>Allow AAS Beam Select Messages</u>	<u>188</u>	<u>1</u>	<u>Boolean to indicate whether unsolicited AAS Beam Select messages (see 6.3.2.3.41) should be sent by the MS. The default value is 1, with possible values of 0-1:</u> <u>0 — MS should not send AAS Beam Select Messages</u> <u>1 — MS may send AAS Beam Select Messages</u>
<u>Use CQICH indication flag</u>	<u>189</u>	<u>1</u>	<u>The N MSB values of this field represents the N-bit payload value on the Fast Feedback channel reserved as indication flag for MS to initiate feedback on the Feedback header, where N is the number of payload bits used for S/N measurement feedback on the Fast Feedback channel.</u> <u>The value shall not be set to all zeros.</u>
<u>MS-specific up power offset adjustment step</u>	<u>190</u>	<u>1</u>	<u>Unsigned in units of 0.01 dB</u>
<u>MS-specific down power offset adjustment step</u>	<u>191</u>	<u>1</u>	<u>Unsigned in units of 0.01 dB</u>
<u>Minimum level of power offset adjustment</u>	<u>192</u>	<u>1</u>	<u>Signed in units of 0.1 dB</u>
<u>Maximum level of</u>	<u>193</u>	<u>1</u>	<u>Signed in units of 0.1 dB</u>

<u>power offset adjustment</u>			
<u>Handover Ranging Codes</u>	<u>194</u>	<u>1</u>	<u>Number of handover ranging CDMA codes. Possible values are 0-255.</u>
<u>Initial ranging interval</u>	<u>195</u>	<u>1</u>	<u>Number of frames between initial ranging interval allocation.</u>
<u>Tx Power Report</u>	<u>196</u>	<u>3</u>	<u>Bit#0~3: Tx Power Report Threshold, It is unsigned integer and shall be read in dB scale. When 0b111 it means infinite.</u> <u>Bit#4~7: It is unsigned integer whose value is d. Its value d shall be interpreted as Tx Power Report Interval = 2^d. When 0b111 it means infinite.</u> <u>Bit#8~11: α_{p_avg} in multiples of 1/16 (range [1/16,16/16])</u> <u>Bit#12~15: Tx Power Report Threshold, It is unsigned integer and shall be read in dB scale. When 0b111 it means infinite. It shall be used when CQICH is allocated to the SS.</u> <u>Bit#16~19: It is unsigned integer whose value is d. Its value d shall be interpreted as Tx Power Report Interval = 2^d. When 0b111 it means infinite. It shall be used when CQICH is allocated to the SS.</u> <u>Bit#20~24: α_{p_avg} in multiples of 1/16 (range [1/16,16/16]), It shall be used when CQICH is allocated to the SS.</u>
<u>Normalized C/N for Channel Sounding</u>	<u>197</u>	<u>1</u>	<u>Signed integer for the required C/N (dB) for Channel Sounding. This value shall override C/N for the channel sounding in Table 334a.</u>
<u>Initial ranging backoff_start</u>	<u>198</u>	<u>1</u>	<u>Initial backoff window size for initial ranging contention, expressed as a power of 2. Values of n range 0-15 (the highest order bits shall be unused and set to 0) This TLV shall be used in NBR-ADV message only to represent corresponding values that appear in UCD message fields.</u>
<u>Initial ranging backoff_end</u>	<u>199</u>	<u>1</u>	<u>Final backoff window size for initial ranging contention, expressed as a power of 2. Values of n range 0-15 (the highest order bits shall be unused and set to 0) This TLV shall be used in NBR-ADV message only to represent corresponding values that appear in UCD message fields.</u>
<u>Bandwidth request backoff_start</u>	<u>200</u>	<u>1</u>	<u>Initial backoff window size for contention BW requests, expressed as a power of 2. Values of n range 0-15 (the highest order bits shall be unused and set to 0). This TLV shall be used in NBR-ADV message only to represent corresponding values that appear in UCD message fields.</u>

<u>Bandwidth request backoff_end</u>	<u>201</u>	<u>1</u>	<u>Final backoff window size for contention BW requests, expressed as a power of 2. Values of n range 0-15 (the highest order bits shall be unused and set to 0). This TLV shall be used in NBR-ADV message only to represent corresponding values that appear in UCD message fields.</u>
<u>Uplink burst profile for multiple FEC types</u>	<u>202</u>	<u>1</u>	<u>May appear more than once (see 6.3.2.3.3 and 8.4.5.5). The length is the number of bytes in the overall object, including embedded TLV items.</u>

Remedy 11:

In 802.16e/D11, 11.4.1 DCD channel encodings, Table 358 DCD channel encoding, pages 541, lines 48, delete row item 'MAC version', Type 148 from the Table

Remedy 12:

In 802.16e/D11, 11.4.1 DCD channel encodings, Table 358 DCD channel encoding, pages 540, lines 56-62, delete row item 'DL allocated subchannel bitmap for optional AMC permutation', Type 30 from the Table

Remedy 13:

In 802.16e/D11, 11.4.1 DCD channel encodings, Table 358 DCD channel encoding, page 543, immediately preceding 11.4.2 Downlink burst profile encodings, **insert the following Table 358c, including Editorial markup, and insert Editorial Instruction with:**

[Change the rows in Table 358 as indicated:]

Table 358c DCD channel encoding

Name	Type (1 byte)	Length (1 byte)	Value (variable-length)	PHY Scope
DL AMC allocated physical bands bitmap	22	6	A bitmap describing the physical bands allocated to the segment in the DL, when allocating AMC subchannels through the HARQ MAP, <u>or through the Normal MAP</u> , or for Band-AMC CINR reports, <u>or using the optional AMC permutation (see 8.4.6.3)</u> . The LSB of the first byte shall correspond to band 0. For any bit that is not set, the corresponding band shall not be used by the SS on that segment. When this TLV is not present, BS may allocate any physical bands to a SS	OFDMA

Remedy 14:

In 802.16e/D11, 11.4.1 DCD channel encodings, pages 540, lines 8, move the sentence 'The trigger TLV (type 54) in Table 358 is encoded using the following description.', to **immediately preceding Table 358a Trigger TLV description, page 542**

Remedy 14a:

In 802.16e/D11, Table 358 DCD channel encoding, page 539, Editor to re-sequence the presentation of the rows of TLVs in ascending Type number order.