Project	**IEEE 802.16 Broadband Wireless Access Working Group** <http://ieee802.org/16>	
Title	**Clarification of Byte and Bit ordering of TLV encodings in REP-RSP message**	
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Re:	IEEE Working Group 802.16 Letter Ballot #26 as announced in IEEE 802.16-07/049	
Abstract	This contribution clarifies Byte and Bit ordering of TLV encodings in REP-RSP message	
Purpose	Adopt the proposed change in IEEE802.16REV2/D1	
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Clarification of Byte and Bit ordering of TLV encodings in REP-RSP message

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1. Introduction

There are a lot of ambiguities for Byte and Bit ordering of TLV encodings in REP-REP as follows.

- 1 byte and 1 byte: which one occupies the most significant 8 bits?
- Second byte: Is it the most significant 8 bits or the least significant 8 bits?
- First MM bits and Next NN bits: Do Fist MM bits mean the most significant MM bits or the least significant MM bits? What about Next NN bits?

We need to explicitly clarify the ambiguities.

2. Proposed text change

[Modify the 1st table in the section 11.12 REP-RSP management message encodings on Page 1262 of IEEE802.16REV2/D1, as follows]

REP-REQ Report type	Name	Type	Length	Value
..	..	..	..	..
Bit #1 = 1	CINR report	1.5	2	~~1 byte~~Bit #15~Bit #8 : mean (see also 8.2.2, 8.3.9, 8.4.11) for details) ~~1 byte~~Bit #7~Bit #0 : standard deviation
Bit #2 = 1	RSSI report	1.6	2	~~1 byte~~Bit #15~Bit #8 : mean (see also 8.2.2, 8.3.9, 8.4.11) for details) ~~1 byte~~Bit #7~Bit #0 : standard deviation

[Modify the 2nd table in the section 11.12 REP-RSP management message encodings on Page 1262 of IEEE802.16REV2/D1, as follows]

REP-REQ Channel Type request	Name	Type	Length	Value
..	..	..	..	..
Channel Type = 01	Band AMC Report	2.2	4	~~First 12 bits for the band indicating bitmap and Next 25 bits for CINR reports (5 bits per each band)~~ Bit #31 ~ Bit #20 : Band Indication Bitmap (Bit #31 for Band with index 11, Bit #30 for Band with 10 .. Bit#20 for Band with index 0) Bit #19 ~ Bit #0 : CINR reports for 4 selected Bands. (5 bits per each band. Band with lower index has lower significant 5 bits)
Channel Type = 01	Enhanced Band AMC Report	2.4	5	~~First 12 bits for the band indicating bitmap and next 25 bits for CINR measurement (5 bits per each band)~~ Bit #39 ~ Bit #28 : Band Indication Bitmap (Bit #39 for Band with index 11, Bit #38 for Band with index 10 .. Bit#2

				8 for Band with index 0) Bit #27 ~ Bit #3 : CINR reports for 5 selected Bands. (5 bits per each band. Band with lower index has lower significant 5 bits) Bit #2 ~ Bit #0 : Reserved
Channel Type = 10	Safety Channel Report	2.3	5	~~The first 20 bits for the reported bin indices and the next 20 bits for CINR reports (5 bits for each bin)~~ Bit #39 ~ Bit #20 : Reported Bin Indication Bitmap (Bit #39 for Bin with index 19, Bit #38 for Bin with index 18 .. Bit#20 for Bin with index 0) Bit #19 ~ Bit #0 : CINR reports for 4 selected Bins. (5 bits per each bin. Bin with lower index has lower significant 5 bits)
..	..	..	..	..

[Modify the table in the section 11.12 REP-RSP management message encodings on Page 1263 of IEEE802.16REV2/D1, as follows]

REP-REQ Preamble physical CINR request	Name	Type	Length	Value
Bits 0–2 = 0b000	PUSC zone with Use All SC = 0	2.6	1 or 2	Bits 0–4: Mean of physical CINR estimate for PUSC zone with Use All SC = 0 and PRBS_ID indicated in Zone-Specific Physical CINR Request. Bit 5: Report type: 0: CINR estimated from pilot subcarriers. 1: CINR estimated from data subcarriers. Bits 6–7: *Reserved*; shall be set to zero. Bits 8–12: Standard deviation of CINR estimate for PUSC zone with Use All SC = 0 and PRBS_ID indicated in Zone-Specific CINR Request. Bits 13–15: *Reserved*; shall be set to zero. NOTE—The ~~second byte~~ Bit #15~Bit#8 shall only be sent if length = 2.
Bits 0–2 = 0b001	PUSC zone with Use All SC = 1	2.7	1 or 2	Bits 0–4: Mean of physical CINR estimate for PUSC zone with Use All SC = 1 and PRBS_ID indicated in Zone-Specific Physi-cal CINR Request. CINR reported corresponds to a subset of major groups as specified in CINR Type Request. Bit 5: Report type: 0: CINR estimated from pilot subcarriers. 1: CINR estimated from data subcarriers. Bits 6–7: *Reserved*; shall be set to zero. Bits 8–12: Standard deviation of CINR estimate for PUSC zone with Use All SC = 1 and PRBS_ID indicated in Zone-Specific CINR Request. CINR reported corresponds to a subset of major groups as specified in CINR Type Request. Bits 13–15: *Reserved*; shall be set to zero. NOTE—The ~~second byte~~ Bit #15~Bit#8 shall only be sent if length = 2.
Bits 0–2 = 0b010	FUSC zone	2.8	1 or 2	Bits 0–4: Mean of physical CINR estimate for FUSC zone with PRBS_ID indicated in Zone-Specific Physical CINR Request. Bit 5: Report type: 0: CINR estimated from pilot subcarriers. 1: CINR estimated from data subcarr

				iers. Bits 6–7: *Reserved*; shall be set to zero. Bits 8–12: Standard deviation of CINR estimate for FUSC zone with PRBS_ID indicated in Zone-Specific CINR Request. Bits 13–15: *Reserved*; shall be set to zero. NOTE—The ~~second byte~~ Bit #15~Bit#8 shall only be sent if length = 2.

[Modify the 1st table in the section 11.12 REP-RSP management message encodings on Page 1264 of IEEE802.16REV2/D1, as follows]

REP-REQ Preamble physical CINR request	Name	Type	Length	Value
Bits 0–2 = 0b011	Optional FUSC zone	2.9	1 or 2	Bits 0–4: Mean of physical CINR estimate for Optional FUSC with PRBS_ID indicated in Zone-Specific Physical CINR Request. Bit 5: Report type: 0: CINR estimated from pilot subcarriers. 1: CINR estimated from data subcarriers. Bits 6–7: *Reserved*; shall be set to zero. Bits 8–12: Standard deviation of CINR estimate for Optional FUSC with PRBS_ID indicated in Zone-Specific CINR Request. Bits 13–15: *Reserved*; shall be set to zero. NOTE—The ~~second byte~~ Bit #15~Bit#8 shall only be sent if length = 2.
..	..	..	..	..
Bits 0–2 = 0b101	AMC zone	2.11	1 or 2	Bits 0–4: Mean of physical CINR estimate for AMC AAS zone or AMC zone with dedicated pilots with PRBS_ID indicated in Zone-Specific Physical CINR Request. Bit 5: Report type: 0: CINR estimated from pilot subcarriers. 1: CINR estimated from data subcarriers. Bits 6–7: *Reserved*; shall be set to zero. Bits 8–12: Standard deviation of CINR estimate for AMC AAS zone or AMC zone with dedicated pilots. Bits 13–15: *Reserved*; shall be set to zero. NOTE—The ~~second byte~~ Bit #15~Bit#8 shall only be sent if length = 2.

[Modify the 2nd table in the section 11.12 REP-RSP management message encodings on Page 1264 of IEEE802.16REV2/D1, as follows]

REP-REQ Preamble physical CINR	Name	Type	Length	Value

request				
Bits #0-1 = 0b00	The estimation of physical CINR measured from preamble for frequency reuse configuration = 1	2.12	1 or 2	Bits 0–4: The mean of physical CINR estimation measured from preamble for frequency reuse configuration = 1. Bits 5–7: *Reserved*; shall be set to zero. Bits 8–12: The standard deviation of CINR estimation measured from preamble for frequency reuse configuration = 1. Bits 13–15: *Reserved*; shall be set to zero. NOTE—The ~~second byte~~ Bit #15~Bit#8 shall only be sent if length = 2.

[Modify the 1st table in the section 11.12 REP-RSP management message encodings on Page 1265 of IEEE802.16REV2/D1, as follows]

REP-REQ Preamble physical CINR request	Name	Type	Length	Value
Bits #0-1 = 0b01	The estimation of physical CINR measured from preamble for frequency reuse configuration = 3	2.13	1 or 2	Bits 0–4: The mean of physical CINR estimation measured from preamble for frequency reuse configuration = 3. Bits 5–7: *Reserved*; shall be set to zero. Bits 8–12: The standard deviation of CINR estimation measured from preamble for frequency reuse configuration = 3. Bits 13–15: *Reserved*; shall be set to zero. NOTE—The ~~second byte~~ Bit #15~Bit#8 shall only be sent if length = 2.
Bits #0-1 = 0b10	The estimation of physical CINR measured from preamble for Band AMC zone.	2.14	4	The estimation of physical CINR measured from preamble for band AMC subchannel. ~~First 12 bits for the band indicating bitmap and Next 20 bits for CINR reports (5 bits per each band).~~ Bit #31 ~ Bit #20 : Band Indication Bitmap (Bit #31 for Band with index 11, Bit #30 for Band with 10 .. Bit#20 for Band with index 0) Bit #19 ~ Bit #0 : CINR reports for 4 selected Bands. (5 bits per each band. Band with lower index has lower significant 5 bits)
Bits #0-1 = 0b10	The enhanced estimation of physical CINR measured from preamble for Band AMC zone.	2.15	5	The enhanced estimation of physical CINR measured from preamble for Band AMC subchannel. ~~First 12 bits for the band indicating bitmap and Next 25 bits for CINR reports (b bits per each band)~~ Bit #39 ~ Bit #28 : Band Indication Bitmap (Bit #39 for Band with index 11, Bit #38 for Band with index 10 .. Bit#28 for Band with index 0) Bit #27 ~ Bit #3 : CINR reports for 5 selected Bands. (5 bits per each band. Band with lower index has lower significant 5 bits) Bit #2 ~ Bit #0 : Reserved