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Re:	“IEEE 802.16n-11/0029,” in response to Call for Comments on GRIDMAN AWD	
Abstract	Multicast indication cycle on GRIDMAN Amendment Draft Standard	
Purpose	To discuss and adopt the proposed text in the draft amendment document on GRIDMAN	
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Clarification on Multicast Indication Cycle over IEEE 802.16n

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1. Introduction

In IEEE 802.16n[2], multicast indication cycle is defined in 16.9.1.3. The Multicast Indication cycle is unique to HR multicast group zone. Thus, to support the mobility of HR-MS, the MR-MS receiving multicast service needs the multicast indication cycle as a part of handover and location update. In addition, the multicast indication cycle of neighbor HR-BS, which belongs to other multicast group zone, shall be included in NBR-ADV message to support seamless mobility.

Thus, this contribution provides the clarification on multicast indication cycle.

2. References

- [1] IEEE 802.16n-10/0048r3, 802.16n System Requirement Document including SARM annex, November 2011.
- [2] IEEE 802.16n-11/0032, P802.16n Draft AWD, November 2011.
- [3] IEEE 802.16n-11/0033, P802.16.1a Draft AWD, November 2011.
- [4] IEEE P802.16Rev3/D3, IEEE Draft Standard for Local and metropolitan area networks; Part 16: Air Interface for Fixed and Mobile Broadband Wireless Access Systems," November 2011.
- [5] IEEE P802.16.1TM/D3, IEEE Draft for WirelessMAN-Advanced Air Interface for Broadband Wireless Access Systems, November 2011.

3. Proposed Text on the IEEE 802.16n Amendment Draft Standard

Note:

The text in **BLACK** color: the existing text in the IEEE 802.16 GRIDMAN AWD

The text in **RED** color: the removal of existing IEEE 802.16 GRIDMAN AWD

The text in **BLUE** color: the new text added to the IEEE 802.16 GRIDMAN AWD

[-----Start of Text Proposal-----]

[Remedy1: Change Table 1028 in line#2, page 55 on 802.16n AWD as follows:]

Table 1028 ---- HR Multicast service flow update mapping info definition

<u>Field</u>	<u>Length (bits)</u>	<u>Note</u>
<u>Multicast_Group_Zone_ID</u>	<u>12</u>	<u>Multicast zone identifier for current Multicast Zone</u>
<u>Neighboring_Multicast_Group_ZONE_ID</u>	<u>12</u>	<u>Multicast Group zone identifier for neighboring Multicast Group Zone</u>
<u>Multicast Indication Cycle of neighboring Multicast Group Zone</u>	<u>8</u>	<u>Multicast Indication Cycle for neighboring Multicast Group Zone</u> <u>It indicates the start of multicast indication cycle in unit of 8 LSB of frame number.</u> <u>Multicast indication cycle is unique to HR multicast group zone and it consists of multicast available interval and multicast unavailable interval. 1st frame of multicast indication cycle is the multicast available interval and rest frames are the multicast unavailable interval.</u>
<u>List of HR Multicast Group CID Mappings</u>	<u>variable (Nx4)</u>	<u>Current_HR_MGID(1), New_HR_MGID(1),, Current_HR_MGID(N), New_HR_MGID(N)</u>

A value of 0xFFFF in the New_HR_MGID field indicates that the service flow corresponding to Current_HR_MGID is not available in the Multicast Zone identified by the TLV.

[Remedy2: Change from line #15, page 105 to line #27, page 106 on 802.16n AWD as follows:]

16.9.1.3 Multicast communication operation in idle mode

When an HR-MS in Idle mode moves to an HR-BS which does not belong to HR-MS' previous Multicast Group Zone, the HR-MS is expected to update the multicast service flow management encodings at that HR-BS to provide continuous reception of multicast content. The HR-MS may obtain the multicast information in the target Multicast zone through MOB_NBR-ADV message described in 6.3.2.3.42 in the Multicast Zone of the service HR-BS. If the idle mode HR-MS has not received such information from the serving Multicast Zone, the HR-MS shall use location update procedure to acquire updated multicast service flow management encodings. In order to perform the multicast location update process, the HR-MS shall transmit RNG-REQ message described in 6.3.2.3.5 with the Ranging Purpose Indication Bit 5 setting to 1. In response to the request for multicast location update, the HR-BS shall transmit RNG-RSP message described in 6.3.2.3.6, which may include the Multicast Group Zone identifier, Multicast Indication Cycle, and HR Multicast Group CID to provide update service flow management encodings for any affected multicast flow(s).

HR-BS providing multicast service transmits multicast indication cycle using DCD and DSA/ DSC messages. The multicast indication cycle is unique to HR multicast group zone and it consists of multicast available interval and multicast unavailable interval. Multicast available interval is the first frame of each multicast indication cycle. In the multicast available interval, the HR-BS providing multicast service transmits HR-MG-IND message described in 6.3.2.3.98.23 and HR-MT-IND message described in 6.3.2.3.98.24 during multicast available interval of [the multicast indication cycle in an](#) HR multicast group zone. HR-MG-IND and HR-MT-IND message are used to indicate

- multicast service establishment/change/release
- whether the multicast traffic is transmitted after those messages are transmitted
- to perform network entry or exit sleep mode to transmit multicast related message to change/ release multicast service and update multicast security key.
- to perform multicast service flow update using ranging procedure

Multicast indication cycle included in DCD message is used for multicast service establishment.

During multicast service establishment/change using DSA/DSC message, new multicast indication cycle may be transmitted.

[-----End of Text Proposal-----]