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Re:	“IEEE 802.16n-11/0020,” in response to Call for Comments on GRIDMAN AWD	
Abstract	Local forwarding on IEEE 802.16 GRIDMAN Amendment Draft Standard	
Purpose	To discuss and adopt the proposed text in the draft amendment document on 802.16 GRIDMAN	
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Local Forwarding over IEEE 802.16n

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1. Introduction

This document provides a proposed local forwarding operation on IEEE 802.16 GRIDMAN. Local forwarding allows an HR-MS to communicate with one or more HR-MSs via an HR-infrastructure station without going through the backhaul[1]. In addition, localized routing in WiMAX[7] allows communication between MSs whose data paths are anchored on the same ASN-GW.

Thus, the first scenario, which routes data between MSs inside an ASN, of the localized routing covers the requirement on the local forwarding in IEEE 802.16n[6][7].

2. References

- [1] IEEE 802.16n-10/0048r2, 802.16n System Requirement Document including SAMR annex, July 2011.
- [2] IEEE 802.16n-11/0024, P802.16n Draft AWD, October 2011.
- [3] IEEE 802.16n-11/0025, P802.16.1a Draft AWD, October 2011.
- [4] IEEE P802.16Rev3/D2, IEEE Draft Standard for Local and metropolitan area networks; Part 16: Air Interface for Fixed and Mobile Broadband Wireless Access Systems,” October 2011.
- [5] IEEE P802.16.1TM/D2, [Draft] WirelessMAN-Advanced Air Interface for Broadband Wireless Access Systems, October 2011.
- [6] IEEE C802.16n-11/0174, Local Forwarding in IEEE 802.16n, September 2011.
- [7] WiMAX Forum, WiMAX ASN Localized Routing (unapproved), February 2011.

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

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

[Remedy: Insert the following text into line 20, page 58 in the 802.16n AWD.]

When local forwarding opportunity is determined, an HR-MS may communicate with one or more HR-MSs via an HR-infrastructure station without going through the backhaul. ~~However, how to determine the local forwarding opportunity is outside scope of this specification.~~ If HR-MS information such as MSID is used, HR-infrastructure station may detect the local forwarding. Otherwise, local forwarding is detected by upper layer, which is outside of this specification.

When DSD procedure is performed, local forwarding is terminated. In addition, local forwarding may be terminated by upper layer, which is outside of this specification. When local forwarding is terminated, the HR-MS shall communicate with one or more HR-MSs via an HR-infrastructure station with going through the backhaul.

An infrastructure station capable of providing local forwarding shall (re)assign and manage the uplink CID for the source HR-MS and downlink CID for destination HR-MS during DSA procedure. Any available CID may be used for the local forwarding (i.e., there are no dedicated CIDs for local forwarding connections). An HR-MS may not be aware of local forwarding but shall follow the same procedure defined in 6.3.

~~Data traffic for HR-MSs sent on the connection with the CID shall be forwarded to other one or more HR-MSs without going through the backhaul.~~ The HR-infrastructure station forwards the received data traffic from the source HR-MS to the destination HR-MS locally based on the CIDs of the source HR-MS and destination HR-MS. Each MAC PDU shall begin with a fixed-length MAC Header and its format is the same as that defined in 6.3.2.1. The header may be followed by the Payload of the MAC PDU. If present, the Payload shall consist of zero or more subheaders and zero or more MAC SDUs and/or fragments thereof. The payload information may vary in length, so that an HR-MS' MAC PDU may represent a variable number of bytes. A MAC PDU may contain a CRC, as described in 6.3.3.5. MAC PDUs sent on the connection used by local forwarding shall follow the same format as shown in Figure 20.

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