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| Project | **IEEE 802.16 Broadband Wireless Access Working Group <**<http://ieee802.org/16>**>** | |
| Title | ***Neighbor cell scanning operation of stations in standalone network*** | |
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| Re: | “IEEE 802.16n-11/0025,” in response to the 802.16n (GRIDMAN) AWD Call for Comments | |
| Abstract | This contribution is proposes neighbor cell scanning operation of stations in standalone network to find the infrastructure networks. | |
| Purpose | To discuss and adopt the proposed text in the AWD of 802.16n | |
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**Neighbor cell scanning operation of stations in standalone network**

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# Introduction

IEEE 802.16n AWD describes standalone network in Section 6.12.4. In this contribution, we propose neighbor cell scanning operation of HR-BS as well as its subordinate HR-MSs. In the standalone network it is desirable that any station in the standalone network tries to recover the connection to the backbone network as fast as possible. For this purpose, HR-BS initiates the neighbor BS/RS scanning operation by sending MM-ADV message including scanning information to the subordinate HR-MSs in a periodic manner or non-periodic manner.

# Proposed Texts

Note:

The text in **BLACK** color: the existing text in the 802.16n Amendment Draft Standard

The text in **~~RED~~** color: the removal of existing 802.16n Amendment Draft Standard Text

The text in **BLUE** color: the new text added to the 802.16n Amendment Draft Standard Text

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

**[*Remedy1: Insert a new subsection in Section 6.12.4.4 in the GRIDMAN AWD for 802.16.1.*]**

**6.12.1 Multi-mode operation**

**6.12.4 Support for standalone network**

…

**6.12.4.4 Neighbor BS/RS scanning operation**

In order to make backbone connection HR-BS in standalone network may initiate neighbor BS/RS scanning operation by sending AAI-MM-ADV message with setting Action Type as 0b1001 to the subordinate HR-MSs. The scanning period is repeated either periodically or on demand basis by HR-BS. During the scanning period HR-BS as well as subordinate HR-MSs scan the signal from neighbors. The scanning procedure provides the opportunity for the stations in standalone network to perform measurement and obtain necessary system configuration information of the neighboring cells for recovering backbone connection.

**[*Remedy2: Modify the following text into section 6.2.3in the GRIDMAN AWD for 802.16.1.*]**

**6.2.3.65 MAC control messages for HR-Networks**

**6.2.3.65.1 AAI-MM-ADV message**

Infrastructure stations and HR-MS acting as HR-BS or HR-RS may transmit AAI-MM-ADV message to support multimode operation in the case as follows:

* When the backhaul link is down or up
* During maintaining relay link due to unavailable backhaul link, PHY/MAC layer parameters need be reconfigured such as
  + Power down
  + Power reduction
  + FA change
* Multimode service establish/release/change to inform subordinate stations to perform handover
* Scanning operation for HR-MS acting as relay to maintain synchronization with the serving HR-BS
* Neighbor cell scanning operation ~~for HR-MS acting as relay to handover~~

**Table 763mm1- Parameters for AAI-MM-ADV message**

|  |  |  |  |
| --- | --- | --- | --- |
| Field | Size(bits) | Value/Description | Condition |
| Action Type | 34 | Used to indicate the purpose of this message  0b0000: Reconfiguration of HR-BS/RS including multimode BS/RS  0b0001: Restart of HR-BS/RS including multimode BS/RS  0b0010: Power down (including FA down) of HR-BS/RS including multimode BS/RS  0b0011: Power reduction of HR-BS/RS including multimode BS/RS  0b0100: Backhaul link down of HR-BS  0b0101: Backhaul link up of HR-BS  0b0110: FA change of HR-BS/RS including multimode BS/RS  0b0111: Multimode service end of HR-MS  0b1000: Scanning operation for HR-MS acting as relay to maintain synchronization with the serving HR-BS  0b1001: Neighbor cell scanning ~~operation for HR-MS acting as relay to handover~~  0b1010 – 0b1111: reserved |  |

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