

Project	<b>IEEE 802.16 Broadband Wireless Access Working Group</b> < <a href="http://ieee802.org/16">http://ieee802.org/16</a> >	
Title	<b>Missing Scenario of Handover Process Supporting Legacy System</b>	
Date Submitted	<b>2009-01-05</b>	
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Re:	TGm SDD: IEEE 802.16m-08/052: Call for Comments and Contributions on Project 802.16m System Description Document (SDD)	
Abstract	Provision of missing scenario for legacy support handover	
Purpose	To discuss and adopt the proposed text in the IEEE 802.16m SDD	
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# Missing Scenario of Handover Process Supporting Legacy System

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## 1. Introduction

The recent effort for handover process supporting legacy system is outlined in Section 10.3.5 in SDD [1]. Table 1 summarizes all possible scenarios of handover supporting legacy system. The corresponding requirement for each scenario from the perspective of advertising neighbor base stations is also provided. Each scenario is marked in SDD column to indicate if the scenario is captured in the current SDD [1].

Handover Scenario	MS triggered for handover	Requirements	SDD
YBS to ABS	YMS	YBS advertises the Lzones of its neighbor ABSs.	O (Section 10.3.5.2)
	AMS	YBS advertises the Lzones of its neighbor ABSs. ABS handover to the Lzone of a target ABS. It might be switched to Mzone. Or it handover to Mzone directly.	O (Section 10.3.5.2)
YBS to 16m only ABS	AMS	YBS advertises neighbor 16m only ABSs	O (Section 10.3.5.2)
ABS to YBS	YMS	ABS advertises its neighbor YBSs (in its Lzone).	O (Section 10.3.5.3)
	AMS	ABS advertises its neighbor YBSs (in its both Lzone and Mzone). The serving ABS performs context mapping and protocol inter-working from 16m to 16e system.	O (Section 10.3.5.3)
16m only ABS to YBS	AMS	16m only ABS advertises its neighbor. This is not specifically mentioned. However, from a perspective of AMS, handover procedure from ABS or 16m only ABS to YBS is same.	O (Implicitly in Section 10.3.5.3)
ABS to ABS	YMS	ABS broadcasts the Lzones of its neighbor ABSs in its Lzone.	x
	AMS	This would follow general 16m handover procedure.	These are not legacy support HO scenarios.
16m only ABS to 16m only ABS	AMS	This would follow general 16m handover procedure.	
ABS to 16m only ABS	AMS	This would follow general 16m handover procedure.	
16m only ABS to ABS	AMS	This would follow general 16m handover procedure.	

< Table 1. All possible scenarios of handover supporting legacy system >

We observe that one feasible legacy supporting handover scenario is not reflected in the current SDD. The missing scenario is for YMS to handover from the Lzone of serving ABS to the Lzone of a target ABS. We note that this is clearly a feasible legacy supporting handover scenario. To support this handover scenario, ABS should advertise Lzones of neighbor ABSs in its Lzone. For seamless operation of legacy supporting handover, we propose reflecting this missing scenario and the corresponding requirement of neighbor advertisement in SDD. Also, section 10.3.4 is duplicated with 10.3.5. We suggest moving all texts in 10.3.5 into 10.3.4.

Finally, we also propose replacing 16m zone and 16e zone with Mzone and Lzone, respectively which are adopted in Section 3.1 as new terms.

## 2. Proposed Text for the 802.16m SDD

----- Start of the proposed text -----

### ~~10.3.4 Handover Process supporting Legacy system~~

~~[Editor's Note: This section is only related to intra-RAT 16e/IEEE 802.16m HO.]~~

#### ~~10.3.4.1 Network topology acquisition~~

#### ~~10.3.4.2 Handover from 16e to IEEE 802.16m~~

#### ~~10.3.4.3 Handover from IEEE 802.16m to 16e~~

### **10.3.5 4 Handover Process supporting Legacy system**

[Editor's Note: This section is only related intra-RAT 16e/IEEE 802.16m HO.]

#### 10.3.5-4.1 Network topology acquisition

The [WirelessMAN-OFDMA Reference System/WirelessMAN-OFDMA Advanced System](#) co-existing system consists of [WirelessMAN-OFDMA Reference System](#) and [WirelessMAN-OFDMA Advanced System](#) cells/sectors. A YBS advertises the system information for its neighbor YBSs and the LZones of its neighbor ABSs. A ABS advertises the system information for its neighbor YBSs in its both LZone and ~~16m-zone~~ [Mzone](#). It advertises the LZones of its neighbor ABSs in its Lzone. It also advertises the system information for its neighbor ABSs in ~~16m-zone~~ [Mzone](#) only.

The ABS may indicate its [WirelessMAN-OFDMA Advanced System](#) capability and information in its ~~16e-zone~~ [Lzone](#). The signaling for transmitting ~~16m-zone~~ [Mzone](#) information is FSS. ~~In addition, the MOB\_NBR\_ADV message in the LZone of ABS may contain information of a neighboring 16m-only ABS or 16m-zone of ABS.~~

~~[Editors note: the 16 m only BS definition is unclear. Since clearly 16m support is indicated the BS is interpreted to be an ABS.]~~

----- **End of the proposed text** -----

**References**

- [1] IEEE 802.16m-08/003r6. The Draft IEEE 802.16m System Description Document, December 2008.