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Re:	80216m-07_013CallForComments to 16m requirement: 80216m-07_002r1	
Abstract	This contribution proposes clarification to section 5.1 legacy support	
Purpose	To clarify the legacy support description.	
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## Comments to section 5.1

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### Introduction

This contribution proposes the legacy support requirement of 16m.

In the PAR of 16m, it has been clearly required that 16m should meet the ITU-Advanced requirement. But as amendment of 16e, it also has to support legacy system.

In the current 16m requirement document: 80216m-07\_002r1, there has some description of legacy support, but we think it should give more clearly indication to 16m standard developed.

One key issue of the current requirement is which is more important when meeting IMT-Advanced requirement conflicts with meeting with the requirement of legacy support.

To solve the issues as stated above, a clarification to section 5.1 in current requirement document is proposed.

### Proposed Solution

#### 5.1 Legacy Support

The IEEE 802.16m amendment is based on the IEEE Standard 802.16 WirelessMAN-OFDMA specification.

IEEE 802.16m shall provide continuing support and interoperability for legacy WirelessMAN-OFDMA equipment, including base stations and mobile stations.

[This continuing support shall be limited to only a “harmonized sub-set” of IEEE 802.16e OFDMA features. This harmonized sub-set is captured by the WiMAX Forum™ definition of OFDMA mobile system profiles [1]. These WiMAX mobile system profiles shall serve as the IEEE 802.16e reference system.]

A new IEEE 802.16m mobile station ~~[should]~~[shall] be able to operate with a IEEE 802.16e base station at a level of performance that is equivalent to an IEEE 802.16e mobile station.

An IEEE 802.16m base station shall support:

operation of IEEE 802.16e mobile stations with performance equivalent to an IEEE 802.16e base station, and

concurrent operation of both IEEE 802.16m and 802.16e mobile stations on the same RF carrier.

~~[An IEEE 802.16m base station should also support:~~

~~concurrent operation of IEEE 802.16e and 802.16m mobile stations on the same RF carrier where the 802.16m base station operates at a channel bandwidth larger than that of the 802.16e mobile station, and~~

~~concurrent operation of two 802.16m mobile stations on the same RF carrier in different channel bandwidths.<sup>1</sup>]~~

~~[IEEE 802.16m base stations operating in bandwidths greater than 20 MHz shall only be required to support 802.16e mobile stations operating with bandwidths of 20 MHz or less.]~~

The performance of an IEEE 802.16m system supporting concurrent operation of IEEE 802.16e and 802.16m mobile stations should be proportional to the fraction of 802.16m mobile stations attached to the base station.

~~[Legacy support requirements shall apply to both TDD and FDD duplexing modes, respectively, with a minimal degradation of performance in backward compatibility operational configurations.]<sup>2</sup>~~

**Contributor notes :** *Add the following paragraph:*

**Legacy support requirement shall apply to both TDD and FDD duplexing modes, respectively, with no performance degradation when backward compatibility is desired.**

IEEE 802.16m shall enable the efficient upgrade of existing IEEE 802.16e (reference system) base stations to 802.16m compliance and enable graceful migration of IEEE 802.16e systems to fully capable 802.16m systems.<sup>3</sup>

IEEE 802.16m shall operate and support backward compatibility in all bands where existing IEEE 802.16e systems are deployed or could be deployed by the time 802.16m technology is available.

[This requirement shall not be construed as different modes of operation for different frequency bands; rather to reduce the number of optional features and the complexity of the standard, a unified baseband system with configurable parameters shall be used for operation in different frequency bands.]

[It shall not be mandatory that every IEEE 802.16m mobile station also support any or all of the IEEE 802.16e modes.]

[It shall not be mandatory that every IEEE 802.16m base station also support any or all of the IEEE 802.16e modes on all channels.]

[In view of continuing support for legacy 802.16 systems, the legacy 802.16 terminals shall be able to be

<sup>1</sup> This probably belongs in a different section.

<sup>2</sup> Legacy requirements only apply to TDD per WiMAX profile??

<sup>3</sup> Maybe move this to a different section??

supported within the spectrum band(s) where the IEEE 802.16m might be deployed.]

[IEEE 802.16m system shall meet the IMT-Advanced performance/capability requirements and support legacy terminals simultaneously.]

**[Contributor:] At the case that there is no resolution to meet the IMT-Advanced performance/capability requirement and support legacy terminals simultaneously, meeting the IMT-Advanced performance/capability has more high priority.**

[The IEEE 802.16m enhancements shall be transparent to the IEEE 802.16e reference-system-based terminals and base stations.]

[IEEE 802.16m may also be deployed on a separate RF carrier as an overlay to legacy IEEE 802.16e reference system.]

**Editor's note: choose one of the following:**

[The IEEE 802.16m system shall support seamless handover to and from legacy IEEE 802.16e reference system.]

~~[An IEEE 802.16m base station shall support seamless handover of IEEE 802.16e mobile stations to and from legacy IEEE 802.16e base stations.]~~

~~[Clause 12 of P802.16m shall specify a new profile, tentatively titled "WirelessMAN-OFDMA/2008." This profile shall include a number of subprofiles. Each unique combination of duplexing mode (TDD or FDD) and FFT size shall be represented by a unique subprofile. Clause 12 shall not delete the WirelessMAN-OFDMA/2005 profile, nor edit it other than to make minor maintenance changes that are deemed essential. Furthermore, the P802.16m draft will not substantively alter any normative content references by the WirelessMAN-OFDMA/2005 profile, other than to make minor maintenance changes that are deemed essential. If any maintenance changes are made, the P802.16m draft shall rename the WirelessMAN-OFDMA/2005 profile as "WirelessMAN-OFDMA/2005r1". The nature of any such maintenance changes shall ensure that devices compliant to the originally specified WirelessMAN-OFDMA/2005 profile shall be compliant with WirelessMAN-OFDMA/2005r1.~~

~~Each subprofile in the WirelessMAN-OFDMA/2008 profile shall require legacy support for the corresponding~~

~~subprofile (i.e., the subprofile with matching duplexing and FFT size) in WirelessMAN-OFDMA/2008, specified as follows:~~

- ~~— A WirelessMAN-OFDMA/2008 MS [should] [shall] interoperate with a WirelessMAN-OFDMA/2005 BS at a level of performance that is equivalent to that of a WirelessMAN-OFDMA/2005 MS.~~
- ~~— A WirelessMAN-OFDMA/2008 BS shall interoperate with a WirelessMAN-OFDMA/2005 MSs at a level of performance that is equivalent to that of a WirelessMAN-OFDMA/2005 BS.~~
- ~~— A WirelessMAN-OFDMA/2008 BS shall support concurrent operation of both WirelessMAN-OFDMA/2005 and WirelessMAN-OFDMA/2008 MSs on the same RF carrier.~~
- ~~— A WirelessMAN-OFDMA/2008 BS shall support seamless handover of WirelessMAN-OFDMA/2005 MSs to and from WirelessMAN-OFDMA/2005 BSs.~~
- ~~— {additional conditions to be determined} }~~

~~[This standard amends the IEEE 802.16 WirelessMAN-OFDMA specification to provide an advanced air interface for operation in licensed bands. It meets the cellular layer requirements of IMT-Advanced next generation mobile networks. This amendment provides continuing support for legacy WirelessMAN-OFDMA equipment.]~~