

## 802.20 Proposed Remedies to IEEE 802.16m and 5 Criteria

### Remedies for IEEE 802.16m (R2) PAR

#### 5.2 Scope of Proposed Standard:

This standard amends the [IEEE 802.16](#) WirelessMAN-OFDMA specification to provide an advanced air interface for operation in licensed bands. It addresses the cellular layer requirements of IMT-Advanced next generation mobile networks ~~as specified in Rec. ITU-R M.1645~~. This amendment provides continuing support for legacy [802.16](#) OFDMA equipment.

**5.4 Purpose of Proposed Standard:** The purpose of this standard is to provide performance improvements [to IEEE 802.16](#) necessary to support future advanced services and applications, such as those described by the ITU in Report ITU-R M.2072.

#### 7.1 Are there other standards or projects with a similar scope? No

If yes, please explain: It is anticipated that other standards will also be submitted to the ITU-R for IMT-Advanced. At this time, there is no indication about the number of standards that may be proposed or the number of standards that may be adopted by the ITU-R for IMT-Advanced.

Other IEEE 802 projects may ~~target aspects of~~ [submit standards to the ITU-R for IMT-Advanced](#). ~~but~~ The scope of this standard is expected to be unique [as the extension of IEEE 802.16 toward IMT-Advanced within IEEE 802](#).

#### 7.4 Additional Explanatory Notes: (Item Number and Explanation)

The title of this PAR should be:

"IEEE Standard for Local and metropolitan area networks - Part 16: Air Interface for Fixed and Mobile Broadband Wireless Access Systems Advanced Air Interface"

However, the automatic PAR titling system does not permit the assignment of this name. Note that the base of the title must contain the words "and Mobile". These words are not in the title of IEEE 802.16-2006, but the title was modified by IEEE 802.16e-2005.

#### 3.3 Joint Sponsor:

The PAR submittal form does not allow for the entry of Joint Sponsor information. The Joint Sponsor is as follows:

Joint Sponsor: IEEE Microwave Theory and Techniques Society  
 Contact information for Sponsor Chair: Richard Snyder  
 Email: r.snyder@ieee.org  
 Phone: +1-201-492-1207

#### 5.2 Scope

Some of the requirements ~~specified in Rec. ITU-R M.1645~~ that this amendment will target are:

- 100 Mbits/s - high mobility, ~~as defined in Recommendation ITU-R M.1645~~
- Frequency bands - licensed [mobile](#) bands ~~as identified in Report ITU-R M.2079~~ [below 6 GHz](#)
- Target cell size: Micro and Macro-cells as defined in Table 7-15 of Report ITU-R M.2078

## Remedies for the 802.16m (R2) 5 Criteria

*ITU-R Recommendation M.1645 (Framework and overall objectives of the future development of IMT-2000 and systems beyond IMT-2000) discusses a multi-layer structure as described in Figure 5 of M.1645(reproduced below) ...*

*ITU-R M.1645 does not establish the specific requirements for IMT-Advanced (the proposed name for “systems beyond IMT-2000”). ~~No-The existing IEEE 802.16 standards or projects~~does not meet provide the preliminary cellular layer IMT-Advanced target requirements, such as 100 Mbit/s in high-speed mobility applications, which M.1645 predicts new radio interfaces will need to support. ~~In order to address this and other ITU-R M.1645 elements, such as the distribution layer, the hotspot layer, the personal network layer and the fixed (wired) layer, other IEEE 802 groups have the opportunity to develop their own submissions for the ITU-R. M.1645 envisions the use of multiple coordinated technologies, therefore other IEEE 802 media and interworking standards may be suited to address specific parts of the M.1645 structure.~~ The project will produce an interoperable and distinguishable extension to the IEEE Std 802.16 to meet the higher data rates envisioned to be needed for IMT-Advanced so that users of that standard can easily distinguish the enhancements from the original standard*

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### Notes related to proposed remedies:

1. The proposed remedies are intended to eliminate the aspects of this PAR that would encumber other IEEE 802 projects from making submissions to the ITU-R for IMT-Advanced based either on their existing standards or future amendments to those standards.
2. ITU- R M.1645 does not establish requirements for IMT-Advanced. It states that, “It is predicted that potential new radio interface(s) will need to support data rates of up to approximately 100 Mbit/s for high mobility such as mobile access and up to approximately 1 Gbit/s for low mobility such as nomadic/local wireless access, by around the year 2010.” Thus, the statements in the 802.16m PAR and 5 criteria about the target requirements are not accurate. Actual requirements for IMT-Advanced will be determined later.”

This does not mean that 100Mbit/s will be established as the minimum requirement for IMT-Advanced.

3. ITU-R M.2079, entitled “Technical and operational information for identifying Spectrum for the terrestrial component of future development of IMT-2000 and IMT-Advanced” is a compilation of information about each of the candidate bands that may be considered by the WRC-2007 under Agenda Item 1.4. This report includes all bands analyzed by the ITU-R, including bands that are not currently allocated to the Mobile Service. All of the bands included in this report are below 6 GHz. Identification for IMT-Advanced does not constrain the applicability of IMT-Advanced to other bands which are not included in that identification. It is therefore more appropriate for the 802.16m PAR to address the licensed bands allocated to the Mobile Service below 6 GHz. This is the same frequency range associated with IEEE 802.16e, so it imposes no additional constraint on their project.