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| Title | Proposed Text on Legacy Support for Project 802.16m Requirements | | |
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| Source(s) | Jin Sam Kwak Yeong-Hyeon Kwon Wookbong Lee Ronny (Yong-Ho) Kim LG Electronics Inc. LG R&D Complex, 533 Hogye-1dong, Dongan-gu, Anyang, 431-749, Korea | samji@lge.com wishwill@lge.com ronnykim@lge.com Voice: +82-31-450-7902 Fax: +82-31-450-7912 | wbong@lge.com |
| Re: | IEEE 802.16m-07/013 Call for Comments and Contributions on Project 802.16m Requirements: IEEE 802.16 Advanced Air Interface | | |
| Abstract | This contribution proposes a specific text as a unified framework over several (sub-) sections of "1.0 Overview", "3.0 Definition", "5.1 Legacy Support" in order to clarify "continuing legacy support" - mentioned in the approved P802.16m PAR - in the IEEE 802.16m requirement document. | | |
| Purpose | For discussion and approval by TGM | | |
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Proposed Text on Legacy Support for P802.16m Requirements

Jin Sam Kwak, Yeong-Hyeon Kwon, Wookbong Lee, and Ronny (Yong-Ho) Kim
LG Electronics Inc.

Abstracts

In order to clarify “continuing legacy support” - mentioned in the approved P802.16m PAR - in the 802.16m requirement document, this contribution proposes a specific text as a unified framework over several (sub-) sections of “1.0 Overview”, “3.0 Definition”, “5.1 Legacy Support.”

Comments

Most of the sentences in the “Section 1.0 Overview” are relevant to the requirements specified in the following (sub-)sections, e.g., “Definition” (Sec. 3.0), “Legacy Support” (Sec. 5.1), “Performance Requirement” (Sec. 7.0), “System Architecture” (Sec. 8.3), etc. Some sentences in the draft Sec.1.0 also seem redundant by simply repeating or rewording the scope and purpose of the approved P802.16m PAR. It is therefore desirable that the section “1.0 Overview” should address some generic descriptions on the scope, purpose and characteristics of the document “IEEE 802.16m Advanced Air Interface Requirements” according to the approved PAR as indicated in “Remedy 1.”

In the Section of “3.0 Definition,” the definition of legacy (or reference) system and a new 16m system with corresponding profiles should be clarified. The terms defined here should be also reflected in the Section 5.1 to maintain the consistency. A suggested definition is described in the “Remedy 2.”

The statements regarding legacy support in Section 5.1 can fall into a couple of categories, i.e., “inter-operation” and “concurrent operation” as described in “Remedy 3.” Each statement classified into the two categories must use “SHOULD” (not “shall”) without any limitation of the definition or the level of legacy support. Furthermore, the legacy support excluding backward compatibility should be also allowed to avoid restricting a development of a new 16m advanced air interface as a candidate IMT-Advanced due to a strict requirement of legacy support such as backward compatibility. However, it should be obviously noted that the advance air interface satisfying the IMT-Advanced requirements with the high-level legacy support is required for the IEEE 802.16m system.

Suggested Remedies

[Remedy 1: Replace the contents of the section below (1.0 Overview) with the following text:]

1.0 Overview

1.1 Scope and Purpose

This document defines the system-level requirements for the P802.16m advanced air interface in accordance with the following scope and purpose of the approved P802.16 project authorization request (PAR):

- *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.*
- *The purpose of this standard is to provide performance improvements necessary to support future advanced*

services and applications, such as those described by the ITU in Report ITU-R M.2072.

The detailed requirements described here shall meet the requirements of International Telecommunications Union– Radio Communications Sector (ITU-R) IMT-Advanced in order for an advanced IEEE 802.16m air interface to be proposed as a candidate for consideration in the IMT-Advanced evaluation process being conducted by the ITU-R.

1.2 Document Revision

Since, as stated in the PAR, the completion of the project is contingent upon the completion of the ITU-R IMT-Advanced requirements on a timely basis, this document shall be maintained and evolved according to the IMT-Advanced requirements released by the ITU-R.

[Remedy 2: Replace the contents of the section below (3.0 Definition) with the following text:]

3.0 Definitions

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|---------------------------------------|--|
| Sector | This term refers to physical partitioning of the base station (BS). When there are N transmitting directional antennas in the BS, each of them is named a sector. |
| Cell | A collection of sectors (typically 3) belonging to the same base station. |
| WirelessMAN-OFDMA/2005 ⁽¹⁾ | A profile including several sub-profiles to be defined during the 802.16 revision project begun in March 2007. An equipment (BS/MS) compliant with a (sub-)profile ⁽²⁾ represents the legacy 16e equipment (BS/MS). |
| WirelessMAN-OFDMA/2008 ⁽¹⁾ | A set of profiles including several sub-profiles to be defined during the 802.16m project. An equipment (BS/MS) compliant with the (sub-)profile represents a new 16m equipment (BS/MS). |

[Remedy 3: Replace the contents of sub-section below (5.1 Legacy Support) with the following text:]

5.1 Legacy Support

The (sub-) profile in the WirelessMAN-OFDMA/2008 shall require legacy support for the corresponding (sub-)profile in WirelessMAN-OFDMA/2005, at least considering a couple of operations below:

- ***Inter-Operation between a new 16m equipment and legacy 16e BS/MS***

- *A new 16m equipment should interoperate with a legacy 16e BS/MS at a level of performance that is equivalent to that of the corresponding legacy 16e equipment.*

[Specific conditions or examples may be added⁽³⁾]

⁽¹⁾ The terminology may be changed according to the definitions and views on the legacy and new 16m systems. The terms changed in Sec. 3.0 should be incorporated in Sec. 5.1.

⁽²⁾ The (sub-)profile for legacy equipment, e.g., WiMAX profile, should be further clarified and discussed.

- **Concurrent Operation of new 16m and legacy 16e MSs**

- *A new 16m BS should support concurrent operation of both legacy 16e and new 16m MSs on the same RF carrier.*

- [Specific conditions or examples may be added⁽³⁾]*

The IEEE 802.16m system compliant with a (sub-) profile of the WirelessMAN-OFDMA/2008 shall meet the IMT-Advanced performance/capability requirements as well as provide legacy support including backward compatibility simultaneously. However, the legacy support excluding backward compatibility shall not be precluded in order that the advanced P802.16m air interface meets the high-level requirements consistently and has a competitive edge over other candidates for IMT-Advanced.

⁽³⁾ Each statement must use “SHOULD” (not “shall”) in order not to restrict the definition of legacy support to a certain level.