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TECHNOLOGY ASPECTS

Institute of Electrical and Electronics Engineers, Inc. (IEEE)

INTENTION TO SUBMIT CANDIDATE IMT-ADVANCED RIT BASED ON IEEE PROJECT 802.16m

1 Source information

This contribution was developed by IEEE Project 802®, the Local and Metropolitan Area Network Standards Committee (“IEEE 802”), an international standards development committee organized under the IEEE and the IEEE Standards Association (“IEEE-SA”).

The content herein was prepared by a group of technical experts in IEEE 802 and industry and was approved for submission by the IEEE 802.16™ Working Group on Wireless Metropolitan Area Networks, the IEEE 802.18 Radio Regulatory Technical Advisory Group, and the IEEE 802 Executive Committee, in accordance with the IEEE 802 policies and procedures, and represents the view of IEEE 802.

2 Overview

The IEEE informs ITU-R WP 5D of its intent to submit a proposal based on IEEE Project 802.16m as a candidate IMT-Advanced RIT in accordance with the development schedule. In January 2007, IEEE first informed ITU-R of our intentions regarding IMT-Advanced in our liaison contribution (Document 8F/1083-E also [L802.16-06/034r1](#)). Further information summarizing the work in IEEE Project 802.16m was presented in the IMT-Advanced workshops in Kyoto, Japan in May 2007 ([R07-WS.WP8F-C-0016](#)) and in Seoul, Korea in October 2008 ([IEEE L802.16-08/057r2](#)).

IEEE has actively contributed towards the development of IMT-Advanced, specifically with numerous contributions towards development of the Reports ITU-R M.[IMT.TECH], ITU-R M.[IMT.EVAL], ITU-R M.[IMT.REST] and the Circular Letter 5/LCCE/2.

The IEEE Project 802.16m is being developed by the IEEE 802.16 Working Group (WG), which continues to progress in its development of a candidate RIT for IMT-Advanced. This contribution provides more details on the progress. However, this contribution does not constitute any specific components of the candidate RIT submission being contemplated by the IEEE 802.16 WG and therefore is for information purposes only.

3 Background

The IEEE 802.16 WG has been developing IEEE Std 802.16 in stages since 1999. Since 2003, the standard development has been focused on supporting an IP-based radio interface that is capable of MIMO-OFDMA.

Presently, Recommendation ITU-R M.1457 includes the OFDMA TDD WMAN radio interface based on IEEE Std 802.16 and an implementation profile developed by the WiMAX Forum. Also, Recommendations ITU-R F.1763 and ITU-R M.1801 make normative reference to IEEE Std 802.16.

The IEEE 802.16 WG meets six times a year, around the globe. Presently the WG has over 500 Members. We have worldwide participation, and the members' addresses include Canada, China, Egypt, Finland, France, Germany, India, Israel, Italy, Japan, Korea, Netherlands, Russia, Singapore, Sweden, Taiwan, UK and USA.

Today, implementations based on IEEE Std 802.16 are being deployed worldwide and are supported by a healthy ecosystem of service providers, content/application providers, system/equipment vendors and chip vendors.

The interest generated in IEEE Project 802.16m is testament to the keen industry following of IMT-Advanced. IEEE intends to contribute to its success in enabling worldwide adoption of advanced mobile broadband technologies.

4 IEEE Project 802.16m overview

The IEEE Project 802.16m was authorized in December 2006. The Project title is "*Air interface for fixed and mobile broadband wireless access systems – Advanced air interface*". The Project scope statement is "*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.*" Hence this requires that the standard being developed in IEEE Project 802.16m must meet the IMT-Advanced requirements.

The Task Group m (TGm) in the IEEE 802.16 WG was tasked to develop IEEE Project 802.16m. TGm first created a plan for its work, identifying the following work items for development:

- Project 802.16m System Requirements Document (SRD)
- Project 802.16m Evaluation Methodology Document (EMD)
- Project 802.16m System Description Document (SDD)
- Project 802.16m Draft Standard
- Project 802.16m IMT-Advanced Candidate RIT Proposal.

The System Requirements Document (SRD) capturing the high level 802.16m system requirements was developed from January to September 2007. Taking into account the completion by WP 5D of the IMT-Advanced requirements (Report ITU-R M.[IMT.TECH]), the SRD was updated in July 2008.

The Evaluation Methodology Document (EMD) capturing the link-level and system-level simulation models and parameters was developed from January to November 2007. It has also been updated taking into account Reports ITU-R M.[IMT.TECH] and ITU-R M.[IMT.EVAL] finalized in WP 5D.

TGm started development of the System Description Document (SDD) in November 2007 and the work is progressing in an expeditious manner.

TGm started work on the P802.16m Draft Standard in November 2008.

5 Planned submission package for IMT-Advanced contributions

The criteria for completeness of submissions is defined in Section 4.1 of Report ITU-R M.[IMT.REST], which refers to the completed templates specified in Section 4.2.

Therefore it is the understanding of IEEE that the following components constitute a complete submission package.

- Technology Description Template (4.2.3.2)
- Link Budget Template (4.2.3.3)
- Self Evaluation
 - i) Services Compliance Template (4.2.4.1)
 - ii) Spectrum Compliance Template (4.2.4.2)
 - iii) Performance Compliance Template (4.2.4.3)
- Indication of ITU IPR Policy Compliance
- Version of minimum technical requirements and evaluation criteria.

IEEE understands that any additional information beyond this list is voluntary. Please let us know if this is not correct.

6 References

IEEE 802.16m Project Authorization Request <<http://standards.ieee.org/board/nes/projects/802-16m.pdf>>

IEEE 802.16m System Requirements Document (SRD), [IEEE 802.16m-07/002](#)

IEEE 802.16m Evaluation Methodology Document (EMD), [IEEE 802.16m-08/004](#)

IEEE 802.16m System Description Document (SDD), [IEEE 802.16m-08/003](#).

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