P802.16n

Submitter Email: tim.godfrey@ieee.org
Type of Project: Amendment to IEEE Standard 802.16
PAR Request Date: 22-Mar-2010
PAR Approval Date: 17-Jun-2010
PAR Expiration Date: 31-Dec-2014
Status: PAR for an Amendment to an existing IEEE Standard
Project Record: No Project Record
Root Project: 802.16-

1.1 Project Number: P802.16n
1.2 Type of Document: Standard
1.3 Life Cycle: Full Use

2.1 Title: IEEE Standard for Air Interface for Broadband Wireless Access Systems
Amendment: Higher Reliability Networks

3.1 Working Group: Broadband Wireless Access Working Group (C/LM/WG802.16)
Contact Information for Working Group Chair
Name: Roger Marks
Email Address: r.b.marks@ieee.org
Phone: 1 619 393 1913
Contact Information for Working Group Vice-Chair
None

3.2 Sponsoring Society and Committee: IEEE Computer Society/Local and Metropolitan Area Networks (C/LM)
Contact Information for Sponsor Chair
Name: Paul Nikolich
Email Address: p.nikolich@ieee.org
Phone: 857.205.0050
Contact Information for Standards Representative
None

4.1 Type of Ballot: Individual
4.2 Expected Date of submission of draft to the IEEE-SA for Initial Sponsor Ballot: 07/2012
4.3 Projected Completion Date for Submittal to RevCom: 07/2013

5.1 Approximate number of people expected to be actively involved in the development of this project: 20
5.2 Scope: This amendment specifies protocol enhancements to the medium access control layer (MAC) for enabling increased robustness and alternate radio path establishment in degraded network conditions. Limited orthogonal frequency-division
multiple access physical layer (OFDMA PHY) extensions are included for enabling operation with radio path redundancy and direct
communication between subscriber stations. Also mobile base stations and mobile relay stations are supported.
5.3 Is the completion of this standard dependent upon the completion of another standard: Yes. This will amend IEEE Std 802.16, following completion of the current revision.
5.4 Purpose: This amendment addresses higher reliability requirements that are not supported by IEEE Std. 802.16.
5.5 Need for the Project: Work undertaken within Land Mobile Radio, Aeronautic, Maritime and Government bodies, such as the
TETRA Association, Eurocae, International Maritime Organization, and the US Department of Homeland Security and Federal
Aviation Administration, regarding the deployment of IEEE 802.16 technology in Public Safety, Avionics, Airport Surface
Communication, Maritime Safety, and Surveillance applications, has raised specific issues which may be addressed within IEEE
802.16.
Recently introduced legislation in U.S. and other countries encourages and funds a wide range of activities in communications

technologies supporting Smart Grid applications such as monitoring and control of generation, transmission, distribution and
consumption of energy resources. This project is expected to support communication with higher reliability that may be used in some
Smart Grid applications.
High data rates and long range are required for some of these applications. 802.16 technology is uniquely suitable for these purposes,
due to its inherent longer range and high data rate capability compared to other wireless technologies.
The benefit of this particular project is to facilitate applications for those new markets. In particular, the new mechanisms will be
advantageous for IEEE 802.16when targeted to those applications.
5.6 Stakeholders for the Standard: Semiconductor manufacturers, network equipment manufacturers, mobile and wireless device
manufacturers, network operators, utility companies, government agencies (e.g. US Department of Homeland Security, Department of
Energy and the Federal Aviation Administration), non-government agencies with equivalent interest and the public safety and energy
industries.

Intellectual Property
6.1.a. Is the Sponsor aware of any copyright permissions needed for this project?: No
6.1.b. Is the Sponsor aware of possible registration activity related to this project?: No
7.1 Are there other standards or projects with a similar scope?: No

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7.2 International Activities
a. Adoption
Is there potential for this standard (in part or in whole) to be adopted by another national, regional or international
organization?: Do Not Know
Organization:
Technical Committee Name:
Technical Committee Number:
Contact Name:
Phone:
Email:
b. Joint Development
Is it the intent to develop this document jointly with another organization?: No
c. Harmonization
Are you aware of another organization that may be interested in portions of this document in their standardization
development efforts?: Do Not Know
Organization:
Technical Committee Name:
Technical Committee Number:
Contact Name:
Phone:
Email:

8.1 Additional Explanatory Notes (Item Number and Explanation): In Section 5.2 the following definitions and notes apply:
Degraded Network: The failure of one or more 802.16 network infrastructure nodes or network connectivity.
Robustness: The capability of the network to withstand and automatically recover from degradation to provide the required
availability to support mission critical applications (essential to the core function of society and the economy). E.g. the ability to
recover from a single point of failure.
Mobile Base Station: A base station which is capable of maintaining service while moving.

Radio Path Redundancy: The ability to provide alternative paths between base stations, relay stations, and subscriber stations.
Operation in licensed, unlicensed and lightly licensed spectrum bands below 6 GHz with means and mechanisms to coexist with other
radio access technologies (RATs) is supported. Support for enabling application specific specialized security suites is also provided.