

P802.16.1a**Submitter Email:** r.b.marks@ieee.org**Type of Project:** New IEEE Standard**PAR Request Date:** 12-Oct-2011**PAR Approval Date:****PAR Expiration Date:****Status:** Unapproved PAR, PAR for a New IEEE Standard**1.1 Project Number:** P802.16.1a**1.2 Type of Document:** Standard**1.3 Life Cycle:** Full Use**2.1 Title:** Standard for WirelessMAN-Advanced 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/LAN/MAN Standards Committee (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

3.3 Joint Sponsor: IEEE Microwave Theory and Techniques Society/Standards Coordinating Committee (MTT/SCC)**Contact Information for Sponsor Chair****Name:** Michael Janezic**Email Address:** janezic@boulder.nist.gov**Phone:** 303-497-3656**Contact Information for Standards Representative****Name:** Michael Janezic**Email Address:** janezic@boulder.nist.gov**Phone:** 303-497-3656**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:** 08/2013**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 WirelessMAN-Advanced physical layer 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**If yes please explain:** Yes. This amendment will amend IEEE Std 802.16.1.1.1**5.4 Purpose:** This amendment addresses higher reliability requirements that are not supported by IEEE Std 802.16.1.**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 communication 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. 802.16.1 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 802.16.1 when targeted to those applications.

IEEE

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

7.2 Joint Development

Is it the intent to develop this document jointly with another organization?: No

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 802.16.1 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.

Note: This PAR is being submitted as a PAR for a new standard. The actual intent is to amend IEEE 802.16.1. However, the submittal system will not allow it to be filed in this way because IEEE 802.16.1 has not been approved at the time of this submittal.