Call for Contributions:

*Proximity based Direct Communications (PDC) as an amendment to WirelessMAN Advanced Air Interface*

Project Planning Committee

# Issued: 14 November 2012

# Deadline: 12 January 2013 AOE

During the IEEE 802.16 Working Group’s Session #80 (16-19 July 2012 in San Diego, CA, USA) and #81 (17-20 September 2012 in Indian Wells, CA, USA), the Project Planning Committee (PPC) group, under the IEEE 802.16 Working Group, reviewed input contributions regarding Proximity based Direct Communications (PDC) as an enhancement to the WirelessMAN-Advnaced Air Interface. The summary of input contribution on PDC is reported in the Document 802.16-12-0618. Following the review of those contributions, the PPC hereby issues this Call for Contributions soliciting input documentation to progress the development of a Project Authorization Request (PAR) and Five Criteria (5C) Statement on *Proximity based Direct Communications as an Enhancement to WirelessMAN Advanced Air Interface*.

Such contributions will be addressed at Session #83, where the PPC intends to develop the PAR and Five Criteria with the intent of presenting them for IEEE 802 approval in conjunction with Session #84.

Comments are also solicited on the following draft text for key elements of the PAR and 5C, taken from Document 802.16-12-0570-04-Gcon:

**Type of Project:** Amendment to IEEE Standard 802.16.1

**2.1 Title:** Air Interface for Broadband Wireless Access Systems: Amendment for Proximity based Direct Communications (PDC).

**5.2.b. Scope of the project:** This project will develop an amendment specifying enhancements to the WirelessMAN-Advanced Air Interface for effective use in proximity based direct communications (PDC), providing detection of device discovery in the physically close proximity. It will focus on optimized physical (PHY) layer and medium access control (MAC) layer enhancements to provide functionalities for proximity based applications utilizing direct communication link in licensed bands, hence increase the overall network throughput. The enhancements will be advanced mobile station (AMS) initiated discovery of neighboring AMSs, unified approach to deploy proximity based direct communication between AMSs covering both infrastructure-dependent and infrastructure-less operation scenarios, and switching mechanism between conventional ABS-centric link and direct communication link for increase of cell spectral efficiency by cellular traffic offloading. This amendment will provide continuing support for WirelessMAN-Advanced Air Interface equipment.

**5.5 Need for the Project:** In order to meet the ever growing wireless cellular data traffic, further increase in cell spectral efficiency must be provided. This can be realized by employing a unified solution to proximity based cellular data traffic offloading in ABS coverage case and infrastructure-less proximity based direct communication in out-of-ABS coverage case. Many proximity based applications require PHY and MAC technique that involve requirements significantly different from those used to support typical ABS-centric network access. The ABS-centric network architecture of PHY and MAC do not have a functionality to let AMS to actively search the presence of other AMSs in its close proximity. Such applications include proximity based social networking services, proximity based network gaming services, proximity based advertisement (e.g. retail digital signage management), proximity based service discovery, infrastructure-less synchronization and distributed coordination, and etc.

##### **1 Broad Market Potential**

*A standards project authorized by IEEE 802 LMSC shall have a broad market potential. Specifically, it shall have the potential for:*

*a) Broad sets of applicability.*

*b) Multiple vendors and numerous users.*

*c) Balanced costs (LAN versus attached stations).*

Proximity based direct communications is a very distinct capability that enables the implementation of the “peer awareness”. As per several market forecasts, the potential market for this is expected to be very large over the next 10 years.

1. A variety of applications that are possible include traffic offloading, peer discovery, social networking, ad hoc networking, digital signage, emergency communications, internet-of-things, and etc.
2. The technologies involved in enabling proximity based direct communications can be enabled by a variety of base station and mobile device vendors, chipsets can be developed by a variety of vendors and also applications can be provided using this standard by numerous industry players.
3. The technologies used in proximity based direct communication (PDC) provide an appropriate degree of balance of costs to mobile devices.

##### **3 Distinct Identity**

*Each IEEE 802 LMSC standard shall have a distinct identity. To achieve this, each authorized project shall be:*

*a) One unique solution per problem (not two solutions to a problem).*

*b) Substantially different from other IEEE 802 standards.*

(a) This amendment is unique in providing enhancements for supporting proximity based applications to 802.16.1 while it supports continuing 802.16.1 user experience.

(b) The title of this amendment and the scope is distinct enough for document readers to discern the application of this standard.

Submit your contribution by the deadline abovefollowing the IEEE 802.16 Document Submission Instructions <http://ieee802.org/16/submit.html> using the File Code “Gcon”.

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