myProject™ - P802.11ac PAR Detail

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Type of Project: Amendment to IEEE Standard

PAR Request Date: 23-Jul-2008

PAR Approval Date: 26-Sep-2008

PAR Expiration Date: 31-Dec-2012

Status: Amendment to an Existing IEEE Standard 802.11-2007

Project Record:

1.1 Project Number: P802.11ac

1.2 Type of Document: Standard

1.3 Life Cycle: Full Use

2.1 Title: IEEE Standard for Information Technology - Telecommunications and Information Exchange Between Systems - Local and Metropolitan Area Networks - Specific Requirements - Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications - Amendment: Enhancements for Very High Throughput for operation in bands below 6GHz

3.1 Working Group: Wireless LAN Working Group (C/LM/WG802.11)
Contact Information for Working Group Chair
Name: Bruce Kraemer
Email: bkraemer@marvell.com
Phone: 321-751-3988
Contact Information for Working Group Vice-Chair
Name: Jon Rosdahl
Email: jrosdahl@ieee.org
Phone: 801-756-1496

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: 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 for Initial Sponsor Ballot: 12/2011

4.3 Projected Completion Date for Submittal to RevCom: 12/2012

5.1 Approximate number of people expected to work on this project: 100

5.2 Scope: This amendment defines standardized modifications to both the 802.11 physical layers (PHY) and the 802.11 Medium Access Control Layer (MAC) that enable modes of operation capable of supporting: o A maximum multi-station (STA) throughput (measured at the MAC data service access point), of at least 1 Gbps and a maximum single link throughput (measured at the MAC data service access point), of at least 500 Mbps. o Below 6 GHz carrier frequency operation excluding 2.4 GHz operation while ensuring backward compatibility and coexistence with legacy IEEE802.11 devices in the 5 GHz unlicensed band.
5.3 Is the completion of this standard dependent upon the completion of another standard: Yes

If yes, please explain: IEEE 802.11n. In order to provide higher throughput than IEEE 802.11n it is foreseen that the multi-input multiple-output (MIMO) feature of IEEE 802.11n to IEEE 802.11 may be required.

5.4 Purpose: The purpose of the amendment is to improve the 802.11 wireless local area network (LAN) user experience by providing significantly higher basic service set (BSS) throughput for existing WLAN application areas and to enable new market segments for operation below 6 GHz including distribution of multiple multimedia/data streams.

5.5 Need for the Project: As wireless networks are deployed, users are able to transition applications from fixed, non-wireless links to the convenience, freedom and versatility of wireless links. These transitions create an evolutionary demand to enhance the capacity of wireless networks in order to support new classes of applications with higher bandwidth requirements. Moreover as WLAN usage grows, the wireless medium is being inherently shared among users motivating the need to achieve higher multi-STA aggregated throughput. This project will meet that evolving need for higher bandwidth in the projected completion timeframe and enable the transition of the next class of applications

5.6 Stakeholders for the Standard: Manufacturers and users of semiconductors, personal computers, enterprise networking devices, consumer electronic devices, and mobile devices.

Intellectual Property

6.1.a. Has the IEEE-SA policy on intellectual property been presented to those responsible for preparing/submitting this PAR prior to the PAR submittal to the IEEE-SA Standards Board? Yes

If yes, state date: 05/12/2008

6.1.b. Is the Sponsor aware of any copyright permissions needed for this project? No

6.1.c. Is the Sponsor aware of possible registration activity related to this project? No

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7.1 Are there other standards or projects with a similar scope? No

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 Person Name:
Contact Person Phone:
Contact Person 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? No

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8.1 Additional Explanatory Notes (Item Number and Explanation): 5.2) The project may include the capability to handle multiple simultaneous communications. The multi-STA throughput is defined as the sum of the MAC SAP throughputs across all active transmissions within a set of STAs. The 1 Gbps maximum multi-STA throughput may be achieved when considering multiple simultaneously actively-communicating STAs, e.g., a BSS with 1 access point (AP) and 3 or more STAs. Though the primary metric used in the scope of the project deals with MAC SAP throughput, the intent is to provide enhancements over IEEE802.11n on the following inter-dependent performance indicators: throughput at the MAC data SAP, range of operation, aggregate network capacity (spectrum efficiency), power consumption (peak and average). 1.1) This is an amendment to the then current revision of the IEEE standard 802.11