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26 May 2006

Paul Nikolich
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Re: P802.11p - Standard for Information Technology – Telecommunications and information exchange between systems – Local and metropolitan area networks – specific requirements – Part II: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) specifications

Dear Paul:

I am pleased to inform you that on 25 May 2006 the IEEE-SA Standards Board approved the above referenced project until 31 December 2008. A copy of the file can be found on our website at <http://standards.ieee.org/board/nes/projects/802-11p.pdf>.

Now that your project has been approved, please forward a roster of participants involved in the development of this project. This request is in accordance with the IEEE-SA Operations Manual, Clause 5.1.2i under Duties of the Sponsor which states:

"Submit annually to the IEEE Standards Department an electronic roster of individuals participating on standards projects"

For your convenience, an Excel spreadsheet for your use has been posted on our website at <http://standards.ieee.org/guides/par/roster.xls>. Please forward this list to me via e-mail at j.haasz@ieee.org no later than 23 August 2006.

Please visit our website, IEEE Standards Development Online (<http://standards.ieee.org/resources/development/index.html>), for tools, forms and training to assist you in the standards development process. Also, we strongly recommend that a copy of your draft be sent to this office for review prior to the final vote by the working group to allow for a quick review by editorial staff before sponsor balloting begins.

If you should have any further questions, please contact me at 732-562-6367 or by email at j.haasz@ieee.org.

Sincerely,

Jodi Haasz
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CC: stuart@ok-brit.com

PAR Request Date: 08 March 2006**PAR Approval Date:** 25 May 2006**PAR Signature Page on File:** Yes**Type of Project:** Modification to Approved PAR**Status:** Modification to a Previously Approved Amendment PAR P802.11p, 2004-09-23**Root Project/PAR:** Modification to Approved PAR P802.11-REVma, 2003-03-20**1.1 Project No.:** **P802.11p****1.2 Type of Document:** Standard**1.3 Life Cycle:** Full-Use**1.4 Is this document in ballot now?** No**2.1 Title**

Standard for Information Technology – Telecommunications and information exchange between systems – Local and metropolitan area networks – specific requirements – Part II: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) specifications

Old Title

Amendment to Standard [for] Information Technology – Telecommunications and information exchange between systems – Local and Metropolitan networks – specific requirements – Part II: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) specifications: Wireless Access in Vehicular Environments

2.1 Amendment/Corrigenda Title

Amendment : Wireless Access in Vehicular Environments

3.1 Working Group Name[Wireless LAN Working Group](#)**Working Group Chair**[Kerry Stuart J](#)

Phone: 408-348-3171

Email: stuart@ok-brit.com

Working Group Vice Chair**3.2 Sponsor**[IEEE Computer Society Local and Metropolitan Area Networks \(C/LM\)](#)**Sponsor Chair**[Nikolich Paul](#)

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3.3 Joint Sponsor**4.1 Type of Ballot:** Individual**4.2 Expected Date of Submission for Initial Sponsor Ballot:** 2006-06-00**4.3 Projected Completion Date for Submittal to RevCom:** 2007-03-00**5.1 Approximate number of people expected to work on this project:** 400

5.2 Scope: The scope of the proposed project is to create an amendment of IEEE 802.11 to support communication between vehicles and the roadside and between vehicles while operating at speeds up to a minimum of 200 km/h for communication ranges up to 1000 meters. The amendment will support communications in the 5 GHz bands; specifically 5.850-5.925 GHz band within North America with the aim to enhance the mobility and safety of all forms of surface transportation, including rail and marine. Amendments to the PHY and MAC will be limited to those required to support communications under these operating environments within the 5 GHz bands.

Old Scope: The scope of the proposed project is to create an amendment of IEEE 802.11 to support communication between vehicles and the roadside and between vehicles while operating at speeds up to a minimum of 200 km/h for communication ranges up to 1000 meters. The amendment will support communications in the 5 GHz bands; specifically 5.850-5.925 GHz band within North America with the aim to enhance the mobility and safety of all forms of surface transportation, including rail and marine. Amendments to the PHY and MAC will be limited to those required to support communications under these operating environments within the 5 GHz bands.

5.3 Is the completion of this document contingent upon the completion of another document? No

5.4 Purpose: The purpose of the proposed project is to amend the existing IEEE 802.11 standard to make it suitable for interoperable communications to and between vehicles. The primary reasons for this amendment include the unique transport environments, and the very short latencies required (some applications must complete multiple data exchanges within 4 to 50ms).

Old Purpose: The purpose of the proposed project is to amend the existing IEEE 802.11 standard to make it suitable for interoperable communications to and between vehicles. The primary reasons for this amendment include the unique transport environments, and the very short latencies required (some applications must complete multiple data exchanges within 4 to 50ms).

5.5 Need for the Project: While there is a priority within North America to support the US National Intelligent Transportation System (ITS) Architecture, the intent is to develop an amendment to IEEE 802.11 that will be applicable on a global basis. The proposed project is coordinated with ISO TC204/WG16 to ensure global applicability. Within the IEEE 802 context, "Wireless Access in Vehicular Environments" (WAVE) refers to what was previously called Dedicated Short Range Communications (DSRC). The National ITS Architecture has identified DSRC as a primary means of communicating between the roadside and vehicles, and from one vehicle to another. There are a very large number of applications planned within the ITS domain (ITS services), including collision avoidance, traveller information, toll collection, commercial vehicle operations, transit operations, and traffic management. In addition to these ITS applications, WAVE is expected to support another very large set of applications that would be of broader interest to motorists and those interested in providing services to these motorists. Some of these applications would be using the WAVE device as a means of connecting the vehicle to the Internet. The US DoT, most of the major automobile manufacturers, public agencies throughout North America, DSRC device manufacturers, and many potential service providers have been involved in the DSRC program and actively support it. Some of the largest automobile manufacturers are developing plans leading to inclusion as standard equipment on new cars beginning as soon as possible (as early as the 2008 model year). In addition, many state and local government agencies are planning to install the roadside infrastructure. Thus, for North America, plans are already underway that would result in the widespread deployment of roadside access points and to have WAVE radios installed in cars, either as built in by the manufacturer or as an aftermarket installation. In addition, there are rail and transit agencies that are involved and planning to use these standards.

5.6 Stakeholders for the Standard: The stakeholders are the telecommunications industry.

6.1.a. Has the IEEE-SA policy on intellectual property been presented to those responsible for preparing/submitted this PAR prior to the PAR submittal to the IEEE-SA Standards Board? Yes **Presented Date:** 2006-03-06
If no, please explain:

6.1.b. Is the Sponsor aware of any copyright permissions needed for this project? Yes

If yes, please explain: ASTM International has a published standard, E2213, which will be used as a basis for this effort. ASTM International has agreed in principal to relinquish the copyrights to the IEEE at the appropriate time.

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

If yes, please explain:

7.1 Are there other standards or projects with a similar scope? Yes**If yes, please explain:**

ASTM International Standard E2213-03 is based on IEEE 802.11a. The right to use ASTM International Standard E2213 in an IEEE standard has been agreed to in principle by ASTM International and the IEEE Standards Association. The scope of the two projects is very similar and most of the ASTM International subcommittee members have become members of the IEEE 802.11 WAVE Study Group. The ASTM International effort will be reduced in scope once this 802.11 project is approved. ISO TC204/WG16 Wide Area Communications is responsible for medium and long range communications. WG16 is working on ISO CD 21215 (CALM M5) with a similar scope. A working relationship between ISO and IEEE has been created to avoid overlap. WG16 will provide input, IEEE 802.11 will develop the basic standard, and CALM M5 will reference the final IEEE standard. IEEE 802.20's PAR is different as it is targeting wide area coverage instead of spot or narrow zone coverage, as well as operating in a different frequency band. The IEEE 802.20 is also targeting business and residential applications, whereas this PAR is targeting safety related transportation applications at very high burst data rates of up to 27 to 54 Mbps. This PAR also differs by providing coverage at selected locations and times rather than being always on over a wide coverage zone. IEEE 802.16e is not based on IEEE 802.11a, which this PAR uses, and does not support the short latency or direct vehicle to vehicle communications. IEEE 802.11j has defined methods of communicating alternate channel definitions for different applications and geographies. This PAR shall utilize these definitions as defined.

Sponsor Organization:**Project/Standard Number:****Project/Standard Date:** 0000-00-00**Project/Standard Title:****7.2 Is there potential for this standard (in part or in whole) to be adopted by another national, regional, or international organization? ? Yes****Technical Committee Name and Number:** ISO TC204 WG16**Contact person:** [T. Russell Shields](#)**Contact person Phone Number:** (408) 234-4533**Contact person Email Address:****7.3 Will this project result in any health, safety, security, or environmental guidance that affects or applies to human health or safety? No****7.4 Additional Explanatory Notes:**

This PAR modification is to revise the "Type of Project" section only, to change the document being amended to "IEEE P802.11-REVma". This amendment cannot be approved until after the approval of IEEE P802.11-REVma.

8.1 Sponsor Information:

Is the Scope of this project within the approved scope/definition of the Sponsor's Charter? Yes

If no, please explain: