IEEE P802.11
Wireless LANs

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| Proposed PAR: Real-time mobile game service optimization |
| Date: 2018-06-27 |
| Author(s): |
| Name | Affiliation | Address | Phone | email |
| Kate Meng | Tencent | KexingScience Park,Keyuan Road,No.15,Middle Zone,Science&Technology Park,Nanshan District,Shenzhen City | +86 166-7516-1765 | katemeng@tencent.com |
| Binhui, Ning | Tencent Holdings Limited | KexingScience Park,Keyuan Road,No.15,Middle Zone,Science&Technology Park,Nanshan District,Shenzhen City | +86 177-2269-0746 | famousning@tencent.com |
| Liuteng, Li | Tencent Holdings Limited | KexingScience Park,Keyuan Road,No.15,Middle Zone,Science&Technology Park,Nanshan District,Shenzhen City | +86 177-2269-0382 | landerli@tencent.com |
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Abstract

This document contains a draft proposed Project Authorization Request (PAR) for Real-time mobile game service optimization.

**PAR for real-time mobile game service optimization**

# Section 1

* 1. **Assigned Project Number**:
	2. **Type of Document: Standard**
	3. **Life Cycle:  *Full Use***

# Section 2

**2.1 Project Title: 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: Real-time mobile game service optimization**

# Section 3

**3.1 Working Group:** Wireless LAN Working Group (C/LM/WG802.11)

**Contact information for Working Group Chair:**

**Name:** Dorothy Stanley

**Email address**: dstanley1389@gmail.com

**Phone:** 630-363-1389
**Contact Information for Working Group Vice-Chair**
**Name:** Jon Rosdahl
**Email Address:** jrosdahl@ieee.org
**Phone:** 801-492-4023

**3.2** Sponsoring Society and Committee: IEEE Computer Society/LAN/MAN Standards Committee (C/LM)
Contact Information for Sponsor ChairName: Paul Nikolich
Email Address: p.nikolich@ieee.org
Phone: 8572050050
Contact Information for Standards RepresentativeName: James Gilb
Email Address: gilb@ieee.org
Phone: 858-229-4822

**3.3 Joint Sponsor:**

# Section 4

**4.1 Sponsor Balloting Information: Individual**

**4.2 Expected Date of Submission of Draft to the IEEE-SA for Initial Sponsor Ballot**

**Month: 9 Year: 2019**

**4.3 Projected Completion Date for Submittal to RevCom**

**Month: 9 Year: 2020**

# Section 5

**5.1 Approximate number of people expected to be actively involved in the development of this project: 50**

**5.2.a Scope of the proposed standard:**

The scope of the standard is to define one medium access control (MAC) and several physical layer (PHY) specifications for wireless connectivity for fixed, portable, and moving stations (STAs) within a local area.

**5.2.b Scope of the project:**

This amendment defines modifications to both the IEEE 802.11 medium access control layer (MAC) and physical layers (PHY) that can optimize game traffic transmission from client through wireless router and internet to servers in datacenter.

The amendment will:

1. Add one access category for real-time game service for service prioritization to be the same as voice traffic, which is highest during packets forwarding to ensure latency, airtime and jitter.
2. Define the following policies:

I. Real-time game traffic identifier/tag for downlink WAN traffic arriving at a gateway.

II. A mapping policy (WMM, DSCP or 802.1Q) in order to forward the packets accordingly.

III. Real-time traffic tag for uplink traffic received by a router to be forwarded to internet according to prioritization classification.

1. Support Power Line communication to compatible with multi-ap communication.

**5.3 Is the completion of this standard contingent upon the completion of another standard?**

No

**5.4 Will this document contain a Purpose clause?**

The purpose of this standard is to provide wireless connectivity for fixed, portable, and moving stations within a local area. This standard also offers regulatory bodies a means of standardizing access to one or more frequency bands for the purpose of local area communication.

**5.5 Need for the project:**

The need of this standard is to ensure a stable, prioritized wireless connectivity for real-time mobile game traffic.

According to Newzoo’s 2018 global games market report [1], the global games market will reach $137.9 billion in 2018 with mobile games taking 51% market share. And the mobile games market is growing rapidly with an estimated CAGR (2012-2021) of 11% to obtain 59% of the market share by 2021. According to our analysis of the habits of the tens of millions of game players, mobile games usage in Wi-Fi scenarios accounts for more than 50%. With customized QoS mechanism for mobile games in Wi-Fi scenarios, the user experience of mobile games especially MOBA would be improved significantly.

To ensure quality of real-time mobile game user experience there is a need to add an access category for real-time mobile game and service prioritization policies. In addition, the following requirements are desirable.

1. Selective repeat ARQ. Only error frames should be retransmitted alone. Since real-time game packets are sequential. All packets would be transferred to client even delayed.
2. Bandwidth limit to terminal client. To avoid applications taking up all bandwidth which cause negative impact to real-time mobile game. The threshold should be carefully considered to balance different needs of user.

**5.6 Stakeholders for the standard:**

 Manufacturers and users of mobile devices, routers.

# Section 6

**6.1 Intellectual Property:**

**A. Is the Sponsor aware of any copyright permissions needed for this project?**

No

**B. Is the Sponsor aware of possible registration activity related to this project?**

# Yes

**If yes please explain:** This project may define new management frames (extending the existing IEEE 802.11 frame structure) to support its new features. These frames will include fields that contain 48-bit MAC addresses. It is not expected that any new namespaces for allocation under RAC control will be defined.

# Section 7

**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

**7.3 International Standards Activities**

**A. Adoptions - Is there potential for this standard to be adopted by another organization?**

No

If this document is to be adopted by another organization, the document must be adopted intact (whole and unmodified) and the requested contact persons entered on the submittal form. For information about adoptions, contact your IEEE-SA Staff Liaison.

**If yes, please indicate the organization, technical committee name/number and contact person within external organization**

**B. Harmonization - Are you aware of another organization that may be interested in portions of this document in their standardization development efforts?**

**If yes, please indicate the organization, technical committee name/number and contact person within external organization**

**Organization:**

**7.4 Does the sponsor foresee a longer term need for testing and/or certification services to assure conformity to the standard?**

**Additionally, is it anticipated that testing methodologies will be specified in the standard to assure consistency in evaluating conformance to the criteria specified in the standard?**

No

# Section 8

**8.1 Additional Explanatory Notes:**

**8.2 IEEE Code of Ethics**

The PAR will not be accepted if the box below is not checked.

**I acknowledge that I have read and I understand the** [**IEEE Code of Ethics**](http://www.ieee.org/portal/pages/iportals/aboutus/ethics/code.html)

Yes

**I agree to conduct myself in a manner that adheres to the IEEE Code of Ethics when engaged in official IEEE business.**

Yes

**References:**