**DCN: 15-14-0715-03-003e\_SG3e\_draft\_PAR**

**P802.15.3e**

**Submitter Email:** [bheile@ieee.org](mailto:bheile%40ieee.org) **Type of Project:** Amendment to IEEE Standard 802.15.3-2003 **PAR Request Date:** --2014 **PAR Approval Date: PAR Expiration Date: Status:** Unapproved PAR, PAR for an Amendment to an existing IEEE Standard

**1.1 Project Number:** P802.15.3e

**1.2 Type of Document:** Standard

**1.3 Life Cycle:** Full Use

**2.1 Title:** Standard for Information technology-- Local and metropolitan area networks-- Specific requirements-- Part 15.3: Wireless Medium Access Control (MAC) and Physical Layer (PHY) Specifications for High Rate Wireless Personal Area Networks (WPAN) Amendment for high-rate close proximity point-to-point communications

**3.1 Working Group:** Wireless Personal Area Network (WPAN) Working Group (C/LM/WG802.15)

**Contact Information for Working Group Chair Name:** Robert Heile **Email Address:** [bheile@ieee.org](mailto:bheile%40ieee.org) **Phone:** 781-929-4832

**Contact Information for Working Group Vice-Chair Name:** PATRICK KINNEY **Email Address:** [pat.kinney@kinneyconsultingllc.com](mailto:pat.kinney%40kinneyconsultingllc.com) **Phone:** 847-960-3715

**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](mailto:p.nikolich%40ieee.org) **Phone:** 857.205.0050

**Contact Information for Standards Representative Name:** James Gilb **Email Address:** [gilb@ieee.org](mailto:gilb%40ieee.org) **Phone:** **858-229-4822**

**4.1 Type of Ballot:** Individual

**4.2 Expected Date of submission of draft to the IEEE-SA for Initial Sponsor Ballot:** 11/2016

**4.3 Projected Completion Date for Submittal to RevCom:** 07/2017

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

**5.2 Scope of the project:** This amendment defines Medium Access Control (MAC) layer additions and a Physical (PHY) layer utilizing unlicensed 60GHz spectrum to enable close proximity (typically 10cm or less), high rate (up to 100Gbps) communications with at least one mode that is capable of achieving connection set up times of 2ms or less.

**5.3 Is the completion of this standard dependent upon the completion of another standard:** No

**5.4 Purpose:** The purpose of the amendment is to create a standard satisfying a set of consumer multimedia industry needs, and to support a wide variety of use cases such as rapid large multimedia data downloads and file exchanges between two devices in close proximity, including between mobile devices and stationary devices (kiosks, ticket gates, etc.), and/or wireless data storage devices. Achieving these needs requires a communications system capable of quick connection setup and disconnection, low complexity, low cost, low power consumption, and high data rate close proximity wireless connectivity among devices and also capable of operating in high device density environments with low levels of interference.

**5.5 Need for the Project:** There is a growing need for systems supporting a rapid “touch and get” capability (250ms or less including connection setup and tear down) of things such as feature length 4K HD movies and other types of large file transfers in potentially dense environments in terms of the number of co-located devices. No existing wireless communications standard is capable of supporting all of these needs. This amendment addresses the key requirements, namely transfer speeds up to 100Gbps, connection times of 2ms or less, and close proximity only operation, needed to make such systems a reality including in environments with high device density.

**5.6 Stakeholders for the Standard:** Chip vendors, radio frequency (RF), equipment manufacturers, enterprise infrastructure providers, wireless operators and consumers.

**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):**

**5.2**

* General requirements include:
  + Network topology always limited to point-to-point communications
  + A method to estimate whether a peer device drew apart and a procedure to promptly dissolve connection and change to a standby state when such estimation is made
* Specific MAC additions that need to be addressed include:
  + Connection setup without any network identifiers
  + Fast connection setup time prior to active state to meet application requirements
  + Not requiring Listen Before Talk (or CSMA) prior to data transmission
  + No periodic management frame transmission after connection establishment.
* The PHY requirements include:
  + A means of ensuring spatial division from other systems without beamforming
  + Nominal PHY rates up to 100Gbps
  + Limiting operation to close proximity
  + Ability to operate in dense device environments without undue self interference or unacceptable interference with other devices operating in the 60GHz unlicensed bands