**IEEE P802.15**

**Wireless Personal Area Networks**

|  |  |  |
| --- | --- | --- |
| Project | IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs) | |
| Title | **Suggested draft text for SG 100G PAR and 5C** | |
| Date Submitted | September 2013 | |
| Source | [] [] [address] | Voice: [ 503-712-5012 ] Fax: [ ] E-mail: [richard.d.roberts@intel.com] |
| Re: |  | |
| Abstract |  | |
| Purpose | Provide draft text for consideration by SG 100G | |
| Notice | This document has been prepared to assist the IEEE P802.15. It is offered as a basis for discussion and is not binding on the contributing individual(s) or organization(s). The material in this document is subject to change in form and content after further study. The contributor(s) reserve(s) the right to add, amend or withdraw material contained herein. | |
| Release | The contributor acknowledges and accepts that this contribution becomes the property of IEEE and may be made publicly available by P802.15. | |

***Suggestions for Key PAR Clauses***

**2.1 Title: IEEE Standard for Local and Metropolitan Area Networks Part 15.3: Wireless Medium Access Control**

**(MAC) and Physical Layer (PHY) Specifications for High Rate Wireless Personal Area Networks (WPANs) Amendment: 100 Gbps Physical Layer**

**5.2 Scope:** This amendment defines a wireless switched point-to-point physical layer for IEEE Std. 802.15.3 operating at data rates up to 100 Gbps. This amendment defines modifications to the Medium Access Control (MAC) layer needed to support this new physical layer.

**5.4 Purpose:** This amendment will specify a PHY layer and MAC changes to enable switched point-to-point applications at data rates up to 100 Gbps.

**5.5 Need for the Project:** There is a need for increased data rate in emerging wireless switched point-to-point applications such as data center wireless flyways and small cell wireless backhaul.

**5.6 Stakeholders for the Standard:** Chip vendors, equipment manufacturers, and enterprise infrastructure developers and users.

***Suggestions for 5 Criteria***

**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**

*There is a need for increased wireless data rates to service aggregated data streams in switched point-to-point applications such as data center wireless flyways and small cell wireless backhaul.*

**b) Multiple vendors and numerous users**

*The membership of IEEE 802.15 demonstrates the interest in WPANs. Members include international wireless industry leaders, academic researchers, semiconductor manufacturers, communication equipment manufacturers, system integrators and end users.*

**2. COMPATIBILITY**

**IEEE 802 LMSC defines a family of standards. All standards should be in conformance : IEEE Std 802, IEEE 802.1D, and IEEE 802.1Q. If any variances in conformance emerge, they shall be thoroughly disclosed and reviewed with IEEE 802.1 WG. In order to demonstrate compatibility with this criterion, the Five Criteria statement must answer the following questions.**

1. **Does the PAR mandate that the standard shall comply with IEEE Std 802, IEEE Std 802.1D and IEEE Std 802.1Q?**
2. **If not, how will the WG ensure that the resulting draft standard is compliant, or if not, receives appropriate review from the IEEE 802.1 WG?**

*The PAR does not mandate compliance with IEEE Std. 802, IEEE Std. 802.1D or IEEE Std. 802.1Q. The task group will schedule regular joint meetings with 802.1 to facilitate review of the IEEE802.15.3 amendment draft as it is developed.*

**3. DISTINCT IDENTITY**

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

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

*There are currently no IEEE 802 wireless standards servicing 100 Gbps switched point-to-point applications.*

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

*The proposed amendment to IEEE 802.15.3 will provide a unique solution for servicing 100 Gbps switched point-to-point wireless data distribution.*

**c) Easy for the document reader to select the relevant specification.**

*The proposed amendment for IEEE 802.15.3 will be clearly identified as an amendment for specifying 100 Gbps switched point-to-point wireless.*

**4. TECHNICAL FEASIBILITY**

**For a project to be authorized, it shall be able to show its technical feasibility. At a minimum, the proposed project shall show:**

1. **Demonstrated system feasibility**

*There is technology available today that demonstrates the feasibility of 100 Gbps at wavelengths shorter than millimeter wave.*

**b) Proven technology, reasonable testing**

*Many examples of 100 Gbps wireless data rates have been published in the literature and demonstrated in laboratories worldwide.*

**c) Confidence in reliability**

*Confidence in reliability has been consistently demonstrated in currently deployed non IEEE based solutions.*

**Coexistence of 802 wireless standards specifying devices for unlicensed operation**

*An appropriate coexistence assurance document will be created.*

**5. ECONOMIC FEASIBILITY**

**For a project to be authorized, it shall be able to show economic feasibility (so far as can reasonably be estimated) for its intended applications. At a minimum, the proposed project shall show:**

**a) Known cost factors, reliable data**

*IEEE 802.15.3 devices implementing the 100 Gbps amendment will make use of technology emerging to support the corresponding wired technology. The incremental cost for implementation is expected to be reasonable.*

**b) Reasonable cost for performance**

*Performance and costs associated with the 100 Gbps amendment, in regards to the intended enterprise market, are believed to be reasonable.*

**c) Consideration of installation costs**

*One of the IEEE 802.15.3 100 Gbps amendment objectives includes low cost installation with minimal or no operator intervention.*