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| **Comment** | **Text in Original PAR/CSD** | **Remarks / Answers to the Comments** |
| **Responses to IEEE 802.3 comments on IEEE802.15.3e PAR and CSD** |
| • What is the revision plan for IEEE Std 802.15.3-­‐2003? It appears that there are two approved amendments IEEE Std 802.15.3b-­‐2005 and IEEE Std 802.15.3c-­‐2009, plus an exising amendment project. The 4th amendment will be subject to the requirement to revise the standard after three years and three amendments. An extension can be requested, but the PAR should not be approved without knowing the revision plan.  |  | The plan is to open a 15.3 Revision PAR in July and proceed with the Revision right away completing it before either amendment. We would include the scope and purpose fixes that are currently in the 15.3e PAR so those do not get lost and we would update the 15.3d PAR so everything is consistent. The revision will also change the standard from one using 64 bit MAC addresses to one using 48 bit MAC addresses, which is needed for full O&A compatibility. That is currently being addressed at the amendment level so this would be much simpler and cleaner. IEEE SA has agreed to provide an edition by May 2015 which will serve as the basis for the Revision |
| • The P802.15.3d PAR should never have been approved as submitted. The 15.3e PAR fixes these problems but if 15.3e is approved first, these fixes and Scope and Purpose changes would then be backed out by 15.3d. – This makes the two projects contingent in some way that the PAR form is ill-­‐ equipt to handle. – A modified PAR should be submitted for 15.3d to change Scope and Purpose language to refer to the standard, not the project. This could be part of the revision plan (modified PAR or conversion of 15.3d into a revision will be submitted when approval order is clear.) – Both PARs should clearly indicate that if 15.3d is approved after 15.3e the scope and purpose should not change from that specified in 15.3e. |  | Noted. These comments deal mostly with 15.3d and the consequences of the limitations of MyProject. We are aware of the issues and feel the proposed Revision plan is the most effective way to manage the situation |
| • 2.1 (non substantive) — The correct format is “Amendment: <amendment name>”, not “Amendment for <amendment name>”.  |  | Noted. We will advise the NesCom admin to clean that up |
| • 5.1 — It would be unusual for participants to increase from 20-­‐30 in pre-­‐PAR activities (as indicated in the CSD) to the 50 indicated in the PAR. For 802, the resonse should relate to the TG doing the work, not the number of WG members.  | 5.1 Approximate number of people expected to be actively involved in the development of this project: 50 | Action: AcceptChange: In section 5.1, change "50" to "30". |
| • 5.6 — There is an interesing gap in the stakeholders. There is significant industry evidence of devices that include RF communication capability using proprietary chips (not a chip vendor) yet the product is manufactured by a contractor (so also not a manufacturer of RF equipment). Technology suppliers would be more general, and would include providers of design libraries. | **5.6 Stakeholders for the Standard**: Chip vendors, radio frequency (RF) equipment manufacturers, enterprise infrastructure providers, wireless operators and consumers. | Action: AcceptChange: Revise 5.6 to read as follows:Chip vendors, chip makers, chip designers, technology suppliers, radio frequency (RF) equipment manufacturers, enterprise infrastructure providers, international wireless carriers/service providers, academic researchers, government research laboratories, semiconductor manufacturers, communication equipment manufacturers, system integrators and consumers. |
| • 1.2.1,b) — Similar nit to the comment on PAR Stakeholders. The important thing is to get folk participating who are involved in semiconductor and equipment development. It usually doesn’t matter who is manufacturing, more important who will be implementing it.  | b) Multiple vendors and numerous users.There have been 20-30 people, affiliated with 10 or so companies, participating in the development of this project and actively showing interest. Participants include international wireless carriers/service providers, academic researchers, government research laboratories, semiconductor manufacturers, communication equipment manufacturers, system integrators and end users. | Action: AcceptThere was also an 802.11 comment on this clause. This addresses both.Change: Revise 1.2.1 b) to read as follows:There are a large number of multimedia companies who are expected to serve this application space. The application is aimed at a broad consumer market which is comprised of a large number of users. Participants in the standard include chip vendors, chip designers, technology suppliers, radio frequency (RF) equipment manufacturers, infrastructure providers, international wireless carriers/service providers, academic researchers, government research laboratories, semiconductor manufacturers, communication equipment manufacturers, system integrators and consumers. |
| • 1.2.5,a) — The response highlights an imbalance of costs without justification for that being acceptable or expected. | a) Balanced costs (infrastructure versus attached stations).The cost of the communications technology proposed here is only a small fraction of the cost of the infrastructure it uses to serve this application. | Action: Revise 1.2.5 a) to read.The incremental cost of the communications technology proposed to serve this application is consistent with the value of the service provided. |
| **Responses to IEEE 802.11 comments on the 802.15.3e PAR and CSD** |
| **5.2a** – “high rate” – What is high rate? –consider changing to **“**high rate (up to 100Gbps)”“Data rates are high enough” Not defined enough for a scope statement. | 5.2.a. Scope of the complete standard: This standard defines PHY and MAC specifications for high data rate wireless connectivity with fixed, portable and moving devices. Data rates are high enough to satisfy a set of consumer multimedia industry needs, as well as to support emerging wireless switched point-to-point and high rate close proximity applications. | Action: Modify the scope of the 802.15.3 standard to the following. We did not elect to use the suggested resolution since 1 bps would qualify as high rate with that wording.Also a reminder that this is the revised scope for the base standard not this project hence the lower number.This standard defines PHY and MAC specifications for high data rate wireless connectivity (typically over 200 Mbps) with fixed, portable and moving devices. Data rates are high enough to satisfy a set of consumer multimedia industry needs such as streaming HD video, as well as to support emerging wireless switched point-to-point and high rate close proximity applications. |
| 5.4 – “High” and “Low” are relative terms that should be defined as what is “High” or “Low” reword without “high” or “low” “Wireless switched point-to-point” – what is this? Does “switched” relate to a packet or connection type switch? Should intra-device really be inter-device? Wireless backhaul/fronthaul? – what is meant by this? | 5.4 Purpose: The purpose of this standard is to provide for low complexity, low cost, low power consumption, high data rate wireless connectivity among devices supporting a variety of applications including things like a set of consumer multimedia industry needs, wireless switched point-to-point applications in data centers, wireless backhaul/fronthaul intra-device communications and a wide variety of additional 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. | Action: Disagree. This language has already been approved by NesCom as part of 802.15.3 base standard revised purpose included in the 802.15.3d PAR.Note: The use of the term “intra-device” is correct.  |
| **7.1** Similar Scope – 802.11ad and 802.11ay are similar. Please note similarities and differences. | **7.1 Are there other standards or projects with a similar scope?:** No | 802.15.3 and 802.15.3c preceded 802.11ad and 802.11ay. 802.15.3e merely builds on 802.15.3 and 802.15.3c to support new applications in the 802.15.3 family. 802.11ay was not available while this PAR was being drafted. |
| **CSD**:Broad sets of applicability: “high rate” –nebulous – give range to define what is “high rate” | 1. Broad sets of applicability.

There is a need for close proximity high rate communications to service the transmission and rapid exchange of large data files based on close proximity, point-to-point connections, potentially to large numbers of mobile devices in the same space. This amendment consists of IEEE 802.15.3 MAC additions and an unlicensed 60GHz Physical layer, delivering date rates up to 100Gbps, for use in a wide variety of use cases such as rapid large multimedia data downloads and file exchanges between two close proximity devices, i.e. mobile devices, stationary devices (kiosks, ticket gates, etc.), and other wirelessly enabled data storage devices. | Action: Revise CSD 1.2.1a to read as follows:There is a need for close proximity high rate communications to service the transmission and rapid exchange (subseconds) of large data files (on the order of 25 Gbits) based on close proximity, point-to-point connections, potentially to large numbers of mobile devices in the same space. This amendment consists of IEEE 802.15.3 MAC additions and an unlicensed 60GHz Physical layer, delivering date rates up to 100Gbps, for use in a wide variety of use cases such as rapid large multimedia data downloads and file exchanges between two close proximity devices, i.e. mobile devices, stationary devices (kiosks, ticket gates, etc.), and other wirelessly enabled data storage devices. |
| **CSD**:Multiple vendors: Please answer the question about the market potential not the attendees affiliations. | b) Multiple vendors and numerous users.There have been 20-30 people, affiliated with 10 or so companies, participating in the development of this project and actively showing interest. Participants include international wireless carriers/service providers, academic researchers, government research laboratories, semiconductor manufacturers, communication equipment manufacturers, system integrators and end users. | Action: Revise CSD 1.2.1b to read as follows.There are a large number of multimedia companies who are expected to serve this application space. The application is aimed at a broad consumer market which is comprised of a large number of users. Participants in the standard include chip vendors, chip designers, technology suppliers, radio frequency (RF) equipment manufacturers, infrastructure providers, international wireless carriers/service providers, academic researchers, government research laboratories, semiconductor manufacturers, communication equipment manufacturers, system integrators and consumers. |
| **1.2.4** don’t list the corporations in the CSD, but do cite reference to the evidence alluded to. | 1.2.4 Technical FeasibilityEach proposed IEEE 802 LMSC standard shall provide evidence that the project is technically feasible within the time frame of the project. At a minimum, address the following items to demonstrate technical feasibility:1. Demonstrated system feasibility.

*The sequence of link setup, data transfer and link release occurring within a short duration has already been demonstrated for point-to-point wireless communication systems by Sony, Toshiba and others.*1. Proven similar technology via testing, modeling, simulation, etc.

*Similar main components of the technology and signaling are being used in today’s systems by Sony, Toshiba and others. Hence, the involved testing overhead associated with a commercial development undertaken by manufacturers is known to be reasonable.* | Action: Revise CSD 1.2.4a and b to read as follows.1. Demonstrated system feasibility.

The sequence of link setup, data transfer and link release occurring within a short duration has already been demonstrated for point-to-point wireless communication systems by a number of multimedia organizations and universities such as TU Braunschweig.1. Proven similar technology via testing, modeling, simulation, etc.

Similar main components of the technology and signaling are being used today in proprietary commercial systems and in research laboratories at University institutions such as TU Braunschweig.  |
| **1.2.5c) do not use “Wi-Fi” change to “WLAN” or delete** | 1. Consideration of installation costs.

*The installation of fixed standalone terminals would be similar to that of installing Wi-Fi access points and when included in devices like ticket gates would not add to the installation cost of that gate* | Action: Accept. Change “Wi-Fi” to “WLAN” |