CRITERIA FOR STANDARDS DEVELOPMENT (CSD)

Based on IEEE 802 LMSC Operations Manuals approved 15 November 2013

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**Amendment to IEEE 802.15.3 for High Rate Close Proximity (HRCP) Point to Point Communications**

***(15-14-0716-04-003e-sg3e-draft-csd with changes accepted)***

# IEEE 802 criteria for standards development (CSD)

The CSD documents an agreement between the WG and the Sponsor that provides a description of the project and the Sponsor's requirements more detailed than required in the PAR. The CSD consists of the project process requirements, 1.1, and the 5C requirements, 1.2.

## Project process requirements

### Managed objects

Describe the plan for developing a definition of managed objects. The plan shall specify one of the following:

1. The definitions will be part of this project. Yes. This standard provides an interface between the MAC sublayer and the physical channel. The PHY conceptually includes a management entity called the PLME. This entity provides the layer management service interfaces through which layer management functions may be invoked. The PLME is also responsible for maintaining a database of managed objects pertaining to the PHY.
2. The definitions will be part of a different project and provide the plan for that project or anticipated future project.
3. The definitions will not be developed and explain why such definitions are not needed.

###  Coexistence

A WG proposing a wireless project shall demonstrate coexistence through the preparation of a Coexistence Assurance (CA) document unless it is not applicable.

1. Will the WG create a CA document as part of the WG balloting process as described in Clause 13? (yes/no) YES
2. If not, explain why the CA document is not applicable.

## 5C requirements

### Broad market potential

Each proposed IEEE 802 LMSC standard shall have broad market potential. At a minimum, address the following areas:

1. Broad sets of applicability.

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.

1. Multiple vendors and numerous users.

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.

### Compatibility

Each proposed IEEE 802 LMSC standard should be in conformance with IEEE Std 802, IEEE 802.1AC, and IEEE 802.1Q. If any variances in conformance emerge, they shall be thoroughly disclosed and reviewed with IEEE 802.1 WG prior to submitting a PAR to the Sponsor.

1. Will the proposed standard comply with IEEE Std 802, IEEE Std 802.1AC and IEEE Std 802.1Q?

YES

b) If the answer to a) is no, supply the response from the IEEE 802.1 WG.

* + 1. Distinct Identity

Each proposed IEEE 802 LMSC standard shall provide evidence of a distinct identity. Identify standards and standards projects with similar scopes and for each one describe why the proposed project is substantially different.

There is currently no wireless standard capable of supporting applications demanding high device density, close proximity, point-to-point communications, including kiosk downloading, data exchange at ticket gates and other high speed use cases requiring a transfer speed up to 100 Gbps and total transaction times of typically 250ms or less. Standards addressing wireless links operating at 60 GHz include IEEE 802.15.3c, IEEE 802.11ad, ECMA387 and WirelessHD but none is able to meet the requirements of this class of use cases. IEEE802.15.3 comes closest. An amendment defining additions to the IEEE802.15.3 MAC and defining a unlicensed 60GHz 100Gbps PHY layer optimized for close proximity operation, will enable a unique capability for close proximity communications, with quick link setup and release, for exchanging large amounts of data almost instantaneously by means of a simple, impromptu touch action, in potentially dense device applications while co-existing with other uses of this unlicensed band.

### Technical Feasibility

Each 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 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.

### Economic Feasibility

Each proposed IEEE 802 LMSC standard shall provide evidence of economic feasibility. Demonstrate, as far as can reasonably be estimated, the economic feasibility of the proposed project for its intended applications. Among the areas that may be addressed in the cost for performance analysis are the following:

1. Balanced costs (infrastructure versus attached stations).

The incremental cost of the communications technology proposed to serve this application is consistent with the value of the service provided.

1. Known cost factors.

Cost factors are known based on experience with elements of the technology already in the field as part of other applications

1. Consideration of installation costs.

The installation of fixed standalone terminals would be similar to that of installing WLAN access points and when included in devices like ticket gates would not add to the installation cost of that gate

1. Consideration of operational costs (e.g., energy consumption).

The total operational cost is low and the system will provide substantial benefits for users and service operators.

1. Other areas, as appropriate.