IEEE 802 LAN/MAN STANDARDS COMMITTEE (LMSC)

CRITERIA FOR STANDARDS DEVELOPMENT (CSD) For Proposed Project 802.15.4r

Based on IEEE 802 LMSC Operations Manuals approved 15 November 2013

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# 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

1. The definitions will be part of a different project and provide the plan for that project or anticipated future project.
2. 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.

802.15.4 is a widely used standard in a wide variety of applications today such as including internet of things, home area networks, smart grid networks, industrial and control networks, and wireless sensor networks where a standardized approach to ranging and location awareness will further expand the value of the standard. This amendement builds on the current standard and will extend the existing capabilities,and is expected to further expand the potential markets.

1. Multiple vendors and numerous users

There are many silicon and system vendors producing systems based on 802.15.4 capable of implementing the technologies and techniques expected to be included in this amendment.

### 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?

No, the proposed standard is an amendment or revision to an existing

standard for which it has been previously determined that compliance

with the above IEEE 802 standards is not possible.

1. If the answer to a) is no, supply the response from the IEEE 802.1 WG.
The review and response is not required if the proposed standard is an amendment or revision to an existing standard for which it has been previously determined that compliance with the above IEEE 802 standards is not possible. In this case, the CSD statement shall state that this is the case.

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### 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.

This amendment builds on the existing capabilities of 802.15.4 and extends the PHY and MAC enabling a wider set of interoperable radio based distance measurements techniques. No other 802 standard addresses the exchange of range information consistent with the needs of 802.15.4.

### 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 ability to combine data communication and radio based distance measurements has been proven through individual implementations, such as those based on 802.15.4a as well as others. The intent is to extend the capabilities of PHY and MAC and enable alternative standardized techniques to achieve a similar objective.
2. Proven similar technology via testing, modeling, simulation, etc.

The MAC and PHYs defined by 802.15.4 are proven technology with implementations available globally from many vendors. This amendment can be realized using similar implementation techniques.

### 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)
Implementation of a standardized ranging protocol does not add any significant cost to either the infrastructure or the attached stations.
2. Known cost factors

Given this is essentially a standard implemented in firmware, cost factors are well known and very reasonable.

1. Consideration of installation costs.
There are no or at most minimal additional costs associated with installation.
2. Consideration of operational costs (e.g., energy consumption).
Costs associated with operation are negligible.
3. Other areas, as appropriate.