

## 1. IEEE P802.15

### Wireless Specialty Networks

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Project	IEEE P802.15 Working Group for Wireless Specialty Networks (WSNs)	
Title	<b>CSD for 802.15.4aa SUN FSK PHY higher data rate extension</b>	
Date Submitted	[November 4th, 2020]	
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Re:		
Abstract	<b>CSD for 802.15.4aa SUN FSK PHY higher data rate extension</b>	
Purpose	<b>CSD for 802.15.4aa SUN FSK PHY higher data rate extension</b>	
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# IEEE 802 LAN/MAN STANDARDS COMMITTEE (LMSC)

## CRITERIA FOR STANDARDS DEVELOPMENT (CSD)

Based on IEEE 802 LMSC Operations Manuals approved 4 August 2020  
Last edited 31 August 2020

### Standard for Low-Rate Wireless Networks Amendment defining higher data rate extension to IEEE 802.15.4 SUN FSK PHY

#### 2. 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.

##### 2.1 Project process requirements

###### 2.1.1 Managed objects

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

- a) The definitions will be part of this project.  
YES
- b) The definitions will be part of a different project and provide the plan for that project or anticipated future project.
- c) The definitions will not be developed and explain why such definitions are not needed.

###### 2.1.2 Coexistence

A WG proposing a wireless project shall prepare a Coexistence Assessment (CA) document unless it is not applicable.

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

## 2.2 5C requirements

### 2.2.1 Broad market potential

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

- f) Broad sets of applicability.  
IEEE 802.15.4 is a widely used standard in a wide variety of applications today such as internet of things, home area networks, smart grid networks, industrial and control networks. This amendment builds on the current standard and will extend the existing capabilities, and is expected to further expand the potential markets.
- g) Multiple vendors and numerous users.  
There are multiple silicon and system vendors producing systems using IEEE Std 802.15.4, which are capable of implementing the technologies and techniques used in this amendment.

### 2.2.2 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.

- a) Will the proposed standard comply with IEEE Std 802, IEEE Std 802.1AC and IEEE Std 802.1Q?  
No. While the amendment shall comply with IEEE Std 802, it cannot comply with IEEE Std 802.1Q and IEEE Std 802.1AC because IEEE Std 802.15.4 uses 64-bit MAC addresses.
- b) If the answer to a) is no, supply the response from the IEEE 802.1 WG.  
Compliance with IEEE Std 802.1Q and IEEE Std 802.1AC is not possible due to IEEE Std 802.15.4 using 64-bit MAC addresses

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.

### 2.2.3 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 addresses the higher data rate capabilities of SUN FSK PHY in IEEE Std 802.15.4 for Japan and as such is unique to the particular set of capabilities of this standard and these PHYs.


### 2.2.4 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:

- c) Demonstrated system feasibility.  
This project does not require any new technical innovation to implement.
- d) Proven similar technology via testing, modeling, simulation, etc.  
See a)

### 2.2.5 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:

- e) Known cost factors.  
 Given the maturity of this standard, cost factors are well known and very reasonable.
- f) Balanced costs.  
This project can be implemented with no change to the existing device cost basis which has been demonstrated, through millions of shipped devices, to be suitable to effectively address IoT networking needs.
- g) Consideration of installation costs.  
FSK data rate extension does not require any additional hardware implementation from existing hardware. There are no or at most minimal additional costs associated with installation.
- h) Consideration of operational costs (e.g., energy consumption).  
There are already IEEE Std 802.15.4 devices in volume shipment operating in this and adjacent frequency bands. Complying with the regulatory requirements of this band has zero impact on these well-known operational costs.
- i) Other areas, as appropriate.  
None