IEEE 802 LAN/MAN STANDARDS COMMITTEE (LMSC)

CRITERIA FOR STANDARDS DEVELOPMENT (CSD)

P60802 Standard for Local and Metropolitan Area Networks – Time-Sensitive Networking for Industrial Automation

1. 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.

1.1 Project process requirements

1.1.1 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.
 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.

Item c) is applicable to this project because this project will specify one or more profiles that define the use and configuration of functions specified in other IEEE 802 standards, thus, relies on the managed objects specified by the referred standards.

1.1.2 Coexistence

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

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

This project is not a wireless project; therefore, the CA document is not applicable.

1.2 5C requirements

1.2.1 Broad market potential

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

a) Broad sets of applicability.
b) Multiple vendors and numerous users.

a) IEEE 802.1 Time-Sensitive Networking (TSN) gives an opportunity to unify networking for industrial automation. TSN is the foundation to provide connectivity to time and mission critical industrial applications on converged networks of operations technology and information technology. The interoperability provided by IEEE 802 standards is attractive to the players in industrial automation. TSN includes a number of features specified by different TSN standards and TSN provides a wide range of options and variations for the use of TSN standards, i.e., TSN standards provide a lot of flexibility. The specification of the use of TSN features in industrial networking scenarios via TSN profiles is beneficial for vendors offering and/or developing TSN products as well as for the users of industrial automation technologies, e.g., in order to ease interoperability and deployment.

b) Many industrial automation players consider TSN as the next generation networking technology in smart manufacturing. TSN profiles of industrial automation is essential for them.

1.2.2 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?
b) If the answer to a) is no, supply the response from the IEEE 802.1 WG.

a) This amendment will maintain conformance to IEEE Std 802, IEEE Std 802.1AC and IEEE Std 802.1Q.

b) Not applicable.

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.

1.2.3 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.

No other IEEE 802 standard or project defines IEEE 802.1 Time-Sensitive Networking profiles for industrial automation.

1.2.4 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:

   a) Demonstrated system feasibility.
   b) Proven similar technology via testing, modeling, simulation, etc.

   a) The proposed standard will specify profiles for the use of other IEEE 802 standards, for which system feasibility has been demonstrated.

   b) The proposed standard will use other IEEE 802 standards for which the technology has been proven.

1.2.5 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:

   a) Balanced costs (infrastructure versus attached stations).
   b) Known cost factors.
   c) Consideration of installation costs.
   d) Consideration of operational costs (e.g., energy consumption).
   e) Other areas, as appropriate.

   a) The well-established balance between infrastructure and attached stations will not be changed by the proposed standard.

   b) The cost factors are known for the IEEE 802 standards that will be used by the proposed standard.

   c) There are no incremental installation costs relative to the IEEE 802 standards that will be used by the proposed standard.

   d) There are no incremental operational costs relative to the existing costs associated with the IEEE 802 standards that will be used by the proposed standard. Furthermore,

operational costs can be decreased by automatic procedures based on proposed standard versus manual configuration.

e) No other areas have been identified.