IEEE 802.3 Criteria for Standards Development (CSD)

The IEEE 802 Criteria for Standards Development (CSD) are defined in Clause 14 of the IEEE 802 LAN/MAN Standards Committee (LMSC) Operations Manual. The criteria include project process requirements ("Managed Objects") and 5 Criteria (5C) requirements. The 5C are supplemented by subclause 4.5 'Criteria for Standards Development' of the 'IEEE 802.3 Ethernet Working Group Operations Manual'.

The following are the CSD Responses in relation to the IEEE P802.3dq PAR

Items required by the IEEE 802 CSD are shown in Black text and supplementary items required by IEEE 802.3 are shown in **blue** text.

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.

The definition of protocol independent managed objects, to be included in Clause 30 of IEEE Std 802.3, will be part of this project.

Coexistence

A WG proposing a wireless project shall prepare a Coexistence Assessment (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.

- No. A CA document is not applicable because the proposed project is not a wireless project.

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.**

Broad Sets of Applications:

This standard may simplify the connection of a broad array of Ethernet PHYs to any device that implements this standard in the future.

Multiple Vendors and Numerous Users:

At a call for interest, 37 individuals from 23 affiliations indicated they would support a pin optimized interface between a MAC and a PHY . The responding individuals include subject matter experts with experience in PHY, MCU, CPU, and Ethernet switching semiconductor design and manufacturing.

Substantial Market Potential:

Once complete, this standard could replace existing pin-intensive interfaces between the MAC and the PHY in the field for both single-pair and multi-pair wired Ethernet, which ships hundreds of millions of ports per year.

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 Standards Committee.

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.

c) Compatibility with IEEE Std 802.3

d) Conformance with the IEEE Std 802.3 MAC

a) & b) As a Physical Layer amendment to IEEE Std 802.3, the proposed project will remain in conformance with IEEE Std 802, IEEE Std 802.1AC, and IEEE Std 802.1Q.

c) As an amendment to IEEE Std 802.3, a new interface will be defined, including an updated reconciliation sublayer that maps the PLS service primitives to the new interface, as well as mapping the new interface to the PCS.

d) The proposed amendment will conform to the IEEE 802.3 MAC as defined in Clause 4 of IEEE Std 802.3-2022 as the PLS service primitives will not be altered.

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.

Substantially different from other IEEE 802.3 specifications/solutions.

- There is no IEEE 802.3 standard supporting a single interface between multiple MACs and multiple PHYs of any type. Further, there is no IEEE 802.3 specified interface between a MAC and a PHY of any type specified to carry a single port using fewer than 8 pins.

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.

c) Confidence in reliability.

- The functionality sought by this project already exists in industry specifications for much higher port speeds and counts that those considered for this project. Thus, similar technology has been demonstrated in shipping products for several years. Reliability has also been demonstrated in these similar products in the field as they are used in mission critical infrastructure networks daily.

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

- This project is not expected to have a significant impact on the balance of cost factors, installation costs, nor the operational costs.
- The influence of costs factors such as package pins and interface speeds are well known in the industry as they relate to legacy IEEE 802.3 interfaces such as MII, GMII, or XAUI as well as industry interfaces such as RMII, RGMII, SGMII, etc.
- The primary goal of this project is to ***significantly improve*** the relative cost factors of the interfaces currently specified in IEEE Std 802.3. For example, this could be achieved by reducing the number of pins required or by reducing the complexity of the signaling.
- Solution costs will be positively impacted by reduced interface complexity.