

# Broad Market Potential

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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:
    - Higher than current **automotive** Ethernet rates ~~in the automotive market~~ will enable replacement of multiple proprietary protocols operating at rates greater than 1 Gb/s with Ethernet, furthering consolidation of legacy in-car networks in a homogeneous architecture.
    - Autonomous **automobiles** are driving the need for higher data rates due to increased performance required of cameras, sensors, etc.
  - Multiple vendors and numerous users:
    - At the Call for Interest, 85 individuals from 38 companies indicated they would support this project. These included companies from industrial automation, building automation, automotive, automotive OEMs, silicon, infrastructure, cabling, connector, and test equipment vendors.
    - Data presented at the CFI indicate a substantial market potential, e.g., the prediction for 2019 is 270 million total ports/year.

# Distinct Identity

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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 that supports Ethernet at rates greater than 1 Gb/s for the requirements of **vehicular automotive** applications.
- The project may define multiple PHYs, but will define only a single PHY for each rate, media, and link reach combination.

# 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.
- Ethernet interfaces in the target data rate range defined by this project will maintain a favorable cost-performance balance.
  - The balance of costs between infrastructure and attached stations is not applicable to the **vehicular automotive** environment.
  - The cost factors for Ethernet components and systems are well known. The proposed project may introduce new cost factors which can be quantified.
  - Prior experience in the development of other physical layer specifications for Ethernet indicates that the specifications developed by this project will entail a reasonable cost for the resulting performance.
  - The reduction in the number of legacy networks requiring specialized components, expertise, and gateways in the targeted markets will result in a significant drop in both installation and operational costs.
  - Overall costs are minimized by introducing Ethernet network architecture, management, and software into the **vehicular automotive** environment.
  - Migrating **vehicular automotive** networking to Ethernet results in a significant improvement in system price/performance.