

Timing and Synchronization for Time-Sensitive Applications in Bridged Local Area Networks

5 Criteria

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Broad Market Potential

- **Broad set(s) of applicability**
 - The proposed standard would apply to all 802 networks composed of full duplex Ethernet or similar links, as a means of providing timing and synchronization for time-sensitive applications.
- **Multiple vendors and numerous users**
 - Many vendors and users have continually expressed their support for a standardized means of providing timing and synchronization to facilitate the use of bridged LANs for carrying time-sensitive applications.
- **Balanced cost (LAN vs. attached stations)**
 - The functionality needed to provide timing and synchronization at switches and end stations is not significantly different. The cost of providing timing and synchronization at each type of device will not be significant, given the expected large volumes.

Compatibility with IEEE Std. 802.1

Conformance with 802 Overview and Architecture

Conformance with 802.1D, 802.1Q

Conformance with 802 Functional Requirements

The proposed standard will conform to the aforementioned documents.

Distinct Identity

Substantially different from other IEEE 802 standards

Unique solution for problem (not two alternatives / problem)

Easy for document reader to select relevant spec.

- There is no existing 802 standard or approved project that provides timing and synchronization at bridges or end stations
- The proposed standard will consist of a single set of specifications to guarantee the timing and synchronization performance
- The proposed project will be formatted as a separate 802.1 document, making it easy for the document reader to select the specification for providing timing and synchronization

Technical Feasibility

Demonstrated system feasibility; reports – working models

Proven technology, reasonable testing

Confidence in reliability

- There are numerous existing LANs and WANs that transport timing and synchronization using time stamping methods based on, e.g., IEEE 1588 and NTP (some augment these standards with vendor-specific requirements to ensure performance).
- The proposed project may re-use existing specifications that transport timing and synchronization using time stamping. Numerous implementations exist that provide timing and synchronization for time-sensitive applications.

Economic Feasibility

Known cost factors, reliable data

Reasonable cost for performance expected

Consideration of installation costs

- The technology for transporting timing and synchronization using time stamping techniques is well-known and available in the market today.
- Adding the ability to transport timing and synchronization using time stamping techniques will have a negligible impact on the cost of 802 networks.
- The solution provides a low cost acceptable for a cost-sensitive consumer market.
- It will be possible for configuration to be automatic and require no action by the user; therefore, there are no incremental installation costs for the provision of timing and synchronization.