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

Draft 5 Criteria

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Broad Market Potential

- **Broad set(s) of applicability**
  - **The proposed standard would apply to all 802 networks, as a means of providing timing and synchronization for time-sensitive applications**
- **Multiple vendors and numerous users**
  - **Many vendors that participate in the ResE Study Group have continually expressed their support for a means of providing timing and synchronization to facilitate the use of bridged LANs for carrying time-sensitive applications. These vendors are looking for a standardized solution that is applicable to most audio/video devices, which is a very large market.**
- **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, and 802.1F
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 switches 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 (but augmenting these standards with vendor-specific requirements to ensure performance).

- The proposed project will, to the extent possible, re-use the existing specifications that transport timing and synchronization using time stamping. Numerous implementations of these specifications in many fields exist that provide timing and synchronization for time-sensitive applications.

- The proposed standard will result in reliable timing and synchronization performance across multiple vendors' equipment by fully specifying the necessary requirements (the requirements necessary for performance are not fully standardized for existing systems).

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 an Ethernet port.
- This project will improve on general cost/performance, due to the significantly added volumes in the consumer electronics/residential application space.
- There are no installation costs for the provision of timing and synchronization. Configuration will be automatic and require no action by the user.