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Type of Project: New IEEE Standard
PAR Request Date: 09-Sept-2018
PAR Approval Date:
PAR Expiration Date:
Status: Unapproved PAR, PAR for a New IEEE Standard

1.1 Project Number:
1.2 Type of Document: Standard
1.3 Life Cycle: Full Use

2.1 Title: Time-Sensitive Networking Profile for Automotive In-Vehicle Ethernet Communications

3.1 Working Group: Higher Layer LAN Protocols Working Group (C/LM/WG802.1)
Contact Information for Working Group Chair
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3.2 Sponsoring Society and Committee: IEEE Computer Society/LAN/MAN Standards Committee (C/LM)
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4.1 Type of Ballot: Individual
4.2 Expected Date of submission of draft to the IEEE-SA for Initial Sponsor Ballot: 01/2022
4.3 Projected Completion Date for Submittal to RevCom
Note: Usual minimum time between initial sponsor ballot and submission to Revcom is 6 months.: 09/2022

5.1 Approximate number of people expected to be actively involved in the development of this project: 40
5.2 Scope: This standard defines time-sensitive deterministic latency networking, security and safety profiles for Automotive In-Vehicle Ethernet communications. The profiles select features, options, configurations, defaults, protocols and procedures of bridges, end stations, and LANs to build Automotive In-Vehicle networks.

5.3 Is the completion of this standard dependent upon the completion of another standard: Yes
P802.1AS-Rev - This standard will use time synchronization being specified by P802.1AS-Rev.
P802.1Qcr – This standard shall allow for the use of the Asynchronous Traffic Shaping method specified by P802.1Qcr
P802.1CS – This standard shall allow for dynamic flow control reservations by managing point-to-point link object registration with Link-local Registration Protocol (LRP)
P802.1Qdd – This standard shall provide support for accurate latency calculations and reporting by using Resource Allocation Protocol (RAP) for LRP
P802.1AE-Rev – This standard shall provide support for end-to-end MACsec message based security with networking forwarding based on message stream-id's
5.4 Purpose: This standard provides guidance for designers and implementers of Automotive Ethernet networks, to be shared by some number of applications, who need the features offered by various IEEE 802.1 standards, such as dependable bandwidth, limited packet loss, minimal latency, redundancy, security, and safety networking requirements.
5.5 Need for the Project: The Automotive segment does not have a standards-based profile to define a subset of the new IEEE 802 Time-Sensitive Network (TSN) standards as usage can vary widely based on the networking scenarios. This makes an OEM definition of requirements to Tier 1&2 suppliers and implementation more difficult and costly. Thus there is a need for guidelines for the selection and the

use of IEEE 802 standards and features in order to be able to deploy converged networks to simultaneously support operations deterministic traffic, networked security and safety requirements.

5.6 Stakeholders for the Standard:
Developers, providers, Tier 1&2 suppliers, and users of networking services and components for Automotive Ethernet networked equipment. These components may include bridges, end stations, network interface cards, and integrated circuits.

Intellectual Property
6.1.a. Is the Sponsor aware of any copyright permissions needed for this project?: No
6.1.b. Is the Sponsor aware of possible registration activity related to this project?: No

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7.1 Are there other standards or projects with a similar scope?: No
7.2 Joint Development
   Is it the intent to develop this document jointly with another organization?: No
   Organization:
   Technical Committee Name:
   Technical Committee Number:
   Contact Name:
   Phone
   Email:

8.1 Additional Explanatory Notes:
- This project is not a joint development, however, this work will be done in collaboration with AUTOSAR, specifically the WPA-2 Working group (https://www.autosar.org) and participation from the AVNu Alliance Automotive members (https://avnu.org/automotive/)
- Use Cases will be used in our development work. The purposes of the Use Cases is to provide a reference to background requirements and the basis to introduce the use of 802.1 TSN Standards in the new profile (such as latency requirements, redundancy, or whatever).
- Within our profile we cannot specify anything that non-802.1 groups would be required to do. We can only specify how we will use other standards and what requirements we may put upon a set of optional values that non-802.1 standards may enumerate (i.e. we may restrict the set of non-802.1 optional values to meet a particular performance requirement that we have in our profile).
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