Draft PAR Proposal for an IEEE 802.1 standard on Cut-Through Forwarding (CTF)

Author: Johannes Specht (Self; Analog Devices, Inc.; Mitsubishi Electric Corporation; Phoenix Contact GmbH & Co. KG; PROFIBUS Nutzerorganisation e.V.; Siemens AG; Texas Instruments, Inc.)

Date: January 10, 2022.


Disclaimer: This document is an individual contribution by the author(s) for subsequent discussion in IEEE 802.1 WG, and NOT an approved statement or position by IEEE 802.1 WG or IEEE SA.
Type of Project: New IEEE Standard
Project Request Type: Initiation / New
PAR Request Date: 
PAR Approval Date: 
PAR Expiration Date: 
PAR Status: Draft
1.1 Project Number: 
1.2 Type of Document: Standard
1.3 Life Cycle:
2.1 Project Title: Cut-Through Forwarding in Bridges and Bridged Networks
3.1.1 Contact Information for Working Group Chair:
   - Name: Glenn Parsons
   - Email Address: glenn.parsons@ericsson.com
3.1.2 Contact Information for Working Group Vice Chair:
   - Name: Jessy Rouyer
   - Email Address: jessy.rouyer@nokia.com
3.2 Society and Committee: IEEE Computer Society/LAN/MAN Standards Committee(C/LM)
3.2.1 Contact Information for Standards Committee Chair:
   - Name: Paul Nikolich
   - Email Address: p.nikolich@ieee.org
3.2.2 Contact Information for Standards Committee Vice Chair:
   - Name: James Gilb
   - Email Address: glib@ieee.org
3.2.3 Contact Information for Standards Representative:
   - Name: James Gilb
   - Email Address: glib@ieee.org
4.1 Type of Ballot: Individual
4.2 Expected Date of submission of draft to the IEEE SA for Initial Standards Committee Ballot: Nov 2023
4.3 Projected Completion Date for Submittal to RevCom: Nov-Dec 2024
5.1 Approximate number of people expected to be actively involved in the development of this project: 30
5.2 Scope of proposed standard: This project standard specifies protocols, procedures, and management objects of Bridges with support for Cut-Through Forwarding (CTF) in Bridges and Bridged Networks, that interconnect individual Local Area Networks (LANs) connected by different or identical Media Access Control (MAC) methods. The standard is expected to allow for the integration of a detailed model for internal interaction between CTF bridges and IEEE 802.3 LAN Standards, methods, although completion of this project does not depend on such a model.
5.3 Is the completion of this standard contingent upon the completion of another standard? No
5.4 Purpose: This standard specifies support for Cut-Through Forwarding (CTF) in Bridges and Bridged Networks, which enables lower communication delays than achievable by Bridges and Bridged Networks solely supporting store-and-forward operations. The standard allows interoperable interconnection of Information Technology equipment, with and without support for CTF, attached to separate individual LANs.
5.5 Need for the Project: Support for CTF is found in existing products, but CTF is not standardized by an IEEE 802.1 standard. Such products are used in existing installations that require the lower communication delays enabled by CTF, but interoperability between different products is not ensured. Standardizing CTF is needed to enable such interoperability between different products, which is required for interconnecting different products conformant to the standard developed in this project, including (but not limited to) products with support for CTF of different vendors.
5.6 Stakeholders for the Standard: Manufacturers, distributors, vendors, developers, providers, and users of networking services and bridging equipment for industrial automation, professional audio-video, data centers, and other systems requiring communication decreased latency delays over lower than
achievable by store-and-forward bridging operations, including networking integrated-circuit developers, bridge and network interface card vendors, and users.

6.1 Intellectual Property
6.1.1 Is the Standards Committee aware of any copyright permissions needed for this project? No
6.1.2 Is the Standards Committee aware of possible registration activity related to this project? No

7.1 Are there other standards or projects with a similar scope? No
7.2 Is it the intent to develop this document jointly with another organization? No

8.1 Additional Explanatory Notes: