

P802.1DU

- Content Proposal

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Introduction

- **Individual Contribution**
- **Outlines proposed contents for P802.1DU:**
- **Based on**
 - **P802.1DU PAR**
 - **Earlier contributions by the Author**
 - IEEE 802.1
 - IEEE 802 Nendica
 - **“Commons” of IEEE 802.1 Stds**
 - **IEEE-SA Style Manual**
- **Some links**
 - **PAR**
<https://www.ieee802.org/1/files/public/docs2023/du-PAR-0323-v03.pdf>
 - **Style Manual**
<https://mentor.ieee.org/myproject/Public/mytools/draft/styleman.pdf>
 - **DCN 1-22-0042-12-Icne**
<https://mentor.ieee.org/802.1/dcn/22/1-22-0042-12-ICne-technical-descriptions-for-cut-through-forwarding-in-bridges.pdf>
 - **Tutorial**
<https://mentor.ieee.org/802.1/dcn/21/1-21-0037-00-ICne-ieee-802-tutorial-cut-through-forwarding-ctf-among-ethernet-networks.pdf>
 - **Consensus**
<https://www.ieee802.org/1/files/public/docs2022/du-cut-through-summary-1122-v04.pdf>

PAR: Scope and Purpose

- **5.2 Scope of proposed standard:** This standard specifies Cut-Through Forwarding (CTF) bridges based on the IEEE 802.1Q bridge architecture, including protocols, procedures, and managed objects. CTF bridges interconnect individual local area networks (LANs) using different or identical media access control (MAC) methods with and without support for CTF. This standard also details the usage of CTF bridges in bridged networks.
- **5.4 Purpose:** This standard enables lower latency communication compared to what is achievable without CTF and reduces the dependency of end-to-end latency on frame length, while allowing interoperable interconnection of individual LANs with and without support for CTF.

Top-Level Structure

- 1. Overview
- 2. Normative references
- 3. Definitions
- 4. Acronyms and abbreviations
- 5. Conformance
- 6. Architecture
- 7. Modelling Principles
- 8. Internal Sublayer Service (ISS) providers
- 9. Bridge port transmit and receive operations
- 10. Bridge relay operations
- 11. Management parameters
- 12. YANG
- 13. Cut-Through Forwarding (CTF) in bridged networks

- Annex A (normative): Protocol Implementation Conformance Statement (PICS) proforma
- Annex C (informative): Bibliography
- Annex Z (informative): Open issues

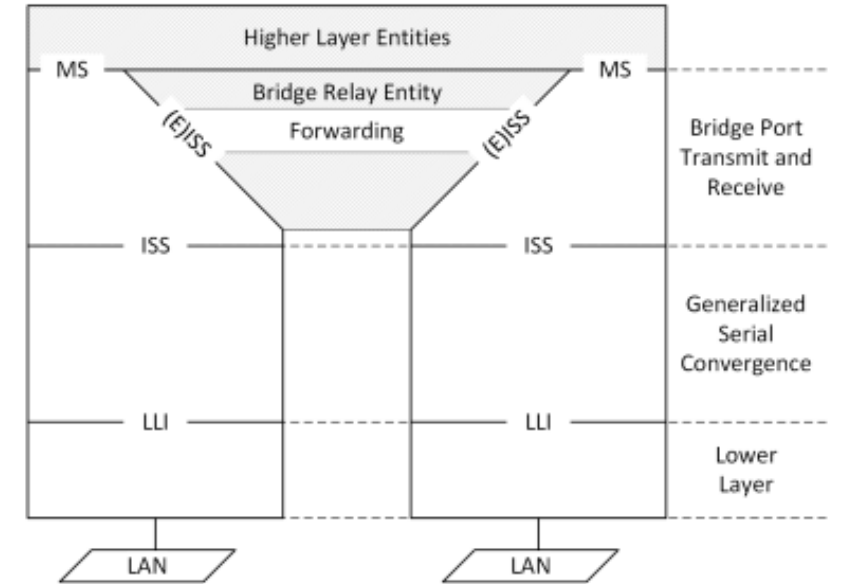
- Scope
- Purpose
- Introduction
- [Conventions]

- (More) style manual
- 802.1

- (More) style manual
- (More) 802.1

Architecture

6. Architecture
7. Modelling Principles
8. Internal Sublayer Service (ISS) providers
9. Bridge port transmit and receive operations
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11. Management parameters
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13. Cut-Through Forwarding (CTF) in bridged networks



- Base: Section 4 of DCN 1-22-0042-12-Icne
- Replace generalized serial conversion function + lower layer by ISS provider
- „Diff“ to published 802.1 Stds.

Modeling Principles

6. Architecture
7. Modelling Principles
8. Internal Sublayer Service (ISS) providers
9. Bridge port transmit and receive operations
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- Base: Section 5 of DCN 1-22-0042-12-Icne
- Frame types
 - received frames
 - frames under reception
 - transmitted frames
 - frames under transmission
- Service primitives
- Temporal control

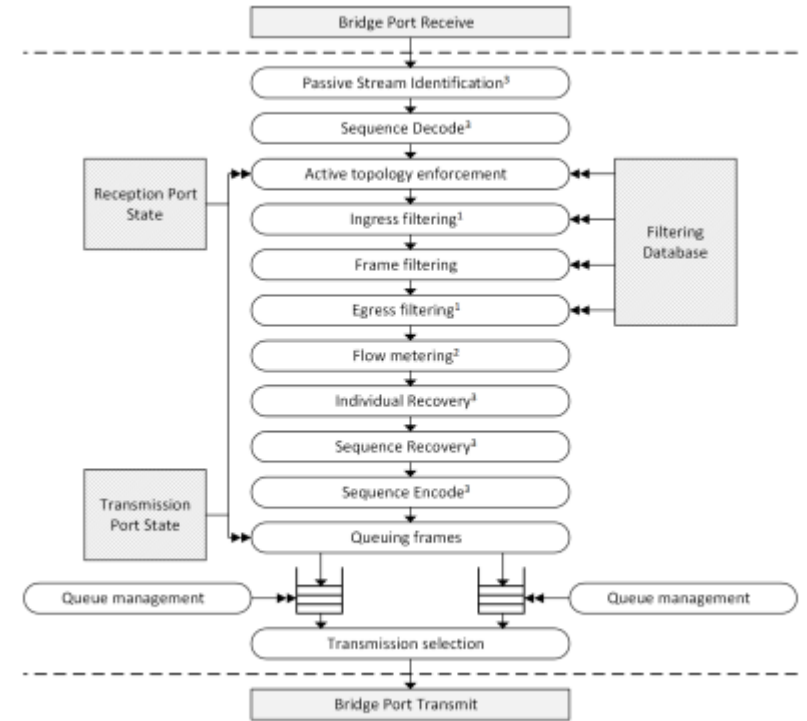
ISS Providers

6. **Architecture**
7. **Modelling Principles**
8. **Internal Sublayer Service (ISS) providers**
9. **Bridge port transmit and receive operations**
10. **Bridge relay operations**
11. **Management parameters**
12. **YANG**
13. **Cut-Through Forwarding (CTF) in bridged networks**

- Base: 802.1AC/802.1Q
- Differentiation between CTF and non-CTF
- Primitives
 - For non-CTF: AS-IS
 - For CTF: additional primitives for late-errors (e.g., similar to 802.3 TSSI)
- Interfaces only (i.e., no internal behavior models)

Bridge Relay Operations

6. Architecture
7. Modelling Principles
8. Internal Sublayer Service (ISS) providers
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10. Bridge relay operations
11. Management parameters
12. YANG
13. Cut-Through Forwarding (CTF) in bridged networks



- Base: Section 8 of DCN 1-22-0042-12-Icne
- Essentially, augmented 802.1Q forwarding process for supporting FRER/802.1CB with behavior additions for CTF

Management Parameters & YANG

6. Architecture
7. Modelling Principles
8. Internal Sublayer Service (ISS) providers
9. Bridge port transmit and receive operations
10. Bridge relay operations
11. Management parameters
12. YANG
13. Cut-Through Forwarding (CTF) in bridged networks

- Base: Section 9 of DCN 1-22-0042-12-Icne
- Categories:
 - CTF Control Parameters (on/off, [un]supported)
 - Timing Parameters
 - Error Counters
- YANG:
 - „Echoes“ Management parameters
 - Augments 802.1Q Bridge models [?]

CTF in Bridged Networks

6. Architecture
7. Modelling Principles
8. Internal Sublayer Service (ISS) providers
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10. Bridge relay operations
11. Management parameters
12. YANG
13. Cut-Through Forwarding (CTF) in bridged networks

- Base: Slides 46-49 of the Tutorial
- In summary:
working with late discovered erroneous frames/bad headers
- In detail:
 - Circulating frames in topological loops
 - Additional congestion
 - Security/Privacy

Thank You for Your Attention!

Questions,
Comments,
Opinions,
Ideas?