Cut-Through Forwarding (CTF) in Bridges and Bridged Network – Status of 802 Nendica/802.3 NEA joint meeting discussions

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Past 802 Nendica/802.3 NEA Joint Meetings

Date	Agenda	Selected Contributions
June 22, 2022 and June 29, 2022	https://1.ieee802.org/ctf-agenda-2022-06-22/ https://1.ieee802.org/ctf-agenda-2022-06-29/	• Roger Marks, *CSD Compatibility Criterion for Cut-Through Forwarding* • Johannes Specht and Dieter Proell, *Johannes Specht Cut-Through Forwarding (CTF) in Bridges and Bridged Network – Need for Unified and Standardized Management*
June 8, 2022	https://1.ieee802.org/ctf-agenda-2022-06-08/	• Johannes Specht, *Cut-Through Forwarding (CTF) in Bridges and Bridged Network – Background and Clarifications*
June 1, 2022	https://1.ieee802.org/ctf-agenda-2022-06-01/	• Roger Marks, *CTF status update from Nendica perspective* • John D'Ambrosia, Shimon Muller and Peter Jones, *Summary of IEEE 802.3 Expressed concerns* • Johannes Specht, *Cut-Through Forwarding (CTF) in Bridges and Bridged Network – Considerations on Modelling, Compatibility and Locations*
May 4, 2022	https://1.ieee802.org/ctf-agenda-2022-05-04/	• Johannes Specht, *Cut-Through Forwarding (CTF) in Bridges and Bridged Network – Continuing Technical Discussions* • Johannes Specht, *Cut-Through Forwarding (CTF) in Bridges and Bridged Network – Considerations on Modelling, Compatibility and Locations*
April 27, 2022	https://1.ieee802.org/ctf-agenda-2022-04-27/	• Peter Jones, *802.3 NEA CTF: CTF concerns*
April 20, 2022	https://1.ieee802.org/ctf-agenda-2022-04-20/	• Johannes Specht, *Cut-Through Forwarding (CTF) in Bridges and Bridged Network – Status Update*

Invitation to 802.1: Discussion Opportunity

ET Start	ET End	Monday Jul 11	Tuesday Jul 12	Wednesday Jul 13	Thursday Jul 14	Friday Jul 15	PT Start	CEST start	JST start
07:00	07:30	Hybrid Orientation					04:00	13:00	20:00
07:30	08:00						04:30	13:30	20:30
08:00	08:30	TSN	Maintenance	TSN P802.1DP	TSN P802.1DG	TSN 60802	05:00	14:00	21:00
08:30	09:00				Nendica		05:30	14:30	21:30
09:00	09:30			Security			06:00	15:00	22:00
09:30	10:00						06:30	15:30	22:30
10:00	10:30						07:00	16:00	23:00
10:30	11:00	Opening Plenary	TSN P802.1DG Security	TSN TSN 60802 Security	TSN TSN 60802	TSN 60802	07:30	16:30	23:30
11:00	11:30						08:00	17:00	00:00
11:30	12:00						08:30	17:30	00:30
12:00	12:30						09:00	18:00	01:00
12:30	13:00						09:30	18:30	01:30
13:00	13:30					TSN 60802	10:00	19:00	02:00
13:30	14:00	TSN Security	TSN YANGsters	TSN TSN 60802 Security	Closing Plenary		10:30	19:30	02:30
14:00	14:30						11:00	20:00	03:00
14:30	15:00						11:30	20:30	03:30
15:00	15:30						12:00	21:00	04:00
15:30	16:00					TSN 60802	12:30	21:30	04:30
16:00	16:30	TSN Security	TSN 60802 Security	TSN TSN 60802 Security	Closing Plenary		13:00	22:00	05:00
16:30	17:00						13:30	22:30	05:30
17:00	17:30						14:00	23:00	06:00
17:30	18:00						14:30	23:30	06:30
18:00	18:30	802 Technical Plenary					15:00	00:00	07:00
18:30	19:00		802.1/802.15 Joint				15:30	00:30	07:30
19:00	19:30						16:00	01:00	08:00
19:30	20:00		Nendica				16:30	01:30	08:30
20:00	20:30	802.1 Reception					17:00	02:00	09:00
20:30	21:00						17:30	02:30	09:30
21:00	21:30						18:00	03:00	10:00

2h for CTF Discussion

Source: https://1.ieee802.org/wp-content/uploads/2022/07/2022-07-schedule-v12.png

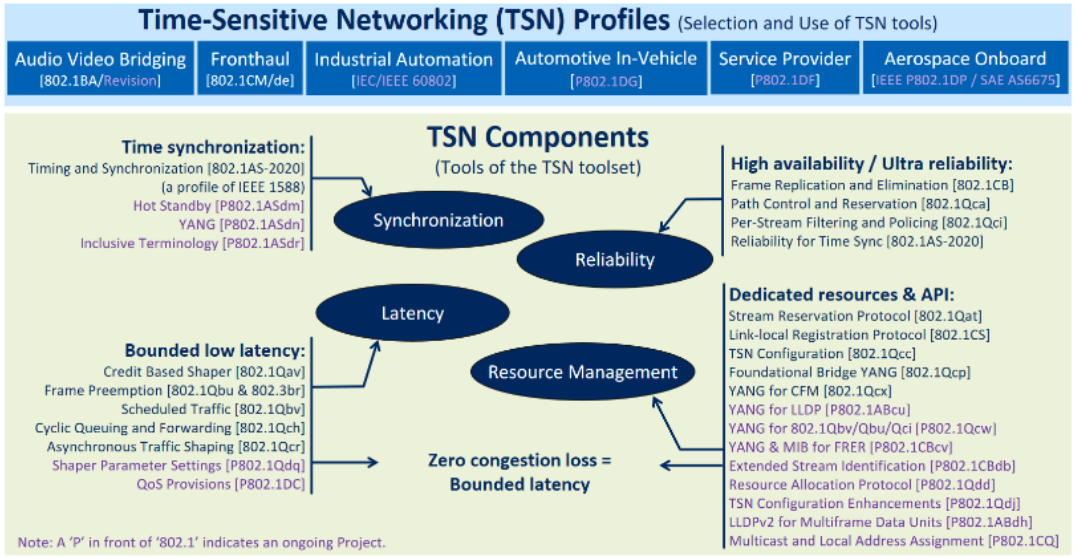
For Discussion Today

- Recap: Suggested Goals for the Joint Nendica/NEA Meetings
  - Identify Stds requirements, inconsistencies and and possible constraints w.r.t. CTF
  - Understand concerns and positions of WG 802.1 and 802.3 individuals
  - Building consensus across 802.1 and 802.3 on CTF
- Proposed Discussion Topics Tomorrow
  - Outcome of joint discussions
  - Logistics
    - A third 802.1 WG motion on P802.1DU PAR/CSD
    - Active participation - need for standardizing CTF in 802
    - 802.1 WG expectation on potential future Nendica/NEA joint activity
  - Technical
    - Service Interface, atomic and instantaneous
    - IEEE 802.1 WG statement on compatibility (CSD)
    - Minimum required technical features for a CTF Standard
  - A.O.B. on CTF – you're welcome to contribute!

Triggers for today’s discussion, from the Author’s point of view

From the Meetings on June 22 & 29, 2022

IEEE 802.1 is the best Venue



Source: https://www.ieee802.org/1/files/public/docs2021/admin-TSN-summary-1121-v01.pdf

- IEEE 802.1 is the "home" of the other TSN tools → management for CTF in IEEE 802.1 fits into the existing standardized management system (managed objects, management flows, MIB, YANG)
- Orchestration of per-device management from a network level point of view existent in 802.1
- Broad acceptance by vendors/markets expected (e.g., IEEE/IEC P60802 profile)

22-Jun-22 CTF: Need for Unified and Standardized Management 5

Source: https://mentor.ieee.org/802.1/dcn/22/1-22-0031-02-ICne-cut-through-forwarding-ctf-in-bridges-and-bridged-network-need-for-unified-and-standardized-management.pdf

From the Meeting on June 1, 2022

Potential Outputs of this Joint Effort

A. Agree that the 802.1 MAC Service Interface specification and 802.3 MAC definition support cut-through, an 802.1 project is formed to address cut-through, and an 802.3 project is not required.

B. Agree that the 802.1 MAC Service Interface specification and 802.3 MAC definition do not support cut-through and an 802.3 project is required to complement the IEEE 802.1 project.

C. Agree to disagree and “Cut through” proponents continue to work in IEEE 802.1 only.

Source: https://www.ieee802.org/3/ad_hoc/ngrates/public/calls/22_0601/dambrosia_nea_01_220601.pdf

Additional Points

- IEEE 802.1 may work on the compatibility questions on 802, 802.1AC and 802.1Q in the CSD of P802.1DU
  - Identify areas of incompatibility, document, and have a recorded response from WG 802.1
  - Consider answering “Yes” – CTF as a feature, not an obligation
  - CTF capable MACs
- Perceptions
  - It is the author’s interpretation that some individuals in IEEE 802.3 are primarily concerned about a large amount of work in 802.3.
  - Presenting the need for CTF (instead of technical solutions) has been suggested in a past joint meeting. It is the author’s belief that such motivation should be carried to 802.3 by multiple individuals, rather than only the author himself.

Thank You for Your Attention!

Questions,
Comments,
Opinions,
Ideas?