

Cut-Through Forwarding (CTF) - in IEEE 802 Nendica on November 15th 2022

Johannes Specht

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

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Introduction

Current Situation

- Vendors are providing Cut-Through Forwarding (CTF) in multiple non-interoperable ways
- Users are asking for a standard to achieve interoperability
 - There are lots of complications raised by CTF above the level of the MAC that WG 802.1 is ready to address

WG 802.1 Activities

- WG 802.1 is proposing to prepare a project (P802.1DU) to address those issues

ISS Providers, MACs, GSCF, WG 802.1 limits

- Needed is an ISS Provider, such as 802.1 AC convergence+802 MACs
 - Inside of IEEE 802, or
 - outside of IEEE 802
- GSCF is a technical concept worked out in IEEE 802 Nendica, between the ISS and the PLS
- WG 802.1 will not write 802 MAC standards venturing below the traditional MAC interface

Recommendations and Intentions

Today's meeting is an IEEE 802 Nendica Meeting

- Attended by IEEE WG 802.1 participants
- Attended by IEEE WG 802.3 participants
- Attended by participants from other IEEE 802 WGs

Recommendations and Intentions

- It IS NOT intended to change the 802.3 MAC, its upper interface, or make it CTF capable
- It IS NOT intended to discuss about IEEE 802 WG responsibilities today
- It is intended to discuss on a technical level today
- It is intended to start a project for CTF in IEEE WG 802.1 (P802.1DU)

Next Steps - in IEEE 802 Nendica and IEEE WG 802.1

- Continue to develop “Technical Descriptions for Cut-Through Forwarding in Bridges” and gather feedback in IEEE Nendica, by e-mail, etc.
- Determine the “vehicles” for the next steps in standardization
- On the basis of “Technical Descriptions for Cut-Through Forwarding in Bridges”, ask 802.1 WG, at IEEE 802 Plenary Session in November 2023, to authorize TSN for PAR/CSD pre-submission(s) towards IEEE 802 Plenary Session in March 2023

^ September 2022 802.1 Interim Meeting

→ here we are ...

Meetings during this IEEE 802 Plenary Session

- IEEE 802.1 TSN: Tuesday, 14:30-15:30 ICT
 - Overview of the Document
 - Why P802.1DU/Vehicles (**non-technical**)
- IEEE 802 Nendica: Tuesday, 19:30 – 21:30 ICT → **Now!**
 - Introduction to **GSCF**
 - **Technical** discussions on the document
- IEEE 802.1: Thursday, 13:30 – 18:00 ICT
 - Closing Plenary
 - **PAR/CSD Motion** on P802.1DU

Providing Technical Clarity (1)

1 Technical Descriptions for
2 Cut-Through Forwarding in Bridges
3 DCN 1-22-0042-12-ICne
4 Author: Johannes Specht
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179 **1. Purpose**
180 Purpose of this document is to provide input for technical discussion in pre-PAR activities of IEEE 802, the *IEEE 802 Network Enhancements for the Next Decade Industry Connections Activity* (Nendica) in particular. The contents of this document are technical descriptions for the operations of Cut-Through Forwarding (CTF) in bridges. The intent is to provide more technical clarity, demonstrate technical feasibility, and thereby satisfy the request expressed by individuals during the IEEE 802.1 closing plenary meeting in July 2022.

187 **2. Relationship to IEEE Standards**
188 This document **IS NOT** an IEEE Standard or an IEEE Standards draft, it is an individual contribution by the author containing technical descriptions. This allows readers to focus on the technical contents in this document, rather than additional aspects that are important during standards development. For example:

206 **3. Status of this Document**
207 This document is work-in-progress. It contains technical and editorial errors, omissions, simplifications and certain descriptions can be enhanced. Readers discovering such issues are encouraged for making enhancement proposals, e.g. by proposing textual changes or additions to the author (johannes.specht.standards@gmail.com).

6	Contents	
7	I. Introduction	8
8	1. Purpose	9
9	2. Relationship to IEEE Standards	10
10	3. Status of this Document	11
11	II. Cut-Through Forwarding in Bridges	12
12	4. Overview and Architecture	13
13	5. Modeling Principles	15
14	5.1. Frame Types	15
15	5.2. Modeling of Service Primitives	15
16	5.3. Parameter-based Modeling	16
17	5.4. Temporal Control	17
18	5.4.1. Processing Stalls	17
19	5.4.2. Late errors	17
20	5.4.3. Fall-backs to S&F	17
21	5.4.4. Instantaneous Operations	18
22	6. Generalized Serial Convergence Operations	19
23	6.1. Overview	19
24	6.2. Service Primitives	21
25	6.2.1. M_DATA.indication and M_DATA.request	21
26	6.2.1.1. DA	21
27	6.2.1.2. SA	21
28	6.2.1.3. MSDU	21
29	6.2.1.4. FCS	21
30	6.2.2. M_UNITDATA.indication and M_UNITDATA.request	21
31	6.3. Global Constants	22
32	6.3.1. PREAMBLE	22
33	6.3.2. LEN_OCT	22
34	6.3.3. LEN_ADDR	22
35	6.3.4. LEN_FCS	23
36	6.3.5. LEN_MIN	23

37	6.3.6. LEN_MAX	23
38	6.3.7. LEN_DATA	23
39	6.4. Global Variables	23
40	6.4.1. RxBitEnable	23
41	6.4.2. RxBit	23
42	6.4.3. RxBitStatus	24
43	6.4.4. RxDataEnable	24
44	6.4.5. RxData	24
45	6.4.6. RxDataStatus	25
46	6.4.7. TxBitEnable	25
47	6.4.8. TxBit	25
48	6.4.9. TxBitStatus	25
49	6.4.10. TxDataEnable	25
50	6.4.11. TxData	25
51	6.4.12. TxDataStatus	25
52	6.5. Global Functions	26
53	6.5.1. append(bitArray,bit)	26
54	6.5.2. insert(bitArray,index,bit)	26
55	6.5.3. remove(bitArray,index)	26
56	6.6. Generic Data Receive process	26
57	6.6.1. Description	26
58	6.6.2. State Machine Diagram	26
59	6.6.3. Variables	26
60	6.6.3.1. cnt	26
61	6.6.3.2. buf	26
62	6.6.3.3. rxDataEnd	26
63	6.7. Generic Frame Receive process	28
64	6.7.1. Description	28
65	6.7.2. State Machine Diagram	28
66	6.7.3. Variables	28
67	6.7.3.1. cnt	28
68	6.7.3.2. len	28
69	6.7.3.3. buf	28
70	6.7.3.4. status	28
71	6.7.4. Functions	28
72	6.7.4.1. FCSValid(FCS)	28
73	6.8. Receive Convergence process	30
74	6.9. Generic Data Transmit process	30
75	6.9.1. State Machine Diagram	30
76	6.9.2. Variables	30
77	6.9.2.1. cData	30
78	6.10. Generic Frame Transmit process	30
79	6.10.1. Description	30
80	6.10.2. State Machine Diagram	30

Work-in-progress → Feedback welcome!

Providing Technical Clarity (2)

81	6.10.3. Variables	33
82	6.10.3.1. cnt	33
83	6.11. Transmit Convergence process	33
84	7. Bridge Port Transmit and Receive Operations	34
85	7.1. Overview	34
86	7.2. Bridge Port Connectivity	35
87	7.3. Priority Signaling	35
88	7.3.1. Receive path operations	35
89	7.3.2. Transmit path operations	36
90	7.4. Translations between Internal Sublayer Service (ISS) and Enhanced Internal Sublayer Service (EISS)	36
91	7.4.1. Receive path operations	36
92	7.4.2. Transmit path operations	37
93	7.5. Higher Layer Compatibility	37
94	7.6. CTF Sublayer	37
95	7.6.1. Receive Path Operations	37
96	7.6.2. Transmit Path Operations	38
97	7.6.3. Inconsistent frame handling	38
98		
99	8. Bridge Relay Operations	39
100	8.1. Overview	39
101	8.2. Passive Stream Identification	41
102	8.3. Sequence Decode	41
103	8.4. Active Topology Enforcement	42
104	8.4.1. Overview	42
105	8.4.2. Learning	42
106	8.4.3. Initial set of potential transmission Ports	42
107	8.5. Ingress Filtering	42
108	8.6. Frame Filtering	43
109	8.7. Egress Filtering	43
110	8.8. Flow Classification and Metering	43
111	8.8.1. General	43
112	8.8.2. Stream Filtering	44
113	8.8.3. Maximum SDU size filtering	44
114	8.8.4. Stream Gating	45
115	8.8.5. Flow Metering	45
116	8.9. Individual Recovery	45
117	8.10. Sequence Recovery	46
118	8.11. Sequence Encode	46
119	8.12. Queuing Frames	46
120	8.13. Queue Management	46
121	8.14. Transmission Selection	47

122	9. Management Parameters	48
123	9.1. Overview	48
124	9.2. Control Parameters	48
125	9.2.1. CTFTransmissionSupported	48
126	9.2.2. CTFTransmissionEnable	48
127	9.2.3. CTFReceptionSupported	49
128	9.2.4. CTFReceptionEnable	49
129	9.3. Timing Parameters	49
130	9.3.1. CTFDelayMin and CTFDelayMax	49
131	9.4. Error Counters	49
132	9.4.1. CTFReceptionDiscoveredErrors	49
133	9.4.2. CTFReceptionUndiscoveredErrors	50
134		
135	III. Cut-Through Forwarding in Bridged Networks	51
136		
137	IV. Appendices	53
138	A. Interaction of the Lower Layer Interface (LLI) with existing Lower Layers	54
139	A.1. PLS Service Interface	54
140	A.1.1. Overview	54
141	A.1.2. Service Primitives	54
142	A.1.3. Global Variables and Constants	55
143	A.1.3.1. BitTick	55
144	A.1.3.2. LEN_FRAMEGAP	55
145	A.1.4. Global Constraints	55
146	A.1.5. Transmit Bit Clock process	55
147	A.1.6. PLS Transmit process	55
148	A.1.6.1. Description	55
149	A.1.6.2. State Machine Diagram	55
150	A.1.6.3. Variables	57
151	A.1.7. PLS Receive process	57
152	A.1.7.1. Description	57
153	A.1.7.2. State Machine Diagram	57
154	A.1.7.3. Variables	57
155	A.1.8. Support for Preemption	57
156	Bibliography	57

Work-in-progress → Feedback welcome!

Core elements of the document

Item	DCN 1-22-0042-12-ICne
Modeling of Service Primitives	Part II, 5.2
Parameter-based Modeling	Part II, 5.3
Temporal Control	Part II, 5.4
Generalized Serial Convergence Operations	Part II, 6
Bridge Port Transmit and Receive Operations	Part II, 7
Bridge Relay Operations	Part II, 8
Management Parameters	Part II, 9
Cut-Through Forwarding in Bridged Networks (right now, a placeholder with references)	Part III
Interaction of the Lower Layer Interface (LLI) with existing Lower Layers, PLS	Part IV, A.1

Thank You for Your Attention!

Questions,
Comments,
Opinions,
Ideas?