

# IEEE P802.3cw Task Force: 400 Gb/s over DWDM Systems

## Closing Report

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# IEEE P802.3cw Task Force Project information

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## Task Force Organization

- John D'Ambrosia, Chair, IEEE P802.3cw Task Force
- Editorial Team
  - Tom Issenhuth – Chief Editor, 400 GbE Optical PHY Clause
  - Leon Bruckman - 400 GbE PCS/PMA Clauses
- Task force web and reflector information
  - Reflector: <http://www.ieee802.org/3/ct/reflector.html>
  - Home page: <http://www.ieee802.org/3/cw/index.html>
- Project Documentation –
  - PAR : [http://www.ieee802.org/3/cw/proj\\_doc/P802d3cw\\_PAR.pdf](http://www.ieee802.org/3/cw/proj_doc/P802d3cw_PAR.pdf)
  - CSD: <https://mentor.ieee.org/802-ec/dcn/19/ec-19-0219-00-ACSD-p802-3cw.pdf>
  - Objectives: [http://www.ieee802.org/3/cw/proj\\_doc/3cw\\_Objectives\\_190911.pdf](http://www.ieee802.org/3/cw/proj_doc/3cw_Objectives_190911.pdf)
  - Timeline: [https://www.ieee802.org/3/cw/proj\\_doc/timeline\\_3cw\\_230608.pdf](https://www.ieee802.org/3/cw/proj_doc/timeline_3cw_230608.pdf)
- Ad Hoc page: <http://www.ieee802.org/3/ct/public/adhoc/index.html>

# This Week's Progress

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Approved Motion (802.3: 65 / 2 / 7) -

Affirmed modified IEEE P802.3cw CSD responses as summarized in Slides #3 – 10 of [dambrosia\\_3cw\\_01a\\_2311.pdf](#)

CSD Modifications shown next pages

- Broad Market Potential
- Distinct Identity

P802.3cw Task Force Affirmed modified IEEE P802.3cw CSD:

<https://mentor.ieee.org/802-ec/dcn/23/ec-23-0211-00-00EC-ieee-p802-3cw-modified-csd.pdf>

# IEEE P802.3cw CSD Modifications - Broad Market Potential

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[2] Broad Market Potential updated to reflect approval of the IEEE Std 802.3ct-2021 100 Gb/s over DWDM systems and that as a result IEEE P802.3cw will provide an upgrade path for 100 Gb/s over DWDM systems which doesn't exist today

This project will provide upgrade paths for existing application areas that need greater bandwidth at the reaches specified. Applications over 80 km over DWDM systems migrating from 100 Gb/s do not have an upgrade path.

# IEEE P802.3cw CSD Modifications - Distinct Identity

[1] Distinct Identity updated based on ITU-T SG15 liaison letter to IEEE 802.3 informing us that they had remove the “G.698.2 addition of 200G and 400G” work item from their programme

- While there are no other IEEE standards or projects with a similar scope, the IEEE 802.3 Working Group has received a liaisons from ~~two~~ one organizations indicating that ~~it~~ the respective groups ~~has~~ completed a related efforts underway. ~~ITU-T Study Group 15 has communicated that it is working on a future revision of Recommendation ITU-T G.698.2 to include 400G application codes for multi-vendor interoperable 400 Gb/s single channel optical interfaces that operate over a DWDM system for approximately 80 km distances.~~ The Optical Internetworking Forum (OIF) has communicated that it is developed te 400ZR Implementation Agreement (IA), which is targeted at (passive) single channel and (amplified) short-reach DWDM (dense wavelength division multiplexing) / DCI (data center interconnect) pluggable modules with distances supported from 80-120 km. The effort ~~will support~~ s 400 Gb/s Ethernet via the 400GAUI-8 interface that is defined by IEEE 802.3.

# IEEE P802.3cw to Standards Association ballot (conditional)

## Date the ballot closed

5th Working Group recirculation ballot on IEEE P802.3cw 400 Gb/s over DWDM Systems draft D2.5 closed  
16th Oct 2023 at 23:59 AOE (23:59 UTC-12)

Vote tally	Initial Draft D2.0			1 <sup>st</sup> Recirculation Draft D2.1			2 <sup>nd</sup> Recirculation Draft D2.2			3 <sup>rd</sup> Recirculation Draft D2.3			4 <sup>th</sup> Recirculation Draft D2.4			5 <sup>th</sup> Recirculation Draft D2.5			Req %
	#	%	Status	#	%	Status	#	%	Status	#	%	Status	#	%	Status	#	%	Status	
Abstain	13	9	PASS	17	10	PASS	18	10	PASS	19	11	PASS	24	13	PASS	20	11	PASS	< 30
Dis with comment	13	-	-	12	-	-	7	-	-	5	-	-	3	-	-	1	-	-	-
Dis w/o comment	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	-
Approve	115	89	PASS	130	91	PASS	141	95	PASS	145	96	PASS	148	98	PASS	156	99	PASS	≥ 75
Ballots returned	141	62	PASS	159	70	PASS	166	74	PASS	169	75	PASS	175	78	PASS	177	78	PASS	> 50
Voters	224	-	-	224	-	-	224	-	-	224	-	-	224	-	-	225*	-	-	-
Comments	582	-	-	290	-	-	25	-	-	38	-	-	14	-	-	39	-	-	-

\* Increase from 224 to 225 due to an ex-officio member casting a vote (subclause 4.2 'Voting Membership' of IEEE 802 LMSC Working Group Policies and Procedures says 'Ex-officio members are allowed to vote on any Working Group motion or ballot, but are not counted towards quorum requirements or ballot return requirements if they don't vote.').

# IEEE P802.3cw – Unsatisfied Comments

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38 unsatisfied TR / 0 ER comments from 1 commenter

## Summary of Unsatisfied Comments:

- Clause 116 (200/400 Introduction): use of “400ZR” 2
- Clause 155 (PCS/PMA): codeword/test vector examples 5
- Clause 155 (PCS/PMA): project cancellation 2
- Clause 155 (PCS/PMA): generic operation of hamming encoder 3
- Clause 156 (optical): laser frequency noise 14
- Clause 156 (optical): EVM calculation 4
- Clause 156 (optical): optical parameters 3
- Clause 156 (optical): I-Q parameters 3
- Clause 156 (optical): reference receiver 1
- Clause 156 (optical): transmit spectrum 1

For more information:

[https://www.ieee802.org/3/cw/comments/D2p5/8023cw\\_D2p5\\_comments\\_final\\_unsatisfied\\_by\\_clause.pdf](https://www.ieee802.org/3/cw/comments/D2p5/8023cw_D2p5_comments_final_unsatisfied_by_clause.pdf)

# WG Motion

Motion	Move that the IEEE 802.3 Working Group affirm the CSD responses in <a href="https://mentor.ieee.org/802-ec/dcn/23/ec-23-0211-00-00EC-ieee-p802-3cw-modified-csd.pdf">https://mentor.ieee.org/802-ec/dcn/23/ec-23-0211-00-00EC-ieee-p802-3cw-modified-csd.pdf</a> and request conditional approval to progress the IEEE P802.3cw draft to IEEE Standards Association ballot once the Working Group ballot process has been successfully completed.
Technical (>= 75%)	
Moved by	John D'Ambrosia
Second by	Tom Issenhuth
Results 802.3 (y/n/a)	

# IEEE P802.3cw to Standards Association ballot (conditional)

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## Recirculation ballot and resolution meeting schedule

6th Working Group recirculation ballot day one	8 November 2023
6th Working Group recirculation ballot close date	29 November 2023
IEEE P802.3cw comment resolution meeting	11 December 2023
7th Working Group recirculation ballot day one	18 December 2023
7th Working Group recirculation ballot close date	3 January 2024
IEEE P802.3cw comment resolution meeting	8 January 2024

Note 1: 6th Working Group recirculation ballot already underway

Note 2: 7th Working Group recirculation ballot only if required

# Questions?

# Thank you!