

# IEEE P802.3cz Multi-Gigabit Optical Automotive Ethernet Task Force Report

Robert M. (Bob) Grow  
RMG Consulting/KDPOF  
Virtual interim  
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# IEEE P802.3cz Multi-Gigabit Optical Automotive Ethernet

## Project information

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### Task Force Organization

Bob Grow, IEEE P802.3cz Task Force Chair

Luisma Torres, IEEE P802.3cz Task Force Secretary, Chief Editor

### Task force web and reflector information

Reflector information: <http://www.ieee802.org/3/cz/reflector.html>

Home page: <http://ieee802.org/3/cz>

PAR: [http://www.ieee802.org/3/cz/P802d3cz\\_PAR.pdf](http://www.ieee802.org/3/cz/P802d3cz_PAR.pdf)

CSD: <https://mentor.ieee.org/802-ec/dcn/20/ec-20-0095-00-ACSD-p802-3cz.pdf>

Objectives: [http://www.ieee802.org/3/cz/P802d3cz\\_objectives\\_01\\_0520.pdf](http://www.ieee802.org/3/cz/P802d3cz_objectives_01_0520.pdf)

Approved timeline: [http://www.ieee802.org/3/timeline\\_3cz\\_01a.pdf](http://www.ieee802.org/3/timeline_3cz_01a.pdf)

Private area: <https://www.ieee802.org/3/cz/private/index.html>

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# IEEE P802.3cz Multi-Gigabit Optical Automotive Ethernet

## Activities since November 2021 plenary

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- **Virtual meetings**
  - 30 November 2021 interim teleconference
  - 9, 10, 16, 17 November 2021 plenary TF meeting
  - 14 December 2021 interim teleconference
  - 11, 12, 18, 19 January 2022 interim TF meeting
- **Major items discussed, decisions made and actions**
  - One PMD presentation (30 Nov, heard by amending the agenda to overrule a decision of the Chair)
  - Two January presentations on GIPOF bandwidth
  - Heard multiple presentations on path forward (PAR split, modified PAR)
  - Conducted D1.2 TF review, January interim completed D1.2 comment resolution



# Task Force Status (1)

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- As reported to 802.3 in November, we have failed to add any PMD specifications to our draft
- PMD “alternatives” are on significantly different timelines
  - Detailed specifications for GIPOF, and fiber samples are not available
  - Some wavelength technologies also are not completely specified in proposals
- The TF has discussed “PAR split”
  - The P802.3cz project scope is narrowed to address graded-index glass fiber only
  - A second new project would address graded-index plastic optical fiber only
  - Efforts to gain support for a “PAR split” were unsuccessful
- The possibility of only modifying the current P802.3cz PAR project scope has also been raised

# Task Force Status (2)

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- The TF Chair sees PMD support clustered around four proposals differentiated by medium and wavelength
  - 980 nm on OM3 fiber
    - Only alternative with proposed mostly complete draft content
  - 850-980 nm on OM3 fiber
    - Specifies a significantly wider wavelength range than is typical
  - 1310 nm on OM3 fiber
    - Tied to enabling use of silicon photonics technology
    - Not proposed for all data rates in our objectives
  - GIPOF
    - Cable/fiber samples are not available for independent testing
    - Doesn't reach the 40 meters in our reach/rate objectives nor 50 Gb/s data rate

# P802.3cz/D1.2 status

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- P802.3cz/D1.2 TF review closed 28 Dec 2021
  - Includes 12 Oct baseline adoptions (50Gb/s PCS/PMA, EEE, Loopback, BER test)
  - Comments were encouraged to fill in technically incomplete draft
  - P802.3cz/D1.2 comment resolution complete
  - 176 Comments received
    - 100 of the comments non-substantive (grammar, format, etc.)
    - Other comments did a little to move the draft closer to technical completeness
    - Comment #173 to merge a 3 August 2021 proposed 980nm/OM3 PMD baseline into the draft
      - ▷ Motion to accept #173 suggested remedy failed, Y: 37, N: 13 (74%)
      - ▷ Consequent response: Reject, No consensus to make a change

# Observation

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- The TF Chair assertion that PMD alternatives are on different timelines is reinforced by 14 Dec 2020 straw polls



# 14 December - Straw Poll #1

I believe that the earliest a technically complete IEEE P802.3cz draft, specifying operation over 40m over graded Index Glass Optical Fiber could be generated by:

			% of call	% voting		
A. Mar 2022	19	26%	<b>35%</b>			
B. Jul 2022	18	25%	<b>33%</b>			
C. Nov 2022	7	10%	<b>13%</b>			
D. Mar 2023	8	11%	<b>15%</b>			
E. Later than above	3	4%	<b>5%</b>			
No Answer	18	25%				

# 14 December - Straw Poll #2

I believe that the earliest a technically complete IEEE P802.3cz draft, specifying operation over a reach less than 40m over graded Index Plastic Optical Fiber (GIPOF), could be generated by:

			% of call	% voting		
A. Mar 2022	1	1%	<b>2%</b>			
B. Jul 2022	11	16%	<b>22%</b>			
C. Nov 2022	9	13%	<b>18%</b>			
D. Mar 2023	15	22%	<b>29%</b>			
E. Later than above	15	22%	<b>29%</b>			
No Answer	18	26%				

# 14 December – Straw Poll: Medium Support

I would support the following			% of call	% voting
A. The project should specify operation over graded index glass optical fiber		29	42%	<b>56%</b>
B. The project should specify operation over graded index glass optical fiber AND plastic optical fiber		23	33%	<b>44%</b>
No Answer		17	25%	

# 14 December – Motion: Narrow Project Scope

Move to support modifying the existing IEEE 802.3cz PAR per “swanson\_3cz\_02\_141221\_Proposal for Modifying the IEEE 802.3cz PAR.pdf”

			%	Y/(Y+N)	
	Yes	25	61.0%	<b>67.6%</b>	
	No	12	29.3%		
	Abstain	4	9.8%		
	Total	41			

## ***P802.3cz PAR modifications in referenced presentation:***

**4.2 Expected Date of submission of draft to the IEEE SA for Initial Standards Committee Ballot:** ~~Mar 2022~~Nov 2022

**4.3 Projected Completion Date for Submittal to RevCom:** ~~Oct 2022~~Jun 2023

**5.2.b Scope of the project:** Specify additions to and appropriate modifications of IEEE Std 802.3 to add Physical Layer specifications and management parameters for multi-gigabit optical Ethernet using graded-index glass optical fiber for application in the automotive environment

# Summary (1)

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- As TF Chair I have a duty

“The operation of the TF has to be balanced between democratic procedures that reflect the desires of the TF members and the TF Chair's responsibility to produce a draft standard, recommended practice, or guideline in a reasonable amount of time for review and approval by the WG.” (802.3 Operations Manual, 3.4)

- I infer from the straw polls that the TF consensus is that continuing on our current path will significantly delay getting to WG ballot

- Initial timeline: Sep 2021
- Current timeline: Mar 2022
- Per straw polls: Mar 2023 or later

## Summary (2)

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- I believe failure of some proponents to make detailed proposals for their preferred PMD technologies has already delayed us 6 months
- I believe that without non-traditional actions we are facing 14 more months before we get a technically complete draft

# Questions?