

Minutes
Multi-Gigabit Optical Automotive Ethernet (OMEGA)
Task Force Interim
18 May 2021

Attendance list as recorded in Webex participant list

Last Name	First Name	Employer	Affiliations	May 18th
Abbot	John	Corning	Corning	X
Amamiya	Yasushi	MegaChips	MegaChips	X
Andrae	Stefan	SEI Antech-Europe GmbH	SEI Antech-Europe GmbH	X
Aono	Michikazu	Yazaki	Yazaki	
Araki	Nobuyasu	Yazaki	Yazaki	X
Bergner	Bert	TE Connectivity	TE Connectivity	
Boyer	Rich	APTIV	APTIV	
Barbero	Fernando	KDPOF	KDPOF	X
Bordogna	Mark	Intel	Intel	
Brooks	Paul	Viavi Solutions	Viavi Solutions	
Bruckman	Leon	Huawei	Huawei	
Chang	Jae-yong	Keysight	Keysight	
Choudhury	Mabud	OFS	OFS	
Chuang	Keng Hua	HPE	HPE	
Cuesta	Emilio	TE Connectivity	TE Connectivity	
Dittmann	Markus	KDPOF	KDPOF	X
Donthu	Suresh	Corning	Corning	X
EEK	Magnus	Volvo Cars	Volvo Cars	
Felgenhauer	Alexander	Yazaki	Yazaki	X
Ferretti	Vincent	Corning	Corning	X
Fortusini	David	Corning	Corning	
Fukuoka	Takashi	AutoNetworks Technologies Ltd.; Sumitomo Electric Industries, Ltd.	AutoNetworks Technologies Ltd.; Sumitomo Electric Industries, Ltd.	X
Glanzner	Martin	SEI Antech-Europe GmbH	SEI Antech-Europe GmbH	X
Gomez	Chisato	Nitto Denko Corporation	Nitto Denko Corporation	X
Goto	Hideki	Toyota Motor Corporation	Toyota Motor Corporation	X
Grow	Robert	Robert M. Grow Consulting	RMG Consulting, KDPOF	X
Hajduczenia	Marek	Charter Communications	Charter Communications	X
Harshbarger	Douglas	Corning Incorporated	Corning Incorporated	X
Hartmann	Stephan	Siliconally GmbH	Siliconally GmbH	X
Hayashi	Takehiro	HAT Labs	HAT Labs	
HIRASE	Hidenari	AGC	AGC	X
Hormmeyer	Bernd	Phoenix Contact	Phoenix Contact	X
Huang	David	Broadcom	Broadcom	
Huang	Shaowu	Marvell	Marvell	
Hyakutake	Yasuhiro	Adamant Namiki Precision Jewel	Adamant Namiki Precision Jewel	X
Isono	Hideki	FOC	FOC	X
Kadry	Haysam	Ford Motor Company	Ford Motor Company	X
KAGAMI	Manabu	NI Tech	NI Tech	X
Kazuhiko	Ishibe	Anritsu	Anritsu	
Kamino	John	OFS	OFS	
Kawahara	Keisuke	Furukawa Electric	Furukawa Electric	
KIKUTA	Tomohiro	Adamant Namiki Precision Jewel	Adamant Namiki Precision Jewel	X
Kim	Joshua	Hirose USA	Hirose USA	
King	Roger	TRUMPF Photonic Components	TRUMPF Photonic Components	X
Kobayashi	Shigeru	AIO Core	AIO Core	X

Koeppendoerfer	Erwin	Leoni	Leoni	X
Kondo	Taiji	MegaChips	MegaChips	X
Law	David	HPE	HPE	X
Liu	Karen	Lightwave	Lightwave	
Lee	Bernard	Senko	Senko	
Lee	Sylvanus	Leviton	Leviton	X
Lingle	Robert	OFS	OFS	
Malicoat	David	Malicoat Networking Solutions	Senko Advanced Components	X
Martino	Kjersti	Inneos	Inneos	X
Marques	Flavio	Furukawa electric	Furukawa Electric	
Masuda	Takeo	OITDA/PETRA	OITDA/PETRA	X
McMillan	Larry	Western Digital	Western Digital	
Mueller	Harald	Endress + Hauser	Endress + Hauser	
Mueller	Thomas	Rosenberger	Rosenberger	X
Nakagawa	Hideki	AGC	AGC	X
Nicholl	Gary	Cisco	Cisco	
Nikolich	Paul	802 Chairman	802 Chairman	
Niihara	Yoshihiro	Fujikura	Fujikura	X
Ogura	Ichiro	Petra	Petra	X
Omori	Kumi	NEC	NEC	
Pandey	Sujan	Huawei	Huawei	
Pankert	Joseph	TRUMPF Photonic Components	TRUMPF Photonic Components	X
Pardo	Carlos	KDPOF	KDPOF	X
Pérez-Aranda	Rubén	KDPOF	KDPOF	X
Pham	Phong	EastPoint	EastPoint	
Piehler	David	Dell	Dell	
Pimpinella	Rick	Panduit	Panduit	X
Pitwon	Richard	Resolute Photonics	Resolute Photonics	X
Preis	Roland	MD Elektronik	MD Elektronik	X
Reinhard	Michael	SEI Antech-Europe GmbH	SEI Antech-Europe GmbH	X
Sambasivan	Sam	AT&T	AT&T	
Savi	Olindo	Hubbell Incorporated	Hubbell Incorporated	
Sawano	Hiroshi	OITDA		X
Sayre	Edward	Samtec	Samtec	
Shukla	Priyank	Synopsys	Synopsys	
Shigematsu	Masayuki	Sumitomo Electric	Sumitomo Electric	X
Shiino	Masato	Furukawa Electric	Furukawa Electric	X
Shukla	Priyank	Synopsys	Synopsys	X
Silvano de Sousa	Jonathan	GG-Group	GG-Group	
Sun	Wensheng	Marvell	Marvell	X
Sun	Yi	OFS	OFS	
Suzuki	Yasuo	KDPOF Japan	KDPOF	X
Swanson	Steve	Corning Inc.	Corning Inc.	X
Takahashi	Ryutaro	Senko	Senko	X
Takahashi	Satoshi	POF Promotion	POF Promotion	X
Takahashi	Tadashi	Nitto Denko Corporation	Nitto Denko Corporation	X
Takayama	Kazuuya	Nitto Denko Corporation	Nitto Denko Corporation	X
Theodoras	James	HG Genuine	HG Genuine	
Torres	Luisma	KDPOF	KDPOF	X
Tsujita	Yuichi	Nitto Denko Corporation	Nitto Denko Corporation	X
Tsuzaki	Nozomi	Independent	Independent	
Ueno	Yuto	Sumitomo	Sumitomo	X
WATANABE	Yuji	AGC	AGC	X
Wendt	Mattias	Signify	Signify	
Wienckowski	Natalie	General Motors	General Motors	X
Xu	Xing	Huawei	Huawei	X
Yamada	Osamu	Yazaki	Yazaki	

Yasui	Hideshi	AGC	AGC	X
Yonezawa	Kenji	AGC	AGC	X
Yurtin	John	APTIV	APTIV	
Zhiwei	Yang	ZTE	ZTE	
Zhu	Liang	Marvell	Marvell	

Tuesday, 18th May 2021, 12:00 (noon) UTC

The meeting was called to order at approximately 12:02 UTC Tuesday 18th May 2021
Chaired by Robert Grow, IEEE P802.3cz Task Force Chair.

Mr. Grow presented *Agenda and General Information*

(https://www.ieee802.org/3/cz/public/18_may_2021/Agenda_3cz_01_180521.pdf).

Mr. Grow presented the agenda for the meeting. The ToDo list revision was moved to the beginning of the agenda, just after the *Chief Editor Report*. The agenda was approved by unanimous consent.

Mr. Grow asked the audience if there was anybody from the press. No one responded to the call.

Mr. Grow issued the call for essential patent claims. No one responded to the call. He also presented the slides on the IEEE Copyright Policy and participation guidelines.

Mr. Torres asked to present *Chief Editor's Report*

(https://www.ieee802.org/3/cz/public/18_may_2021/CEReport_3cz_180521.pdf). The presentation announces that 802.3cz D1.1 is already available in the Private area of the website. Commenting deadline is 2 June. Mr. Torres reminded that the preferred format for the comments is to fill the comment excel sheet.

Mr. Torres started the review of the ToDo list

(https://www.ieee802.org/3/cz/P802_3cz_todo_01i.xlsm). Mr. Torres added a missing task derived from the D1.0 comment resolution (comment #82). Mr. Pérez-de-Aranda will present a proposal by 25th May.

Mr. Torres also showed the current tasks status for the different PMD options in the ToDo list. VCSEL + OM3 PMD related tasks are finished with VCSEL reliability presentation (*VCSEL design for automotive datacom Experimental results for 980 nm versus 850 nm*) in this meeting. Mr. Takayama informed that he cannot commit in this meeting to a due date for the tasks related with VCSEL + GIPOF PMD and Silicon Photonics + GIPOF PMD. Mr. Ogura informed that he is also in the same situation with Silicon photonics + OM2/OM3 PMD. The ToDo list was updated accordingly.

Mr. Abbot experienced some problems with the connection, and therefore Mr. King asked to present *VCSEL design for automotive datacom Experimental results for 980 nm versus 850 nm*

(https://www.ieee802.org/3/cz/public/18_may_2021/king_3cz_01a_180521.pdf). This presentation shows the difference in terms of reliability and industrialization between 850 and 980 nm VCSEL. Wear out reliability test data at 140°C, 155°C and 170°C and 10, 8 and 6 mA bias current, respectively, were presented. A number of questions were asked and Mr. King provided answers. The contribution demonstrated much better wear out reliability performance of 980nm devices compared with 850nm ones.

Mr. Abbott, once he solved problems with the connection, asked to present *Extrapolation of IEC EMB guidance for OM3 to 980nm*

(https://www.ieee802.org/3/cz/public/18_may_2021/abbott_3cz_01_180521_Extrapolation_of_IEC_guidance_for_OM3_to_980.pdf). This presentation shows an extrapolation of the IEC Effective Modal Bandwidth (EMB) guidance curve for OM3 and 980 nm transmission wavelength. The result of 946 MHz.Km appears well in excess of the BW needed for 802.3cz link budget and has been calculated independently by different TF participants.

Mr. Pérez-de-Aranda asked to present *980nm VCSEL performance in extreme temperatures*

(https://www.ieee802.org/3/cz/public/18_may_2021/perezaranda_3cz_01_180521_VCSEL_980nm.pdf). The presentation showed the result of experiments using a TRUMPF 980nm VCSEL to transmit

50 Gb/s using PAM4, 25 Gb/s NRZ and 10 Gb/s NRZ across extreme chip backside temperatures (-40 to +125°C) using OM3 fiber. The methodology used to measure the LIV and RIN was the same used in previous experiments also presented in previous TF meetings. The results are very good compared to 850 nm VCSEL in terms of speed and linearity, and may lead to a simplification of the transceiver. A number of questions were asked and Mr. Pérez-de-Aranda provided answers.

Mr. Pérez-de-Aranda asked to present *50GBASE-AU PCS and PMA baseline adoption* (https://www.ieee802.org/3/cz/public/18_may_2021/perezaranda_3cz_03a_180521_50G_strawpoll.pdf) This presentation summarizes some of the presentations regarding 50 Gb/s PCS/PMA feasibility, including the 50 Gb/s PCS/PMA baseline proposal presented in the TF meeting held 11th May (*50GBASE-AU baseline proposal*, https://www.ieee802.org/3/cz/public/11_may_2021/perezaranda_3cz_03_110521_50Gbps_pcs_pma.pdf). Mr. Pérez-de-Aranda proposed Straw Poll #1.

Straw Poll #1

I support adoption of the PCS and PMA baselines for 50GBASE-AU operation as described in [4] (perezaranda_3cz_03_110521_50Gbps_pcs_pma.pdf)

The result of the Straw Poll was the following

- Yes: 25
- No: 2
- Abstain: 21

With these results on the table, Mr. Pérez-de-Aranda moved Motion #1. Mr. Abbott seconded the motion. The motion was identified as Technical.

Motion #1

Adopt the PCS and PMA baselines for 50GBASE-AU operation as described in (perezaranda_3cz_03_110521_50Gbps_pcs_pma.pdf)

Technical (>=75%):

Moved: Rubén Pérez de Aranda

Seconded: John Abbott

In the discussion of the motion, Mr. Pérez-de-Aranda and Mr. Abbot summarized the 50 Gb/s PCS/PMA baseline proposal, and spoke in favor of the motion. Mr. Watanabe asked for more time to consider the motion. Mr. Grow reminded that the 50 Gb/s PCS/PMA baseline proposal was presented in the previous TF meeting. Nobody spoke against the motion.

The voting was conducted by Roll Call. Only 802.3 WG members can vote. The result of the Motion vote was the following

- Yes: 10
- No: 7
- Abstain: 17

Motion #1 failed.

The following table shows the detailed vote

IEEE P802.3cz Multi-Gigabit Optical Automotive Ethernet TF 18 May 2021	18 May TF Interim Attendee	802.3 Voter	Motion 1	
			Y	10
	Count			

By choosing to attend this meeting, you acknowledge and agree that your personal data will be documented for IEEE standards development purposes to comply with policies and procedures, legal and accreditation requirements, and evaluation of patent claims by patent offices.				63		N	7
						A	17
Last Name	First Name	Employer	Affiliations	Call	V		Vote
Abbott	John	Corning	Corning	X	V		y
Andrae	Stefan	SEI Antech-Europe GmbH	SEI Antech-Europe GmbH	X	V		
Araki	Nobuyasu	Yazaki	Yazaki	X	V		a
Ferretti	Vincent	Corning	Corning	X	V		y
Fukuoka	Takashi	AutoNetworks Technologies Ltd.	AutoNetworks Technologies Ltd.; Sumitomo Electric Industries, Ltd.	X	V		y
Glanzner	Martin	SEI Antech-Europe GmbH	SEI Antech-Europe GmbH	X	V		a
Goto	Hideki	Toyota Motor Corporation	Toyota Motor Corporation	X	V		a
Grow	Robert	Robert M. Grow Consulting	RMG Consulting, KDPOF	X	V		
Hajduczenia	Marek	Charter Communications	Charter Communications	X	V		
Hartmann	Stephan	Siliconally GmbH	Siliconally GmbH	X	V		
HIRASE	Hidenari	AGC	AGC	X	V		n
Hyakutake	Yasuhiro	Adamant Namiki Precision Jewel	Adamant Namiki Precision Jewel	X	V		a
Isono	Hideki	Fujitsu Optical Components Limited	FUJITSU	X	V		a
Kadry	Haysam	Ford Motor Company	Ford Motor Company	X	V		a
KAGAMI	Manabu	NI Tech	NI Tech	X	V		y
KIKUTA	Tomohiro	Adamant Namiki Precision Jewel	Adamant Namiki Precision Jewel	X	V		a
Koependoerfer	Erwin	LEONI	LEONI Kabel GmbH	X	V		a
Kondo	Taiji	MegaChips	MegaChips	X	V		a

Law	David	HPE	HPE	X	V		
Lee	Sylvanus	Leviton	Leviton	X	V		a
Malicoat	David	Malicoat Networking Solutions	Senko Advanced Components	X	V		a
Masuda	Takeo	OITDS/PETR	OITDA/PETR	X	V		a
Mueller	Thomas	Rosenberger	Rosenberger	X	V		a
Nakagawa	Hideki	AGC	AGC	X	V		a
Ogura	Ichiro	PETRA	PETRA	X	V		n
Pardo	Carlos	KDPOF	KDPOF	X	V		y
Perez De Aranda Alonso	Ruben	KDPOF	KDPOF	X	V		y
Pimpinella	Rick	Panduit	Panduit	X	V		y
Pitwon	Richard	Resolute Photonics	AIO CORE	X	V		n
Preis	Roland	MD Elektronik	MD Elektronik	X	V		a
Sawano	Hiroshi	OITDA		X	V		a
Shigematsu	Masayuki	Sumitomo Electric	Sumitomo Electric	X	V		
Shiino	Masato	Furukawa Electric	Furukawa Electric	X	V		a
Shukla	Priyank	Synopsys	Synopsys	X	V		
Swanson	Steve	Corning Inc.	Corning Inc.	X	V		y
Takahashi	Satoshi	POF Promotion	POF Promotion	X	V		y
Takahashi	Tadashi	Nitto Denko Corporation	Nitto Denko Corporation	X	V		n
Takayama	Kazuya	Nitto Denko Corp.	Nitto Denko Corp.	X	V		n

Torres	Luisma	KDPOF	KDPOF	X	V		y
Watanabe	Yuji	AGC	AGC	X	V		n
Wienckowski	Natalie	General Motors	General Motors	X	V		
Yonezawa	Kenji	AGC	AGC	X	V		n

Mr. Pérez-de-Aranda expressed his surprise about the results that were very different from the ones in the Straw Poll (Straw Poll Y:25;N:2;A:21 vs Motion: Y:10;N:7;A:17) and stated that the behavior of some TF participants is not fair.

Mr. Law invite the participants that voted no to share their reasons with the TF. Mr. Law reminded that he heard Mr. Watanabe asking for more time. Nobody answered.

Mr. Grow asked to continue with the last slides of *Agenda and General Information* (https://www.ieee802.org/3/cz/public/18_may_2021/Agenda_3cz_01_180521.pdf).

Mr. Grow reminded that we are in the interim series with 802.3cz TF interim meetings 25th and 26th May. Then, the TF teleconferences will happen weekly from 8th June for Draft 1.1 comment resolution and new presentations. Mr. Grow also reminded that IEEE 802.3 attendance credit will be given to participants attending 4 of 8 days of the 802.3 interim session, and also that registration and fee is required for July electronic 802 plenary series.

The meeting was adjourned at approximately 14:15 UTC.

Recording Secretary: Luisma Torres.