

Minutes
Multi-Gigabit Optical Automotive Ethernet (OMEGA)
Task Force Plenary
10, 17 and 18 November 2020

Attendance list as recorded in Webex participant list

Last Name	First Name	Employer	Affiliations	Nov 10th	Nov 17th	Nov 18th
Abbott	John	Corning	Corning	X	X	X
Amamiya	Yasushi	MegaChips	MegaChips	X	X	X
Aono	Michikazu	Yazaki	Yazaki	X	X	X
Araki	Nobuyasu	Yazaki	Yazaki	X	X	X
Bakronagy	Istvan	EFFECT Photonics	EFFECT Photonics	X		
Barbero	Fernando	KDPOF	KDPOF	X	X	X
Beaudoin	Denis	TI	TI		X	
Bhatti	Bakar	Senko Advanced Components, Inc.	Senko Advanced Components, Inc.		X	X
Boyer	Rich	APTIV	APTIV	X	X	
Brychta	Michal	Analog Devices	Analog Devices	X		
Carty	Clark	Cisco	Cisco	X		
Castro	Jose	Panduit	Panduit			X
Chang	Jae-yong	Keysight	Keysight		X	X
Choudhury	Mabud	OFS	OFS	X	X	X
Cuesta	Emilio	TE Connectivity	TE Connectivity	X	X	
D'Ambrosia	John	Futurewei (U.S. Subsidiary of Huawei)	Futurewei Technologies			X
Dawe	Piers	Mellanox	Mellanox		X	
Dawson	Fred	Chemours	Chemours	X	X	
DiBiao	Eric	TE Connectivity	TE Connectivity	X		
Diminico	Chris	Panduit Corp.	M C Communications, LLC		X	
Dittmann	Markus	KDPOF	KDPOF	X	X	X
Ewen	John	Marvell	Marvell		X	
Fortusini	Davide	Corning	Corning	X	X	X
Fukuoka	Takashi	AutoNetworks Technologies Ltd.	AutoNetworks Technologies Ltd.; Sumitomo Electric Industries, Ltd.	X	X	X
Geng	Lemon	Huawei	Huawei		X	
Gianordoli	Stefan	GG-Group	GG-Group			X
Glanzner	Martin	SEI Antech-Europe GmbH	SEI Antech-Europe GmbH	X		
Goto	Hideki	Toyota Motor Corporation	Toyota Motor Corporation	X	X	X
Grow	Robert	Robert M. Grow Consulting	RMG Consulting, KDPOF	X	X	X
Harshbarger	Doug	Corning Incorporated	Corning Incorporated	X	X	X
Hartmann	Stephan	Siliconally GmbH	Siliconally GmbH	X	X	X
Hess	Dave	Cord Data	Cord Data	X	X	X
HIRASE	Hidenari	AGC	AGC	X	X	X
Hormmeyer	Bernd	Phoenix Contact	Phoenix Contact	X	X	
Hunter		Senko Advanced Components, Inc.	Senko	X	X	X
Huszak	Gergely	Kone	Kone	X		
Hyakutake	Yasuhiro	Adamant Namiki Precision Jewel	Adamant Namiki Precision Jewel	X		X
Ingham	Jonathan	Independent	Independent		X	X
Isono	Hideki	FOC	FOC	X	X	X
Jackson	Kenneth	Sumitomo	Sumitomo	X		
Kabra	Lokesh	Synopsys	Synopsys	X	X	
Kadry	Haysam	Ford Motor Company	Ford Motor Company	X	X	
KAGAMI	Manabu	NI Tech	NI Tech	X		X
Kazuya	Takayama	Nitto Denko Corp.	Nitto Denko Corp.	X		

KIKUTA	Tomohiro	Adamant Namiki Precision Jewel	Adamant Namiki Precision Jewel	X	X	X
King	Roger	TRUMPF Photonic Components	TRUMPF Photonic Components	X	X	
Kobayashi	Shigeru	AIO Core	AIO Core	X	X	X
Koependoerfer	Erwin	Leoni	Leoni		X	X
Kondo	Taiji	MegaChips	MegaChips	X	X	X
Koppermüller	Daniel	MD Elektronik	MD Elektronik	X		
Kumada	Taketo	YAZAKI	YAZAKI	X	X	X
Lackner	Hans	QoSCom GmbH	QoSCom	X		
Law	David	HPE	HPE			X
Ledentsov, Jr.	Nick	VI Systems GmbH	VI Systems GmbH	X	X	
Lee	Bernard	Senko Advanced Components, Inc.	Senko	X	X	
Lee	Sylvanus	Leviton Manufacturing Co	Leviton Manufacturing Co	X	X	X
Luo	Yuanqiu	Futurewei	Futurewei		X	
Malicoat	David	Malicoat Networking Solutions	Senko Advanced Components	X	X	X
Marques	Flavio	Furukawa Electric	Furukawa Electric		X	X
Mash	Chris	Ethernovia	Ethernovia	X		
Masuda	Takeo	OITDS/PETR	OITDA/PETR	X	X	X
McMillan	Larry	Western Digital	Western Digital		X	X
Mueller	Thomas	Rosenberger	Rosenberger	X	X	
Nakagawa	Hideki	AGC	AGC	X	X	X
Nariya	Makoto	Sony	Sony	X		
Neuling	Christian	MD Elektronik	MD Elektronik	X	X	X
New	Anthony	Prysmian Group	Prysmian Group		X	
Niihara	Yoshihiro	Fujikura	Fujikura	X	X	X
O'Gorman	Michael	Firecomms Ltd	Firecomms Ltd			X
Ogura	Ichiro	PETRA	PETRA	X	X	X
Pandey	Sujan	Huawei	Huawei	X		
Pankert	Joseph	TRUMPF Photonic Components	TRUMPF Photonic Components		X	
Pardo	Carlos	KDPOF	KDPOF	X	X	X
Parthasarathy	Raju	Tektronix	Tektronix	X	X	X
Pérez-Aranda	Rubén	KDPOF	KDPOF	X	X	X
Pimpinella	Rick	Panduit	Panduit	X	X	X
Pinzón	Plinio Jesús	KDPOF SL	KDPOF SL	X	X	X
Pitwon	Richard	Resolute Photonics	Resolute Photonics	X	X	X
Preis	Roland	MD Elektronik	MD Elektronik	X	X	X
Ramesh	Sridhar	Maxlinear	Maxlinear	X		
Regev	Alon	Keysight	Keysight	X	X	X
Reinhard	Michael	SEI Antech-Europe GmbH	SEI Antech-Europe GmbH	X	X	X
Ren	Hao	Huawei	Huawei	X		
Ruibo	Han	CMCC	CMCC	X		
Sambasivan	Sam	AT&T	AT&T	X	X	X
Savi	Olindo	Hubbell	Hubbell	X	X	X
Sawano	Hiroshi	OITDS/PETR	OITDA/PETR	X	X	X
Sayre	Edward	Teraspeed, a division of Samtec	Samtec, Inc.			X
Shigematsu	Masayuki	Sumitomo Electric	Sumitomo Electric	X	X	
Shiino	Matsato	Furukawa Electric	Furukawa Electric	X	X	X
Shukla	Priyank	Synopsys	Synopsys	X		
Silvano de Sousa	Johnathan	Gebauer & Griller	Gebauer & Griller	X	X	
Suzuki	Yasuo	KDPOF Japan	KDPOF	X	X	X
Swanson	Steve	Corning Inc.	Corning Inc.	X	X	X
Takahara	Tomoo	Fujitsu	Fujitsu		X	

Takahashi	Ryutaro	Senko Advanced Components, Inc.	Senko Advanced Components, Inc.		X	X
Takahashi	Satoshi	POF Promotion	POF Promotion	X	X	X
Takahashi	Tadashi	Nitto Denko Corporation	Nitto Denko Corporation	X	X	X
Takayama	Kazuya	Nitto Denko Corp.	Nitto Denko Corp.	X	X	X
Takefman	Michael	Inphi	Inphi		X	X
Theodoras	Jim	HG Genuine	HG Genuine		X	X
Torres	Luisma	KDPOF	KDPOF	X	X	X
Toyoda	Ryouma	Yazaki	Yazaki	X		
Ueno	Yuto	Sumitomo	Sumitomo	X	X	X
Vanderlaan	Paul	UL LLC	UL LLC	X		X
WABANABE	Yuji	AGC	AGC	X	X	X
Wang	Roy	Hewlett Packard Enterprise	Hewlett Packard Enterprise			X
Wang	Ruoxu	Huawei	Huawei		X	
Wienckowski	Natalie	General Motors	General Motors	X	X	X
Wiesner	Michael	TRUMPF Photonic Components	TRUMPF Photonic Components		X	
Withey	James	Fluke	Fluke	X	X	
Xu	Dayin	Rockwell Automation	Rockwell Automation	X		
Yonezawa	Kenji	AGC	AGC	X	X	X
Yumeng	Yang	Huawei	Huawei	X	X	X
Yurtin	John	APTIV	APTIV	X	X	X
Zou	Congshi	Huawei	Huawei	X	X	

Tuesday, 10th November 2020, 12:00 (noon) UTC

The meeting was called to order at approximately 12:11 UTC Tuesday 10th November 2020
Chaired by Robert Grow, IEEE P802.3cz Task Force Chair.

Mr. Grow presented *Agenda and General Information* (https://www.ieee802.org/3/cz/public/nov_2020/Agenda_3cz_01_1120.pdf). Mr. Grow presented the agenda for the meeting. The agenda was approved by unanimous consent.

The minutes of the previous IEEE P802.3cz Task Force Ad hoc meeting were approved by unanimous consent.

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

Mr. Grow asked the audience if there are someone that is not familiar with the IEEE general rules presentation. No one responded. Mr. Grow went through the general rules' presentation briefly.

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. Pérez-Aranda had requested to continue with the presentation *OMEGA baseline proposal* (https://www.ieee802.org/3/cz/public/nov_2020/perezaranda_3cz_01_1120_baseline.pdf).

The presentation described a PCS and PMA baseline proposal for 2.5, 5, 10 and 25 Gb/s. It did not include EEE modifications or PMD, medium or MDI baseline proposal. A number of questions were asked about the presentation and Mr. Pérez-Aranda provided answers.

Mr. Pimpinella had requested to present *Choosing the lower cost optical connector* (https://www.ieee802.org/3/cz/public/nov_2020/pimpinella_3cz_01a_1120.pdf).

The presentation described the complexity of LC and EBO connectors and compare them in terms of cost. Mr. Pimpinella presented a straw poll to sense opinion to support EBO or PC connectors or the lack of preference. A number of questions were asked about the presentation and Mr. Pimpinella provided answers.

Tuesday, 17th November 2020, 12:00 (noon) UTC

Mr. Grow presented *Agenda and General Information*

(https://www.ieee802.org/3/cz/public/nov_2020/Agenda_3cz_01_1120.pdf). Mr. Grow presented the agenda for the meeting. The agenda was approved by unanimous consent.

Mr. Grow asked the audience if there are someone that is not familiar with the IEEE general rules presentation. No one responded. Mr. Grow went through the general rules' presentation briefly.

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. Pérez-Aranda had requested to present *OMEGA PHY naming*

(https://www.ieee802.org/3/cz/public/nov_2020/perezaranda_3cz_02b_1120_phyname.pdf).

The presentation goes through the PHY naming scheme in IEEE 802.3 and presented different options to name the PHY in the 802.3cz TF. Mr. Pérez-Aranda proposed nGBASE-AU as PHY name. A number of questions were asked and Mr. Pérez-Aranda provided answers.

Mr. King had requested to present *A comparison between 850 nm and 980 nm VCSEL for automotive datacom* (https://www.ieee802.org/3/cz/public/nov_2020/king_3cz_01_1120.pdf). The

presentation showed the impact of drive current, variability in wearout degradation and thermal resistance on VCSEL failure counts. The presentation also showed a comparison between 850 and 980 nm VCSEL. A number of questions were asked and Mr. King provided answers.

Mr. Dittmann had request to present *MDI definition selection based on rational facts*

(https://www.ieee802.org/3/cz/public/nov_2020/dittmann_3cz_01_1120_MDI-definition.pdf). The presentation showed the history of fiber optics in Automotive and requested to present material to support with facts the technical and economical feasibility of using butt coupling and Expanded Beam Optics in automotive. Mr. Dittmann proposes to include in P802.3cz the MDI definition. A number of questions were asked and Mr. Dittmann provided answers.

With no further business to conduct by today, the meeting was recessed at approximately 14:06 UTC.

Wednesday, 18th November 2020, 12:00 (noon) UTC

Mr. Grow presented *Agenda and General Information*

(https://www.ieee802.org/3/cz/public/nov_2020/Agenda_3cz_01c_1120.pdf). Mr. Grow presented the agenda for the meeting. The agenda was approved by unanimous consent.

Mr. Grow asked the audience if any participants were not familiar with the IEEE meeting slide set. No one responded. Mr. Grow went through the slides briefly.

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. Grow explained how the selection of Baselines should be conducted and the requirements that they should have to be adopted by a counted TF motion.

Mr. Grow opened the floor for Straw Polls and Motions.

Mr. Pimpinella requested the following Straw Poll, modified from the last slide of

https://www.ieee802.org/3/cz/public/nov_2020/pimpinella_3cz_01a_1120.pdf :

Straw Poll #1:

- A. I would support a butt coupled optical MDI
- B. I would support an expanded beam optical MDI
- C. I have no preference

A discussion about the Straw Poll was opened. A number of TF members asked Mr. Pimpinella to add an extra option to ask for more information, and also change slightly options A and B. Mr. Pimpinella changed the Straw Poll to the following:

Straw Poll #1:

- A. I would support a butt coupled interface at TP2
- B. I would support an expanded beam interface at TP2
- C. I have no preference
- D. I need more information

Straw Poll was conducted by using the Webex Polling tool. The results were the following:

A: 3 B: 9 C:15 D:35 No Answer: 8 Participants: 70

The following motion was moved by Rubén Pérez-Aranda:

Motion #1: Adopt the PCS and PMA baseline proposal for the data-rates 2.5, 5, 10 and 25 Gb/s, as described in the presentation: Rubén Pérez-Aranda, "802.3cz baseline proposal" (perezaranda_3cz_01a_1120_baseline.pdf).

The Motion #1 was seconded by Rick Pimpinella. The motion was considered Technical and needed 75% of positive votes to pass.

The voting was conducted by Roll Call. The result was the following:

Yes: 29 No: 0 Abstention: 8

The motion passed.

IEEE P802.3cz Multi-Gigabit Optical Automotive Ethernet TF 10, 17, 18 November 2020				Motion 1	
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.				Y	29
				N	0
				A	8
Last Name	First Name	Employer	Affiliations		Vote
Abbott	John	Corning	Corning		y
Aono	Michikazu	Yazaki	Yazaki		y
Araki	Nobuyasu	Yazaki	Yazaki		a
Choudhury	Mabud	OFS	OFS		y
D'Ambrosia	John	Futurewei (U.S. Subsidiary of Huawei)	Futurewei Technologies		a
Fukuoka	Takashi	AutoNetworks Technologies Ltd.	AutoNetworks Technologies Ltd.; Sumitomo Electric Industries, Ltd.		y

Goto	Hideki	Toyota Motor Corporation	Toyota Motor Corporation		y
Hartmann	Stephan	Siliconally GmbH	Siliconally GmbH		y
Hess	Dave	Cord Data	Cord Data		y
HIRASE	Hidenari	AGC	AGC		a
Hyakutake	Yasuhiro	Adamant Namiki Precision Jewel	Adamant Namiki Precision Jewel		y
Isono	Hideki	FOC	FOC		y
KAGAMI	Manabu	NI Tech	NI Tech		y
Koeppendoerfer	Erwin	Leoni	Leoni		y
Kondo	Taiji	MegaChips	MegaChips		a
Kumada	Taketo	YAZAKI	YAZAKI		a
Malicoat	David	Malicoat Networking Solutions	Senko Advanced Components		y
Marques	Flavio	Furukawa Electric	Furukawa Electric		y
Masuda	Takeo	OITDS/PETR	OITDA/PETR		y
Ogura	Ichiro	PETRA	PETRA		y
Pardo	Carlos	KDPOF	KDPOF		y
Pérez-Aranda	Rubén	KDPOF	KDPOF		y
Pimpinella	Rick	Panduit	Panduit		y
Pitwon	Richard	Resolute Photonics	AIO CORE		y
Preis	Roland	MD Elektronik	MD Elektronik		y
Regev	Alon	Keysight	Keysight		y

Sayre	Edward	Teraspeed, a division of Samtec	Samtec, Inc.		y
Shiino	Matsato	Furukawa Electric	Furukawa Electric		y
Swanson	Steve	Corning Inc.	Corning Inc.		y
Takahashi	Satoshi	POF Promotion	POF Promotion		y
Takahashi	Tadashi	Nitto Denko Corporation	Nitto Denko Corporation		y
Takayama	Kazuya	Nitto Denko Corp.	Nitto Denko Corp.		y
Takefman	Michael	Inphi	Inphi		a
Theodoras	Jim	HG Genuine	HG Genuine		a
Torres	Luisma	KDPOF	KDPOF		y
Vanderlaan	Paul	UL LLC	UL LLC		y
WABANABE	Yuji	AGC	AGC		a

The following motion was moved by Carlos Pardo:

Motion #2: Adopt to use nBASE-AU as the port name for the initial draft development.

The Motion #2 was seconded by John Abbot. The motion was considered Technical and needed 75% of positive votes to pass.

Mr. Grow asked for any opposition to the motion. No opposition to the motion was found. The motion passed by unanimous consent.

Mr. Torres asked to present *Chief-Editor's Report* (https://www.ieee802.org/3/cz/public/nov_2020/torres_3cz_01_1120_ce_report.pdf). The presentation describes the high complexity of the 802.3cz Draft project, some editorial directives and announces that the Draft 1.0 will be available by January 8th for TF commenting. The content of Draft 1.0 will include the baseline approved in Motion #1 and placeholders for the technical content that has not been adopted yet. A number of questions were asked about the presentation and Mr. Torres provided answers.

Mr. Grow asked Mr. Torres to chair the meeting. Mr. Torres accepted to chair the meeting.

Mr. Grow asked to present *P802.3cz Timeline* (https://www.ieee802.org/3/cz/public/nov_2020/grow_3cz_01b_1120.pdf). The presentation describes several possible Timelines for the project.

The following motion was moved by Bob Grow:

Motion #3: Adopt Timeline Alternative #2 (as modified during discussion), from the presentation: "P802.3cz Timeline" (grow_3cz_01b_1120.pdf)

The Motion #3 was seconded by Rubén Pérez-Aranda. The motion was considered Technical and needed 75% of positive votes to pass.

Mr. Torres asked for any opposition to the motion. No opposition to the motion was found. The motion passed by unanimous consent.

Mr. Torres then turned chairing the meeting back to Mr. Grow.

Mr. Torres reviewed with the Task Force group the ToDo list (https://www.ieee802.org/3/cz/P802_3cz_todo_01b.xlsm). Contributions about Eye Safety are expected by December 1st to be presented by Mr. Pérez-Aranda and Mr. Rick Pimpinella. A contribution about Butt Coupling is also expected by December 15th to be presented by Mr. Fukuoka. Mr. Swanson volunteered to lead development of a consensus presentation to the TF about optical channel components requirements, Mr. Dittmann, Mr. Pimpinella, Mr. Choudhury, Mr. O'Gorman and Mr. Fukuoka asked to join the effort. The ToDo list was updated consequently.

Mr. Grow indicated to the TF than he had discussed with the WG Chair (Mr. David Law) the appointment of a P802.3cz Task Force Vice Chair. Mr. Law agreed this would be a prudent thing to do. If anyone wants to discuss this, please contact Mr. Grow directly.

With no further business to conduct, the meeting was adjourned at approximately 14:11 UTC.

Recording Secretary: Luisma Torres.