

## MultiGigabit Automotive Ethernet Study Group (NGAUTO) Minutes

IEEE 802.3 Interim  
Huntington Beach, CA  
January 2017

### January 11<sup>th</sup> 2017

- 1:32pm IEEE 802.3 Working Group Chair (David Law) starts meeting
- 1:34pm David Law appoints Curtis Donahue as meeting secretary
- 1:35pm David Law performs confirmation of the Study Group Chair
- 1:35pm **[Motion #1] Confirm Steven Carlson as the Chair of the MultiGigabit Automotive Study Group**
- Moved by John D’Ambrosia
  - Seconded by George Zimmerman
  - Vote:

Yes - 47	No - 0	Abstain - 2
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  - Motion passes
- 1:40pm Study Group Chair, Steven Carlson, enters room
- 1:41pm Chair presents this meeting’s [agenda](#)
- 1:46pm **[Motion #2] Approve agenda**
- Moved by Natalie Wienckowski
  - Seconded by Phillip Brownlee
  - Passed by voice, without opposition
- 1:48pm Chair asks if anyone is from the press
- No one acknowledges
- 1:50pm Chair discusses goals for this meeting
- Develop a set of objectives for the project
  - Develop responses for the CSD (Criteria for Standards Development)
  - Develop a PAR
  - Review presentation substantiating the above
  - Lay the ground work for the next meeting
- 2:01pm Chair reads “Participation in IEEE 802 Meetings” slide
- Chair asked if Study Group has any questions
  - No one acknowledges
- 2:39pm [Review of the 5 Criteria](#) by Howard Frazier, presented by John D’Ambrosia
- 3:04pm The Chair calls for 15-minute break
- 3:22pm Study Group reconvenes
- 3:24pm [Ad Hoc Report](#) by George Zimmerman
- 3 Ad Hoc Calls (11/23/16, 12/7/16, 12/21/16)
  - Meetings every two weeks. Wednesdays 7-9am PST
- 3:27pm **[Motion #3] Approve minutes of IEEE 802.3 Multigig Automotive Ethernet Study Group ad hoc minutes from 11/23, 12/7, and 12/21**
- Moved by George Zimmerman
  - Seconded by Natalie Wienckowski
  - Motion passes by voice, without opposition
- 3:31pm [The PAR form demystified](#) by David Law

- 3:42pm [Presentation on Cost Discussions to IEEE 802.3 Working Group](#) by Michael Lindsey, presented by David Law
- 4:06pm [Multi-Gig Ethernet for Automotive](#) by Natalie Wienckowski
  - Presents results of a survey conducted during NGAUTO Study Group Ad Hoc
  - Results include rate, channel type, temperature, etc.
- 4:29pm [GM's Multi-Gig Ethernet Objectives](#) by Natalie Wienckowski
  - Presents GM specific interest in NGAUTO work
- 4:43pm [Non-controversial Objectives](#) by Steven Carlson
- 4:49pm Study Group is recessed until 9:00am January 12th

**January 12<sup>th</sup> 2017**

- 9:00am Study Group reconvenes
- 9:01am [Glass Optical Fibers for Harsh Environments](#) by Dan Whelan
  - Discussion:
    - Optical fiber is more successful in Non-North American automotive markets
    - History of optical fiber channels in GM
- 9:32am [Technical Feasibility of 10Gbps PHYs on 1 pair SFTP](#) by George Zimmerman
- 9:49am [Technical Feasibility of 10G over 1 TP](#) by Kamal Dalmia
  - Discussion:
    - PHY latency
    - Startup time
- 10:20am Chair discusses the possibility of an out of cycle interim for NGAUTO
  - The 802.3 Working Group can only vote on transitioning a Study Group to Task Force during a plenary
  - The Study Groups PAR and CSD would need to be circulated by February 10<sup>th</sup> to be considered by Working Group at March 2017 IEEE 802 Plenary
- 10:30am The Chair calls for 15-minute break
- 10:54am Study Group reconvenes
- 10:55am [Proposed PHY Objectives](#) by George Zimmerman
  - Discussion:
    - Technical feasibility of 10G over single shielded twisted-pair
    - Possibly objectives for single unshielded twisted-pair at 2.5G or 5G
    - EMC and immunity concerns for UTP at 2.5G+
    - Broad market potential for more than 1 pair
- 12:00pm The Chair calls for a 90 minute break
- 1:34pm Study Group reconvenes
- 1:34pm [Objectives Ideas](#) by Matthias Fritsche
  - Discussion:
    - Broad Market potential of single twisted-pair with longer reach
- 2:01pm **Strawpoll: Who in the room believes the PAR and CSD could be completed by the end of this week?**
  - Vote:
 

Yes - 7	No – Not counted, 2-3x greater than 'Yes' votes
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- 2:07pm Study Group is recessed until 3:15pm
- 3:15pm Study Group reconvenes
- 3:16pm Chair discusses [PAR draft](#)

- Discussion:
    - Use of the term “Automotive Ethernet” in the project title
- 3:30pm Chair discusses [CSD draft](#)
- 3:50pm [NGAUTO Objectives – How to Move Forwards](#) by Peter Jones
- Discussion:
    - Optional power distribution techniques
    - How this Study Group could be voted to be a Task Force
    - Objective adoption
- 4:48pm [Draft Objectives for NGAUTO by Masood Shariff](#)
- Discussion:
    - Suggest using Category 8 performance as a starting point for Cabling/PHY objective
- 5:18pm Study Group is recessed until 8:00am January 13th

### January 13<sup>th</sup>

- 8:01am Study Group reconvenes
- 8:14am **[Motion #4] Move that the IEEE Multi-Gig Automotive Ethernet PHY Study Group (NGAUTO) adopt the PAR text as shown in NGAUTO\_PAR\_DRAFT\_01\_0117.pdf**
- Move by George Zimmerman
  - Seconded by Natalie Wienckowski
  - Technical ( $\geq 75\%$ )
  - Vote:
 

Yes – 20	No – 0	Abstain – 4
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  - Motion passes
- 8:16am **[Motion #5] Move that the IEEE Multi-Gig Automotive Ethernet PHY Study Group (NGAUTO) adopt the PAR text as shown in NGAUTO\_CSD\_DRAFT\_01\_0117.pdf**
- Move by Natalie Wienckowski
  - Seconded by Peter Jones
  - Technical ( $\geq 75\%$ )
  - Vote:
 

Yes – 24	No – 0	Abstain – 5
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  - Motion passes
- 8:18am [Multi-gig Automotive Ethernet PHY Study Group Proposed Objectives](#) by Natalie Wienckowski
- 8:27am **[Motion #6] Move that the IEEE Multi-Gig Automotive Ethernet PHY Study Group (NGAUTO) adopt the objectives as shown in Wienckowski\_3NGAUTO\_03a\_0117.pdf, slide 2.**
- Moved by Natalie Wienckowski
  - Seconded by Peter Jones
  - Technical ( $\geq 75\%$ )
  - Vote:
 

Yes – 26	No – 0	Abstain – 6
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  - Motion passes
- 8:34am **[Motion #7] Move that the IEEE Multi-Gig Automotive Ethernet PHY Study Group (NGAUTO) adopt the objectives as shown in Wienckowski\_3NGAUTO\_03a\_0117.pdf, slide 3.**
- Moved by Natalie Wienckowski
  - Seconded by George Zimmerman

- Technical ( $\geq 75\%$ )
- Discussion:
  - Proposed objective specifies a 15 meter shielded twisted pair link segment
  - Presentations this week listed a 10 meter STP link segment.

- Vote:

Yes – 14	No – 6	Abstain – 16
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- Motion fails

9:00am **[Strawpoll] If the Study Group were to change objective 9 on slide 3 of Wienckowski\_3NGAUTO\_03a\_0117.pdf from ‘15 meter and four inline connectors’ to ‘10 meter and two inline connectors’, would you support that objective?**

- Formal count was not taken
- Less support for this

9:02am **[Strawpoll] Would you support objective 10 on slide 3 of Wienckowski\_3NGAUTO\_03a\_0117.pdf?**

- Vote:

Yes – 14	No – 4
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9:02am **[Strawpoll] Would you support objective 11 on slide 3 of Wienckowski\_3NGAUTO\_03a\_0117.pdf?**

- Vote:

Yes – 16	No – 4
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9:05am **[Motion #8] Move that the IEEE Multi-Gig Automotive Ethernet PHY Study Group (NGAUTO) adopt objective 10 as shown in Wienckowski\_3NGAUTO\_03a\_0117.pdf, slide 3.**

- Moved by Natalie Wienckowski
- Seconded by Peter Jones
- Technical ( $\geq 75\%$ )
- Discussion:
  - Concerns that it may not be technically feasible

- Vote:

Yes – 21	No – 3	Abstain – 10
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- Motion passed

9:14am **[Motion #9] Move that the IEEE Multi-Gig Automotive Ethernet PHY Study Group (NGAUTO) adopt objective 11 as shown in Wienckowski\_3NGAUTO\_03a\_0117.pdf, slide 3.**

- Moved by Natalie Wienckowski
- Seconded by Peter Jones
- Technical ( $\geq 75\%$ )

- Vote:

Yes – 28	No – 0	Abstain – 8
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- Motion passed

9:29am Study Group is recessed until 10:10am

10:10am Study Group reconvenes

10:12am Natalie Wienckowski and George Zimmerman present a modified objective #9 and #10

10:17am **[Motion #10] Move that the IEEE Multi-Gig Automotive Ethernet PHY Study Group (NGAUTO) adopt objectives 9 and 10 as amended and shown in Wienckowski\_3NGAUTO\_03a\_0117.pdf, slide 4.**

- Moved by Natalie Wienckowski

- Seconded by Peter Jones
- Technical ( $\geq 75\%$ )
- Vote:

Yes – 20	No – 7	Abstain – 12
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- Motion fails

10:25am Chair opens the floor for Study Group discussion on how the NGAUTO can build consensus to adopt further objectives

10:36am [Glass Optical Fiber Objective](#) by Mabud Choudhury

10:39am **[Strawpoll] Do you support glass optical fiber objective at this time?**

- Vote:

Yes – 9	No – 12	Abstain – 17
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10:46am **[Strawpoll] Would you support glass optical fiber objective in the future based on additional contributions/data?**

- Vote:

Yes – 16	No – 3	Abstain – 16
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10:50am Chair opens the floor for Study Group discussion on how the NGAUTO can build consensus to adopt further objectives

11:02am The Chair calls for a 15 minute break

11:22am Study Group reconvenes

11:23am Chair announces an out of cycle interim for the Study Group

- Details to be released at a later time

11:25am **[Motion #11] Motion to adjourn**

- Moved by Brett McClellan
- Seconded by Mehmet Tazebay
- Motion passes by voice

Meeting Attendees



802.3 NGAUTO Sign-In Sheet - January 2017

Name	Company	Affiliation	Wed PM	Thu	Fri
STEVE CARLSON	HSD	BOSCH	SPC	SPC	SPC
DAVID LAW	HPE	HPE	DL	DL	DL
Curtis Donahue	UNH-IOL	UNH-IOL	CKD	CKD	CKD
Alan Flatman	LAD Technologies	LAD Technologies	AF	AF	AF
George Zimmerman	CMS Consulting	ADI, Aquantia, Cisco, Commscope, LTC	MJG	MJG	MJG
John D'Ambrosio	Futurewei	sub of Futurewei	JD		
Amin Bar-Niv	AQUANTIA	AQUANTIA	AB	AB	AB
MASOOD SHARIF	COMMSCOPE	COMMSCOPE	MAS	MAS	
Jens Gotttron	Siemens	Siemens	JG		
Steffen Grober	P+F	P+F	G.		
Natalie Wienckowski	General Motors	GM	NW	NW	NW
SUSAN PANDEY	NXP	NXP	SP	SP	SP
Helge Zurev	Continental	Continental	HZ	HZ	
Olaf Grau	Robert Bosch	Robert Bosch	OG	OG	OG
YONG KIM	Broadcom	Broadcom	YK		
KAMAL DALMIA	Aquantia	Aquantia	KD	KD	
Ramin Shirani	Aquantia	Aquantia	RS		
Bryan Moffitt	Commscope	Commscope	BM	BM	BM
Zahy Madgar	Valens	Valens	ZM	ZM	ZM
ERIC DiBisso	TE	TE	ED	ED	ED
MIKE GARDNER	Molex	Molex	MG	MG	MG
Sungmye Yoo	Molex	Molex	SY	SY	SY
Ken Neumann	Cisco	Cisco	KN	KN	
BRYAN SPARROW	LEVITON	LEVITON	BS	BS	BS
Alex Lin	Mediatek	Mediatek	AL	Alex	Alex



802.3 NGAUTO Sign-In Sheet - January 2017

Name	Company	Affiliation	Wed PM	Thu	Fri
Mandeep Chedda	Microsemi	Microsemi	<del>MC</del>	<del>MC</del>	
Frederic THEPOT	INTEL	INTEL	FT		
Toshiyuki Moritake	JAE	JAE	TM	TM	
Ron Muir	JAE	JAE	RM	RM	
Yasuhito Hyakutake	AdamantCo, Ltd	AdamantCo, Ltd	<del>YH</del>	<del>YH</del>	<del>YH</del>
Takeo MASUDA	OITDA	OITDA	TK	TK	
Jason Sisk	UNH-IOL	UNH-IOL	JS	JS	JS
Daniel Neme	UNH-IOL	UNH-IOL	DN	DN	DN
Tim Beaulieu	UNH-IOL	UNH-IOL	TB	TB	TB
CARLOS PARDO	KDPOF	KDPOE	<del>CP</del>	<del>CP</del>	
Marc Dupuis	Web Ind.	Web Ind.	MD	MD	
BOB VOSS	PANDUIT	PANDUIT	BV		
Phillip Brownlee	TDK	TDK	PB	PB	
DAVID J. RODGERS	TELEDYNELEYBER		DR		
DAVID BRANT	ROCKWELL AUTOMATION	ROCKWELL AUTOMATION	DB	DB	DB
MARTIN ZIELINSKI	EMERSON AUTOMATION SOLUTIONS		MZ		
Ching-Yao Su	Realtek	Realtek	Su	Su	Su
Lisa Ward	Rohde & Schwarz		LW		
Dennis Kowitz	Chemoans	Chemoans	DK		
Shaoan Dai	Marvell	Marvell	SD	SD	SD
Peter Wu	Marvell	Marvell	PW	PW	PW
Dance Wu	Marvell	Marvell	DW	DW	DW
MARCEL MEDINA	SPIRINT	SPIRENT	MM	MM	
MABUD CHOUDHURY	OFS	OFS	MC	MC	MC
Daniel WHELAN	OFS	OFS	DW	DW	



