

Unconfirmed Meeting Minutes: IEEE 802.3 Ethernet for Automotive Imaging Sensors
(ISAAC) Study Group
October 4, 2023
802.3 ISAAC Study Group Interim (telephonic)

Prepared by George Zimmerman

IEEE 802.3 Ethernet for Automotive Imaging Sensors (ISAAC) Study Group meeting convened at 6:01 AM (PST (Pacific Standard Time, UTC-3), Wednesday, October 4, 2023, by Jon Lewis, IEEE 802.3 Ethernet for Automotive Imaging Sensors (ISAAC) Study Group Chair.

Attendance is listed in Appendix A

ADMINISTRATIVE MATTERS

Presentation: [agenda ISAAC 1a 100423.pdf](#)

Presenter: Jon Lewis, Chair.

The Chair reviewed the agenda. Mr. Lewis turned to presentation [agenda ISAAC 1a 100423.pdf](#).

The minutes from 9/27 are not yet posted, so their approval is deferred until the next meeting.

The Chair then resumed the review of presentation [agenda ISAAC 1a 100423.pdf](#):

- Mr. Lewis noted that there should be no recording or photography without permission.

Mr. Lewis asked if anyone was attending from the press including those who would run a public blog on this meeting – none responded.

Motion #1: Approve the agenda from [agenda_ISAAC_1a_100423.pdf](#)

Approved by unanimous consent

Motion #2: Approve the minutes from 14 September 2023 at https://www.ieee802.org/3/ISAAC/public/091423/Unconfirmed_minutes_ISAAC_091423.pdf

**Approved by unanimous consent
(6:02AM)**

Mr. Lewis then continued review of the presentation, Big Ticket items for this meeting, to develop PAR, 5 Criteria, and Objectives for ISAAC.

Mr. Lewis reviewed the goals for the meeting, access to the reflector and website, and ground rules.

Mr. Lewis then gave instructions on how study group votes on motions would be taken for electronic meetings (slide 9) and reserved the right to take informative straw polls by working group voters. He asked for questions or comments. Mr. Dalmia asked questions regarding the straw poll voting procedure and asked that his objection to the process of requesting informative polls by voting group members be noted in the minutes. The chair asked that if such a situation would come up, Mr. Dalmia would be free to object then.

Mr. Lewis moved on reviewing the links to the rules.

IEEE Patent Policy, Mr. Lewis asked if anyone in the meeting had not reviewed the patent policy or would like him to review the patent policy by reading it aloud. None responded, therefore, he showed the patent policy slides for patent policy for study groups from [agenda ISAAC 1a 100423.pdf](#). (06:17 PDT)

Mr. Lewis asked if anyone had not seen the IEEE-SA copyright policy slide. None responded. He showed the IEEE SA copyright slides from [agenda ISAAC 1a 100423.pdf](#)

Mr. Lewis asked if anyone had not seen the IEEE-SA participant behavior policy slide. None responded. He showed the slide "Participant behavior" from [agenda ISAAC 1a 100423.pdf](#), and read the slide.

Mr. Lewis asked if anyone had not seen the IEEE-SA participation policy slides on "individual process". None responded. Mr. Lewis showed and read the "individual process" slide ("Participants ... shall act independently..."). Mr. Lewis asked if anyone objected to the individual process and if so to leave the meeting. There were no participants that left the meeting.

Mr. Lewis advised the group of the IEEE SA (anti) dominance policy, showed, and read the slide "...activities shall allow the fair & equitable consideration" slide. There were no questions.

Attendance, Mr. Lewis advised the group of the IEEE meeting attendance tool and procedures.

Mr. Lewis reviewed the standards development process for IEEE and where this study group is in the process.

LIAISONS

The Chair moved to liaisons and noted that there were no liaisons for the Study Group at this time.

Mr. Lewis reviewed the procedure and time constraints for presentations for this meeting.

PRESENTATIONS

The Chair then moved to the presentations for the meeting. (6:26AM)

Title: [PAR Responses](#)

URL: https://www.ieee802.org/3/ISAAC/public/100423/PAR_ISAAC_01a_092723.pdf

Presenter: Jon Lewis, Dell (as Chair)

Discussion: The presenter reviewed his view of where the unapproved PAR responses were and asked for comments and changes. Some participants questioned the inclusion of 25Gbps in the scope, and the presenter clarified he intended to deal with that issue later. The presenter clarified that at this point the PAR responses had not been voted in, and this was his interpretation of where consensus might lie. A participant noted that slides could be marked draft, to avoid confusion with something the study group had voted on.

There was some discussion on the stakeholders section of the PAR, generally considering broadening the list. Minor edits were made.

There was considerable discussion on the draft of item 7.1, calling out potentially overlapping standards and industry specifications, noting a change to the answer (from NO to YES), and the inclusion of two references. Participants offered various opinions on what else might be listed, including other amendments to IEEE Std 802.3. The 802.3 WG chair, Mr. Law, clarified that IEEE 802.3 was the standard (PARs were for projects to amend the standard) and that 'other standards' referred to 'other than IEEE Std 802.3', so it would not be proper to include other amendments or existing clauses in IEEE Std 802.3. The discussion moved on without consensus on section 7.1.

There was discussion on PAR item 7.2 (joint development), and a participant questioned what would happen if another group requested joint development. Mr. Law responded that the 802.3 working group would have to want to proceed with a joint development as well, and that at this time he has had no requests for joint development.

The presentation concluded without reviewing the CSDs so other presentations could be heard.

(7:14AM)

Title: PAR Items 7.1, 7.2 and CSD item Distinct Identity

URL: https://www.ieee802.org/3/ISAAC/public/100423/Dalmia_ISAAC_01_10042023.pdf

Presenter: Kamal Dalmia, Aviva Links, Inc.

Discussion: The presenter discussed what he believed were projects with similar scope in ASA 2.0 and suggested that we may wish to consider other standards as well, including amendments to 802.3 such as IEEE Std 802.3ch.

During discussion, discussion continued on PAR Item 7.1, with repeated clarification that “the standard” is IEEE 802.3 and therefore, other clauses were not appropriate for inclusion. There was also discussion of the response to the CSD for distinct identity. In particular, several participants voiced opinions (some dissenting with) on the presenter’s opinion that the CSD distinct identity criterion applied to standards outside of IEEE 802.

Time expired on this presentation and discussion, and the chair moved to a previously announced 5-minute break.

BREAK: (7:40 – 7:45AM).

The meeting resumed at 7:45AM.

Title: Considerations for PAR, CSD and Objectives

URL: https://www.ieee802.org/3/ISAAC/public/100423/matheus_ISAAC_01c_10042023.pdf

Presenter: Kirsten Matheus, BMW Group AG

Discussion: The presenter discussed whether 25 Gbps should be in the PAR scope, concluding it should not be. The presentation addressed whether >10Gbps was needed for cameras and radars, previously presented market estimates, and whether asymmetry was needed for backbone links. The presenter concluded that the PAR scope needed to have a speed limit, and that it be 10Gbps or less.

There was little time left for discussion, but in brief discussion some participants disagreed with the presenter’s view.

Time expired and the chair moved to the next presentation.

(8:08AM)

Title: Greater than 10G for the PAR

URL: https://www.ieee802.org/3/ISAAC/public/100423/Lo_01_1023.pdf

Presenter: William Lo, Axonne

Discussion: The presenter discussed reasons 25 Gbps should be in the PAR scope. He presented: use cases for rates greater than 10Gbps (particularly up to 25Gbps), other standards that provided > 10G speeds, and some overview of technical approaches with small incremental effort to standardize higher speeds. He recommended an approach that was speed-agnostic, asking that the PAR scope say “a higher data rate in one direction and a lower data rate in the other direction”.

A participant asked in discussion about line rates vs. payload data rates. Another individual asked whether a future project could address other rates. Participants in discussion both supported and opposed the presenter’s view of including higher rates.

Time expired and the chair moved on.

(8:30 AM)

The chair then moved to take a straw poll (of all in the call). There was no objection:

Straw Poll #1:

I support the following selection in the PAR scope:

“Physical Layer specifications and management parameters for electrical media and operating conditions optimized for automotive end-node cameras for operation up to <selection> in one direction and a lower data rate in the other direction”

Asking respondents to Pick One for the <selection>

10 Gbps: 29

25 Gbps: 19

“with a higher data rate”: 12

The chair took the poll using the zoom polling tool, and then presented the roll call results for participants to review. Participants who could not respond via zoom were added to the roll during review. The resulting roll call vote is listed as Appendix B.

The chair noted that the straw poll indicated there was no consensus on key PAR scope text and therefore, the PAR would not be presubmitted to the other 802 working groups by October 12 as required by 802 rules.

Future Meetings

The chair reviewed future meetings, he suggested the week of Oct 23rd or the 30th if there was a desire to meet. Based on feedback, he asked if there were objections to meeting October 25 at the same time slot (6AM-8:50AM Pacific).

Based on this, the Chair announced an interim Study Group meeting (where motions are permitted) from 8AM to 10:50AM central time (6AM-8:50AM pacific), and clarified that the meeting was to build consensus.

The Chair entertained a motion to have the meeting October 25.

MOTION:

Move to hold an interim meeting of the ISAAC Study Group, October 25, 8AM-10:50AM Central Time.

M: Chad Jones

S: Natalie Wienckowski

During discussion, it was noted that the Chair had the power to call a meeting, without a motion, to progress the work and build consensus.

The chair asked for unanimous consent and noted at least one objection.

Before moving to a roll call vote, the chair noted that time had elapsed.

The mover & seconder withdrew the motion.

The Chair announced the next meeting on October 25, 8AM-10:50AM Central Time (6AM-8:50AM pacific)

ADJOURNMENT

Having exhausted the time allotted, Mr. Lewis adjourned the meeting at 8:57 AM PST.

Appendix A: Attendees at the IEEE 802.3 Ethernet for Automotive Imaging Sensors (ISAAC) Study Group Meeting, October 4, 2023 (74)

Name	Employer	Affiliation	IMAT	Zoom
Ahuja , Ramanjit		ON Semiconductor		X
Akin, Sami	Volkswagen AG	Volkswagen Ag	X	X
Amrani, Yarden	NVIDIA	NVIDIA	X	X
Arndt, Christoph		Continental Automotive Technologies GmbH	X	X
Baggett, Tim	Microchip Technology, Inc.	Microchip Technology, Inc.	X	X
Bar-Niv, Amir	Aquantia Corp	Marvell	X	X
Benyamin, Saied	Aquantia	Aquantia	X	X
Beruto, Piergiorgio	onsemi	onsemi	X	X
Boyer, Rich	Aptiv - Signal and Power Solutions	Aptiv Signal and Power Solutions	X	X
Burmann, Christian		NXP Semiconductors	X	X
Chini, Ahmad	Broadcom Corporation	Broadcom Corporation	X	X
Dalmia, Kamal		AVIVA Links	X	X
D'Ambrosia, John	Futurewei Technologies, U.S. Subsidiary of Huawei	Futurewei Technologies, U.S. Subsidiary of Huawei	X	X
de Koos, Andras	Microchip Technology Inc	Microchip Technology, Inc.	X	X
Dubey, Shivesh		NXP Semiconductors		X
Estrakh, Daniel		Valens Semiconductor	X	X
Fellhauer, Felix	Robert Bosch GmbH	Robert Bosch GmbH	X	X
Ferretti, Vincent	Corning Incorporated	Corning Incorporated	X	X
Feyh, German	Broadcom Corporation	Broadcom Corporation	X	X
Fuller, Paul		Marvell	X	X
Gauthier, Claude	NXP Semiconductors	NXP Semiconductors	X	X
Gerl, Markus	MD Elektronik	MD Elektronik	X	X
Glanzner, Martin	SEI ANTech-Europe GmbH	SEI Automotive Europe GmbH	X	X
Goel, Sachin		Aviva Links Inc	X	X
Gorshe, Steven Scott	Microchip Technology, Inc.	Microchip Technology, Inc.	X	X
Haasz, Jodi	ieee sa	IEEE Standards Association (IEEE-SA)	X	X
Healey, Adam	Broadcom Corporation	Broadcom Corporation		X
Hogenmueller, Thomas	Robert Bosch GmbH	Robert Bosch GmbH	X	X
Hopf, Daniel	Continental Automotive Technologies GmbH	Continental Automotive Technologies GmbH	X	X
Hoshino, Masayuki		Continental Automotive	X	X
HYAKUTAKE, YASUHIRO	Orbray Co., Ltd.	Orbray Co., Ltd.	X	X
Jones, Chad	Cisco Systems, Inc.	Cisco Systems, Inc.	X	X
Jonsson, Ragnar	Marvell Semiconductor, Inc.	Marvell	X	X
Kagami, Manabu	Nagoya Institute of Technology	Nagoya Institute of Technology (NITech)	X	X

Name	Employer	Affiliation	IMAT	Zoom
Kamiyama, Naoto		ROHM Co., Ltd.	X	X
Kikuta, Tomohiro	Orbray Co., Ltd.	Orbray Co., Ltd.	X	X
Klaus-Wagenbrenner, Jochen	CARIAD SE	CARIAD SE	X	X
Koeppendoerfer, Erwin	Leoni Kabel GmbH	Leoni Kabel GmbH		X
Kopet, Tom		onsemi	X	X
Lasry, Ariel	Qualcomm Technologies, Inc	Qualcomm Technologies, Inc	X	X
Law, David	Hewlett Packard Enterprise	Hewlett Packard Enterprise	X	X
Lefkin, Peter		MIPI Alliance		X
Lewis, Jon	Dell Technologies	Dell Technologies	X	X
Liebl, Christian		Continental Automotive Systems AG	X	X
Lo, William	Marvell Semiconductor, Inc.	Axonne Inc.	X	X
Lou, Wei		Broadcom Corporation	X	X
mash, chris	Nupero Ltd	Ethernovia Inc	X	X
Matheus, Kirsten	BMW Group	BMW Group	X	X
Muma, Scott		Microchip Technology, Inc.	X	X
Nariya, Makoto	Sony Semiconductor Solutions Corporation	Sony Group Corporation	X	X
Neulinger, Christian	MD Elektronik	MD Elektronik	X	X
Ng, Hiok Tiaq		Aviva Links Inc	X	X
Nicholson, Guy		ON Semiconductor	X	X
Pal, Debajyoti		ON Semiconductor	X	X
Pardo, Carlos	Knowledge Development for POF SL	KDPOF	X	X
Reinhard, Michael	SEI ANTech-Europe GmbH	SEI ANTech-Europe GmbH	X	X
Ringel, Haim	General Motors Company	General Motors Company	X	X
Sedarat, Hossein	Ethernovia	Ethernovia	X	X
shirani, ramin	Ethernovia	Ethernovia	X	X
So, Kevin		Microchip Technology, Inc.	X	X
Souvignier, Tom	Broadcom Corporation	Broadcom Corporation	X	X
Steyer-Ege, Janik	Robert Bosch GmbH	Robert Bosch GmbH	X	X
Strohmeier, Heiko	Robert Bosch GmbH	Robert Bosch GmbH	X	X
TAKEUCHI, JUNICHI	JAE Electronics, Inc	JAE Electronics, Inc.	X	X
TAZEBAY, MEHMET	Broadcom Corporation	Broadcom Corporation	X	X
Thompson, Geoff	Independent	GraCaSi		X
Tofanicchio, Giuseppe		STMicroelectronics	X	X
Tu, Mike	Broadcom Corporation	Broadcom Corporation	X	X
Turner, Max	Ethernovia	Ethernovia	X	X
Wang, Shun-Sheng		Realtek Semiconductor Corp.	X	X

Name	Employer	Affiliation	IMAT	Zoom
Wienckowski, Natalie	None - Self-funded	IEEE member / Self Employed; Independent Consultant	X	X
Wu, Peter	Marvell Semiconductor, Inc.	Marvell Semiconductor, Inc.	X	X
Zerna, Conrad	Fraunhofer IIS	Fraunhofer IIS	X	X
Zimmerman, George	CME Consulting	CME Consulting/APL Group, Cisco, Marvell, OnSemi, SenTekSe LLC	X	X

Appendix B: Roll call on Straw Poll #1:

Name	Affiliation	Vote
Ahujua, Ramanjit	ON Semiconductor	10 Gbps
Arndt, Christoph	Continental Automotive Technologies GmbH	10 Gbps
Baggett, Tim	Microchip Technology, Inc.	with a higher data rate
Bar-Niv, Amir	Marvell	with a higher data rate
Benyamin, Saied	Aquantia	25 Gbps
Beruto, Piergiorgio	onsemi	10 Gbps
boyer, rich	Aptiv Signal and Power Solutions	10 Gbps
Burmann , Christian	NXP Semiconductors	10 Gbps
Chini, Ahmad	Broadcom Corporation	25 Gbps
Dalmia, Kamal	AVIVA Links	10 Gbps
de Koos, Andras	Microchip Technology, Inc.	10 Gbps
Estrakh, Daniel	Valens Semiconductor	25 Gbps
Ferretti, Vince	Corning Incorporated	with a higher data rate
Feyh, German	Broadcom Corporation	10 Gbps
Gauthier, Claude	NXP Semiconductors	10 Gbps
Gerl, Markus	MD Elektronik	25 Gbps
Goel, Sachin	Aviva Links Inc	10 Gbps
Gorsh, Steven	Microchip Technology, Inc.	10 Gbps
Hopf, Daniel	Continental Automotive Technologies GmbH	10 Gbps
hoshino, masayuki	Continental Automotive	10 Gbps
Hyakutake, Yasuhiro	Orbray Co., Ltd.	25 Gbps
Jones, Chad	Cisco Systems, Inc.	25 Gbps
Jonsson, Ragnar	Marvell	25 Gbps
KAGAMI, Manabu	Nagoya Institute of Technology (NITech)	with a higher data rate
Kamiyama, Naoto	ROHM Co., Ltd.	with a higher data rate
Klaus-Wagenbrenner, Jochen	CARIAD	10 Gbps
Kopet, Tom	onsemi	10 Gbps
Lasry, Ariel	Qualcomm Technologies, Inc	25 Gbps
Law, David	Hewlett Packard Enterprise	with a higher data rate
Liebl, Chistian	Continental Automotive Systems AG	25 Gbps
Lo, William	Axonon Inc.	with a higher data rate
Lou, Wei	Broadcom Corporation	25 Gbps
Mash, Chris	Ethernovia Inc	25 Gbps
Matheus, Kirsten	BMW Group	10 Gbps
Muma, Scott	Microchip Technology, Inc.	10 Gbps

Name	Affiliation	Vote
Nariya , Makoto	Sony Group Corporation	25 Gbps
Neulinger , Christian	MD Elektronik	10 Gbps
Ng, Hiok Tiaq	Aviva Links Inc	10 Gbps
Pal, Debajyoti	ON Semiconductor	10 Gbps
Pardo, Carlos	KDPOF	with a higher data rate
Reinhard, Michael	SEI ANTech-Europe GmbH	10 Gbps
Ringel, Haim	General Motors Company	with a higher data rate
Sedarat, Hossein	Ethernovia	25 Gbps
shirani, ramin	Ethernovia	25 Gbps
So, Kevin	Microchip Technology, Inc.	10 Gbps
Souvi, Tom	Broadcom Corporation	10 Gbps
Steyer-Ege, Janik	Robert Bosch GmbH	with a higher data rate
Strohmeier, Heiko	Robert Bosch GmbH	25 Gbps
Takeuchi, Junichi	JAE Electronics, Inc.	10 Gbps
Tazebay, Mehmet	Broadcom Corporation	10 Gbps
Thompson, Geoff	GraCaSi	with a higher data rate
Tofanicchio, Giuseppe	STMicroelectronics	10 Gbps
Tu, Mike	Broadcom Corporation	10 Gbps
Turner, Max	Ethernovia	25 Gbps
Wang, Shun-Sheng	Realtek Semiconductor Corp.	10 Gbps
Wu, Peter	Marvell Semiconductor, Inc.	with a higher data rate
Zerna, Conrad	Fraunhofer IIS	10 Gbps
Zimmerman, George	CME Consulting/APL Group, Cisco, Marvell, OnSemi, SenTekSe LLC	25 Gbps