Unconfirmed Meeting Minutes: IEEE 802.3 Ethernet for Automotive Imaging Sensors (ISAAC) Study Group
October 25, 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 8:02 AM (PST (Pacific Standard Time, UTC-3), Wednesday, October 25, 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_1_102523.pdf
Presenter: Jon Lewis, Chair.

The Chair reviewed the agenda. Mr. Lewis turned to presentation agenda_ISAAC_1_102523.pdf.

The chair announced that an error had been found in the minutes from 14 September, so in addition to approving the minutes from 9/27 and 4 October, those minutes would need to be reconfirmed.

Motion #1: **Approve the agenda from agenda_ISAAC_1_102523.pdf**

Approved by unanimous consent

The chair then asked whether there were any comments on the corrected minutes from 14 September – there were none.
https://www.ieee802.org/3/ISAAC/public/091423/Unconfirmed_minutes_ISAAC_091423_rev.pdf
The chair then asked whether there were any comments on the corrected minutes from 27 September – there were none.
https://www.ieee802.org/3/ISAAC/public/092723/Unconfirmed_minutes_ISAAC_092723.pdf
The chair then asked whether there were any comments on the corrected minutes from 4 October – there were none.
https://www.ieee802.org/3/ISAAC/public/100423/Unconfirmed_minutes_ISAAC_100423.pdf

The minutes (see above for files) from 14 September 2023, 27 September, and 4 October, are considered approved by unanimous consent, no comments having been received.

The Chair then resumed the review of presentation agenda_ISAAC_1_102523.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.

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 reiterated his objection to the process of requesting informative polls and requested that his objection be noted in the minutes. Mr. Dalmia stated that he believes it is a violation of the operating rules for the study group. There was some discussion in which the working group chair provided the group with his perspective that informative straw polls of study groups have been used to provide the working group with information in the past, and that such straw polls were not forbidden by the rules.

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_1_102523.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_1_102523.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_1_102523.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 the working group had received a liaison letter from ASA, which was posted on the November 2023 802.3 Working Group minutes page, and provided the following link: https://www.ieee802.org/3/minutes/nov23/incoming/20231010_IEEE_liaison_v4_signed_Redacted.pdf

Mr. Lewis reviewed the procedure and time constraints for presentations for this meeting. Because one of the planned presentations had been postponed, the chair announced he was allowing 30 minutes for each presenter, including questions and answers.

PRESENTATIONS
The Chair then moved to the presentations for the meeting. (6:23AM)

Title: On Cable Length Objectives
URL:https://www.ieee802.org/3/ISAAC/public/102523/jonsson_3ISAAC_01_102523.pdf
Presenter: Ragnar Jonsson - Marvell

Discussion: The presenter provided some views on the required cable types and reach for the proposed project, to build consensus. He emphasized that this was not a proposal. Based on previous work including input from individuals familiar with automotive OEM designs, he suggested a reach of 11 meters was a good objective, balancing complexity and needs.

There was discussion supporting the 11m, potential changes in automotive designs, and discussion on changes on the wording to include rates. The presenter stated that he welcomes discussion and building a proposal that had consensus.

(6:49 AM)

Title: Speed, Cable type and Reach for ISAAC

URL:https://www.ieee802.org/3/ISAAC/public/102523/Dalmia_ISAAC_02a_10252023%20Speed%20Reach.pdf

Presenter: Kamal Dalmia, Aviva Links, Inc.

Discussion: (the presenter noted he was presenting an updated presentation (02a) posted after the meeting). The presenter discussed his views of the cable reach, rate, and type, which he believed were tied together. He stated a preference for the 15m reach, based on beliefs that the 15m of 802.3ch had been proven, that in some trends vehicles were increasing in size, and that zonal aggregation may be further out than expected. He then stated needs up to 10G for end-node cameras, and a belief that high pixel count, high frame rate cameras are rare.

Questions were asked an answered. Several participants suggested that 10m was a new reach number without prior support. Others noted that more data from automotive experts and/or cabling experts would be useful in understanding the needed and feasible reach.

(7:24 AM)   The chair noted that time expired and closed discussion with individuals still in the queue.

Future Meetings
The chair reviewed future meetings, indicating the next meeting was at the 802 plenary in Honolulu, HI USA in November (with a registration fee required), and he asked that participants consider picking a date for a single meeting between the November plenary and the January interim – noting scheduling difficulties due to holiday schedules.

ADJOURNMENT
Having exhausted the time allotted, Mr. Lewis adjourned the meeting at 7:29 AM PST.

Appendix A: Attendees at the IEEE 802.3 Ethernet for Automotive Imaging Sensors (ISAAC) Study Group Meeting, October 25, 2023 (84)

Name	Employer	Affiliation	IMAT	Zoom
Aal, Andreas		VW		X
Ahuja, Ramanjit		ON Semiconductor	X	X
Alwishah, Abbas	Molex Incorporated	Molex Incorporated	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	Ethernovia	Ethernovia	X	X
Boyer, Rich	Aptiv - Signal and Power Solutions	Aptiv Signal and Power Solutions	X	X
Burmann, Christian		NXP Semiconductors	X	X
Carty, Clark	Cisco Systems, Inc.	Cisco Systems, Inc.	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
Estrakh, Daniel		Valens Semiconductor	X	X
Fellhauer, Felix	Robert Bosch GmbH	Robert Bosch GmbH	X	X
Feyh, German	Broadcom Corporation	Broadcom Corporation	X	X
Fuller, Paul		Marvell	X	X
Gerl, Markus	MD Elektronik	MD Elektronik	X	X
Goel, Sachin		Aviva Links Inc	X	X
Gorshe, Steven	Microchip Technology, Inc.	Microchip Technology, Inc.	X	X
Goto, Hideki	Toyota Motor Corporation	Toyota Motor Corporation	X	X
Graba, Jim	Broadcom Corporation	Broadcom Corporation	X	X
Haasz, Jodi	ieee sa	IEEE Standards Association (IEEE-SA)	X	X
Han, Ruibo		CMCC		X
Harshbarger, Douglas		Corning Incorporated	IX	X
Healey, Adam	Broadcom Inc.	Broadcom Inc.	X	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
Kamiyama, Naoto	ROHM Co., Ltd.	ROHM Co., Ltd.	X	X

Name	Employer	Affiliation	IMAT	Zoom
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	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	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
Maguire, Valerie	Copperopolis	Copperopolis	X	X
Malicoat, David	Malicoat Networking Solutions	Malicoat Networking Solutions; SENKO Advanced Components	X	X
Martino, Kjersti	Inneos	Inneos	X	X
Mash, Chris	Nupero Ltd	Ethernovia Inc	X	X
Matheus, Kirsten	BMW Group	BMW Group	X	X
McClellan, Brett	Marvell Semiconductor, Inc.	Marvell Semiconductor, Inc.	X	X
Muma, Scott		Microchip Technology, Inc.	X	X
Nagib, Michael		Mixel		X
NAGIUB, Mena		Valeo		X
Nariya, Makoto	Sony Semiconductor Solutions Corporation	Sony Group Corporation	X	X
Ng, Hiok Tiaq		Aviva Links Inc	X	X
Niihara, Yoshihiro	Fujikura Ltd.	Fujikura Ltd.	X	X
Nikolich, Paul	Paul Nikolich	Paul Nikolich; Representing myself	X	X
Nomaguchi, Yoko		ROHM		X
Payne, Aaron		TE Connectivity	X	X
Pérez-Aranda, Rubén		KDPOF		X
Razavi, Alireza	Marvell	Marvell	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
Sharma, Safal		Molex		X
So, Kevin		Microchip Technology, Inc.	X	X
Souvignier, Tom	Broadcom Corporation	Broadcom Corporation	X	X
Spiessens, Peter		Omnivision	X	X
Steyer-Ege, Janik	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	GraCaSI S.A.	INDEPENDENT	X	X

Name	Employer	Affiliation	IMAT	Zoom
Torres, Luisma	Knowledge Development for Plastic Optical Fiber	Knowledge Development for Plastic Optical Fiber	X	X
Tu, Mike	Broadcom Corporation	Broadcom Corporation	X	X
Turner, Max	Ethernovia	Ethernovia	X	X
Uenoyama, Hiro		ROHM		X
Wang, Shun-Sheng		Realtek Semiconductor Corp.	X	X
Wienckowski, Natalie	None - Self-funded	IEEE member / Self Employed; Independent Consultant	X	X
Wu, Mau-Lin	MediaTek Inc.	MediaTek Inc.	X	X
Wu, Peter	Marvell Semiconductor, Inc.	Marvell Semiconductor, Inc.	X	X
Zerna, Conrad	Fraunhofer IIS	Avivalinks Inc.	X	X
Zhang, Tingting	Huawei Technologies Co., Ltd	Huawei Technologies Co., Ltd	X	X
Zhuang, Yan	Huawei Technologies Co., Ltd	Huawei Technologies Co., Ltd	X	X
Zimmerman, George	CME Consulting	CME Consulting/APL Group, Cisco, Marvell, OnSemi, SenTekSe LLC	X	X