



IBIS Open Forum Minutes

Meeting Date: **November 18, 2022**

Meeting Location: **Teleconference**

VOTING MEMBERS AND 2022 PARTICIPANTS

AMD (Xilinx)	(Bassam Mansour)
Analog Devices (Maxim Integrated)	Tushar Pandey, Jermaine Lim, Rolynd Aquino, Aprille Hernandez-Loyola, Janchris Espinoza, Francis Ian Calubag, Toni Rose Racelis, Thi Nhu Quynh Nguyen
ANSYS	Curtis Clark*, Satoshi Endo
Applied Simulation Technology	(Fred Balistreri)
Aurora System	Dian Yang, Hiroshi Ishikawa, Hiroshi Matsuda
Broadcom	(Yunong Gan), Jim Antonellis
Cadence Design Systems	Zhen Mu, Jared James, Ken Willis, Kyle Lake
	Tadaaki Yoshimura, Hideyoshi Sugaya,
	Masahiro Nakahara, Takuya Moriya
	(Sophia Feng)
Celestica	Stephen Scarce
Cisco Systems	(Stefan Paret), Longfei Bai
Dassault Systemes	Hanfeng Wang , Jianmin Zhang
Google	(Hang (Paul) Yan), Su Li, Yiran Lei, Zixin Song
Huawei Technologies	(Christian Sporrer)
Infineon Technologies AG	(Abdelgader Abdalla)
Instituto de Telecomunicações	Hsinho Wu*, Michael Mirmak*, Jingbo Li,
Intel Corporation	Liwei Zhao, Chi-te Chen, Kinger Cai, Chuanyu Li
	Ming Yan, Fangyi Rao, Majid Ahadi Dolotsara,
Keysight Technologies	Pegah Alavi, Saish Sawant, [Radek Biernacki],
	Toshinori Kageura, Hayato Ogawa,
	Satoshi Nakamizo
	(David Banas)
Luminous Computing	Steven Parker*
Marvell	Graham Kus*, Walter Katz*, [Mike LaBonte]
MathWorks	Randy Wolff*, Aniello Viscardi, Justin Butterfield,
Micron Technology	Dragos Dimitriu, Cheng Zhang, Chunqiang Weng,
	Hongyan Li, Tree Li
	Masayuki Honda, Mikio Sugawara
Micron Memory Japan, K.K.	Chulsoon Hwang, Hanyu Zhang,
MST EMC Lab	Haran Manoharan, Jiahuan Huang, Junho Joo,
	Reza Yazdani, Seunghun Ryu, Seungtaek Jeong,
	Xiangrui Su, Xu Wang, Yuanzhuo Liu,
	Zhekun Peng, Yifan Ding
	John Baprawski
SerDesDesign.com	Arpad Muranyi*, Weston Beal, Amin Maher,
Siemens EDA	Scott Wedge, Steve Kaufer, Todd Westerhoff,
	Vladimir Dmitriev-Zdorov, Ken Cantrell
	Kunimoto Mashino
Siemens EDA Japan, K.K.	Olivier Bayet
STMicroelectronics	

Synopsys

Teraspeed Labs
Waymo
ZTE Corporation

Zuken
Zuken USA
Zuken Japan

Ted Mido*, Xuefeng Chen, Yuyang Wang,
Jinghua Huang
Bob Ross*
Zhiping Yang
(Shunlin Zhu), Jian Huang, Ming Zheng,
Changgang Yin, Dongdong Ye, Zhongmin Wei
(Michael Schäder)
Lance Wang*
Kensuke Hyoshijima, Hirohiko Matsuzawa

OTHER PARTICIPANTS IN 2022

A&D Print Engineering Co., Ltd.
Advantest Corporation

Altair
Amazon Lab126
AMD Japan
Apollo Giken Co., Ltd.
ASUSTek Computer

Blue Ocean Smart System
Canon Inc.
Casio Computer Co., Ltd.
Ciena
CMK Corporation
Cornelis Networks
Cybernet Systems Co., Ltd.
De Montfort University
Faurecia Clarion Electronics Co., Ltd.
FICT Limited

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Furukawa Electric Co., Ltd.
GE HealthCare
Global Unichip Japan
Hagiwara Solutions Co., Ltd.
Hamamatsu Photonics K.K.
Hitachi Solutions Technology, Ltd.
HOEI Co., Ltd.
Honeywell
Hoya Corporation
IBM
Imperial College, UK
Japan Radio Co., Ltd.

Ryu Murota, Minoru Hasegawa
Hiroaki Takeuchi, Takahiro Tasaki,
Tsutomu Yuasa
Junesang Lee
Askar Hashemi
Tadashi Arai
Yoshito Usui
Hank Lin, Daniel Yeh, Shih-Yao Lin,
Hayden Huang, Will Chan, Alfred Hu,
Andries Deroo, Bobson Su, Bojun Chen,
Harrison Su, Jenyung Li, Jimmy Kao, Matthew Lu,
Nick Chen, David Chou, Stephen Lee, Henry Tsai,
John Lin, Steven Tsai, Vincent Lu, William Shih,
Asher Lin, Jerry Bai, Anthony Tan
Junyong Deng, Nikki Xie
Syoji Matsumoto, Satoru Ishikawa, Shinichi Ohno
Yasuhisa Hayashi
Hugues Tournier, Kaisheng Hu
Masaki Abe, Motoshi Nakamura
Champion Kao
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Makoto Yoshino, Kazuhiro Kamegawa,
Akira Ueda*, Hirokazu Hidaka, Takashi Kobayashi
Takumi Ohuchi
Balaji Sankarshanan, Sarah Salvador
Masafumi Mitsuishi
Osamu Takeuchi
Akihiro Inoguchi
Sadahiro Nonoyama
Tatsuya Chiba
Bavish Vazhayil
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Cong Ling
Hiroto Katakura

JEDAT Inc.
JEITA
Jujube LLC
JVC Kenwood Corporation

Keyence Corporation
Kioxia Corporation
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Kyocera Corporation
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Shimadzu Corporation
Silvaco Japan Co., Ltd
Socionext Inc.

Sohwa & Sophia Technologies
Sony Global Manufacturing & Operations
Corporation
Sony Semiconductor Solutions Corp.

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Takuo Fujimura
Tomoh Uchida
Noriaki Dobashi, Monori Yoshitomi, Masato Kanie
Jyunya Shibasaki, Tomomichi Takahashi,
Yukio Tanoue
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De Stefano, Riccardo Trincherro, Alessandro
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Miyoko Goto, Toshihiko Makino
Yansheng Wang
Nobuya Sumiyoshi
Takahiro Sato
José Godoy
Takayuki Ito, Takayuki Sato
Ryoichi Okada, Masaaki Ito
Aleksy Tyshchenko, David Halupka
Kazuo Nakajima
Yoshihiko Yamamoto
Shizue Kato, Hajime Ohmi, Yoshito Uchihashi,
Ayako Kitamoto, Megumi Ohno, Motoaki
Matsumura
Tomoki Yamada

Hayato Takeuchi, Yuichi Ikeya, Atsushi Yoshimoto
Toru Fujii, Kazuki Murata, Ryoga Kitajima

Technopro Design Company
Tektronix Company
TEQ Consulting Ltd.
Tokyo Drawing Ltd.
Toshiba Corporation
Toshiba Development & Engineering Corporation
Toshiba TEC Corporation
University of Colorado, Boulder, ECEE
University of Illinois
University of L'Aquila
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Yazaki Corporation
Yazaki Parts Co., Ltd.
Yokogawa Electric Corporation

Mai Fukuoka
Takafumi Watanabe
Tadashi Aoki
Naoya Iisaka, Masahiko Nakamura
Yasuki Torigoshi
Nobuyuki Kasai, Kohei Imamura

Yoshihiro Takayama, Masanao Shigemura
Eric Bogatin
José Schutt-Aine
Fancesco De Paulis
Mike LaBonte
Kazuhiko Kusunoki
Wei He, Zachary Su, Jianfeng Xia, Yan Ma,
Yufeng Dan, Zhangmin Zhong, Lihua (Lily) Liu
Hiroyuki Kai, Yasuhito Kanamori
Syunsuke Ito
Kenichi Fujisawa
Daisuke Kamezawa

In the list above, attendees present at the meeting are indicated by “*.” Those submitting an email ballot for their member organization for a scheduled vote are indicated by “^.” Principal members or other active members who have not attended are in parentheses “().” Participants who no longer are in the organization are in square brackets “[].”

UPCOMING MEETINGS

The connection information for future IBIS teleconferences is as follows:

Microsoft Teams meeting

Join on your computer or mobile app

[Click here to join the meeting](#)

Join with a video conferencing device

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Video Conference ID: 114 666 897 5

[Alternate VTC dialing instructions](#)

Or call in (audio only)

[+1 267-768-8015,554664847#](tel:+12677688015554664847) United States, Philadelphia

Phone Conference ID: 554 664 847#

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All teleconference meetings are 8:00 a.m. to 9:55 a.m. US Pacific Time. Meeting agendas are typically distributed seven days before each Open Forum. Minutes are typically distributed within seven days of the corresponding meeting.

NOTE: "AR" = Action Required.

INTRODUCTIONS AND MEETING QUORUM

Graham Kus notes that a quorum of eight is now required due to membership count of 29 active members. He declared quorum with eight attendees.

CALL FOR PATENTS

Randy Wolff called for declaration of any patents or pending patents related to the IBIS, IBIS-ISS, ICM, or Touchstone 2.0 specifications. No items were announced.

REVIEW OF MINUTES AND ARS

Randy Wolff asked if there was a Motion to accept the Minutes from the October 21, 2022, IBIS Open Forum teleconference. Curtis Clark Motioned to approve and Lance Wang Seconded. The Motion was approved.

Randy Wolff asked if there was a Motion to accept the Minutes from the November 4, 2022 Asian IBIS Summit – China. Lance Wang Motioned to approve. Curtis Clark Seconded. The Motion was approved.

The Minutes are available at the following link:

<https://ibis.org/minutes/>

ARs:

Randy Wolff to ping SAE ITC about the IEEE IBIS standardization progress [AR]

- Randy stated this is in progress.

Randy to send vote solicitation email to set 2023 IBIS dues at \$900 [AR]

- Randy stated this was completed.

Bob Ross to update classification of BUG238 on the website [AR]

- Randy stated on Bob's behalf that this was completed.

Bob Ross to communicate status of IBISCHK 7.1.1 code review and get estimate of final delivery date [AR]

- Randy stated on Bob's behalf that this was completed.

ANNOUNCEMENTS, CALL FOR ADDITIONAL AGENDA ITEMS

Randy Wolff asked for any announcements. Randy announced there would be a vote to approve IBIS CHK 7.1.1 parser, which was not on the original agenda sent out for this OF meeting.

MEMBERSHIP STATUS AND TREASURER'S REPORT

Bob Ross reported by email that we currently have 29 members for 2022 with a quorum defined as eight members in attendance.

Bob stated we have several invoices payments in progress for 2023 and may also have some new member and parser source code inquiries. Bob also stated that we have already credited the overpayment by an academic institution for one-half year payment in 2023.

Bob stated we plan to vote on accepting the IBISCHK7 V7.1.1 build from the parser developer. Then we will send the invoice to SAE ITC for \$1500.00 payment.

Also, the following payment is expected for 2022:

- Approximately \$6,000 for end-of-year SAE ITC assessment for services.

Bob stated there are no additional Summit payments are planned for 2022.

\$21,461 Balance for 2022

\$24,811 Adjusted Balance for 2022

\$450 Adjusted Balance for 2023

Randy Wolff reported that a group of Open Forum members are working on an FAQ for membership to answer such questions as partial year membership (billing) and other membership status queries.

WEBSITE ADMINISTRATION

Stephen Parker reported on updates since the last meeting as follows: various events relating to the Asian summits were updated. Some links for Japan summit were in progress. Also he had posted some DesignCon 2023 information that is currently available. The Asian summit information for 2023 was moved to the bottom of the list as place holders to be ready for next year. And the logo for Aurora System has been uploaded to the website. Stephen stated we do have a notice from our vendor that our domain name is up for renewal, and he will follow up with Bob Ross on that payment to be sure it proceeds [AR].

Randy Wolff confirmed to those in attendance that the past summits pages are listed by screen-sharing the website.

MAILING LIST ADMINISTRATION

Curtis Clark reported we have one new user and a subscription request that confirmed response by email (and stated this is to avoid spammers and bots).

LIBRARY UPDATE

Zhiping Yang was not in attendance. Randy Wolff made the decision to skip the Library Update.

INTERNATIONAL/EXTERNAL ACTIVITIES

Conferences:

Graham Kus reported there are no new conferences at this time.

Press Updates

Randy Wolff reported on behalf of Zhiping Yang that we have received an update from IEEE EMC society, whereas Janet O'Neil is working on Q3 2022 magazine, which would include articles that mention IEEE EMC/SIPI summit and the "Ask the Experts" Panel. Randy stated there may be some links to share or publish at the next meeting.

Related Standards

Michael Mirmak was not in attendance at this point. Randy Wolff decided to skip Related Standards.

IEEE IBIS Standardization

Randy Wolff reported no new contact from SAE-ITC and that we are waiting for response on next steps to proceed.

IBIS Summits:

China IBIS Summit:

Randy Wolff stated that the China IBIS Summit had 53 attendees, and some presentations had to be cut short in order to keep the Summit time to three hours. Also that the Summit recording minutes are all posted on the website, but that some presentations are in slide form without recordings, but the slides are available by link on the website. Randy thanked Lance Wang for performing language translation during the Summit.

Japan IBIS Summit:

Randy reported the Japan IBIS Summit had about 156 attendees and he requested a complete list and a translation of Q+A from JEITA, but that we were waiting on update for when that will be available. The summit recording is available, but the minutes will be delayed until the attendee list is available.

One request from the Japan IBIS Summit was some examples of EMD syntax. Randy will work with resources to try to release public domain examples.

DesignCon 2023 IBIS Summit (Santa Clara, CA):

Randy reported that MathWorks has communicated they will sponsor a meeting space, and have secured a meeting room local to the Santa Clara Convention Center that is walkable and easily drivable. It is a room that carries 48 with an overflow room. Using this meeting room in the mission tower building will allow for the IBIS Summit meeting to be held on Friday, February 3, 2023- whereas working with DesignCon Staff at the SC Convention Center, would have only let it be on Monday, January 30, 2023.

Arpad Muranyi asked if it would be a hybrid type meeting. Randy confirmed it would be. Randy asked Graham Kus for specifics on the meeting room, specifically the AV setup and also to understand the catering vendors and any other issues as well [AR]. Randy stated the IBIS Open Forum would be open for additional co-sponsors for catering costs, for example.

Randy stated that the first announcement for the DesignCon 2023 IBIS Summit will go out December 2, 2023. Randy also stated that Lance Wang and Bob Ross and himself had been discussing various tasks. For example, Lance will take a more active role in summit planning and will probably help more with DesignCon 2023 IBIS Summit.

QUALITY TASK GROUP

Randy Wolff reported for Bob Ross: The group agreed we felt IBISCHK was completed, so the Quality Task Group recommended it is ready to go and be approved for release and that it would be discussed at the end of this meeting.

Randy asked for any questions. None were asked.

Note: The Quality task group checklist and other documentation can be found at:

http://www.ibis.org/quality_wip/

ADVANCED TECHNOLOGY MODELING TASK GROUP

Arpad Muranyi reported in the last 4-6 weeks we spent time on the clarification BIRD, and in the last two meetings we went back to draft that Kinger Cai was working on, and still discussing to finalize them. Meetings for this Task Group are still held Tuesday at Noon Pacific time. Randy Wolff asked if there were any questions. None were asked.

Note: Task group material can be found at:

http://www.ibis.org/macromodel_wip/

INTERCONNECT TASK GROUP

Randy Wolff reported this Task Group is still suspended due to activity in Editorial Task Group.

Note: Task group material can be found at:

http://www.ibis.org/interconnect_wip/

EDITORIAL TASK GROUP

Randy Wolff reported the latest is that now that BIRD 222 is released, Michael Mirmak was working to get the text into Draft 4 of IBIS 7.2 and are prepared to have the draft ready for introduction at the December 9, 2023, Open Forum teleconference meeting to discuss BIRD 221 and BIRD 222 are approved then that draft would be ready to become official and would be put through a review process.

Randy asked if there were questions. Arpad Muranyi commented that we did pretty much all we could up until now, so it is close to being complete to release 7.2. Randy confirmed Figures and Edits are updated, and everything editorial-wise is nearly completed.

Note: Task group material can be found at:

http://www.ibis.org/editorial_wip/

NEW ADMINISTRATIVE ISSUES

Randy Wolff asked if any issues. None were raised.

Roll call: Graham Kus reported a mid-meeting count of eight in attendance.

NEW AND REVISED *IRDS

BIRD221:

Randy Wolff reported that BIRD221, [AMI parameters in Clarification](#), has been submitted by Michael Mirmak, Intel Corp. Randy outlined the details of BIRD221 to the Open Forum. He stated that this is a clarification BIRD. The change is related to AMI_parameters_in, relating to Usage In and Usage InOut.

There was also a change to Format – from “shall” to “should,” as these are EDA tool parameters.

This is meant to be a minor change and is meant to be part of IBIS 7.2. See BIRD221 for details.

Arpad Muranyi Moved to schedule the vote. Graham Kus Seconded. The Motion passed. Randy took an AR to put out a vote solicitation email to hold a vote on December 9, 2022 [AR].

BIRD222:

Randy Wolff thanked Arpad Muranyi for sponsoring BIRD222 through various task groups. Arpad related that there were activity and arguments about the clock_times and the GetWave was described. The arguments became an input as well as an output for the new models. In the past we used these as just an output. So, there was no real description what goes in this parameter as an input or and output from the clock receiver AMI model executable. So, there was room for improvement in describing those conditions and clarifying what was already defined. This is intended to be a clarification BIRD without technical changes, but there ended up being a few. This is intended to also be in the IBIS 7.2 specification. It would be ideal to do a review and vote on this as well.

Arpad reported that at least 6 weeks in ATM meetings have been spent on BIRD222, especially with potential use cases that may be things that can occur.

Arpad stated that he attempted to indicate what is new with yellow-colored text highlighting, to show what other BIRDS did to some of this text by other BIRDS. This was the way draft 3 of IBIS 7.2 spec incorporated those BIRDS.

Arpad stated that he also added cyan-colored text highlighting indicates what BIRD222 is proposing to change. However usually BIRDS cannot reference other BIRDS, instead the specification itself. And for that reason, with respect to IBIS 7.1 indicates what we really need to change to 7.1 but that portion was already changed in green-colored text highlight. So, what I'm showing is purely for convenience of Editor or Committee showing in green-highlight what the draft has, and cyan-highlight what this BIRD222 is changing, on that. So, the bottom line is Cyan and Green is the total outcome of changes, in order to clarify things.

Randy and Arpad outlined various topics covered by the BIRD for clarification. See BIRD 222 for details.

Randy stated that this BIRD222 could be eligible to vote and asked if there were any Motion. Graham Kus Moved to add BIRD222 to vote. Michael Mirmak Seconded. There were no objections.

Randy took an AR to send out a vote solicitation email before our next meeting [AR]

BIRD220:

Randy Wolff reported that BIRD220 discusses potential modifications to implement information relating to PSIJ. For example by introducing a new keyword with two sub parameters relating to jitter parameters relating to rising and falling separately. Randy suggested that this be held for further review. Arpad Muranyi agreed and reported that Kinger Cai is working on a BIRD draft that is similar in scope and topic. There was group discussion about whether to consider both BIRD drafts or table until further discussion or leave it up for discussion each meeting. Arpad suggested to leave it on the discussion list as per people having time to review and ask questions, rather than tabling it. Randy decided to leave it open for discussion next meeting.

IRDS SCHEDULED FOR VOTE

None.

IRDS ELIGIBLE FOR VOTE

None.

TABLED IRDS: (NO DISCUSSION WITHOUT MOTION TO "UNTABLE")

None.

IBISCHK AND TSCHK PARSER AND BUG STATUS

Randy Wolff reported there are no new bugs, all bugs have been classified, and most of the list has been taken care of in the IBISCHK 7.1.1 parser release. Arpad Muranyi asked if we would have a new parser release for 7.2 implementations. Randy responded yes and that the Quality Task Group took a final look at the last few changes made to the parser we made to the developer to address, for example BUG238 and BUG237 are addressed. Also, in the last round requested wording changes relating to BUG228 caution vs. error and are satisfied with how those error messages are listed now. The Quality Task Group recommends we vote and approve. This would allow us to post the executables and release the code to the parser owners and announce the release. And to be able to issue payment to the parser developer. Arpad asked if all these bugs are closed yet, or all addressed. Randy specified that BUG227 is not, it is an enhancement- relating to the root name checking. Randy asked Bob Ross if there were any bugs that remain not dealt with in IBISCHK 7.1.1.

Bob reported there are some future potential bugs, but that all are addressed at this time, and are meant to be closed, except for BUG227.

Michael Mirmak asked if we can have a bug list where the parser version addressed is indicated. There was group discussion about the specifics and options to do so. Bob reported that we already do this for BIRDS. Randy took an AR to discuss this in the Quality Task Group [AR].

Randy asked if there were any further questions about parser or if there was a motion to vote. Arpad made a Motion to start the Vote.

Michael Seconded the Motion. The Motion passed.

The ballot tally was as follows:

Ansyes – Yes

Intel – Yes
Marvell – Yes
MathWorks – Yes
Siemens votes - Yes
Synopsys votes - Yes
Micron votes - Yes
Terasped - Yes
Zuken - Yes

The Secretary confirmed the vote ballot results with the Chair as 9 votes for Yes and 0 votes for No. There were 0 abstentions.

Arpad asked how this would be uploaded, and Bob shared how the upload and the accessibility would work. Arpad asked if this would happen in the next few days and Bob confirmed it would and then the notification would be sent out by email [AR]. Randy noted we would work with Stephen Parker to update the banner and point links to a new version. Bob related the steps to update the archive and checksum, as well as solicit executables for various architectures (such as versions of Linux kernel). Randy asked if there were any parser issues. Bob stated that Mike LaBonte sent out the user guide, and hand editing the spreadsheet, etc. The users guide may take a while. Graham Kus stated he may be able to assist with the user guide.

NEW TECHNICAL ISSUES

Randy Wolff asked if there were any new technical issues. There were none announced.

NEXT MEETING

Randy Wolff stated that the next IBIS Open Forum meeting date would be December 09, 2022. This would be final meeting for 2022. Looking into 2023, the following would be January 06, 2023. There were no objections.

Graham Kus motioned to adjourn. Arpad Muranyi seconded. The meeting was adjourned.

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NOTES

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This meeting was conducted in accordance with SAE ITC guidelines.

All inquiries may be sent to info@ibis.org. Examples of inquiries are:

- To obtain general information about IBIS.
- To ask specific questions for individual response.
- To subscribe to or unsubscribe from the official ibis@freelists.org and/or ibis-users@freelists.org email lists (formerly ibis@eda.org and ibis-users@eda.org):
 - <https://www.freelists.org/list/ibis>
 - <https://www.freelists.org/list/ibis-users>
- To subscribe to or unsubscribe from one of the task group email lists: ibis-macro@freelists.org, ibis-interconn@freelists.org, ibis-editorial@freelists.org, or ibis-quality@freelists.org:
 - <https://www.freelists.org/list/ibis-macro>
 - <https://www.freelists.org/list/ibis-interconn>
 - <https://www.freelists.org/list/ibis-editorial>
 - <https://www.freelists.org/list/ibis-quality>
- To inquire about joining the IBIS Open Forum as a voting Member.
- To purchase a license for the IBIS parser source code.
- To report bugs or request enhancements to the free software tools: `ibischk6`, `tschk2`, `icmchk1`, `s2ibis`, `s2ibis2` and `s2iplt`.

The BUG Report Form for ibischk resides along with reported BUGs at:

<http://www.ibis.org/bugs/ibischk/>
<http://www.ibis.org/bugs/ibischk/bugform.txt>

The BUG Report Form for tschk2 resides along with reported BUGs at:

<http://www.ibis.org/bugs/tschk/>
<http://www.ibis.org/bugs/tschk/bugform.txt>

The BUG Report Form for icmchk resides along with reported BUGs at:

<http://www.ibis.org/bugs/icmchk/>
http://www.ibis.org/bugs/icmchk/icm_bugform.txt

To report s2ibis, s2ibis2 and s2iplt bugs, use the Bug Report Forms which reside at:

<http://www.ibis.org/bugs/s2ibis/bugs2i.txt>
<http://www.ibis.org/bugs/s2ibis2/bugs2i2.txt>
<http://www.ibis.org/bugs/s2iplt/bugspl.txt>

Information on IBIS technical contents, IBIS participants and actual IBIS models are available on the IBIS Home page:

<http://www.ibis.org/>

Check the IBIS file directory on ibis.org for more information on previous discussions and results:

<http://www.ibis.org/directory.html>

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SAE STANDARDS BALLOT VOTING STATUS (attendee X; absent -)

Organization	Interest Category	Standards Ballot Voting Status	Oct. 21, 2022	Nov. 4, 2022	Nov. 11, 2022	Nov. 18, 2022
AMD (Xilinx)	Producer	Inactive	-	-	-	-
Analog Devices (Maxim Integrated)	Producer	Inactive	-	-	-	-
ANSYS	User	Active	X	-	X	X
Applied Simulation Technology	User	Inactive	-	-	-	-
Aurora System	User	Inactive	-	-	X	-
Broadcom Ltd.	Producer	Inactive	-	-	-	-
Cadence Design Systems	User	Inactive	-	-	X	-
Celestica	User	Inactive	-	-	-	-
Cisco Systems	User	Inactive	-	-	-	-
Dassault Systemes	User	Inactive	-	-	-	-
Google	User	Inactive	-	-	-	-
Huawei Technologies	Producer	Inactive	-	X	-	-
Infineon Technologies AG	Producer	Inactive	-	-	-	-
Instituto de Telecomunicações	User	Inactive	-	-	-	-
Intel Corp.	Producer	Active	X	X	X	X
Keysight Technologies	User	Inactive	-	-	X	-
Luminous Computing	General Interest	Inactive	-	-	-	-
Marvell	Producer	Active	X	-	-	X
MathWorks	User	Active	X	-	-	X
Micron Technology	Producer	Active	X	X	X	X
MST EMC Lab	User	Inactive	-	X	-	-
SerDesDesign.com	User	Inactive	-	-	-	-
Siemens EDA (Mentor)	User	Active	X	-	X	X
STMicroelectronics	Producer	Inactive	X	-	-	-
Synopsys	User	Active	X	X	X	X
Teraspeed Labs	General Interest	Active	X	X	X	X
Waymo	User	Inactive	X	-	-	-
ZTE Corp.	User	Inactive	-	X	-	-
Zuken	User	Active	X	X	X	X

= Temporarily not a voting member

Criteria for SAE member in good standing:

- Must attend two consecutive meetings to establish voting membership
- Membership dues current
- Must not miss two consecutive meetings (voting by email counts as attendance)

Interest categories associated with SAE standards ballot voting are:

- Users - members that utilize electronic equipment to provide services to an end user.
- Producers - members that supply electronic equipment.
- General Interest - members are neither producers nor users. This category includes, but is not limited to, government, regulatory agencies (state and federal), researchers, other organizations, and associations, and/or consumers.