# IBIS Open Forum Minutes

Meeting Date: **December 21, 2018**
Meeting Location: **Teleconference**

**VOTING MEMBERS AND 2018 PARTICIPANTS**

| | |
|---|---|
| ANSYS | Curtis Clark*, Miyo Kawata |
| Applied Simulation Technology | (Fred Balistreri) |
| Broadcom | (Yunong Gan) |
| Cadence Design Systems | Brad Brim*, Ken Willis, Ambrish Varma, Zhen Mu |
| | Morihiro Nakazato, Jinsong Hu, Skipper Liang |
| | Zuli Qin, Haisan Wang, Hui Wang, Yitong Wen |
| | Clark Wu, Zhangmin Zhong, Jessica Yen, Nemo Hsu |
| Cisco Systems | Stephen Scearce, Cassie Yan, Baosh Xu |
| CST | Stefan Paret |
| Ericsson | Anders Ekholm, Zilwan Mahmod, Guohua Wang |
| | Wenyan Xie, Amy Zhang |
| GLOBALFOUNDRIES | Steve Parker |
| Huawei Technologies | (Hang (Paul) Yan) |
| IBM | Greg Edlund, Luis Armenta, Hubert Harrer |
| | Michael Cohen |
| Infineon Technologies AG | (Christian Sporrer) |
| Intel Corporation | Hsinho Wu*, Michael Mirmak*, Nilesh Dattani |
| | Fernando Mendoza Hernandez, Varun Gupta |
| | Subas Bastola, Hansel Dsilva, Gianni Signorini |
| | Kai Yuan, Denis Chen, Jimmy Hsu, Cucumber Lin |
| IO Methodology | Lance Wang* |
| Keysight Technologies | Radek Biernacki*, Ming Yan, Heidi Barnes |
| | Pegah Alavi, Toshinori Kageura, Satoshi Nakamizo |
| | Umekawa Mitsuharu |
| Maxim Integrated | Joe Engert, Yan Liang |
| Mentor, A Siemens Business | Arpad Muranyi*, Weston Beal, Raj Raghuram |
| | Carlo Bleu, Mikael Stahlberg, Yasushi Kondou |
| | Vladimir Dmitriev-Zdorov, Nitin Bhagwath |
| | Kazuhiro Kadota, Terence Guo |
| Micron Technology | Randy Wolff*, Justin Butterfield* |
|   Micron Memory Japan | Masayuki Honda, Tadaaki Yoshimura, Toshio Oki |
| | Mikio Sugawara |
| NXP | (John Burnett) |
| Raytheon | Joseph Aday |
| SiSoft | Mike LaBonte*, Walter Katz, [Todd Westerhoff] |
| Synopsys | Ted Mido, Adrien Auge, Scott Wedge, Xuefeng Chen |

|  |  |
|---|---|
|  | Jinghua Huang, Yuyang Wang |
| Teraspeed Labs | Bob Ross* |
| Xilinx | Ravindra Gali |
| ZTE Corporation | Shunlin Zhu, Liqiang Meng, Yonghui Ren, Bi Yi |
| Zuken | Michael Schaeder, Takayuki Shiratori |


**OTHER PARTICIPANTS IN 2018**

| | |
|---|---|
| A&D Print Engineering Co. | Ryu Murota |
| Abeism Corporation | Nobuyuki Kiyota, Noboru Kobayashi |
| Alpine Electronics | Norio Mashiko |
| AMD Japan | Tadashi Arai |
| Apollo Giken Co. | Naoya Iisaka, Satoshi Endo |
| ASRock Rack | Eric Chien, Timmy Kao |
| ASUSTek Computer | Eric Hsieh, Nick KH Huang, Jenyung Li, Eric Tsai |
| Avnet | Shinya Ishizuka |
| BasiCAE | Kiki Li, Darcy Liu, Linda Zhang |
| Canon Components | Takeshi Nagata |
| Canon | Syoji Matsumoto, Yusuke Matsudo, Manabu Sakakibara Tadashi Aoki, Hitoshi Matsuoka, Ryuta Kusaka Masaaki Ohishi, Satoru Ishikawa |
| Casio Computer Co. | Yasuhisa Hayashi |
| Celestica | Sophia Feng, Bowen Shi |
| CMK Products Corp. | Hiroyasu Miura |
| Credo | Anyun Liu |
| Cybernet Systems | Takayuki Tsuzura |
| Denso Corp. | Yukiya Fukunaga |
| Eizo Corp. | Tokimitsu Eso |
| Finnhan | Yuan Xu |
| Fuji Xerox Manufacturing Co. | Rumi Maeda |
| Fujitsu Advanced Technologies | Tendo Hirai, Kumiko Teramae, Hidenobu Shiihara |
| Fujitsu Interconnect Technologies | Masaki Kirinaka, Akiko Tsukada |
| Fujitsu Ltd. | Takashi Kobayashi |
| Fujitsu Optical Components | Masaki Kunii |
| Genesis Technology | TF Chiang |
| Gifu University | Toshikazu Sekine |
| Global Unichip Japan | Masafumi Mitsuishi |
| Google | Zhiping Yang |
| Hamamatsu Photonics | Akihiro Inoguchi, Shigenori Fujita, Hidetoshi Nakamura |
| Haskware | David Banas |
| Hewlett Packard Enterprise | Passor Ho, Corey Huang, Hellen Lo, Edward Pan |
| Hitachi ULSI Systems Co. | Sadahiro Nonoyama |
| Hitachi Ltd. | Yasuhiro Ikeda |
| Hoei Co. | Tatsuya Chiba |
| Huawei Technologies | Haiping Cao, Longfang Lv, Shengli (Victory) Wang |

|  |  |
|---|---|
|  | Hang (Paul) Yan, Chen (Jeff) Yu, Zhengyi Zhu |
|  | Peng Huang |
| IB-Electronics | Matsumuro Makoto |
| Independent | Hiroshi Ishikawa, Fumiyo Kawafuji |
| Inspur Technologies | Josh Chen, Steven Ho, Dane Huang, Nieves Lee |
|  | Eric Lee, Rock Wang |
| Institute for Information Industry | Joseph Yang |
| Japan Radio Co. | Hiroto Katakura |
| JEITA | Yukio Masuko |
| John Baprawski, Inc. | John Baprawski |
| JVC Kenwood Corp. | Yasutoshi Ojima, Masayuki Kurihara |
| KEI Systems | Shinichi Maeda |
| Keihin Corp. | Takayuki Ota |
| Lapis Semiconductor Co. | Satoshi Tachi |
| Lattice Semiconductor | Dinh Tran, Maryam Shahbazi |
| Lenovo | Mark Zheng, Alex Chu, Alan Sun, Simon Yeh |
| Marvell | Jianping Kong, Fang Lv, Banglong Qian |
|  | Songjie (Jacky) Wang, Liang Wu |
| Megachips Corp. | Tomochika Kitamura |
| Mitsubishi Electric Corp. | Yusuke Suzuki |
| Mobile Techno Corp. | Kazuhiro Kamegawa |
| Molex Japan | Nobumasa Motohashi |
| Murata Manufacturing Co. | Kazutaka Mukaiyama |
| Nanya Technology Corp. | Ching-Feng Chen, Chi-Wei Chen |
|  | Taco (Changqun) Hsieh, Benson Hsu, George Lee |
|  | Linda, Allen Ye |
| NEC Magnus Communications | Toshio Saito |
| New H3C Group | Xinyi Hu, Zixiao Yang |
| Nikon Corp. | Manabu Matsumoto |
| Nvidia Corp. | Norman Chang, Chiayuan Hsieh, Rich Lu |
|  | Chihwei (Jason) Tsai |
| Oki Electric Industry Co. | Kenichi Saito |
| OmniVision | Sirius Tsang |
| Panasonic Corp. | Minori Harada, Tomohiro Tsuchiya, Naoyuki Aoki |
|  | Atsushi Nakano |
| Panasonic Industrial Devices, Systems and Technology Co. | Kazuki Wakabayashi |
| Politecnico di Milano | Flavia Grassi, Xinglong Wu |
| Politecnico di Torino | Tommaso Bradde, Marco De Stefano, Paulo Manfredi |
|  | Riccardo Trinchero, Stefano Grivet-Talocia |
| PWB Corp. | Toru Ohisa |
| Qualcomm | Kevin Roselle, Tim Michalka, Zhiguang Li |
| Razer | Irwin (Zhilong) Xue |
| Renesas Electronics Corp. | Masayasu Koumyou, Kazunori Yamada, Kenzo Tan |
|  | Hiroyoshi Kuge, Masato Suzuki |

| | |
|---|---|
| Ricoh Company | Kazuki Murata, Yasuhiro Akita, Kazumasa Aoki |
| | Toshihiko Makino, Koji Kurose |
| RITA Electronics Ltd. | Kenichi Higashiura, Hiroyuki Motoki |
| Rohm Co. | Noboru Takizawa, Ryosuke Inagaki, Nobuya Sumiyoshi |
| Ryosan Co. | Takahiro Sato, Takumi Ito |
| SAE ITC | (Jose Godoy) |
| Sanwa Denki Kogyo Co. | Yutaka Takasaki |
| Shanghai IC R&D Center (ICRD) | Huijie Yan, Hailing Yang |
| Shanghai Zhaoxin Semiconductor | Chuanyu (Liam) Li |
| Shinewave | Nike Yang |
| Shinko Electric Industries Co. | Takumi Ikeda |
| Signal Metrics | Ron Olisar |
| Silvaco Japan Co. | Yoshihiko Yamamoto, Kaoru Kashimura |
| SMK Corp. | Norihide Taguchi |
| Socionext | Megumi Ono, Yumiko Sugaya, Mitsuhiro Tomita |
| | Katsuya Ogata, Yoshihiko Sumimoto, Yuji Nakagawa |
| | Takashi Araki |
| Sohwa & Sophia Technologies | Tomoki Yamada |
| Sony Global Manufacturing & | Takashi Mine, Toshio Murayama, Taichi Hirano |
| Operations Corp. | Takashi Mizoroki |
| Sony LSI Design | Toru Fujii |
| Sony Semiconductor Solutions | Takeshi Ogura |
| SPISim | Wei-hsing Huang, Wei-Kai Shih |
| Stanford University | Tom Lee |
| STMicroelectronics | Aurora Sanna, Olivier Bayet |
| Syswave | Kazuo Ogasawara |
| Tatung Technology | Barry Chen |
| TDK Corp. | Kotaro Suzuki |
| Technopro Design Co. | Mai Fukuoka |
| Teledyne LeCroy | Denny Li, Nan Son, Suping Wu, Sherry |
| Telepower | Kenji Kobayashi |
| TFF Tektronix Co. | Katsuhiko Suzuki |
| Thine Electronics | Takafumi Nakamori |
| Tomen Devices Corp. | Kinji Mitani |
| Toshiba Corp. | Yasuki Torigoshi |
| Toshiba Development & | Nobuyuki Kasai |
| Engineering Corp. | |
| Toshiba Electronic Devices & | Atsushi Tomishima, Yasunobu Umemoto |
| Storage Corp. | Yoshinori Fukuba, Hitoshi Imi, Motochika Okano |
| | Tetsuya Nakamura |
| Toshiba Memory Corp. | Masato Kanie, Takayuki Mizogami |
| Toshiba Memory Systems Co. | Eiji Kozuka, Tomomichi Takahashi |
| Toshiba Microelectronics Corp. | Jyunya Masumi |
| Unisoc | Junyong Deng, Nikki Xie |
| Université de Bretagne Occidentale | Mihai Telescu, Charles Canaff |

| University of Illinois | José Schutt-Aine |
| University of Siegen | Elmar Griese |
| University of Technology Hamburg | Torben Wendt |
| Xpeedic | Suxiang Zhou |
| Xrossvate | Toshiyuki Kaneko |
| Yamaha Corp. | Tetsuya Kakimoto |
| Zhejiang Uniview Technologies | Fang Yang |
| Zheijiang YUSHI Technology | E. Deng |

In the list above, attendees at the meeting 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 bridge numbers for future IBIS teleconferences are as follows:

| Date | Meeting Number | Meeting Password |
| January 11, 2019 | 624 227 121 | IBISfriday11 |

For teleconference dial-in information, use the password at the following website:

http://tinyurl.com/y7yt7buz

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.

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**INTRODUCTIONS AND MEETING QUORUM**
Randy Wolff declared that a quorum was reached.


**CALL FOR PATENTS**
Mike LaBonte called for declaration of any patents or pending patents related to the IBIS 3.2, IBIS 4.2, IBIS 5.1, IBIS 6.1, Touchstone 2.0, IBIS-ISS 1.0 or ICM 1.1 specifications. No patents were declared.


**REVIEW OF MINUTES AND ARS**
Mike LaBonte called for comments on the minutes of the November 12, 2018 IBIS Asia Summit in Tokyo, the November 14, 2018 IBIS Asia Summit in Shanghai, the November 16, 2018 IBIS Asia Summit in Taipei, and the November 30, 2018 IBIS Open Forum teleconference. Curtis Clark moved to approve all the minutes. Michael Mirmak seconded the motion. There were no objections.

Mike reviewed ARs from the previous meeting.

1. Michael Mirmak to confirm what LPB information he is able to share more broadly [AR]. Michael reported he has the question out to the LPB group, but he has not received a response yet and would like to keep the AR open.

**ANNOUNCEMENTS, CALL FOR ADDITIONAL AGENDA ITEMS**
Mike LaBonte reported he received BIRD197.1 from Walter Katz for unofficial review, and he mistakenly sent it out for official review. It will remain on the agenda for comments and be treated as an official BIRD release.

**MEMBERSHIP STATUS AND TREASURER'S REPORT**
Bob Ross reported that we have 25 members. There is $19,051 in our account, with $16,801 accumulated for 2018. $2,250 is allocated to 2019. We may get more payments and do a deduction for SAE assessments for our work with SAE as our parent organization.

**WEBSITE ADMINISTRATION**
Mike LaBonte reported we do have a new webpage added related to work on IBIS 7.0.

**MAILING LIST ADMINISTRATION**
Curtis Clark reported we've had a few emails bounce from ieee.org related to co-branded emails on DesignCon. Mike LaBonte noted he will need to send out one more of those mailings later today and one in two weeks.

**LIBRARY UPDATE**
No update.

**INTERNATIONAL/EXTERNAL ACTIVITIES**
- Conferences
None.

- Press Update
None.

- Related standards
IEC 63055/IEEE 2401, JEITA "LPB"
Michael Mirmak reported there was a LPB (P2401) meeting earlier this week related to the Draft 2 approval. The document is now open for comments to members. The next LPB meeting is January 22, 2019, but the date is tentative. They will review any comments received between now and then at that meeting.

## SUMMIT PLANNING AND STATUS

- DesignCon 2019 IBIS Summit

DesignCon will be held in Santa Clara, CA on January 29 through January 31, 2019.  An IBIS Summit will be held on Friday, February 1, 2019.  Mike LaBonte noted it will be in room 209 of the convention center.  Bob Ross noted that Cadence needed to be added as a sponsor to the IBIS webpage.  Mike will add them to the webpage [AR].  Bob reported there are about 12 presentations penciled in already.  We plan to introduce IBIS 7.0 officially at the Summit.  Lance Wang added there are 27 registrations so far.  Mike reported we have a barter agreement with DesignCon.  We are given a 20% discount to share for conference registration, which is available on the IBIS webpage.  Cadence Design Systems, Keysight Technologies, Mentor, a Siemens Business, and Synopsys are sponsors.

Sponsorship opportunities for all upcoming IBIS summits are available, with sponsors receiving free mentions in the minutes, agenda, and other announcements.  Contact the IBIS Board for further details.

## QUALITY TASK GROUP

Mike LaBonte reported that the group is meeting on Tuesdays at 8:00 a.m. PT.  The next two meetings are cancelled because they fall on holidays.  The discussion has been mostly about the development of IBISCHK6.1.5 as well as getting prepared for IBISCHK7.0.

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 that the group normally meets regularly on Tuesdays at 12:00 p.m. PT.  The last two meetings were used for the Editorial task group.  The next meeting will be January 8, 2019.

Task group material can be found at:

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

## INTERCONNECT TASK GROUP

Michael Mirmak reported that the group usually meets at 8:00 a.m. PT on Wednesdays.  The group remains suspended until IBIS 7.0 activities are completed.

Task group material can be found at:

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

**EDITORIAL TASK GROUP**

Michael Mirmak reported that the group is meeting at 8:00 a.m. PT on Wednesdays and on Fridays when there is no Open Forum teleconference as well as during some ATM task group time slots. A draft IBIS 7.0 was voted out from the task group to the Open Forum for consideration. It is available on the IBIS webpage. They are actively soliciting feedback on the draft. The draft went through over 35 editorial revisions, with a document of draft changes on the task group page. The largest change was the introduction of the interconnect improvements. There are numerous clarifications and corrections to the AMI flows. Mike LaBonte noted he found as many as 41 drafts. The effort was very large. He thanked Michael for chairing the group and Justin Butterfield for taking minutes, some times as many as 3 per week. He thinks the document is much more consistent than it was before. Michael added that 17 BIRDs were incorporated. The document is posted in markup mode, but markup can be turned off if opened in Word. Mike will make a PDF version without markup and post it to the webpage [AR]. Mike noted some editorial notes for future consideration are also posted on the webpage. Comments on the introductory page and the full document are welcome.

Arpad Muranyi asked what the markup baseline is. Mike noted it is relative to IBIS 6.1. Bob Ross added that the Editorial task group will likely meet next year to review comments and deal with any other issues. Michael noted there should be discussion on the process for dealing with comments. Bob thought they should be recorded and added to the issues list. Mike thought there should be a new document to record issues relevant to IBIS 7.0, a new known issues document. Bob noted known issues is usually relevant to the final version. Issues could be added to the Editorial task group's spreadsheet, the editorial checklist. Mike agreed with this. Any issues can be sent to Michael to add to the spreadsheet. Mike agreed with Bob that any issues found that are not addressed after ratification of IBIS 7.0 can be moved to a new known issues document for IBIS 7.0. Arpad clarified Mike's earlier question, asking if new comments should be added to a new spreadsheet since comments now are coming from the Open Forum. Bob thought that only one spreadsheet should be maintained by the Editorial task group. Mike agreed with this. Bob commented that minor spelling fixes also do not need to be recorded in the spreadsheet.

Bob noted the markup version is over 500 pages. Mike thought it would be good to note that comments should refer to pages in the non-markup version.

Task group material can be found at:

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

**NEW ADMINISTRATIVE ISSUES**

Mike LaBonte noted that the minutes show an example of a member company, Micron, with a subsidiary listed as Micron Memory Japan. He wondered if it was clear that the subsidiary is not a separate member company. Bob thought that indentation used already was clear. Mike agreed to this notation as long as there was not confusion.

**BIRD197.1: NEW AMI RESERVED PARAMETER DC_OFFSET**

Mike LaBonte noted some editorial changes were made. Bob noted some of his comments

could use further discussion in the ATM task group. Arpad Muranyi agreed to put it on the agenda for a future ATM task group meeting.

## BIRD166.4: RESOLVING PROBLEMS WITH REDRIVER INIT FLOW
Discussion was tabled.

## BIRD181.1: I-V TABLE CLARIFICATIONS
Discussion was tabled.

## BIRD190: CLARIFICATION FOR REDRIVER FLOW
Discussion was tabled.

## IBISCHK PARSER AND BUG STATUS
Bob Ross reported the IBISCHK6.1.5 source code was received. He'll be going through the process to distribute it. The executables associated with it will be added to the webpage by Mike. This assumes we will accept the parser. There is a vote needed to accept the parser in order to make payment of $1,000 to the parser developer. Mike noted the $1,000 was voted already as the payment to make. Mike added that many regression checks were done by the developer. He also does additional checks with his own set of models. He also compares 32 and 64-bit executables to see any differences. There are some expected differences in IBIS-AMI model checking messages. He also compares Linux and Windows versions and results compared to the last IBISCHK version.

Bob moved to accept the IBISCHK6.1.5 parser and make payment to the developer. Michael Mirmak seconded the motion. There were no objections. Michael asked if a roll call vote was needed. Mike noted that the funds were already approved, so this is just a vote to release the funds. He and Bob did not feel a roll call vote was needed. Michael and Radek Biernacki agreed.

Arpad Muranyi asked when the parser would be released. Bob was hoping to send out links to the source code after the meeting.

Mike will create a webpage for the new executables, also noting the user guide release is TBD [AR].

Bob also noted there are two potential bugs that have not been dealt with yet. These may turn into bug reports later.

## NEW TECHNICAL ISSUES
Michael Mirmak asked how many IBIS Open Forum meetings are needed for review of IBIS 7.0 before it can be scheduled for a vote. Mike noted the Policies and Procedures document does not state a requirement. Bob stated it could be scheduled for a vote on February 1, 2019 at the

DesignCon meeting based on previous practice of requiring two meetings for review, with voting in the third meeting. Mike noted we would need to schedule a vote during the January 11, 2019 IBIS Open Forum meeting. Any changes to the document would need to be mentioned during that meeting.


**NEXT MEETING**

The next IBIS Open Forum teleconference meeting will be held on January 11, 2019. The DesignCon IBIS Summit is scheduled on February 1, 2019. No teleconference will be available.

Mike LaBonte thanked the participants for all their contributions to IBIS in 2018.

Arpad Muranyi moved to adjourn. Bob Ross seconded the motion. The meeting adjourned.


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**NOTES**

IBIS CHAIR: Mike LaBonte
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This meeting was conducted in accordance with ANSI guidance.

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 the official ibis@freelists.org and/or ibis-users@freelists.org email lists (formerly ibis@eda.org and ibis-users@eda.org).
- To subscribe to one of the task group email lists: ibis-macro@freelists.org, ibis-interconn@freelists.org, or ibis-quality@freelists.org.
- 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/bugsplt.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

| Organization | Interest Category | Standards Ballot Voting Status | November 14, 2018 | November 16, 2018 | November 30, 2018 | December 21, 2018 |
|---|---|---|---|---|---|---|
| ANSYS | User | Inactive | - | - | - | X |
| Applied Simulation Technology | User | Inactive | - | - | - | - |
| Broadcom Ltd. | Producer | Inactive | - | - | - | - |
| Cadence Design Systems | User | Active | X | X | X | X |
| Cisco Systems | User | Inactive | - | - | - | - |
| CST | User | Inactive | - | - | - | - |
| Ericsson | Producer | Inactive | X | X | - | - |
| GLOBALFOUNDRIES | Producer | Inactive | - | - | X | - |
| Huawei Technologies | Producer | Inactive | - | - | - | - |
| IBM | Producer | Inactive | - | - | - | - |
| Infineon Technologies AG | Producer | Inactive | - | - | - | - |
| Intel Corp. | Producer | Active | X | X | X | X |
| IO Methodology | User | Active | X | - | X | X |
| Keysight Technologies | User | Active | - | - | X | X |
| Maxim Integrated | Producer | Inactive | - | - | - | - |
| Mentor, A Siemens Business | User | Active | X | - | X | X |
| Micron Technology | Producer | Active | - | - | X | X |
| NXP | Producer | Inactive | - | - | - | - |
| Raytheon | User | Inactive | - | - | - | - |
| SiSoft | User | Active | X | X | X | X |
| Synopsys | User | Active | X | - | X | - |
| Teraspeed Labs | General Interest | Active | - | - | X | X |
| Xilinx | Producer | Inactive | - | - | - | - |
| ZTE Corp. | User | Inactive | X | - | - | - |
| Zuken | User | Inactive | - | - | - | - |

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

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.