



IBIS Hybrid Summit at DesignCon 2026 Minutes

Meeting Date: **June 17, 2026**

Meeting Location: **Politecnico Di Torino, Turin, Italy with IEEE SPI 2026**

VOTING MEMBERS AND 2026 PARTICIPANTS

AMD	(Bassam Mansour)
Analog Devices	(Jermaine Lim-Abroguena)
Applied Simulation Technology	(Fred Balistreri)
Arm	Kinger Cai
Aurora System	(Dian Yang)
Broadcom	(Yunong Gan)
Cadence Design Systems	Kyle Lake, Jared James, Sai Zhou
Ciena	(Stephen Shew)
Cisco	(Shadi Ebrahimi Asl)
Dassault Systemes	(Stefan Paret)
Google	(Hanfeng Wang)
Huawei Technologies	(Hang (Paul) Yan)
Infineon Technologies AG	(Kasthuri Rengan Narayanan)
Intel Corporation	Michael Mirmak*, Ben Silva, Alex Manukovsky, Joshua Nutzati
Keysight Technologies	Fangyi Rao, Ming Yan, Pegah Alavi, David Banas,
	Seok Keun Choi, Tim Wang Lee
Marvell	Steven Parker, Ioana Preda*, Roxana Vladuta*, Toma Ursutiu*
MathWorks	Walter Katz*, Tripp Worrell
Micron Technology	Justin Butterfield
MST EMC Laboratory	Chulsoon Hwang, Zhiping Yang
Nvidia	(Ben Friedmann Gluck), Elad Bar*
Siemens EDA	Weston Beal, Arpad Muranyi*, Randy Wolff, Todd Westerhoff,
	Zhichao Deng, Matt Leslie, Scott Wedge
Signal Edge Solutions	(Benjamin Dannan), Tyler Huddleston, Emily Tann, [Graham Kus]
STMicroelectronics	Manish Bansal, Manishka Mishra*, Fabio Brina*, Raushan Kumar*
Synopsys	Curtis Clark, Ted Mido, Edna Moreno, Jian Yang, Manu Pillai
ZTE Corporation	(Zhongmin Wei)
Zuken	Ralf Brüning*, Shinji Takahashi

OTHER PARTICIPANTS IN 2026

Advantest Corporation	Genichi Tanaka
Altera	Hsinho Wu*
Amphenol	Graham Kus*
ASUS	Chite Chen, Joseph Chen
Dacco	Joan Vollen
Eliyan	Ali Khoshniat, Joshua Kim, Arpit Kothari,
	Mohammad Mahani
FJScaler	Ron Olisar
Harman	Isabelo Dector*
KarMic	Padiyappa S.*
Kioxia	Yuta Hibe
McGill University	Roni Khazaka*
Mercury Systems	Casey Mallare
New Polys LLC	Zahra Pezeshki*
PCB Automation	Zhiping Yang

Qualcomm
RaceEL Systems
SAE-ITC
SI-Clarity
Sintecs
Socionext
Unaffiliated

Todd Bermensolo
Venkata Rao S
Tammy Patton, Richard DeMary, Jose Godoy
Doug Burns*
Hans Klos
Futoshi Terasawa
Ole Steffensen, Gerson Morales*

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

106010980@teams.bjn.vc

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#

[Find a local number](#) | [Reset PIN](#)

[Learn More](#) | [Meeting options](#)

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.

SUMMIT MINUTES - SUMMARY AND LINKS

The IBIS Summit at DesignCon 2026 at Santa Clara, CA was held both in-person and online in hybrid format. The notes below capture key content and discussions. A summit recording has been made available where time index is provided in 3 parts.

IBIS Summit presentations, their recordings and support materials are available at this link:

Link: <https://ibis.org/summits/feb26/>

OFFICIAL OPENING AND AGENDA

(Start 00:04:00, To 00:02:15. *Note: beginning of recording 1 of 2*)

The outgoing IBIS Chair, Doug Burns, joined remotely. Doug welcomed attendees to the summit, and thanked the IBIS summit sponsors for their support: Cadence, Intel, Keysight, MathWorks, Micron, Siemens EDA, and Synopsys.

Doug also summarized the resources available on the IBIS website including the recently adopted IBIS 8.0 specification, the upcoming Touchstone 3.0 specification draft, as well as IBIS and Touchstone IRDs available for review.

Link: <https://www.ibis.org/summits/>

IBIS CHAIR'S REPORT

(Start 00:01:30, To 00:28:30 - *recording 1 of 2*)

Doug Burns, Outgoing Chair, IBIS Open Forum Committee (SI-Clarity, USA)

Doug presented on the following:

- 7 IBIS Sponsors as of February 2026:
 - Cadence Design Systems
 - Intel
 - Keysight Technologies
 - MathWorks
 - Micron
 - Siemens EDA
 - Synopsys
- 27 IBIS Member Organizations
 - A consortium involving multiple companies- both EDA vendors, Hardware implementation companies, and ASIC/CPU chip vendors.
 - The number of members by year has more or less moved between 25 and 35 members since 1995, these numbers have changed as acquisitions have come along.
 - Doug presented the IBIS Open Forum website and noted the logos represent membership.
- Roster of IBIS Officers for current term, June 12, 2026 to May 2027
 - Summary of elected individuals representing organizations on board:
 - Chair: Kyle Lake, Cadence Design Systems
 - Vice Chair: Kinger Cai, arm
 - Secretary: Graham Kus, Amphenol
 - Treasurer: Randy Wolff, Siemens EDA
 - Librarian: Zhiping Yang, PCB Automation & MST
 - Postmaster: Curis Clark, ANSYS/Synopsys
 - Social Media: Edna Moreno, Synopsys
 - Summits: Manu Pillai, Synopsys

- Webmaster: Steve Parker, Marvell
- Additional liaison positions:
 - University Relations: Chulsoon Hwang, MST
 - IEEE DASC Liaison: Michael Mirmak, Intel
- IBIS Meetings (weekly teleconferences)
 - Quality task group (Tuesdays, 9:00 PT)
 - Advanced Technology Modeling (ATM) task group (Tuesdays, 12:00 PT)
 - Interconnect task group (Wednesdays, 8:00 PT)
 - Editorial task group (Fridays, 8:00 PT when no IBIS OF meeting)
- IBIS Open Forum teleconference every 3 weeks (Fridays, 08:00 PT)
- IBIS Summit meetings (USA and international)
 - DesignCon, IEEE SPI, IEEE EMC+SIPI, Shanghai, Tokyo (JEITA-organized)
- Participants: ~330 in 2025
 - Participants noted as accumulated attendance-list in Minutes throughout each year
- SAE ITC
 - Industry Technologies Consortia is the parent organization of the IBIS Open Forum
 - SAE ITC representatives: Tammy Patton, Rich DeMary, and Peter Doty
 - SAE ITC provides financial, legal, and other services to the IBIS Open Forum:
 - Link: <https://www.sae-itc.com/>
- Task Groups
 - Advanced Technology Modeling (ATM) task group (Tuesdays, 12:00 PT)
 - Chair: Arpad Muranyi, Siemens EDA
 - https://ibis.org/atm_wip/
 - Develop non-interconnect technical BIRDs
 - Editorial task group (Fridays, 8:00 PT when no IBIS OF meeting)
 - Chair: Michael Mirmak, Intel
 - https://ibis.org/editorial_wip/
 - Produce IBIS specification documents
 - Interconnect task group (Wednesdays, 08:00 PT)
 - Chair: Michael Mirmak, Intel
 - https://ibis.org/interconn_wip/
 - Develop on-die/package/module/connector interconnect modeling BIRDs
 - Quality task group (Tuesdays, 09:00 PT)
 - Acting Chair: Randy Wolff, Siemens EDA
 - https://ibis.org/quality_wip/
 - Oversee IBISCHK parser testing and development
- IBIS Milestones

- Various accomplishments and industry-associated activities shown in slides
- Other Work
 - Specification Development
 - Current official BIRD content in IBIS 8.0 specification
 - IBIS work includes governing Touchstone (s-parameter file) specifications
 - Touchstone 3.0 is in draft stage: pole-residue compression format
 - IBISCHK: IBIS file syntax parser
 - Parser development contract in progress for IBISCHK8
 - TSCHK: Touchstone file syntax parser
 - TSCHK3 is under planning process for 2026
 - Both IBISCHK and TSCHK have freely available executables
 - Both have source code available by license if embedding in EDA tool
- BIRD description (Buffer Issue Resolution Document)
 - Summary of present BIRDs considered for adoption
- TSIRD description (Touchstone Issue Resolution Document)
 - Summary of present TSIRDs considered for adoption
- BUGs
 - How to submit bug reports for IBISCHK and TSCHK/TSCHK2
 - Summary of present BUGs considered for resolution
- Recent and Future Developments in IBIS
 - Expanded system-level perspective
 - Power Integrity focused modeling
 - Multi-level analog buffer modeling
 - Interconnect modeling
 - Quality and Testing
 - Specification Clarification
 - What else should we be looking at? Bring your ideas!
- Participation in IBIS
 - The success of IBIS depends on active participation and volunteering
 - Bringing your ideas and talents to IBIS
 - Task groups for technical discussions and document editing
 - IBIS email reflectors
 - Open Forum teleconferences for event planning and voting
 - Summit presentations
 - Social Media Ideas
 - IBIS Board and task group volunteering
 - Writing BIRDs- Buffer Issue Resolution Documents

- IBIS Website Resources
 - IBIS Summits
 - Task Group information
 - Member FAQ
 - Specification documents (IBIS and Touchstone)
 - BIRDs (IBIS), ISSIRDs (Spice), and TSIRDs (Touchstone)
 - Email support
 - Syntax parser downloads (IBISCHK for IBIS/IBIS-AMI and TSCHK for Touchstone)
 - Link: <https://www.ibis.org>

This concluded the Chair's report.

PRESENTATIONS:

COMPARATIVE ANALYSIS OF C COMP EXTRACTION TECHNIQUE FOR HIGH-FIDELITY IBIS I/O BUFFER MODELING

(Start 00:30:00, To 00:53:45 - *recording 1 of 2*)

Rahul Kumar (STMicroelectronics, India)

Manish Bansal (STMicroelectronics, India)

Manishka Mishra (STMicroelectronics, India)

[Presented by Manishka Mishra]

The presentation covered the following:

- Introductions
- Extraction Methods
- Results
- Conclusion & Summary
- Future work
- Discussion

IBIS FOR I3C SERIAL TRANSMISSION

(Start 00:55:30, To 01:19:00 - *recording 1 of 2*)

Fabio Brina (STMicroelectronics)

[Presented by Fabio Brina]

The presentation covered the following:

- Introduction to I3C protocol and comparison with SPI and I2C
- Characterization of I3C driver through IBIS I/O and IBIS I/O_open_drain
- Simulation of I3C IBIS models into a specific Test-bench with both IBIS types
- Simulation of the wasted Power of I3C IBIS Test-bench
- Considering the opportunity to update the I/O_open_drain Model Type
- to include an Internal pull-up resistor in the open drain structure
- Discussion

POWER INTEGRITY MODELING BIRDS 234 AND 235

(Start 01:20:00, To 01:39:30 - *recording 1 of 2*)

Walter Katz (MathWorks, USA)

[Presented by Walter Katz]

The presentation covered the following:

- Two Power Integrity BIRDS currently under consideration
 - BIRD 234: Walter Katz, MathWorks
 - BIRD 235: Kingor Cai, ARM Ltd.
- High level requirements of Power Integrity models for IBIS, EMD and other
- electronic Devices
- Status of resolving BIRDS 234 and 235
- Discussion

IBIS INTERCONNECT TASK GROUP UPDATE: TOUCHSTONE 3.0 FEATURES & PROGRESS

(Start 00:01:15, To 00:22:00 - *recording 1 of 2*)

Michael Mirmak (Intel, USA)

(Chair, Interconnect Task Group)

[Presented by Michael Mirmak]

The presentation covered the following:

- Touchstone format maintained by the IBIS Open Forum since 2007
 - Touchstone 1.1 (2002) – documented format from mid-1980s RF software
 - Touchstone 2.0 (2009) – added optional IBIS-like keywords for cross-checking
 - Touchstone 2.1 (2024) – corrections plus clarifications on per-port referencing
- Touchstone gaps identified by industry in the interconnect context
 - File compression not supported: large, fast networks cause unwieldy files
 - Connecting ports requires documentation: automation not supported
- Touchstone 3.0 is being prepared to address these issues
- Discussion

ACCURATE SI/PI ANALYSIS OF DIFFERENTIAL INTERFACES: ADDRESSING LIMITATIONS IN POWER AWARE IBIS MODELING METHODOLOGY

(Start 00:22:50, To 00:34:00 - *recording 1 of 2*)

Raushan Kumar (STMicroelectronics, India)

Manish Bansal (STMicroelectronics, India)

[Presented by Raushan Kumar]

The presentation covered the following:

- Introduction
- Challenge
- Conventional Modelling
- Proposed Solution
- Conventional vs Proposed
- Approach Gain
- Conclusion
- Discussion

IBIS IMPORTANCE FOR SI AND PI

(Start 00:37:30, To 00:47:00 - *recording 1 of 2*)

Douglas Burns (SI-Clarity, USA)

[Presented by Ralf Brüning]

The presentation covered the following:

- What is the IBIS Group About Today?
 - Not Just IO Buffer Model
- Active IBIS Work
 - IBIS 8.0 Released in December 2025
 - IBISCHK 8.0 in Development
- IBIS BIRD's 234 & 235
 - Define parameters required for Power deliver models
 - Standardized PI Models as was done for SI models
- Touchstone 3.0
 - Improved models with standardized Pole-Residue representation
 - Decreases file size
 - Standardize Port Mapping
- A Free Open Standard [Specification] for SI & PI Models
- IBIS Open Forum (IOF)
 - Any company can attend meetings and use specification for free!
 - Member organizations have voting right
- Participation
 - IOF
 - Summit papers
- Who should be involved
 - Computer development
 - Network Development
 - Aerospace
 - Automotive
 - IOT
- IBIS Website Resources
- Discussion

CLOSING REMARKS

(Start 00:47:00, To 00:49:26 *Note: end of recording 2*)

Closing remarks provided by summit moderators. Doug Burns thanked the attendees at the summit and thanked the IBIS summit sponsors for their support: Cadence, Intel, Keysight, MathWorks, Micron, Siemens EDA, and Synopsys.

The meeting was adjourned.

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NOTES

IBIS Officers:

CHAIR: Kyle Lake

klake@cadence.com

Principal Application Engineer, Cadence.

VICE CHAIR: Kinger Cai

kinger.cai@arm.com

Senior Principal Engineer, Arm.

SECRETARY: Graham Kus

graham.kus@ibis.org

Signal Integrity Engineer, Amphenol.

TREASURER: Randy Wolff

randy.wolff@siemens.com

Product Architect, Siemens EDA.

LIBRARIAN: Zhiping Yang

YangZhip@mst.edu

CEO, PCB Automation.

WEBMASTER: Steven Parker

sparker@marvell.com

Senior Staff Manager, Architecture DSP at Marvell.

POSTMASTER: Curtis Clark

curtis.clark@ansys.com

Synopsys.

SOCIAL MEDIA CHAIR: Edna Moreno

edna.moreno@synopsys.com

Signal Integrity Engineer, Synopsys.

SUMMITS CHAIR: Manu Pillai

manu.velayudhan@synopsys.com

Sr. Director, Solutions Engineering, Synopsys.

UNIVERSITY RELATIONS CHAIR: Chulsoon Hwang

hwangc@mst.edu

Associate Professor, Missouri University of Science and Technology.

IEEE DASC LIASON: Michael Mirmak

michael.mirmak@intel.com

Signal Integrity Technical Lead, Intel.

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: `ibischk7`, `tschk2`, `icmchk1`, `s2ibis`, `s2ibis2` and `s2iplt`.

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

<https://ibis.org/bugs/ibischk/>
<https://ibis.org/bugs/ibischk/bugform.txt>

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

<https://ibis.org/bugs/tschk/>
<https://ibis.org/bugs/tschk/bugform.txt>

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

<https://ibis.org/bugs/icmchk/>
https://ibis.org/bugs/icmchk/icm_bugform.txt

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

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

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

<https://ibis.org/>

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

<https://ibis.org/directory.html>

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

Organization	Interest Category	Standards Ballot Voting Status	May 22, 2026	June 12, 2026	June 17, 2026
AMD (Xilinx)	Producer	Inactive	-	-	-
Analog Devices	Producer	Inactive	-	-	-
Applied Simulation Technology	User	Inactive	-	-	-
Arm	Producer	Inactive	-	-	-
Aurora System	User	Inactive	-	-	-
Broadcom Ltd.	Producer	Inactive	-	-	-
Cadence Design Systems	User	Active	-	X	-
Ciena	User	Inactive	-	-	-
Cisco	User	Inactive	-	-	-
Dassault Systems	User	Inactive	-	-	-
Google	User	Inactive	-	-	-
Huawei Technologies	Producer	Inactive	-	-	-
Infineon Technologies AG	Producer	Inactive	-	-	-
Intel Corp.	Producer	Active	X	X	X
Keysight Technologies	User	Inactive	-	-	-
Marvell	Producer	Inactive	X	-	X
MathWorks	User	Active	-	X	X
Micron Technology	Producer	Inactive	-	X	-
MST EMC Lab	User	Inactive	-	X	-
Nvidia	Producer	Inactive	-	-	X
Siemens EDA	User	Active	X	X	X
Signal Edge Solutions	User	Inactive	-	-	-
STMicroelectronics	User	Active	X	-	X
Synopsys	User	Active	X	X	-
ZTE Corp.	User	Inactive	-	-	-
Zuken	User	Active	-	X	X

N/A = 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.