



IBIS Open Forum Minutes

Meeting Date: **April 1, 2022**

Meeting Location: **Teleconference**

VOTING MEMBERS AND 2022 PARTICIPANTS

Analog Devices (Maxim Integrated)	Tushar Pandey, Jermaine Lim
ANSYS	Curtis Clark*
Applied Simulation Technology	(Fred Balistreri)
Broadcom	(Yunong Gan)
Cadence Design Systems	Zhen Mu*
Celestica	(Sophia Feng)
Cisco Systems	(Stephen Searce)
Dassault Systemes	(Stefan Paret)
Ericsson	(Guohua Wang)
Google	(Hanfeng Wang)
Huawei Technologies	(Hang (Paul) Yan)
Infineon Technologies AG	(Christian Sporrer)
Instituto de Telecomunicações	(Abdelgader Abdalla)
Intel Corporation	Hsinho Wu*, Michael Mirmak*
Keysight Technologies	Radek Biernacki*, Ming Yan*
Luminous Computing	(David Banas)
Marvell	Steven Parker*
MathWorks	Mike LaBonte*, Walter Katz*
Micron Technology	Randy Wolff*
MST EMC Lab	(Chulsoon Hwang)
SerDesDesign.com	(John Baprawski)
Siemens EDA	Arpad Muranyi*, Weston Beal*
STMicroelectronics	(Olivier Bayet)
Synopsys	Ted Mido*
Teraspeed Labs	Bob Ross*
Xilinx	(Bassam Mansour)
Waymo	Zhiping Yang*
ZTE Corporation	(Shunlin Zhu)
Zuken	(Michael Schäder)
Zuken USA	Lance Wang*

OTHER PARTICIPANTS IN 2022

None

In the list above, attendees 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#

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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

Mike LaBonte declared that a quorum had been reached.

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 patents were declared.

REVIEW OF MINUTES AND ARS

Randy Wolff called for comments on the minutes of the March 11, 2022, IBIS Open Forum teleconference. Curtis Clark moved to approve the minutes. Michael Mirmak seconded the motion. There were no objections.

Randy reviewed ARs from the previous meeting.

- Randy Wolff to write IBIS 7.1 article for Signal Integrity Journal [AR]
Randy said this was done. It had not yet been published. Randy also wrote a variation of the article for the IEEE EMC Society magazine. That would mention the upcoming "Ask the IBIS Experts" panel.
- Michael Mirmak to send ISSIRD draft to IBIS reflector for review [AR]
Randy said this was done.
- Michael Mirmak to confirm that leading zeros and exponents are allowed in Touchstone 2.0 [AR]
Michael said this was done.
- Randy Wolff to update BIRD216 to reflect approval [AR]
Randy said this was done.
- Randy Wolff to update BIRD217 to reflect approval [AR]
Randy said this was done.

- Randy Wolff to send vote solicitation for BIRD211.4 [AR]
Randy said this was done.

ANNOUNCEMENTS, CALL FOR ADDITIONAL AGENDA ITEMS

None

MEMBERSHIP STATUS AND TREASURER'S REPORT

Bob Ross reported that we had 22 renewed and new members. Unpaid returning companies would be dropped from membership at the end of May. Bob said the SAE ITC charge of \$6,048 for 2021 had been recorded, leaving a 2021 balance of \$5,095, \$4,645 adjusted for 2021 attribution. We had a balance of \$18,793 (rounded) for 2022, and a balance adjusted for 2022 attribution of \$22,143 (rounded). More payment reminders would be sent, and several more membership payments were in process. Bob would check with SAE ITC. On-site DesignCon summit expenses were expected, slightly less than previous DesignCon expenses.

WEBSITE ADMINISTRATION

Steven Parker said the minutes and BIRD219 had been updated. There was a new entry on the free tools page, which Randy Wolff showed. Steve needed to add a column to the IBISCHK bugs page. Bob Ross said the BIRD list did not yet reflect approval changes he had made. Steven said he would refresh the list.

MAILING LIST ADMINISTRATION

Curtis Clark reported that all was well. Bounces had slowed down.

LIBRARY UPDATE

Zhiping Yang said there was no update.

INTERNATIONAL/EXTERNAL ACTIVITIES

- Conferences

Randy Wolff said IEEE SPI 2022, was to be held in Siegen, Germany, May 22 to 25. Bob Ross said he had not seen the program available yet, but the conference would be virtual and on-site.

26th IEEE Workshop on Signal and Power Integrity, May 22 to 25, 2022

<https://spi2022.uni-siegen.de/>

Bob noted IEEE EMC+SIPI would be held in Spokane, Washington, August 1 to 5.

IEEE International Symposium on Electromagnetic Compatibility, Signal & Power Integrity (EMC+SIPI), August 1-5, 2022

<https://emc2022.emcss.org>

- Press Updates

None.

- Related standards

IEC 63055/IEEE 2401, JEITA "LPB"

Michael Mirmak said the next DASC meeting would be held Thursday.

- IEEE IBIS Standardization

Zhiping Yang said he had contacted IEEE about ballot processes. One question was about patent policy. A meeting had been suggested to discuss possibilities. Randy Wolff said work on that would proceed after DesignCon. He said there had been dual logo discussions in the past. Randy said SAE might want us to consider SAE standards. Michael Mirmak asked if we wanted to contact DASC. He said 10 years ago there had been an investigation, but our requirement for making the specifications freely available was a blocking factor. We would need to restrict meeting and specification access. Randy said we were looking for a new IBIS parent organization at the time, but the policy mismatches were a problem. Bob Ross said there were conflicting requirements. He asked if any organizations had relaxed their open/closed requirements. Also, what annual fees would be involved? Zhiping said it seemed some negotiation might be possible. Zhiping would work with Michael. Bob said there were new IEEE guidelines for political correctness in documents. Michael said IEEE had a new standards writing course.

SUMMIT PLANNING AND REVIEW

Randy Wolff said the fourth DesignCon 2022 summit announcement had been sent. The summit would be held Friday, April 8, as a hybrid event. The contract was in place, and room and food arrangements had been made. Randy would give a final headcount today, which probably would be under the minimum. It would start at 8:15. Bob Ross said we had four sponsors: Cadence Design Systems, Keysight Technologies, Siemens EDA, Synopsys. Presentations would be uploaded next week and would be available during the summit. One presentation was excessively long, some rescheduling might be needed. Randy said the authors could reduce it to focus on matters relevant to IBIS. Arpad Muranyi asked if there would be a microphone for online broadcast, and if there would be an audience microphone. Randy said yes, and Michael Mirmak would also bring a Jabra teleconference device to pick up room audio. Bob noted that the podium speaker could repeat questions. He said there would be time for discussion at the end.

IEEE SPI 2022 would be held at the end of May in Siegen, Germany. We were past the deadline for the first announcement, and logistics had not yet been worked out. It could be a virtual event later in the day. Bob said the time in the US would be early. Mike LaBonte had concerns about having a virtual meeting just as SPI presenters would be traveling. He suggested having a virtual event on a later date, hopefully with SPI presentation content. Bob said we would need to decide logistics soon to be in the SPI program.

QUALITY TASK GROUP

Mike LaBonte said the group meets on Tuesdays at 9:00 a.m. PT. Yingxin Sun from Cadence Design Systems had joined the group to show a bug that impacted tools embedding the source IBISCHK code, but a testcase for a bug report had not yet been supplied. The group had discussed the scheduling of the next IBISCHK development, and were leaning toward developing an IBISCHK 7.1.1, to reduce the work for an upcoming IBISCHK 7.2.0. Bob Ross said there may also be a bug from John Angulo from Siemens EDA. He said the Cadence and Siemens bugs would be crash bugs.

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 meets on Tuesdays at 12:00 a.m. PT. They had talked about PAMn, which needed some finishing touches. Michael Mirmak had submitted a BIRD clarifying AMI root name requirements.

Task group material can be found at:

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

INTERCONNECT TASK GROUP

Michael Mirmak reported the group was meeting on Wednesdays at 8:00 a.m. PT. They had discussed ISSIRD and TSIRD template formats. Touchstone 3 proposals including pole-zero format ["Pole-residue support for Touchstone" topic in Interconnect Task Group minutes] had been discussed, and that would be discussed further in the DesignCon summit. Arpad asked if pole-zero should be a new model type, not Touchstone. Michael said a 2019 article asked, "Why are there so many standards?". Bob Ross said a consideration was whether pole-zero was a general format, or did it have restrictions for passivity, or for vector fitting, that might make it incompatible with Touchstone. For example, could it be used for amplifier design? Arpad Muranyi said another question was if it was a data format or a container. Michael said some Touchstone experts might join us at the summit for that discussion. Bob felt Touchstone was a format, with no presumption about what it was used for. He said EDA tools were responsible for passivity, reciprocity, and causality checking.

Task group material can be found at:

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

EDITORIAL TASK GROUP

Michael Mirmak reported that the group remained suspended.

Task group material can be found at:

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

NEW ADMINISTRATIVE ISSUES

Randy Wolff showed the ISSIRD template document, explaining the recent changes. He said it should be approved by the Open Forum. Arpad Muranyi moved to vote in the next meeting. It would not be a roll call vote. Mike LaBonte seconded the motion. There were no objections.

Randy Wolff to announce ISSIRD template format vote [AR]

Randy showed the TSIRD template document. He said it was different from ISSIRD because Touchstone 2 was more like IBIS than SPICE. For example, it used terms like "keyword". Randy said this would be reviewed more.

Randy said some cleanup changes to the BIRD template would also be made. Bob Ross asked if all three documents would be approved at the same time. Randy said the BIRD work was not yet ready.

Randy showed the IBIS 7.1 Known Issues document. A new issue #7 from Michael Mirmak had been added, related to examples that did not pass the parser. Issue #8 suggested changing [Manufacturer] "Texas Instruments" to "NoName".

NEW AND REVISED *IRDS:

BIRD219: AMI PARAMETER ROOT NAME CLARIFICATIONS

Randy Wolff showed the BIRD. Michael Mirmak introduced the BIRD, describing the usage of AMI root names. He said the parser did not check for that, and it was a difficult problem to detect. The BIRD clarified the language to use “root name” consistently, and where checking should be performed by the model and/or EDA tool. He thanked the ATM Task Group for their help. Bob Ross said details in input vs. output requirements should be present. Michael said that was covered, describing the details. He said only the model could check the AMI_Init input string, and only the EDA tool could check the output string. He noted that “must” was used for EDA tool requirements, whereas “shall” was used for model requirements.

Radek asked if this would be contingent on AMI_Version. Michael said EDA tools today had cryptic reporting, but they would continue simulating, regardless of AMI_Version. Arpad Muranyi asked if it was enforceable at all by the parser. Michael said the parser could act like an EDA tool and report. It could also look for message outputs from the model, in addition to AMI_parameters_out. Arpad said the input string could not really be checked. Michael said a mismatch in one direction was unlikely.

Bob said we had at times enforced rules on previous version IBIS files. Walter Katz said this was a clarification about a rule that had existed all along. He felt the check should not be version dependent. Mike LaBonte agreed. Radek Biernacki said we did not want non-compliant models to break the flow. Michael said the sentence regarding message checking would constitute a new requirement. Randy asked if EDA tools would need to be fixed. Michael said it might not be possible to enforce the model returning mismatch warnings. Arpad said users might have trouble understanding the problem. Walter said it should be made clear to the user whether the EDA tool was wrong, or the model was wrong. Mike asked if IBISCHK should pass a bad root name to test the model warning. Michael said he had that in mind, noting that some kind of debug mode would also help. Bob said the AMI_Init return value was too ambiguous to be helpful. Michael said he could strike that sentence from the BIRD if others felt it should be. Randy suggested that further ATM discussion was warranted.

***IRDS SCHEDULED FOR VOTE:**

BIRD211.4: IBIS AMI REFERENCE FLOW IMPROVEMENTS

Randy Wolff showed the BIRD. Arpad Muranyi moved to vote. Walter Katz seconded.

The roll call vote tally was:

1. ANSYS – yes
2. Cadence – yes
3. Intel – yes
4. Keysight – yes
5. Marvell - yes
6. MathWorks – yes
7. Micron Technology – yes
8. Siemens EDA – yes
9. Synopsys – yes
10. Teraspeed Labs – yes
11. Zuken – yes

The vote passed.

Randy Wolff to update BIRD211.4 to reflect approved status [AR]

***IRDS ELIGIBLE FOR VOTE:**

BIRD213: EXTENDING IBIS-AMI FOR PAMn ANALYSIS

Randy Wolff said the BIRD was in final ATM revision.

BIRD218: DESIGNATOR PIN LIST RELAXATION

Randy Wolff showed the BIRD. Arpad Muranyi said there had been no new comments. Walter Katz moved to schedule a vote in the next meeting. Arpad seconded. There were no objections.

Randy Wolff to send vote solicitation for BIRD218 [AR]

TSIRD4: [END] KEYWORD CORRECTIONS AND OTHER EDITORIAL CHANGES

Randy Wolff showed the TSIRD plain text document. He said it would be transformed into the new template format once that was approved. Michael Mirmak said no comments had been received, noting that no parser change was required. Randy suggested adding that note when the new document was created.

Michael Mirmak to add note to TSIRD 4 that no parser change is required [AR]

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

Walter Katz moved to untable BIRDS 166.4, 190, and 210. He moved to schedule a vote to reject all three BIRDS, now that BIRD211.4 was approved. Radek Biernacki seconded. There were no objections. Randy said he would mention in the announcement that there was a recommendation to vote "no".

Randy Wolff to send vote solicitation for BIRD166.4, BIRD190, and BIRD210 [AR]

BIRD166.4: RESOLVING PROBLEMS WITH REDRIVER INIT FLOW

Discussed above.

BIRD181.1: I-V TABLE CLARIFICATIONS

Discussion was tabled.

BIRD190: CLARIFICATION FOR REDRIVER FLOW

Discussed above.

BIRD210: NEW REDRIVER AMI FLOW

Discussed above.

IBISCHK AND TSCHK PARSER AND BUG STATUS

Bob Ross said there would be an IBISCHK 7.1.1. A bug from Michael Mirmak was easy to fix but serious enough to warrant a new parser. Randy showed the IBISCHK bug list. Bob said two bugs were crashes. Arpad Muranyi said it was hard to know that the parser had crashed. There was no crash dialog, it just stopped printing. That had led him to think there was no problem at first.

NEW TECHNICAL ISSUES

Arpad Muranyi said Ted Mido had asked if Ignore_Bits was really about symbols, not bits. He said that would be discussed in ATM.

Michael Mirmak suggested putting IBISCHK and TSCHK source code on GitHub. He said that would provide access control, and it would be easier to integrate with development environments. Randy Wolff and Mike LaBonte agreed with the idea, as long as it would be secure. Bob noted that access should be revoked for people leaving a licensee company. Randy suggested discussing the idea in the Quality Task Group.

NEXT MEETING

The DesignCon 2022 IBIS Summit would be held April 8, 2022. The next IBIS Open Forum teleconference meeting would be held on April 22, 2022. The following IBIS Open Forum teleconference meeting was tentatively scheduled for May 13, 2022.

Radek Biernacki moved to adjourn. Bob Ross seconded the motion. The meeting 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 `s2ipt`.

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>

Other trademarks, brands and names are the property of their respective owners.

SAE STANDARDS BALLOT VOTING STATUS

Organization	Interest Category	Standards Ballot Voting Status	January 28,	February	March 11,	April 1,
			2022	18, 2022	2022	2022
Analog Devices (Maxim Integrated)	Producer	Inactive	-	X	-	-
ANSYS	User	Active	X	X	X	X
Applied Simulation Technology	User	Inactive	-	-	-	-
Broadcom Ltd.	Producer	Inactive	-	-	-	-
Cadence Design Systems	User	Active	X	X	-	X
Celestica	User	Inactive	-	-	-	-
Cisco Systems	User	Inactive	-	-	-	-
Dassault Systemes	User	Inactive	-	-	-	-
Ericsson	Producer	Inactive	-	-	-	-
Google	User	Inactive	-	-	-	-
Huawei Technologies	Producer	Inactive	-	-	-	-
Infineon Technologies AG	Producer	Inactive	-	-	-	-
Instituto de Telecomunicações	User	Inactive	-	-	-	-
Intel Corp.	Producer	Active	X	X	X	X
Keysight Technologies	User	Active	X	X	X	X
Luminous Computing	General Interest	Inactive	-	-	-	-
Marvell	Producer	Active	X	X	-	X
MathWorks (SiSoft)	User	Active	X	X	X	X
Micron Technology	Producer	Active	X	X	X	X
MST EMC Lab	User	Inactive	-	-	-	-
SerDesDesign.com	User	Inactive	-	-	-	-
Siemens EDA (Mentor)	User	Active	X	X	X	X
STMicroelectronics	Producer	Inactive	-	-	-	-
Synopsys	User	Active	X	X	X	X
Teraspeed Labs	General Interest	Active	X	X	X	X
Waymo	User	Inactive	X	X	-	X
Xilinx	Producer	Inactive	-	-	-	-
ZTE Corp.	User	Inactive	-	-	-	-
Zuken	User	Active	X	-	X	X

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.