



IBIS Open Forum Minutes

Meeting Date: **February 18, 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*
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*
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](tel: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.

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 January 28, 2022, IBIS Open Forum teleconference. Curtis Clark moved to approve the minutes. Radek Biernacki seconded the motion. There were no objections.

Randy reviewed ARs from the previous meeting.

- Randy Wolff to contact press outlets about IBIS 7.1 article [AR]
Randy said Signal Integrity Journal had replied that they would welcome an article.
- Michael Mirmak to produce new IBIS 7.1 PDF with Figure 46 corrected [AR]
Randy reported this was done.
- Michael Mirmak to draft template ISSIRD document [AR]
Randy said this was done, and the document was in review.

Randy Wolff to write IBIS 7.1 article for Signal Integrity Journal [AR]

ANNOUNCEMENTS, CALL FOR ADDITIONAL AGENDA ITEMS

None.

MEMBERSHIP STATUS AND TREASURER'S REPORT

Bob Ross reported that we had 15 paid members. Two had paid in the previous year. Unpaid returning companies will be dropped from membership at the end of May. We had a balance of \$12,150, and a balance adjusted for 2022 attribution of \$15,500. There may be expenses for DesignCon. Bob said the Xilinx representative would change to Bassam Mansour.

WEBSITE ADMINISTRATION

Steve Parker reported that minutes had been updated. Zhiping Yang had sent a models.txt file to test the new model library page update process. Steve would post the result of that with a corrected header. The About page had an eda.org reference that Steve had removed, along with other fixes. BIRD211.4 had been posted, and the IBIS 7.1 PDF had been updated to fix a figure issue. The 404 "page not found" page itself was encountering an error. Steve was working with BlueHost to fix that. Randy Wolff said the IBIS 7.1 Known Issues document also had been updated.

MAILING LIST ADMINISTRATION

Curtis Clark reported that some Gmail subscription requests had to be verified. Bob Ross asked if there had been any bounce notices for him, related ibis-interconn@freelists.org. Curtis said he would check.

LIBRARY UPDATE

Zhiping Yang reported that the new models page update process was working well. Steve Parker said he would work on the script to automate the few manual edits required. Zhiping said there had been no contacts or updates related to the model library page.

INTERNATIONAL/EXTERNAL ACTIVITIES

- Conferences

Randy Wolff said we could begin reporting on IEEE SPI 2022, to be held in Siegen, Germany, May 22 to 25.

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

- Press Updates

None.

- Related standards

IEC 63055/IEEE 2401, JEITA "LPB"

No discussion.

SUMMIT PLANNING AND REVIEW

Randy Wolff said the first DesignCon 2022 summit announcement had been sent. The summit would be held Friday, April 8, as a hybrid event. Masks might be required for the conference. Randy had signed a contract with Informa Markets to secure their obligations to IBIS. He had not yet received our obligations. Randy asked people planning to attend to let him know. Mike LaBonte asked how many free passes we would have. Randy said we would have five. Bob

Ross named some likely attendees, asking if anyone else was going, so that he could plan for food and beverage expenses. Bob said he was soliciting financial sponsors for the event. Bob felt we would have less than 50 in-person attendees, and lunch would have to be less than full catering. Bob said we had two planned presentations, and he was requesting more presentations. He noted that travelling attendees would need to plan to stay an extra day to attend the summit in person.

QUALITY TASK GROUP

Mike LaBonte said the group meets on Tuesdays at 9:00 a.m. PT. The group had been discussing new IBISCHK bugs. The IBISCHK 7.1.0 User Guide had been updated and posted to the IBISCHK7 web page. Mike had made corrections to the associated message spreadsheet.

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 crosstalk terms in the IBIS-AMI impulse matrix input. Arpad said they were finalizing the PAMn BIRD draft, which he encouraged people to review.

Tushar Pandey asked if it was possible to change the meeting time because he could not attend at that time. Arpad suggested having that discussion on the email list. Tushar said he would do that.

Task group material can be found at:

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

INTERCONNECT TASK GROUP

Randy Wolff reported that the group had been meeting in its Wednesday time slot at 8:00 a.m. PT. They continued to discuss possible additions for a Touchstone 3 specification. There had been a discussion about whether complex number pairs could be split across lines. They had discussed a BIRD draft about EMD [Designator Pin List], adding a new feature related to no-connect pins.

Task group material can be found at:

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

EDITORIAL TASK GROUP

Randy Wolff reported that the group remained suspended.

Task group material can be found at:

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

NEW ADMINISTRATIVE ISSUES

None.

NEW AND REVISED BIRDS:

BIRD211.4: IBIS AMI REFERENCE FLOW IMPROVEMENTS

Randy Wolff said the ATM Task Group had voted to submit the BIRD update. He showed the BIRD. Arpad Muranyi said page references had been corrected to use IBIS 7.1 page numbers, and there were a few other minor editorial updates. He said the BIRD had been discussed for years. Several other BIRDS would be voted down in favor of this BIRD. BIRD211.4 was a large BIRD, and the plan was to include it in IBIS 7.2. Arpad suggested we could vote on it either in the next meeting or the one after. Radek Biernacki suggested giving more time, asking to wait before scheduling the vote.

BIRDS SCHEDULED FOR VOTE:

None

BIRDS ELIGIBLE FOR VOTE:

BIRD213: EXTENDING IBIS-AMI FOR PAMn ANALYSIS

Arpad Muranyi said there would be a few more clarifications, and a BIRD213.1 would be submitted.

BIRD216: ALPHANUMERIC PIN NAMES

Randy Wolff showed the BIRD. Arpad Muranyi asked if it had been introduced in a prior Open Forum meeting. Randy said it had. Arpad summarized the changes. A definition for “alphanumeric” had been added, the requirement for the [Pin] keyword to have alphanumeric pin names had been added, and the requirement for `function_table_group` to be alphanumeric had been removed. Radek Biernacki moved to schedule a vote on the BIRD in the next Open Forum meeting. Arpad seconded. Without objection the motion passed.

Randy Wolff to send vote solicitation email for BIRD216 [AR]

BIRD217: REQUIRE CLOCKED RX MODELS TO RETURN CLOCK TIMES

Randy Wolff showed the BIRD. Arpad Muranyi described the new requirement for Rx models to return `clock_times` in the case where clock forwarding was used. It was important in that case because there was no embedded clock for EDA tools to recover. Bob Ross said “must” vs. “shall” had been debated. He asked if it would be difficult for the IBISCHK parser to check the new requirement. Arpad said the parser currently did not execute model functions, so it could not enforce the new requirement. It had been decided to only “highly recommend” `clock_times` for non-clock-forwarded cases. Arpad said redrivers were an exception because there was no mechanism to forward clocks.

Bob Ross said another BIRD might introduce new keywords that would help IBISCHK test the models for `clock_times` output and other functions. Mike LaBonte asked how many `AMI_GetWave` calls must be made before deciding there were no clock ticks. Arpad said `Ignore_Bits` could give an indication. Mike said IBISCHK could be significantly slower if it had to call `AMI_GetWave` many times before seeing `clock_times`.

Arpad said the BIRD also highly recommended using Rx_Decision_Time. The BIRD noted that if absent, the EDA tool must decide.

Arpad moved to schedule a vote on the BIRD in the next Open Forum meeting. Curtis Clark seconded. Without objection the motion passed.

Randy Wolff to send vote solicitation email for BIRD217 [AR]

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

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.

BIRD210: NEW REDRIVER AMI FLOW

Discussion was tabled.

IBISCHK AND TSCHK PARSER AND BUG STATUS

Randy Wolff showed IBISCHK BUG228. Bob Ross said an [IBIS Ver] 7.1 EMD file could refer to IBIS files going back to IBIS 2.0. In IBIS 7.0, a new rule prohibited attaching a single bus_label to two signal_name entries, but that was not checked in files with [IBIS Ver] less than 7.0. The [IBIS Ver] 2.0 file in the testcase gave no error message but gave two when changed to [IBIS Ver] 7.1. The suggested fix was to check all .ibs files using IBIS 7.0 rules, when it was checked as part of an EMD set. A new line would be printed by IBISCHK to explain. Bob suggested Annoying severity and Low priority classification, adding that it would be fixed in the next release. Mike LaBonte moved to approve the classification. Arpad Muranyi seconded. Without objection the motion passed.

Randy showed IBISCHK BUG229. He noted that the file had non-ASCII quote characters. Bob said he would fix those. Mike summarized the bug. He said the suggested fix was to not call the "system" function to find .pkg files, that could be done directly using other standard functions. Bob suggested Annoying severity and Low priority classification. Curtis Clark moved to approve the classification. Bob seconded. Without objection the motion passed.

Randy showed IBISCHK BUG230. Mike said the problem involved the check to see if a model was being used in both differential and single-ended contexts. Randy said the message identified the model as Series, which was incorrect. Bob affirmed that the file had no Series type models. He said the file should pass with zero errors, and the message was totally misleading. Bob proposed Severe severity and High priority classification. Radek Biernacki moved to approve the classification. Curtis seconded. Without objection the motion passed.

Randy Wolff showed IBISCHK BUG231. Mike LaBonte described the bug, saying that a certain "out of memory" message was reported as an internal bug in one place, and as an error in

another place in the code. Mike said it should always be printed as a bug. Bob moved to classify it as Annoying severity and Medium priority. Randy seconded. Without objection the motion passed.

NEW TECHNICAL ISSUES

None.

NEXT MEETING

The next IBIS Open Forum teleconference meeting would be held on March 11, 2022. The following teleconference meeting was tentatively scheduled for April 1, 2022. The DesignCon 2022 IBIS Summit would be held April 8, 2022.

Arpad Muranyi moved to adjourn. Curtis Clark 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 `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](http://www.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	December 10, 2021	January 7, 2022	January 28, 2022	February 18, 2022
Analog Devices (Maxim Integrated)	Producer	Inactive	X	-	-	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	X	-	-	-
Cisco Systems	User	Inactive	-	-	-	-
Dassault Systemes	User	Inactive	-	-	-	-
Ericsson	Producer	Inactive	-	-	-	-
Google	User	Inactive	X	X	-	-
Huawei Technologies	Producer	Inactive	-	-	-	-
Infineon Technologies AG	Producer	Inactive	X	-	-	-
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	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	X	-	-	-
Synopsys	User	Active	X	X	X	X
Teraspeed Labs	General Interest	Active	X	X	X	X
Waymo	User	Inactive	-	-	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.