



IBIS Open Forum Minutes

Meeting Date: **January 7, 2022**

Meeting Location: **Teleconference**

VOTING MEMBERS AND 2022 PARTICIPANTS

Analog Devices (Maxim Integrated)	(Tushar Pandey)
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	(Ravindra Gali)
ZTE Corporation	(Shunlin Zhu)
Zuken	(Michael Schäder)
Zuken USA	Lance Wang*

OTHER PARTICIPANTS IN 2022

Waymo	Zhiping Yang*
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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 December 10, 2021 IBIS Open Forum teleconference. Curtis Clark moved to approve the minutes. Zhiping Yang seconded the motion. There were no objections.

Randy reviewed ARs from the previous meeting.

- Zhiping Yang to send models page updates to Steve Parker [AR]
Zhiping reported this was done.
- Steve Parker to update Models page [AR]
Steve was still working on the list of 35 changes to the page.
- Michael Mirmak to send official IBIS 7.1 document [AR]
Michael said this was done.
- Randy Wolff to announce approval of IBIS 7.1 to email reflector [AR]
Randy said this was done.
- Randy Wolff to contact SAE ITC about IBIS 7.1 press release [AR]
Randy said this was done. There had been no reply from SAE ITC, but others reported the press release had been seen.
- Randy Wolff to contact press outlets about IBIS 7.1 article [AR]
Randy said this had not been done yet, he had been waiting to see the press release.
- Steve Parker to update IBIS website for IBIS 7.1 [AR]
Steve said this was done.

ANNOUNCEMENTS, CALL FOR ADDITIONAL AGENDA ITEMS

Randy Wolff said an IBIS 7.1 known issue would be discussed.

MEMBERSHIP STATUS AND TREASURER'S REPORT

Bob Ross said 2021 had closed with 29 members, but NXP had resigned their membership for 2022. The membership was now at 28, and the quorum would be 7 for 2022. Bob said that might be temporary.

Bob said the Instituto de Telecomunicações in Portugal had accidentally sent a \$900 payment, whereas the fee for educational institutions was \$450. The payment would be recorded as membership for 2022 and prepayment for 2023.

A full payment of \$17,500.00 for ibischk7 version 7.1.0 had been recorded on December 28, 2021. After the parser payment we had an \$11,143 balance for 2021, with a balance of \$10,693, adjusting for previous and next year allocations. The adjusted balance for 2022 was \$3,350. We had a \$450 adjusted balance for 2023 due to the prepayment by Instituto de Telecomunicações. Bob said payment had been received from Google, but no payment had yet been received from Waymo. He said Zhiping Yang could continue to represent Google. Zhiping said a payment for Waymo membership was in process.

Invoices for 2022 membership payments had been sent January 6, 2022. Autoreplies to some invoice emails indicated that contacts were not reachable. Bob would work to find other contacts.

WEBSITE ADMINISTRATION

Steven Parker reported that the minutes were up to date. NXP had been removed from membership listings. Copyrights had been updated for 2022. Steve had contacted BlueHost about ibis.org email service problems, and they had put him in a priority queue. A test email did not reach us. Later, BlueHost had sent an email to customers saying the problem had been resolved. Mike LaBonte said he had seen no ibis.org email problems since December.

Bob Ross asked if the DOCX minutes files for the recent summits had been uploaded. Steve said no, but he would do that.

Steve Parker to upload DOCX files for China and Japan summit minutes [AR]

MAILING LIST ADMINISTRATION

Curtis Clark reported that all was normal. There had been some new subscriptions. People changing email addresses had run into a few minor problems.

LIBRARY UPDATE

Zhiping Yang reported that the IBIS models page had been cleaned up and given to Steve Parker to update the web page. Bob Ross said it was interesting to see how many entries had been deleted.

INTERNATIONAL/EXTERNAL ACTIVITIES

- Conferences

Randy Wolff said we were not tracking any new conferences.

- Press Updates

None.

- Related standards

IEC 63055/IEEE 2401, JEITA "LPB"

Michael Mirmak reported that there was no update. Ted Mido said there was a discussion in the Japan summit about connecting 3D structure models to IBIS. Ted said the LPB group would be contacting Michael about that.

SUMMIT PLANNING AND REVIEW

Randy Wolff said DesignCon would be held in April. We would be given meeting space in the Hyatt hotel for up to 80 people. Mike LaBonte asked if a vote would be needed. Randy said the cost would be enough to warrant that. Arpad Muranyi asked if we had anyone able to conduct the meeting in-person. Randy said his travel was restricted. Randy said if we voted to approve the expense, we could always cancel, although there might be cancellation fees. Bob Ross said there might be minimums for the service contracts, such as for food. Randy noted that the summit would be held in about 3 months, and announcement emails would begin about 2 months before the event. Bob suggested April 8 as the tentative date for the summit. Randy said he would get more contract information to help inform a vote.

Randy to contact Suzanne Deffree about DesignCon summit contract terms [AR]

QUALITY TASK GROUP

Mike LaBonte said the group meets on Tuesdays at 9:00 a.m. PT. The group had held a vote to accept the source code for IBISCHK7.1.0, as authorized by the IBIS Open Forum, enabling payment to complete the contract. The prospect of a new IBIS Quality Specification and checklist was being investigated. Arpad Muranyi asked about a new bug that had been found. Mike said that could be discussed in the parser section of the meeting.

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 were discussing new BIRD drafts to address issues found during the editing and review of IBIS 7.1.

Task group material can be found at:

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

INTERCONNECT TASK GROUP

Michael Mirmak reported that the Interconnect task group had remained suspended until it was certain that the Editorial Task Group would not use the time slot.

Task group material can be found at:

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

EDITORIAL TASK GROUP

Michael Mirmak reported that the Editorial Task Group remained suspended, having completed the work of finalizing IBIS 7.1. Arpad Muranyi suggested resuming the Interconnect Task Group meetings. Randy said Arpad had BIRDS that needed discussion, and Interconnect would be better than ATM for those. Michael said he would send a meeting invitation for an Interconnect Task Group meeting to be held the following week.

Arpad asked what other topics might be discussed. Michael said the status of Touchstone could be discussed. Arpad said we had done a survey that should help with that. Walter said he had emailed the Interconnect group about his preference to have a new Touchstone 3, which guaranteed compatibility with both Touchstone 1 and 2 files, without requiring additional keywords beyond the version number. He said that simply changing the version of a Touchstone 1 file to Touchstone 2 did not produce a valid file. Walter said there were many Touchstone 1 parsers. He said people would like to use Touchstone 2 to get the impedance per port feature, but other changes were required to do that. Bob Ross said Touchstone 2 incorporated both Touchstone 1 and Touchstone 2. Radek Biernacki said Touchstone 2 had other extensions that were needed.

Michael Mirmak to send notice of resumption of Interconnect Task Group meetings [AR]

Task group material can be found at:

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

NEW ADMINISTRATIVE ISSUES

None

NEW BIRDS

Arpad Muranyi asked whether the proposed BIRD clarifying the allowed usage of A_gnd for File_IBIS-ISS should be kept on the table. Bob Ross felt it should be kept. Randy Wolff said it could be an item in the Known Issues list. Arpad Muranyi said the BIRD draft was only one page. It was felt that there should be no need to restart the Editorial Task Group to discuss that. The ATM Task Group might discuss some new clarification BIRDS. Bob iterated a list of BIRDS and potential new BIRDS that might be brought up.

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.

BIRD211.3: IBIS AMI REFERENCE FLOW IMPROVEMENTS

This was a tabled BIRD. Walter Katz moved to un-table BIRD211.3 and BIRD213. Arpad seconded. There were no objections.

Arpad asked if BIRD211.3 had been updated to refer correctly to IBIS 7.1 page numbers, and if that was the only change required. Randy Wolff asked if Fangyi Rao would be the person to work on that. Walter said he would ask Fangyi. Bob Ross said IBIS 7.1 already included some training flow provisions relevant to the BIRDS. Randy said those changes introduced a mistake, but the new BIRD(s) would correct that. Randy said he would add that to the Known Issues document. Arpad asked if BIRD211.3 should be on the ATM Task Group agenda. Randy suggested conducting one ATM review.

Walter Katz to contact Fangyi Rao about finalizing BIRD211.3. [AR]

Randy Wolff to add Known Issue for training flow mistakes in IBIS 7.1 [AR]

BIRD213: EXTENDING IBIS-AMI FOR PAMn ANALYSIS

This was a tabled BIRD. It was un-tabled by the previous motion.

IBISCHK AND TSCHK PARSER AND BUG STATUS

Bob Ross said new IBISCHK executables had been posted and source code had been distributed to parser licensees.

Bob said a new IBISCHK bug report was needed. The fix for a bug in the new code had been requested, but somehow it was found to not be fixed. Bob said we needed a simplified testcase for the bug, which Randy had found with a large testcase. Mike LaBonte noted that the problem was a case where an IBIS 7.0 check was now being applied to pre-7.0 files. He had seen the fix in the latest source code, and it looked like a correct fix, so he was baffled that it was still not fixed.

Bob said the developer had been paid for the work. However, the job would be completed only once we received the updated list of error message strings. We needed to make the payment in 2021, however, for accounting reasons.

Bob said we had not yet classified BUG227. He said a related specification change might be warranted, to clarify the rule that would make it an error check. He suggested waiting to classify until it was decided if there would be a BIRD. Bob said the parser change would be complicated. Randy asked if Michael Mirmak was considering a new BIRD. Michael said he was considering the short BIRD that Bob had suggested. He suggested deciding what parser change was needed before writing the BIRD, agreeing that it was a major parser change. A second new BIRD would be to enhance the [Test Data] keyword to support the parser testing.

Arpad Muranyi asked how the parser would know that the DLL response was correct. Michael said that his second proposed BIRD would help with that by specifying data to be sent to the DLL, and the expected response that should be produced. We might also need a special test mode for the DLL. Bob asked if this was about the [Test Data] keyword, or the concept of test data in general. Michael said it was about the keyword, which would point to a waveform file. Arpad was concerned there would not be enough incentive for model makers to add that. Michael said model makers already had to do that test fixture design work for development testing anyway, and it would be best if EDA tools could repeat it. He felt users would appreciate having the tests.

Mike said it would help to be able to test with parameter settings other than defaults. Walter Katz described a second category of simple tests that could be performed. He added that tests with invalid data might be out of scope. Michael said the IBIS specification was unclear about rules for AMI root names, and that needed to be clarified. Walter felt it was clear that the root names in the AMI file and DLL string must match, and that a mismatch was invalid input. Michael said people he spoke with did not understand that requirement. Walter suggested passing both correct and incorrect root names to check DLL operation.

Bob anticipated a new parser development contract to fix the previously discussed bug anyway. He said we would have to be explicit in the contract on what was to be done. Radek Biernacki agreed, noting that currently, only the DLL symbol table was checked by IBISCHK. He said the ATM Task Group might discuss the matter. Hsinho Wu asked what EDA tools would do upon a mismatch. Walter said one simulator would flag the mismatch. Michael said one tool gave an unclear error message, and the problem became difficult to diagnose. Walter suggested DLLs should have a debug switch to verify its operation, noting that that was up to model makers, not EDA tools.

Randy asked if BUG227 should be classified. Mike suggested waiting. Randy asked if it would be discussed in any task groups. Mike expected discussion in the Quality Task Group. Michael said he intended to raise the issue in the ATM Task Group.

NEW TECHNICAL ISSUES

No discussion

NEXT MEETING

The next IBIS Open Forum teleconference meeting would be held on January 28, 2022. The following teleconference meeting was tentatively scheduled for February 18, 2022.

Radek Biernacki moved to adjourn. Walter Katz 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 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	(Summit) November 19, 2021	November 19, 2021	December 10, 2021	January 7, 2022
Analog Devices (Maxim Integrated)	Producer	Active	-	X	X	-
ANSYS	User	Active	-	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	X	-	-	-
Dassault Systemes	User	Inactive	-	-	-	-
Ericsson	Producer	Inactive	-	-	-	-
Google	User	Active	-	X	X	X
Huawei Technologies	Producer	Inactive	X	-	-	-
Infineon Technologies AG	Producer	Inactive	-	-	X	-
Instituto de Telecomunicações	User	Inactive	-	-	-	-
Intel Corp.	Producer	Active	-	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	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
Xilinx	Producer	Inactive	-	-	-	-
ZTE Corp.	User	Inactive	X	-	-	-
Zuken	User	Active	X	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.