IBIS Open Forum Minutes

Meeting Date: **June 4, 2021**
Meeting Location: **Teleconference**

VOTING MEMBERS AND 2021 PARTICIPANTS

ANSYS	Curtis Clark*, Wei-hsing Huang
Applied Simulation Technology	(Fred Balistreri)
Broadcom	(Yunong Gan)
Cadence Design Systems	Zhen Mu*
Celestica	(Sophia Feng)
Cisco Systems	(Stephen Scearce)
Dassault Systemes (CST)	Stefan Paret, David Duque, Longfei Bai
Ericsson	(Guohua Wang)
Google	Zhiping Yang*
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*, Fangyi Rao
Luminous Computing	David Banas
Marvell	Steve Parker*
Maxim Integrated	Tushar Pandey
Micron Technology	Randy Wolff*, Justin Butterfield, Aniello Viscardi
MST EMC Lab	(Chulsoon Hwang)
NXP	(John Burnett)
SerDesDesign.com	(John Baprawski)
Siemens EDA (Mentor)	Arpad Muranyi*, Weston Beal*
Siemens AG	Franz Pfleger, Sebastien Kollinger
SiSoft (MathWorks)	Mike LaBonte*, Walter Katz*
Synopsys	Ted Mido*, Andy Tai
Teraspeed Labs	Bob Ross*
Xilinx	(Romi Mayder)
ZTE Corporation	Bowen Shen, Changgang Yin, Dongdong Ye
	Liqiang Meng, Xiaoxuan Liu
Zuken	Michael Schäder
Zuken USA	Lance Wang*

OTHER PARTICIPANTS IN 2021

Achronix Semiconductor	Hansel Dsilva
AVL Software and Functions	Wolfgang Röhrner

Continental Automotive	Julnar Musmar, Stefanie Schatt
De Montfort University (IEEE EMC)	Alistair Duffy
IT-Beratung-Maurer	Manfred Maurer
Kandou Bus	Sherman Chen
KEI Systems	Shinichi Maeda
Microchip Norway	Lars Snith
Politecnico di Torino	Stefano Grivet-Talocia, Paolo Manfredi
	Alessandro Zanco, Felipe Treviso
	Marco Destefano, Riccardo Trinchero
	Tomasso Bradde
RTC	Ken Whigham
University of Illinois, Urbana	Jose Shutt-Ainé, Xinying Wang

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#](#)   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

Curtis Clark declared that a quorum was 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 May 12, 2021 virtual European IBIS Summit at SPI 2021. Mike LaBonte moved to approve the minutes. Bob Ross seconded the motion. There were no objections.

Randy Wolff called for comments on the minutes of the May 14, 2021 IBIS Open Forum teleconference. Radek Biernacki moved to approve the minutes. Bob Ross seconded the motion. There were no objections.

Randy reviewed ARs from the previous meeting.

1. Randy Wolff to update BIRD212 acceptance date [AR].
    Randy reported that this had been done.

2. Steve Parker to update BIRD212 on the website [AR].
    Steve reported that this had been done.

3. Randy Wolff to send vote solicitation email for BIRD211.1 [AR].
    Randy reported that the vote had been cancelled because the BIRD was not yet ready for a vote.

4. Randy Wolff to send vote solicitation email for IBISCHK7.1 parser funding [AR].
    Randy reported that this had been done. Curtis Clark reported that 11 votes had been received, and all votes were "yes". Randy said the vote had passed. Further discussion is in the IBISCHK Status section.

ANNOUNCEMENTS, CALL FOR ADDITIONAL AGENDA ITEMS
None.

MEMBERSHIP STATUS AND TREASURER'S REPORT
Bob Ross reported that we now have 28 members. IBM has not yet renewed and thus has been moved out of voting status. If their payment is received in time, their vote in the officer elections would be counted. The quorum for meetings is 7. Cash flow for 2021 is $26,725 and total adjusted balance for 2021 is $30,075. These figures are up $2,800 from the previous meeting and reflect two additional membership payments and one tschk2 parser source code license payment.

Bob noted that a contract had been signed for the $17,500 capitalized expenditure for the

ibischk7.1 parser development. Full payment is expected to be made later in 2021. Bob said one or two new half-year memberships are still possible.

WEBSITE ADMINISTRATION

Steve Parker reported that the website was generally up to date with respect to meeting minutes. There are still some outstanding tasks with respect to uploading working documents to the task groups' archives, but he is working on automating the process. Randy Wolff asked if the automated process will ultimately allow task group chairs to upload documents themselves. Steve said what he was currently developing was a service local to his machine, but he could eventually pursue a solution with a form hosted on Bluehost that would allow people to upload documents.

Per Bob Ross' report on IBM's membership status, Steve to remove IBM from the IBIS roster page [AR].

MAILING LIST ADMINISTRATION

Mike LaBonte reported that mailing lists were generally operating smoothly. He was pursuing one issue in which messages sent by Walter Katz were rejected on the receiving end when forwarded back to Walter by freelists. He is working with MathWorks' IT on resolving it.

LIBRARY UPDATE

Zhiping Yang reported no new updates to the model library.

INTERNATIONAL/EXTERNAL ACTIVITIES

- Conferences
IEEE EMC + SIPI Symposium 2021 (virtual from July 27-August 13, 2021):

    https://www.emc2021.emcss.org

DesignCon 2021 (August 16-18, 2021, San Jose, CA):

    https://www.designcon.com/

- Press Update
Randy Wolff noted that we will need to issue a press update with SAE ITC to advertise the upcoming DesignCon IBIS Summit.

- Related standards
None.

SUMMIT PLANNING AND STATUS

- IEEE EMC+SIPI (July 27-August 13, 2021 virtual)
Randy Wolff and Bob Ross said we had settled on Thursday, August 12th, morning in the US, 8

a.m. until noon PST, 4 p.m. to 8 p.m. in Europe. Randy said the first announcement will go out on June 10th. Zhiping Yang said the next issue of the EMC magazine will be coming out soon, and he asked if we wanted to write something to advertise the event. Zhiping to check on the deadline for submission of such an article [AR].

Bob noted that on Thursday, August 5th, a one hour "Ask the IBIS Experts" event has been scheduled at 10:30 a.m. PT. The panel discussion is presented in association with EMC+SIPI. Randy to advertise that event as well [AR].

- DesignCon 2021 (August 16-18, 2021 planned for in-person)
Randy reported on the results of a SurveyMonkey poll he had sent out to gauge possible in-person DesignCon Summit attendance.

Total Respondents – 21
Attending DesignCon – 4 Yes, 6 Unsure, 11 No.
Would attend a summit if attending DesignCon – 12 Yes, 3 Unsure, 2 No.
If not attending, would participate in a virtual summit - 17 Yes, 2 Unsure, 2 No.
Date preferences – Monday 15, Thursday 12, Friday 7.

Some of the individual comments:
Planning can't be done at this time because it depends on company travel policy.
Attendance at the summit might depend on conflicts with tutorial workshops (Monday).
A suggestion that all events this year be virtual.

Randy said that if we wanted to do something in person, it would probably have to be a hybrid event and have an online presence as well. It would complicate planning, but it would be required to get more people to attend this year. Hsinho Wu, Zhen Mu, and others noted travel and or external conference restrictions at their organizations that extend past the DesignCon Summit timeframe. Randy said that he was also unsure if he would be able to travel to DesignCon.

Bob suggested we should just make it fully virtual at this point, as we likely can't rely on having enough people attend who could run the IBIS Summit. Randy agreed that there's still a bit too much uncertainty, and as much as we would like to gather in-person, we may need to wait a bit longer. Randy suggested we rule out Friday, as the Friday afternoon timeslot limits participation from Europe. Because the summit will be virtual, and at the request of several people working with the tutorial workshops on Monday, the group decided Thursday was best. Randy suggested a Thursday morning window, US PST. Randy said there is no need for an official vote to schedule the summit, since it will be virtual and will not require a financial commitment.

QUALITY TASK GROUP
Mike LaBonte reported that the group meets on Tuesdays at 9:00 a.m. PT. Mike noted the fact that the group had now signed and executed a contract for ibischk7.1.0. Mike said tschk2.0.1 is ready for beta review. Further discussion is in the IBISCHK and TSCHK Status section.

The Quality task group checklist and other documentation can be found at:

ADVANCED TECHNOLOGY MODELING TASK GROUP

Arpad Muranyi reported that the group meets on Tuesdays at 12:00 p.m. PT. The group continues to discuss improvements to the AMI flow for redrivers. He said the discussions were ongoing, and a version of BIRD211.2 had not been ready in time to vote on it today. He thought final technical considerations had been resolved, and he expected final editorial wordsmithing of BIRD211.2 in upcoming ATM meetings. The group can then move on to the PAMn proposal, BIRD213.

Task group material can be found at:

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

INTERCONNECT TASK GROUP

Randy Wolff reported that the Interconnect task group remains suspended. Its former timeslot is being used by the Editorial task group.

Task group material can be found at:

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

EDITORIAL TASK GROUP

Randy Wolff reported that the group now meets at 8:00 a.m. PT on Wednesdays. Arpad Muranyi reported that at the recent meeting they had focused on minor editorial issues in the draft of IBIS 7.1, and they had updated language in the EMD section to clarify the way in which interconnects can be modeled between Designator Pins.

Task group material can be found at:

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

NEW ADMINISTRATIVE ISSUES
- Annual Election of Officers

Radek Biernacki reported that everything was proceeding properly with the election. The nomination email had gone out on May 14th, and the ballot email had been sent out on June 1st. Radek had received 8 votes already, and he said he we would send a reminder email before the voting closed on June 14th. Radek will announce the results on June 15th.

BIRD211.1: NEW REDRIVER FLOW

Walter Katz summarized the status of the BIRD. He said that the ATM task group was still refining final wording, and they didn't quite have it ready in time to submit for a vote at this

meeting. He said there were no significant technical issues, and they hope to finish the review at the next ATM meeting. Randy Wolff noted that there had been some discussion of changing the name of the BIRD. Walter said the original intent was to fix the Redriver statistical flow. In fixing the Redriver flow, a new Reserved Parameter was introduced, and it applies to all Txs. So, perhaps the name becomes "IBIS AMI Reference Flow Improvements" instead of "New Redriver Flow".

As was done at the previous two meetings, Arpad Muranyi and Walter suggested we could attempt to fast track the vote. Walter moved to schedule a vote on BIRD211.2 at the June 25, 2021 IBIS Open Forum teleconference. Arpad seconded. There were no objections. Randy to send an email to the Open Forum announcing the vote [AR].

Bob Ross and Arpad noted that the BIRD would have to be submitted by June 11th to qualify for a vote at the next meeting. Arpad said that BIRD211.2 is all the Editorial task group is waiting for to complete IBIS 7.1.

BIRD213: EXTENDING IBIS-AMI FOR PAMn ANALYSIS
Walter Katz said there had been no new discussions or feedback since this BIRD was introduced at the last meeting. He said ATM had been focusing on BIRD211. Randy Wolff asked if we were hoping to get this BIRD into IBIS 7.1. Walter said just getting the BIRD out for review and discussion will be good enough. It will allow model makers and tool vendors to get started and gain some experience before it goes into the next version of IBIS after 7.1.

BIRD210: NEW REDRIVER AMI FLOW
Discussion was tabled.

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 AND TSCHK PARSER AND BUG STATUS
Bob Ross reiterated that the contract with the parser developer for ibischk7.1.0 had been executed after the vote on funding it at $17,500 had passed with a vote tally of Yes – 11, No – 0, Abstain – 0.

Mike LaBonte said that tschk2.0.1 is now ready for beta testing. He reviewed the four BUGs

that it addresses:

BUG1

Issue: The parser previously presented a vague error message that did not help the user isolate the trouble spot in the file. In addition, the error message's text "invalid option" implied the issue was with the command line options not the file itself.

Solution: The parser now presents a more helpful error message and displays the line number of the line containing the problem.

BUG2

Issue: With the example input file, which contains an error (missing common-mode descriptors), the parser terminated with no output and no error message.

Solution: The parser now displays a message indicating the problem with the input file.

BUG3

Issue: Canonical mode adds whitespace and may significantly increase output file size.

Solution: Mike noted that Touchstone data could be written out with different whitespace, number formats (engineering, scientific), etc., and that the "canonical" mode was meant to guarantee that the output would be identical if the input data had been the same. In the current version of the parser, canonical output was using a high default precision. In the new version, by default, it will look for the maximum precision in the input data and use that. It will display a message indicating the number of digits of precision that it determined to exist in the input. In addition, there is a new compact spacing option that can be used. It provides a more compact output with less regard for alignment.

BUG4

Issue: This was more of an enhancement request for the case in which the input file is Touchstone 2.0, and you want the output file to be Touchstone 1.0. Touchstone 2.0 can have different reference impedances per port. The request was that if all of those reference impedances have the same value in the Touchstone 2.0 file, then tschk should allow it to be converted to Touchstone 1.0. With the existing parser, the conversion will fail if there are per port reference impedances specified in the 2.0 file, even if they all have the same value.

Solution: The new parser will allow the conversion to Touchstone 1.0 if all the Touchstone 2.0 file's per port references have the same value.

Mike noted that a nice regression suite is packaged with the source code. He said the regression suite now contains some tests that check the canonical output and the new option. Randy Wolff thanked Mike for all the work to fix these bugs and add enhancements. He said he was starting to share S-parameters a lot more, and file sizes can get huge. He said the new precision options would be very helpful. Mike said the original author of the tschk code, Brian Anderson, had provided really good code that was a pleasure to work on and easy to fix.

Mike said the Quality task group would be interested in sharing the update with people to get feedback on it before it is officially published. He asked people to email him if they're interested.

Bob and Mike noted that new help option provides more information. Bob encouraged people to try the new version out on their large Touchstone files.

NEW TECHNICAL ISSUES
- None.

NEXT MEETING
The next IBIS Open Forum teleconference meeting will be held on June 25, 2021. The following teleconference meeting is tentatively scheduled for July 16, 2021.

Mike LaBonte moved to adjourn. Radek Biernacki 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 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	April 23, 2021	May 12, 2021	May 14, 2021	June 04, 2021
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	-	X	-	-
Ericsson	Producer	Inactive	-	-	-	-
Google	User	Active	X	-	X	X
Huawei Technologies	Producer	Inactive	-	-	-	-
Infineon Technologies AG	Producer	Inactive	-	-	-	-
Instituto de Telecomunicações	User	Inactive	-	-	-	-
Intel Corp.	Producer	Active	X	-	X	X
Keysight Technologies	User	Active	X	-	X	X
Luminous Computing	General Interest	Inactive	X	-	X	-
Marvell	Producer	Active	-	-	X	X
Maxim Integrated	Producer	Active	X	-	X	-
Micron Technology	Producer	Active	X	X	X	X
MST EMC Lab	User	Inactive	-	-	-	-
NXP	Producer	Inactive	-	-	-	-
SerDesDesign.com	User	Inactive	-	-	-	-
Siemens EDA (Mentor)	User	Active	X	X	X	X
SiSoft	User	Active	X	X	X	X
Synopsys	User	Active	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

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.