

**IBIS Open Forum Minutes**

Meeting Date: **March 12, 2021**

Meeting Location: **Teleconference**

**VOTING MEMBERS AND 2021 PARTICIPANTS**

ANSYS Curtis Clark\*

Applied Simulation Technology (Fred Balistreri)

Broadcom (Yunong Gan)

Cadence Design Systems Zhen Mu\*

Cisco Systems (Stephen Scearce)

Dassault Systemes (CST) (Stefan Paret)

Ericsson (Guohau Wang)

Google Zhiping Yang\*

Huawei Technologies (Hang (Paul) Yan)

IBM (Juan Martinez)

Infineon Technologies AG (Christian Sporrer)

Instituto de Telecomunicações (Abdelgader Abdalla)

Intel Corporation Hsinho Wu\*, Michael Mirmak\*

Keysight Technologies Radek Biernacki\*, Fangyi Rao

Marvell Steve Parker

Maxim Integrated Tushar Pandey

Micron Technology Randy Wolff\*, Justin Butterfield

MST EMC Lab (Chulsoon Hwang)

NXP (John Burnett)

SerDesDesign.com (John Baprawski)

Siemens EDA (Mentor) Arpad Muranyi\*, Weston Beal\*

SiSoft (MathWorks) Mike LaBonte\*, Walter Katz\*

Synopsys Ted Mido\*

Teraspeed Labs Bob Ross\*

Xilinx (Romi Mayder)

ZTE Corporation (Shunlin Zhu)

Zuken (Michael Schäder)

 Zuken USA Lance Wang\*

**OTHER PARTICIPANTS IN 2021**

Achronix Semiconductor Hansel Dsilva

In the list above, attendees at the meeting 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:

 <https://tinyurl.com/IBISOFfridayTeams>

[Join Microsoft Teams Meeting](https://teams.microsoft.com/l/meetup-join/19%3Ameeting_ZmIyZGI5NTQtZDM4MS00NmU5LTgyNmYtNzU4ZTllMWI5NGM4%40thread.v2/0?context=%7b%22Tid%22%3a%22fcbfc6fa-e20b-4a1d-b629-1b8e17697dbc%22%2c%22Oid%22%3a%227735c7ad-2577-4290-9e27-bce52c296030%22%7d)

Conference ID: 803 509 041#

[Local numbers](https://dialin.teams.microsoft.com/d1ae197a-e3fc-4c53-90b6-39fdeba65bc1?id=803509041) | [Learn more about Teams](https://support.microsoft.com/en-us/office/join-a-meeting-in-teams-1613bb53-f3fa-431e-85a9-d6a91e3468c9?ui=en-us&rs=en-us&ad=us) | [Meeting options](https://teams.microsoft.com/meetingOptions/?organizerId=7735c7ad-2577-4290-9e27-bce52c296030&tenantId=fcbfc6fa-e20b-4a1d-b629-1b8e17697dbc&threadId=19_meeting_ZmIyZGI5NTQtZDM4MS00NmU5LTgyNmYtNzU4ZTllMWI5NGM4@thread.v2&messageId=0&language=en-US)

Join with a video conferencing device

106010980@teams.bjn.vc VTC Conference ID: 1143484747

[Alternate VTC dialing instructions](https://support.bluejeans.com/s/article/VTC-Dial-In-Options-for-Teams-Meetings)

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.

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**INTRODUCTIONS AND MEETING QUORUM**

Curtis Clark declared that a quorum was reached.

Weston Beal of Siemens EDA reintroduced himself. He works in customer support and does some consulting work helping customers. He has been involved with IBIS since before 2000 both using and creating models. He wanted to get more involved again, and he has recently started working with the Editorial task group.

**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 February 19, 2021 IBIS Open Forum teleconference. Lance Wang moved to approve the minutes. Ted Mido seconded the motion. There were no objections.

Randy reviewed ARs from the previous meeting.

1. Zhiping Yang to check with IEEE+SIPI event organizers on any deadline for setting the agenda, possible special registration codes for IBIS members, and to see if they have a preferred time for the IBIS summit [AR].
Zhiping reported this had been done. The discussion is in the Summit Planning and Status section.
2. Randy Wolff to send vote solicitation email for BIRD202.3 [AR].
Randy reported that this had been done.
3. Randy Wolff to send vote solicitation email for BIRD209 [AR].
Randy reported that this had been done.

**ANNOUNCEMENTS**, **CALL FOR ADDITIONAL AGENDA ITEMS**

None.

**MEMBERSHIP STATUS AND TREASURER'S REPORT**

Bob Ross reported that we have 27 members. The quorum for meetings is 7. Cash flow for 2021 is $10,125 and total adjusted balance for 2021 is $13,475. These figures are up $3,600 from the previous meeting and reflect 4 new membership payments.

Bob reported that we had received the final figure ($6,304) for the deduction for SAE ITC 2020 Extra charges. We had $22,131 cash flow for 2020 and a $20,031 adjusted balance for 2020.

Bob said we expect a new membership payment in 2021, and we expect a new Touchstone parser source code license payment in 2021 as well. All current member organizations should now have received an invoice for 2021 membership. Current 2020 memberships will expire in May of 2021 if payment is not received by then. Bob reported that 14 members have paid for 2021, and it may be 15 depending on whether a sponsorship payment forwarded from 2020 will be converted to dues for 2021.

Bob reported that he is tracking down payment status for several organizations. There have been several issues caused by SAE revising the format of their invoice, changing the bank account number, using the IBIS logo instead of the SAE logo, etc. Bob is tracking down issues to make sure membership payments are received and recorded properly.

**WEBSITE ADMINISTRATION**

Randy Wolff reported that Steve Parker had the website up to date with respect to task groups’ minutes and documents. Steve had posted some documents for the recently restarted Editorial task group.

**MAILING LIST ADMINISTRATION**

Mike LaBonte reported that mailing lists were operating smoothly. He said he was waiting for a confirmation email from one new subscriber. Mike noted that when an address that is not from an organization with an obvious connection to IBIS attempts to subscribe (e.g., hotmail.com), he sends a follow up asking the subscriber to confirm and briefly explain their interest in IBIS.

**LIBRARY UPDATE**

Zhiping Yang reported no new updates to the model library. He said there had been no new contacts from any model providers. Discussions continue on the possibility of creating a new mailing list.

**INTERNATIONAL/EXTERNAL ACTIVITIES**

- Conferences

SPI2021 – the 25th IEEE Workshop on Signal and Power Integrity (virtual May 10-12, 2021) :

[https://spi2021.uni-siegen.de](https://spi2021.uni-siegen.de/)

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

[https://www.emc2021.emcss.org](https://www.emc2021.emcss.org/)

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

<https://www.designcon.com/>

- Press Update

None.

- Related standards

None.

**SUMMIT PLANNING AND STATUS**

- SPI 2021 (May 10-12, 2021 entirely virtual)

Bob Ross noted that Randy Wolff had sent out the first announcement for this summit. The IBIS summit be held on Wednesday, May 12th, from 4 p.m. to 8 p.m. local time. Bob reported that attendees were starting to register. He said Alistair Duffy, IEEE EMC Society Chair, was planning to talk about the latest IEEE transactions on Signal and Power Integrity, and we are waiting for other presentations to be submitted.

- IEEE EMC+SIPI (July 27-August 13, 2021 virtual)

Zhiping Yang reported that the conference schedule is still in development. There have been 33 papers submitted, and there are special session papers as well. The EMC society plans to develop the schedule once they have a clear understanding of the participation. Zhiping said the IBIS summit will be decoupled from paper sessions, so IBIS can choose its time for the summit. The earlier we decide, the better it is for promoting the summit. Bob asked whether Friday, August 13th, from 11 a.m. to 3:30 p.m. EST would be okay, or we should keep it tentative for now. Zhiping said his only concern with that time is that it would be late Friday evening in Europe and might affect European participation. Randy and Zhiping said we could consider moving the summit to an earlier date coinciding with the Standards Week portion of the conference. Randy said we could also consider moving the start time back to 10 a.m. EST.

Zhiping confirmed that there would be a special registration code for IBIS members. Zhiping to get more details on the special registration codes and the schedule for Standards Week [AR]. Zhiping asked whether we should have different content for the EMC+SIPI summit and the DesignCon summit or just let presenters decide if they want to do both. Bob said we could leave it up to presenters, but he thought the DesignCon summit would be a better venue for detailed IBIS papers and the EMC+SIPI summit might be better for overview presentations on IBIS.

- DesignCon 2021 (August 16-18, 2021 planned for in-person)

Randy said we could hold off on further planning for this summit the time being. He said we had received no new updates from DesignCon.

**QUALITY TASK GROUP**

Mike LaBonte reported that the group meets on Tuesdays at 8:00 a.m. PT. The group continues to plan for the next ibischk release and work on tschk BUG fixes.

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 p.m. PT. The group continues to discuss BIRD210 and the AMI flow for redrivers. The group had also been discussing Chulsoon Hwang’s presentations on improving power supply induced jitter modeling.

Task group material can be found at:

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

**INTERCONNECT TASK GROUP**

Michael Mirmak reported that the Interconnect task group remains suspended. Its most recent work product, BIRD202.3, is up for a vote today. 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**

Michael Mirmak reported that the group now meets at 8:00 a.m. PT on Wednesdays using the suspended Interconnect task group’s time slot. They had developed a task list, which has now been posted to the Interconnect work archives. Interested parties can also participate via the ibis-editorial mailing list.

Task group material can be found at:

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

**NEW ADMINISTRATIVE ISSUES**

- None.

**BIRD202.3: ELECTRICAL DESCRIPTIONS OF MODULES**

Randy Wolff noted that the BIRD had been reviewed for the second time at the last Open Forum teleconference. Several minor editorial issues had been shared and reviewed. Those had been corrected to create BIRD202.3, and the BIRD was scheduled for a vote at this meeting.

Radek Biernacki reported that he had several editorial corrections to report after his review of the BIRD.

Page 24:

The following line is incorrect:

If present under File\_TS, Terminal\_type A\_gnd may be used only once on the N+1th terminal line.

The “N+1th terminal line” should be replaced with “terminal line for Terminal\_number N+1”.

Bob Ross noted that we should also add that correction to the known issues document for IBIS 7.0 because this text had been copied from the Interconnect Modeling section introduced in IBIS 7.0.

Page 20:

Note 4 in the table says the subparameter (Unused\_port\_termination) shall be followed by “=”, but this is not correct. It is not followed by “=”.

Page 18:

The [Manufacturer] keyword’s Description: and Usage Rules: sections refer to .emd files. They should refer to .emd and .ems files.

Page 16:

The last sentence in the first paragraph on the page says, “in the same .ibs file”. It should say, “in the same .ebd file”.

Page 13:

The first paragraph on this page is inconsistent in its use of and requirements for “pin\_name entry”. If the pin\_name entry is the portion after the reference designator and the “.”, then it is correct to limit its length to 8 characters, but we cannot then demand uniqueness. We could demand uniqueness of pin\_name entries for each particular designator, or we could demand uniqueness for the entire reference designator + “.” + pin\_name entry, but this could be 10 (reference designator) + 1 (dot) + 8 (pin\_name entry) = 19 characters in length.

Radek said this last correction was slightly more than editorial. Randy said he thought we could still handle it in the Editorial task group if we agree on intent. Radek agreed. Radek then noted that he thought there was one place in the BIRD that was missing a closing parenthesis. Michael Mirmak agreed all of this could be handled in the Editorial task group. He said they could send it back or file their own BIRD if they found technical corrections were necessary.

Walter Katz moved to vote on the BIRD with the noted editorial changes. Michael Mirmak seconded the motion. There were no objections.

The roll call vote tally was:

ANSYS – yes

Cadence – yes

Google – yes

Intel – yes

Keysight – yes

Micron – yes

Siemens EDA - yes

SiSoft – yes

Synopsys – yes

Teraspeed Labs – yes

Zuken – yes

The roll call vote concluded with a vote tally of Yes – 11, No – 0, Abstain – 0. The vote passed.

Randy took an AR to update the Date Revised field of the BIRD [AR]. Randy gave Steve Parker an AR to update the status of BIRD202.3 on the website [AR].

**BIRD209: MAKE CLOCK TIMES OUTPUT REQUIRED FOR CLOCK EXECUTABLE MODELS**

Arpad Muranyi briefly summarized the BIRD. It is intended to supersede BIRD204, and it provides a minor technical change to BIRD204. In a scenario where the data executable model specifies that it wants “Times”, the EDA tool would have a hard time generating the proper clock ticks itself. Therefore, BIRD209 states that if the data executable model specifies “Times”, the clock executable model must have AMI\_GetWave and it must return clock ticks. Arpad said he had received no new comments on the BIRD. Randy Wolff noted that this BIRD contains the complete text of BIRD204 along with the one technical change. If approved, this BIRD will replace BIRD204.

Arpad Muranyi moved to vote on the BIRD. Walter Katz seconded the motion. There were no objections.

The roll call vote tally was:

ANSYS – yes

Cadence – yes

Google – yes

Intel – yes

Keysight – yes

Micron – yes

Siemens EDA - yes

SiSoft – yes

Synopsys – yes

Teraspeed Labs – yes

Zuken – yes

The roll call vote concluded with a vote tally of Yes – 11, No – 0, Abstain – 0. The vote passed.

Randy took an AR to update the Date Revised field of the BIRD [AR]. Randy gave Steve Parker an AR to update the status of BIRD209 on the website [AR].

**BIRD210: NEW REDRIVER AMI FLOW**

Randy Wolff noted that this BIRD had been sent back to the ATM task group for further discussion. He asked if we should entertain motions to table it for now. Radek Biernacki suggested we leave it untabled.

**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**

-ibischk

Bob Ross said they still do not have enough information to submit an enhancement BUG for the source code buffer security update. They have deferred discussion on that topic.

Bob introduced a new BUG215, “Connecting IBIS and Interconnect Models to Touchstone,” which adds the checking of links to Touchstone files and is an enhancement. He said that it parallels BUG214, which added the checking of links to IBIS-ISS files. Bob noted that one key difference is that there are no multi-lingual (i.e., [External Model], [External Circuit]) connections to Touchstone files. Bob reviewed the BUG and showed that it includes test cases illustrating a mismatch in the number of ports between the Interconnect Model and the Touchstone file, improper use of Unused\_port\_termination, and incorrect use of an AMI Ts4file Reserved parameter with a Touchstone file with the wrong number of ports.

In reference to the examples in the BUG, Radek Biernacki noted that there is no requirement that a .sNp file extension means N ports. Bob agreed, but he said the .sNp extensions used in the examples were indicative of the actual port counts to make it clear which examples were errors. Bob noted that a Touchstone 2.0 file has the [Number of Ports] keyword, but for a Touchstone 1.0 file the parser will have to determine how many ports are described in the file. Randy said the parser code will make no assumptions based on the file extension.

Randy noted that the current language of BUG215 is relative to IBIS 7.0. Similar issues will need to be checked in BIRD202.3, which was just approved. Bob agreed and said BUG215 includes a Future Enhancements section as BUG214 had.

Bob moved to classify BUG215 as enhancement, medium priority, open, to be fixed in a release TBD. Curtis Clark seconded. There were no objections. Bob to update the status of BUG215 [AR].

-tschk

Bob reported that the group had deferred discussion on releasing a new version of tschk. Work on addressing existing BUGs continues in the background.

**NEW TECHNICAL ISSUES**

- BIRD Content for IBIS 7.1

Randy Wolff shared a brief presentation on possible content of IBIS 7.1. The first slide contained all the BIRDs approved since IBIS 7.0. That list now includes BIRD209 and BIRD202.3, which were approved today.

The second slide listed two BIRDs that we expect to reject if BIRD210 is approved (BIRD166, BIRD190), and BIRD181.1, which will be delayed beyond 7.1. Randy said BIRD210 is under active discussion in ATM. Radek Biernacki said he thought it would be good to have BIRD210 included in IBIS 7.1. He said discussion on this topic has started six years ago with BIRD166, and he felt it was close to being decided. Walter disagreed with that conclusion and said he thought we might arrive at a solution that required fewer changes than BIRD210. Randy said we could leave this open for one or two more Open Forum meeting cycles, but we would have to make a decision soon and vote on the official list of BIRDs to include.

**NEXT MEETING**

The next IBIS Open Forum teleconference meeting will be held on April 2, 2021. The following teleconference meeting is tentatively scheduled for April 23, 2021.

Mike LaBonte 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 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](http://www.ibis.org/%20bugs/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** | **January 08, 2021** | **January 29, 2021** | **February 19, 2021** | **March 12, 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 | X |
| Cisco Systems | User | Inactive | - | - | - | - |
| Dassault Systemes | User | Inactive | - | - | - | - |
| Ericsson | Producer | Inactive | - | - | - | - |
| Google | User | Active | X | X | X | X |
| Huawei Technologies | Producer | Inactive | - | - | - | - |
| Infineon Technologies AG | Producer | Inactive | - | - | - | - |
| Instituto de Telecomunicações | User | Inactive | - | - | - | - |
| IBM | Producer | Inactive | - | - | - | - |
| Intel Corp. | Producer | Active | X | X | X | X |
| Keysight Technologies | User | Active | X | X | X | X |
| Marvell | Producer | Active | X | X | X | - |
| Maxim Integrated | Producer | InActive | X | X | - | - |
| Mentor, A Siemens Business | User | Active | X | X | 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 | X |
| Teraspeed Labs | General Interest | Active | X | X | X | X |
| Xilinx | Producer | Inactive | - | - | - | - |
| ZTE Corp. | User | Inactive | - | - | - | - |
| 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

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.