

**IBIS Open Forum Minutes**

Meeting Date: **August 27, 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\*, Songping Wu

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, Pegah Alavi,

Todd Bermensolo

Luminous Computing David Banas

Marvell Steve Parker\*

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

Maxim Integrated Tushar Pandey, Pawan Sai, Yan Liang

Micron Technology Randy Wolff\*, Justin Butterfield, Aniello Viscardi,

Akshay Shivaji Chaudhari, Dragos Dimitriu

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NXP Jon Burnett

SerDesDesign.com (John Baprawski)

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

Siemens AG Franz Pfleger, Sebastien Kollinger

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, Chithrupa Ramesh

Zuken USA Lance Wang

**OTHER PARTICIPANTS IN 2021**

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Analog Devices Patrick DeRoy

ATE Service Corporation Yutaka Honda

AVL Software and Functions Wolfgang Röhrner

Ciena Taha Kheyar, Kaisheng Hu

Continental Automotive Julnar Musmar, Stefanie Schatt

De Montfort University (IEEE EMC) Alistair Duffy

Elite Material Co. Nick Huang

Extreme Networks Robert Haller

Hamburg University of Technology Cheng Yang

IT-Beratung-Maurer Manfred Maurer

Kandou Bus Sherman Chen

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Mercury Systems Vincent Tam

Microchip Norway Lars Snith

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Tomasso Bradde

RTC Ken Whigham

Simberian Yuriy Shlepnev

Teradyne Tao Wang

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.

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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.

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**INTRODUCTIONS AND MEETING QUORUM**

Randy Wolff 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 August 6, 2021 IBIS Open Forum teleconference. Radek Biernacki moved to approve the minutes. Curtis Clark seconded the motion. There were no objections. Randy said the recent summit minutes had been posted, but they would be reviewed in the next meeting to give more time for review.

Randy reviewed ARs from the previous meeting.

1. Mike LaBonte to supply MathWorks logo for IBIS home page [AR]  
   Mike said he was in the process of getting legal approval. No changes should be made to the web pages for now.
2. Bob Ross to post finalized classification for BUG217 [AR]  
   This was done.
3. Bob Ross to post finalized classification for BUG218 [AR  
   This was done.
4. Mike LaBonte to finalize tschk2.0.1 and post [AR]  
   Mike reported this had been done, and Randy Wolff had sent an announcement.

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

None.

**MEMBERSHIP STATUS AND TREASURER'S REPORT**

Bob Ross reported that there had been no change from the previous report. Cash flow for 2021 was $26,725 and the total adjusted balance for 2021 was $30,075. Membership stood at 28, with a voting quorum of 7. We had 26 members paid this year and 2 paid in the prior year.

The member whose payment was previously incorrectly acknowledged had paid for 2021. Two new one-half year memberships were possible, waiting for approval. No new Summit expenses were anticipated. A full payment of $17,500.00 for ibischk7 version 7.1.0 is expected in 2021. A web hosting payment was due, but the invoice amount needed to be resolved with the vendor.

**WEBSITE ADMINISTRATION**

Steve Parker reported the minutes page was up to date. Summit page changes had also been made. The new TSCHK page was up to date. He said the web vendor was invoicing an additional $6 per month for our dedicated IP address, but we never had to pay that before. He would resolve that.

Bob Ross said he was unable to see the most recent summit video. Steve suggested right clicking in the frame to reload the frame. Randy Wolff said holding control while clicking the refresh button should also work.

Randy showed the home page banner announcement advertising the new TSCHK2.0.1 release.

**MAILING LIST ADMINISTRATION**

Curtis Clark reported all was well. Mike LaBonte had made several subscription changes. Two subscribers had not yet responded to a query and were not yet approved.

Steve Parker had added Randy Wolff to the forwarding list for [info@ibis.org](mailto:info@ibis.org) emails, so Randy will receive those.

**LIBRARY UPDATE**

Zhiping Yang reported no change in status.

**INTERNATIONAL/EXTERNAL ACTIVITIES**

- Conferences

Randy Wolff noted that we had been tracking IEEE EMC+SIPI and DesignCon here, but those were past.

- Press Update

- Related standards

**SUMMIT PLANNING AND REVIEW**

- Review of IEEE EMC+SIPI and DesignCon summits

Randy Wolff said the IEEE EMC+SIPI summit had been held on August 12, and the DesignCon summit had been held on August 19. He felt both summits had gone well. We had 19 attendees for EMC+SIPI, and 33 for DesignCon. Randy would be sending thank you emails to the presenters. Mike LaBonte said he enjoyed the summits and found some of the presentations to be thought provoking.

Zhiping Yang asked if anyone had attended the DesignCon conference in person. Randy said Michael Mirmak might have attended. Zhiping said the next EMC+SIPI conference would be held in person, but travel restrictions might still pose a problem. Bob Ross asked where it would be. Zhiping said it would be in August, held in Spokane, Washington. Randy said we might need to continue holding virtual summits, and he felt that 4 hours was about right for virtual events. Mike said in-person summits were not usually much longer, with lunch and breaks subtracted. Randy agreed, saying there were only 1 or 2 more presentations at in-person summits. Bob suggested penciling in a time for the next EMC+SIPI summit. Availability of a board member to travel would be a key factor. Zhiping said the conference would be August 1-5.

- Asia Summit planning

Randy said a summit was being planned for Japan, Friday, Nov. 12. Per our usual schedule there would ordinarily be an Open Forum teleconference on November 19, but that would be cancelled to hold a China summit that day. Bob Ross suggested having those two summits as line items in the minutes going forward. Randy will check with JEITA on the web sharing service. They had used WebEx Events previously. Bob said they might pre-record some presentations. JEITA might provide three presentations and we might provide four or five, depending on time. Randy said the announcement about Japan would be sent in three weeks. Bob said he was contacting people in China who might present.

**QUALITY TASK GROUP**

Mike LaBonte reported that the group meets on Tuesdays at 9:00 a.m. PT. The group continues to oversee the next ibischk release, ibischk7.1.0. New bugs had been reported by the developer, which would be classified today. He said tschk2.0.1 had been released. Information about the changes in it could be seen in the TSCHK2 presentation given in the IEEE EMC+SIPI and DesignCon summits.

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. They were done with redriver flows and were discussing the PAMn proposal. Zhiping Yang asked about the status of the PSIJ proposal from the summits. Arpad said he would put it on the task group agenda when the authors were ready to discuss it. Zhiping said the BIRD for PSIJ was in draft form. Arpad suggested writing an updated draft with a new draft number for discussion in a future ATM meeting.

Task group material can be found at:

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

**INTERCONNECT TASK GROUP**

Michael Mirmak reported that the Interconnect task group remained suspended. Its former time slot was 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 they were meeting on Wednesday at 8:00 a.m. PT. The changes to IBIS section 10.9 were deemed complete. Work on the main 7.1 draft would resume in the next week. Randy Wolff said the IBIS 7.1 draft could conceivably be ready for announcement in the next Open Forum meeting.

Task group material can be found at:

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

**NEW ADMINISTRATIVE ISSUES**

- None

**BIRD211.3: IBIS AMI REFERENCE FLOW IMPROVEMENTS**

Randy Wolff showed the recently submitted BIRD211.3. He said it had been changed extensively. The ATM group had voted to send it back to the Open Forum. Randy showed the summary of changes made. Walter Katz said he wanted the Tx to inform the EDA tool if it would optimize itself, but others had objected, so that had been excluded. He said no hardware Tx currently would optimize itself. It was decided that deconvolution was not required, and that was clarified in IBIS sections 11.2 and 11.3.

Arpad Muranyi said the primary goal was to fix the broken flow, and he felt that had been accomplished. He noted that this was not slated for IBIS 7.1. He said the IBIS Open Forum decided that this BIRD211.3 and the PAMn BIRD213 would go into IBIS 7.2. Bob Ross said we might discover something in 7.1 that might impact the BIRD. Arpad asked if voting on BIRD211.3 should wait until after 7.1 is finalized.

Randy showed a Figure 41 from BIRD211.3, which had labeling improvements that the Editorial Group planned to use in IBIS 7.1 for Figure 43. Bob said there had been some editing for IBIS 7.1 that might result in a new superseding BIRD from the Editorial Task Group to capture changes made for 7.1. Mike LaBonte asked if the proposed new editorial BIRD would be approved and added to the list of BIRDs slated for 7.1. Bob said yes, it would supersede BIRD201.1.

**BIRD213: EXTENDING IBIS-AMI FOR PAMn ANALYSIS**

Walter Katz said the ATM Task Group had agreed to remove symbol mapping from the BIRD, leaving that up to EDA tools. They were resolving how to handle PAMn with 4 levels, which overlapped the existing PAM4 capability. Arpad Muranyi said it would be more appropriate to use "symbol\_time" instead of “bit\_time” because it is correct for NRZ as well as for PAMn signaling. He suggested making that change in the PAMn BIRD, and possibly also in the in the current IBIS specification for consistency, properness and to eliminate possibilities for confusion. Walter said that was only a function argument name, it was not a functional change. Randy Wolff said the change would not break any existing IBIS-AMI model. Radek Biernacki felt that change could be made independently of the PAMn BIRD. Arpad noted we had already established the list of BIRDs for 7.1. Michael Mirmak noted that there was already an expectation to have another IBIS 7.1 BIRD from the Editorial Task Group. Randy asked if someone could write the new BIRD. Arpad said he would do that. Bob said it would be necessary to search for many places where replacements should be made.

Arpad Muranyi to draft BIRD with “symbol\_time” and other Editorial Task Group changes [AR]

**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**

Bob Ross said there had been many email exchanges with the IBISCHK developer. He also said TSCHK2.0.1 source code had been distributed to licensees.

BUG219

Bob said a typographical error in the source code could cause a failure to compile. Curtis Clark said he had encountered the problem only because he sets a #define IBIS\_PRINT, which enables compiling the faulty code. It was easily fixed. Bob moved to classify the bug with MODERATE severity and HIGH priority. Curtis seconded the motion. There were no objections.

BUG220

Bob said this was discovered by the developer. Duplicate [Interconnect Model Set]s would not be detected. Bob moved to classify the bug as SEVERE severity and HIGH priority. Radek Biernacki felt a severe effect was unlikely. Randy Wolff said it could impact EDA tools differently, depending on implementation. Radek seconded the motion. There were no objections.

BUG221

Bob said no error report was generated when a .ims or .ebd file had no [Interconnect Model Set] or [Electrical Board Description] keywords, respectively. The IBISCHK developer planned to fix this. Bob moved to classify the bug as MODERATE severity and HIGH priority. Curtis Clark seconded the motion. There were no objections. Randy noted two typos in the bug report. Bob said he would fix them.

BUG222

Bob said [Interconnect Model Set] names with spaces were illegal, but not flagged as an error. Curtis asked if the parser recorded a single word or the whole string. No one knew. Bob said it just needed to be fixed. Bob thought he had quoted the requirement for having no spaces, but only the page reference was in the bug. Radek asked if a name could be quoted. Bob moved to classify as SEVERE and HIGH. Mike LaBonte seconded the motion. There were no objections.

Bob Ross to update classifications for IBISCHK BUG219, BUG220, BUG221 and BUG222 [AR]

Bob Ross to fix typos in BUG221 [AR]

Bob said the IBISCHK developer had noted other issues, such as using the term “alphanumeric” without defining it. Bob said the feedback was helpful.

**INTERNATIONAL/EXTERNAL ACTIVITIES (Continued)**

Michael Mirmak asked people to contact him if any issues needed to be raised in the upcoming IEEE DASC meeting. There would be discussion about whether to have a 3rd revision of IEEE 2401, the LPB standard. Bob noted that the LPB standard referenced IBIS. Michael said the passage of IBIS 7.1 would be relevant to them.

Michael said DesignCon had been held at a different venue, so it was difficult to say if the crowd size was different from before, but it seemed very much reduced. He said there was confusion about badges, which were not automatically printed. Mobile devices were used to admit people into sessions. That made it harder to identify people.

**NEW TECHNICAL ISSUES**

None

**NEXT MEETING**

The next IBIS Open Forum teleconference meeting would be held on September 17, 2021. The following teleconference meeting was tentatively scheduled for October 8, 2021.

Curtis Clark 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.

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* 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/>   
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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** | **August 6, 2021** | **August 12, 2021** | **August 19, 2021** | **August 27, 2021** |
| ANSYS | User | Active | - | X | X | X |
| Applied Simulation Technology | User | Inactive | - | - | - | - |
| Broadcom Ltd. | Producer | Inactive | - | - | - | - |
| Cadence Design Systems | User | Inactive | 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 | X |
| Keysight Technologies | User | Active | X | - | X | X |
| Luminous Computing | General Interest | Inactive | - | - | - | - |
| Marvell | Producer | Inactive | X | - | - | X |
| MathWorks (SiSoft) | User | Active | X | X | X | X |
| Maxim Integrated | Producer | Inactive | - | - | X | - |
| Micron Technology | Producer | Active | X | X | X | X |
| MST EMC Lab | User | Active | - | X | X | - |
| NXP | Producer | Inactive | - | - | X | - |
| SerDesDesign.com | User | Inactive | - | - | - | - |
| Siemens EDA (Mentor) | 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 | - | - | - | - |
| Zuken | User | Active | - | 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.