IBIS Open Forum Minutes

Meeting Date: **December 8, 2023**
Meeting Location: **Teleconference**

VOTING MEMBERS AND 2023 PARTICIPANTS

Altair	(JuneSang Lee)
AMD (Xilinx)	(Bassam Mansour)
Ansys	Curtis Clark*, Wei-hsing Huang, Minggang Hou, Xi Hu
Applied Simulation Technology	(Fred Balistreri)
Aurora System	Dian Yang, Raj Raghuram
Broadcom	(Yunong Gan)
Cadence Design Systems	Kyle Lake, Jared James, John Philips, Kristoffer Skytte, Dingru Xiao, Jianping Kong, Shengli Wang, Shiying Fang, Zuli Qin
Celestica	(Sophia Feng), Echo Lv, Lurker Li
Cisco Systems	(Stephen Scearce), Hong Wu, Sally Yang
Dassault Systemes	Stefan Paret, Longfei Bai
GE Healthcare Technologies	(Balaji Sankarshanan)
Google	(Hanfeng Wang)
Huawei Technologies	Danilo Di Febo, Marco De Stefano, Hang (Paul) Yan
Infineon Technologies AG	(Christian Sporrer)
Instituto de Telecomunicações	(Abdelgader Abdalla), Joana Catarina Mendes
Intel Corporation	Chi-te Chen, Kinger Cai*, Michael Mirmak*, Hsinho Wu*, Chuanyu Li, Alaeddin Aydiner*
Keysight Technologies	Ming Yan, [Douglas Burns], Fangyi Rao, Pegah Alavi, Hee-Soo Lee, Heidi Barnes, Chuanbao Li, Jiarui Wu
Marvell	Steven Parker
MathWorks	Graham Kus*, Walter Katz, Kerry Schotz
Micron Technology	[Randy Wolff], Justin Butterfield, Akshay Shivaji Chaudhari, Dragos Dimitriu, Cheng Zhang, Chunqiang Weng, Hongyan Li, Tree Li
MST EMC Lab	Chulsoon Hwang, Zhiping Yang*
SerDesDesign.com	John Baprawski
Siemens EDA	Arpad Muranyi*, Weston Beal*, Matthew Leslie, Mikael Stahlberg, Todd Westerhoff, Scott Wedge, Randy Wolff*
STMicroelectronics	Olivier Bayet, Rahul Kumar, Raushan Kumar, Manish-FTM Bansal, Sameer Vashishtha
Synopsys	Ted Mido*, (Tushar Pandey), Wael Dghais, Jinghua Huang, Kevin Li, Xuefeng Chen
Teraspeed Labs	Bob Ross*
Waymo	[Zhiping Yang], (Ji Zhang)
ZTE Corporation	(Shunlin Zhu), Changgang Yin, Jian Huang, Ming Zheng
Zuken	[Michael Schäder], Markus Bücker, Ralf Brüning, Hongmin Li, Zhi Yin
Zuken USA	Lance Wang*

OTHER PARTICIPANTS IN 2023

Alibaba	Wenzhi Wang
Alphawave Semi	Adrien Auge, Todd Bermensolo
Ciena	Hugues Tournier
Empyrean	Chenghan Jia, Hanqing Tian, Jiajie Zhao, Tao Zhang, Yunpeng Pei
HiSilicon	Zhengrong Xu, Si Ruan, Gengxin Chen
Hitachi Ltd.	Yutaka Uematsu
Honeywell	Bavish Vazhayil
India Institute of Technology	Jai Narayan Tripathi, Vinod Verma
Lenovo	July Rao, Sophia Yang
Montage Tech Co.	Guobing (Robin) Han, Jianbin Wei, Xiangting Wang, Xiaoliang Xu, Hannah Bian, Amy Zhu
Nanjing University of Information Science & Technology	Hongchuan Jia, Xin Cheng
Ningbo DeTooLIC Technology	Zhifei Xu
Nokia	Ramiro Guzman
OMNIVISION	Sirius Tsang
Renesas	Billy Chen, Jie Pan, Mengting Liao, XiangYin Zeng, Zhong Fu Ji
SAE-ITC	Tammy Patton*
Shanghai Fullhan Microelectronics Co.	Zhengyi Zhu
Signal Edge Solutions	Ben Dannan
SI-Clarity, LLC. (SI Consultants At-Large)	Douglas Burns
SI Guys (SI Consultants At-Large)	Donald Telian
Socionext, Inc.	Raymond Yakura
University of Illinois Urbana-Champaign	Jose Schutt-Aine
University of Tunisia, Electronic Laboratory	Malek Souilem
Unaffiliated	Will Hobbs, Mike LaBonte, Jon Powell, Stephen Peters
Xiangdixian Computing Technology	Lili Dai
Xidian University	Xiuqin Chu, Yajun Lv
Xpeedic	Guangmeng Ji, Jessie Zhang
Zhejiang University	Ling Zhang

In the list above, attendees present 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
Roll Call: Meeting Quorum not met: 7 member companies represented. Quorum requires 8.

CALL FOR PATENTS

IBIS OF Chair, Lance Wang called for declaration of any patents or pending patents related to the IBIS, IBIS-ISS, ICM, or Touchstone 2.0 specifications. None were announced.

REVIEW OF MINUTES AND ARS
- November 10, 2023 Asian IBIS Summit in Shanghai
- Randy Motioned. Bob Seconded. Motion approved.
- November 14, 2023 Asian IBIS Summit in Tokyo
    o Delayed per Chair request due to logistics regarding attendee list
- November 17, 2023 IBIS Open Forum teleconference
    o Delayed per Chair request due to logistics regarding prior

ARs:
- Lance to send solicitation email for BIRD226 vote

ANNOUNCEMENTS, CALL FOR ADDITIONAL AGENDA ITEMS

Lance Wang called for any new announcements. None were announced.

MEMBERSHIP STATUS AND TREASURER'S REPORT

Bob reported dues have been sent out for Corporate and Academic dues. Some organizations may not renew. Some early DesignCon sponsorship may come in. These are tracked for 2024.

We expect 1500 for IBISCHK Parser Developer 7.2.1 after a vote later on this meeting.

SAE-ITC assessment is scheduled for February next year.

$16,354 Balance for 2023
$21,404 Adjusted Balance for 2023 (considering pre-payments in earlier years dedicated to 2023).

Lance Wang noted that ZTE contact will change for membership and billing purposes.

WEBSITE ADMINISTRATION

Lance Wang on behalf of Steve Parker that there is an IBIS Summit site for Tokyo Japan, including recording but backdrop has to be updated. Also there is an IBIS Summit site for Shanghai, PRC with similar issues, both are to be updated.

Other than these items, everything is updated.

There is an updated IBIS event link for the IBIS Summit at Designcon 2024 in Santa Clara, CA.

Link: https://ibis.org/events/

Lance noted, A discount code is available for Designcon 2024, the IBIS discount code is "IBIS24" and is available to anyone affiliated with IBIS or Touchstone (Secretary Note: Including those interested in IBIS or Touchstone or anyone interested in attending the convention and/or IBIS Summit).

MAILING LIST

Curtis Clark reported there is no issue with freelists.org. He did mention having to migrate from one domain to another for a subscriber. Other than that, there have been no issues.

LIBRARY UPDATE

Lance Wang reported on behalf of Zhiping Yang there are no updates.

PRESS UPDATES

No updates reported.

UNIVERSITY RELATIONS

Zhiping Yang reported on behalf of Professor Chulsoon Hwang no updates.

INTERNATIONAL/EXTERNAL ACTIVITIES

Related Standards: IEC 63055/IEEE 2401, JEITA "LPB"

Michael Mirmak reported there is an upcoming meeting on January 4th, for DASC.

SUMMIT PLANNING AND REVIEW

<u>DesignCon IBIS Summit 2024 (Santa Clara, CA)</u>
Location:
- February 2, 2024, Mission Towers I, First Floor Training Room, 3975 Freedom Circle, Santa Clara CA
- (Parking is complimentary in garage, Mention "MathWorks or IBIS Summit" for directions from security desk if necessary).

Sponsors:
- IBIS Open Forum

Co-Sponsors:
- The MathWorks, Inc.
- Keysight Technologies
- Others to be determined.

Notes: Lance Wang reported this will be planned to be a Hybrid Summit, 9am-5pm Pacific time US, which would be 12-8pm Eastern time US. Lance thanked The MathWorks and Keysight Technologies for sponsoring the Summit. The Summit is open for further Sponsorship.

QUALITY TASK GROUP

Bob Ross reported we have reviewed the IBISCHK 7.2.1 Parser, have found it to be satisfactory with one minor spelling error and other minor issues. This would be addressed in a second release to avoid carrying them forward.

Also, we worked on a Touchstone 2.1.0 specification for the Parser, and sent this to Draft Specification and to Tammy Patton for SAE-ITC legal review as well. However, there are some issues yet to be resolved, and SAE-ITC would respond in these matters. Bob reported that Weston Beal is continuing to work on the Power Integrity representations to the IBIS Specification, such as rules for spreadsheets and similar artifacts.

Lance Wang asked if there were questions, none were asked.

Note: The Quality Task Group checklist and other documentation can be found at:

 https://www.ibis.org/quality_ver3.0/

ADVANCED TECHNOLOGY MODELING TASK GROUP

Arpad Muranyi reported meeting usual time at 12pm noon Pacific.

Arpad noted there would be one (1) more meeting this year, then a break the rest of the year.

Arpad reported that Michael Mirmak has developed BIRD228 for extended pin field in IBIS files. Also there is work on IBIS AMI model testing and verification, which may involve a new BIRD. We are also discussing feedback on Pre-Driver PSIJ proposal from MST, discussed and covered by BIRD220. These are the main topics.

Lance Wang asked if there were questions, none were asked.

Note: Task group material can be found at:

 http://www.IBIS.org/macromodel_wip/

INTERCONNECT TASK GROUP

Michael Mirmak reported we continue to meet Wednesdays 3pm Pacific Time. Recent have been on Arpad's proposal. There have been issues regarding getting industry opinions on Foster Format as opposed to PLS format. This is in regard to Touchstone 3.0. There may be additional discussions as we try to close out pole-residue and related topics.

Also, Touchstone 2.1 has some open questions, and we would re-forward the updated draft as issues come in for consideration.

Arpad Muranyi stated that the PLS format enforces some things that are desirable, but that would be more specific in upcoming revision. In general, requests everyone looks at this carefully which format we prefer. For example, Foster Format IBIS-ISS already describes it, but PLS format has some technical advantages over it, such as enforcing realness and stability.

Lance Wang asked if there were questions, none were asked.

Note: Task group material can be found at:

> http://www.IBIS.org/interconnect_wip/

EDITORIAL TASK GROUP

Michael Mirmak reported this remains suspended due to immediate activities only being Touchstone 2.1. Unless another document comes up for revision it will remain so.
Lance Wang asked if there were questions, none were asked.

Note: Task group material can be found at:

> http://www.IBIS.org/editorial_wip/

NEW ADMINISTRATIVE ISSUES

None reported.

ROLL CALL

Mid-meeting roll call: Graham Kus reported there were now 8 member companies, now reporting to have Quorum.

TECHNICAL DISCUSSION

Michael Mirmak reported that Touchstone 2.1 Draft has been submitted, it makes adjustments some typographical editorial, but adds support to .OPTION line, essentially to bring into alignment with EDA Tools that support reference impedances "per port". There was a request in the Open Forum last session to add Appendix to the document. This has been kicked back to Interconnect Task Group for an anticipated updated Draft 3 which may be presented to the Open Forum for vote in the near future.

Lance Wang stated we will postpone voting and looks forward to Draft 3.

Link: https://ibis.org/touchstone_ver2.1/

NEW AND REVISED *IRDs
BIRD228: Pin Name Field Extension, submitted by Michael Mirmak, Intel
Link: https://ibis.org/birds/bird228.docx

Michael Mirmak reported that this deals with Kyle Lake and Walter Katz that we only allow 5 characters for first column of PIN list- which is difficult for CAD-based connections or large BGAs (e.g. CAD-Label Net-name based from a Schematic after forward-annotation). The industry has progressed to the point where only 5 characters to express PINs + PADs + CAD Nets becomes very restrictive. So this has been increased from 5 to 20 characters. This is arbitrary, but must be fixed value due to software code conventions. This PIN keyword touches number of other Keywords, so the BIRD is now 6 pages, because they cross-reference back to PIN. They have similar fields that are restricted- so now there are 10-11 Keywords to change from 5 to 20 characters. There were some minor grammatical/editorial to fix as well. The current line restriction is 1024 characters, and none of these keywords run into that or affect that. This should address any concerns about restricted PIN field length.

Lance Wang asked if there were questions.

Arpad Muranyi asked if this affected Syntax, or simply the PIN field length. Michael confirmed it only affects length.

No further questions were asked.

IRDS SCHEDULED FOR VOTE
BIRD226: PSIJ Sensitivity, submitted by Kinger Cai, et al.
Link: https://ibis.org/birds/bird226.docx

Lance Wang invited Kinger Cai to express a summary abstract. Kinger presented the abstract from BIRD226 along with some summary and background information.

Ballot results:
- Ansys – Yes
- Cadence – not present
- Google – Yes (via email ballot)
- Intel Corporation - Yes
- MathWorks – Yes
- MST EMC Lab – Yes
- Siemens EDA – Yes
- Synopsys – Yes
- Teraspeed Labs – Yes
- Zuken – Yes

The vote passed with a tally of TBD – 9 Yes, 0 – No, 0 – Abstain.
Lance Wang announced that BIRD is approved. Lance Wang congratulated Kinger Cai.

IRDS ELIGIBLE FOR VOTE

BIRD220: Pre-driver PSIJ Sensitivity Keyword   Ding et al

Link: https://ibis.org/birds/bird220.docx

Lance Wang noted that BIRD220 would remain eligible to vote status until updated.

BIRD227: AMI Ignore Block Feature   Aydiner et al

Link: https://ibis.org/birds/bird227.docx

Lance Wang asked Alaeddin Aydiner to report. Alaeddin provided a summary abstract from BIRD227. Michael Mirmak motioned to move to schedule to vote. Curtis Clark seconded. There were no objections. The motion passed. Lance noted this BIRD moved to be scheduled to vote for next Open Forum meeting.

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

No updates reported.

IBISCHK AND TSCHK PARSER AND BUG STATUS

Bob Ross reported on test cases as follows: The Parser Developer tested BUG245. One of the bugs was compiler warnings, he removed the warnings. Bob Ross asked Curtis Clark and Graham Kus and Michael Mirmak to retest these. Bob reported the status may not be perfect because of the variety and versions of Linux and Windows but should be much better. Bob stated we are ready to approve the Parser per the contract per the IBIS Open Forum has to approve it.

Bob Ross stated that after approving the Parser, it may be re-submitted with editorial fixes. After approval Bob as Treasurer would submit the amount of $1500, to SAE-ITC for payment to the Parser.

Arpad Muranyi asked: can we get a list of technical changes before we move to vote?

Lance Wang responded by bringing up the change list on shared remote-view as of 2023-12-08:

Link: https://ibis.org/bugs/ibischk

(with exception of BUG227)

Randy Wolff reported that a some of these BUGs are reported as marked Severe so we would want to have these updated as critical BUGs, such as BUG244 regarding EMD.

Lance asked if there were any questions.

Randy asked if Bob had forwarded on to Graham and Curtis Clark and whether they had updates.

Graham stated on behalf of The MathWorks that their philosophy is for code to be targeted to ship with no errors and no warnings. However, if they should occur, they be documented as a minimum with a delivery target in mind, and marked for being addressed at a later time (either being as resolved or no-action planned, but tracked). As the Parser Developer is now tracking and attempting to address these, that is sufficient. That being stated, there were no objections.

Curtis Clark stated on behalf of Ansys there was no problem taking the developers word they had moved forward. There were no objections.

Bob Ross motioned to approve, Arpad Muranyi seconded. There were no objections.

Randy stated this may be available by the end of the year.

Bob stated the Parser subscribers may be issued by the end of the year.

Lance wang thanked everyone.

NEW TECHNICAL ISSUES

None

NEXT MEETING AGENDA AND SCHEDULING

The next IBIS Open Forum teleconference meeting would be held as a teleconference meeting January 26, 2024, and the following date as IBIS Summit during DesignCon February 2, 2024.

Arpad Muranyi motioned to Adjourn: Curtis Clark seconded the motion. The meeting adjourned.

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NOTES

IBIS CHAIR: Lance Wang (978) 633-3388
        lance.wang@ibis.org
        Solutions Architect, Zuken USA
        238 Littleton Road, Suite 100
        Westford, MA 01886

VICE CHAIR: Randy Wolff
        vice-chair@ibis.org
        Product Architect, Siemens EDA

SECRETARY: Graham Kus
        graham.kus@ibis.org
        Senior Engineer, The MathWorks, Inc.
        3 Apple Hill Drive
        Natick, MA 01760

TREASURER: Bob Ross (503) 246-8048
        bob@teraspeedlabs.com
        Engineer, Teraspeed Labs
        10238 SW Lancaster Road
        Portland, OR 97219

LIBRARIAN: Zhiping Yang
        YangZhip@mst.edu

WEBMASTER: Steven Parker (845) 372-3294
        sparker@marvell.com
        Senior Staff Engineer, DSP, Marvell
        2070 Route 52
        Hopewell Junction, NY 12533-3507

POSTMASTER: Curtis Clark
        curtis.clark@ansys.com
        Ansys, Inc.
        400 Fifth Avenue
        Suite 500
        Waltham, MA 02451

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: IBISchk7, 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 (attendee X; absent -)

Organization	Interest Category	Standards Ballot Voting Status	Nov 10, 2023	Nov 14, 2023	Nov 17, 2023	Dec 8, 2023
Altair	User	Inactive	-	-	-	-
AMD (Xilinx)	Producer	Inactive	-	-	-	-
Ansys	User	Active	X	-	X	X
Applied Simulation Technology	User	Inactive	-	-	-	-
Aurora System	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	-	-	-	-
GE Healthcare Technologies	User	Inactive	-	-	-	-
Google	User	Inactive	-	-	-	-
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	Inactive	X	X	-	-
Marvell	Producer	Inactive	-	-	-	-
MathWorks	User	Active	-	-	X	X
Micron Technology	Producer	Inactive	X	X	-	-
MST EMC Lab	User	Active	X	X	X	X
SerDesDesign.com	User	Inactive	-	-	-	-
Siemens EDA	User	Active	-	X	X	X
STMicroelectronics	Producer	Inactive	-	-	X	-
Synopsys	User	Active	X	X	X	X
Teraspeed Labs	General Interest	Active	-	X	X	X
Waymo	User	Inactive	-	-	-	-
ZTE Corp.	User	Inactive	X	-	-	-
Zuken	User	Active	X	X	X	X

= Temporarily not a voting member

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.