



IBIS Open Forum Minutes

Meeting Date: **July 17, 2020**

Meeting Location: **Teleconference**

VOTING MEMBERS AND 2020 PARTICIPANTS

ANSYS	Curtis Clark*, Wei-hsing Huang, Marko Marin Shai Sayfan-Altman, Zilwan Mahmod
Applied Simulation Technology	(Fred Balistreri)
Broadcom	James Church, Jim Antonellis
Cadence Design Systems	Zhen Mu*, Ambrish Varma, Jared James Kumar Keshavan, Ken Willis
Cisco Systems	Stephen Searce, Hong Wu
Dassault Systemes (CST)	Stefan Paret
Ericsson	Anders Ekholm, Sungjoo Yu, Thomas Ahlstrom
Google	Zhiping Yang, Shuai Jin, Zhenxue Xu
Huawei Technologies	(Hang (Paul) Yan)
IBM	Michael Cohen, Greg Edlund
Infineon Technologies AG	(Christian Sporrer)
Instituto de Telecomunicações	(Abdelgader Abdalla)
Keysight Technologies	Radek Biernacki*, Hee-Soo Lee, Todd Bermensolo Graham Riley, Pegah Alavi, Fangyi Rao Stephen Slater
Marvell	Steve Parker*, Johann Nittmann
Maxim Integrated	Joe Engert, Charles Ganai, Dzung Tran, Yan Liang
Mentor, A Siemens Business	Arpad Muranyi*, Raj Raghuram, Todd Westerhoff Weston Beal
Micron Technology	Randy Wolff*, Justin Butterfield
NXP	John Burnett
SerDesDesign.com	John Baprawski
SiSoft (MathWorks)	Mike LaBonte*, Walter Katz*, Graham Kus
Synopsys	Ted Mido*, Andy Tai
Teraspeed Labs	Bob Ross*
Xilinx	Ravindra Gali
ZTE Corporation	(Shunlin Zhu)
Zuken	Michael Schäder, Kazunari Koga
Zuken USA	Lance Wang*

OTHER PARTICIPANTS IN 2020

Accton	Tariq Abou-Jeyab
Achronix Semiconductor	Hansel Dsilva

Apollo Giken Co.	Satoshi Endo
Intel Corporation	Hsinho Wu*, Michael Mirmak, Adrien Auge Fernando Mendoza, Taeyoung Kim, Wendem Beyene Oleg Mikulchenko, Nhan Phan, Ifiok Umoh Subas Bastola
Kandou Bus	Sherman Chen
KEI Systems	Shinichi Maeda
Kioxia Corporation	Yasuo Otsuka
OmniVision	Sirius Tsang
Qualcomm	Kevin Roselle, Sunil Gupta
Renesas	Genichi Tanaka
RITA Electronics	Takahide Nozaki
SAE ITC	Jose Godoy
Samsung	Wonsuk Choi
San Jose State University	Vincent Tam
Seagate	Preetesh Rathod, Alex Tain, Karthik Chandrasekar Emmanuel Atta
Signal Metrics	Ron Olisar
Silvaco Japan Co.	Yoshiharu Furui
SK Hynix Memory Solutions	Jongchul Shin, Alex Lee, James Yu
Socionext	Matsumura Motoaki, Shinichiro Ikeda Takafumi Shimada [Wei-hsing Huang]
SPISim	Dongmei Han, Edward Pulscher, Sheri Zhuang
Teradyne	Tomoo Tashiro, Paul Carlin, Tao Wang

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 bridge numbers for future IBIS teleconferences are as follows:

Date	Meeting Number	Meeting Password
August 7, 2020	627 261 744	Friday1

For teleconference dial-in information, use the password at the following website:

<https://tinyurl.com/IBISfriday-new>

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 June 26, 2020 IBIS Open Forum teleconference. Mike LaBonte moved to approve the minutes. Radek Biernacki seconded the motion. There were no objections.

Randy reviewed ARs from the previous meeting.

1. Randy Wolff and the IBIS board to review the IBIS FAQ web page for changes to describe the new academic membership [AR].
Randy reported that this had been done.
2. Randy Wolff to update IBIS 7.0 known issues document for review of “DLL” vs. “executable model” descriptions [AR].
Randy reported that this had been done. Steve Parker reported that the updated document had been uploaded to the website.
3. Steve Parker to update status of BIRD204 on the IBIS BIRDS page [AR].
Steve reported that this had been done.
4. Steve Parker to update status of BIRD205 on the IBIS BIRDS page [AR].
Steve reported this had been done.
5. Randy Wolff to send an email to the Open Forum announcing the BIRD201.1 vote [AR].
Randy reported that this had been done.
6. Bob Ross to notify the parser developer of the agreement already approved by SAE-ITC [AR].
Bob reported that this had been done.

ANNOUNCEMENTS, CALL FOR ADDITIONAL AGENDA ITEMS

None.

MEMBERSHIP STATUS AND TREASURER'S REPORT

Bob Ross reported that we now have 25 members, as payment for 2020 membership had been received from Infineon. We expect payment in July or August from the one remaining organization that has yet to renew for 2020. The quorum for meetings is 7. We have \$25,478 cash flow for 2020 and a \$25,828 adjusted balance for 2020. Bob said one half-year

membership is proceeding slowly, and there is the possibility of a second half-year membership. One new ibischk7 parser license purchase is in progress.

WEBSITE ADMINISTRATION

Steve Parker reported that the website was up to date with respect to ATM, Interconnect, and Quality task group minutes and documents. BIRD204, BIRD205, BIRD206, and the known issues document for IBIS 7.0 had been updated. Steve said he would be updating the FAQ page to reflect the new academic membership and the ibischk and tschk2 pages to reflect the new license agreement for the free executables.

Steve noted that plain text appears for IBM and Ericsson on the IBIS home page instead of their corporate logos. He asked if people had been unable to obtain permission to display their logos. Mike LaBonte and Bob Ross said that several people had attempted to obtain permission in the past but could not. They noted that the plain text is permissible.

MAILING LIST ADMINISTRATION

Mike LaBonte reported that mailing lists were generally operating smoothly. Our mailing lists' host, freelists.org, had been on the SORBS blacklist periodically, but it was not affecting any deliveries.

LIBRARY UPDATE

No update.

INTERNATIONAL/EXTERNAL ACTIVITIES

- Conferences

2020 IEEE International Symposium on EMC + SIPI (August 3-28, online)

<https://www.emc2020virtual.emcss.org/>

- Press Update

None.

- Related standards

IEC 63055/IEEE 2401, JEITA "LPB"

Randy Wolff reported that he had received an email update from Genichi Tanaka. On June 4th, the IEC TC91 working group 13 held a web meeting, and the working group members agreed that IEEE 2401-2019 should become an IEC standard through a dual logo. All IEC members will now discuss this domestically, and the working group and TC91 plenary body will authorize the dual logo at an official meeting in November.

SUMMIT PLANNING AND STATUS

- IEEE EMC + SIPI Symposium (August 3-28, online)

Bob Ross reported that the virtual IBIS Summit will take place on August 28th, the last day of the virtual conference, from 1 to 5 p.m. CST. Bob reminded everyone that all EMC + SIPI conference times are in CST. Bob noted that Randy Wolff had sent out the first summit announcement on Friday, July 10th. Randy said the second announcement would be sent on July 24th. Randy said that we are working on the legal details of a cooperation agreement with IEEE EMC. We don't yet have the details, but IBIS members who want to attend the entire conference should get discounts comparable to IEEE members.

Bob asked that anyone planning to attend the summit please register with Lance Wang. Lance will send out the link to the virtual summit to those who register. Bob said that some presentations will focus on basic introduction to IBIS topics. Zhiping Yang will be presenting some PI material. The schedule is open for more presentations, and the deadline for submission is August 14th. Please notify Bob as soon as possible if you plan to present.

QUALITY TASK GROUP

Mike LaBonte reported that the group is meeting on Tuesdays at 8:00 a.m. PT. The group continues to focus on ibischk7.0.2, and parser development is underway. New ibischk7 and tschk2 webpages will feature the newly developed license agreement for the free binaries. Steve Parker will be updating the pages shortly.

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. He said that with the recent submission of several BIRDs that were discussed in ATM, the agenda is currently lighter than normal. The group is now in exploratory discussions on how IBIS might help with PI modeling, a topic Zhiping Yang had proposed. The group is also considering a proposal from Randy Wolff to add new AMI Reserved Parameters for passing the Component name and signal_name into an AMI model.

Task group material can be found at:

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

INTERCONNECT TASK GROUP

Randy Wolff reported that the group meets at 8:00 a.m. PT on Wednesdays. He noted that the focus is still on the EMD proposal (BIRD202), and they are making good editorial progress toward a BIRD202.1.

Task group material can be found at:

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

EDITORIAL TASK GROUP

Randy Wolff reported the task group remains suspended.

Task group material can be found at:

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

CHINA REGIONAL FORUM

Lance Wang reported that there had been no activity since the last Open Forum meeting. He and Randy Wolff said they may talk to Kevin Li about a possible virtual summit in November.

China Regional Forum material can be found at:

http://www.ibis.org/china_forum/

NEW ADMINISTRATIVE ISSUES

- None.

BIRD206: CLARIFICATION OF TEXT “TRANSITION TIME”

Arpad Muranyi summarized the BIRD on behalf of Hansel Dsilva. He said the BIRD was a straightforward clarification of terminology, and that in using “transition time” we had really meant “threshold crossing time”. He noted that the industry generally uses “transition time” to mean the time it takes to complete the transition, i.e., the duration of the edge. This BIRD replaces several instances of “transition time” with “threshold crossing time”. Walter Katz said that when he had drafted the original text being amended by this BIRD, the threshold crossing time was what he had in mind.

Randy Wolff noted that in section 10.7 a portion of a paragraph was removed. Arpad said that during discussions of the BIRD several of the sentences in this section were found to be redundant, so they were removed. Walter asked people to review this BIRD and said he planned to move to schedule a vote at the next meeting.

BIRD201.1: BACK-CHANNEL STATISTICAL OPTIMIZATION

Walter Katz noted that this BIRD had been through several iterations and had settled down. Radek Biernacki agreed and said that his earlier concerns had been addressed. Walter moved to vote on the BIRD. Radek seconded the motion. There were no objections.

The roll call vote tally was:

ANSYS – yes
Cadence – no
Keysight – yes

Marvell – yes
Mentor – yes
Micron – yes
SiSoft – yes
Synopsys – yes
Teraspeed Labs – yes
Zuken - yes

The roll call vote concluded with a vote tally of Yes – 9, No – 1, Abstain – 0. The vote passed.

Randy Wolff gave Steve Parker an AR to update the status of BIRD201.1 on the website [AR].

BIRD198.2: KEYWORD ADDITIONS FOR ON DIE PDN (POWER DISTRIBUTION NETWORK) MODELING

Randy Wolff summarized the BIRD. This BIRD establishes a way of providing a simple on-die decoupling model. It is a two terminal model, and the terminals are defined using signal_name or bus_label. The model provides a decoupling capacitor with an equivalent series resistance and a leakage resistance. The BIRD allows for providing multiple PDN models in parallel and for creating different power domains.

Randy moved to schedule a vote on the BIRD at the August 7, 2020 IBIS Open Forum teleconference. Walter Katz seconded. There were no objections. Randy Wolff to send an email to the Open Forum announcing the vote [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.

BIRD202: ELECTRICAL DESCRIPTIONS OF MODULES

Discussion was tabled.

IBISCHK PARSER AND BUG STATUS

Bob Ross reported that there were no new parser BUGs to discuss. He said the parser developer was close to delivering the first version of ibischk7.0.2 for testing. The developer had inquired about BUG204, which notes that negative values of Rx_Receiver_Sensitivity should

result in a warning, and asked if zero was allowed. Walter Katz and Randy Wolff confirmed that zero is allowed. Bob said he would report back to the parser developer and note that warnings for negative values should apply to List, Range, and Corner formats as well. Bob noted that ibischk7 licensees will be notified when the new release is ready.

Radek Biernacki asked if the ibischk7.0.2 binaries would be distributed with the new license agreement. Mike LaBonte reported that the current ibischk7 webpage, for release ibischk7.0.1, is being updated with the new license.txt. He said that anyone redistributing the binaries for ibischk7.0.2 and beyond should bundle the license agreement with them.

NEW TECHNICAL ISSUES

- Next revision of the IBIS specification

Arpad Muranyi asked if all of the recently approved BIRDS were targeted for the next release, and if the EMD BIRD202 is going to be the gating factor for the next release. Randy Wolff said he expected that all the recent BIRDS would go into the next release, and that the EMD BIRD might be a good place to cut off technical content for IBIS 7.1, but we haven't yet had any formal discussion on the topic. Arpad asked if EMD might represent a lot of new parser work, and if we might want to put it into a major release (8.x) for that reason. Bob Ross said that aside from BIRD202 most of the BIRDS are minor, and we currently have excess money from the 7.x parser license sales, so we should be able to cover the parser development costs. Randy said we will schedule some discussion time for this in a meeting or two.

NEXT MEETING

The next IBIS Open Forum teleconference meeting will be held on August 7, 2020. The following teleconference meeting is tentatively scheduled for August 28, 2020.

Curtis Clark moved to adjourn. Ted Mido 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/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>

Other trademarks, brands and names are the property of their respective owners.

SAE STANDARDS BALLOT VOTING STATUS

Organization	Interest Category	Standards Ballot Voting Status	May 15, 2020	June 05, 2020	June 26, 2020	July 17, 2020
ANSYS	User	Active	X	X	X	X
Applied Simulation Technology	User	Inactive	-	-	-	-
Broadcom Ltd.	Producer	Active	X	X	X	-
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	-
Huawei Technologies	Producer	Inactive	-	-	-	-
Infineon Technologies AG	Producer	Inactive	-	-	-	-
Instituto de Telecomunicações	User	Inactive	-	-	-	-
IBM	Producer	Active	X	-	X	-
Keysight Technologies	User	Active	X	X	X	X
Marvell	Producer	Active	X	X	X	X
Maxim Integrated	Producer	Inactive	-	-	-	-
Mentor, A Siemens Business	User	Active	X	X	X	X
Micron Technology	Producer	Active	X	X	X	X
NXP	Producer	Inactive	-	-	-	-
SerDesDesign.com	User	Inactive	-	-	-	-
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

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.