



IBIS Open Forum Minutes

Meeting Date: **July 11, 2014**

Meeting Location: **Teleconference**

Agilent Technologies

Altera

ANSYS

Applied Simulation Technology

Cadence Design Systems

Ericsson

Infineon Technologies AG

Intel Corporation

IO Methodology

LSI (Avago)

Maxim Integrated Products

Mentor Graphics

Micron Technology

Qualcomm

Signal Integrity Software

Synopsys

Teraspeed Consulting Group

Xilinx

ZTE Corporation

Zuken

Radek Biernacki*, Nilesh Kamdar, Colin Warwick,

Graham Riley, Pegah Alavi, Fangyi Rao,

Heidi Barnes, Dimitrios Drogoudis

David Banas, Kundan Chand, Hsinho Wu

(Steve Pytel)

Fred Balistreri, Norio Matsui

Ambrish Varma, Brad Brim*, Joy Li, Kumar Keshavan,

Ken Willis, Yingxin Sun, Joshua Luo, John Phillips

Anders Ekholm, Zilwan Mahmod

(Christian Sporrer)

Michael Mirmak*, Jon Powell, Riaz Naseer

Udy Shrivastava, Mustafa Yousuf, Jimmy Jackson

Pietro Brenner, Todd Bermensolo

Lance Wang, Michelle Coombs

Xingdong Dai, Min Huang, Anaam Ansari, Brian Burdick

Venkatesh Avula

Hassan Rafat

Arpad Muranyi*, John Angulo, Fadi Deek, Chuck Ferry

Thomas Groebli

Randy Wolff*

Jaimeen Shah, Srinivasa Rao*, Senthil Nagarathinam*

Mike LaBonte*, Walter Katz, Todd Westerhoff,

Michael Steinberger

Ted Mido, Scott Wedge, Kevin Cameron, Rita Horner

Bob Ross*, Tom Dagostino, Scott McMorrow

Ravindra Gali

(Shunlin Zhu)

Michael Schaefer, Amir Wallrabenstein, Griff Derryberry

Reinhard Remmert

OTHER PARTICIPANTS IN 2014

ADVLSI

Carleton University

Continental Automotive

CST

ECL Advantage

Freescale

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Proficient Design	Kishor Patel
Renesas	Genichi Tanaka
SAE International	Chris Denham
Tabula	Ben Zhou
Technische Universität Hamburg	Torsten Reuschel
Toshiba	Hiroyuki Ikegami, Toshihiro Tsujimura
University of Illinois	José Schutt-Ainé
Vitesse	Siris Tsang

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 1, 2014	205 475 958	IBIS

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

<https://ciscosales.webex.com/ciscosales/j.php?J=205475958>

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. When calling into the meeting, follow the prompts to enter the meeting ID. For new, local international dial-in numbers, please reference the bridge numbers provided by Cisco Systems at the following link:

http://www.cisco.com/web/about/doing_business/conferencing/index.html

NOTE: "AR" = Action Required.

INTRODUCTIONS AND MEETING QUORUM

Michael Mirmak declared that a quorum was reached and the meeting could begin.

CALL FOR PATENTS

Michael Mirmak called for any patents or pending patents related to the IBIS 3.2, IBIS 4.2, IBIS 5.1, IBIS 6.0, Touchstone 2.0, IBIS-ISS 1.0 or ICM 1.1 specifications. No patents were declared.

REVIEW OF MINUTES AND ARS

Randy Wolff called for comments regarding the minutes of the June 20, 2014 IBIS Open Forum teleconference. The minutes were approved without changes.

Randy noted that BIRD168 needed to be marked on the web as approved as of June 20, 2014. Also, the BIRD document needs to be updated and the new version uploaded. Radek Biernacki took an AR to update the BIRD.

ANNOUNCEMENTS

None.

CALL FOR ADDITIONAL AGENDA ITEMS

Arpad Muranyi requested time to talk about what to do with typical data when min/max data is available for certain keywords but not all, as related to [Ramp] and V-T waveforms.

Bob Ross noted that BIRD169 needs to be in the agenda for introduction and time may be needed for BIRD172 discussion.

MEMBERSHIP STATUS AND TREASURER'S REPORT

Bob Ross reported that there are 20 paid members. The treasury sits at \$38,683. We are awaiting a parser payment and additional membership renewals. There is no confirmation yet that our payment to the parser developer has gone through. There are possibly four other memberships pending.

WEB PAGE AND MAILING LIST ADMINISTRATION

Mike LaBonte reported that he had an AR from the last meeting, so he looked on the SAE website and contacted Chris Denham to inquire on web services available to move to a more modern PHP platform. Our website is not working out well at eda.org with the level of support available from volunteers. SAE appears to give only a small web space to committees where meeting information is logged. Chris did respond asking what we need. Mike noted that what we are heading toward for a better website is very different from what we have now. He looked into GoDaddy webhosting as well.

Mike looked at administrator notices on the email server, and Stanford SMTP server representation scores are good for 3 of 4 servers, but one server has a score of 0. Emails sent out through this server are not always delivered. If anyone is not receiving emails, let Mike know.

Michael Mirmak noted that he would like Mike and Randy Wolff to find out how to log meetings on the SAE website. Michael noted that we should discuss the website requirement document further. We may want secure login pages, for instance, as well as bug and BIRD logging. Bob Ross noted that it is implied that we will have administrator privileges for any web server option.

Michael asked if we had a document that noted all the email lists and join requirements for IBIS Open Forum and the task groups. Mike thought this would be a good web page to create.

Mike also noted that the ibischk web page has been updated to point to ibischk6 as the latest release.

LIBRARY UPDATE

No update.

INTERNATIONAL/EXTERNAL ACTIVITIES

- Conferences

The 23rd Conference on Electrical Performance of Electronic Packaging (EPEPS) will be held October 26-29, 2014 in Portland, Oregon. There is usually some IBIS and/or signal integrity related material. More information is available at:

<http://epeps.org>

- Press Update

None.

- P2401 and P1735

Michael Mirmak reported that the IEEE DASC (standards committee) met yesterday. Two items of interest to IBIS were mentioned there. The P1735 group is related to generic encryption that could be implied to multiple languages. They have completed their work enough to bring the specification to ballot. Encryption could be applied to IBIS 4.1 or later models using the AMS languages. The P2401 group for the LSI package board specification will have its second working group meeting on July 24, 2014 at 9:00 a.m. JST (July 23, 2014 at 8:00 p.m. EST). A presentation about this group was given at the DAC IBIS Summit.

SUMMIT PLANNING AND STATUS

Bob Ross asked if we received the bill for the DAC IBIS Summit. Michael Mirmak noted that we have not, and it may not be received until August.

- Asian IBIS Summit planning

Bob Ross reported that Summits are planned for November 7 in Shanghai, November 17 in Taipei and November 20 in Yokohama. Lance Wang had asked if he should sign the contract for the Parkyard hotel in Shanghai or send it to SAE. Bob recommended to him to sign the contract. Michael is handling the details for the Sherwood hotel reservation in Taipei. Michael asked if there were any objections to the proposed dates. There were none. Michael will see if SAE can sign the Sherwood hotel contract. Michael encouraged presentations and sponsorships. Calls for papers will start going out in September.

Sponsorship opportunities for all upcoming IBIS summits are available, with sponsors receiving free mentions in the minutes, agenda, and other announcements. Contact the IBIS Board for further details.

QUALITY TASK GROUP

Mike LaBonte reported that the group is meeting on Tuesdays at 8:00 a.m. PT. They have used some meeting time to look at BIRDs and bugs, but the main focus is developing documentation to accompany the ibischk6 release. A first draft is completed. Later this year the group will start discussing new ideas for enhancing IBIS quality checking.

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

http://www.eda.org/ibis/quality_wip/

ADVANCED TECHNOLOGY MODELING TASK GROUP

Arpad Muranyi reported that the group is meeting regularly on Tuesdays at 12:00 p.m. PT. They are trying to decide on a BIRD147 backchannel proposal versus the idea of a more general proposal. There was a vote on BIRD direction a few weeks ago, but it was a tie. After subsequent discussion, SiSoft withdrew their proposal. Discussions are focusing on whether BIRD147 is sufficient as-is, or if it needs to become more generalized. If it needs to be changed, will a new BIRD be required? Bob Ross noted that he will address some questions in private to the BIRD147 authors.

Task group material can be found at:

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

INTERCONNECT TASK GROUP

Michael Mirmak reported that the group's ongoing work is discussing and updating a draft BIRD proposal from Walter Katz. Discussions next week will focus on handling of grounds and ideal ground in subcircuits and unused port terminations.

Task group material can be found at:

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

SHALL IBIS MOVE TO A 1-YEAR DEVELOPMENT SCHEDULE?

Michael Mirmak showed the presentation given at the DAC and European IBIS Summits related to development schedules for IBIS. Michael's proposal is to move to a regular development schedule (one specification release per year). This will allow for better planning for EDA vendor implementation of the specification changes and ibischk parser development and financing. With the proposal, most development work would occur in the months of February through July. The specification would move to date codes for releases, and this removes the major/minor release distinction. Parser development fees could become part of membership dues in 2015.

Randy Wolff noted that August 1 is too aggressive a cut-off date for this year. We need more time to close out package modeling efforts. Radek Biernacki asked how many BIRDS are approved right now for the next specification release. Michael noted only 3 so far. He felt the package modeling would need another 2 months as well as approval time through the Open Forum. Bob Ross liked the idea of the fixed date, but we missed the deadline for this year, since we need the next release to have more technical features. Michael noted we may need one more release under the old system and move to the new system next year.

Bob commented that he felt these are three independent proposals of date code, yearly releases and parser development fees rolled into membership fees. Bob added that getting the parser source code would always require signing the licensing agreement. Bob commented that moving to the date code system complicates the ability to release minor-type versions needed for editorial work before standardization.

Michael's presentation is linked at:

<http://www.eda.org/ibis/summits/jun14/mirmak.pdf>

NEW ADMINISTRATIVE ISSUES

None.

BIRD169: DLL DEPENDENCY CHECKING

Arpad Muranyi introduced the BIRD. The BIRD was prompted by situations with customers getting models that they could not simulate due to missing DLLs. It can be difficult for customers to figure out why the models are not working. The BIRD adds information to the specification to suggest that model developers check their models on a clean system with a dynamic library checking tool to prevent failures related to dynamic library dependencies. One idea is to try to put this check into the parser, but doing so is complicated.

Bob Ross asked about the ldd and Dependency Walker tools mentioned in the BIRD. He suggested they formalize these names. Radek Biernacki suggested describing them more generically. Michael Mirmak wondered if this language should be in a cookbook, but wasn't opposed to it being in the specification. The language can't enforce anything in the parser. Arpad noted that the BIRD also removes two sentences that were ambiguous and not useful.

Bob Ross moved to schedule the BIRD for a vote at the next IBIS Open Forum teleconference. Radek Biernacki seconded the motion. There were no objections.

BIRD170: DELETE EXTRA PARAGRAPH FOR PORTS UNDER [EXTERNAL CIRCUIT]

Bob Ross introduced the BIRD. It is a cleanup BIRD for the specification. The BIRD removes a paragraph that essentially repeats several sentences found in the previous paragraph. This is found on page 121 under the [External Circuit] section.

Radek Biernacki moved to schedule the BIRD for a vote at the next IBIS Open Forum teleconference. Arpad Muranyi seconded the motion. There were no objections.

BIRD171: CLARIFY THAT NULL ROOT NAME IS NOT PERMITTED IN AMI FILES

Bob Ross introduced the BIRD. An issue came up during ibischk6 parser development where a number of test cases had null root names. BUG152 was issued to test for null root names and generate Errors. This proposal adds the explicit constraint into the specification.

Bob intends to issue a BIRD171.1 to change the word “null” used in the bullet item to “empty”. Radek Biernacki noted this must state that the name cannot include only white space characters. Mike LaBonte suggested stating the root name must contain at least one non-whitespace character. Adge Hawes noted that we may already have rules for names similar to XML language. He agreed that root names must exist, so he agreed with stating this in the specification. We should also check the parser to see if it checks for root names of branches as well, since these should not be empty.

Radek Biernacki moved to schedule an updated BIRD171.1 for a vote at the next IBIS Open Forum teleconference. Bob Ross seconded the motion. There were no objections.

BIRD125.1: MAKE IBIS-ISS AVAILABLE FOR IBIS PACKAGE MODELING

Discussion was tabled.

BIRD128: ALLOW AMI_PARAMETERS_OUT TO PASS AMI_PARAMETERS_IN DATA ON CALLS TO AMI_GETWAVE

Discussion was tabled.

BIRD145.3: CASCADING IBIS I/O BUFFERS WITH [EXTERNAL CIRCUIT]S USING THE [MODEL CALL] KEYWORD

Discussion was tabled.

BIRD147: BACK-CHANNEL SUPPORT

Discussion was tabled.

BIRD157: PARAMETERIZE [DRIVER SCHEDULE]

Discussion was tabled.

BIRD158.3: AMI TOUCHSTONE ANALOG BUFFER MODELS

Discussion was tabled.

BIRD161.1: SUPPORTING INCOMPLETE AND BUFFER-ONLY [COMPONENT] DESCRIPTIONS

Discussion was tabled.

BIRD163: INSTANTIATING AND CONNECTING [EXTERNAL CIRCUIT] PACKAGE MODELS WITH [CIRCUIT CALL]

Discussion was tabled.

BIRD164: ALLOWING PACKAGE MODELS TO BE DEFINED IN [EXTERNAL CIRCUIT]

Discussion was tabled.

BIRD165: PARAMETER PASSING IMPROVEMENTS FOR [EXTERNAL CIRCUIT]S

Discussion was tabled.

BIRD166: RESOLVING PROBLEMS WITH REDRIVER INIT FLOW

Discussion was tabled.

IBISCHK6 PARSER AND BUG STATUS

No update. Bob Ross is waiting for confirmation that the payment is made to the parser developer before he discusses potential ibischk version 6.0.1 development work.

TOUCHSTONE 2.1

Discussion was postponed.

NEW TECHNICAL ISSUES

Bob Ross noted that the writing of a BIRD172 is in progress. This is a cleanup BIRD that clarifies Parameter and Converter_Parameter rules under [External Model] and [External Circuit] to conform to ibischk6 parsing rules. This BIRD is a result of feedback from the parser developer. Ibischk6 allows more legal file name extensions for parameter files. Embedded spaces in the parameter reference line are also prohibited by ibischk6. Also, AMI Formats of Table, Gaussian, Dual-Dirac and DjRj are illegal for parameters referenced in a parameter file. If we don't want to accept these changes we can change the parser.

Arpad Muranyi noted that language exists under several keywords indicating that if min/max data is listed as NA, then the typ value is used by default. However, some keywords do not state this. So, what if waveform data has only typical data but Ramp has min and max data. Should an EDA tool use the Ramp data in min/max cases? The same problem exists for Composite Current if only typ data is present but min/max data exists for voltage waveforms. Also, the same problem exists for I-V data and V-T data. Radek Biernacki suggested that there may need to be a requirement that groups of keywords must contain the same data columns. Arpad will send an email to the reflector for further discussion.

NEXT MEETING

The next IBIS Open Forum teleconference meeting will be held August 1, 2014. The following IBIS Open Forum teleconference meeting will be held August 22, 2014.

Arpad Muranyi moved to adjourn. Radek Biernacki seconded the motion. There were no objections.

NOTES

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This meeting was conducted in accordance with ANSI guidance.

The following e-mail addresses are used:

majordomo@eda.org

In the body, for the IBIS Open Forum Reflector:
subscribe ibis <your e-mail address>

In the body, for the IBIS Users' Group Reflector:
subscribe ibis-users <your e-mail address>

Help and other commands:
help

ibis-request@eda.org

To join, change, or drop from either or both:
IBIS Open Forum Reflector (ibis@eda.org)
IBIS Users' Group Reflector (ibis-users@eda.org)
State your request.

ibis-info@eda.org

To obtain general information about IBIS, to ask specific questions for individual response, and to inquire about joining the IBIS Open Forum as a full Member.

ibis@eda.org

To send a message to the general IBIS Open Forum Reflector. This is used mostly for IBIS Standardization business and future IBIS technical enhancements. Job posting information is not permitted.

ibis-users@eda.org

To send a message to the IBIS Users' Group Reflector. This is used mostly for IBIS clarification, current modeling issues, and general user concerns. Job posting information is not permitted.

ibis-bug@eda.org

To report ibischk parser BUGs as well as tschk2 parser BUGs. The BUG Report Form for ibischk resides along with reported BUGs at:

<http://www.eda.org/ibis/bugs/ibischk/>
<http://www.eda.org/ibis/bugs/ibischk/bugform.txt>

The BUG Report Form for tschk2 resides along with reported BUGs at:

http://www.eda.org/ibis/tschk_bugs/
http://www.eda.org/ibis/tschk_bugs/bugform.txt

icm-bug@eda.org

To report icmchk1 parser BUGs. The BUG Report Form resides along with reported BUGs at:

http://www.eda.org/ibis/icm_bugs/
http://www.eda.org/ibis/icm_bugs/icm_bugform.txt

To report s2ibis, s2ibis2 and s2iplt bugs, use the Bug Report Forms which reside at:

<http://www.eda.org/ibis/bugs/s2ibis/bugs2i.txt>
<http://www.eda.org/ibis/bugs/s2ibis2/bugs2i2.txt>
<http://www.eda.org/ibis/bugs/s2iplt/bugsplt.txt>

Information on IBIS technical contents, IBIS participants and actual IBIS models are available on the IBIS Home page:

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

Check the IBIS file directory on eda.org for more information on previous discussions and results:

<http://www.eda.org/ibis/directory.html>

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IBIS – SAE STANDARDS BALLOT VOTING STATUS

Organization	Interest Category	Standards	May 23, 2014	June 5, 2014	June 20, 2014	July 11, 2014
		Ballot Voting Status				
Agilent Technologies	User	Active	X	X	X	X
Altera	Producer	Inactive	X	X	-	-
ANSYS	User	Inactive	-	-	-	-
Applied Simulation Technology	User	Inactive	-	-	-	-
Cadence Design Systems	User	Active	-	X	X	X
Ericsson	Producer	Inactive	-	-	-	-
Infineon Technologies AG	Producer	Inactive	-	-	-	-
Intel Corp.	Producer	Active	X	X	X	X
IO Methodology	User	Inactive	X	-	X	-
LSI (Avago)	Producer	Active	-	X	X	-
Maxim Integrated Products	Producer	Inactive	-	-	-	-
Mentor Graphics	User	Active	X	-	X	X
Micron Technology	Producer	Active	X	-	X	X
Qualcomm	Producer	Active	X	-	X	X
Signal Integrity Software	User	Active	X	X	X	X
Synopsys	User	Inactive	-	X	-	-
Teraspeed Consulting	General Interest	Active	X	X	X	X
Xilinx	Producer	Inactive	-	-	-	-
ZTE	User	Inactive	-	-	-	-
Zuken	User	Inactive	-	-	-	-

I/O Buffer Information Specification Committee (IBIS)

CRITERIA FOR 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 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.