**IBIS Open Forum Minutes**

Meeting Date: **April 4, 2014**

Meeting Location: **Teleconference**

**VOTING MEMBERS AND 2014 PARTICIPANTS**

Agilent Technologies Radek Biernacki\*, Nilesh Kamdar, Colin Warwick,

Graham Riley, Pegah Alavi, Fangyi Rao,

Heidi Barnes

Altera David Banas\*, Kundan Chand, Hsinho Wu

ANSYS (Steve Pytel)

Applied Simulation Technology Fred Balistreri, Norio Matsui

Cadence Design Systems Ambrish Varma, Brad Brim\*, Joy Li, Kumar Keshavan,

Ken Willis, Yingxin Sun, Joshua Luo, John Phillips

Ericsson Anders Ekholm\*, Zilwan Mahmod

Foxconn Technology Group (Sogo Hsu)

Huawei Technologies Jinjun Li, Xiaoqing Dong

IBM Adge Hawes\*

Infineon Technologies AG (Christian Sporrer)

Intel Corporation Michael Mirmak\*, Jon Powell, Riaz Naseer

Udy Shrivastava, Mustafa Yousuf, Jimmy Jackson

IO Methodology Lance Wang, Michelle Coombs

LSI Xingdong Dai, Min Huang, Anaam Ansari, Brian Burdick

Maxim Integrated Products Hassan Rafat

Mentor Graphics Arpad Muranyi\*, John Angulo, Fadi Deek

Micron Technology Randy Wolff\*

Signal Integrity Software Mike LaBonte\*, Walter Katz\*, Todd Westerhoff,

Michael Steinberger

Synopsys Ted Mido, Scott Wedge

Teraspeed Consulting Group Bob Ross\*, Tom Dagostino, Scott McMorrow

Toshiba (Yasumasa Kondo)

Xilinx Ravindra Gali

Zuken Michael Schaeder, Amir Wallrabenstein, Griff Derryberry

**OTHER PARTICIPANTS IN 2014**

ECL Advantage Thomas Iddings

Hewlett Packard Ting Zhu

KEI Systems Shinichi Maeda

Lattice Semiconductor Xu Jiang

Mellanok Technologies Piers Dawe

Pangeya Edgar Aguirre

Proficient Design Kishor Patel

SAE International Chris Denham

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

April 25, 2014 205 475 958 IBIS

May 14, 2014 European IBIS Summit at SPI – no teleconference

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.

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**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 March 14, 2014 IBIS Open Forum teleconference. The minutes were approved without changes.

**ANNOUNCEMENTS**

None.

**CALL FOR ADDITIONAL AGENDA ITEMS**

None.

**MEMBERSHIP STATUS AND TREASURER'S REPORT**

Bob Ross reported that 14 members have renewed so far for 2014. The treasury sits at $26,880. There is a potential Touchstone parser pending. He sent reminder emails to active members that have not renewed yet. He got some responses, so he expects more renewals soon. He reminded members to renew before the DAC Summit meeting to maintain membership status for 2014.

**WEB PAGE AND MAILING LIST ADMINISTRATION**

Mike LaBonte reported there are 409 unique email addresses across both mailing lists. Web page updates were made to the events page for the DAC Summit event. Lynne Green has offered to donate her training materials for IBIS training. She needs to do some reformatting before it can be posted, but she expects that to be done in May. Mike plans to implement it in the wiki and link it in to the main page. This will be the first content solely on the wiki page. Michael Mirmak clarified that her company is Green Streak Programs. His understanding is that she is not planning to continue the training classes in the future. We should mention her prominently on the web page. Michael also thought it would be good to turn the IBIS cookbook into a wiki site.

**MODEL LIBRARY UPDATE**

Anders Ekholm noted that he had made no updates since the last meeting. The last updated added one company, removed two or so and fixed several broken links.

**INTERNATIONAL/EXTERNAL ACTIVITIES**

- Conferences

The 18th IEEE Workshop on Signal and Power Integrity (SPI 2014) will be held May 11-14, 2014 in Ghent, Belgium. There will be a European IBIS Summit in conjunction with this conference. There are typically many papers on IBIS-related algorithms presented by student researchers. More information is available at:

<http://spi2014.org>

- Press Update

None.

**SUMMIT PLANNING AND STATUS**

- European IBIS Summit Status

The Summit is scheduled after the SPI event on May 14, 2014 in Ghent, Belgium. Bob Ross noted that the second announcement needs to go out. Michael Mirmak is planning to send it out after the meeting. Bob clarified that the event will be a half day. Zuken is confirmed as one of the co-sponsors. Attendees are encouraged to sign up and submit paper presentations.

- 2014 Summit schedule

DAC is June 1-5, 2014 in San Francisco, CA. Michael Mirmak reported that room space is confirmed with the help of John Angulo of Mentor in the Moscone Center co-located with DAC. We also have been registered officially on the DAC website. To use the room as part of DAC, there is a requirement to have a DAC attendance badge. A free badge (called “I Love DAC”) is available until May 15, so Summit attendees will need to register with DAC by that time. We are planning for 20-30 people, but with co-location with DAC, we may get more attendees.

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’s current task is to complete the ibischk5 parser documentation. They are documenting the list of messages, what they mean and what causes them. The pressure is on to finish this in a week or two. They also discussed a Touchstone bug recently.

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 recently discussing BIRD147 on backchannel modeling. The BIRD is getting more changes to include a statistical flow.

Task group material can be found at:

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

**INTERCONNECT TASK GROUP**

Michael Mirmak reported that the group held its second meeting last week. Package model examples supplied by Randy Wolff have been written up in two different proposals from Arpad Muranyi and Walter Katz. Comparisons in syntax are ongoing. Michael won’t be able to attend the next meeting, so Mentor and SiSoft will be helping host the meeting. Mike LaBonte will send out a WebEx invite and Arpad will provide the phone bridge. The group is meeting Wednesdays at 8:00 a.m. PT.

**NEW ADMINISTRATIVE ISSUES**

Michael Mirmak reported that he was notified we will get additional information on SAE’s ITC rules that allow us to maintain our entity-based membership.

**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.

**IBISCHK5 PARSER AND BUG STATUS**

Bob Ross reported there are no new bugs. BUG147, BUG148 and BUG149 will be fixed in the ibischk6 release. Michael Mirmak noted that BUG150 is classified as not a bug, so it doesn’t need to be dealt with. BUG151 will remain open for now.

**IBISCHK6 PARSER STATUS**

Bob Ross reported that he has an initial partial code release including all BIRDs for IBIS 6.0 except BIRD160.1. He and Michael Mirmak have reviewed test cases and noticed a Type issue for three AMI Reserved Parameters. It was found that descriptions of the parameters were correct but the tables were incorrect. The developer had implemented checking based on the tables, so a code fix is in progress. A few other minor incorrect implementations are being fixed. None of the bug fixes were incorporated in this release. Michael noted that a BIRD is needed to clarify the table fixes for the Reserved\_Parameter Type issue. He is working on the BIRD.

Bob asked if a null root was allowed in the .ami file. Mike LaBonte thought this should not be allowed. David Banas and Radek Biernacki both recollected that a root name is required. Bob noted that if this is the case, then the parser test cases need to updated to include root names. The parser currently doesn’t check for this condition.

The targeted release is still May 15.

**KNOWN ISSUES LISTING FOR VER. 6.0**

Michael Mirmak reported that a new document has been included on the website that lists known issues with the IBIS 6.0 specification. Issues can be editorial or technical and may or may not require BIRDs. Radek Biernacki asked if a BIRD was required for fixing the AMI tables that omit Type “Float” for Tx\_jitter, Tx\_Dj, Tx\_Rj and Tx\_Sj. He saw the correct tables in the original BIRD123. Bob Ross noted he felt this was the best way to deal with it. The document is linked at:

<http://www.eda.org/ibis/ver6.0/ver6_0_known_issues.txt>

**IBIS ANNUAL UPDATE SCHEDULE DISCUSSION**

Michael Mirmak noted that comments were made at the last Summit meeting that the proposed 6-month release schedule for IBIS would be difficult to implement by EDA software vendors. More people expressed interest in a one year release schedule. Michael proposed moving to a one year release schedule, and he can prepare a slide for the next meeting detailing the schedule. Radek Biernacki felt this was a better proposal. Michael noted that further discussion will need to happen to agree on the new schedule and propose a cut-off date for BIRD submissions for the next IBIS release.

**NEW TECHNICAL ISSUES**

Walter Katz noted that he submitted a BIRD to Michael Mirmak that needs distribution on the IBIS reflectors.

**NEXT MEETING**

The next IBIS Open Forum teleconference will be held April 25, 2014 from 8:00 a.m. to 10:00 a.m. US Pacific Time. The next IBIS Open Forum Summit meeting will be held May 14, 2014 at SPI. There will be no teleconference. The following teleconference meeting will be held May 16, 2014.

Bob Ross moved to adjourn. Arpad Muranyi seconded the motion. There were no objections.

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**NOTES**

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This meeting was conducted in accordance with ANSI guidance.

The following e-mail addresses are used:

[majordomo@eda.org](mailto:majordomo@eda-stds.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](mailto:ibis-request@eda-stds.org)

To join, change, or drop from either or both:

IBIS Open Forum Reflector ([ibis@eda.org](mailto:ibis@eda-stds.org))

IBIS Users' Group Reflector ([ibis-users@eda.org](mailto:ibis-users@eda-stds.org))

State your request.

[ibis-info@eda.org](mailto:ibis-info@eda-stds.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](mailto:ibis@eda-stds.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](mailto:ibis-users@eda-stds.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](mailto:ibis-bug@eda-stds.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](http://www.eda-stds.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](mailto:icm-bug@eda-stds.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-stds.org/ibis/icm_bugs/)

[http://www.eda.org/ibis/icm\_bugs/icm\_bugform.txt](http://www.eda-stds.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-stds.org/ibis/bugs/s2ibis/bugs2i.txt)

[http://www.eda.org/ibis/bugs/s2ibis2/bugs2i2.txt](http://www.eda-stds.org/ibis/bugs/s2ibis2/bugs2i2.txt)

[http://www.eda.org/ibis/bugs/s2iplt/bugsplt.txt](http://www.eda-stds.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](http://www.eda-stds.org/ibis/directory.html)

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**IBIS – SAE STANDARDS BALLOT VOTING STATUS**

**I/O Buffer Information Specification Committee (IBIS)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Organization** | **Interest Category** | **Standards Ballot Voting Status** | **January 31, 2014** | **February 21, 2014** | **March 14, 2014** | **April 4, 2014** |
| Agilent Technologies | User | Active | X | X | X | X |
| Altera | Producer | Active | X | X | - | X |
| ANSYS | User | Inactive | - | - | - | - |
| Applied Simulation Technology | User | Inactive | X | - | - | - |
| Cadence Design Systems | User | Active | X | X | - | X |
| Ericsson | Producer | Inactive | X | - | - | X |
| Foxconn Technology Group | Producer | Inactive | - | - | - | - |
| Huawei Technologies | Producer | Inactive | X | - | - | - |
| IBM | Producer | Active | X | X | - | X |
| Infineon Technologies AG | Producer | Inactive | - | - | - | - |
| Intel Corp. | Producer | Active | X | X | X | X |
| IO Methodology | User | Inactive | X | X | - | - |
| LSI | Producer | Active | - | X | X | - |
| Maxim Integrated Products | Producer | Inactive | X | - | - | - |
| Mentor Graphics | User | Active | X | X | X | X |
| Micron Technology | Producer | Active | X | 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 |
| Toshiba | Producer | Inactive | - | - | - | - |
| Xilinx | Producer | Inactive | X | - | - | - |
| Zuken | User | Inactive | X | - | - | - |

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.