

IBIS Open Forum Minutes

Meeting Date: **June 22, 2012**

Meeting Location: **Teleconference**

VOTING MEMBERS AND 2012 PARTICIPANTS

Agilent	Heidi Barnes, Radek Biernacki, Yoji Sekine, Fangyi Rao
Altera	David Banas*, Hsinho Wu, Masashi Shimanouchi
ANSYS (Ansoft)	Flavio Calvano, Luis Armenta*, Dan Dvorscak
Applied Simulation Technology	Norio Matsui
ARM	(Nirav Patel)
Cadence Design Systems	Brad Griffin, Terry Jernberg*, Jilin Tan, Dennis Nagle Ambrish Varma
Ericsson	Anders Ekholm, Zilwan Mahmod, Mattias Lundquist
Foxconn Technology Group	(Sogo Hsu)
Freescale	(Jon Burnett)
Infineon Technologies AG	(Christian Sporrer)
Intel Corporation	Michael Mirmak*, Subas Bastola, Udy Shrivastava, Stewart Gilbert, Eddie Frie
IO Methodology	Lance Wang*
LSI	Brian Burdick
Maxim Integrated Products	Hassan Rafat, Mahbulul Bari
Mentor Graphics	Arpad Muranyi*, Vladimir Dmitriev-Zdorov
Micron Technology	Randy Wolff*, Aniello Viscardi, Francesco Madonna Antonio Prisco, Justin Butterfield
Nokia Siemens Networks GmbH	Eckhard Lenski*, Evis Minga
Signal Integrity Software	Walter Katz*, Mike LaBonte*, Todd Westerhoff Akalu Lentiro
Sigrity	Raymond Chen, Yingxin Sun, Sam Chitwood Ben Franklin, Srdjen Djordjevic
Synopsys	Andy Tai, Scott Wedge, Hany Elhak, Ted Mido
Teraspeed Consulting Group	Bob Ross, Tom Dagostino
Toshiba	Masatoshi Abe
Xilinx	Harry Fu
Zuken	Michael Schaefer

OTHER PARTICIPANTS IN 2012

AMD	(Nam Nguyen)
Apple Computer	(Matt Herndon)
Aruba Networks	Amir Motamedi
Avago Technologies	Sanjeev Gupta, Amolak Badesha
Bayside Design	Elliot Nahas
Cavium	Johann Nittmann
Ciena	Kaisheng (Klaus) Hu

Cisco Systems	David Siadat, Mike Sapozhnikov
Enterasys	Robert Haller
Exar Corporation	Helen Nguyen
Granite River Labs	Jiang Xu, Johnson Tan
Hewlett-Packard	Ting Zhu
High Speed Design Center	Ben Chia
Hitachi	Yutaka Uematsu
Huawei Technologies	Xiaoqing Dong
IBM	Adge Hawes, Greg Edlund
Instituto de Telecomunicações	Wael Dghais, Hugo Teixeira
JEITA	Atsushi Ishikawa
KEI Systems	Shinichi Maeda
Luxshare-ICT	Alan Kinningham, Steven Wong
MK Resolutions	Olga Chervyakova
Nvidia	Eric Hsu
Politecnico di Torino	Stefano Grivet-Talocia
QLogic	(James Zhou)
Research In Motion	Yi Cao
Sony	Kenji Yasoda
ST Microelectronics	Davide Pandini
TechAmerica	(Chris Denham)
Texas Instruments	Casey Morrison, Pegah Alavi, Valerie Chang
	Modesto Garcia, Karl Muth
Université de Brest	Mihai Telescu, Cherif Diouf
University of Illinois	Thomas Comberiate, José Schutt-Ainé
Vitesse Semiconductor	Sirius Tsang
ZTE	(Huang Min)

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
July 13, 2012	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 AM to 9:55 AM 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

No new participants.

CALL FOR PATENTS

Michael Mirmak called for any patents or pending patents related to the IBIS 3.2, IBIS 4.2, IBIS 5.0, Touchstone 2.0 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 1, 2012 IBIS Open Forum teleconference. He also called for comments regarding the minutes of the June 5, 2012 IBIS Open Forum Summit at DAC. Eckhard Lenski asked for a clarification on the ATM task group report section of the DAC minutes. Randy clarified that "It" referred to BIRD150 as targeted for IBIS 6.0. Both sets of minutes were approved without changes.

MEMBERSHIP STATUS AND TREASURER'S REPORT

Michael Mirmak reported that we officially have 24 members now. There is at least one and possibly more companies with payments in progress. Outlays for Summit events have been small, but we need 4-8 additional memberships and parser payments to break even for the year. There has been no report of any leftover money from last year. The membership list is updated in the minutes. Contact the board with any questions.

WEB PAGE UPDATES

Mike LaBonte reported that he is working with Michael Mirmak on Mantis to enter existing information into the system. He found there is still some work to be done on layout of custom fields. Mantis is designed for software BUG reports, and we are trying to use it for other things as well. Michael displayed the Mantis webpage. Originally it had custom fields for BIRD and BUG numbers, but this could not be displayed properly. Now there is a general "number" field to cover this. Attachments are also allowed. Registered account access is required to file items. Mike noted he will need some volunteers to help expand the site to include more BUGs. Randy Wolff noted he could help with the project. The Mantis site is found at:

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

MAILING LIST ADMINISTRATION

Mike LaBonte reported that everything is running well. He noted the rate of incoming SPAM is increasing (about 800 per day now).

MODEL LIBRARY UPDATE

No update.

MISCELLANY/ANNOUNCEMENTS

None.

OPENS FOR NEW ISSUES

None.

INTERNATIONAL/EXTERNAL ACTIVITIES

- IEEE DASC

Michael Mirmak reported that there was a meeting at DAC, but no IBIS related topics were discussed.

- VHDL-AMS Table-Driven Models

Arpad Muranyi had no update. More information can be found at:

http://www.eda.org/twiki/bin/view.cgi/P10761/ProjectsArea#Table_driven_Modeling_Champion_J

- Conferences

- EPEPS (21st IEEE Conference on Electrical Performance of Electronic Packaging and Systems) will be held October 21-24, 2012 in Tempe, Arizona. This event occasionally includes IBIS-related content. More information can be found at:

<http://epeps.ece.illinois.edu/>

Official IBIS participation may/may not be planned for all of the events above, though individual papers and discussion on IBIS are encouraged. These are events with refereed submissions, with deadlines either pending or already passed.

- Press Update

None.

IEC APPROVAL ACTIVITIES

Randy Wolff reported that he has not heard any further updates from Victor Berman since the last meeting. We are waiting news of the merger of TC93 into TC91, after which plans should move forward with IBIS approval. Still no word on any upcoming teleconferences or possibly any in-person meetings we will need to attend.

SUMMIT STATUS

- DAC Summit Review

The Summit meeting was held Tuesday, June 5, 2012 in San Francisco, CA at the Marriott Marquis Hotel. About 16 from 13 organizations attended. The event went well with good discussion and presentations. Presentations are posted. Michael Mirmak thanked presenters and Mentor Graphics for co-sponsorship. Next year's DAC will be in Austin, Texas, so we are considering options for a Summit associated with other conferences.

-Asian IBIS Summits Planning

Shanghai, Taipei and Yokohama events are planned in November. Planners are inquiring about sponsorships now.

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

QUALITY TASK GROUP

Eckhard Lenski reported that the group did not reach quorum for the last meeting. They talked about looking into rescheduling the meeting time and talked about future topics for discussion.

Arpad Muranyi inquired about quorum rules for task groups. Michael Mirmak noted that we have been working under the same quorum rules as the Open Forum for task groups, with 5 participants attending. This is an unstated rule.

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 submitted four BIRDS to the Open Forum for discussion today. The next discussion topic is BIRD150 on dependency tables. They are also talking about package modeling improvements with IBIS-ISS. There are some fundamental questions about IBIS to discuss.

Task group material can be found at:

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

EDITORIAL TASK GROUP

Michael Mirmak reported that meetings continue weekly. The IBIS 5.1 draft was submitted for review at today's meeting. The group's next task is to develop a set of templates for BIRD submissions.

The IBIS reformatting documentation can be reviewed at:

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

NEW ADMINISTRATIVE ISSUES

Michael Mirmak noted that an email was sent from the KAVI system this week to announce re-balloting of the GEIA-STD-0001 (ICM) standard. Any specification we put out as a national standard must be re-balloted every 5 years if we want to keep the specification as a useable standard. The ICM standard must now be reaffirmed by us. Members must login to the KAVI system to cast a ballot. David Banas asked for information on which voting members are in the KAVI system. Arpad Muranyi added that concerning the low use rate as a specification, do we want to keep it alive? Michael noted that if there are customers required to use official standards as part of their work, dropping standards status on ICM could cause problems. July 12 is the closing date for the ballot.

Randy Wolff displayed the KAVI roster and noted that it is out of date and this may affect the ability to get a 2/3 passing vote on ICM. David asked what the KAVI voting system applies to. Michael noted that this system is used for voting on official TechAmerica issues such as reaffirmation or official ANSI standardization. Michael took the AR to update the roster list and look into any issues with the balloting including making sure anyone added to the roster can login.

BIRD116.1: ADD IBIS-ISS TO [EXTERNAL MODEL] AND [EXTERNAL CIRCUIT] AS A SUPPORTED LANGUAGE

Arpad Muranyi noted that this BIRD makes IBIS-ISS available as a new supported language under [External Circuit] and [External Model]. The edit to the BIRD was to change "ISS" to "IBIS-ISS", just an editorial change. Walter Katz commented that BIRD122 had four canned IBIS-ISS subcircuits. What he plans to do is to submit four exemplar external models for IBIS-ISS to either be part of BIRDS or just standard examples in some other format. BIRD122 will eventually be withdrawn. BIRD116.1 is being resubmitted to the Open Forum for consideration along with BIRD117.4 and BIRD118.3 to indicate closure on the technical questions.

Walter noted that we may want to consider removing Berkeley-SPICE as an option (deprecate it) since it isn't used much. Arpad noted that it does have transistors and other non-linear modeling capabilities that could be useful beyond the capabilities of IBIS-ISS. Walter changed his mind, acknowledging this useful aspect of Berkeley-SPICE.

Michael confirmed that when this BIRD is brought to a vote, it would be best to bring BIRD122 for a vote at the same time so it could be voted down. Arpad felt it made sense to wait for a vote until it is reformatted to fit the IBIS 5.1 format.

BIRD117.4: PARAMETERIZE A_TO_D AND D_TO_A CONVERTERS

Arpad Muranyi noted the changes were a generalization of the concept. Syntax changes proposed in this BIRD and BIRD118.3 are identical; they just deal with different parameters. The BIRD is now allowing any file that contains a parameter tree to be pointed to by these parameters, so this makes the format non-AMI specific. Parameter trees could then be used even inside an IBIS file. Randy Wolff asked how this might be used in an IBIS file. Arpad

showed an example in the BIRD of parameterizing values used in the A_to_D and D_to_A elements. Michael Mirmak noted a typo where “MyHigh” in the Converter_Parameters section should be “MyVhigh”. Arpad clarified for Michael that the Converter_Parameters parameters are just assigning values to model elements, so they do not have to be interpreted. The Converter_Parameters just have to be used by the EDA tool to generate stimuli.

Walter Katz asked if the Corner subparameter is limited to just three corners. Arpad confirmed that it is, but the parameterization allows you to use a single netlist with unlimited instances of parameter passing. Walter inquired about parameterizing the file_name and circuit_name values in Corner. Arpad noted that if there is serious interest in this, it could be added to the BIRD or written up in a separate BIRD.

Arpad noted that BIRD129 is also related to A_to_D and D_to_A converters, making modeling of differential models easier.

BIRD118.3: ANALOG PARAMETER ASSIGNMENTS

Comments in the BIRD117.4 discussion apply to this BIRD.

BIRD153: PARAMETER TREE KEYWORD

Arpad Muranyi introduced the BIRD. This BIRD proposes a keyword pair that allows parameter trees to be included within an IBIS file. Certain context specific tree rules are proposed such as Usage types of only In and Info. Mike LaBonte asked if there could be multiple tree roots under the new keyword. Arpad confirmed that this is possible. Mike thought it might be good to show a second parameter tree in the example.

BIRD121.1: IBIS-AMI NEW RESERVED PARAMETERS FOR DATA MANAGEMENT

Discussion was tabled.

BIRD122: IBIS-AMI NEW RESERVED PARAMETERS FOR ANALOG MODELING

Discussion was tabled.

BIRD123.3: IBIS-AMI NEW RESERVED PARAMETERS FOR JITTER/NOISE

Discussion was tabled.

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.

BIRD129: ADD "POLARITY" ARGUMENT TO D_TO_A CONVERTERS

Walter Katz moved to un-table BIRD129 for discussion at future teleconferences. Arpad Muranyi seconded. There were no objections.

BIRD 131: IBIS-AMI REPEATERS

Discussion was tabled.

BIRD144.3: ADD TOUCHSTONE TO [EXTERNAL MODEL] AND [EXTERNAL CIRCUIT] AS A SUPPORTED LANGUAGE

Discussion was tabled.

BIRD145.2: CASCADING IBIS I/O BUFFERS WITH [EXTERNAL CIRCUIT]S USING THE [MODEL CALL] KEYWORD

Discussion was tabled.

BIRD147: BACK-CHANNEL SUPPORT

Discussion was tabled.

BIRD150: IBIS-AMI NEW RESERVED PARAMETERS FOR DEPENDENCY TABLES

Discussion was tabled.

IBIS SPECIFICATION STATUS

Michael Mirmak showed an editorial group document at this URL appearing in the agenda:

http://www.eda.org/ibis/editorial_wip/ibis-version-change-strategy-v2p1.pdf

This document tracks the status of recent BIRDS and the version of IBIS they are planned for.

Michael noted that comments in the document about adding BIRDS to version 5.2 may need to be changed, since 5.2 may end up being just a minor clean-up version and not include significant changes. BIRD153 also needs to be added to the spreadsheet.

IBISCHK5 BUG STATUS

Michael Mirmak reported that he was informed that we are still moving forward on parser development, and the parser should be available almost immediately after IBIS 5.1 specification approval.

Arpad Muranyi wondered about expanding the parser to check IBIS-AMI models to make sure that the .dlls load into memory, although this would be OS specific. Mike LaBonte noted that the Quality group is talking about enhancements like this, so it might be a good discussion topic for that task group. Walter Katz noted that Mike Steinberger gave a DesignCon presentation that would be a good reference in relation to this topic.

IBIS 5.1 SPECIFICATION

Michael Mirmak showed the document and opened it up for comments. Walter Katz suggested we set a schedule for review. Michael noted that new specifications must go through a minimum of two meeting reviews before a motion for vote. This is the plan for this document. The document can be viewed at:

http://www.eda.org/ibis/ver5.1_wip/

NEW TECHNICAL ISSUES

Arpad Muranyi brought up BIRD141, a BIRD that clarifies the point distribution between V-t curves and I-t curves. This BIRD removes a requirement that the time points be exactly the same between the two sets of tables. Arpad noted that we don't specify how the time points should be interpolated, and this could cause errors in the EDA software. We may need to write a BIRD to clarify the interpolation issue. Walter Katz noted that he had some comments, but he will save them for a future discussion when more time is available.

NEXT MEETING

The next IBIS Open Forum teleconference will be held July 13, 2012 from 8:00 to 10:00 AM US Pacific Time.

Walter Katz moved to adjourn. Arpad Muranyi seconded. There were no objections.

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NOTES

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This meeting was conducted in accordance with the TechAmerica Legal Guides and TechAmerica Manual of Organization and Procedure.

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/bugspl.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>

To create an account on the TechAmerica KAVI workspace, check out:

<http://workspace.techamerica.org/kwspub/join/>

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IBIS CURRENT MEMBER VOTING STATUS

I/O Buffer Information Specification Committee (IBIS)

Organization	Interest Category	Standards Ballot Voting Status	May 16, 2012	June 1, 2012	June 5, 2012	June 22, 2012
Agilent Technologies	User	Active	-	X	X	-
Altera	Producer	Active	-	-	X	X
ANSYS	User	Active	X	X	X	X
Applied Simulation Technology	User	Inactive	-	-	-	-
ARM	Producer	Inactive	-	-	-	-
Cadence Design Systems	User	Active	-	-	X	X
Ericsson	Producer	Inactive	-	X	-	-
Foxconn Technology Group	Producer	Inactive	-	-	-	-
Freescale	Producer	Inactive	-	-	-	-
Infineon Technologies AG	Producer	Inactive	-	-	-	-
Intel Corp.	Producer	Active	-	X	X	X
IO Methodology	User	Active	X	X	-	X
LSI	Producer	Inactive	-	X	-	-
Maxim Integrated Products	Producer	Inactive	-	-	-	-
Mentor Graphics	User	Active	-	X	X	X
Micron Technology	Producer	Active	X	X	X	X
Nokia Siemens Networks	Producer	Active	X	X	-	X
Signal Integrity Software	User	Active	-	X	X	X
Sigrity	User	Inactive	X	X	-	-
Synopsys	User	Inactive	-	-	-	-
Teraspeed Consulting	General Interest	Inactive	-	-	-	-
Toshiba	Producer	Inactive	-	-	X	-
Xilinx	Producer	Inactive	-	-	-	-
Zuken	User	Inactive	-	-	-	-

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 TECHAMERICA 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.