

**IBIS Open Forum Minutes**

Meeting Date: **December 16, 2016**

Meeting Location: **Teleconference**

**VOTING MEMBERS AND 2016 PARTICIPANTS**

ANSYS Curtis Clark\*, Toru Watanabe, Miyo Kawata

Broadcom (Avago Technologies) Bob Miller

Cadence Design Systems Ken Willis, Brad Brim\*, Aileen Chen, Lanbing Chen

Zhiyu Guo, Mohan Jiang, Rachel Li, Ping Liu

Haisan Wang, Yitong Wen, Clark Wu, Dingru Xiao

Benny Yan, Haidong Zhang, Wenjian Zhang

Zhangmin Zhong, Hui Wang, Jinsong Hu, Wei Dai

Rong Zhang, Kent Ho, Skipper Liang, Jack Lin

Candy Yu, Morihiro Nakazato, Takuya Moriya

Cisco Systems Giuseppi Selli, Brian Baek, Hannah Bian, Tonghao Ding

Amanda Liao, Cassie Yan

CST Stefan Paret

Ericsson Anders Ekholm, David Zhang, Zilwan Mahmod

Guohua Wang

GLOBALFOUNDRIES Steve Parker

Huawei Technologies Yuanbin Cai, Haiping Cao, Zhenxing Hu, Peng Huang

Xusheng Liu, Longfang Lv, Guanjiang Wang

Chen Yu, Cheng Zhang, Gezi Zhang, Zhengyi Zhu

Fangxu Yang, Huajun Chen, Xiao Peng

Zhengrong Xu, Xianbiao Wang, Lin Shi

Hongcheng Yin

IBM Adge Hawes\*, Luis Armenta, Trevor Timpane

Infineon Technologies AG (Christian Sporrer)

Intel Corporation Hsinho Wu\*, Mohammad Bapi, Michael Mirmak\*

Masahi Shimanouchi, Todd Bermensolo, Zao Liu

Gong Ouyang, Udy Shrivastava, Gianni Signorini

Richard Mellitz, Youqing Chen, Jennifer Liu

Luping Liu, Bruce Qin, Yuyang Wang, Denis Chen

Jimmy Hsu, Thonas Su, Morgan Tseng

IO Methodology Lance Wang\*

Keysight Technologies Radek Biernacki, Heidi Barnes, Jian Yang, Fangyi Rao

Stephen Slater, Pegah Alavi, Edwin Young

Mitsuhara Umekawa, Hiroaki Sasaki

Maxim Integrated Yan Liang, Don Greer, Thinh Nguyen, Joe Engert

Hock Seon, Ahmed Gendy

Mentor Graphics Arpad Muranyi\*, Vladimir Dmitriev-Zdorov, John Angulo

Mikael Stahlberg, Kenji Kushima

Micron Technology Randy Wolff\*, Justin Butterfield

Micron Memory Japan Masayuki Honda, Tadaaki Yoshimura, Toshio Oki

Mikio Sugawara

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

Richard Allred

Synopsys Ted Mido, Kevin Li, Massimo Prando, Xuefeng Chen

Andy Tai, Jinghua Huang

Teraspeed Labs Bob Ross\*

Xilinx Masao Nakane

ZTE Corporation Shunlin Zhu, Fengling Gao, Lili Wei, Zhongmin Wei

Bi Yi, Changgang Yin, Yang Yang, Xiaoli Yu

Zuken Michael Schaeder, Amir Wallrabenstein

Kiyohisa Hasegawa, Kazuki Furukawa

**OTHER PARTICIPANTS IN 2016**

AAT Sam Liu

A&D Print Engineering Co. Minoru Hasegawa

Abeism Corporation Nobuyuki Kiyota

AET Shigekazu Hino

Alcatel-Lucent Yishan Li, Yiqing Mao

AMD Japan Tadashi Arai

Apollo Giken Co. Satoshi Endo, Naoya Iisaka, Toshiki Tamura

ASUSTek Computer Nick Huang

Aurora System Dian Yang

Avant Technology Jyam Huang, Chloe Yang

BasiCAE Software Technology Darcy Liu

Canon Components Takeshi Nagata

Canon Kengo Umeda, Syoji Matsumoto

Casio Computer Co. Yasuhisa Hayashi, Ikuo Imada

Celestica Allen Wang, Vincent Wen

Cybernet Systems Hideto Ishikura, Shiho Nagae, Takayuki Tsuzura

Denso Corp. Koji Ichikawa

Digital Corp. Hiroaki Fujita

eASIC David Banas

Edadoc Deheng Chen, Hong Zhang

Eizo Corp. Yu Yamada

FiberHome Technologies Yejing Jia

Foxconn Electronics Gino Chen, Ryan Hou, Mandy HY Su

Fuji Xerox Manufacturing Co. Rumi Maeda

Fujitsu Advanced Technologies Shogo Fujimori

Fujitsu Interconnect Technologies Masaki Kirinaka, Akiko Tsukada

Fujitsu Ltd. Kohichi Yoshimi

Fujitsu Semiconductor Hirokazu Yamazaki

Ghent University Paolo Manfredi

Gigabyte Technology Chris Tsai, CJ Wang

Global Unichip Japan Masafumi Mitsuishi

Gowin Semiconductor Xiaozhi Lin, Qi Zhou

H3C Bin Chen, Mao Jun, Xing Hu

Hamamatsu Photonics Akahiro Inoguchi

Hamburg University of Technology Jan Preibisch, David Dahl

Hanghou Hikvision Digital Wenquan Hu

Technology

Hewlett Packard Enterprise Passor Ho, Corey Huang, Hellen Lo

HGST Satoshi Nakamura

Hisilicon Wei Zhen,

Hitachi Kimihisa Handa

Hitachi Kokusai Electric Katsuya Konno

Hitachi ULSI Systems Co. Sadahiro Nonoyama

IB-Electronics Makoto Matsumuro

Independent Carl Gabrielson

Info TM Microelectronics Aofeng Qian

Institut Supérieur des Sciences Wael Dghais

Appliquées et de Technologie de

Sousse

Inventec Zhong Peng

Japan Electronics Packaging and Yukio Masuko

Circuits Association

Japan Radio Co. Hiroto Katakura

JEITA Yosuke Kanamaru

John Baprawski, Inc. John Baprawski

JVC Kenwood Corp. Takuo Fujimura, Hidetoshi Suzuki, Masayuki Kurihara

KEI Systems Shinichi Maeda

Keyence Corp. Tomo Uchida

Lattice Semiconductor Dinh Tran, Maryam Shahbazi

Leading Edge Pietro Vergine

Lenovo John Lin, Alan Sun

Lite-On Technology Steven Chen, Steven CH Chen, Sam Lyu

Marvell Jie Pan, Weizhe Li, Liang Wu, BL Qian, Fang Lv

MathWorks Mike Mulligan, Corey Mathis

MD Systems Co. Hideaki Kouzu

Megachips Corp. Kosuke Egami

Modech Tomo Koba

Monsoon Solutions Nathan Hirsch

Mostec Ninghua Li, Kaihe Zhang

Murata Manufacturing Co. Satoshi Arai

Nanya Technology Corp. Chiwei Chen, Andy Chih, Taco Hsieh, Jordan Hsu

Andre Huang, Raphael Huang, George Lee, Allen Zuo

NEC Engineering Masahiko Kuroda

NEC Magnus Communications Toshio Saito

NEC Space Technologies Syuichi Koreeda

Nikon Corporation Manabu Matsumoto

Northrup Grumman Alex Golian

Novatek Vincent Lin, Willy Lin

Nvidia Corp. Norman Chang, David Chen, Chihwei Tsai, Ann Yen

NXP Jon Burnett

Oki Electric Industry Co. Atsushi Kitai

Panasonic Corp. Kenichi Hirano

Panasonic Industrial Devices, Kazuki Wakabayashi, Yoshihide Komatsu

Systems and Technology Co.

Peace Giant Corp. Walter Huang, Jimmy Liu

Pegatron Corp. Aje Chang, Stanley Chu

Politecnico di Torino Claudio Siviero, Stefano Grivet-Talocia,

Igor Simone Stievano

Pulax Corp. Masataka Wada

Qualcomm Technologies Guobing Han, Irwin Xue

Quanta Computer Eriksson Chuang, Scott CH Lee

Rambus John Yan

Raytheon Joseph Aday

Renesas System Design Corp. Kazunori Yamada, Hiroyoshi Kuge, Masaru Enomoto

Ricoh Company Shigeru Toyazaki, Yasuhiro Akita, Kazumasa Aoki

Takuya Kitsukawa, Masahiko Banno

Yoshikazu Tadokoro

Ricoh Industry Co. Kohji Kurose, Yuji Hara

Rohm Co. Noboru Takizawa

SAE International (Logen Johnson)

SAIC Motor Corp Weng Yang

Saxa Takayuki Ito

Shanghai Zhaoxin Semiconductor Jude Ji

Shenzhen Zhongzeling Electronics Nick Huang

SILABTECH Biman Chattopadhyary

Silicon Motion Technology Matt Lin

Silvaco Japan Co. Yoshihiko Yamamoto

Signal Metrics Ron Olisar

SiGuys Donald Telian

SMICS Sheral Qi

Socionext Shigeru Nishio, Hajime Omi, Kazuo Toda

Yumiko Sugaya, Yu Kamata

Sohwa & Sophia Technologies Tomoki Yamada

Sony Corporation Hiroaki Ammo

Sony Global Manufacturing & Taichi Hirano, Hayato Takeuchi, Mizue Yamaguchi

Operations Corp. Akira Matsuda

Sony LSI Design Takashi Hasegawa, Toru Fujii

SPISim Wei-hsing Huang

Spreadtrum Communications Junyong Deng, Steven Guo, Baoping Bian

Yanbiao Chu, Nikki Xie, Zhi Wang

STMicroelectronics Fabio Brina, Olivier Bayet

Technoprobe Alberto Berizzi, Lorenzo Bernasconi, Simona Cucchi

Tektronix Co. Hitoshi Hatakeyama

Teledyne LeCroy Denny Li, Yifeng Wu

Toshiba Corp. Satoshi Minewaki, Yasuki Torigoshi, Hitoshi Imi

Toshiba Information Systems Corp. Yasuyuki Inaba, Satoshi Yamaguchi, Masashi Hirai

Toshiba Memory Systems Co. Kanehara Kenichi, Kouichi Ookawa

Toshiba Microelectronics Corp. Jyunya Masumi

TSG Co. Keiichi Hanada

Université de Bretagne Occidentale Mihai Telescu

Vendorchain Jun Zhao, Jing Luo, Dong Lei

VIA Labs Sheng-yuan Lee

VIA Technologies Terence Hsieh, Jerry Hsu, Justin Hsu

WADOW Corp. Kazuhiko Kusunoki

Winbond Electronics Albert Li

Xpeedic Technology Max Cang, Mingcan Zhao, Zhouxiang Su, Rui Wang

Qionhui Gui, Wenliang Dai, Yuqing Shen

Haitao Zhang, Rick Chang, Zachary Su

Zhejiang Uniview Technologies Weiqi Chen, Jiayun Dai

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

January 6, 2017 621 232 289 IBISfriday11

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

<https://sae.webex.com/sae/j.php?MTID=m4d8ccc152fbad40525f12983b3b80505>

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**

Randy Wolff declared that a quorum was reached and the meeting could begin.

**CALL FOR PATENTS**

Mike LaBonte called for declaration of any patents or pending patents related to the IBIS 3.2, IBIS 4.2, IBIS 5.1, IBIS 6.1, 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 on the minutes of the November 11, 2016 Asian IBIS Summit (Shanghai). He then called for comments on the minutes of the November 14, 2016 Asian IBIS Summit (Taipei). He then called for comments on the minutes of the November 18, 2016 Asian IBIS Summit (Tokyo). He then called for comments on the minutes of the December 2, 2016 IBIS Open Forum teleconference. Bob Ross moved to approve all the minutes. Curtis Clark seconded the motion. There were no objections.

Randy Wolff reviewed ARs from the previous meeting.

1. Bob Ross to instruct SAE to begin invoicing member organizations in late December [AR].

Bob reported this as done.

**ANNOUNCEMENTS**, **CALL FOR ADDITIONAL AGENDA ITEMS**

None.

**MEMBERSHIP STATUS AND TREASURER'S REPORT**

Bob Ross reported that we have 22 members. Our account is at $27,798 for 2016. Actual cash flow of $26,737 has been collected this year. A parser payment of $2,000 is expected and a payment to Mike LaBonte of $6,752 for reimbursement of Summit expenses is expected and should be debited for 2016. A payment for DesignCon will be adjusted for 2017 as well as any membership payments if made in 2016. We expect a new parser purchase, most likely with the transaction occurring in 2017. There should also be miscellaneous charges from SAE of about $1,500. There were about $1,300 in charges from SAE in 2015 for bank charges and other allocations. We have a large surplus, so this is not of concern.

**WEBSITE ADMINISTRATION**

Mike LaBonte reported no recent changes. The home page will start promoting DesignCon, but UBM has not sent the image for display yet. We should start promoting our Summit meeting on the webpage.

**MAILING LIST ADMINISTRATION**

Curtis Clark reported that everything is running smoothly.

**LIBRARY UPDATE**

Mike LaBonte reported for Anders Ekholm that a minor change was made for one company.

**INTERNATIONAL/EXTERNAL ACTIVITIES**

- Conferences

None.

- Press Update

None.

- Related standards

None.

- IEEE DASC update

Michael Mirmak noted he could attend a DASC meeting at DVCon in Santa Clara on Thursday, March 2 if there is an opportunity for IBIS to present. He will look into details.

**SUMMIT PLANNING AND STATUS**

- DesignCon 2017 IBIS Summit

Mike LaBonte reported that the DesignCon IBIS Summit will be held in Santa Clara, California on Friday, February 3, 2017. Mike noted that we have a barter agreement with UBM, but we do not know if the meeting room will be in the convention center or in the Hyatt hotel. The Summit is the day after the last day of DesignCon. Cadence Design Systems, Keysight Technologies and Synopsys are sponsors.

- SPI IBIS Summit

Bob Ross noted that we have a motion that was made in the previous meeting and sent out by email. Bob moved for a vote on the previous motion to hold a half day European IBIS Summit at SPI on Wednesday, May 10, 2017, with costs not to exceed $3,000. Michael Mirmak seconded the motion. Bob noted this would be the 20th consecutive year of holding an IBIS Summit meeting in Europe.

The roll call vote tally was:

ANSYS – yes

Cadence – yes

IBM – yes

Infineon Technologies AG – yes (by email)

Intel – yes

IO Methodology – yes

Mentor – yes

Micron – yes

SiSoft – yes

Synopsys – abstain (by email)

Teraspeed Labs – yes

The roll call vote concluded with a vote tally of Yes – 10, No – 0, Abstain – 1. The motion passed.

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. The group is focused on IBISCHK development for improving the quality of IBIS files.

The IBISCHK6 user guide work in progress can be reviewed at:

<http://www.ibis.org/ibischk6/ibischk_6.1.1_UserGuide_wip1.pdf>

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 is meeting regularly on Tuesdays at 12:00 p.m. PT. Arpad noted that the meeting on December 27, 2016 is cancelled. The group has finished reviewing several BIRDs and sent them back to the Open Forum. They will be discussing BIRD158, BIRD165 and BIRD166 in upcoming meetings. Task group material can be found at:

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

**INTERCONNECT TASK GROUP**

Michael Mirmak reported that the group is meeting on Wednesdays at 8:00 a.m. PT. The next meeting will be January 4, 2017. The group is reviewing draft 44 of the BIRD with some changes to introductory sections and figures.

Task group material can be found at:

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

**EDITORIAL TASK GROUP**

Michael Mirmak reported that the group remains suspended.

Arpad Muranyi asked where we stand on the ground cleanup issues. Bob Ross said that there is a lack of momentum and some terminology issues need to be decided. Arpad noted there are some BIRDs addressing some issues. Mike LaBonte said there was a document on the task group site, and he thought there were some issues still not addressed by BIRDs. Bob noted two issues. Some of the BIRDs pending are targeted for IBIS version 7.0, so we might hold off on voting on them. Some other BIRDs are targeted for Version 6.2, and those need more attention. Arpad asked if we could take care of the BIRDs that are out there and finish up the efforts. Bob said there are some changes in 6.2, but we have not decided where to draw the line on what will be addressed in Version 6.2 versus 7.0. Bob noted, for example, BIRD181, in the I-V tables, the terminology changes impact terminology throughout IBIS, so maybe that BIRD will need to be expanded.

Walter Katz said that other than reviewing the BIRDs and passing them, he thought the only open issue was the discussion between Radek Biernacki and Bob. Arpad added that this topic is open for continued review in the ATM meetings. Mike noted we could continue discussions in the task groups, or we could entertain the idea of starting discussions in the Editorial meeting again. Arpad planned to put the discussion item at the top of the ATM task group agenda. Bob noted there was a proposal for a new keyword that needs further review.

Task group material can be found at:

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

**NEW ADMINISTRATIVE ISSUES**

- Second revision of IBIS Policies and Procedures

Mike LaBonte reported that an IBIS Board meeting occurred on December 9, 2016 to discuss this. Some changes were made related to membership payment schedules and the effect on election of officers. A section was also added for termination of officers. The draft needs one more review by the board, then legal review by SAE before a vote by the IBIS membership.

The document can be found at:

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

**BIRD184.2: MODEL\_NAME AND SIGNAL\_NAME RESTRICTION FOR POWER AND GND PINS**

Bob Ross reported that changes were made to Usage Rules to clarify that for a full component description, all pins on a component should be specified. A comment was also added to define “pin\_name”. Bob noted he thought the BIRD was ready for a vote.

Bob moved to vote on BIRD184.2 in the next IBIS Open Forum meeting. Walter Katz seconded the motion. There were no objections.

**BIRD185.2: SECTION 3 RESERVED WORD GUIDELINE UPDATE**

Bob Ross noted that the changes from 185.1 to 185.2 were only two minor punctuation changes. Other issues were determined to be addressed in other BIRDs.

Bob moved to vote on BIRD185.2 in the next IBIS Open Forum meeting. Michael Mirmak seconded the motion. There were no objections.

Arpad Muranyi asked which IBIS version the BIRDs were targeted for. Bob responded that BIRD184.2 and BIRD185.2 are for Version 6.2. Arpad asked if a field could be added to the BIRD template for the targeted version. Bob thought we could mention this in the Open Forum meetings. Walter Katz proposed adding a note to the BIRD table on the IBIS website. Mike LaBonte noted there is a spreadsheet for the Editorial task group that contains this information. Michael commented that it is useful to document the intent of the BIRD author. Arpad said that it might be difficult to categorize this with options such as “next minor version” or “next major version”. Mike LaBonte thought this information could go in the Summary of Proposed Changes section of the BIRD template. Mike will take the discussion offline.

**BIRD187: FORMAT AND USAGE OUT CLARIFICATIONS**

Michael Mirmak reported that this BIRD clarifies text of the Format portion of IBIS 6.1 in Section 10.3 related to the Usage Out. This BIRD also relates to BUG183 of the parser. The phrase “for Usage In and InOut” is added to several subparameter descriptions. Walter Katz noted this BIRD clarifies the original intent of Format. Bob Ross added this BIRD should be targeted for IBIS 6.2.

Walter moved to vote on BIRD187 in the next IBIS Open Forum meeting. Bob seconded the motion.

Mike LaBonte asked why the description of Increment does not include language about Usage Out. This section will need further review. Mike will review the language of the section to see if any specific changes are needed [AR].

Walter withdrew the motion.

Walter commented that Format is ignored for Usage Out parameters except for Table. The specification says specifically “may be ignored”.

**BIRD188: EXPANDED RX NOISE SUPPORT FOR AMI**

Michael Mirmak reported that this BIRD adds a more complete definition of Rx\_noise by adding Rx\_UniformNoise and an alternate name for Rx\_Noise as Rx\_GaussianNoise. Arpad Muranyi asked about the continued usage of Rx\_Noise. Michael noted that the intent is for usage of Rx\_Noise to be unofficially deprecated. Mike LaBonte noted we have precedence with Format, and the specification notes its usage is supported but not encouraged. Arpad asked if we need to support this in the long term. Walter Katz noted that there are many regression tests with Format, for instance, and those will be used for a long time. Bob said that including language stating that Rx\_GaussianNoise is preferred is a good idea. Walter suggested changing “permitted” to “recommended” in the statement “Rx-GaussianNoise is permitted as an alternate name for Rx\_Noise in AMI\_Version 6.2 and higher.”

Curtis Clark commented that use of Rx\_Noise could be forced to be illegal in IBIS 6.2 or higher. Walter noted that this is difficult to support.

Walter moved to vote on BIRD188 in the next IBIS Open Forum meeting with the discussed changes. Bob seconded the motion. There were no objections.

Bob commented that this BIRD is targeted for IBIS Version 6.2. Michael added that this BIRD could be for IBIS 7.0 if desired.

**BIRD147.4: BACK-CHANNEL SUPPORT**

Walter Katz moved to vote on BIRD147.4 in the next IBIS Open Forum meeting.

Walter noted that this BIRD could be targeted for IBIS 7.0. Bob Ross noted that the BIRD has some dependency on BIRD186. Mike LaBonte also noted that the BIRD was recommended for approval by the ATM task group. Walter noted that Bob Miller would like to start creating some models that are compliant with the BIRD.

Bob seconded the motion. There were no objections.

**BIRD186: FILE NAMING RULES**

Walter Katz moved to vote on BIRD186 in the next IBIS Open Forum meeting.

Bob Ross recommended waiting on the vote until some additional sections of the specification are reviewed. Walter requested that Bob provide any comments before the next meeting. Walter withdrew his motion.

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

Discussion was tabled.

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

Discussion was tabled.

**BIRD158.3: AMI TOUCHSTONE ANALOG BUFFER MODELS**

Walter Katz moved to un-table BIRD158.3. Bob Ross seconded the motion. Walter said this BIRD offered a simple way to support on-die S-parameter models. He noted that one objection was related to a common mode issue, and that Radek Biernacki and Walter will make a change and submit BIRD 158.4.

**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**

Walter Katz moved to un-table BIRD166. Michael Mirmak seconded the motion. Walter said the IBIS-AMI flow in IBIS 6.1 is incorrect for redrivers, leaving the downstream Rx without the required inputs. He noted that Fangyi Rao has asked for an additional impulse response, but the topic has been dormant since April. Due to the issue, customers are getting different results from different EDA tools. Walter said Vladimir Dmitriev-Zdorov might propose further enhancements in a separate BIRD. Arpad Muranyi said this would be discussed in ATM meetings. Bob Ross suggested this should be an IBIS 6.2 change.

**BIRD181.1: I-V TABLE CLARIFICATIONS**

Discussion was tabled.

**IBISCHK6 PARSER AND BUG STATUS**

Bob Ross said IBISCHK 6.1.3 was released 2 weeks ago, and that BUG 184 still required classification. Mike LaBonte showed BUG 184. Bob said he had noted some required corrections, such as changing eda.org to ibis.org, which he would make. He noted that we had added new AMI Reserved\_Parameters in IBIS 6.1, and those then automatically became illegal for use as Model\_Specific parameters. However, the parser does not report them as errors or warnings.

Mike LaBonte noted that DLLs were not impacted because it receives a flattened list of all parameters. Bob said this would be fixed in a future version of the parser. It was not yet decided if it would be fixed in version 6.1.4, but that was likely because we have three other bugs waiting, and two more potential bugs to be submitted. Bob moved to classify BUG 184 as Moderate severity and Medium priority. Michael Mirmak seconded. Without objection the classification was accepted.

**NEW TECHNICAL ISSUES**

None.

**NEXT MEETING**

The next IBIS Open Forum teleconference meeting will be held January 6, 2017. Votes on BIRD147.4, BIRD184.2, BIRD185.2 and BIRD188 are scheduled. The following IBIS Open Forum teleconference meeting will tentatively be held January 27, 2017.

Mike LaBonte noted that this was our last Open Forum for the year, and he thanked all for their contributions.

Arpad Muranyi moved to adjourn. Michael Mirmak seconded. The meeting adjourned.

========================================================================

**NOTES**

IBIS CHAIR: Mike LaBonte

[mlabonte@](mailto:mlabonte@)sisoft.com

IBIS-AMI Modeling Specialist, Signal Integrity Software

6 Clock Tower Place, Suite 250

Maynard, MA 01754

VICE CHAIR: Lance Wang (978) 633-3388

[lwang@iometh.com](mailto:lwang@iometh.com)

President/CEO, IO Methodology, Inc.

PO Box 2099

Acton, MA 01720

SECRETARY: Randy Wolff (208) 363-1764

[rrwolff@micron.com](mailto:rrwolff@micron.com)

Principal Engineer, Silicon SI Group Lead, Micron Technology, Inc.

8000 S. Federal Way

P.O. Box 6, Mail Stop: 01-711

Boise, ID 83707-0006

TREASURER: Bob Ross (503) 246-8048

[bob@teraspeedlabs.com](mailto:bob@teraspeedlabs.com)

Engineer, Teraspeed Labs

10238 SW Lancaster Road

Portland, OR 97219

LIBRARIAN: Anders Ekholm (46) 10 714 27 58, Fax: (46) 8 757 23 40

[ibis-librarian@ibis.org](mailto:ibis-librarian@ibis.org)

Digital Modules Design, PDU Base Stations, Ericsson AB

BU Network

Färögatan 6

164 80 Stockholm, Sweden

WEBMASTER: Mike LaBonte

[mlabonte@](mailto:mikelabonte@eda.org)sisoft.com

IBIS-AMI Modeling Specialist, Signal Integrity Software

6 Clock Tower Place, Suite 250

Maynard, MA 01754

POSTMASTER: Curtis Clark

[curtis.clark@ansys.com](mailto:curtis.clark@ansys.com)

ANSYS, Inc.

150 Baker Ave Ext

Concord, MA 01742

This meeting was conducted in accordance with ANSI guidance.

All inquiries may be sent to [info@ibis.org](mailto: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](mailto:ibis@freelists.org) and/or [ibis-users@freelists.org](mailto:ibis-users@freelists.org) email lists (formerly [ibis@eda.org](mailto:ibis@eda.org) and [ibis-users@eda.org](mailto:ibis-users@eda.org)).
* To subscribe to one of the task group email lists: [ibis-macro@freelists.org](mailto:ibis-macro@freelists.org), [ibis-interconn@freelists.org](mailto:ibis-interconn@freelists.org), or [ibis-quality@freelists.org](mailto: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](http://www.ibis.org/%20bugs/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>

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

**SAE STANDARDS BALLOT VOTING STATUS**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Organization** | **Interest Category** | **Standards Ballot Voting Status** | **November 14, 2016** | **November 18, 2016** | **December 2, 2016** | **December 16, 2016** |
| ANSYS | User | Active | - | X | X | X |
| Broadcom Ltd. | Producer | Inactive | - | - | X | - |
| Cadence Design Systems | User | Active | X | X | X | X |
| Cisco Systems | User | Inactive | - | - | - | - |
| CST | User | Inactive | - | - | - | - |
| Ericsson | Producer | Inactive | X | X | - | - |
| GLOBALFOUNDRIES | Producer | Inactive | - | - | X | - |
| Huawei Technologies | Producer | Inactive | - | - | - | - |
| Infineon Technologies AG | Producer | Inactive | - | - | - | - |
| IBM | Producer | Active | - | - | X | X |
| Intel Corp. | Producer | Active | X | - | X | X |
| IO Methodology | User | Active | X | - | X | X |
| Keysight Technologies | User | Active | - | X | X | - |
| Maxim Integrated | Producer | Inactive | - | - | - | - |
| Mentor Graphics | User | Active | - | X | X | X |
| Micron Technology | Producer | Inactive | - | X | - | X |
| Signal Integrity Software | User | Active | X | X | X | X |
| Synopsys | User | Inactive | - | - | X | - |
| Teraspeed Labs | General Interest | Active | - | - | X | X |
| Xilinx | Producer | Inactive | - | X | - | - |
| ZTE | User | Inactive | - | - | - | - |
| Zuken | User | Inactive | - | 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.