



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, Thanh Nguyen, Joe Engert Hock Seon, Ahmed Gendy |
| Mentor Graphics | Arpad Muranyi*, Vladimir Dmitriev-Zdorov, John Angulo |

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|---------------------------|---|
| Micron Technology | Mikael Stahlberg, Kenji Kushima |
| Micron Memory Japan | Randy Wolff*, Justin Butterfield |
| | 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 Schaefer, 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 | Yeijing 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 |

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| 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 Technology | Wenquan Hu |
| 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 Appliquées et de Technologie de Sousse | Wael Dghais |
| Inventec | Zhong Peng |
| Japan Electronics Packaging and Circuits Association | Yukio Masuko |
| 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 |

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|---|---|
| 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, Systems and Technology Co. | Kazuki Wakabayashi, Yoshihide Komatsu |
| 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 & Operations Corp. | Taichi Hirano, Hayato Takeuchi, Mizue Yamaguchi Akira Matsuda |
| Sony LSI Design | Takashi Hasegawa, Toru Fujii |
| SPISim | Wei-hsing Huang |
| Spreadtrum Communications | Junyong Deng, Steven Guo, Baoping Bian |

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|------------------------------------|--|
| STMicroelectronics | Yanbiao Chu, Nikki Xie, Zhi Wang |
| Technoprobe | Fabio Brina, Olivier Bayet |
| Tektronix Co. | Alberto Berizzi, Lorenzo Bernasconi, Simona Cucchi |
| Teledyne LeCroy | Hitoshi Hatakeyama |
| Toshiba Corp. | Denny Li, Yifeng Wu |
| Toshiba Information Systems Corp. | Satoshi Minewaki, Yasuki Torigoshi, Hitoshi Imi |
| Toshiba Memory Systems Co. | Yasuyuki Inaba, Satoshi Yamaguchi, Masashi Hirai |
| Toshiba Microelectronics Corp. | Kanehara Kenichi, Kouichi Ookawa |
| TSG Co. | Jyunya Masumi |
| Université de Bretagne Occidentale | Keiichi Hanada |
| Vendorchain | Mihai Telescu |
| VIA Labs | Jun Zhao, Jing Luo, Dong Lei |
| VIA Technologies | Sheng-yuan Lee |
| WADOW Corp. | Terence Hsieh, Jerry Hsu, Justin Hsu |
| Winbond Electronics | Kazuhiko Kusunoki |
| Xpedic Technology | Albert Li |
| | 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

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This meeting was conducted in accordance with ANSI guidance.

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>

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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.