IBIS Open Forum Minutes

Meeting Date: **May 13, 2011**
Meeting Location: **Teleconference**

VOTING MEMBERS AND 2011 PARTICIPANTS

Agilent	Radek Biernacki*, Fangyi Rao
AMD	Nam Nguyen*
Ansys (Ansoft Corporation)	Samuel Martens
Apple Computer	(Matt Herndon)
Applied Simulation Technology	Norio Matsui
ARM	(Nirav Patel)
Cadence Design Systems	Terry Jernberg*, Ambrish Varma, Dennis Nagle, Martin Biehl
Cisco Systems	Syed Huq*, Mike LaBonte*, Luis Boluna, Ashwin Vasudevan, Zhiping Yang
Ericsson	Anders Ekholm
Freescale	(Jon Burnett)
Green Streak Programs	Lynne Green
Hitachi ULSI Systems	(Kazuyoshi Shoji)
Huawei Technologies	Xiaoqing Dong
IBM	Adge Hawes*, Greg Edlund*
Infineon Technologies AG	(Christian Sporrer)
Intel Corporation	Michael Mirmak*, Udy Shrivastava
IO Methodology	Lance Wang*
LSI	Brian Burdick*
Mentor Graphics	Arpad Muranyi*, Ed Bartlett, Vladimir Dmitriev-Zdorov, Steve Kaufer, Chuck Ferry
Micron Technology	Randy Wolff, Andrea Spiezia, Roberto Izzi, Aniello Viscardi, Giovanni Guerra, Francesco Madonna, Giuseppe Fusillo
National Semiconductor	Hsinho Wu, Pegah Alavi, John Goldie
Nokia Siemens Networks GmbH	Eckhard Lenski*
Signal Integrity Software	Walter Katz*, Todd Westerhoff, Mike Steinberger, Barry Katz
Sigrity	Raymond Chen, Kumar Keshavan, Yingxin Sun
Synopsys	Andy Tai, Ted Mido, Scott Wedge
Teraspeed Consulting Group	Bob Ross*, Kellee Crisafulli, Tom Dagostino, Scott McMorrow
Texas Instruments	Casey Morrison, Alfred Chong
Toshiba	(Yasumasa Kondo)
Xilinx	(Raymond Anderson)
ZTE	(Huang Min)
Zuken	(Michael Schaeder)

OTHER PARTICIPANTS IN 2011

AET	Mikio Kiyono
Altera	Hui Fu, Zhuyuan Liu, Julia Nekrylova
Avago	Weiping He, Minh Quach, Sari Tocco
Bayside Design	Elliot Nahas
Broadcom	Mohammad Ali
Exar Corporation	Helen Nguyen
Granite River Labs	Johnson Tan, Mike Engbretson, Quintin Anderson
High Speed Design Center	Ben Chia
ICT-Lanto	Steven Wong
KEI Systems	Shinichi Maeda
Maxim Integrated Products	Hassan Rafat
Oracle	Gustav Blando
Politecnico di Torino	Igor Stievano, Stefano Grivet-Talocia
Pristine Signals	AbdulRahman (Abbey) Rafiq
Renesas Electronics	Takuji Komeda
Siemens	Manfred Maurer
Simberian	Yuriy Shlepnev
ST Microelectronics	Fabio Brina, Alan Smith
Thales Communication	Alexandre Amedeo, Cyrip Chastang
TechAmerica	(Chris Denham)
University of Illinois	Jose Schutt-Aine
University of L'Aquila	Danilo di Febo
Vitesse Semiconductor	Sirius Tsang
Independent	Yoichi Niioka

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
June 3, 2011	206 520 527	IBIS
June 7, 2011	IBIS Summit at DAC, San Diego – no teleconference	

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

https://cisco.webex.com/cisco/j.php?J=206520527

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
Michael Mirmak and Mike LaBonte called for comments regarding the minutes of the April 22, 2011 IBIS Open Forum teleconference. The minutes were approved with no changes.

MEMBERSHIP STATUS AND TREASURER'S REPORT
Michael Mirmak noted that new information had become available from TechAmerica summarizing recent renewals. Bob Ross added that 12 to 14 renewals had been received, with a lot more in progress. Some payment policies at other companies are causing delays in processing membership dues. Finally, Bob noted that National Semiconductor had re-joined IBIS. The roster and poster should be updated to reflect this.

WEB PAGE UPDATES
No update.

MAILING LIST ADMINISTRATION
Mike LaBonte is seeing increasing issues with the eda.org and freelists.org mailing lists. Many of the problems are emails sent by the list being rejected by subscribers' servers. There is currently a fair amount of email traffic on the lists. Anyone not receiving email from any list they are subscribed to should check the archives for emails that may not have reached them. Also, check spam for mistakenly discarded IBIS emails. Contact Mike LaBonte if issues are found.

MODEL LIBRARY UPDATE
No update.

MISCELLANY/ANNOUNCEMENTS
None.

OPENS FOR NEW ISSUES
None.

INTERNATIONAL/EXTERNAL ACTIVITIES
- DASC
Michael Mirmak said the most recent meeting of DASC covered nothing related to IBIS as part
of its agenda. The DASC file and e-mail archive may be found at:

> http://www.dasc.org/

- P1735 Encryption
No update. The IEEE Study Group on Encryption web reflector archives are found at:

> http://www.eda-stds.org/ip-encrypt/hm/

-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
Bob Ross mentioned two conferences with potential interactions with IBIS.

- EPEPS (Electrical Performance of Electronic Packaging and Systems) will be held October 23-
26 in San Jose, California. More information can be found at:

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

- EDAPS (Electrical Design of Advanced Packaging & Systems) will be held December 12-14 in
Hangzhou, PRC. More information can be found at:

> http://www.edaps2011.org

In addition, a European version of EPEPS has been established, while EDAPS is considered an
EPEPS conference in the People's Republic of China. IBIS has been invited to all three, with
special emphasis possible at EPEPS.

EMCCompo2011, the 8th International Workshop on Electromagnetic Compatibility of Integrated
Circuits, will be held in Dubrovnik, Croatia, November 6-9, 2011. Organizers of the event have
contacted the IBIS Open Forum to see if there is interest in having a tutorial session on IBIS.
April 1 is the deadline for registration. More information can be found at:

-Press Update
No update.

IEC APPROVAL ACTIVITIES
No update.

TECHAMERICA UPDATE
Michael Mirmak noted that TechAmerica is encouraging groups to file PINS (Project Initiation Notification System) documents at the beginning of specification development, not near the end as has been IBIS practice. These are used by ANSI to track ongoing work and no limit exists on how long a PINS document may stay "open" without a formal filing of a specification for balloting with ANSI. Bob Ross asked whether the IBIS Cookbook should have a PINS document filed. Michael responded that this might correspond to an ANSI "handbook" rather than a standard, but that he would look into the possibility.

KAVI members' login is at:

SUMMIT STATUS
-SPIE IBIS Summit
Bob Ross reported that the Naples SPI conference, outside of the summit, did not feature many IBIS-related topics. SPI ownership has been turned over to the University of Cassino. The name of SPI has now been changed to "Workshop on Signal and Power Integrity" (still using "SPI" as initials). The next European meeting is likely at Sorrento, Italy in 2012.

As for the summit, Antonio Girardi of Micron/Numonyx was expected but not able to attend due to an injury to his shoulder. Approximately 20 people signed in, including officers Anders Ekholm, Bob Ross, Lance Wang and Randy Wolff. Lance added that the whole European area is researching power delivery (MOCHA) and that the summit was a "really good" event.

-DAC IBIS Summit
The Design Automation Conference (DAC) is June 6-9, 2011 in San Diego, CA. The IBIS Summit will be held June 7. Michael Mirmak reported that a conference room has been secured at the Omni Hotel. Lance Wang has sent notices. Michael thanked Mentor Graphics for sponsoring the room. Another call for papers will be sent out next week. This meeting will include the annual election of officers, including some non-member positions. Contact the board if you are interested in running for an office.

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 at DAC and in Asia. Contact the IBIS Board for further details.

IBIS QUALITY TASK GROUP

Mike LaBonte reported that "great technical discussions" have recently been held on developing a new format for golden test loads and waveforms. The [External Circuit] keyword was considered but was deemed "too flexible". Currently, the Task Group is staying with IBIS-ISS as a means of improving test load and waveform expressions. The group is meeting weekly on Tuesdays at 8 AM PDT.

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

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

IBIS MODEL REVIEW TASK GROUP

No update.

ADVANCED TECHNOLOGY MODELING TASK GROUP

Arpad Muranyi reported that regular meetings continue as usual. Several BIRDs were under active consideration and the task list may hopefully be completed by the DAC IBIS Summit.

Task group material can be found at:

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

INTERCONNECT TASK GROUP

Michael Mirmak reported weekly meetings continue on IBIS-ISS. A 1.2 review draft is being finalized based on this week's comments, which will be reviewed in the next few meetings, before being turned over to the IBIS Open Forum. Active discussion continues on Walter Katz's proposals on integrating links to IBIS-ISS into IBIS. Bob Ross suggested that an ANSI PINS document be filed on IBIS-ISS.

Task group material can be found at:

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

IBIS EDITORIAL UPDATE

Michael Mirmak reported there have been regular meetings and contact with the TechAmerica tech writer. The next meeting topic will include which IBIS version number scheme should be used.

New IBIS 5.0 documentation can be reviewed at:

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

NEW ADMINISTRATIVE ISSUES

None.

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

Arpad Muranyi reported that no updates have been received, but that comments and suggestions are still encouraged.

BIRD117.3: PARAMETERIZE A_TO_D AND D_TO_A CONVERTERS

Arpad Muranyi reported that no updates have been received, but that comments and suggestions are still encouraged.

BIRD118.2: ANALOG PARAMETER ASSIGNMENTS

Arpad Muranyi reported that no updates have been received, but that comments and suggestions are still encouraged.

BIRD121: IBIS-AMI NEW RESERVED PARAMETERS FOR DATA MANAGEMENT

Walter Katz noted that this BIRD is under IBIS ATM Task Group consideration.

BIRD122: IBIS-AMI NEW RESERVED PARAMETERS FOR ANALOG MODELING

Walter Katz noted that this BIRD is under IBIS ATM Task Group consideration.

BIRD123.1: IBIS-AMI NEW RESERVED PARAMETERS FOR JITTER/NOISE

Walter Katz stated that he has created a graphic to help in understanding the BIRD. Arpad Muranyi mentioned that the graphics have been uploaded to the ATM website, as they are intended to enhance understanding of the technical issues. Mike LaBonte suggested that a BIRD123.2 should include a URL to the graphic. Michael Mirmak asked whether the diagram should be actually part of the BIRD. Arpad agreed that it should and that participants could discuss formatting and presentation of the diagram in the IBIS-ATM meeting. Bob Ross proposed that the team write it up as part of the BIRD, not just present it as a separate URL. Arpad moved to take discussion offline; Bob seconded and no objections were raised.

BIRD124: IBIS-AMI NEW RESERVED PARAMETERS FOR DEPENDENCY TABLES

Walter Katz noted that, as soon as the dependency tables proposals are complete, BIRD124 will be re-written. Bob Ross suggested that the tables proposals would be a new BIRD and that BIRD124 is already too large a BIRD. An editorial review and revisions may be needed.

BIRD125: MAKE IBIS-ISS AVAILABLE FOR IBIS PACKAGE MODELING

Arpad Muranyi reported that no updates have been received, but that comments and suggestions are still encouraged.

BIRD127: IBIS-AMI TYPOGRAPHICAL CORRECTIONS

Arpad Muranyi noted that this BIRD is theoretically ready for a vote, but it may be better to wait with that because some new items may need to be added to it, such as clarifications on what the reasons for the success of AMI function failure codes (1 or 0) are, although it may be better to start separate BIRDs for the new items show in rows 51-61 in the Task List.

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

Ken Willis and Walter Katz were stated to be working on a joint proposal. Arpad Muranyi noted that he maintains his reservations/opinion regarding using outputs for inputs and vice-versa. He added that he is considering the possibility of adding explicit "overloaded" functions to handle this situation, similar to programming languages. Walter responded that a simpler effort would be to change the name of the argument in the "signature" AMI_Parameters_Out to *_IO.

BIRD129: ADD "POLARITY" ARGUMENT TO D_TO_A CONVERTERS

There have been no changes or comments since introduction. People are encouraged to submit comments. This BIRD is also related to BIRDs 116, 117 and 118.

BIRD130: CROSSTALK CLARIFICATION WITH RESPECT TO AMI

Arpad Muranyi noted that the BIRD has been discussed extensively in the IBIS-ATM Task Group, and no comments/questions had yet been received since it was submitted. The purpose was to correct the specification to remove a restriction on modifying channel responses. In addition, it spells out some technical details in terms of flow and crosstalk.

Walter Katz moved to schedule the BIRD for a vote at the next teleconference. Arpad Muranyi seconded. Without objection, BIRD130 was scheduled for a vote at the next teleconference.

Michael Mirmak noted, per an earlier observation by Bob Ross, that the BIRD text had been updated to properly display some special characters.

BIRD 131: IBIS-AMI REPEATERS

Walter Katz noted that this BIRD is under IBIS ATM Task Group consideration.

IBISCHK5 BUG STATUS

Michael Mirmak noted a typo in the title of BUG128 (a missing space) and took the AR to correct it online.

While no new BUGs were reviewed, Michael Mirmak asked whether any issues in or plans for the parser were known that will be fixed/affected by pending BIRDs. Bob Ross responded that parser BUGs identify serious errors that require fixes, even to baseline syntax. Mike LaBonte observed that BUG104 is very old (2009) and really needs a BIRD to address the stated problem, related to how [Model] and the test load/waveform keywords interact. He added that the IBIS Quality group is developing something new to resolve this, possibly a BIRD.

Michael Mirmak suggested that the Open Forum or an individual participant could address this in a BIRD with a few sentences, after IBIS-ISS work has completed, but implications could be significant. Bob responded that the parser doesn't enforce rigid hierarchy as implied by the specification. Mike LaBonte suggested that the Quality Group will take up discussion of the problem.

IBISCHK5 PARSER STATUS
Bob Ross reported that no update release is planned, as several issues are still open. He has requested that the developer provide a complete list of error numbers, which is expected by the end of the year.

IBIS-ISS SPECIFICATION DRAFT
Michael Mirmak reported that the document is still being updated by the Interconnect Task Group. Comments from the general public are still welcome but the document will be resubmitted to the Open Forum after the Task Group completes its revisions.

The review draft revision 1.2 can be reviewed at:

   http://www.eda.org/pub/ibis/ibis-iss_wip/IBIS_ISS_review_draft_1.2.pdf

NEW TECHNICAL ISSUES
Michael Mirmak provided a very brief overview of the Mantis system on eda.org. Mantis is an open-source-based database tracking and filing system, used for software and documentation of bugs. Reports are automatically assigned numbers, may be classified in a reconfigurable way, and both submissions and updates can be moderated. Michael suggested that Mantis could be used for both IBIS parser and specification issue tracking, without having to develop a new system or even leave eda.org. Bob Ross asked whether the listings would be publicly visible. Michael responded that they were, though submission may only be available to those who register.

The Mantis system for eda.org standards and documents can be found at:

   http://www.eda.org/mantis/

Michael also provided a brief overview of approved and pending BIRDs, and resulting parser changes. His list included a classification of the BIRDs as being included in IBIS 5.1 or 5.2, so that the impact of the BIRDs and the editorial reformatting of IBIS would be clearer. Bob Ross suggested bringing the list up at the DAC IBIS Summit to "hash it out" with the participants,

noting that more BIRDs are coming. He added that there may be an indirect impact to the parser from some BIRD changes, due to BIRDs and the parser reflecting actual intent (as opposed to what the specification actually says).

Bob suggested BIRD113.3 be added to 5.1 rather than 5.2. No objections were raised. In terms of editorial updates, Bob suggested that IBIS may see a period where two formats of BIRDs will be acceptable. The Editorial group or some other team will edit BIRDs into a final document. Michael Mirmak suggested that the participants could submit BIRD-by-BIRD inclusion motions if needed. Finally, Bob suggested that he may submit a C_comp BIRD in the very near future.

NEXT MEETING
The next IBIS Open Forum teleconference will be held June 3, 2011 from 8:00 to 10:00 AM US Pacific Standard Time. A vote on BIRD130 is scheduled. The next Open Forum Summit will be held June 7, 2011 in conjunction with DAC. Mike LaBonte moved to adjourn and Bob Ross seconded.

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NOTES

IBIS CHAIR: Michael Mirmak (916) 356-4261, Fax (916) 377-3788
     michael.mirmak@intel.com
     Platform Applications Engineer, Intel Corporation
     1900 Prairie City Rd.,
     FM5-239
     Folsom, CA 95630

VICE CHAIR: Lance Wang (978) 633-3388
     lwang@iometh.com
     President/CEO, IO Methodology, Inc.
     PO Box 2099
     Acton, MA 01720

SECRETARY: Randy Wolff (208) 363-1764, Fax: (208) 368-3475
     rrwolff@micron.com
     SI Modeling Manager, Micron Technology, Inc.
     8000 S. Federal Way
     Mail Stop: 01-711
     Boise, ID 83707-0006

LIBRARIAN: Anders Ekholm (46) 10 714 27 58, Fax: (46) 8 757 23 40
     ibis-librarian@eda.org
     Digital Modules Design, PDU Base Stations, Ericsson AB
     BU Network
     Färögatan 6
     164 80 Stockholm, Sweden

WEBMASTER: Syed Huq (408) 525-3399, Fax: (408) 526-5504
huqs@cisco.com
Manager, Hardware Engineering, Cisco Systems
170 West Tasman Drive
San Jose, CA 95134-1706

POSTMASTER: Mike LaBonte (978) 936-2147
milabont@cisco.com
Signal Integrity Engineer, Cisco Systems
Mail Stop BXB01/1/
1414 Massachusetts Ave
Boxborough, MA 01719

This meeting was conducted in accordance with the GEIA Legal Guides and GEIA 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 EIA-IBIS Open Forum as a full Member.

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

ibis-users@eda.org
To send a message to the IBIS Users' Group Reflector. This is used mostly for IBIS

clarification, current modeling issues, and general user concerns. Job posting information is not permitted.

ibis-bug@eda.org
To report ibischk parser BUGs as well as tschk2 parser BUGs. The BUG Report Form for ibischk resides along with reported BUGs at:

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

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

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

icm-bug@eda.org
To report icmchk1 parser BUGs. The BUG Report Form resides along with reported BUGs at:

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

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

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

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

http://www.eda.org/ibis

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

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

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	April 1, 2011	April 22, 2011	May 11, 2011	May 13, 2011
Advanced Micro Devices	Producer	Active	X	X	-	X
Agilent Technologies	User	Active	X	X	-	X
Ansys	User	Inactive	-	-	-	-
Apple Computer	User	Inactive	-	-	-	-
Applied Simulation Technology	User	Inactive	-	-	-	-
ARM	Producer	Inactive	-	-	-	-
Cadence Design Systems	User	Active	-	-	X	X
Cisco Systems	User	Active	X	X	-	X
Ericsson	Producer	Active	X	-	X	-
Freescale	Producer	Inactive	-	-	-	-
Green Streak Programs	General Interest	Inactive	-	-	-	-
Huawei Technologies	Producer	Inactive	-	-	-	-
Hitachi ULSI Systems	Producer	Inactive	-	-	-	-
IBM	Producer	Inactive	X	-	-	X
Infineon Technologies AG	Producer	Inactive	-	-	-	-
Intel Corp.	Producer	Active	X	X	-	X
IO Methodology	User	Active	X	X	X	X
LSI	Producer	Inactive	-	-	-	X
Mentor Graphics	User	Active	X	X	-	X
Micron Technology	Producer	Active	X	-	X	-
National Semiconductor	Producer	Inactive	-	-	-	-
Nokia Siemens Networks	Producer	Inactive	X	-	-	X
Signal Integrity Software	User	Active	X	X	-	X
Sigrity	User	Inactive	-	X	-	-
Synopsys	User	Inactive	-	-	-	-
Teraspeed Consulting	General Interest	Active	X	X	X	X
Texas Instruments	Producer	Inactive	-	-	-	-
Toshiba	Producer	Inactive	-	-	-	-
Xilinx	Producer	Inactive	-	-	-	-
ZTE	User	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.