IBIS Open Forum Minutes

Meeting Date: **November 30, 2012**Meeting Location: **Teleconference**

VOTING MEMBERS AND 2012 PARTICIPANTS

Agilent Heidi Barnes, Radek Biernacki*, Yoji Sekine, Fangyi Rao,

Jing-Tao Liu, Zhengpeng Zhu, Xuliang Yuan, Yi Wang,

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ARM

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Ericsson Anders Ekholm, Zilwan Mahmod, Mattias Lundquist,

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Mandy (Hsiao-Yun) Su

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Hongxin Jiang, Wenjin Luo, Longfang Lv, Luya Ma, Xiao Peng, Huichao Weng, Zhengrong Xu, Juhua Yu,

Fangfang Zhang

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ZTE Huifeng Chen, Xiaolin Chen, Fengling Gao, Hui Jiang,

Wan Ming, Qi Ni, Anbing Sun, Lili Wei, Shunlin Zhu

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Apache Design Jianbo Liu, Shulong Wu, Mengfei Xu, Wei Yang

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Ting Zhu, Rick Wu

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Yutaka Uematsu
Hitachi Advanced Digital
Hitachi Consumer Electronics
Hitachi Information &
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Hitachi Kokusai Electric Kunihito Seguchi

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Hitachi ULSI Systems Co. Masahiro Hyoma, Sadahiro Nonoyama,

Hiroshi Uematsu

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Paltek Nobuyouki Sasaki Panasonic Ryuichi Yamaguchi

Pegatron Corporation Stanley Chu, Lawrence Ting

PFU Kohhei Shimazu
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Renesas Electronics Mikiko Sode, Hiroyuki Uchida, Kazunon Yamada

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Ricoh Company Yasuhiro Akita, Kazumasa Aoki, Masahiko Banno,

Shigeru Isobe, Takuya Kitsukawa, Daisuke Koya,

Kazuki Murata, Shigeru Toyazaki

Rohm Co. Yutaka Okui Ruijie Networks Ye Tao Sanei Hytechs Co. Hiroyuki Kai

Seiko Instruments Takayuki Okamoto Semiconductor Technology Hiroshi Nishijima

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Sendai Nikon Kohsuke Aoyama Shimadzu Kazuo Nakjima Silicon Motion Technology Star Wang

Sony Kenji Yasoda, Haruhiko Saitoh

Sony EMCS Naotaka Tachibana

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Spreadtrum Communications Steven Guo, Xianyu Meng, John Rowland

Shanghai

ST Microelectronics Davide Pandini Success International Tatsuo Futai

Sunplus Technology Forest Hsu, Yi-Tzeng Lin

SWIEE Electronics

Chen Gao

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Katsufumi Ehata

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Tokyo Electron Device

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Takayuki Yamazaki

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Toshiba Microlectronics Masahiro Ishibashi, Jyunya Masumi

Toshiba Semiconductor & Storage Masahiko Kashima, Shigeo Kida, Toshihiro Tsujimura

Company Yasunobu Umemoto Towa Electronics Co. Yoshikazu Suzuki

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University of Illinois Thomas Comberiate, José Schutt-Ainé

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Zhejiang United Electronic Gang Xu

Industry

Zhejiang Uniview Technologies Sunny (Huanyang) Chen, Phil (Fei) Ye

Zuiki Seikoh Go

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

December 21, 2012 205 475 958 IBIS

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

https://ciscosales.webex.com/ciscosales/i.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 5.1, 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 October 26, 2012 IBIS Open Forum teleconference. The minutes were approved without changes.

MEMBERSHIP STATUS AND TREASURER'S REPORT

Bob Ross reported that there is no change from last time. We currently have 29 members. He has received no recent financials report, but we should be pretty close to break even for the year.

WEB PAGE UPDATES

Mike LaBonte reported that he made a few minor style changes to the task group web page. He asked for time later in the meeting to discuss bug tracking.

MAILING LIST ADMINISTRATION

Mike LaBonte reported that the mailing list has had a few email bounces where the error messages are not clear. Michael Mirmak noted that Walter Katz and Micron folks have had continuing email bounce issues. Walter noted that he sent out an email yesterday and it still bounced. Randy noted he is not getting any emails from the ibis-interconn mailing list. His server administrators have white-listed the email address, but this hasn't solved the problem. He also re-subscribed to the list this morning to see if that would help.

Michael also noted that at least one member can't download external software, so they can't download Microsoft Silverlight required for Lync meetings. This makes participation difficult.

Michael also recognized Mike LaBonte for all his script writing that helps update BIRD lists among other functions.

Arpad Muranyi noted that when he sends an email to multiple email reflectors, he only gets one email back. He wondered if this is ok. Mike thought that Arpad's email client might be smart enough to merge the multiple emails.

MODEL LIBRARY UPDATE

No update.

MISCELLANY/ANNOUNCEMENTS

None.

CALL FOR NEW ISSUES

Michael Mirmak noted that BIRD154 was missed in the agenda and will be discussed. Also, BUGs 139 and 140 will be discussed.

Mike LaBonte mentioned a suggestion from Michael that if Mantis is too clunky to use, we might consider other bug tracking software such as Bugzilla. Mike recently looked at Bugzilla. It does require an SQL database, so running it on the eda.org server would require help to get it installed and setup. We likely wouldn't have full administrator rights to it. He doesn't know how configurable Bugzilla is, as he hasn't been able to install it on any servers and play with it yet.

Mike is also looking at ways to make changes to files on the IBIS website more easily. There is no login on the server or file management software. Specifically he is looking at bug tracking, where bug tracking software is very useful. Installing a wiki page might be good, since it

requires a login. It should help for pages we change a lot. Potentially it could be useful to take bug reports and put them in a wiki page. People could subscribe to the pages to get notifications of changes. He could put a wiki page on the website to demonstrate at our next meeting, such as the Summits page as a wiki.

Michael noted that a couple of things he didn't like about Mantis. One was fields that we didn't need but couldn't change. Also, the appearance of Bugzilla seems more similar to what we have now and is easier to understand than Mantis. The idea is to make how we submit, track, and dispose of bugs and other issues easier to handle. Please feel free to suggest other software that might be useful.

Bob Ross added that he'd like to have the ability to display the list of bugs including status like we have now. Mike took the AR to prepare a wiki page for both a bug list and the Summits page for demonstration at the next meeting.

INTERNATIONAL/EXTERNAL ACTIVITIES

- IEEE DASC

Michael Mirmak reported that there have been a couple of meetings and votes held, but no business related to IBIS.

- VHDL-AMS Table-Driven Models

Arpad Muranyi had no update. Arpad suggested we remove this item from our next agenda, since the work is coming to a close.

Michael mentioned there has been talk of APIs and C recently that may have some bearing on IBIS AMI. This is a discussion on the Verilog-AMS mailing list.

More information can be found at:

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

- Conferences

None.

- Press Update

None.

IEC APPROVAL ACTIVITIES

Randy Wolff reported that a TC91 meeting was held October 15-19 in Fukuoka-city, Japan. He still has not heard any feedback from Victor Berman about the meeting. Randy took the AR to contact Dennis Brophy for further information and to check the IEC website to see if any meeting minutes exist.

SUMMIT STATUS

-Asian IBIS Summits Review

Michael Mirmak noted that the Summits were successes. The presentation materials were posted this morning and a notification was sent to the email reflectors. The minutes will be distributed in the coming week. Michael thanked Lance Wang and Anders Ekholm for attending to represent IBIS and run the meetings. He also thanked Bob Ross for all his help in organizing the meetings and preparing the materials.

Bob Ross reported that there were 109 attendees in Shanghai, 49 in Hsinchu, and 156 in Yokohama. Lance noted that this year was the first year we solved financial issues in Taiwan, but attendance was low. We didn't have any participation from Taipei, and we did not do a good job of promoting the meeting through local contacts. In Japan, a lot more people were interested in IBIS and Lance fielded many questions after the meeting about new developments in IBIS. The JEITA EDA Fair is helping turnout as well. Lance noted that not many people in Taiwan and China subscribe to the SI list and the IBIS reflector, so we need to do more direct mailings to individual companies to improve attendance.

Bob also noted that we had tables at the Shanghai and Hsinchu events. We also broke even on the events.

-DesignCon 2013 Summit Status

Michael reported that we have received a draft contract and should have it finalized by Monday with similar terms and room arrangements as previous years. Thursday, January 31 will be the Summit. We will be listed as a co-sponsor of DesignCon. Arpad Muranyi asked if we should consider moving our officer voting to DesignCon instead of the DAC Summit in June. Michael noted that we are discussing an online voting system. We will not have a meeting at DAC this year due to its location in Texas.

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 had one meeting since the last report. They discussed a new IBIS parser bug that was quite sophisticated. The bug will be discussed later in the meeting. The next meetings are December 11 and January 8.

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

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

ADVANCED TECHNOLOGY MODELING TASK GROUP

Arpad Muranyi reported that the group is meeting regularly on Tuesdays. They are currently discussing BIRD150 related to dependency tables. They also recently submitted BIRD121.2 that will be discussed today. They plan to move onto the backchannel and repeater BIRDs once BIRD150 discussions are complete.

Task group material can be found at:

INTERCONNECT TASK GROUP

Michael Mirmak reported that the group continues to meet Wednesdays. Their current topic of discussion is use of a parameter tree structure for parameters in the EMD format, an alternative from Walter Katz to the EBD modeling format. Walter noted that EMD is an attempt to bring EBD up-to-date, and what we learn from this can be applied to IBIS.

The task group documents can be found at:

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

NEW ADMINISTRATIVE ISSUES

None.

BIRD121.2: IBIS-AMI NEW RESERVED PARAMETERS FOR DATA MANAGEMENT

Walter summarized that this is a BIRD that adds Supporting_Files, DLL_Path, and DLL_ID information to IBIS-AMI to point to directories where the files are stored and ultimately improve model portability between EDA simulators.

Walter requested that a PDF file version of the Word file be posted.

Arpad Muranyi noted that he had issues with the format of the BIRD template, since he saw the Analysis Path section listed twice. Michael Mirmak took the AR to check if this was in the latest template and also to see if a problem statement existed in the template.

Walter moved to continue discussions of the BIRD template in an Editorial task group meeting. Arpad seconded the motion. There were no objections.

Walter plans to have further discussion at the next meeting, and a vote can be scheduled at that time.

BIRD154: USING IBIS-AMI LEAF LABELS IN LIST PARAMETERS

Walter Katz described the BIRD. It introduces the ability to use Labels for any List parameter in the same manner that Labels are used to assign names to columns in a Table.

Walter moved to table discussion on BIRD154. Bob Ross seconded the motion. There were no objections.

Walter moved to formally deliver BIRD154 to the ATM task group for consideration. Radek Biernacki seconded the motion. There were no objections.

BIRD123.4: IBIS-AMI NEW RESERVED PARAMETERS FOR JITTER/NOISE

Bob Ross noted that the Usage Out for Tx_DCD was deprecated in BIRD123.4 as seen in Table 1 on page 13. He suggested adding a note in Table 1 for Tx_DCD. He also suggested adding a statement in the Other Notes of the Tx_DCD parameter description section that Usage Out was legal in Version 5.1 and illegal for the next Version (6.0?). The same would apply to Tx_Jitter (Tx_JItter change is not mentioned in BIRD123.4 but the Usage Out is not included in Table 1). Bob also suggested removing "for information only" from the sentence introducing Table 1. BIRD123.4 should be updated, but an Editing Committee also can make sure these changes are made.

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

Discussion was tabled.

BIRD117.4: PARAMETERIZE A_TO_D AND D_TO_A CONVERTERS

Discussion was tabled.

BIRD118.3: ANALOG PARAMETER ASSIGNMENTS

Discussion was tabled.

BIRD122: IBIS-AMI NEW RESERVED PARAMETERS FOR ANALOG MODELING

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

Discussion was tabled.

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.

BIRD153: PARAMETER TREE KEYWORD

Discussion was tabled.

IBIS SPECIFICATION CHANGE STATUS

Michael Mirmak noted that no changes were made to the document since the last meeting, but he will update the entry for BIRD123.4 once it is posted.

http://www.eda.org/ibis/docs/ibis-version-change-strategy-v2p3.pdf

IBISCHK5 BUG STATUS

Bob Ross introduced BUG139. For a [Ramp] Caution test on Model_type 3-state_ECL, the parser gives the wrong value of 0. Curtis Clark found this in the source code and generated a test case for it. The bug was classified as Moderate severity, Medium priority and Open status.

Mike LaBonte described BUG140. In the case when you need to examine combined curves such as a Pulldown curve and two Clamp curves, you might have misaligned voltage points to add together. A Warning message can be generated if the voltages are not aligned even if the original summed tables are monotonic for aligned voltages. This occurs due to linear interpolation of non-aligned points in regions of curvature where the summed slope might be close to 0. A number of solutions have been suggested including demoting the Warning to a Caution message, setting a tolerance limit, or using a spline fitting algorithm for interpolation.

Walter Katz asked if the non-monotonicities are gross or minor. He noted he has a lot of experience with combining curves, and you can end up with minor non-monotonicities quite often. He suggested ignoring minor issues by applying a filter. Bob noted that the issues are usually very minor, but the problem is setting a filter limit. Arpad Muranyi suggested applying a similar logic as the I-V/V-t mismatch test to classifying I-V curve non-monotonicities. The bug was classified as Annoying severity, Medium priority and Open status.

Bob added that nothing in the IBIS specification specifies that combined curves must be monotonic. This check comes from the Quality task group. The Warnings are a problem, since it is suggested to distribute models with 0 Errors and Warnings from the parser. Michael Mirmak suggested that a specification for the parser would be useful to list the limits for specific checks that generate Error and Warning messages. He also suggested maybe having the parser include a way of reading in a configuration table allowing for setting of limits in the parser. Arpad felt this idea would cause problems, as users are already unaware of the various flag options of the parser. Mike felt this would also cause problems where two users could run the parser and generate different results.

Michael suggested that the Quality task group take up the task of developing a parser specification. Mike responded that he would make sure to discuss this in the next Quality task group meeting. Michael took an AR to find the existing draft parser specification to use as a starting point.

NEW TECHNICAL ISSUES

None.

NEXT MEETING

The next IBIS Open Forum teleconference will be held December 21, 2012 from 8:00 to 10:00 AM US Pacific Time.

Mike LaBonte moved to adjourn. Lance Wang seconded. There were no objections.

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/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 - TECHAMERICA STANDARDS BALLOT VOTING STATUS

I/O Buffer Information Specification Committee (IBIS)

-	Internat	Standards Ballot	N		N	Manage
Organization	Interest Category	Voting Status	November 9, 2012	November 13, 2012	November 16, 2012	November 30, 2012
Agilent Technologies	User	Active	Х	Х	Х	Х
Altera	Producer	Inactive	-	-	-	Χ
ANSYS	User	Active	Χ	X	X	X
Applied Simulation Technology	User	Inactive	-	-	-	-
ARM	Producer	Inactive	-	-	-	-
Cadence Design Systems	User	Active	Χ	X	X	Χ
Ericsson	Producer	Active	Χ	X	Χ	-
Foxconn Technology Group	Producer	Inactive	-	X	-	-
Freescale	Producer	Inactive	-	-	Χ	-
Huawei Technologies	Producer	Inactive	Χ	-	-	-
IBM	Producer	Inactive	-	-	-	X
Infineon Technologies AG	Producer	Inactive	-	-	-	-
Intel Corp.	Producer	Active	Χ	Χ	-	Χ
IO Methodology	User	Active	Χ	X	Χ	X
LSI	Producer	Inactive	-	-	-	-
Maxim Integrated Products	Producer	Inactive	-	-	-	-
Mentor Graphics	User	Active	_	-	Χ	X
Micron Technology	Producer	Inactive	-	-	-	Χ
Nokia Siemens Networks	Producer	Inactive	Χ	-	-	-
QLogic	Producer	Inactive	-	-	-	-
Signal Integrity Software	User	Inactive	-	-	-	Χ
Sigrity	User	Inactive	_	-	-	-
Synopsys	User	Inactive	Χ	-	-	-
Teraspeed Consulting	General Interest	Inactive	_	-	-	X
Texas Instruments	Producer	Inactive	-	-	-	-
Toshiba	Producer	Inactive	-	-	X	-
Xilinx	Producer	Inactive	-	-	-	-
ZTE	User	Inactive	Х	-	-	-
Zuken	User	Inactive	_	-	Х	_

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.