IBIS Chair’s Report

Mike LaBonte
SiSoft
Chair, IBIS Open Forum

IBIS Summit
at EPEPS 2015
San Jose, California
October 28, 2015

http://ibis.org/
# IBIS Milestones

<table>
<thead>
<tr>
<th>I/O Buffer Information Specification</th>
<th>Other Work</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1993-1994 IBIS 1.0-2.1:</strong></td>
<td><strong>1995: ANSI/EIA-656</strong></td>
</tr>
<tr>
<td>‒ Behavioral buffer model (fast simulation)</td>
<td>‒ IBIS 2.1</td>
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<tr>
<td>‒ Component pin map (easy EDA import)</td>
<td><strong>1999: ANSI/EIA-656-A</strong></td>
</tr>
<tr>
<td><strong>1997-1999 IBIS 3.0-3.2:</strong></td>
<td>‒ IBIS 3.2</td>
</tr>
<tr>
<td>‒ Package models</td>
<td><strong>2001: IEC 62014-1</strong></td>
</tr>
<tr>
<td>‒ Electrical Board Description (EBD)</td>
<td>‒ IBIS 3.2</td>
</tr>
<tr>
<td>‒ Dynamic buffers</td>
<td><strong>2003: ICM 1.0</strong></td>
</tr>
<tr>
<td><strong>2002-2006 IBIS 4.0-4.2:</strong></td>
<td>‒ Interconnect Model Specification</td>
</tr>
<tr>
<td>‒ Receiver models</td>
<td><strong>2006: ANSI/EIA-656-B</strong></td>
</tr>
<tr>
<td>‒ AMS languages</td>
<td>‒ IBIS 4.2</td>
</tr>
<tr>
<td><strong>2007-2012 IBIS 5.0-5.1:</strong></td>
<td><strong>2009: Touchstone® 2.0</strong></td>
</tr>
<tr>
<td>‒ IBIS-AMI SerDes models</td>
<td>*</td>
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<tr>
<td>‒ Power aware</td>
<td><strong>2011: IBIS-ISS 1.0</strong></td>
</tr>
<tr>
<td><strong>2013-2015 IBIS 6.0-6.1:</strong></td>
<td>‒ Interconnect SPICE Subcircuit specification</td>
</tr>
<tr>
<td>‒ PAM4 multi-level signaling</td>
<td><em>Touchstone® is a registered trademark of Agilent Technologies, Inc.</em></td>
</tr>
<tr>
<td>‒ Power delivery package models</td>
<td></td>
</tr>
</tbody>
</table>
Progress: IBIS 6.1 Ratified

- Ratified 11 September 2015
- Support for PAM4
- IBIS-AMI Parameters Simplified
- Package Models for Power Integrity
- and more ...
Lifespan of IBIS Versions

\[ y = 2.1573x + 636.89 \]

Days Between Approval and Successor

IBIS Version

2 2.1 3 3.1 3.2 4 4.1 4.2 5 5.1 6 6.1

Specification Development

28 October 2015

IBIS Chair’s Report

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In The Works

• IBIS 6.2 dedicated to reference node clarifications
  – Potential SAE standard
• Advanced Technology Modeling Task Group
  – Optimization/Back-channel support
  – External circuit enhancements
• Interconnect Task Group
  – External Package/on-die models using IBIS-ISS
• IBIS Quality Task Group
  – IBISCHK enhancements and documentation
# Status of IBIS Standards

<table>
<thead>
<tr>
<th>Specification</th>
<th>Version</th>
<th>Document</th>
</tr>
</thead>
<tbody>
<tr>
<td>I/O Buffer Information Specification</td>
<td>IBIS 4.2: <a href="http://example.com">SAE/EIA-STD-656-B</a></td>
<td></td>
</tr>
<tr>
<td></td>
<td>IBIS 3.2: <a href="http://example.com">IEC-62014-1</a></td>
<td></td>
</tr>
<tr>
<td>IBIS Interconnect Modeling Specification</td>
<td>ICM 1.1: <a href="http://example.com">ANSI/GEIA-STD-0001</a></td>
<td></td>
</tr>
</tbody>
</table>

IBIS 6.2 might be next ...
Days To Resolve BIRDS

Average = 162 days, down from 173 days
Pending BIRDS

BIRD125.1 pending for 5 years, a new “record”
24 IBIS Members

Organization

Our Members

Number of Members

2012-2016
IBIS Officers 2015-2016

• New Chair, Treasurer and Postmaster elected 15 June 2015
• Many thanks to incumbent IBIS officers for their continued service

A special thank you to outgoing chair Michael Mirmak (Total of 11 terms!)

Chair:  
Mike LaBonte, Signal Integrity Software

Vice-Chair:  
Lance Wang, IO Methodology Inc.

Secretary:  
Randy Wolff, Micron Technology

Treasurer:  
Bob Ross, Teraspeed Labs

Librarian:  
Anders Ekholm, Ericsson

Webmaster:  
Mike LaBonte, Signal Integrity Software

Postmaster:  
Curtis Clark, ANSYS
Organizational Activities

• So far in 2015:
  – 15 Open Forum teleconferences
  – 3 Summit meetings (including this one)
    • 2015 first year for EPEPS IBIS summit
  – 38 ATM Task Group teleconferences
  – 10 Editorial Task Group teleconferences
  – 10 Interconnect Task Group teleconferences
  – 35 Quality Task Group teleconferences
Upcoming Summits

• Asian IBIS Summit, Shanghai, China
  – November 9, 2015
• Asian IBIS Summit, Taipei, Taiwan
  – November 13, 2015
• Asian IBIS Summit, Tokyo, Japan
  – November 16, 2015
• DesignCon IBIS Summit, Santa Clara, CA
  – January 22, 2016
• SPI IBIS Summit, Torino, Italy
  – May 11, 2016
We Have Moved!

• Our gratitude to Accellera for eda.org web and email service from 1993 to 2015
• Email lists have moved to freelists.org
• Website has moved to http://ibis.org
Same Website For Now

- Manually edited HTML
- Perl scripts
New Website In The Works

• WordPress
• Bug trackers
• Live Calendar
• Responsive Design
[Thank You]

IBIS Open Forum:
Web: http://ibis.org
Email: ibis-info@freelists.org

We welcome participation by all IBIS model makers, EDA tool vendors, IBIS model users, and interested parties.
## Open BIRDs

<table>
<thead>
<tr>
<th>BIRD</th>
<th>Description</th>
<th>Author(s)</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>125.1</td>
<td><strong>Make IBIS-ISS Available for IBIS Package Modeling</strong></td>
<td>Arpad Muranyi, Mentor Graphics</td>
<td>21-Oct-10</td>
</tr>
<tr>
<td>128.2</td>
<td><strong>Allow AMI_parameters_out to pass AMI_parameters_in data on calls to AMI_GetWave</strong></td>
<td>Walter Katz, SiSoft</td>
<td>11-Mar-11</td>
</tr>
<tr>
<td>147</td>
<td><strong>Back-channel support</strong></td>
<td>Marcus Van Ierssel, Snowbush IP; Kumar Keshavan, Sigrity, Inc.; Ken Willis, Sigrity, Inc.; Walter Katz, SiSoft</td>
<td>18-Oct-11</td>
</tr>
<tr>
<td>158.3</td>
<td><strong>AMI Touchstonefile (R) Analog Buffer Models</strong></td>
<td>Walter Katz, Signal Integrity Software, Inc.</td>
<td>20-Feb-13</td>
</tr>
<tr>
<td>161.1</td>
<td><strong>Supporting Incomplete and Buffer-only [Component] Descriptions</strong></td>
<td>Michael Mirmak, Intel Corp.</td>
<td>8-May-13</td>
</tr>
<tr>
<td>163</td>
<td><strong>Instantiating and Connecting [External Circuit] Package Models with [Circuit Call]</strong></td>
<td>Arpad Muranyi &amp; John Angulo, Mentor Graphics; Ambrish Varma &amp; Brad Brim, Cadence Design Systems, Inc.</td>
<td>9-Jan-14</td>
</tr>
<tr>
<td>164</td>
<td><strong>Allowing Package Models to be defined in [External Circuit]</strong></td>
<td>Ambrish Varma &amp; Brad Brim, Cadence Design Systems, Inc.; Arpad Muranyi, Mentor Graphics</td>
<td>9-Jan-14</td>
</tr>
<tr>
<td>166</td>
<td><strong>Resolving problems with Redriver Init Flow</strong></td>
<td>Walter Katz, Signal Integrity Software, Inc. Darshan Shah, F5Networks, Inc.</td>
<td>2-Apr-14</td>
</tr>
<tr>
<td>179</td>
<td><strong>New IBIS-AMI Reserved Parameter Special_Param_Names</strong></td>
<td>Arpad Muranyi, Mentor Graphics</td>
<td>13-Oct-15</td>
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</tbody>
</table>