IBIS Update

Mike LaBonte
SiSoft
Chair, IBIS Open Forum

2018 DesignCon IBIS Summit
Santa Clara, California
February 2, 2018

http://www.ibis.org/
26 IBIS Members

Number of Members by Year

IBIS Update
IBIS Officers 2017-2018

Chair: Mike LaBonte, SiSoft
Vice-Chair: Lance Wang, IO Methodology Inc.
Secretary: Randy Wolff, Micron Technology
Treasurer: Bob Ross, Teraspeed Labs
Librarian: Anders Ekholm, Ericsson
Postmaster: Curtis Clark, ANSYS
Webmaster: Mike LaBonte, SiSoft

*2018 Officer Election nominations open May 17*
IBIS Meetings

• Weekly teleconferences
  – Quality Task Group (Tuesdays)
  – Advanced Technology Modeling Task Group (Tuesdays)
  – Interconnect Task Group (Wednesdays)
  – Editorial Task Group (some Fridays)

• IBIS Open Forum teleconference every 3 weeks
  – 499 meetings so far

• IBIS Summit meetings: DesignCon, IEEE SPI, EDICON USA, EPEPS, Shanghai, Taipei, Tokyo
SAE ITC

• SAE Industry Technologies Consortia is the parent organization of the IBIS Open Forum
• IBIS is assisted by SAE employees José Godoy, Phyllis Gross, Dorothy Lloyd
• SAE ITC provides financial, legal, and other services
• http://itc.sae.org/
Task Groups

• Interconnect Task Group
  – Chair: Michael Mirmak
  – http://ibis.org/interconn_wip/
  – Develop on-die/package/module/connector interconnect modeling BIRDs

• Advanced Technology Modeling Task Group
  – Chair: Arpad Muranyi
  – http://ibis.org/atm_wip/
  – Develop most other technical BIRDs

• Quality Task Group
  – Chair: Mike LaBonte
  – http://ibis.org/quality_wip/
  – Oversee IBISCHK parser testing and development

• Editorial Task Group
  – Chair: Michael Mirmak
  – http://ibis.org/editorial_wip/
  – Produce IBIS Specification documents

BIRD = Buffer Issue Resolution Document
IBIS Milestones

I/O Buffer Information Specification

• 1993-1994 IBIS 1.0-2.1:
  – Behavioral buffer model (fast simulation)
  – Component pin map (easy EDA import)
• 1997-1999 IBIS 3.0-3.2:
  – Package models
  – Electrical Board Description (EBD)
  – Dynamic buffers
• 2002-2006 IBIS 4.0-4.2:
  – Receiver models
  – AMS languages
• 2007-2012 IBIS 5.0-5.1:
  – IBIS-AMI SerDes models
  – Power aware
• 2013-2015 IBIS 6.0-6.1:
  – PAM4 multi-level signaling
  – Power delivery package models
• 2018? IBIS 7.0

Other Work

• 1995: ANSI/EIA-656
  – IBIS 2.1
• 1999: ANSI/EIA-656-A
  – IBIS 3.2
• 2001: IEC 62014-1
  – IBIS 3.2
• 2003: ICM 1.0
  – Interconnect Model Specification
• 2006: ANSI/EIA-656-B
  – IBIS 4.2
• 2009: Touchstone 2.0*
• 2011: IBIS-ISS 1.0
  – Interconnect SPICE Subcircuit specification

Current development
IBIS Version Development

As of 2-Feb-2018
## Possible IBIS 7.0 Timeline

<table>
<thead>
<tr>
<th>Meeting Date</th>
<th>Milestone</th>
</tr>
</thead>
<tbody>
<tr>
<td>4/21/2017</td>
<td>Vote to establish 7.0 as the next IBIS version passes</td>
</tr>
<tr>
<td>5/12/2017</td>
<td><em>BIRD review and acceptance (10 meetings)</em></td>
</tr>
<tr>
<td></td>
<td></td>
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<tr>
<td>2/16/2018</td>
<td></td>
</tr>
<tr>
<td>3/9/2018</td>
<td>Vote to approve 7.0 BIRD set is scheduled for next meeting</td>
</tr>
<tr>
<td>3/30/2018</td>
<td>7.0 BIRD set accepted. Editorial work begins</td>
</tr>
<tr>
<td>4/20/2018</td>
<td></td>
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<tr>
<td>5/11/2018</td>
<td>Editorial announces 7.0 ready. Review period begins</td>
</tr>
<tr>
<td>6/1/2018</td>
<td></td>
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<tr>
<td>6/22/2018</td>
<td>Vote to ratify 7.0 scheduled for next meeting</td>
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<tr>
<td>7/13/2018</td>
<td>7.0 ratified</td>
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</table>
## BIRDs Possibly Included in IBIS 7.0

<table>
<thead>
<tr>
<th>BIRD</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>147.6</td>
<td>Back-channel Support</td>
</tr>
<tr>
<td>158.7</td>
<td>AMI Ts4file Analog Buffer Models</td>
</tr>
<tr>
<td>179</td>
<td>New IBIS-AMI Reserved Parameter Special_Param_Names</td>
</tr>
<tr>
<td>180</td>
<td>Require Unique Pin Names in [Pin]</td>
</tr>
<tr>
<td>182</td>
<td>POWER and GND [Pin] signal_name as [Pin Mapping] bus_label</td>
</tr>
<tr>
<td>183</td>
<td>[Model Data] Matrix Subparameter Terminology Correction</td>
</tr>
<tr>
<td>184.2</td>
<td>Model_name and Signal_name Restriction for POWER and GND Pins</td>
</tr>
<tr>
<td>185.2</td>
<td>Section 3 Reserved Word Guideline Update</td>
</tr>
<tr>
<td>186.4</td>
<td>File Naming Rules</td>
</tr>
<tr>
<td>187.3</td>
<td>Format and Usage Out Clarifications</td>
</tr>
<tr>
<td>188.1</td>
<td>Expanded Rx Noise Support for AMI</td>
</tr>
<tr>
<td>189.4</td>
<td>Interconnect Modeling Using IBIS-ISS and Touchstone</td>
</tr>
<tr>
<td>191.2</td>
<td>Clarifying Locations for Si_location and Timing_location</td>
</tr>
<tr>
<td>192.1</td>
<td>Clarification of List Default Rules</td>
</tr>
<tr>
<td>193</td>
<td>Figure 29 corrections</td>
</tr>
</tbody>
</table>

Green = currently accepted BIRD
### BIRDs Possibly Excluded from IBIS 7.0

<table>
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<tr>
<th>BIRD</th>
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<tbody>
<tr>
<td>125.1</td>
<td>Make IBIS-ISS Available for IBIS Package Modeling</td>
</tr>
<tr>
<td>145.3</td>
<td>Cascading IBIS I/O buffers with [External Circuit]s using the [Model Call] keyword</td>
</tr>
<tr>
<td>166.2</td>
<td>Resolving problems with Redriver Init Flow</td>
</tr>
<tr>
<td>163</td>
<td>Instantiating and Connecting [External Circuit] Package Models with [Circuit Call]</td>
</tr>
<tr>
<td>164</td>
<td>Allowing Package Models to be defined in [External Circuit]</td>
</tr>
<tr>
<td>165</td>
<td>Parameter Passing Improvements for [External Circuit]s</td>
</tr>
<tr>
<td>181.1</td>
<td>I-V Table Clarifications</td>
</tr>
<tr>
<td>190</td>
<td>Clarification for Redriver Flow</td>
</tr>
</tbody>
</table>

White = currently not an accepted BIRD
[Thank You]

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

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