IBIS Update

Mike LaBonte
SiSoft
Chair, IBIS Open Forum

2018 Asian IBIS Summit
Shanghai, P. R. China
November 14, 2018

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

Number of Members by Year

IBIS Update
IBIS Officers 2018-2019

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
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
  – 480 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://www.sae- itc.org/
Task Groups

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

• Advanced Technology Modeling Task Group
  – Chair: Arpad Muranyi
  – Develop most other technical BIRDs

• Quality Task Group
  – Chair: Mike LaBonte
  – Oversee IBISCHK parser testing and development

• Editorial Task Group
  – Chair: Michael Mirmak
  – 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
- **2019? IBIS 7.0**

Current development

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
As of 12-Nov-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></td>
<td>... BIRD review and acceptance (30 meetings)</td>
</tr>
<tr>
<td>7/20/2018</td>
<td>7.0 BIRD set accepted.</td>
</tr>
<tr>
<td></td>
<td>... Editorial task group drafts IBIS 7.0</td>
</tr>
<tr>
<td>12/21/2018</td>
<td>Editorial announces IBIS 7.0 ready. Review period begins</td>
</tr>
<tr>
<td>1/11/2019</td>
<td></td>
</tr>
<tr>
<td>2/8/2019</td>
<td>Vote to ratify 7.0 scheduled for next meeting</td>
</tr>
<tr>
<td>3/1/2019</td>
<td>IBIS 7.0 ratified</td>
</tr>
</tbody>
</table>
# BIRDs 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>165</td>
<td>Parameter Passing Improvements for [External Circuit]s</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>189.6</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>
<tr>
<td>194</td>
<td>Revised AMI Ts4file Analog Buffer Models</td>
</tr>
<tr>
<td>196.1</td>
<td>Prohibit Periods at the End of File Names</td>
</tr>
</tbody>
</table>
BIRDS Excluded from IBIS 7.0

<table>
<thead>
<tr>
<th>BIRD</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>166.2</td>
<td>Resolving problems with Redriver Init Flow</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>
<tr>
<td>195.1</td>
<td>Enabling [Rgnd] and [Rpower] Keywords for Input Models</td>
</tr>
</tbody>
</table>

Green = Approved BIRD
[Thank You]

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

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