Introducing IBIS Version 7.0

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http://www.ibis.org/ver7.0_wip/

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Agenda

What IBIS 7.0 Contains

Key Features

- New Interconnect support
- AMI Improvements
- Traditional and Multi-lingual IBIS Improvements

Development Timeline

What's Next?

References

* Other names and brands may be claimed as the property of others

What IBIS 7.0 Contains

- IBIS Version 7.0 Draft 3 is now available
  - 12 chapters, 331 pages
  - Available at http://www.ibis.org/ver7.0_wip/
  - Now under consideration by the IBIS Open Forum

- 17 BIRDs addressed
  - 5 interconnect/packaging or related changes
  - 6 IBIS-AMI changes
  - 6 traditional IBIS and multi-lingual syntax changes

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BIRDs Included in IBIS 7.0

Number	Issue Title	Date First Submitted	Date Approved	Days Open
196.1	Prohibit Periods at the End of File Names	25-Sep-18	12-Oct-18	17
194	Revised AMI Ts4file Analog Buffer Models	2-May-18	29-Jun-18	58
193	Figure 29 corrections	10-Jan-18	23-Mar-18	72
192.1	Clarification of List Default Rules	22-Aug-17	15-Sep-17	24
191.2	Clarifying Locations for Si_location and Timing_location	28-Jun-17	15-Sep-17	79
189.7	Interconnect Modeling Using IBIS-ISS and Touchstone	27-Jan-17	29-Jun-18	518
188.1	Expanded Rx Noise Support for AMI	13-Dec-16	17-Feb-17	66
187.3	Format and Usage Out Clarifications	13-Dec-16	21-Apr-17	129
186.4	File Naming Rules	29-Nov-16	14-Jul-17	227
185.2	Section 3 Reserved Word Guideline Update	13-Sep-16	6-Jan-17	115
184.2	Model_name and Signal_name Restriction for POWER and GND Pins	1-Sep-16	6-Jan-17	127
183	[Model Data] Matrix Subparameter Terminology Correction	30-Aug-16	14-Oct-16	45
182	POWER and GND [Pin] signal_name as [Pin Mapping] bus_label	30-Aug-16	14-Oct-16	45
180	Require Unique Pin Names in [Pin]	17-Feb-16	14-Oct-16	240
179	New IBIS-AMI Reserved Parameter Special_Param_Names	13-Oct-15	18-Dec-15	66
165.1	Parameter Passing Improvements for [External Circuit]s	9-Jan-14	15-Dec-17	1436
158.7	AMI Ts4file Analog Buffer Models	20-Feb-13	27-Oct-17	1710
147.6	Back-channel Support	18-Oct-11	10-Mar-17	1970

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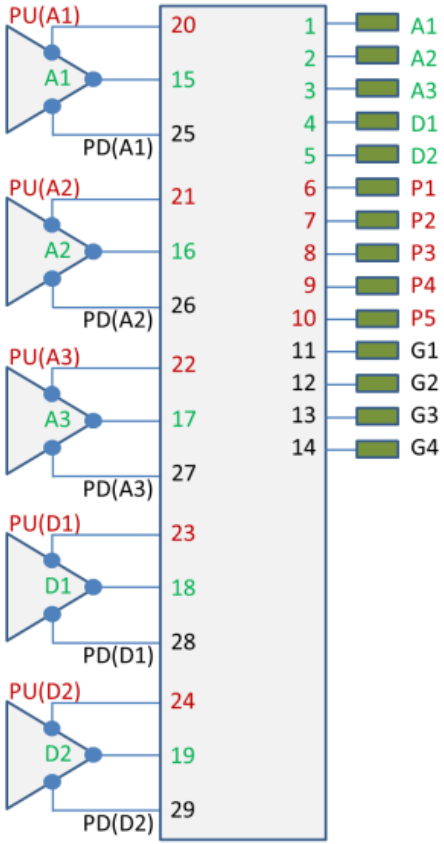
IBIS Interconnect Support

- Improved package modeling is finally here!
  - Touchstone and IBIS-ISS directly supported
  - Explicit locations for buffer, pin, plus die pad
  - On-die power delivery networks

- More detail shared at previous Summits
  - http://ibis.org/summits/feb18/mirmak.pdf

- Additional modifications
  - Voltage and timing measurement locations updated
  - Model, signal name clarifications for POWER and GND
  - Updates to [Pin Mapping] and bus label concepts



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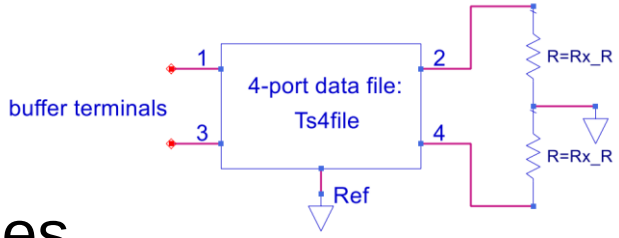
AMI Improvements

- Backchannel support!
  - Buffer models negotiate equalization
- Touchstone for analog buffer models
  - 4-port through paths for Tx and Rx
- New parameter Special_Param_Names
  - Enables EDA functions or user interactions under Model_Specific parameters beyond current IBIS definitions
- Clarifications to Format and Usage Out (parser bug fix)
- Clarification of Format List rules, including default value
- Expanded receiver noise support
  - Alternate name for Rx_Noise: Rx_GaussianNoise
  - New Rx_UniformNoise parameter



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Traditional & Multi-Lingual IBIS Changes

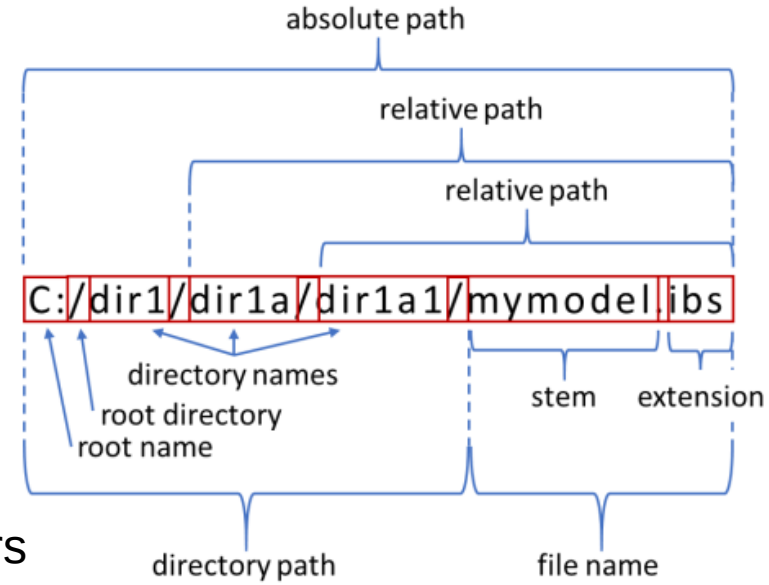
- Parameters may be passed to instances of [External Circuit]

- File and directory clarifications
  - Naming rules for files and directories
  - Cross-OS support is ensured

- [Pin] list names now must be unique
  - Avoids unintentional shorts or other errors

- Reserved word (e.g., GND) rules relaxed

- Package matrices are no longer “subparameters”



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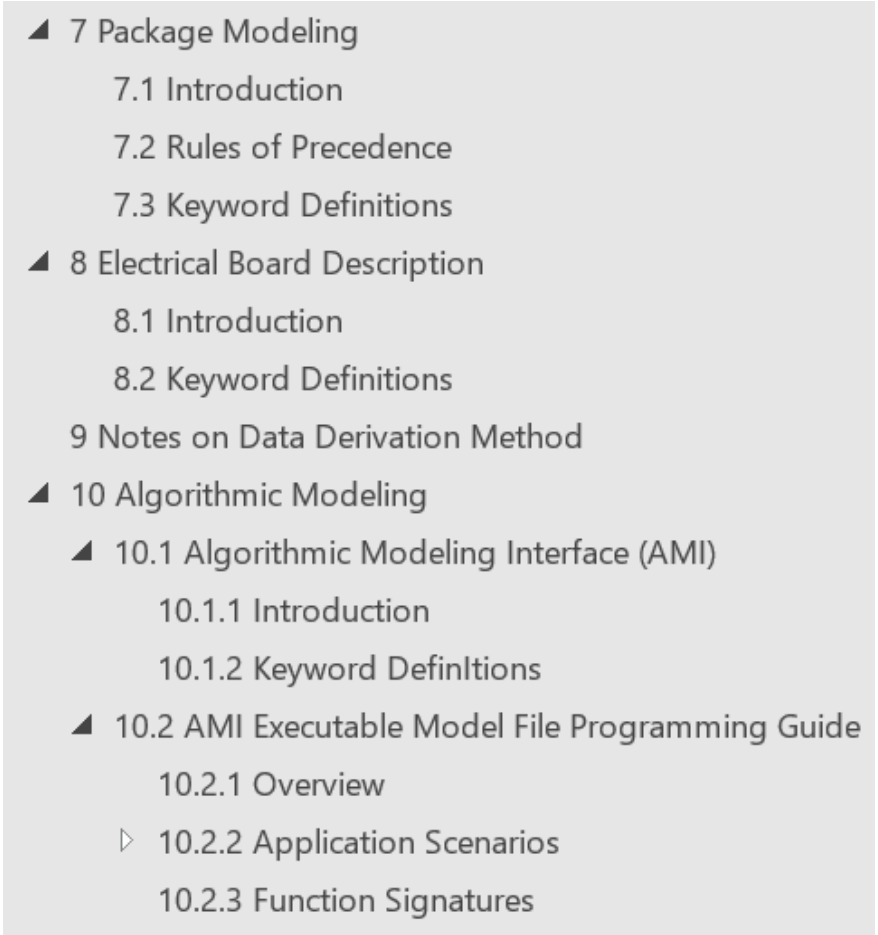
Other Changes

- Organization
  - Three numbered levels
  - Lists of Tables and Figures
  - Hyperlinked Figures and Tables
- Readability improvements
  - Fixes made to grammar and spelling



These improvements create a more readable and more usable document

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IBIS 7.0 Timeline

Target Date	Actual Date	Milestone
4/21/2017	4/21/2017	Vote to establish 7.0 as the next IBIS version passes
…		*BIRD review and acceptance (30 meetings)*
7/20/2018	7/20/2018	7.0 BIRD set accepted
…		*Editorial task group drafts IBIS 7.0*
12/19/2018	12/19/2018	Editorial announces IBIS 7.0 Draft 1 ready Review period begins 12/21 at Open Forum
…		*Work begins to address comments*
1/18/2019	1/18/2019	Editorial announces IBIS 7.0 Draft 2 ready
1/25/2019	1/25/2019	Editorial announces IBIS 7.0 Draft 3 ready
2/22/2019		Vote to ratify 7.0 scheduled for next meeting
3/15/2019		IBIS 7.0 ratified

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BIRDs Excluded from IBIS 7.0

BIRD	Title
166.2	Resolving problems with Redriver Init Flow
181.1	I-V Table Clarifications
190	Clarification for Redriver Flow
195.1	Enabling [Rgnd] and [Rpower] Keywords for Input Models
197.2	New AMI Reserved Parameter DC_Offset

- Two of these expand or clarify traditional IBIS
  - Voltage referencing continues to be point of debate
- Two clarify AMI repeater treatment (re-drivers)
  - Tabled in IBIS-ATM
- DC_Offset looks ahead to DDR5
  - Current focus of IBIS-ATM

Targeted for the next IBIS version – possibly 7.1 or beyond

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What's Next?

- IBIS 7.0 is eligible for an approval vote
  - At least two IBIS Open Forum meetings generally occur with a stable draft before a vote would be taken
- A Known Editorial Issues document is available
  - Mostly clarifications needed in a future release
- A parser will be commissioned upon IBIS 7.0 approval

Your feedback is vital – the window for changes is open… but will close soon

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References

- IBIS Web site: www.ibis.org
  - Links to Task Groups, including Editorial, available there
- Draft Specification
  - IBIS 7.0 Draft 3: www.ibis.org/ver7.0_wip/
- Summit Presentations
  - www.ibis.org/summits/

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