Introducing IBIS 6.0



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

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Agenda

- > IBIS 6.0 in Summary
 - Key Features
 - Changes from IBIS 5.1
- > What problems does 6.0 address?
- > Issues to Resolve
- > What's Next?
- > Questions

Key Features of IBIS 6.0

- > IBIS 6.0 was approved September 20, 2013 – <u>http://www.eda.org/ibis/ver6.0/</u>
- > Major additions focus on IBIS-AMI
 - Adds redriver and retimer support
 - Expands jitter/noise parameters
 - Clarifies analog buffer impedance descriptions
 - Supports IBIS-ISS (Interconnect SPICE Subcircuits) and Touchstone 1.x/2.0

Other Changes from IBIS 5.1

- Clarifications of A/D and D/A converters in [External Model] and [External Circuit]
 - Parameter passing now supported!
- > Additional files supported for IBIS-AMI
 - Including explicit paths
 - Identifiers for individual IBIS-AMI model instances
- List Tips for IBIS-AMI Lists
 - Associates labels with parameter lists
- > Improved organization of the document
 - Easier to read and use

- > How do I model a mid-bus repeater?
 - Recall the repeater types: retimers and redrivers
 - Think of redriver as filtering and/or amplifying analog signals
 - Think of retimer as using clock-data recovery to re-transmit data



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- How do I model a mid-bus repeater?
 - Use [Repeater Pin] to identify RX and TX pins
 - Define "Redriver" or "Retimer" in the .ami parameters file under "Repeater_Type"
 - For Retimers, ensure AMI_GetWave is defined and included



from the IBIS 6.0 specification

- Where to "put" the analog impedance of the buffer?
- What if I can't easily represent the analog behavior of my buffer using traditional IBIS?
 - In 6.0, use IBIS-ISS to represent complex analog buffer behavior
 - Traditional IBIS becomes ideal (TX or RX)



What if your algorithmic model isn't a single file?
Multiple files, in different locations, now supported
From the .ami parameters file...



Issues to Resolve

- Ensuring true IBIS-AMI model compatibility
 - Some models under IBIS 5.x place buffer analog information in the executable (DLL or SO file)
 - This may be a problem for some tools
 - Use of IBIS 6.0 improved analog modeling can help ensure portability



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Issues to Resolve

> Improving IBIS packages

- Two separate approaches being discussed
- Objective is to finalize a package model format that...
 - Can interact with IBIS and related files
 - Supports time- and frequency-domain modeling data in IBIS-ISS format
 - Supports arbitrary numbers of crosstalking signal lines in individual segments
- Target is to include this in the next major IBIS release

What's Next?

- > A parser: IBISCHK6
 - Check new keyword syntax
 - Check new IBIS-AMI parameter syntax
 - Simple checks for IBIS-AMI DLL/SO executables?
 - > Are the required IBIS-AMI functions present?
 - > Do the functions execute (instead of crashing)?
- > Is a parser for IBIS-ISS required?
 - SPICE features used in IBIS-ISS are very common across EDA tools
- > IBIS version updates
 - IBIS continues to target updates twice per year

Questions?