IBIS Chair's Report & Roadmap

Michael Mirmak
Intel Corp.

DesignCon East 2004
IBIS Summit
April 5, 2004

Stunning Progress...

* IBIS 4.1 approved
  - Verilog-AMS and VHDL-AMS are now linked to IBIS!
  - *Flash!* April edition of EDN Japan features discussion of JEITA EDA-WG and consumer applications of IBIS 4.1!
* IBIS 4.0 parser released
  - Ver. 4.0.1 covers all BUGs except BUG80 and BUG82
  - Thanks to the parser licensees for their support!
    * Ansoft
    * Cadence
    * Cisco
    * Huawei
    * Intel
    * LSI Logic
    * Mentor Graphics
    * Synopsys
    * Texas Instruments
    * Zuken
* IBIS 4.1 parser bidding underway
* ICM 1.0 approved and a golden parser distributed
  - Thanks to developer Kelly Green for his considerable efforts
* Membership remains strong despite economic situation
  - 2003 ended with 28 paid members
  - 2004 membership invoices are already being filled
* IBIS Quality Committee continues work

IBIS is an active and growing force in the industry

…And Upcoming Challenges

* Maintain our development pace
* Drive IBIS enhancements in the industry
  – Publish an updated Cookbook
  – Work actively with other modeling standards groups (IEEE, Accelera)
  – Promote 4.1 language extensions in trade publications
* Promote widespread ICM adoption
  – Support the ICM with a cookbook, example models and tool enabling
  – Prepare for ICM 1.5/2.0 (frequency-dependent RLGCs, fixes to known issues)
* Improve international support and interaction
  – Maintain active participation in European IBIS Summits
  – Develop "Electronic Roadshow" to support Asia, Europe and the US with summit-quality teleconference presentations
* Increase the Open Forum's value
  – Expand our membership as we help drive behavioral modeling
  – Develop our public image through web and publication improvements

As always, thank you for your support!

Roadmap Agenda

* IBIS History
  – Specification Revisions
  – Parser Revisions
  – Challenge for the Future
* Call to Action!
  – Proposed Development Guidelines
  – Proposed Two-year Roadmap
  – Futures Subcommittee
  – Cookbook & Training

IBIS History

* ### Specification Revisions
    - IBIS 1.0 – April 1993
    - IBIS 1.1 – June 1993
    - IBIS 2.0 – June 1994
    - IBIS 2.1 – Dec. 1995
    - IBIS 3.0 – June 1997
    - IBIS 3.1 – July 1998
    - IBIS 3.2 – Sept. 1999
    - IBIS 4.0 – July 2002
    - IBIS 4.1 – January 2004

* ### Parser Revisions
    - Ver. 1.0 – July 1995
    - Ver. 2.0 – April 1996
    - Ver. 2.0+ – Aug. 1998
    - Ver. 3.0 – July 2002
    - Ver. 4.0 – Dec. 2003

* ### Average Delivery Times
    - 24 months for a major specification revision
    - 12 months for a minor specification revision
    - 28 months for a parser from final specification revision

---

The Challenge

* ### We need to "close the gaps" to keep IBIS relevant to the industry
    - PC products on an 18 month cycle ("Moore's Law")
    - Increased synergy between transportation, PC and home electronics markets
        * *Example: DVD, Bluetooth* in automobiles*
        * *Cellular telephones, cameras and PCs now integrating*
        * *Traditional PC makers now entering home electronics*
    - New technologies in almost every product generation
    - IBIS is not the only choice for modeling
        * *IBIS universality is a "plus" BUT*
        * *Any perception that IBIS is "behind" is a major negative*

* ### How can we keep IBIS valuable?
    - Support the latest design trends *fast and proactively*
    - Lower barriers to acceptance of new IBIS revisions
    - Lower barriers for users of IBIS features

Call To Action!
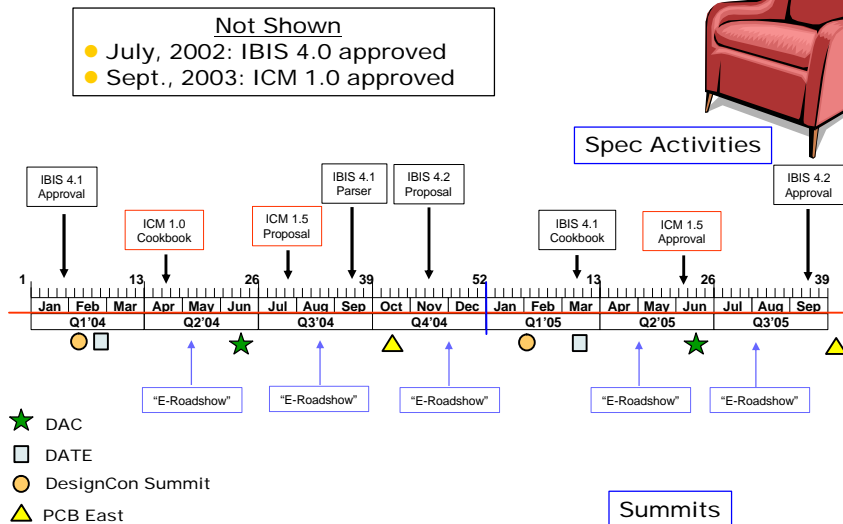
- Support new design technologies
  - Faster release of new specification revisions
    - *Address new technologies with new IBIS features*
    - *Be proactive with features, rather than reactive*
  - Faster release of parsers
    - *Avoid delaying EDA tools or driving custom parsers*
- Lowering barriers for users of IBIS features?
  - Regular Cookbook updates
  - Practical training through web and "E-Roadshow"
- Proposed Development Guidelines
  - Specification-to-parser delay of *6-8 months*
    - *Add in 8-12 months for EDA product integration*
  - *Parser-to-cookbook delay of 6 months*
    - *Cookbook to be available with new EDA tool releases*
  - *Specification revision cycle of 18 months or less*
    - *Major vs. minor to be clarified?*

DesignCon 2004 IBIS Summit

7

Development Timeline

Not Shown
- July, 2002: IBIS 4.0 approved
- Sept., 2003: ICM 1.0 approved

Spec Activities

IBIS 4.1 Approval · ICM 1.0 Cookbook · ICM 1.5 Proposal · IBIS 4.1 Parser · IBIS 4.2 Proposal · IBIS 4.1 Cookbook · ICM 1.5 Approval · IBIS 4.2 Approval

1 · 13 · 26 · 39 · 52 · 13 · 26 · 39

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep
Q1'04 · Q2'04 · Q3'04 · Q4'04 · Q1'05 · Q2'05 · Q3'05

"E-Roadshow"

DAC
DATE
DesignCon Summit
PCB East

Summits

DesignCon 2004 IBIS Summit

8

4

Futures Subcommittee

* "New" Futures Subcommittee
  – Meeting every two weeks
  – To create, discuss and draft IBIS/ICM updates
* Tasks for IBIS 4.2 and Beyobd
  – "Clean up" of language and resolve conflicts
    * Example: [Series Pin Mapping] & [Model Selector] (BIRD87)
  – [External Model] integration issues
    * Example: Acceptable digital states for input ports
  – [External Circuit] usage issues
    * User-definable measurement parameters and delay fixtures
  – Specification "hooks" between ICM and IBIS
* Tasks for ICM
  – Add frequency-dependent RLGC matrix support
  – Resolve known parser assumptions and keyword conflicts

Cookbook & Training

* Cookbook Subcommittee
  – Meeting every two weeks, with Futures Subcommittee
  – To create, edit and distribute Cookbooks
    * *Practical examples of new keywords*
    * *Hints for data extraction and correlation*
    * *See S. Peters' 1997 IBIS 2.1 Cookbook*
  – Separate ICM and IBIS publications
* E-Roadshow
  – Summit-level teleconference presentations for global audiences
    * Foster worldwide interaction, rather than separate IBIS communities
  – Two presentations (60-90 minutes, plus Q&A)
  – Schedule to be tailored for specific location
    * *GMT+1 for Europe (ex. 6 AM US Pacific)*
    * *GMT+6/9 for Asia (ex. 10 PM US Pacific)*

Summary

* A Motto to Remember:
  - How can we keep IBIS valuable to the industry?
    * Support the latest design trends *fast and proactively*
    * Lower barriers to acceptance of new IBIS revisions
    * Lower barriers for users of IBIS features
* Implementation
  - Adopt a regular, aggressive schedule
  - Organize to make changes quickly
    * Two new subcommittees
* Volunteers are welcome!

> Your participation and contributions are critical to IBIS!