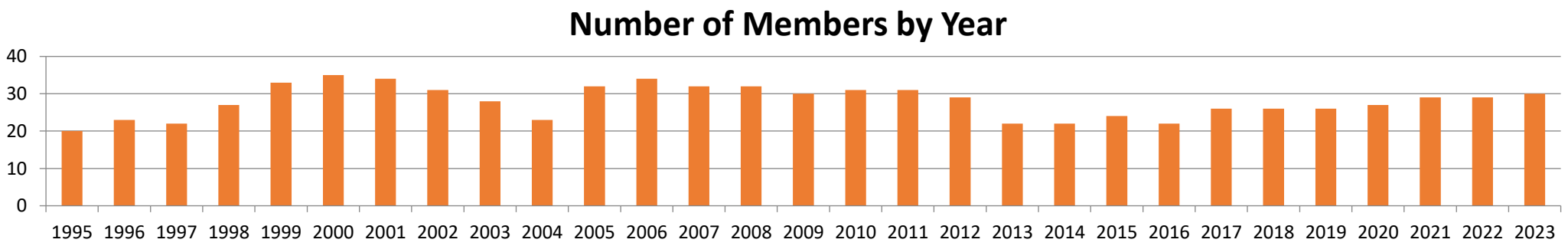
IBIS Chair's Report

Randy Wolff
Siemens EDA
Chair, IBIS Open Forum

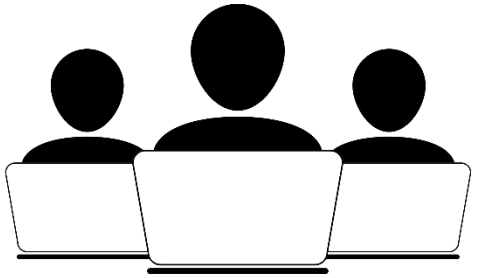
European Hybrid IBIS Summit with IEEE SPI 2023
Aveiro, Portugal
May 10, 2023

30 IBIS Members (Organization-based)



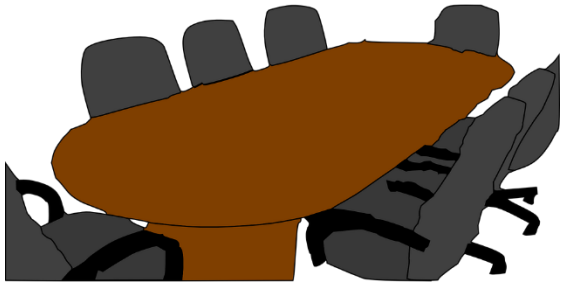
IBIS Officers June 2022- May 2023

Chair:	*Randy Wolff, Siemens EDA*
Vice-Chair:	*Lance Wang, Zuken USA*
Secretary:	*Graham Kus, MathWorks*
Treasurer:	*Bob Ross, Teraspeed Labs*
Librarian:	*Zhiping Yang, MST*
Postmaster:	*Curtis Clark, ANSYS*
Webmaster:	*Steve Parker, Marvell*



- Starting the election process for new officers for 2023
  - Nominations accepted May 17 through May 31
  - Seeking nominations for all roles

IBIS Meetings



- Weekly teleconferences
  - Quality task group (Tuesdays, 09:00 PT)
  - Advanced Technology Modeling (ATM) task group (Tuesdays, 12:00 PT)
  - Interconnect task group (Wednesdays, 08:00 PT)
  - Editorial task group (suspended)
- IBIS Open Forum teleconference every 3 weeks (Fridays, 08:00 PT)
- IBIS Summit meetings (USA and international)
  - DesignCon, IEEE SPI, IEEE EMC+SIPI, Shanghai, Taipei, Tokyo (JEITA-organized)
- Participants: ~280 in 2022

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, and Michael McNair
- SAE ITC provides financial, legal, and other services
- https://www.sae-itc.com/

Task Groups

- Advanced Technology Modeling Task Group
  - Chair: Arpad Muranyi, Siemens EDA
  - https://ibis.org/atm_wip/
  - Develop non-interconnect technical BIRDs
- Editorial Task Group
  - Chair: Michael Mirmak, Intel
  - https://ibis.org/editorial_wip/
  - Produce IBIS specification documents
- Interconnect Task Group
  - Chair: Michael Mirmak, Intel
  - https://ibis.org/interconn_wip/
  - Develop on-die/package/module/connector interconnect modeling BIRDs
- Quality Task Group
  - Chair: Bob Ross, Teraspeed Labs
  - https://ibis.org/quality_wip/
  - Oversee IBISCHK parser testing and development

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)
- 2002-2006 **IBIS 4.0-4.2**:
  - Receiver models
  - AMS languages
- 2007-2012 **IBIS 5.0-5.1**:
  - IBIS-AMI SerDes models
  - Power-aware model

Celebrating 30 Years in 2023!

I/O Buffer Information Specification

- 2013-2015 **IBIS 6.0-6.1**:
  - PAM4 multi-level signaling
  - Power delivery package models
- 2019 **IBIS 7.0**:
  - Back-channel time-domain support
  - Interconnect modeling using IBIS-ISS and Touchstone
- 2021 **IBIS 7.1:**
  - DDRx IBIS-AMI support
  - Electrical Module Description (EMD)
  - IBIS-AMI back-channel statistical optimization
- 2023 **IBIS 7.2:**
  - Redriver simulation flow fixes
  - PAMn IBIS-AMI support

Other Work

- 1995: **ANSI/EIA-656 (IBIS 2.1 International standard)**
- 1999: **ANSI/EIA-656-A (IBIS 3.2 International standard)**
- 2001: **IEC 62014-1 (IBIS 3.2 International standard)**
- 2003: **Interconnect Model Specification (ICM 1.0)**
- 2006: **ANSI/EIA-656-B (IBIS 4.2 International standard)**
- 2009: **Touchstone 2.0**
  - Official Touchstone donated from Agilent/Keysight
- 2011: **IBIS-ISS 1.0 (Interconnect SPICE Subcircuit)**
  - Subset of HSPICE
- **IBISCHK**: IBIS file syntax parser
  - Current version 7.2.0
  - Source code available for purchase
  - Compiled executables available free of charge
- **TSCHK2**: Touchstone 2.0 file syntax parser
  - Current version 2.0.1
  - Source code available for purchase
  - Compiled executables available free of charge

What's Next for IBIS?

- IBIS Open Forum's task groups are discussing these topics:
  - Expanded system-level perspective
    - Clock/data relationships, timing information, equalization training
  - Power Integrity focused modeling
    - Improved Power Supply Induced Jitter (PSIJ) modeling (BIRD220 and others)
    - Chip-level Standard Power Integrity Model (SPIM, BIRD223)
    - Voltage regulator, diode, and inductor models
  - Multi-level analog buffer modeling
  - Interconnect Modeling
    - Touchstone 3.0 with Pole/Residue and port mapping support
    - Touchstone 1.x expansions
    - IBIS-ISS expansions
  - What else should we be looking at? Bring your ideas!

Participation in IBIS

- The success of IBIS depends on active participation and volunteering
- Bringing your ideas and talents to IBIS
  - Task groups for technical discussions and document editing
  - IBIS email reflectors
  - Open Forum teleconferences for event planning and voting
  - Summit presentations
  - IBIS Board and task group volunteering
  - Writing BIRDs – Buffer Issue Resolution Documents
    - Official method for submitting a proposed change to the IBIS specification
    - Many developed collaboratively in task groups
    - Discussed and voted on in Open Forum meetings

IBIS Board Opportunities

- Nominations of IBIS officers in late May
- New board positions start mid-June
- All positions are open
- Potential to modernize board positions
  - Currently: Chair, Vice-chair, Secretary, Treasurer, Librarian, Webmaster, Postmaster, and University Relations (not listed in Policies & Procedures)
  - Better alignment with needs: Chair, Vice-chair/Summits Lead, Secretary, Treasurer/Membership, Web/Email, Software Lead, University Relations
  - Requires change to Policies & Procedures
- Remember the importance of mentoring younger engineers and encouraging them to participate in IBIS

IBIS Website Resources

IBIS Summits

Task Group Info

Member FAQ

Spec documents

*IRDs

Email support

Syntax Parser Downloads

[Thank You]

IBIS Open Forum:
Web: https://ibis.org
Email: info@ibis.org

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