IBIS Chair’s Report

Douglas Burns
SI-Clarity
Outgoing Chair, IBIS Open Forum

2026 IEEE SPI Conference: IBIS Summit
Turin, Italy
June 17, 2026

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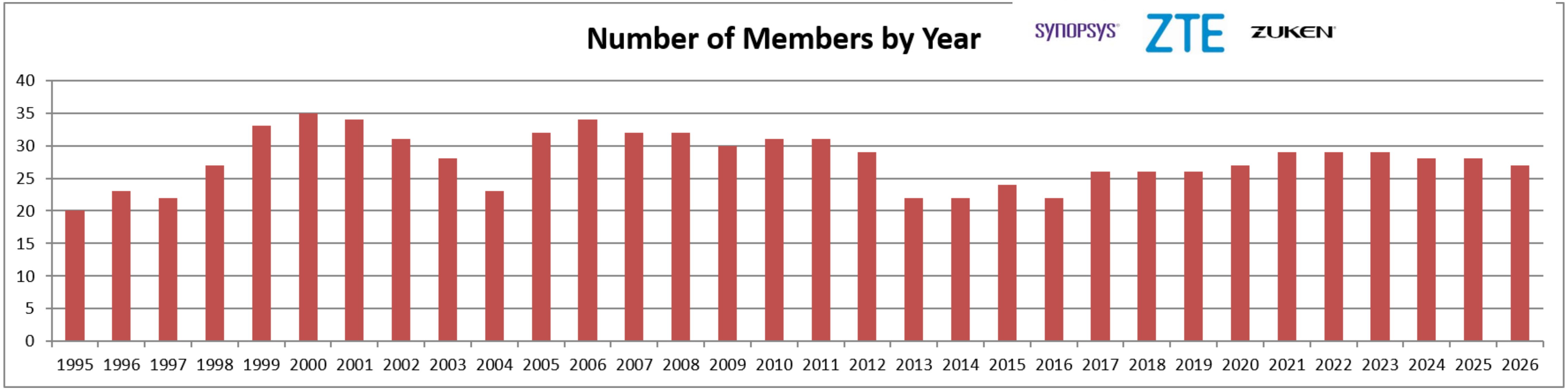
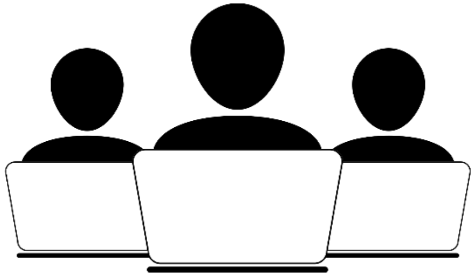


IBIS Officers June 2025- May 2026

Elected



Chair: *Douglas Burns, SI-Clarity*

Vice-Chair: *Walter Katz, Mathworks*

Secretary: *Graham Kus, Mathworks*

Treasurer: *Randy Wolff, Siemens EDA*

Librarian: *Zhiping Yang, PCB Automation & MST*

Postmaster: *Curtis Clark, Ansys*

Webmaster: *Steve Parker, Marvell*

- University Relations: *Chulsoon Hwang, MST*
- IEEE DASC IBIS Liaison: *Michael Mirmak, Intel*

Appointed

IBIS Officers June 2026- May 2027

- Elections to be concluded June 12, 2026
  - See IBIS.org for results

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 (Fridays, 8:00 PT when no IBIS OF meeting)
- IBIS Open Forum teleconference every 3 weeks (Fridays, 08:00 PT)
- IBIS Summit meetings (USA and international)
  - IEEE SPI Conference: , IEEE SPI, IEEE EMC+SIPI, Shanghai, Tokyo (JEITA-organized)
- Participants: ~330 in 2025

SAE ITC

- SAE Industry Technologies Consortia is the parent organization of the IBIS Open Forum
- IBIS is assisted by SAE employees Tammy Patton, Richard DeMary, and Peter Doty
- SAE ITC provides financial, legal, and other services
- https://www.sae-itc.com/

An SAE International Affiliate

2025 IBIS Membership Fees

- IBIS Membership (2026)
  - Company >50 $1600
  - Company < =50 $ 800
  - Educational $ 500
- IBIS Sponsorship $1500/yr
  - 5 Summits
  - Social Media
- IBIS Parsers (IBSCHK & TSCHK)
  - Option 1: Annual Payment
    - $2400/yr Includes Major releases and Bug Fixes)
  - Option 2: One Time Purchase
    - $4000 for IBISCHK (One Time Charge)
    - $1500 for TSCHK (One Time Charge)
- Contact IBIS offices for More information

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
  - Acting Chair: Randy Wolff, Siemens EDA
  - 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
- 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
- 2025 IBIS 8.0
  - Released December 5, 2025
- 2026 IBISCHK 8.0
  - In Development
  - Target Release June 2026

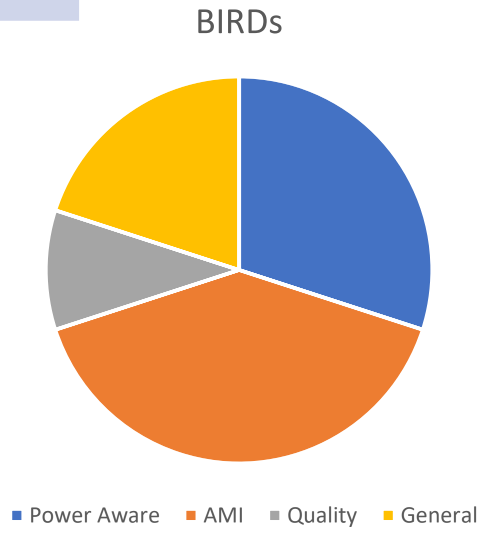
Other Work

- 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
- 2024: **Touchstone 2.1**
  - Clarify S-parameter Definition
  - [End] Keyword Corrections and Other Editorial Changes
  - Per Port Reference Resistance on the Option Line
  - Clarify File Extension Rule for Touchstone 1.0 and 1.1 Files
- **IBISCHK**: IBIS file syntax parser
  - Current version 7.2.1
  - Source code available for purchase
  - Compiled executables available free of charge
  - Vesion 8.0 in development
- **TSCHK2**: Touchstone 2.1 file syntax parser
  - Current version 2.1.0
  - Source code available for purchase
  - Compiled executables available free of charge

IBIS Version 8.0

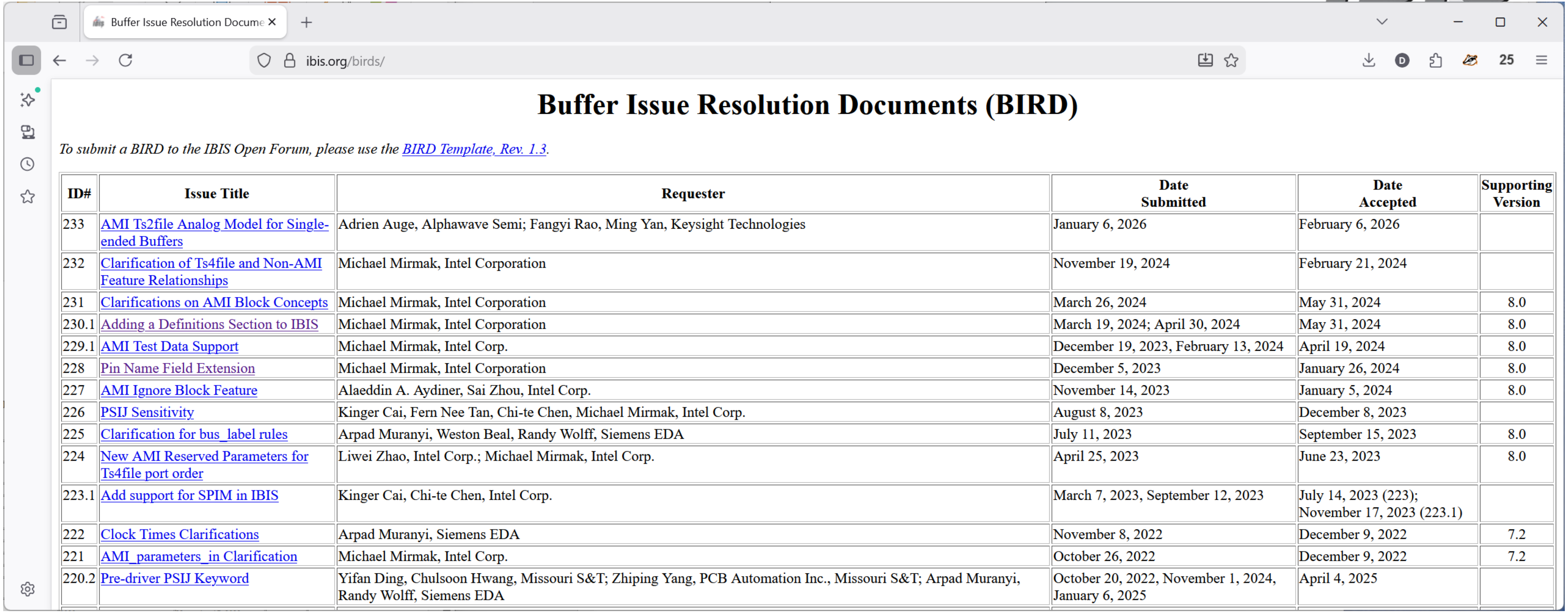
Current official BIRD content

BIRD ID	BIRD Title	Approval Date	Note
224	New AMI Reserved Parameters for Ts4file port order	June 23, 2023	AMI
225	Clarification for bus_label rules	September 15, 2023	Power Aware
227	AMI Ignore Block Feature	January 5, 2024	AMI
228	Pin Name Field Extension	January 26, 2024	General
229.1	AMI Test Data Support	April 19, 2024	AMI, Quality
230.1	Adding a Definitions Section to IBIS	May 31, 2024	General
231	Clarifications on AMI Block Concepts	May 31, 2024	AMI



- Motions were approved on June 21, 2024
- Will fix many editorial issues in IBIS 7.2
  - ver7_2_known_issues.docx

Specification Development

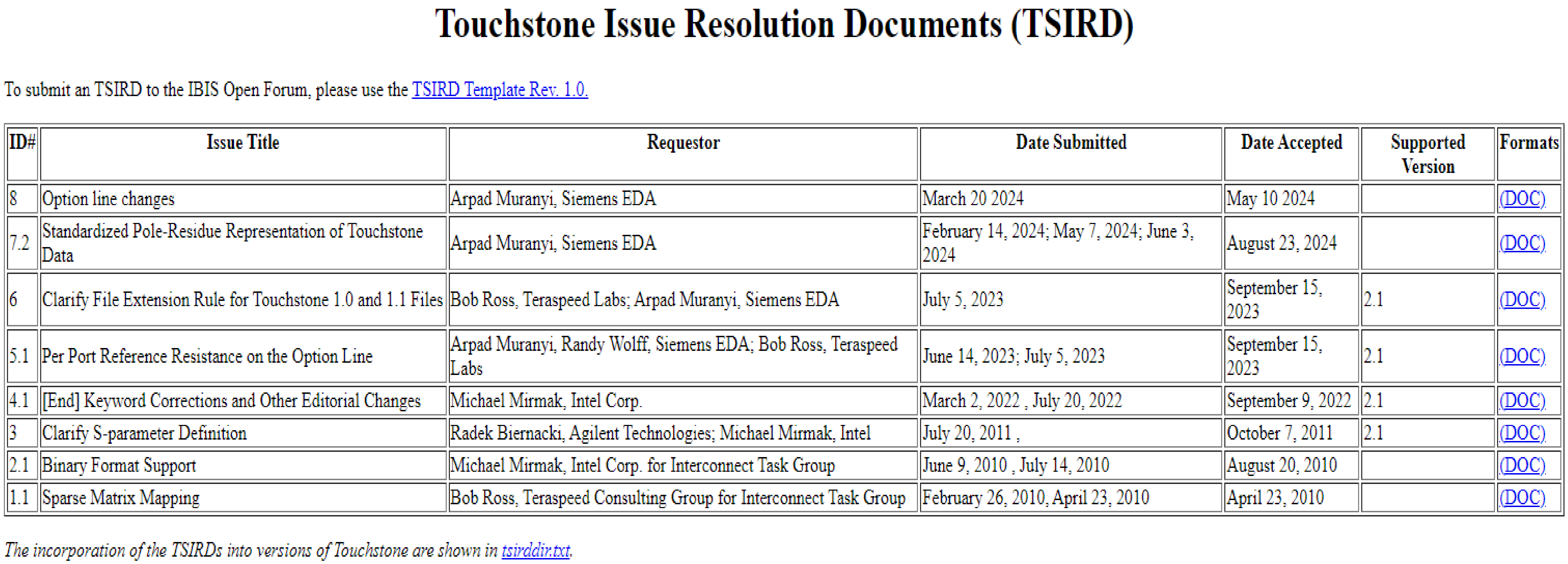


Buffer Issue Resolution Documents (BIRD)

To submit a BIRD to the IBIS Open Forum, please use the [BIRD Template, Rev. 1.3](#).

ID#	Issue Title	Requester	Date Submitted	Date Accepted	Supporting Version
233	AMI Ts2file Analog Model for Single-ended Buffers	Adrien Auge, Alphawave Semi; Fangyi Rao, Ming Yan, Keysight Technologies	January 6, 2026	February 6, 2026	
232	Clarification of Ts4file and Non-AMI Feature Relationships	Michael Mirmak, Intel Corporation	November 19, 2024	February 21, 2024	
231	Clarifications on AMI Block Concepts	Michael Mirmak, Intel Corporation	March 26, 2024	May 31, 2024	8.0
230.1	Adding a Definitions Section to IBIS	Michael Mirmak, Intel Corporation	March 19, 2024; April 30, 2024	May 31, 2024	8.0
229.1	AMI Test Data Support	Michael Mirmak, Intel Corp.	December 19, 2023, February 13, 2024	April 19, 2024	8.0
228	Pin Name Field Extension	Michael Mirmak, Intel Corporation	December 5, 2023	January 26, 2024	8.0
227	AMI Ignore Block Feature	Alaeddin A. Aydiner, Sai Zhou, Intel Corp.	November 14, 2023	January 5, 2024	8.0
226	PSIJ Sensitivity	Kinger Cai, Fern Nee Tan, Chi-te Chen, Michael Mirmak, Intel Corp.	August 8, 2023	December 8, 2023	
225	Clarification for bus_label rules	Arpad Muranyi, Weston Beal, Randy Wolff, Siemens EDA	July 11, 2023	September 15, 2023	8.0
224	New AMI Reserved Parameters for Ts4file port order	Liwei Zhao, Intel Corp.; Michael Mirmak, Intel Corp.	April 25, 2023	June 23, 2023	8.0
223.1	Add support for SPIM in IBIS	Kinger Cai, Chi-te Chen, Intel Corp.	March 7, 2023, September 12, 2023	July 14, 2023 (223); November 17, 2023 (223.1)	
222	Clock Times Clarifications	Arpad Muranyi, Siemens EDA	November 8, 2022	December 9, 2022	7.2
221	AMI_parameters_in Clarification	Michael Mirmak, Intel Corp.	October 26, 2022	December 9, 2022	7.2
220.2	Pre-driver PSIJ Keyword	Yifan Ding, Chulsoon Hwang, Missouri S&T; Zhiping Yang, PCB Automation Inc., Missouri S&T; Arpad Muranyi, Randy Wolff, Siemens EDA	October 20, 2022, November 1, 2024, January 6, 2025	April 4, 2025	

Specification Development



Touchstone Issue Resolution Documents (TSIRD)

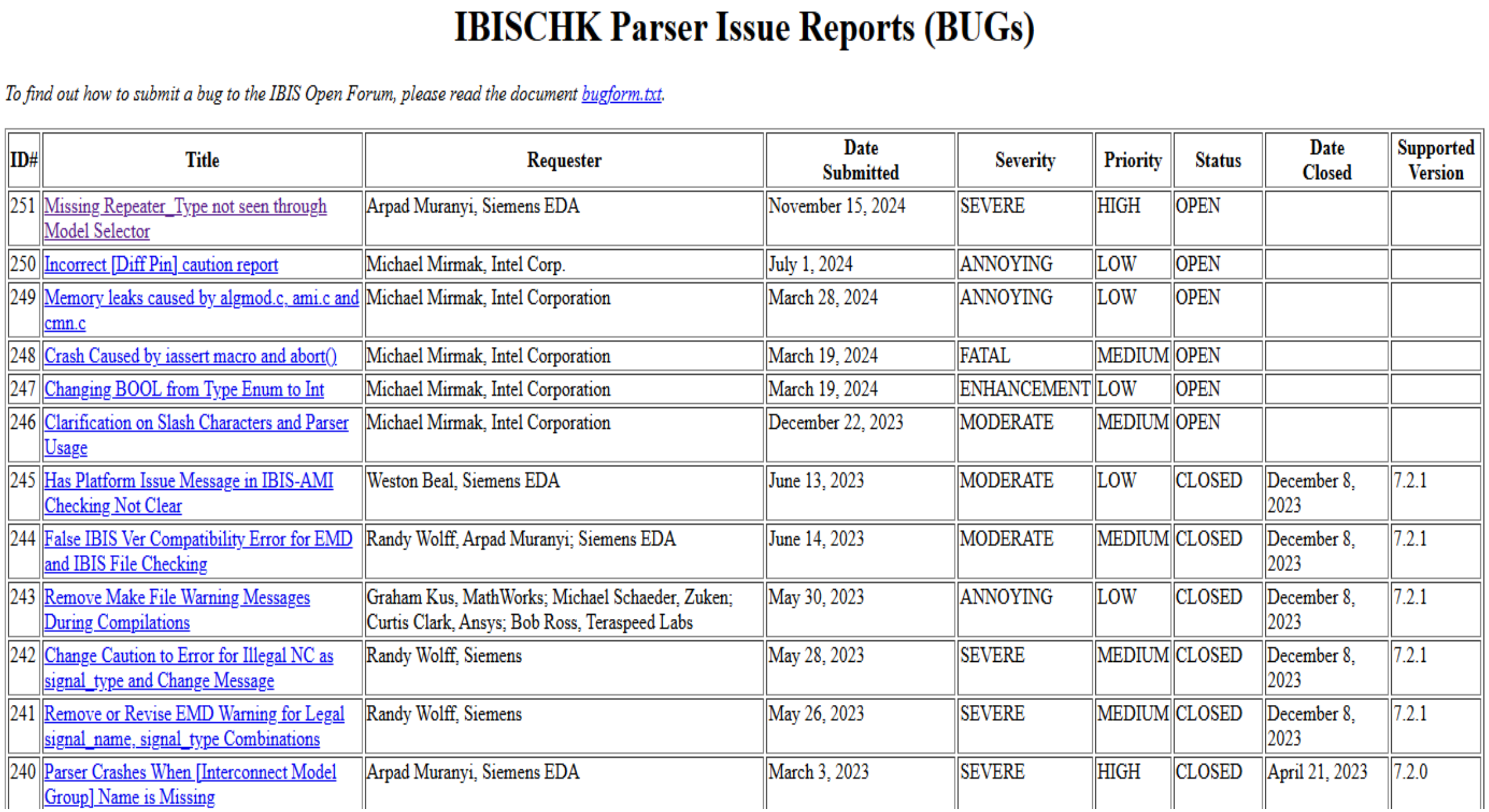
To submit an TSIRD to the IBIS Open Forum, please use the TSIRD Template Rev. 1.0.

ID#	Issue Title	Requestor	Date Submitted	Date Accepted	Supported Version	Formats
8	Option line changes	Arpad Muranyi, Siemens EDA	March 20 2024	May 10 2024		(DOC)
7.2	Standardized Pole-Residue Representation of Touchstone Data	Arpad Muranyi, Siemens EDA	February 14, 2024; May 7, 2024; June 3, 2024	August 23, 2024		(DOC)
6	Clarify File Extension Rule for Touchstone 1.0 and 1.1 Files	Bob Ross, Teraspeed Labs; Arpad Muranyi, Siemens EDA	July 5, 2023	September 15, 2023	2.1	(DOC)
5.1	Per Port Reference Resistance on the Option Line	Arpad Muranyi, Randy Wolff, Siemens EDA; Bob Ross, Teraspeed Labs	June 14, 2023; July 5, 2023	September 15, 2023	2.1	(DOC)
4.1	[End] Keyword Corrections and Other Editorial Changes	Michael Mirmak, Intel Corp.	March 2, 2022 , July 20, 2022	September 9, 2022	2.1	(DOC)
3	Clarify S-parameter Definition	Radek Biernacki, Agilent Technologies; Michael Mirmak, Intel	July 20, 2011 ,	October 7, 2011	2.1	(DOC)
2.1	Binary Format Support	Michael Mirmak, Intel Corp. for Interconnect Task Group	June 9, 2010 , July 14, 2010	August 20, 2010		(DOC)
1.1	Sparse Matrix Mapping	Bob Ross, Teraspeed Consulting Group for Interconnect Task Group	February 26, 2010, April 23, 2010	April 23, 2010		(DOC)

The incorporation of the TSIRDs into versions of Touchstone are shown in tsirddir.txt.

IBISCHK Development

- The latest parser 7.2.1 was delivered on December 21, 2023
- Covers 6 BUG fixes (BUG 239 and BUG 241-245)
  - https://ibis.org/bugs/ibischk/
- 6 more bugs found and classified after IBISCHK 7.2.1
- IBISCHK8 in development
  - Target Release June 2026

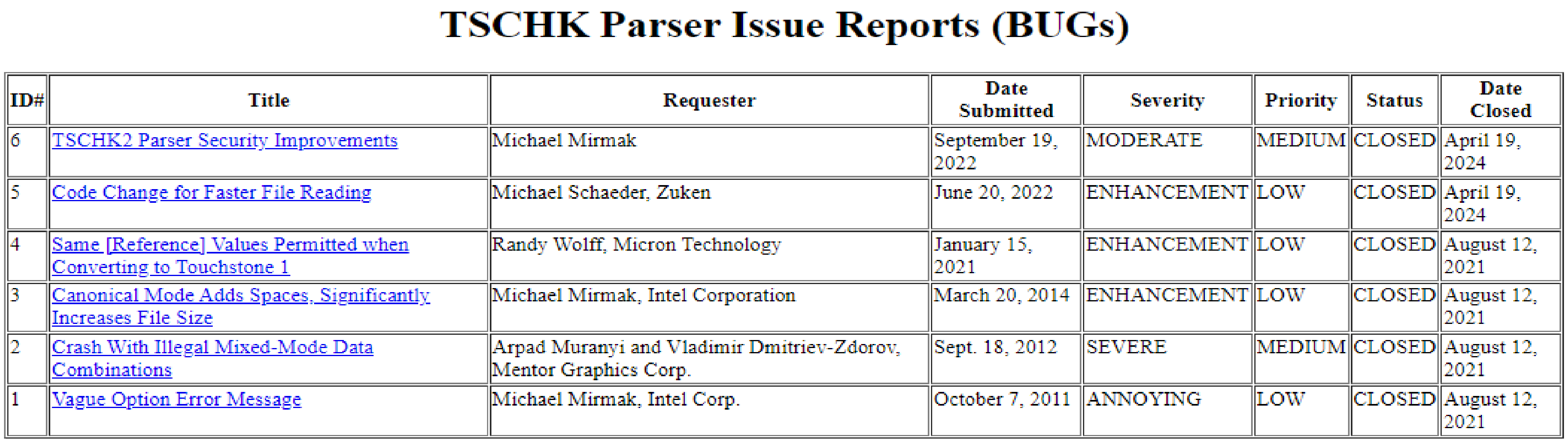


IBISCHK Parser Issue Reports (BUGs)

To find out how to submit a bug to the IBIS Open Forum, please read the document bugform.txt.

ID#	Title	Requester	Date Submitted	Severity	Priority	Status	Date Closed	Supported Version
251	Missing Repeater_Type not seen through Model Selector	Arpad Muranyi, Siemens EDA	November 15, 2024	SEVERE	HIGH	OPEN		
250	Incorrect [Diff Pin] caution report	Michael Mirmak, Intel Corp.	July 1, 2024	ANNOYING	LOW	OPEN		
249	Memory leaks caused by algmod.c, ami.c and cmn.c	Michael Mirmak, Intel Corporation	March 28, 2024	ANNOYING	LOW	OPEN		
248	Crash Caused by iassert macro and abort()	Michael Mirmak, Intel Corporation	March 19, 2024	FATAL	MEDIUM	OPEN		
247	Changing BOOL from Type Enum to Int	Michael Mirmak, Intel Corporation	March 19, 2024	ENHANCEMENT	LOW	OPEN		
246	Clarification on Slash Characters and Parser Usage	Michael Mirmak, Intel Corporation	December 22, 2023	MODERATE	MEDIUM	OPEN		
245	Has Platform Issue Message in IBIS-AMI Checking Not Clear	Weston Beal, Siemens EDA	June 13, 2023	MODERATE	LOW	CLOSED	December 8, 2023	7.2.1
244	False IBIS Ver Compatibility Error for EMD and IBIS File Checking	Randy Wolff, Arpad Muranyi; Siemens EDA	June 14, 2023	MODERATE	MEDIUM	CLOSED	December 8, 2023	7.2.1
243	Remove Make File Warning Messages During Compilations	Graham Kus, MathWorks; Michael Schaeder, Zuken; Curtis Clark, Ansys; Bob Ross, Teraspeed Labs	May 30, 2023	ANNOYING	LOW	CLOSED	December 8, 2023	7.2.1
242	Change Caution to Error for Illegal NC as signal_type and Change Message	Randy Wolff, Siemens	May 28, 2023	SEVERE	MEDIUM	CLOSED	December 8, 2023	7.2.1
241	Remove or Revise EMD Warning for Legal signal_name, signal_type Combinations	Randy Wolff, Siemens	May 26, 2023	SEVERE	MEDIUM	CLOSED	December 8, 2023	7.2.1
240	Parser Crashes When [Interconnect Model Group] Name is Missing	Arpad Muranyi, Siemens EDA	March 3, 2023	SEVERE	HIGH	CLOSED	April 21, 2023	7.2.0

TSCHK Development



TSCHK Parser Issue Reports (BUGs)

ID#	Title	Requester	Date Submitted	Severity	Priority	Status	Date Closed
6	TSCHK2 Parser Security Improvements	Michael Mirmak	September 19, 2022	MODERATE	MEDIUM	CLOSED	April 19, 2024
5	Code Change for Faster File Reading	Michael Schaeder, Zuken	June 20, 2022	ENHANCEMENT	LOW	CLOSED	April 19, 2024
4	Same [Reference] Values Permitted when Converting to Touchstone 1	Randy Wolff, Micron Technology	January 15, 2021	ENHANCEMENT	LOW	CLOSED	August 12, 2021
3	Canonical Mode Adds Spaces, Significantly Increases File Size	Michael Mirmak, Intel Corporation	March 20, 2014	ENHANCEMENT	LOW	CLOSED	August 12, 2021
2	Crash With Illegal Mixed-Mode Data Combinations	Arpad Muranyi and Vladimir Dmitriev-Zdorov, Mentor Graphics Corp.	Sept. 18, 2012	SEVERE	MEDIUM	CLOSED	August 12, 2021
1	Vague Option Error Message	Michael Mirmak, Intel Corp.	October 7, 2011	ANNOYING	LOW	CLOSED	August 12, 2021

- The latest parser 2.1.0 was delivered on April 19, 2024
- Covers 2 BUG fixes (BUG 5 and BUG 6)
    - https://ibis.org/bugs/tschk/
- TSCHK3 is under planning process for 2026

Recent and Future Developments in 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
    - PSIJ related BIRD220.2
    - SPIM for transient analysis
    - Voltage regulator, diode, and inductor models
  - Multi-level analog buffer modeling
  - Interconnect Modeling
    - Finalize Touchstone 3.0, including size reduction (pole-residue support), port mapping, and referencing documentation
    - Updates to IBIS Interconnect and EMD for Touchstone 3.0, including new referencing types and port maps
    - Expansion of IBIS-ISS to cover W-element “wrappers” for Touchstone data
  - Quality and Testing
    - IBISCHK8 parser development
- 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
    - Social Media Ideas
    - 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

Participation

IBIS Website Resources

IBIS Summits

Task Group Info

Member FAQ

Spec documents

*IRDs

Email support

Syntax Parser Downloads

Welcome to the IBIS Open Forum

- **Upcoming Events**
- **Past Summits**

- **Open Forum**
  - **Minutes**
- **Regional Forums**
  - **China**
- **Task Groups**
  - **ATM**
  - **Quality**
  - **Interconnect**
  - **Editorial**
- **Members**
  - **Membership FAQ**
  - **Roster**

- **Specifications**
  - **BIRDs**
  - **ISSIRDs**
  - **TSIRDs**
- **Models**

- **Support**
  - **Model Review**
  - **Training**
- **FREE Tools**
- **IBIS Parsers**
  - **IBISCHK**
  - **IBISCHK Bugs**
  - **TSCHK**
  - **TSCHK Bugs**
- **IBIS Cookbook**
- **Accuracy Handbook**
- **IBIS Quality Spec**

- **Site Map**
- **About IBIS**
  - **Officers**
  - **Articles**
  - **FAQ**

NEW IBIS Version 8.0 is approved and available for download!

NEW 2026 Hybrid DesignCon IBIS Summit Registration
Register to join the meeting on-line or in-person in Santa Clara, CA on Friday, February 27, 2026

Our Specifications

I/O Buffer Information Specification	(IBIS 8.0) (SAE/EIA-STD-656-B) (IEC-62014-1)
IBIS Interconnect Modeling Specification	(ICM 1.1) (SAE/GEIA-STD-0001)
IBIS Interconnect SPICE Subcircuit Specification	(IBIS-ISS 1.0)
Touchstone® File Format Specification	(Touchstone 2.1)

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The IBIS Open Forum is the industry organization responsible for the management of the IBIS specifications and standards including IBIS, IBIS-AMI, IBIS-ISS, ICM, and Touchstone. The Open Forum meets every three weeks by teleconference. Membership is open to all interested companies. If you are interested in joining the IBIS Open Forum, please contact the IBIS Open Forum Chair or any of the IBIS Officers.

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