

IBIS Projects 2011



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IBIS Organization

- TechAmerica (www.techamerica.org)
 - Top level organization (offices around the world)
 - Merger of several standards and trade organizations
 - IBIS under SSTC (Standards and Technology Council)
- IBIS Officers 2010 - 2011
 - Chair: Michael Mirmak, Intel Corporation
 - Vice-Chair: Lance Wang, IO Methodology
 - Librarian: Anders Ekholm, Ericsson
 - Secretary: Randy Wolff, Micron Technology
 - Webmaster: Syed Huq, Cisco Systems
 - Postmaster: Mike LaBonte, Cisco Systems
 - (Past Chair): Bob Ross, Teraspeed Consulting Group



**TERASPEED
CONSULTING
GROUP**

IBIS Active Since 1993

- Regular IBIS meetings
 - Teleconference/Web meetings every 3 weeks
 - Several standards and documents and parsers
- IBIS Summits (about 5-6 per year)
 - China, Taiwan, Japan, Europe, and USA (2)
- Active task groups with leading experts
 - **Advanced Technology Modeling** - AMI work
 - **Quality** - IBIS Quality Specification
 - **Interconnect** - Touchstone Spec., IBIS-ISS, MCP, ICM
 - **IBIS Model Review** - Free review service
 - **Editing** - Reformatting IBIS document



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Current Specifications and Parsers

- IBIS Version 5.0
 - Power distribution modeling (SSO)
 - EMI/EMC issues
 - IBIS-AMI Introduced
 - Other features such as threshold area
- IBISCHK5 Version 5.0.6
 - [Ramp] dV Caution check and other BUGs fixed
- Touchstone 2.0
 - Mixed-mode, per-port reference impedance, format improvements
- TSCHK2 Version 2.0.0
- IBIS Quality Specification



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Project Details (I)

- IBIS-ISS (IBIS-Interconnect SPICE Subcircuits)
 - IBIS connection with Spice, Specification near approval
 - Mostly an HSPICE subset with Synopsys permission
 - Under review, revision
- IBIS-AMI (IBIS-Algorithmic Model Interface)
 - Cleanup of specification and flow
 - New features under discussion for SerDes, back channel modeling, and repeaters
- IBIS Version 5.1, 5.2
 - Would include IBIS-AMI advances and IBIS-ISS linkages
 - Re-formatting into true .doc and .pdf document with true graphics (starting point is Version 5.0)



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IBIS Format change

- Pending IBIS Version 5.1

Keyword: [IBIS Ver]

Required: Yes

Description: Specifies the IBIS template version. This keyword informs electronic parsers of the kinds of data types that are present in the file.

Usage Rules: [IBIS Ver] must be the first keyword in any IBIS file. It is normally on the first line of the file, but can be preceded by comment lines that must begin with a "|".

Example:

```
[IBIS Ver] 5.0 | Used for template variations
```

- Existing IBIS Version 5.0

| **Keyword:** [IBIS Ver]

| **Required:** Yes

| **Description:** Specifies the IBIS template version. This keyword informs electronic parsers of the kinds of data types that are present in the file.

| **Usage Rules:** [IBIS Ver] must be the first keyword in any IBIS file. It is normally on the first line of the file, but can be preceded by comment lines that must begin with a "|".

[IBIS Ver] 5.0 | Used for template variations



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Project Details (2)

- MCP (Model Connection Protocol)
 - Allows connections to die, package, board, and more
 - Specification format being discussed (after IBIS-ISS review)
 - Signal and power path grouping
- Touchstone Version 2.1 (or 3.0) features
 - Sparse matrix mapping
 - Binary format
- IBISCHK5 Version 5.0.X
 - Open, future BUGS being addressed
- Quality Task Group
 - Test load proposal (links via IBIS-ISS)
 - Correlation investigation

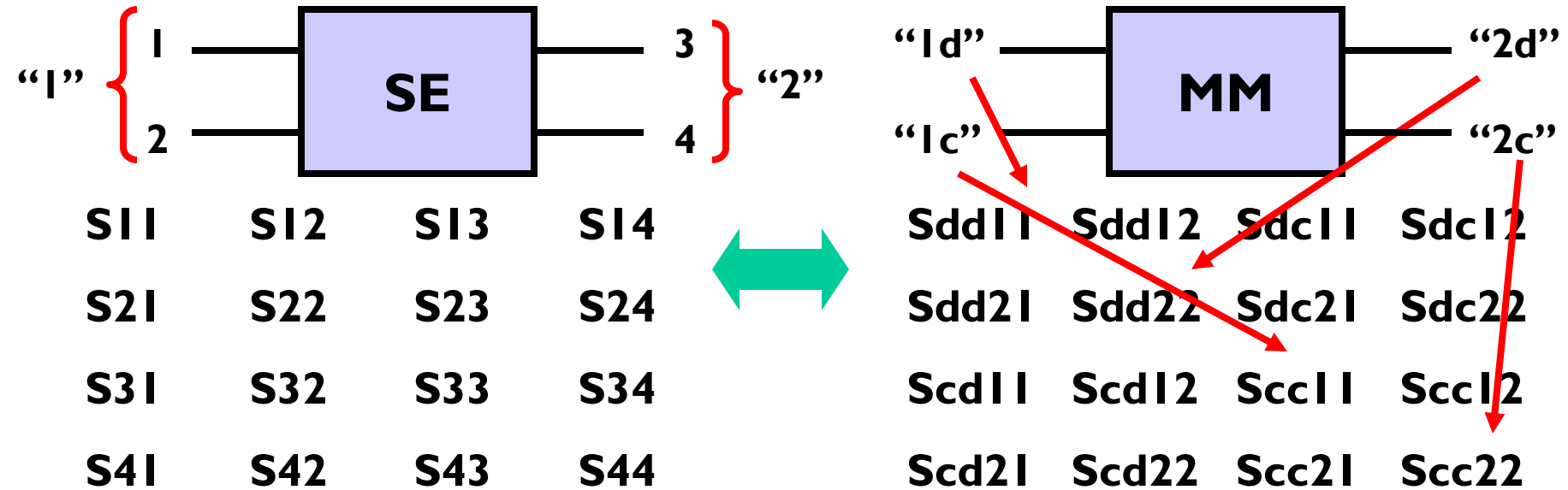
Touchstone 2.0 Features

- Some industry adoption
 - Thirteen keywords for details
 - tschk2: checks and converts Version 1.0/2.0
- Features
 - Individual port reference impedances
 - General mixed-mode syntax (example shown)
 - Diagonal centric
 - Supports single-ended and mixed-mode ports
 - In mixed-mode, names the single-ended ports



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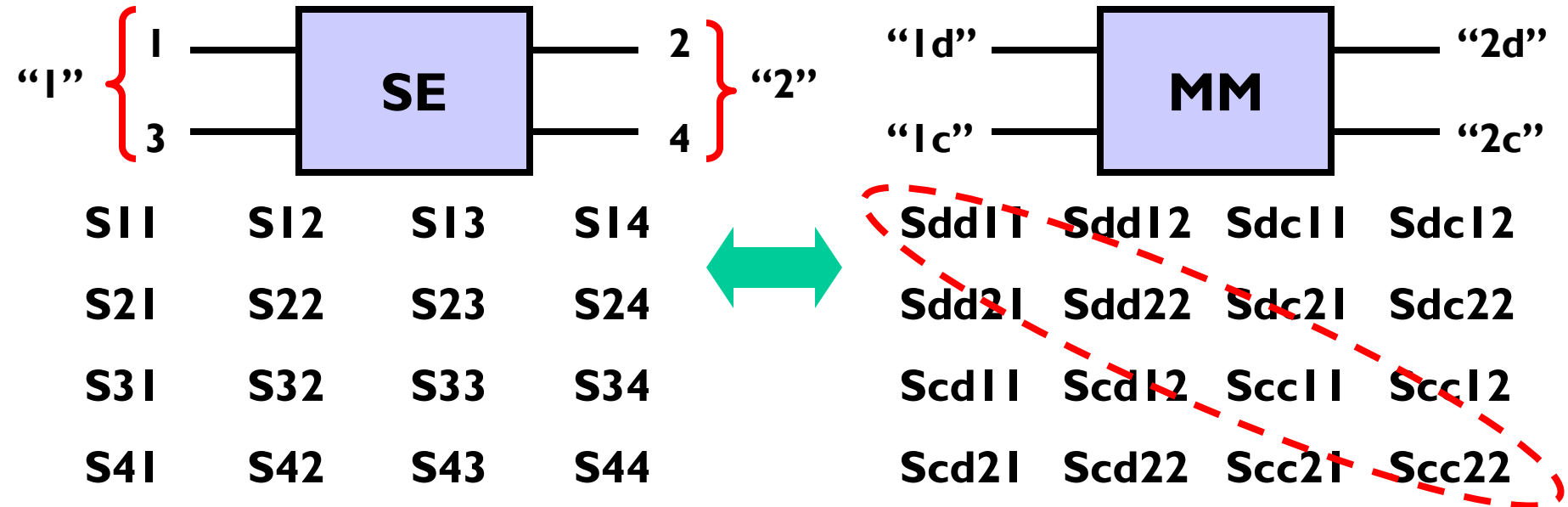
[Mixed-Mode Order] D1,2 D3,4 C1,2 C3,4 (1,2 and 3,4 port-pairs by position)



pos	entry	MM
1	D1,2	"1"
2	D3,4	"2"
3	C1,2	"1"
4	C3,4	"2"

**Diff Port notation
by position,
numbers for SE
ports**

[Mixed-Mode Order] D1,3 D2,4 C1,3 C2,4 (1,3 and 2,4 port-pairs by position)



pos	entry	MM
1	D1,3	"1"
2	D2,4	"2"
3	C1,3	"1"
4	C2,4	"2"

**Diff Ports
reference same
SE positions**

Useful Links Under IBIS

Home Page: www.eda.org/ibis/

[ver5.0/](#)
[ibischk5/](#)

IBIS Version 5.0 (August 29, 2008)
ibischk5 Version 5.0.6 (March 2010)

[touchstone_ver2.0/](#)
[tschk2/](#)

Touchstone Version 2.0 (April 24, 2009)
tschk2 Version 2.0.0 (December 2009)

[quality_ver2.0/](#)

IBIS Quality Specification (Oct. 30, 2009)

[ibis-iss_wip/](#)

IBIS-ISS (recent versions wip)

[interconnect_wip/](#)
[macromodel_wip/](#)
[quality_wip/](#)
[reformat_wip/](#)

Interconnect Task Group (wip)
Advanced Technology Task Group (wip)
Quality Task Group (wip)
Editing Group (wip)

(wip: work in progress)



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