IEEE SW Test Workshop
Semiconductor Wafer Test Workshop

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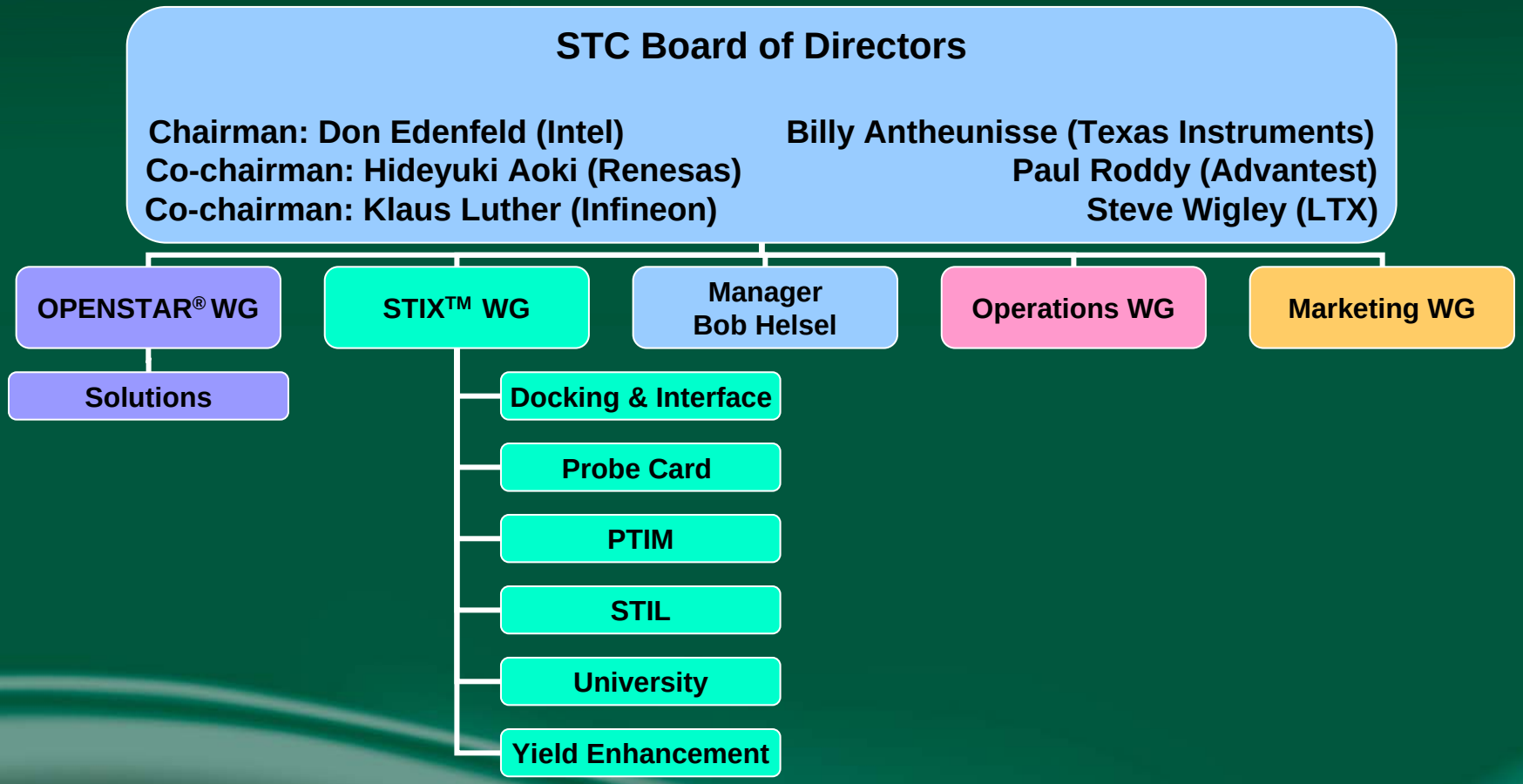
Tangible Value Can be Realized by Standardizing Probe Interfaces

June 8-11, 2008
San Diego, CA USA

STC at a Glance

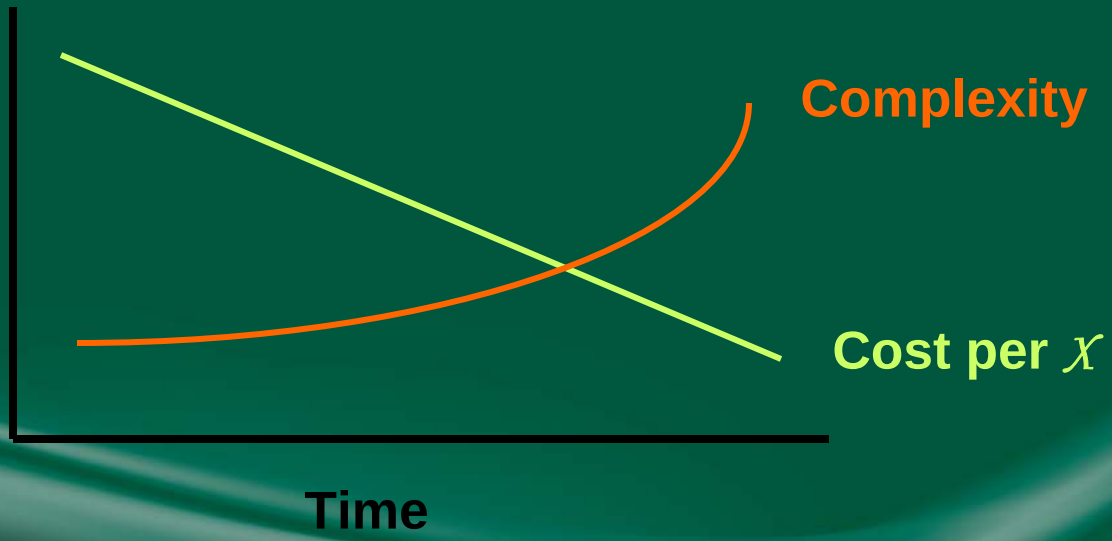
- Global non-profit industry organization
- Main objective: develop & deploy value-added open test standards to benefit the industry
- Innovative collaboration initiated through technical, industry-driven Working Groups
- Diverse membership of leading companies, innovators & universities throughout the semiconductor supply chain

Diversified Board



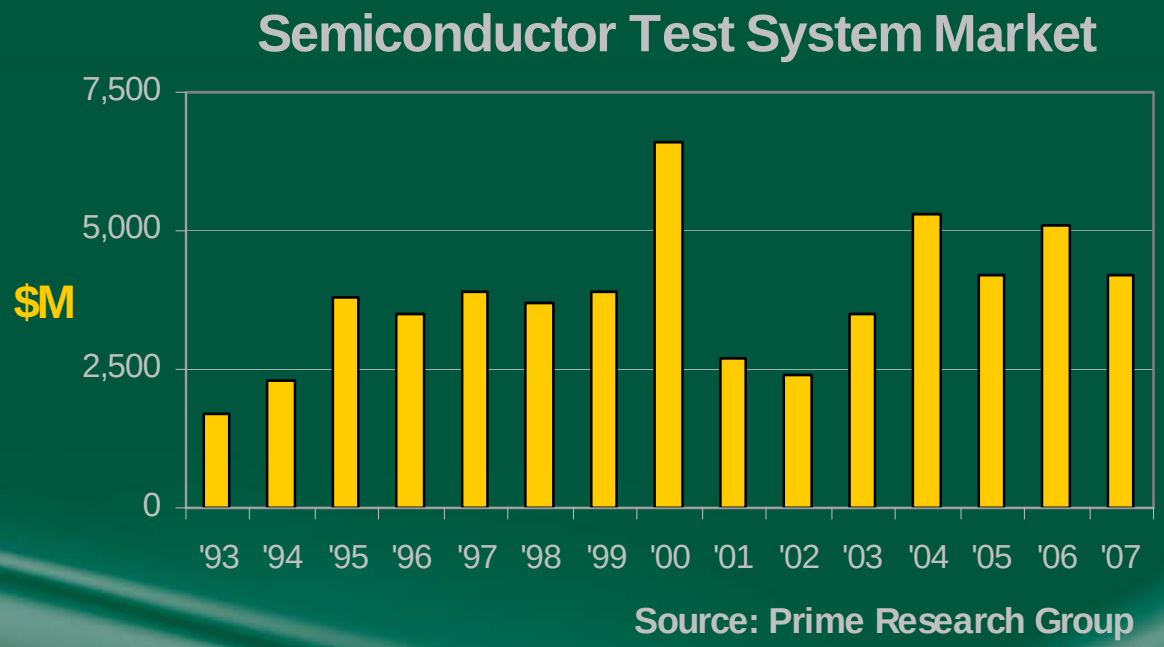
Consumer Driven Market

- Places great strain on supply chain
  - Time to market/volume/profitability is critical
  - Reduced total cost of test is a necessity
  - Device technology & integration are increasing
  - Product life cycles are shortening
  - Test requirements are increasing exponentially



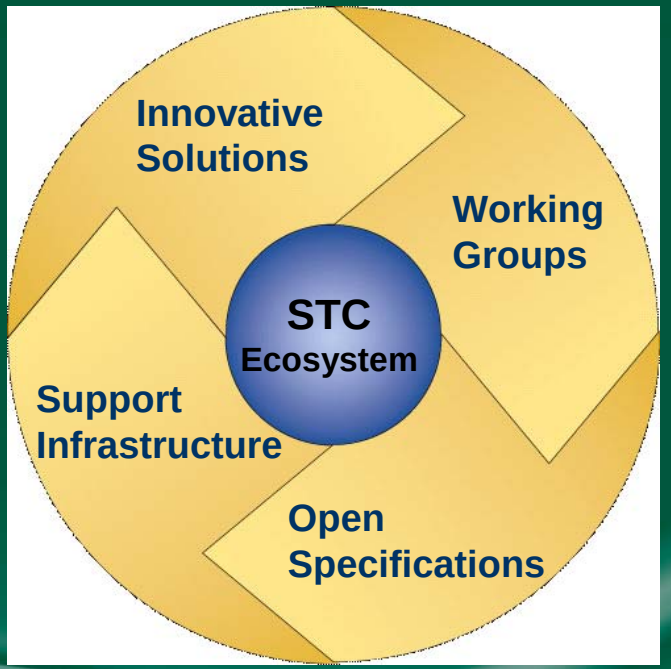
Volatile Industry Dynamics

- Chaotic market is detrimental to supply chain
- Everyone's resources are stretched
  - Efficiencies & economies of scale are critical

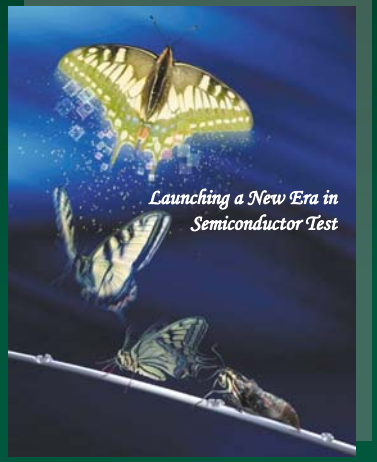


Collaborative Solutions are Necessary

- Synergistic ecosystem elements
- Infrastructure enables quick solution deployment
- True open specifications:
  - Fully leveraged throughout supply chain
  - Enable “best-in-class” solutions
  - Facilitate innovation
  - Drive economies of scale



STC Evolution

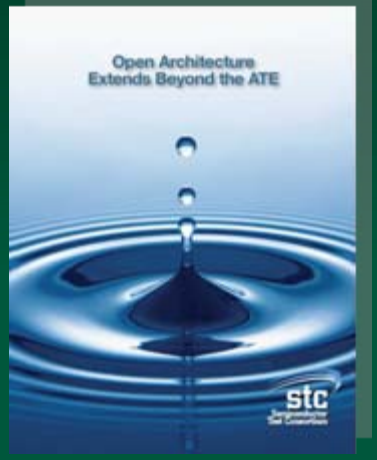


Phase I Launch

- Established corporate infrastructure & core Working Groups
- OPENSTAR® specs published
- Achieved critical mass

Phase II Traction

- 1st Third Party module developed
- OPENSTAR® specs improved
- Established new Working Groups



Phase III Expansion

- **STIX™ formalized**
- **Continued focus on providing value to industry**
- **Additional Working Groups forming**

STIX™ Expansion

- "Semiconductor Test Interface eXtensions"
  - For areas around ATE

STIX™ Enabled Opportunities

Training
Test Engineers
Product Engineers
Techs & Operators

Corporate Integration
ATE specs to Design rules
ATE to Planning system

Program Development
Test Programs
Characterization Programs
Test Vectors
Data Collection

"Black box" ATE

Software
ATPG Tools
Design to Test Tools
Conversion Tools
Virtual Test Tools

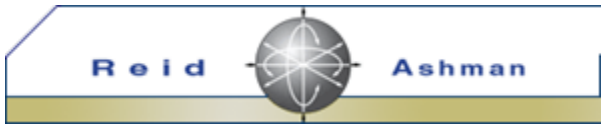
Factory Integration
Hardware Specs
Calibration
GUI Interface

Hardware Support
Probe Cards
Mechanical Docking
Load Boards
Spares Inventory

Probe-centric Groups

- Probe card WG
  - Japan driven
- Prober task team
  - Part of DIWG
  - Europe driven

PCWG & DIWG Members

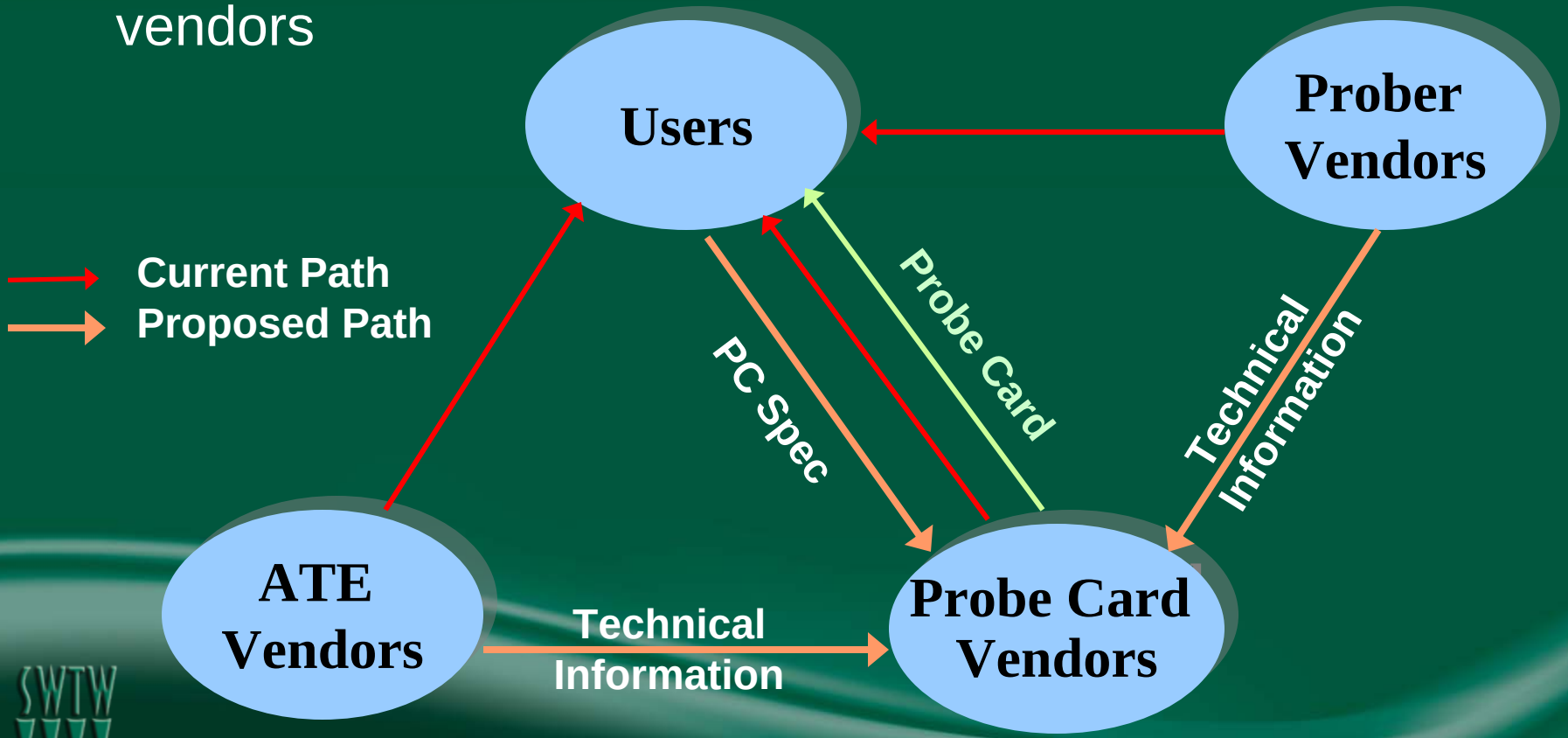


PCWG

- Efforts initiated by Japanese members
  - Goals: shorten time to procure probe cards & standardize path
  - Achieved general consensus on key points & documentation
- First Japan/US WG meeting – March 13
  - Follow up meeting June 6 at GSC
- Vote on Rev. 0 specs ~ Q3'08

Probe Card Order Placement Path

- Users no longer need multiple contacts
- Probe Card ordering info is managed between vendors
- Users can get up to date and controlled info from vendors



Automatic Deployment of Documented Work Instructions

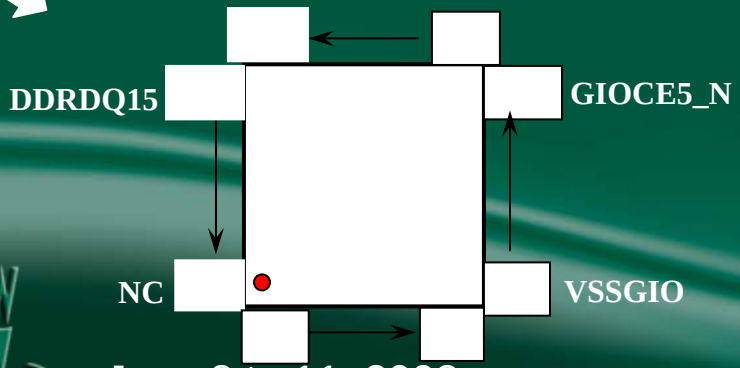
User Input

Pad		Map of Probe point		Signal Path Spec.	
No.	NAME	X (μm)	Y (μm)	Net List	Signal Attribute
213	DDRAD0				
210	DDRAD1				
215	DDRAD10				
224	DDRAD11				
228	DDRAD12				
230	DDRAD13				
212	DDRAD2				
221	DDRAD3				
219	DDRAD4				
216	DDRAD5				
218	DDRAD6				

Pad order sheet

Pad		Map of Probe po	
No.	NAME	X (μm)	Y (μr
1	VSSC1		
2	VSSHDMI		
3	TOUTP_A		
4	TOUTN_A		
5	REXT_A		
6	VDDC2		
7	RXNC_A		

Die image sheet

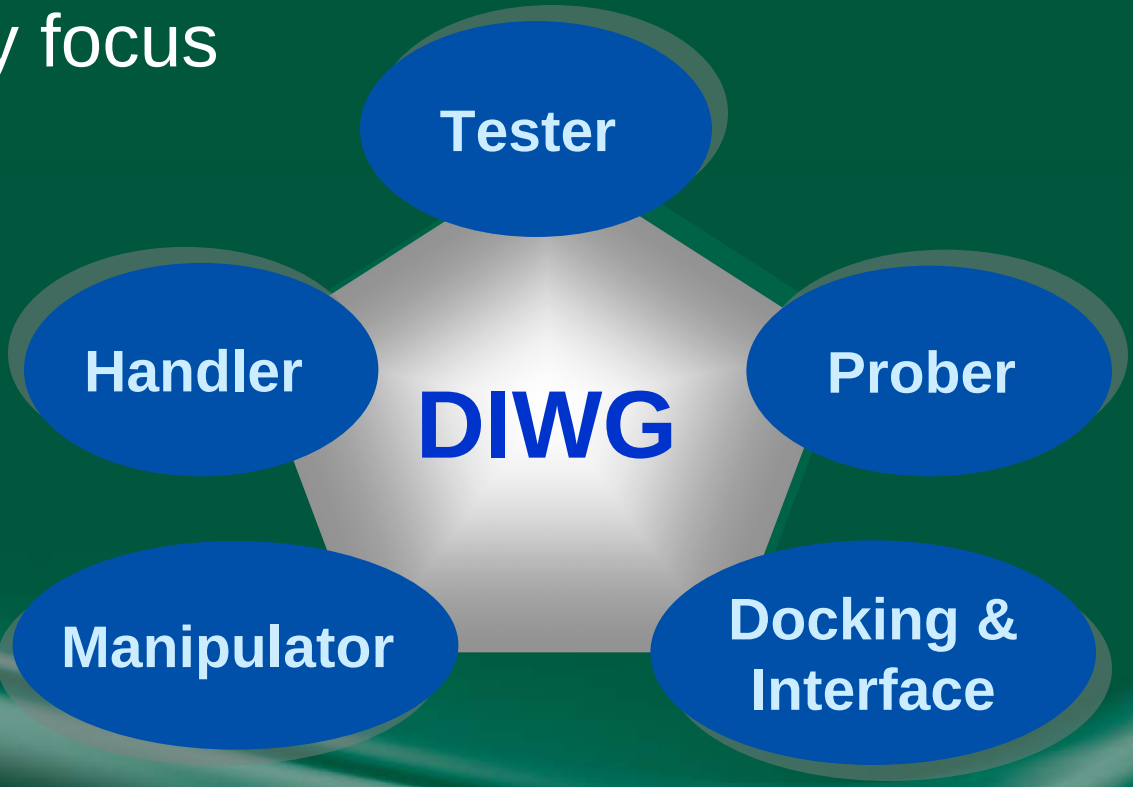


Power Plane sheet

262	VSSDDR	0V3
265	VSSDDR	0V3
271	VSSDDR	0V3
48	VSSGIO	0V4
56	VSSGIO	0V4
68	VSSGIO	0V4

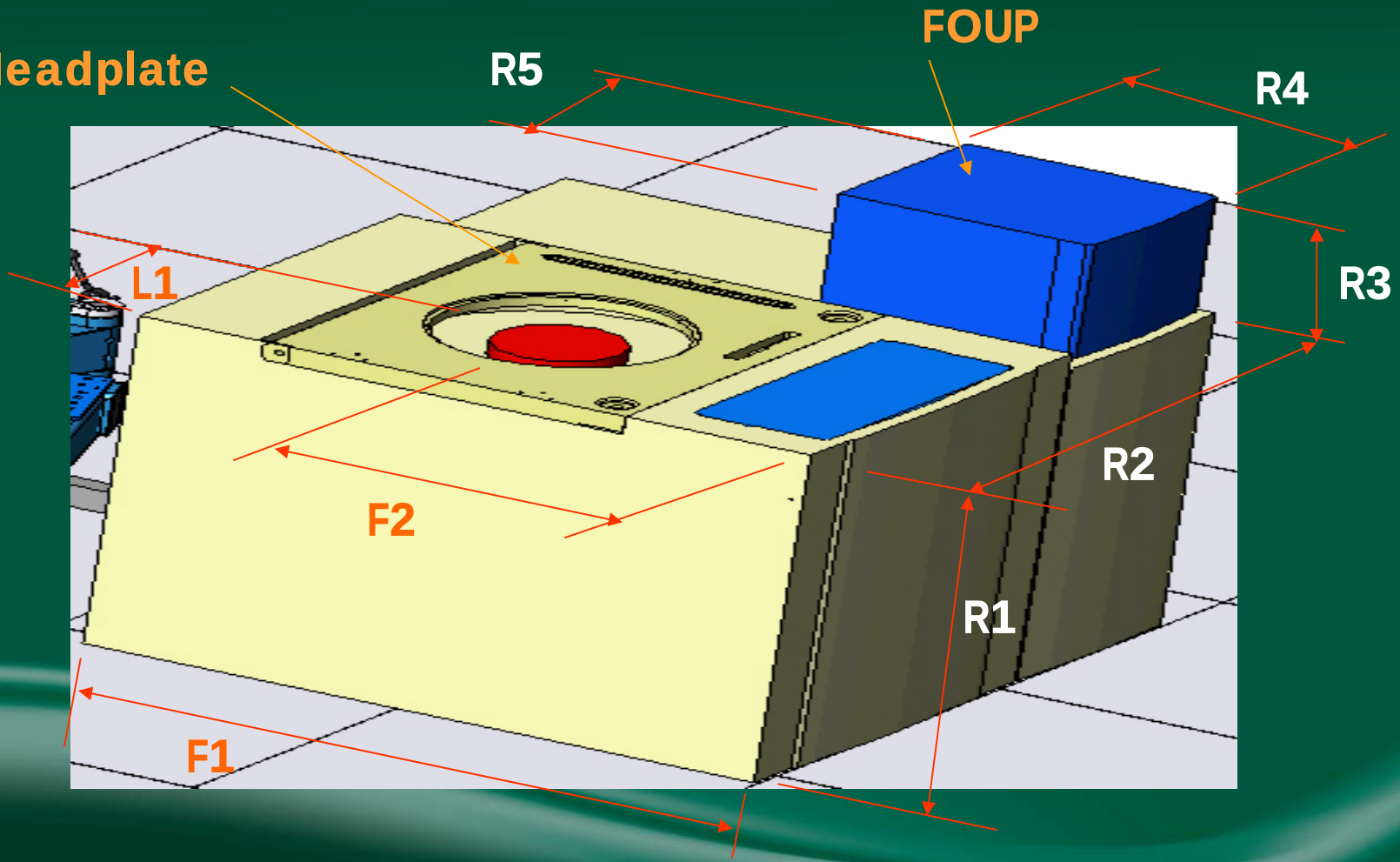
DIWG: Task Teams

- Formed Jan. 2007 in Europe
- First documents completed Oct. 2007
  - Terminology focus



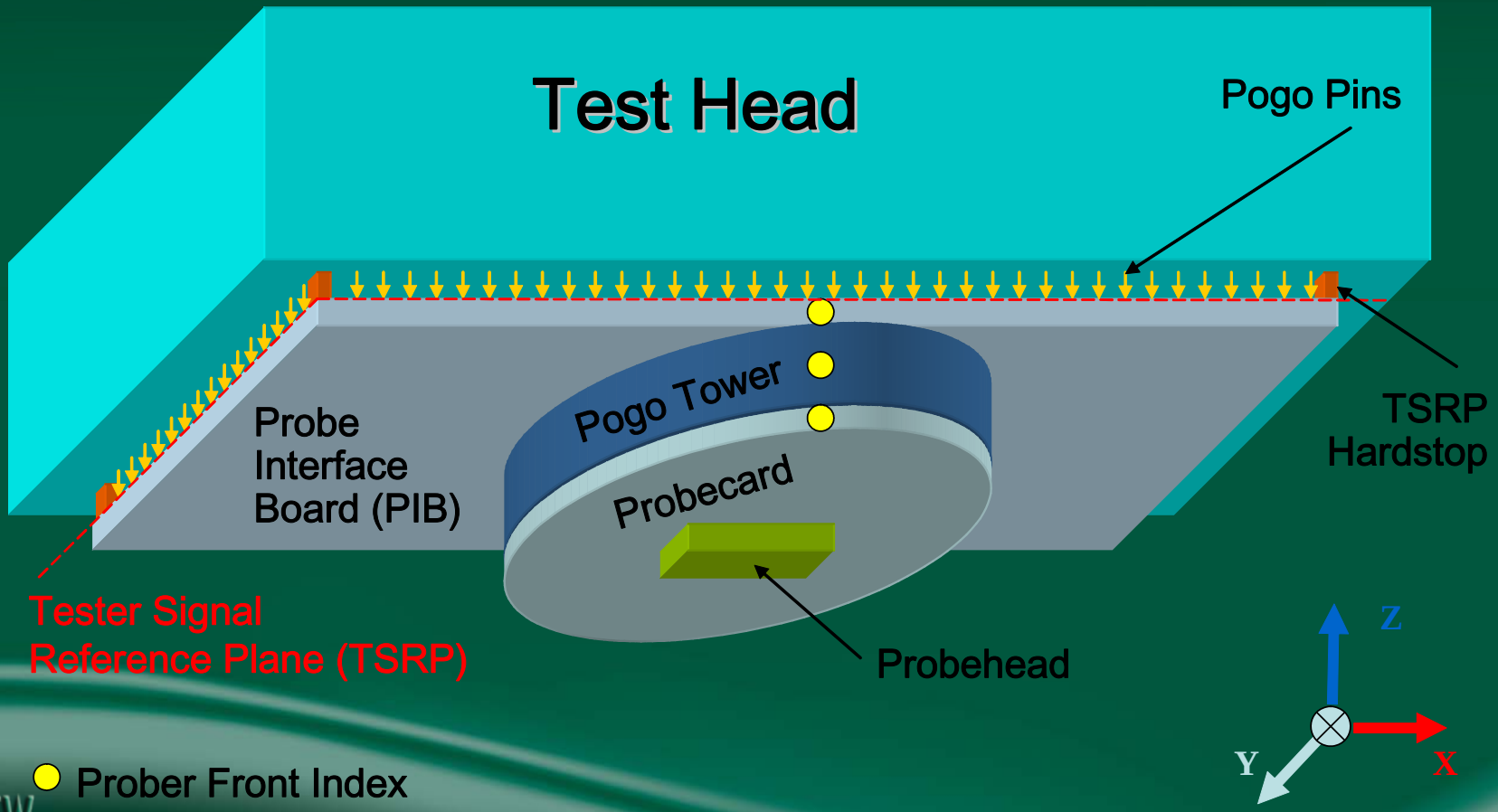
Prober Outline

- Standardized naming conventions are key



Sort Interface Terminology

- Multiple drawings for various implementations



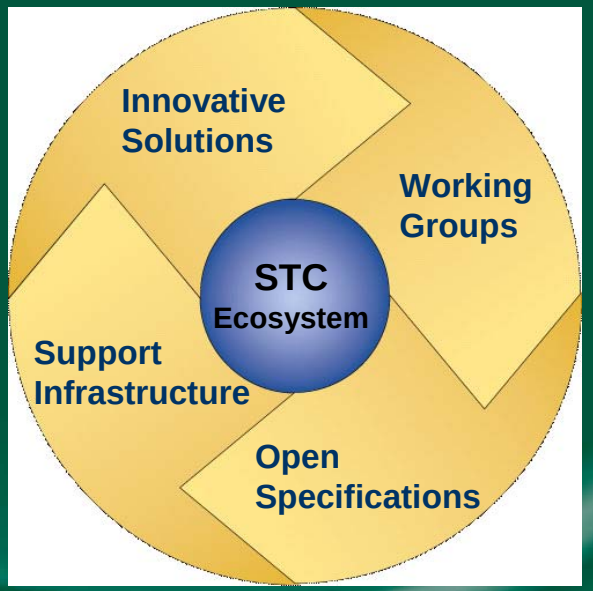
2008 Worldwide Calendar

- 19 global activities
  - 5 regional meetings
  - 5 industry events
  - 4 major shows
  - 4 event meetings
  - 1 GSC
- Details on web site
  - www.semitest.org

Month	Japan	Asia	Europe	USA
Jan. 2008				ISS (Half Moon Bay) Jan. 15
			GM @ Infineon Jan. 31	VLSI Chip Insider Live. Jan. 16
Feb.				
March	GM - Tokyo March 26	Semicon China Mar. 18-20		GM (Austin) Mar. 13
Apr.				
May			@ ETS (Italy) May 25-29	
June	Global STC Conference: June 4-6 in San Diego, CA			
				SWTW June 8-11
July				Semicon West July 15-17
Aug.				
Sept.	GM Sept. 24	Semicon Taiwan GM/Dinner event ~Sept. 9-11	Reliability conference Ingolstadt, Germany Sept. 29 - Oct. 1	GM (Boston?) Sept. 18
Oct.			Semicon Europe Dinner meeting Oct. 8	Dinner event Oct. 27
				ITC - Santa Clara Oct. 28-30
Nov.				
Dec.	GM/Dinner event Dec. 4			
	Semicon Japan Dec. 3-5			

STC Value Proposition

- Active Working Groups focused on driving value-added solutions to industry
- Synergistic ecosystem enables timely, cost-effective solutions to meet dynamic market challenges
- Membership is open to all
- www.semitest.org



Thank you
for your attention