

NDIA Trusted Microelectronics Joint Working Group

Team 4: New Methods to Instill Trust in Semiconductor Fabrication

Presented by
Dr. Pat Hays, The Boeing Company
at NDIA's 7th
Trusted Microelectronics Workshop
August 16th & 17th, 2016

Team 4 Launch

New Methods to Instill Trust in Semiconductor Fabrication

- **The Problems:** the Trusted Foundry Program Currently Does Not Support
 - Access to the most advanced process technologies
 - Access to off-shore foundries
- **The Hypothesis:** High-Tech Methods Can Instill Sufficient Trust to Enable Policy Changes That Will Solve the Above Problems *and* Further Improve Trust at Established Trusted Foundries
- **The Methodology:** Evaluate the Spectrum of Methods vs *Pragmatic* Criteria
- **The Deliverables:**
 - Present findings at GOMAC, March 20, 2017, Reno, NV
 - Recommendations Report, March 31, 2017

Team Members

Name	Organization	Split Mask	Functional Disaggregation & Packaging	Equivalence Checking	Fab Options	New Design Approaches
John Robert Adams Elizabeth Klein-Lebbink Nick Sramek	The Aerospace Corporation		X		X	
Todd Bauer	Sandia	X (chair)				X
Dave Davis	USAF SMC			X		
Brad Ferguson	Cypress					
Pat Hays	Boeing			X (chair)		
Robert Irie Rob Ciccariello	MIBP					X
Scott Jordon	Jazz	X	X (chair)			
Eric Miller	Boeing		X			X
John Monk	Northrop Grumman	X			X	
Mike Newman	Aeroflex (Cobham)		X		X	
Mark Porter	General Dynamics					
Dan Radack	IDA			X		X (chair)
Tim Scott	Novati		X		X	
John Weaver	Tectonic Labs					X
Ken Wetzal	SMI Inc.		X		X	
Ed Yarbrough	Honeywell				X	

Evaluation Criteria	Score	Weight	Total
1. Residual vulnerability to attacks (malicious insertion, etc.)?			
2. Compatibility with current commercial fabrication technology and methods?			
3. Degradation of chip specifications (performance, power, area, functionality)?			
4. Scope of applicability. All technologies and foundries?			
5. Capital investment to implement at fabs?			
6. New USG regulations or standards needed?			
7. Opportunity for phase-in vs. all-at-once forklift?			
8. Cost of “complete solution” (e.g. 3 rd party IP, test, etc.)?			
9. Technical Readiness Level (TRL)?			
10. Schedule for availability?			
Overall Total			

Score 1-10 (higher is better); Weight 1-10 (higher is more important); Row total is Score x Weight