

# IC Maker Interface A Needs

- **Perry Hartswick**

- Chief Engineer, IBM 300mm Automation and Integration technology
- 15 years experience in Semiconductor Mfg
- Chief Architect of IBM's 300 mm facility from the start

# Agenda

- **Introduction**
- **IBM and e-Manufacturing**
- **Interface A requirements**
- **Conclusion**

# IBM and e-Manufacturing

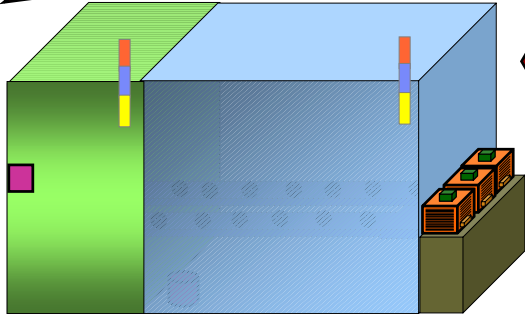
- **Thanks to all suppliers in the 300 mm effort**
  - Compliance with 300 mm standards has contributed to our success
- **IBM corporate directive to use standards**
  - Highly automated manufacturing impossible without standards
- **The bar is raised**
  - IBM is requiring Interface A on 65 / 45 nm tools
  - Time frame required 4Q05

# Interface A Benefits

Support Increasing  
Process Complexity  
+  
2-3 Year Technology Nodes

Focuses Few Expert  
Resources on Solving Issues  
vs. Finding Data

Sustain Complex  
Equipment Design  
+  
Fierce Competition for  
Next Design Win



Reduces  
Mis-Processing

Data required for  
understanding  
detailed  
RPT and OEE  
learning

Shorten Time to Money for  
Install, Configure, and  
Qualification

Reduces High Cost  
Downtime

The Right Data and the Right Tools are Needed  
to Meet the Complex Needs of Future Technology

## IBM and e-Manufacturing continued

- **IBM yield learning requirements**
  - Increased
    - Data availability and accessibility
    - Consistent Data Integrity
    - Data granularity
  - Timeliness of data must be consistent

## IBM and e-Manufacturing continued

- **IBM already has extensive deployment of e-Diagnostics**
  - This was difficult and time consuming because the standards weren't ready
  - Interface A Standards / Interface C guidelines simplify e-Diagnostics deployment
    - Less individual IC Maker-OEM negotiations
    - Clear method of communicating the data
  - Must move past connectivity issues and into improving Cost of Ownership by using e-Diagnostics

# IBM and e-Manufacturing

## ■ Preparation for Interface A underway

- Expect shorter time to integrate tool into the factory
  - Use of equipment self description will enable programmatic discovery of tool services, events, data collection plans, etc.
  
- Process control function continues to increase
  - More and finer grained process data required
  - Time stamping and ordering of events and data must be improved (not Interface A specific)
    - Example, CJ started event indicated while product is sitting in FOUP, - inaccurate state, inaccurate data

# IBM Interface A requirements

- **Interface A is NOW a requirement**
  - In purchase spec since 1/05
  
  - IBM will test for Interface A
    - If no standards tester is available, IBM will use internally developed software
    - We plan to test early and often
      - At supplier site
      - Expect cooperative effort similar to 300 mm testing

## Conclusion

- **Implementation of Interface A must be a total standard success story**
  - Capitalizing on the success of 300 mm standards and learning from the mistakes (no room for errors or inconsistency of interpretation)
  - OEM / IC maker cooperation will lead to successful factories and profitability for both parties
- **e-Manufacturing drives need for standards**
  - Process learning requires high volumes and fine grained data
- **IBM will require Interface A**