

# Integrated Measurement Association Meeting Agenda

## 11 Oct 2001, Banff, Alberta, Canada

- 8:00 Welcome and outline - Jimmy Hosch
- 8:05 Status of IMA-driven Semi-Standards - Dan Judd
- 8:25 Definition of Process Parameters Needed for MBPC - James Moyne
- 8:40 Example: Adverse Effects of Measurement Lag Time - Joe Pelligrini

### Presentations of How Companies are Reducing Measurement Lag Time

- 8:55 KLA-Tencor - Matt Hankinson
- 9:15 Nova Instruments, Inc. - Yigal Dafna
- 9:35 MKS Instruments, Inc. - Peter Solomon
- 9:55 Verity Instruments, Inc. - Andy Kueny
- 10:15 Break
- 10:30 Inficon - Steve Lakeman
- 10:50 Si Automation - Bertrand Reversat
- 11:10 IBEX Process Technology - Ed Rietman
  
- 11:25 Discussion - remaining problems - standards needed  
- next meeting topic and date
- 12:00 Adjourn for Lunch

# IMA Corporate Members

- Advanced Energy Industries
- Advanced Micro Devices
- Applied Materials
- Brooks Automation
- Cymer
- Inficon
- International Sematech
- KLA Tencor
- Luxtron
- MKS fka On-Line Technologies
- NanoPhotonics
- New Vision Systems
- Nova Ltd.
- Philips Analytical
- Si Automation
- Verity Instruments, Inc.

# IMA Individual Affiliates

- Arnold Cheng
- Michael Ellis
- Tomohisa Sato
- Claus Schneider
- Rachael Simpson
- Jean-Louis Stehle
- John Morgan
- Stephen Knight

# Remaining Problems 1

- No way to quantify what the capability of the tool is
- Fabs don't demand enough from the tool supplier
  - Don't care about APC stuff; no demands on PO
    - Are there standards to define these things?
- Participation in Standards by different groups and balance
  - What is the financial motivation? The PO drives all incentives
- User perspective: “If there is a spec there that we know then we'll put it in there”
  - Up/downloading parameters for controlling tools
    - What are the things we can control / what are/are not controllable parameters
  - Short → long-term solutions
  - Equipment Control Systems task force?

# Remaining Problems 2

- Additional Memembers as Contributors to ECS Effort
  - Nova, AMD, IBEX, TEL
- 300mm Timeline, we don't have enough time to flush things out, therefore shoot for a general setup to support APC
  - Give OEM's opportunity to provide control loop
  - Maybe provide an ability to download an algorithm to the tool
  - Opportunities for collaboration
- The reliability people do want the detailed data associated with handoff, XXX
  - Area for productivity gain
  - Tool controller and software will likely have to make use of this
  - Sometimes need very detailed data to detect faults, so eventually that data will have to be made available, maybe not right away, but, OEMs, don't design away from this
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# Remaining Problems 3

- Interface for R2R control to tool not yet defined
- Between components of tool, metrology and controller, the interfaces need to be defined
- Need for definition of terminology and data taxonomy (control variables, manipulated variables, etc.)
  - Maybe check out the EECDDT (Equipment Engineering Capabilities Data Taxonomy Team)
- Need a presentation on how integration efforts presented today might have better utilized existing SEMI standards
  - Margaret to present at next meeting?
  - Days work to update IMA SEMI standards Glossary

# Remaining Problems 4

- Determining ROI and providing visibility (chicken and egg problem)
  - At AMD it was a necessity because of competition; first project was a big success with high ROI that it broke through the barriers
  - At Motorola a litho case study showed \$1M/week benefit
  - Focus on factory, not tool benefits; don't stop with Cpk at tool; relate to yield and throughput
  - But... how do you get the yield data ???
- Everyone should read Moore's *Crossing the Chasm*

# What Should the IMA Do Next ??

- Answer the question of “what is the value of integrated metrology”
- Don’t focus on what we can’t control
  - Like value statements / business issues
  - Focus on the standards, that is the way to move forward
  - Process and IT have to come closer together; APC is between these two; → need standards for communication of data between these two levels
  - Need to format information to be an educational tool

# Summary

- JH: Do more of the same, but faster
  - Standards
  - Parameters, definitions, communication standards
  - Need methods to verify standards
    - This could be a function of the IMA
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# Standards Needed

# Next Meeting Topic & Date

- Historical IMA Public Meeting dates:
  - Semi Winter Standards Meeting in March at La Jolla, CA
  - Semicon-West in July at San Francisco
  - AEC/APC in October
- Standards Working meetings
  - Winter: March in La Jolla, CA
  - Summer: July in San Francisco, CA
  - Fall: October in Austin, TX
- March Meeting Topic?
  - Alternatives to La Jolla
    - SPIE Conference (March, Santa Clara)
    - SEMICON/Europe (April)