Metrology TWG

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1999 Domestic Metrology TWG

- Jan. - Teleconf
- Jan. to March 9 - Write text - update tables
- March 9 and 10 - Face to Face Meeting in CA in conjunction with International SEMATECH Litho Metrology Meeting March 11 and 12
- April 12 - US TWG Metrology Roadmap Draft presented to Metrology ITWG
- April 13 - July 8 Revise Draft
- May - June Obtain buy-in for Roadmap

1999 Domestic Metrology TWG

- Metrology TWG requests updates from other TWG before April meeting to assure use of correct process requirements

MetrologyITWG Participants

- **Han-Rei Ma - Taiwan**
- **Akihito Ishitani - Japan**
- **Peter van Velzen - Europe**
- **Bob Scace - US**
- **Alain Diebold - US**

Metrology ITWG

1998 Metrology Update was accepted by the International Metrology TWG

99 Metrology Roadmap Suggestions

- Sensor based Process Control for 1999
  - The evolution toward in-situ sensor based process control is expected to continue, but the previous emphasis of IC manufacturers is diminished. We concluded that evolution toward a complete systems approach (i.e., AEC/APC) will occur more slowly than previously predicted.
  - Identify the key sensor functions required and describe more specifically in the 99 roadmap text.

99 Metrology Roadmap Suggestions

- Statistical Limits
  - This issue is expected to be a major source of variation across the chip and across the wafer in sub-100 nm node technologies.
  - Metrology ITWG should quantify the node at which process tolerance will be so large that process can’t be controlled.
  - Blanket processes such as low dose implant and some other doping technologies are examples.

99 Metrology Roadmap Suggestions

- Some measurement tools (e.g., CD-SEM) are limited by the skill of the operator despite the present level of automation.
- In order to achieve the desired level of automation required for non-specialist users, investments in automation and standard user interfaces but in particular methodologies must be multiplied. Otherwise the increases in methods complexity and increased automation will cancel.

99 Metrology Roadmap Suggestions

- Issue :

  When the very small precision listed as technology requirements (e.g., gate dielectric thickness precision) cannot be realized, process control may be limited to 30% or larger P/T.