A Probe Data Collection System
Test Head Cummap (THC)

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Background

- HVM wafer test
- Probe damage observations
- Infrequent, but catastrophic
- Root cause incident
- Large wafer defects
- Silent killers
- Need a data collection system
- TestHeadCummap (THC)
THC Objectives

- Document the probe damage
- Analyze information
- Trends, Paretos, Cummaps
- Drive solutions
THC Methods

- Excel© spreadsheets
- Macro for simple data entry
- SAS JMP© script
- Database created
- Graphs: Trend, pareto, and cummap
Results

• THC output revealed systematic regions for probe burning
• THC trends provided evidence of turn-on and turn-off
• THC Paretos showed specific power planes for further scrutiny
• THC graphs compared cross factory and cross products
Summary

• Consolidate probe damage information
• Cumulate across fleet of probe cards
• Use statistical methods to find outliers
• Drive solutions to reduce probe energy
• Save $$$ in probe card costs
Next Steps

• **Some weaknesses of THC:**
  – Hundreds of Excel files
  – Fragmented database
  – Inadvertent spreadsheet changes

• **A new tool is in development today**
  – Uses a web-based interface for technicians
  – Stores probe damage in SQL database
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Thank you in multiple languages: Obrigado!, 谢谢你, Díky, Ευχαριστώ, תודה, Merci, Dank, Gracias.
5 probes in this region have exhibited “tilted paddles” of varying degrees.
Visuals are performed

Find the probe

Open the padmap file

WDAFxxA054.XLS
WDAFxxA108.XLS
WDAFxxA109.XLS
WDAFxxA150.XLS

Update probe damage

Save the padmap file
New test program released

Supply clamps correctly applied
Probe Burn Cummap - AFO CTAT - by X,Y location