

## What are the proprietary features of FAKS system?

1. A Knowledge management (KM) system. Bring knowledge management to another level by supplying the knowledge to the users rather than the engineers using their time to constantly seek out the knowledge.
2. Our patent pending Failure Classification System (FCS) module provides a very unique environment for FAB module engineers to collaborate. The knowledge based system can accumulate and record experiences while the engineers exchange knowledge which will prevent future mis-processing problems.
3. A built-in conferencing feature allows users from different FABs to participate in group discussions. Participants could be from ETCH, THIN Film, Diffusion, Implant and Photolithograph groups.
4. Our patented GUI oriented rule building system allows the users to build the WAT disposition rules by filling out a simple form which is very similar to WAT disposition specification most companies use.
5. Capable of supporting multiple processing technologies by invoking different diagnostic rule systems.

### These features provide -

- PHM automated WAT disposition capability will provide the information and knowledge sharing between FAB engineers. Using the automated WAT disposition, the engineer only needs to view the summary report to get the information he/she needs.
- Communication and sharing is the most efficient way to maximize the utilization of knowledge within an organization. Knowledge must flow continuously within an organization in order to motivate and stimulate more wisdom, further development and constant feedback. Our FAKS system provides such an environment for the FAB engineers to communicate and

## What is Knowledge Management?

Knowledge management has often been treated by companies as brainstorming sessions, formal meetings, informal discussions, presentations, and all kinds of data gathering and accumulation sessions.

But with the evolution of time and technology, knowledge management should be defined as a well-organized system which can durably and universally collect and re-use human wisdom.

The object of management in a KM system is knowledge, not information. Therefore, in this age of information explosion there is a need to extract knowledge after organizing and categorizing the information.

### Summary:

1. Improve the communication channel and knowledge sharing.
2. Store, forever, the company's invisible invaluable intellectual property: **Knowledge**.
3. The purpose of knowledge management is through knowledge sharing and re-utilization, to continuously accumulate success stories and experiences in order to stay competitive.
4. To use the knowledge to continually improve.



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**Increase Your  
Knowledge At  
Work!™**

### Free 30 day trial offer

We offer a 90 day free trial for our product. We charge a nominal fee for travel, workshop training and equipment cost. During this 90 day period we collect information about FAB's scrapped wafers and the symptoms associated with those scrapped wafers. From this data we will then set an appropriate pricing plan for our customers. For the first 90 days, our customers enjoy the benefits of our real-time diagnostics of having symptoms identified almost immediately and having subsequent lots stopped from being processed that are identified as having similar symptoms.

### How will PHM provide benefit to your company?

#### By benefiting your engineers -

1. It will make their job easier. Your engineers can be more productive. They won't have to find the problems anymore. They can spend more time finding out why it happened, fix it and prevent it from happening again.
2. Having more time to spend solving problems will make your engineers more knowledgeable and valuable to the company.
3. More productivity and more problem solving will strengthen the company and make it less vulnerable to recessions.
4. Solving problems will mean having less problems and this will make the company more attractive to customers.

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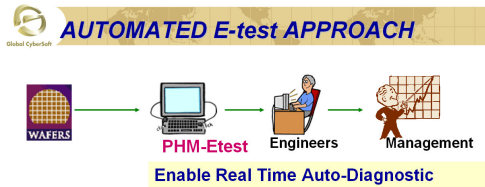
# PHM—The First Knowledge Management System for the Semiconductor and Automotive Industries

## What is PHM

- **Prognostic/Diagnostic Health Management System**
- **In-line, real time.** Not off-line, capture of miss processing or equipment degradation conditions
- **ETest results** processed by a SPC and knowledge-based system to generate disposition summaries **within minutes** not hours
- Real time feedback of process evaluation results
- Raw data and SPC stats provide weekly or quarterly pareto and/or trend analysis

## Patents

United States patent 6,240,329  
Taiwan and China patent pending



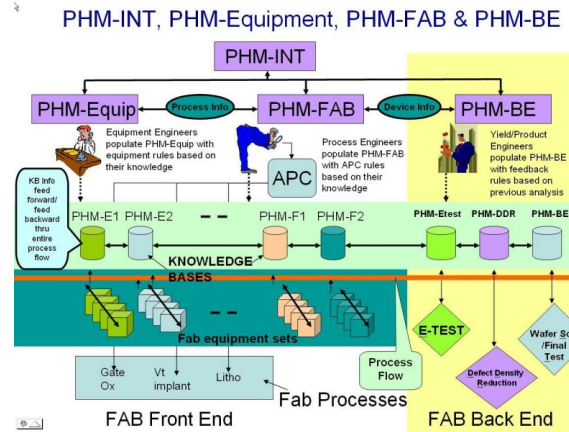
- **Reduce or Eliminate potential Human Errors:** Automated, Knowledge based Analysis
- **Feed Forward ↔ Feed Backward Proactive Approach:** Enable Knowledge Sharing, Self Correction, and providing Predictive Capability
- **Consistency:** Analysis results are based on Data and Knowledge
- **Saving Resources:** Fast Time-to-Corrective Actions, Shorten training time for new engineers

**Our PHM ETEST KM/SPC system is designed to assist in analyzing E-test results with real-time information feedback. A built-in knowledge management system accumulates, retains and shares valuable technical knowledge.**

**With our PHM system, your FAB and product engineers will actually spend more time solving problems rather than chasing after them.**

## Benefits from using our PHM systems:

- Sustain higher yield**
  - Real-time data extraction and analysis
  - Fast knowledge-based results diagnosis
- Reduce manufacturing costs**
  - Around-the-clock process monitoring
  - Automatic wafer lot disposition
  - Real-time result notification by email
- Increase engineering productivity**
  - Your company's engineering knowledge kept in *your* knowledge-based system
  - Maintain and share engineering experiences
- Platform independent**
  - PC, UNXI



## PHM Systems

### Knowledge-based ETest modules

Diagnostic module: The Brain  
Failure classification system (FCS): The Heart  
Data analysis module: The Body

### Knowledge-based Inspection module

Store particle maps  
Defect diagnosis

### Knowledge-based Sort module

Store sort bin parameters and yield map  
Capture miss processing detected at sort level



## Features of PHM

- **Generate out-of-spec, % fail, % invalid, average/std**
  - parameters summary table
- **Provides pareto analysis**
  - failure parameter
  - parameter uniformity
  - western electrical rule violation parameter
- **Real-time SPC western electrical rule detection**
- **Incorporates RS/Decision (knowledge-based system)**
  - for automatic wafer lot disposition
- **Provide trend chart for key parameters**
- **Data Analysis Graphic Package: Scatterplots, Trend charts, Boxplots, Histograms, Wafer maps and Prob-**

## User-Friendly GUI



## Disposition Results

LOT ID: U627280\_M has UNDER DOSE VPI IMPLANT  
LOT ID: U627280\_M has low ion, Wet Code=91, Pareto=58;  
wafer ID: 2, very likely, underdose VTI implant. WET Code=16, Pareto=46  
wafer ID: 8 has Thicker Gate Oxide, Wet Code=N/A, Pareto=N/A  
wafer ID: 8 has low ion, Wet Code=91, Pareto=58  
wafer ID: 8 has missed VTI implant. WET Code=16, Pareto=46  
wafer ID: 11 has UNDER DOSE VPI IMPLANT  
wafer ID: 11 has low ion, Wet Code=91, Pareto=58  
wafer ID: 14 has low ion, Wet Code=91, Pareto=58  
wafer ID: 16 has low ion, Wet Code=91, Pareto=58  
wafer ID: 21 has low ion, Wet Code=91, Pareto=58  
wafer ID: 23 has UNDER DOSE VPI IMPLANT  
wafer ID: 23 has low ion, Wet Code=91, Pareto=58

## 1) 2H568500dat;1 WAT Fail Root Causes Summary

Symptoms	Wafer IDs	Report Root Causes symptoms in a tabular format
DVXL16 uniformity problem	1	
Unknown RC-PMOS root causes	1	
<b>Failed Wafers ID Passed Wafers ID Good Wafers ID</b>		
1	13	6,18,25
<b>Failed Wafers ID Failed WAT Parameters</b>		Out of Spec WAT Parameters
1	RSP, IRL16, DVTLX16, RCM1P, RCM1BD, RCM1N	
<b>WE Rules (1 OR 5) Violation WAT Parameters</b>		
<b>WE(M)</b>	ID10GN055, VPTN055, BVJN055, ID10GNW06, VPTNW06, BVJNW06, VTN110, VPTNFTP95, VTNWFTP95, ID10GPD05, VPTPD065, BVJPD065, VTPDFTP21, VTPDFTP21, RSN	
Out of Control WAT Parameters	RSP, VTL16, IBB4G016, DVTLX16, BVDGOXN, RCM1P, RCM1BD, RCM1N, RCM1M2, BRM1, BRM2, BRPL3_ARY	
<b>WE(S)</b>	VTN110, RSP, RCM1P, RCM1BD, RCM1N	

Lot ID: 2H568500DAT;1 -> THERE ARE NO PROBLEMS FOUND IN THIS LOT. SHIP THE LOT.