

e-Diagnostics & EEC Workshop

“e” Requirements

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“e” Requirements

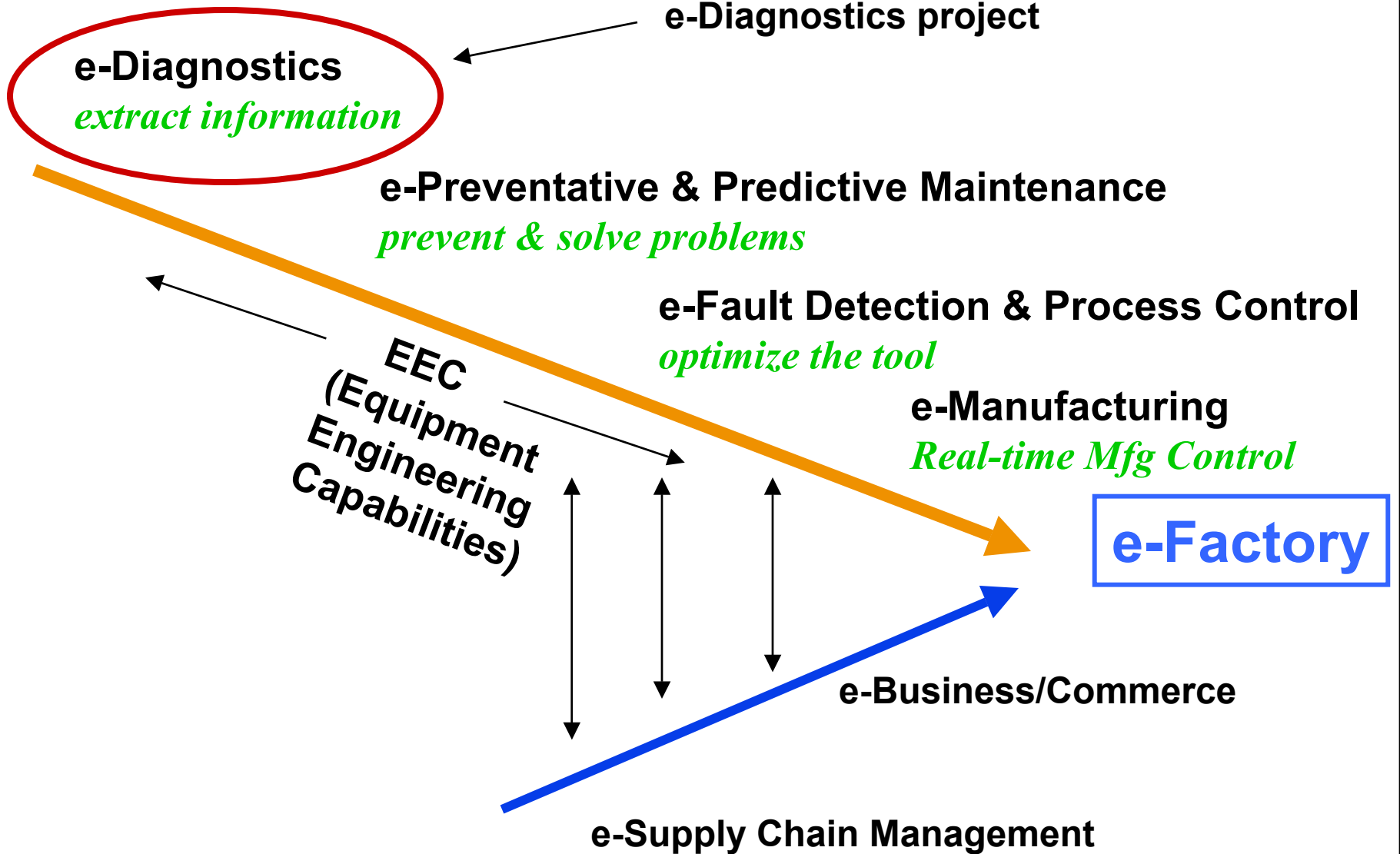
“e” Requirements is the current method to express electronic communications between the various elements of our industry. Those elements leading to an “e- factory”.

The terms e-Manufacturing and e-Diagnostics refer to what & how information is shared between the environments. ISMT and SELETE continue working together to create guidelines leading into SEMI Standards.

The purpose of this presentation is to provide an overview of what we, the equipment suppliers and device makers, are developing and the requirements to be placed by us upon our suppliers.

Equipment suppliers will require their 3rd party software suppliers to meet the guidelines. This also applies to the Device makers and their equipment suppliers and 3rd party software suppliers.

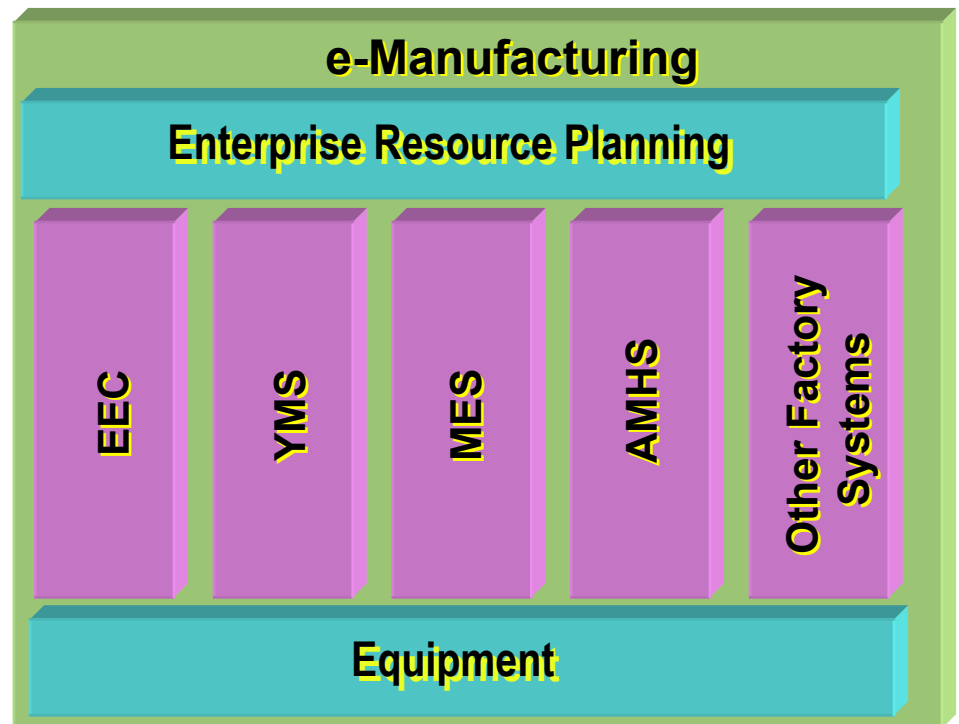
Path to e-Factory - ISMT



e-Manufacturing Definition

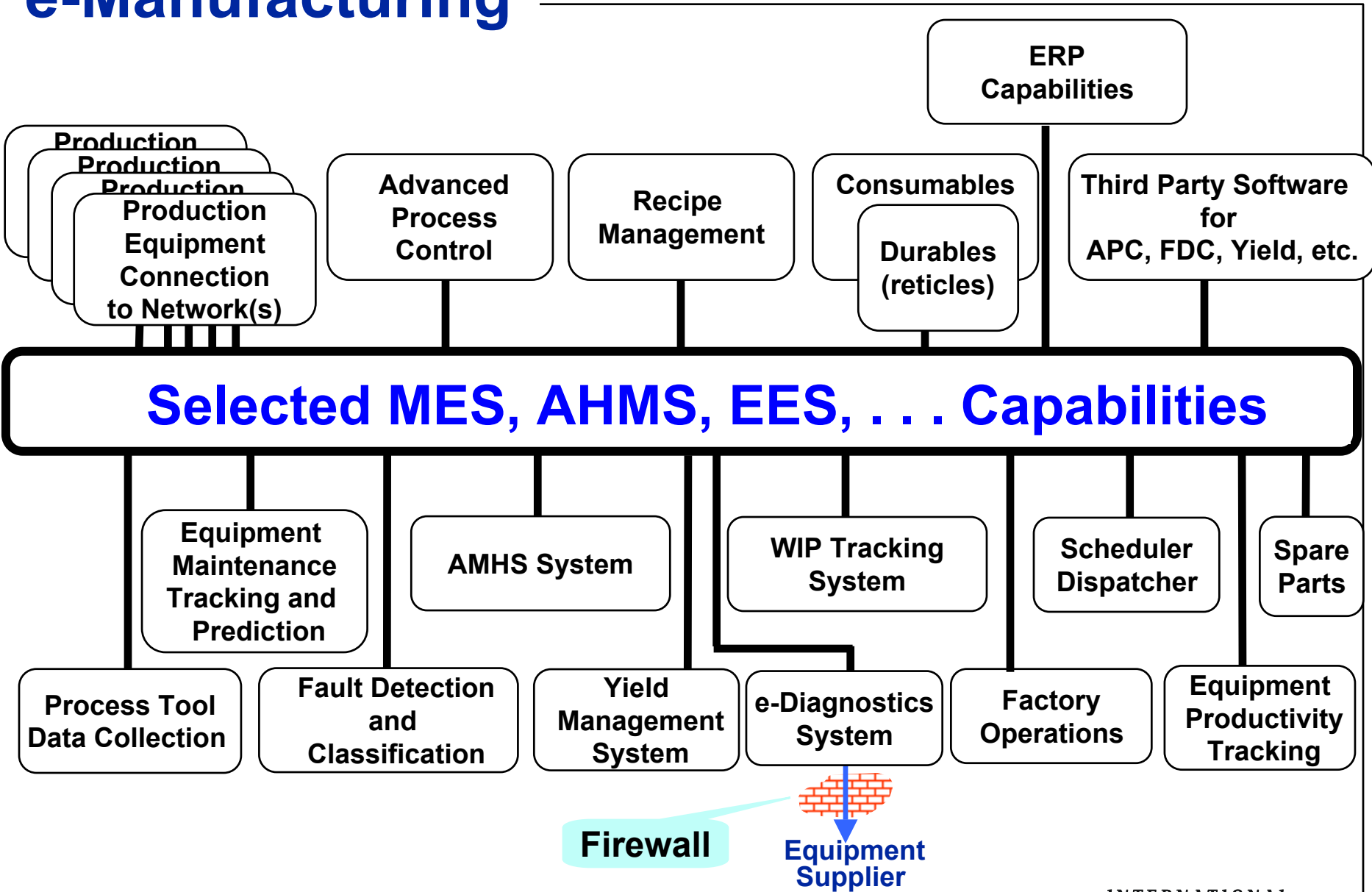
- The complete electronic (computer systems) integration of all factory components using industry standards. e-Manufacturing extends from the Equipment to the Equipment Automation Systems to the MES (Manufacturing Execution System) / YMS (Yield Management System) / EEC (Equipment Engineering Capability) and to the ERP (Enterprise Resource Planning). Users range from operators to technicians to engineers to managers.

- Includes WIP tracking, Machine Tracking, Equipment Control and Monitoring, Scheduling and Dispatching, Automated Material Handling, Fault Detection and Classification, Run to Run Control, Advanced Process Control, Data Warehouses, Decision Support Tools, Quality Management Systems, Engineering Analysis Systems, e-Diagnostics, Maintenance Systems, Spare Parts Management, Test Systems.....many other systems



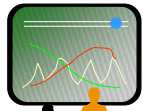
e-Manufacturing has many faces and components

e-Manufacturing



An e-Manufacturing Vision

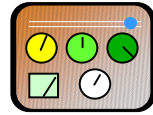
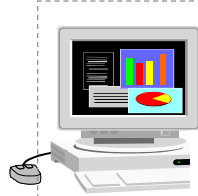
Linkages to/from Enterprise systems & suppliers



For Planners/Schedulers

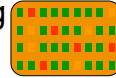
- Enterprise interfaces
- Finance interfaces
- Materials interfaces
- Warehousing Interfaces

Summary Data & Analysis



For Mangers

- Productivity Status
- Yield, Engineering
- Capacity planning
- Output Schedule
- Performance



Drill-down data



For Engineers/Technicians

- Equipment performance
- Inventory management
- Remote diagnostics
- Equip/Process excursion management

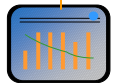
Tools enabling linkages to/from enterprise systems, suppliers, and the network

Tools to monitor commitments of output, cost, agility, and on-time delivery of products ...

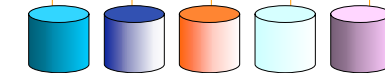
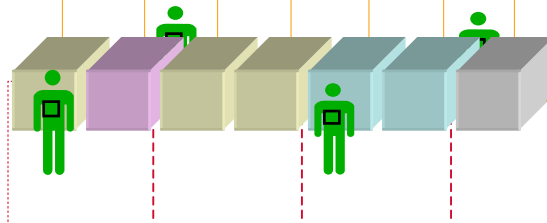
Tools to manage factory assets effectively ...

firewall

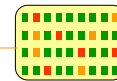
Reliable & Consistent Information - agreed to data, any time, anywhere, ...



- Single one-stop shop
- User interface personalized to the end-user



- Consolidated databases, datamarts
- Data mining tools, Applications

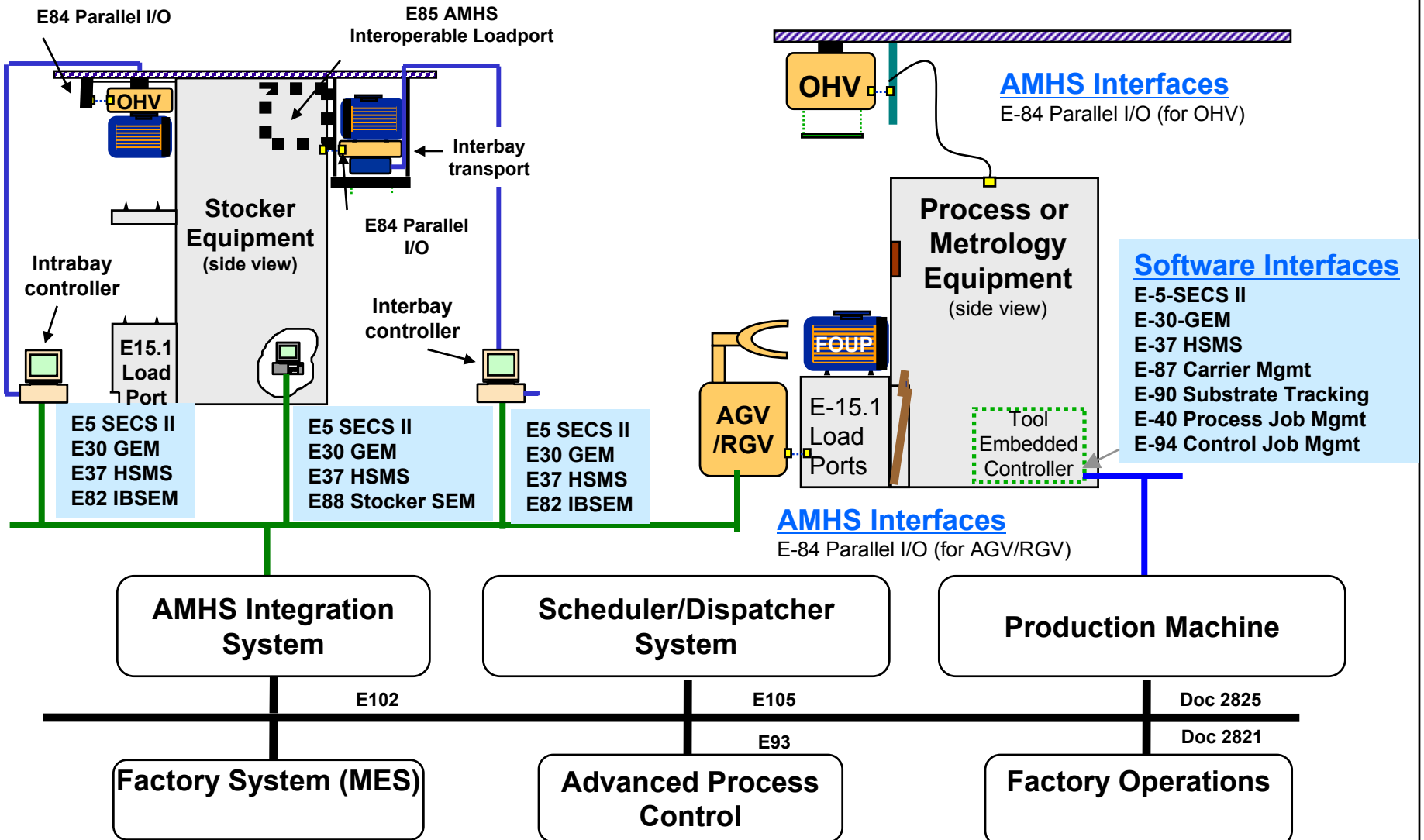


- Equipment
- Sensors
- Metrology
- WIP
- Process



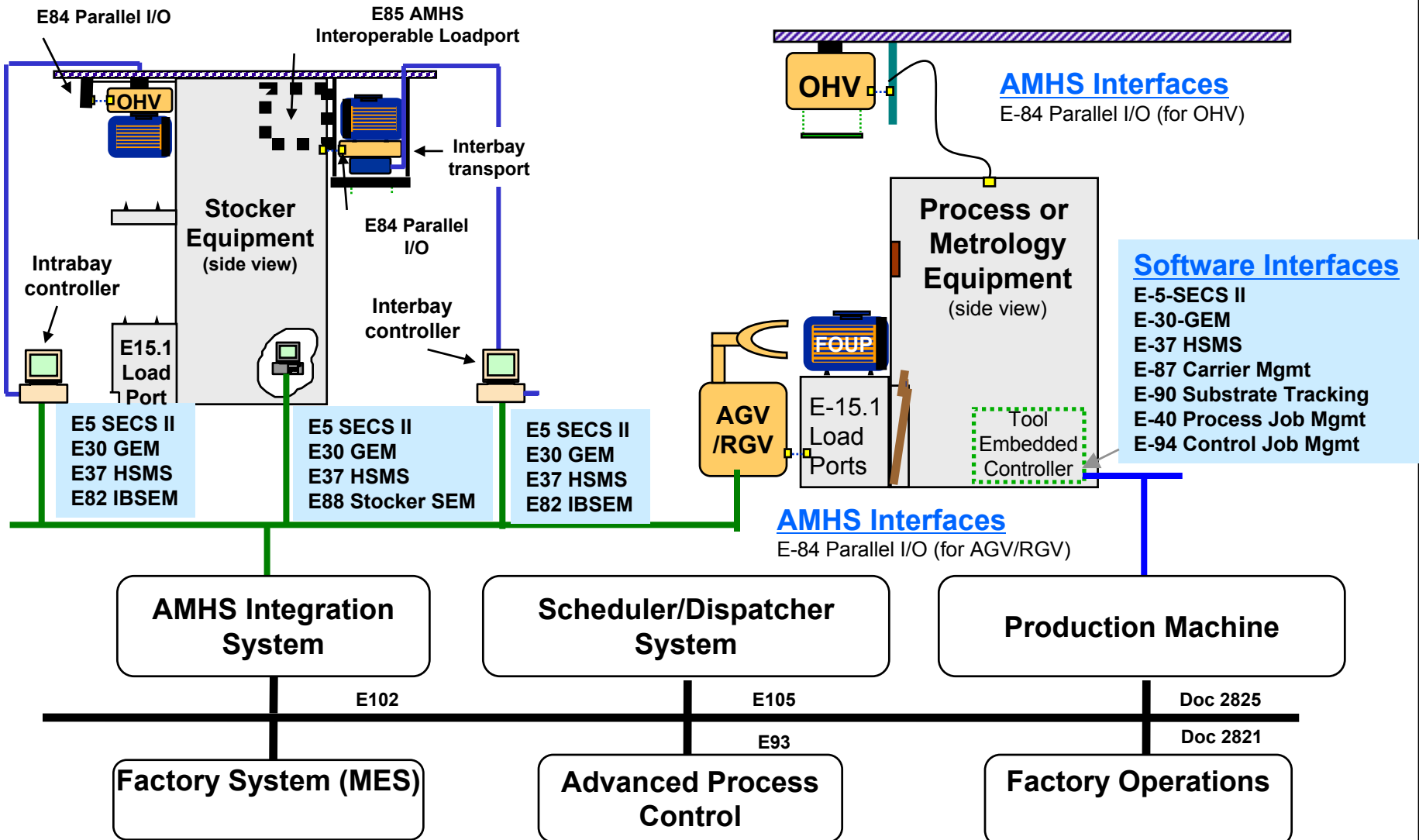
- Remote diagnostics
- Remote monitoring
- Remote de-bugging/fix

300mm Fab Automation Standards View



300mm Fab Automation Standards View

However, standards cycle time has taken far too long...

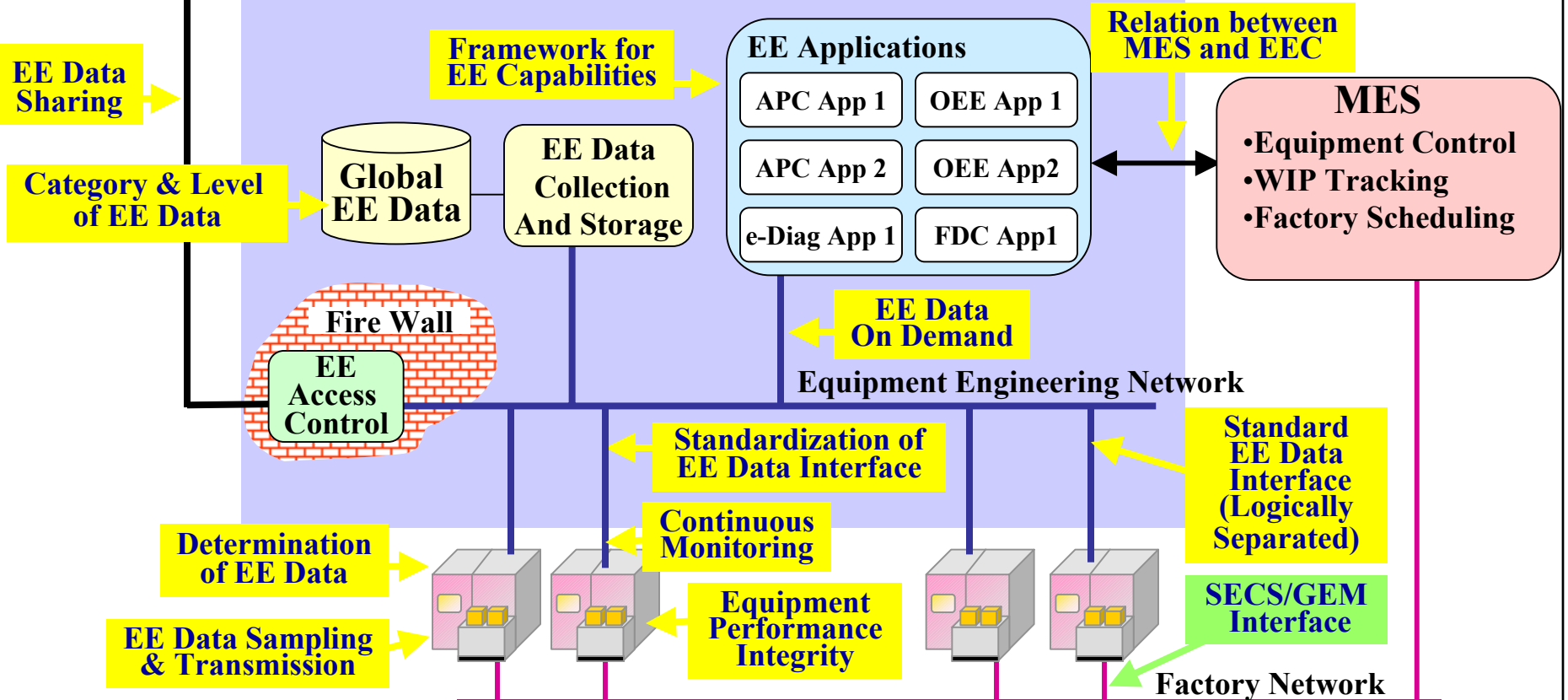


Equipment Engineering Capability View

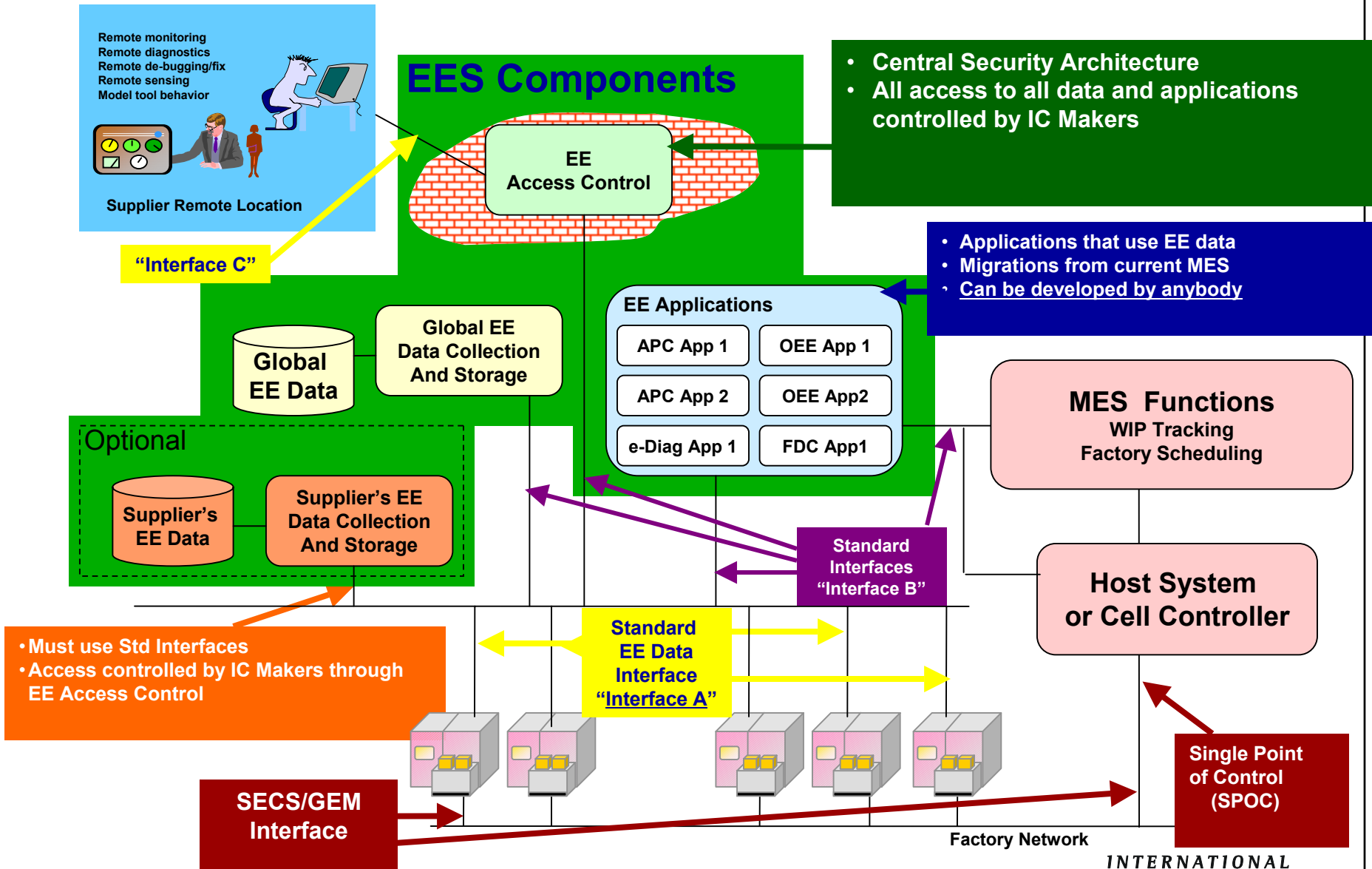


Supplier Remote Location

EES (Equipment Engineering System)

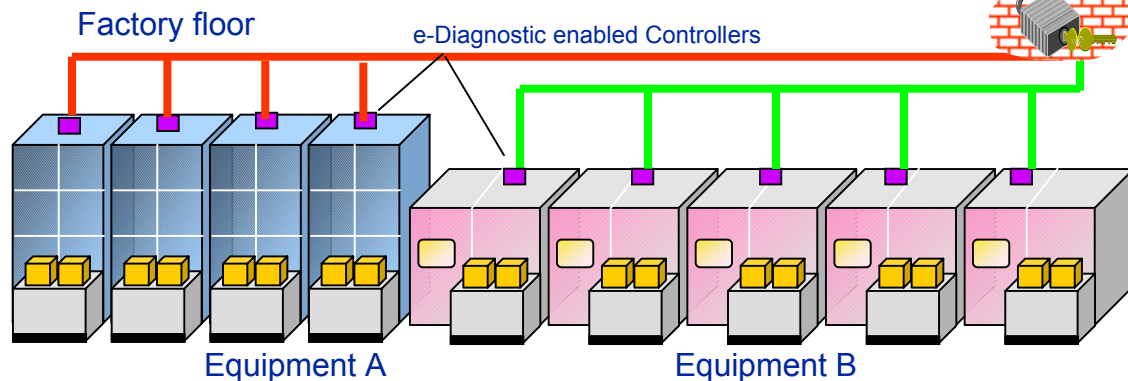


Factory Diagram with EEC components

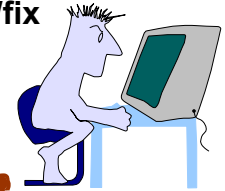
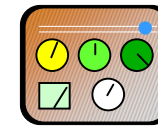


e-Diagnostics View

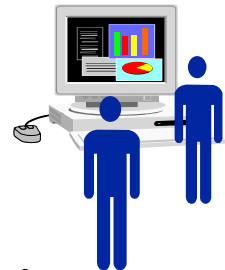
- Equipment diagnostics data is available via remote access capability
- Equipment is remotely configurable for initial set-up or to resolve and debug issues
- PM utilities are available to fix issues in advance of problems
- Has built-in intelligence to determine whether to allow specific remote capabilities to be run
- Permit using enabling audio-visual capabilities such as video collaboration



Remote monitoring
Remote diagnostics
Remote de-bugging/fix
Remote sensing
Model tool behavior



Supplier A Main Office



Remote monitoring
Remote diagnostics
Remote de-bugging/fix
Remote sensing
Model tool behavior

Supplier B Main Office

e-Diagnostics Key Messages

- 1. 300mm standards implementations remains the highest priority**
- 2. Leading OEMs are deploying e-Diagnostics solutions (100s of tools) and reporting significant benefit**
- 3. Interface A (data off the equipment) is the ISMT MC focus - standardized, open, & with accurate data**
- 4. Prototype solutions at ISMT, including Interface A**
- 5. ISMT MCs are cooperating with suppliers early to assure mutual success**

Path to e-Manufacturing

- **Build e-Mfg vision and roadmap consensus**
 - Refine and execute e-Diagnostics and EEC roadmaps
 - Transition guidelines (requirements) to standards
 - Prototype solutions to verify guidelines
 - Confirm data integrity
 - Develop factory “e” migration strategy
- **Continue e-Manufacturing global collaboration leading to e-Factory**
 - Future SEMICON and APC Symposiums

Thanks for your engagement and support!!

For further information please contact:
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