Greetings

www.sematech.org/public/resources/ediag/index.htm

Karl Gartland

December 4, 2001

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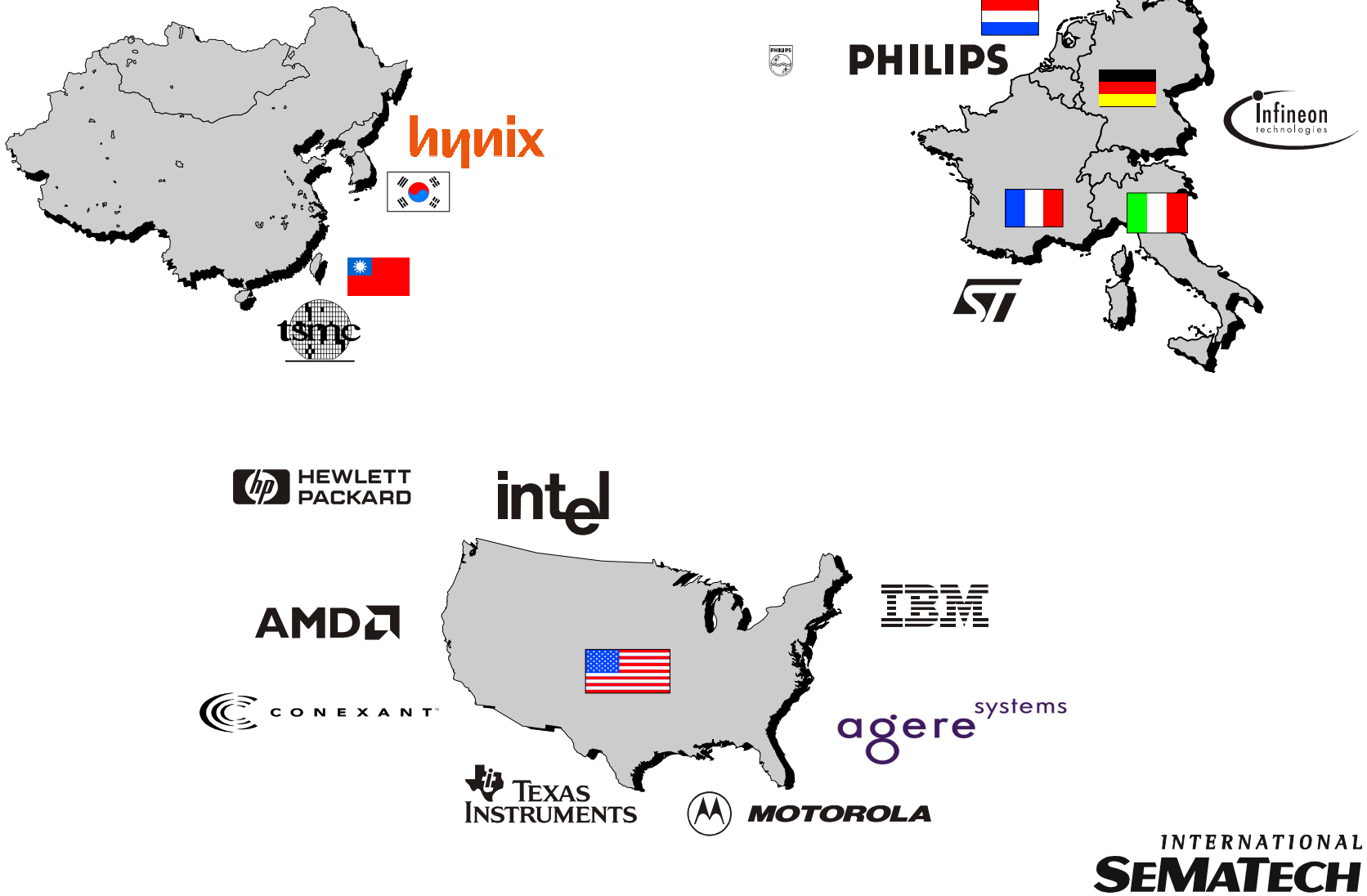
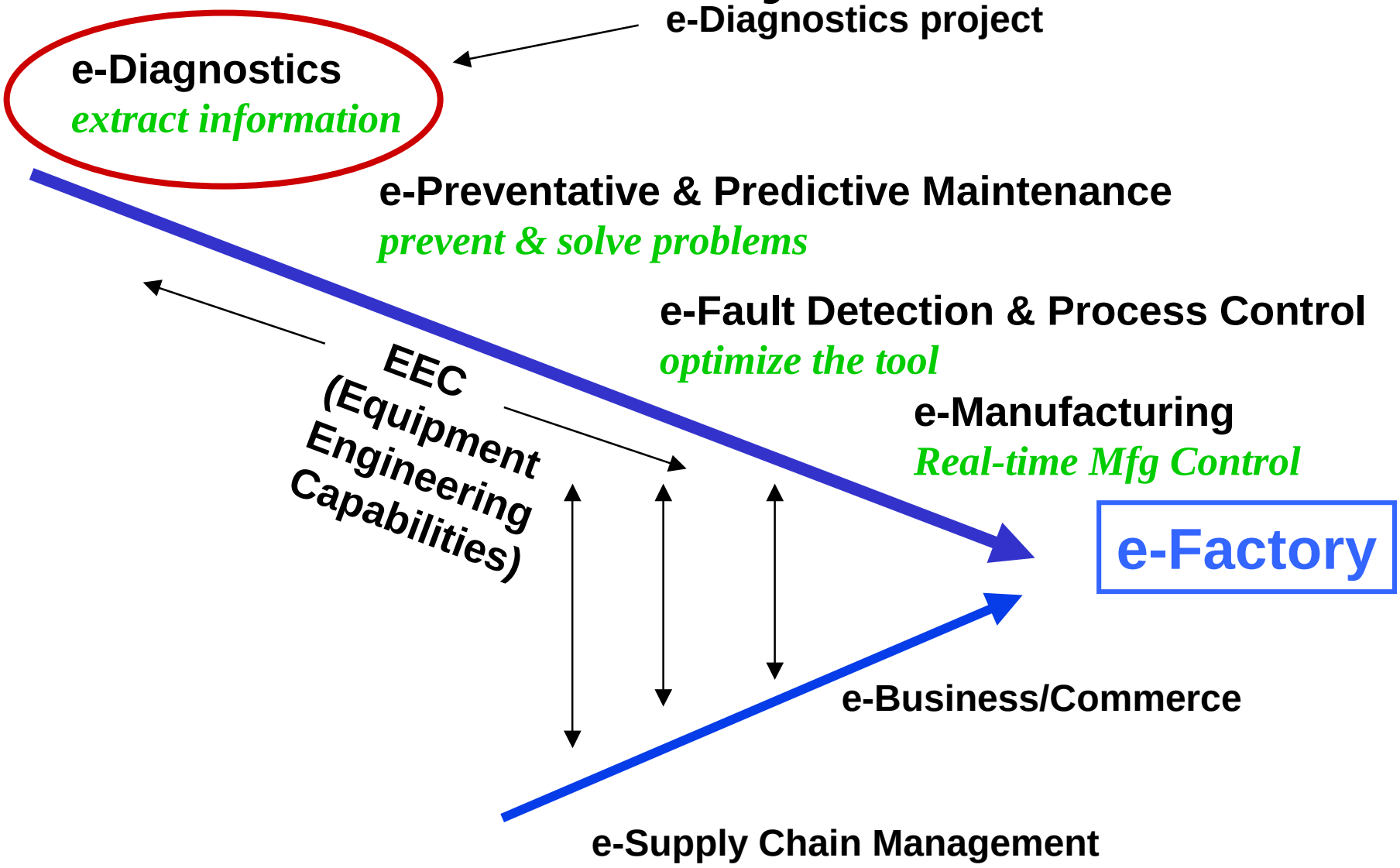
Selete - 13 IC Makers Collaborating

Semiconductor Leading Edge Technologies, Inc.

International SEMATECH
13 IC Makers Cooperating



Path to e-Factory - ISMT



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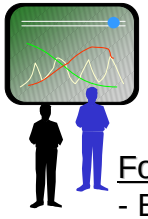
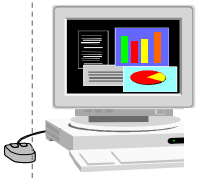
An e-Manufacturing Vision

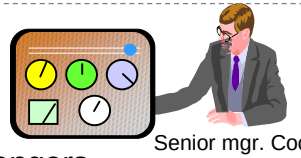
Linkages to/from Enterprise systems & suppliers



For Planners/Schedulers
- Enterprise interfaces
- Finance interfaces
- Materials interfaces
- Warehousing Interfaces

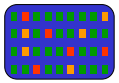
Summary Data & Analysis





Senior mgr. Cockpit

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

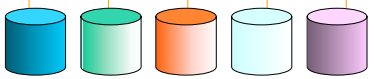
Tools enabling linkages to/from enterprise systems, suppliers, and the network

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

Tools to manage factory assets effectively ...

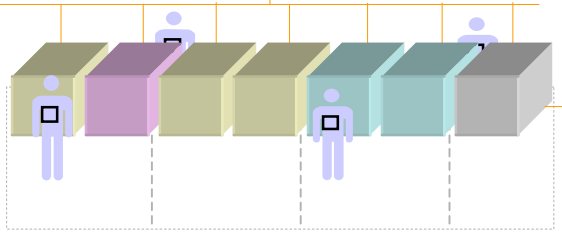
firewall

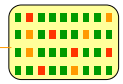
Reliable & Consistent Information - agreed to data, any time, anywhere, ...



- Consolidated databases, datamarts
- Data mining tools, Applications

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

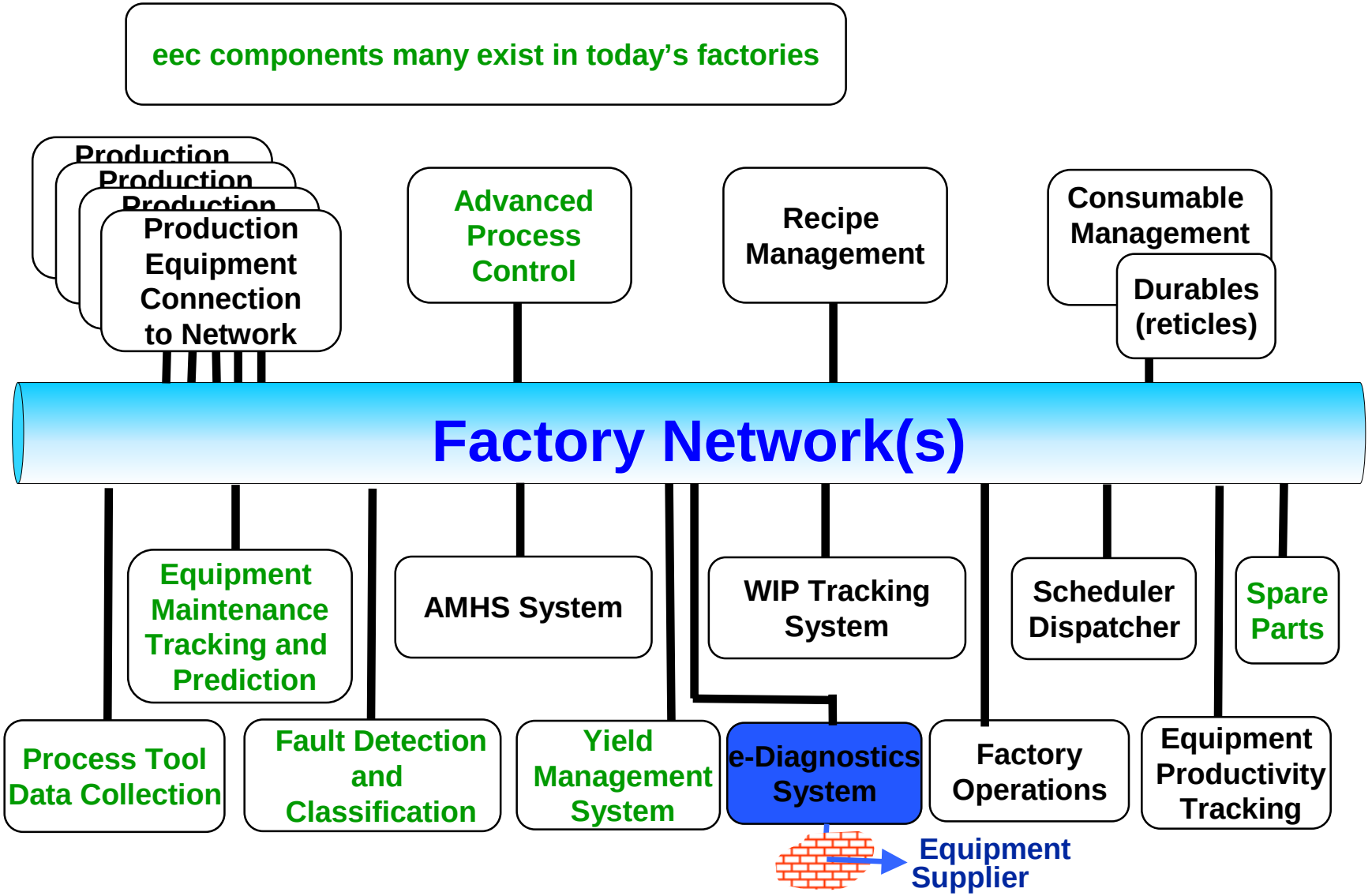




- Equipment
- Sensors
- Metrology
- WIP
- Process

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

OEE Improvement through Global Factory Information System Guidelines



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ISMI e-Diagnostic Capability Definitions

Level 3 - Prediction:
Predictive Maintenance, Self Diagnostics, Automated Notification

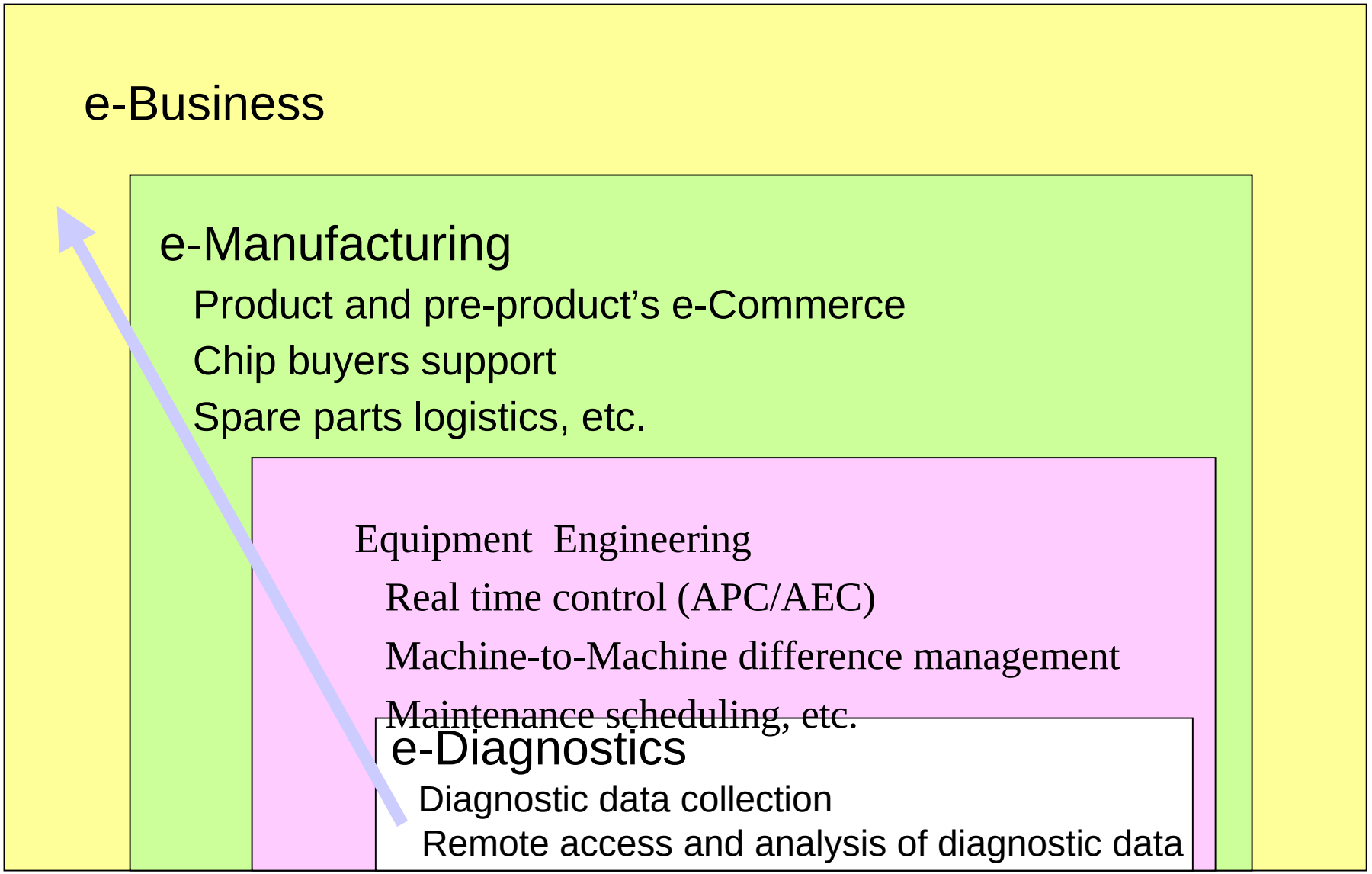
Level 2 - Analysis:
Automated Reporting and Advanced Analysis with SPC capability

Level 1 - Collection and Control:
Remote Tool Operation, Remote Performance Monitoring, Remote Equipment Configuration

Level 0 - Access and Remote Collaboration:
Remote connectivity to the tool and remote collaboration capabilities (text, audio, video)

Full capability definition document available at:
http://www.sematech.org/public/resources/ediag/index.htm

EEC Collaborations



Interfaces are Key

- The prime need for a successful EEC is standard interfaces
  - Equipment interface is number one
    - IEE/DDA/EECDTT task forces will define the interface from/to equipment to factory network
    - Simpler interfaces are easiest, DATA from the equipment
  - Interfaces to Off tool EEC applications
    - Use of 3rd party supplier apps is strongly encouraged by IC makers
    - Use existing CIM framework/APC framework where possible
      - Build off existing standards where possible
        - » Starting from scratch will take longer
        - » Don't repeat history, improve existing standards if possible
    - If new standards required, align with existing standards
    - Interfaces cannot be based on proprietary systems
  - Interfaces Outside of the factory
    - Use of standard IT technology is required, NOT semiconductor specific

Considerations

- e-Diagnostics and EEC are part of an overall factory system
  - ***NOT*** standalone functions
    - Must operate smoothly and effortlessly with factory system (MES) (e-Diagnostics is able to function independently of MES)
- Comes after basic function
- Data integrity is most important

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
  - Future SEMICON and APC Symposiums

Thanks for your engagement and support!!

For further information please contact:
Harvey.Wohlwend@sematech.org

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