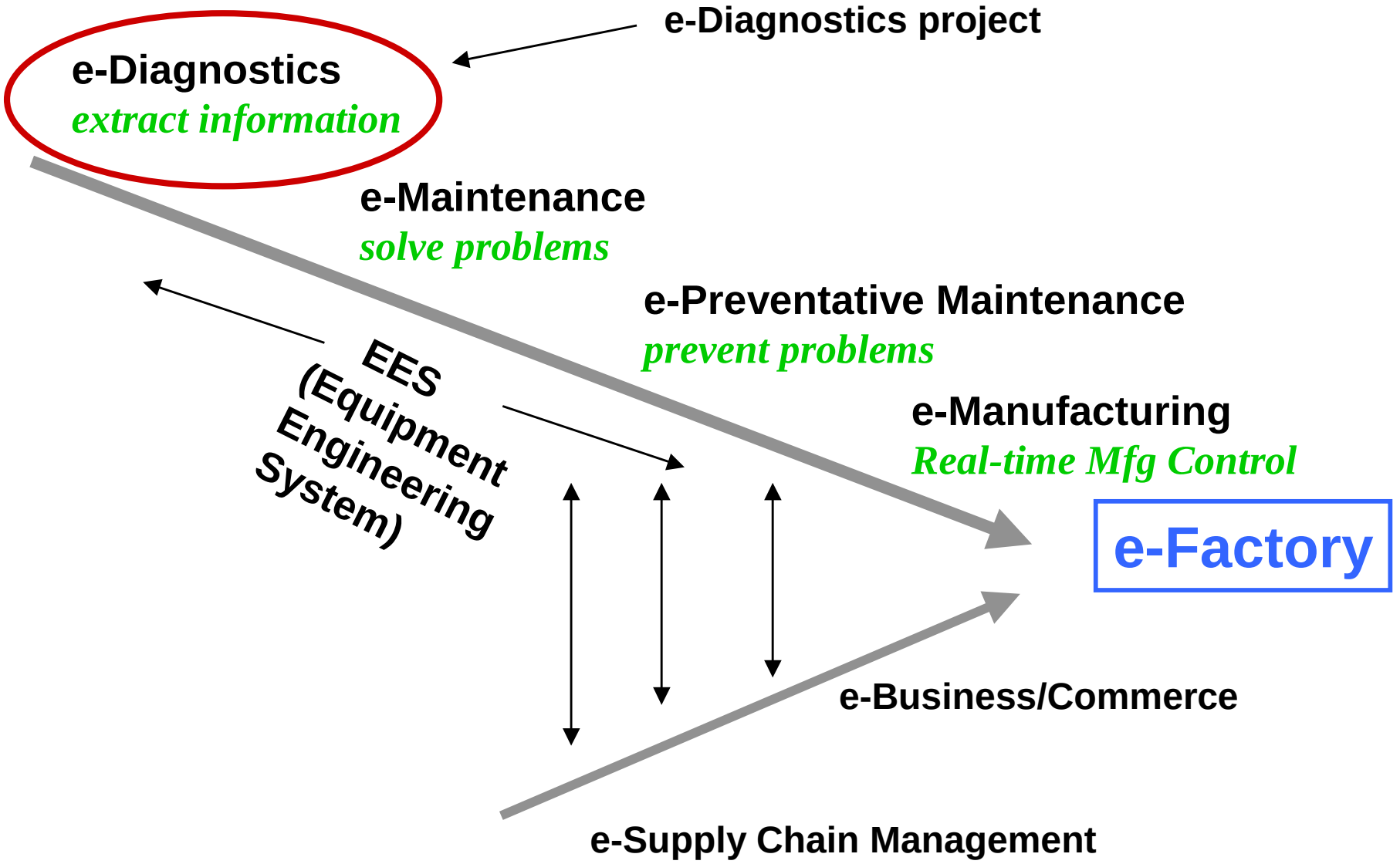
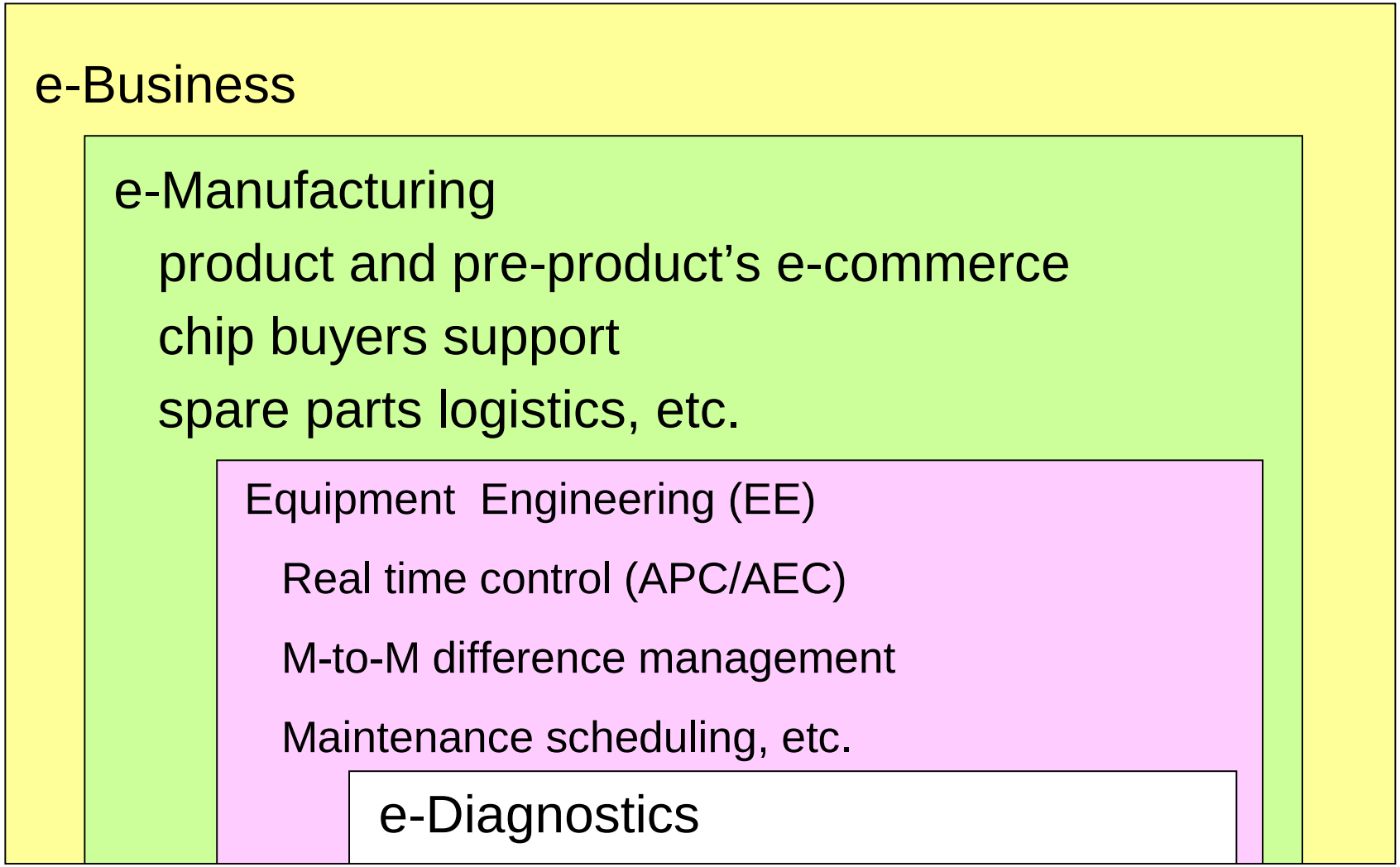
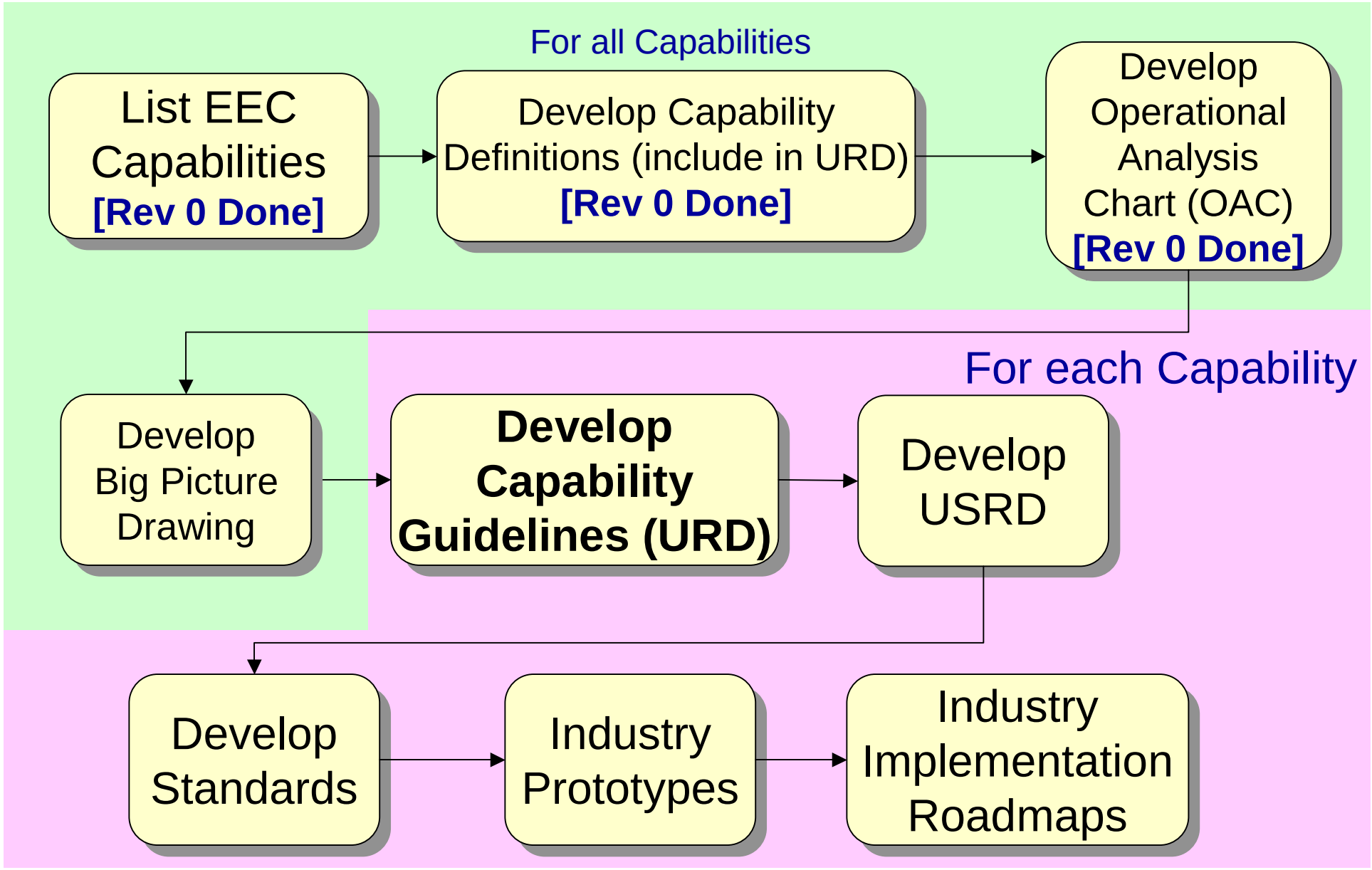
# Path to e-Factory - ISMT



# e-Manufacturing Overview - Selete



# EE Collaboration Process



# EE Collaboration Capability List

- **APC**
  - Real time process control (in-situ)
  - Feedback (Wafer/Lot)
  - Usage Adjustment (Equipment)
  - Feed Forward (Wafer/Lot)
- **FDC**
  - Fault Detection & Classification
  - SPC
- **Recipe Management**
  - Recipe Context Management System
  - Recipe Storage Management System
- **Equipment Engineering**
  - Tool Operations Tracking
  - Machine-to-Machine Difference Management
  - e-Diagnostics
  - Spare Parts Management
  - Maintenance Scheduling
  - Maintenance and Trouble shooting assistance

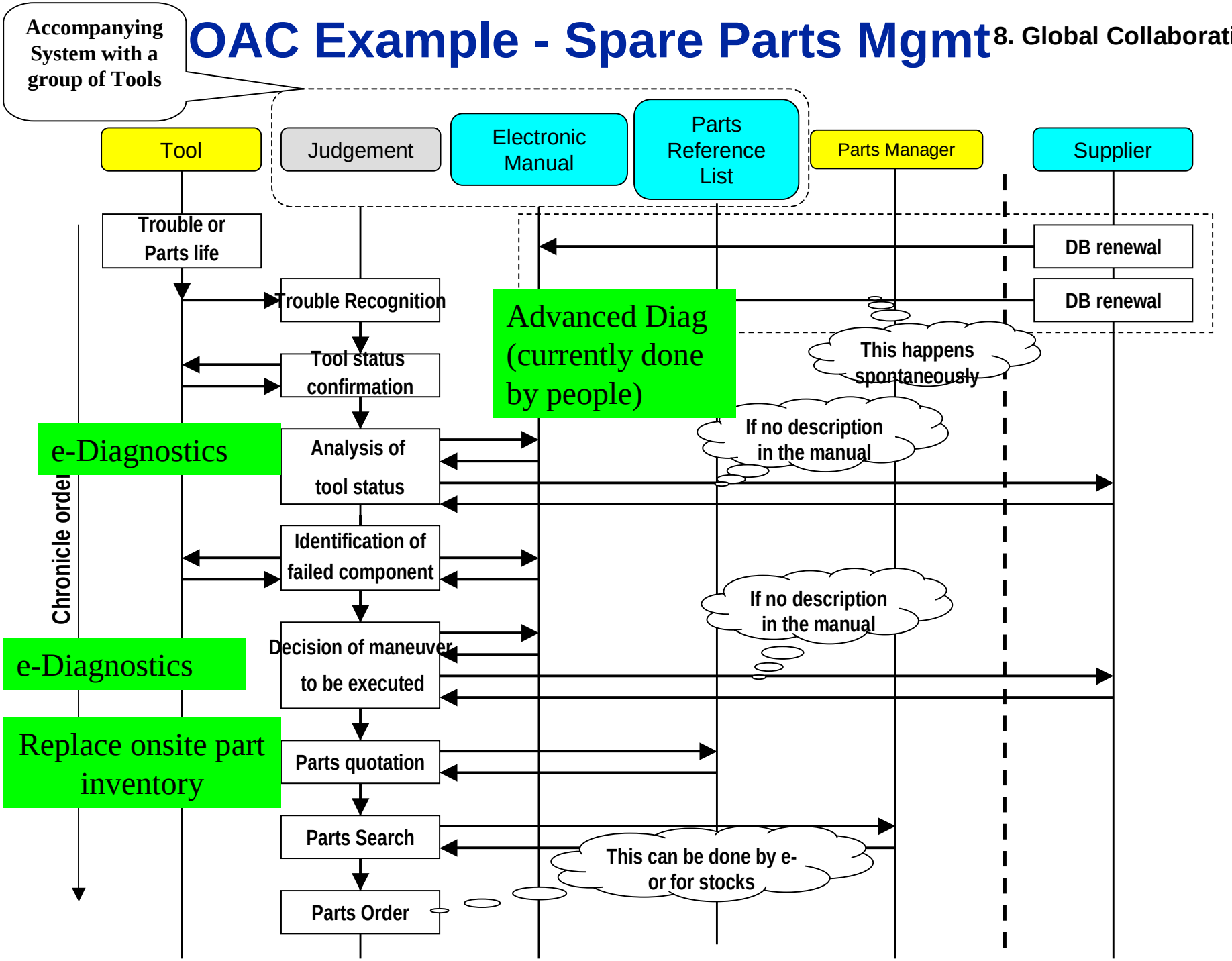
# Definition Example

## Tool Operations Tracking

- **IC Maker needs**
  - Purposes: line management, production control scheduling, dispatching, line capacity census
  - Resolution: “Macro” or “lot by lot”
  - Data example: PM prediction, consumables supply timing, ...
- **Supplier needs (for individual tools)**
  - Purpose: malfunction monitoring, M-to-M difference monitoring and correction, tool performance improvement, Tool performance verification
  - Resolution: “Micro”, or “wafer by wafer”, “component by component (module or chamber)”,”Batch by Batch”,”Recipe by Recipe (maybe?)”
  - Data example: Gantt charts for individual wafers, components operation state history, consumables live data to predict PM, ...

# OAC Example - Spare Parts Mgmt





# Guideline Example

**Title:**

- Tool Performance Analysis & Health Monitor

**Guideline:**

- Production equipment shall provide raw tool operation data as required for the purpose of tool health monitoring. Data shall be provided via a standard equipment interface upon the request of a factory host system. Equipment supplier shall provide documentation of all raw data available through the standard interface.

**Primary Guideline User:**

- IC Makers, Suppliers, Both

**Background:**

- IC makers require raw equipment operational data to perform equipment health analysis in order to improve factory operations.

**Standards:**

- Action required for SEMI to develop production equipment raw data interface standard.

**References and Examples:**

- Valve open close timings, in-tool wafer transfer action record data, gas flow profile analog data

**Pictures and Diagrams:**

# The Future Needs are Global

- Chip makers and equipment suppliers must develop a common strategy for the information systems used for Equipment Productivity Improvement
- This strategy must be:
  - a GLOBAL consensus and unified strategy
  - one that addresses the weak and missing components
  - one that solves integration problems
  - one that leads to open consensus standards
  - one with a consensus business model
- The Selete/ISMT EEC collaboration will provide this strategy and the necessary guidelines
- e-Diagnostics is addressing tool data availability

# Guideline Development Schedule

- Guideline development @ La Jolla in March 2001
- Workshop in mid June in Japan
- First rollout @ SEMICON West 2001
- Second rollout @ SEMICON Southwest 2001
- Third rollout @ SEMICON Japan 2001