

Event Processing for RFID Enabled Enterprise Application

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RFID Is a Cross Industry Initiative



RFID for Business Automation



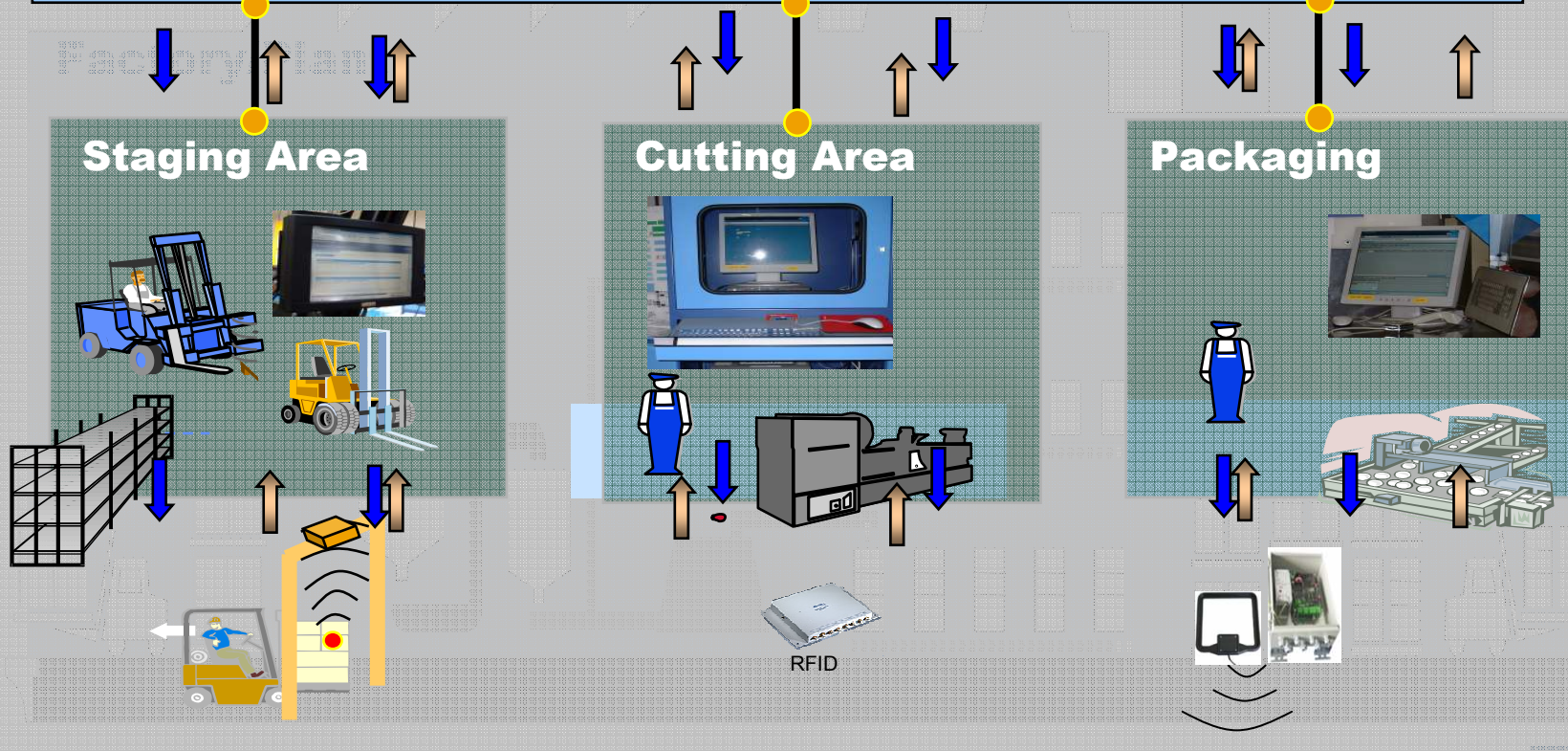
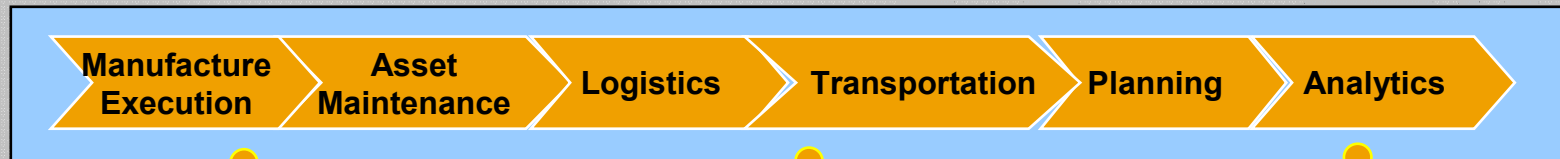
Product Supervisor



Maintenance Technician



Plant Manager

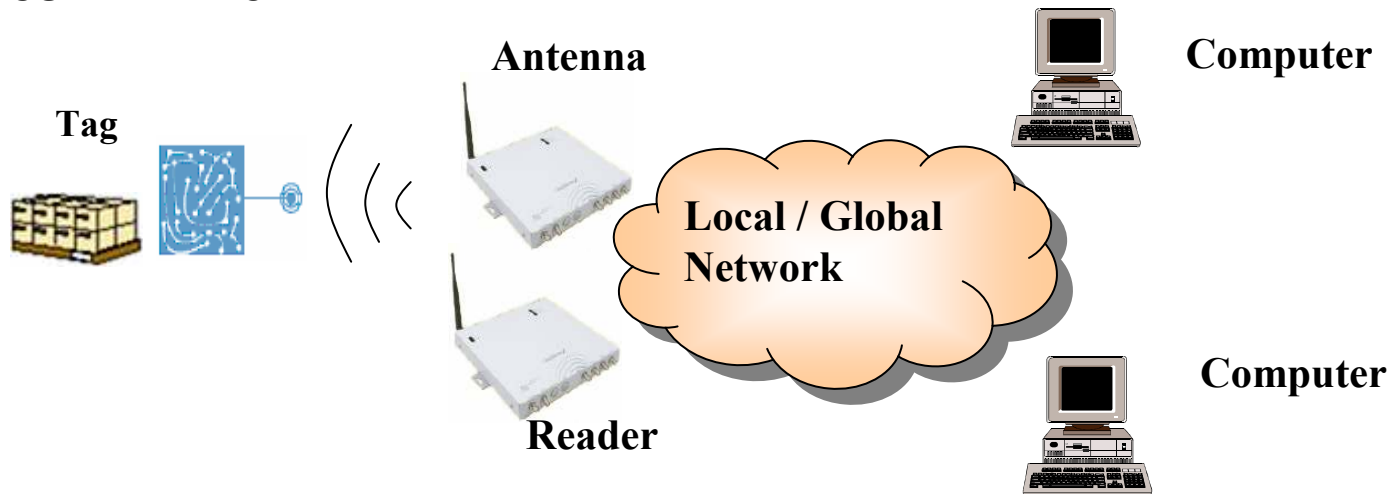




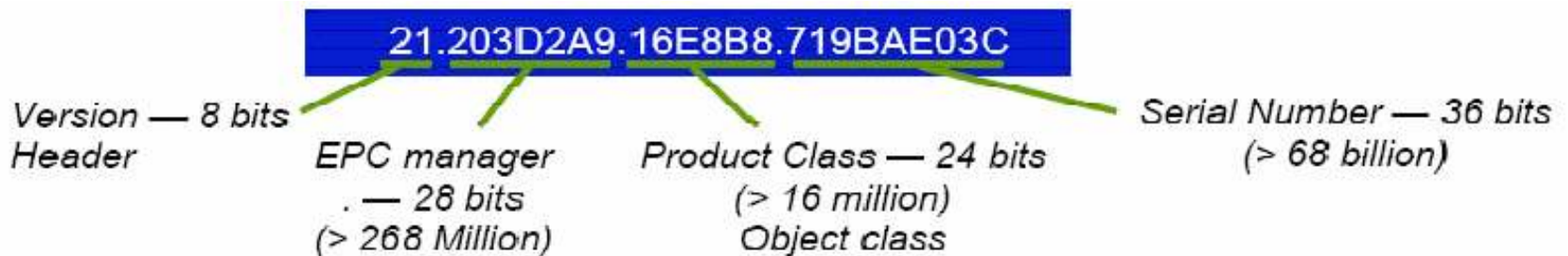
Basic Concepts

RFID and EPC (Auto-ID)

How does RFID work ?



Electronic Product Code (EPC)



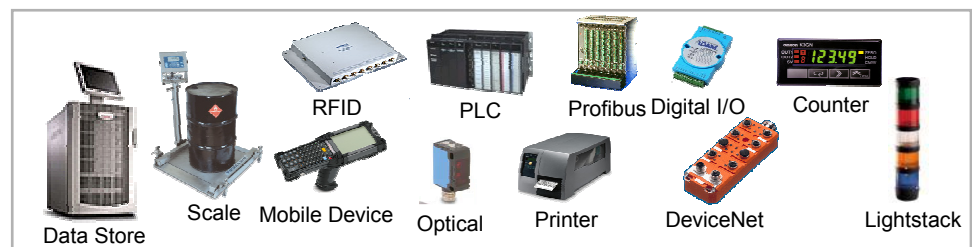
An End-to-End Auto-ID/EPC Solution



Data-oriented Middleware

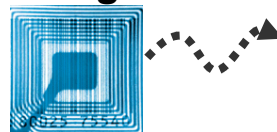
Device-oriented Middleware

Device



Tag & EPC

- Tag -

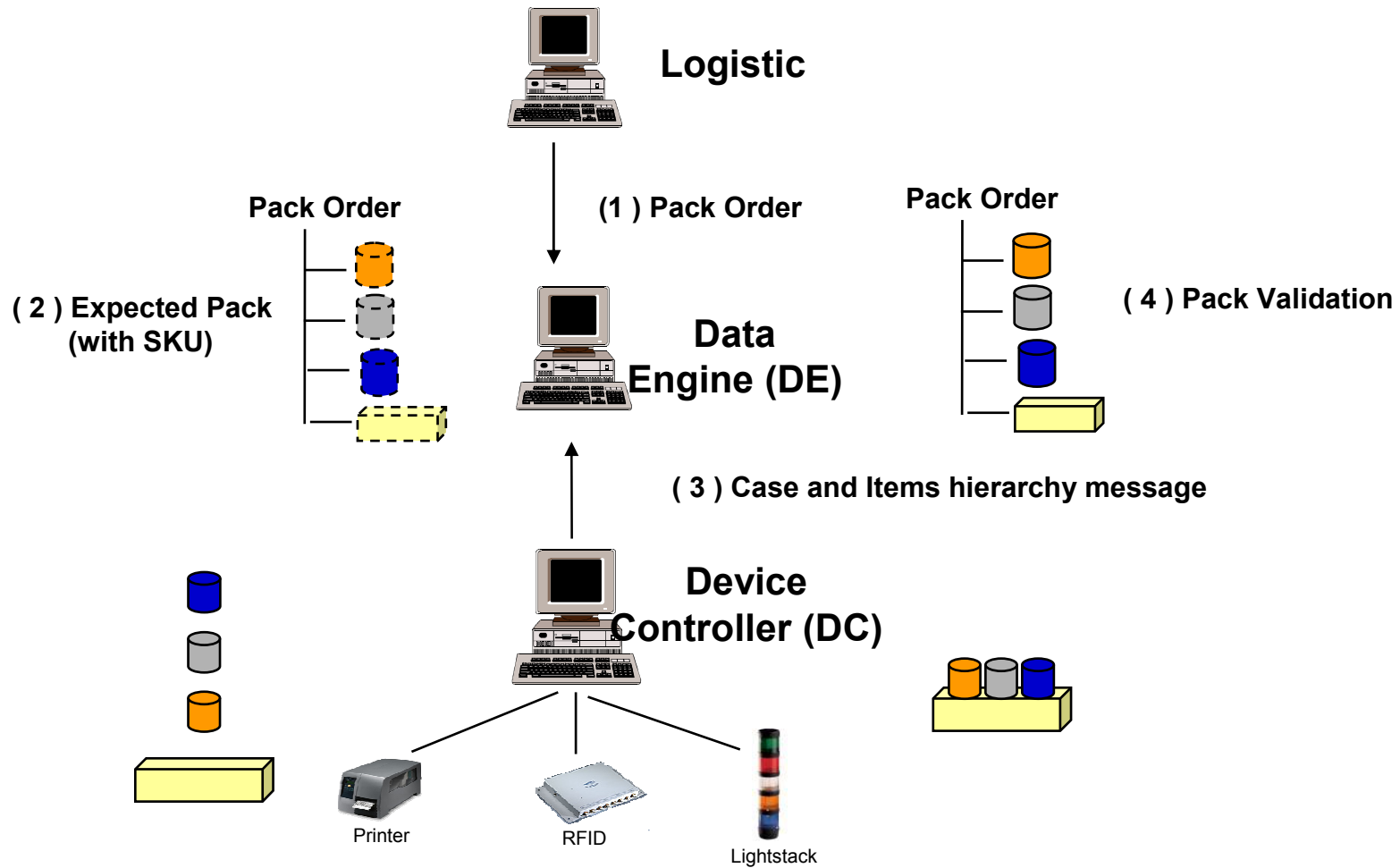


- EPC -

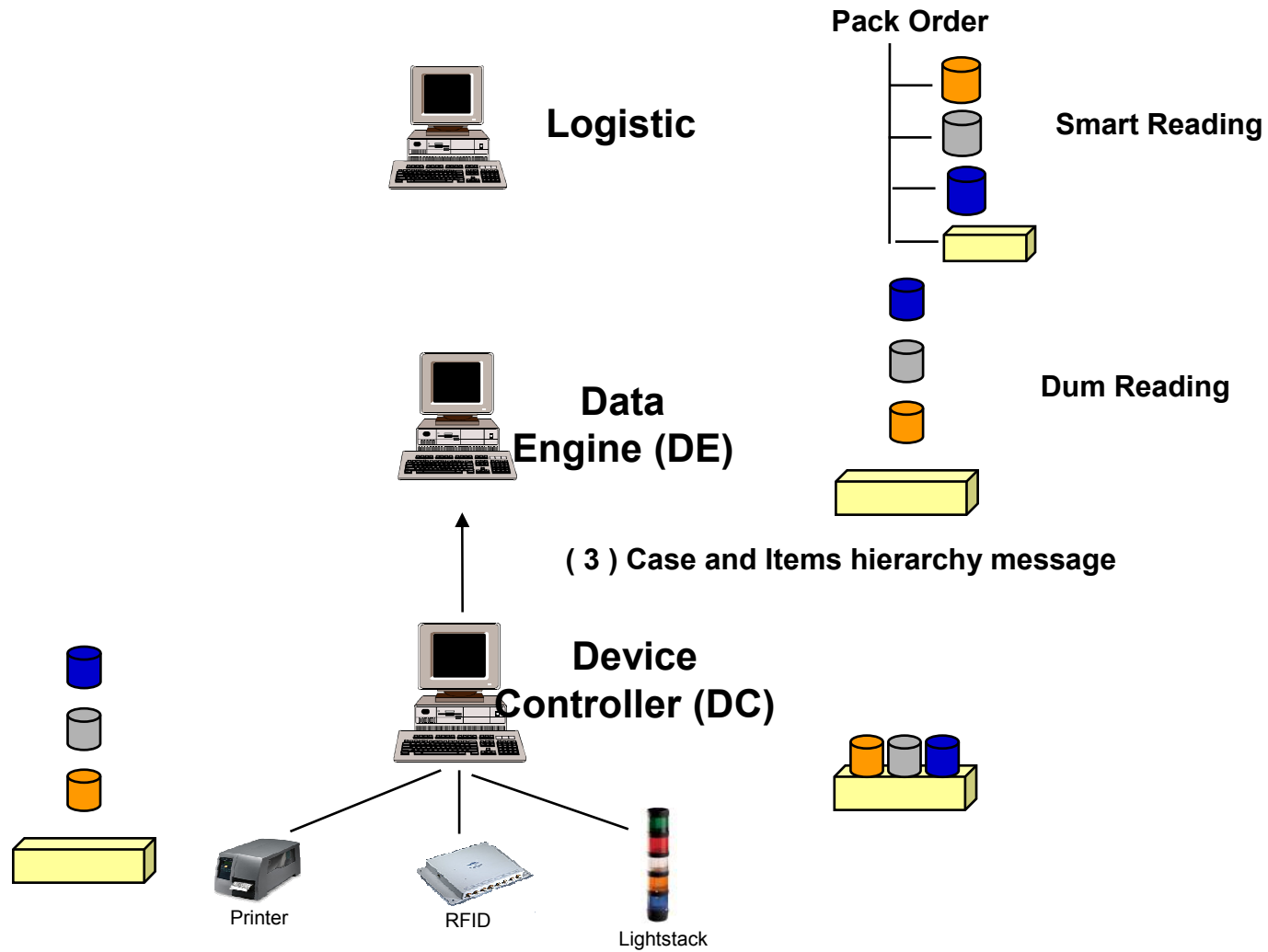
21.203D2A9.16E8B8.719BAE03C



Packing Operation



Smart Reading and "Dum" Reading





Use Case

A Global Network (with Multiple Functional RFID Apps)

A global network with multiple organizations and each organization has multiple sites

■ Logistic Operations

- ◆ Goods receive
- ◆ Unpack
- ◆ Store
- ◆ Pick
- ◆ Pack
- ◆ Load
- ◆ Delivery

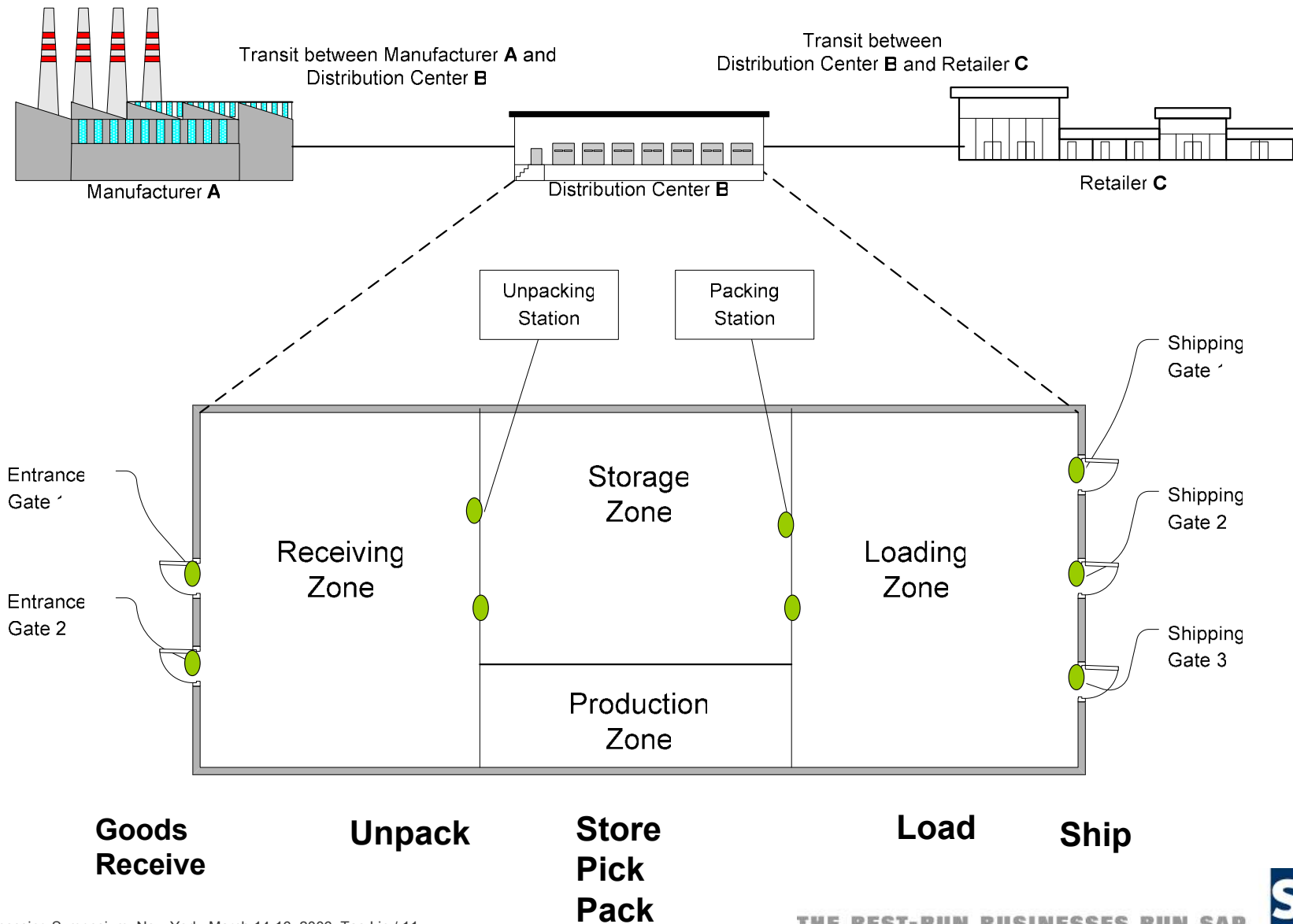
■ Asset Management

- ◆ Asset location tracking
- ◆ Security

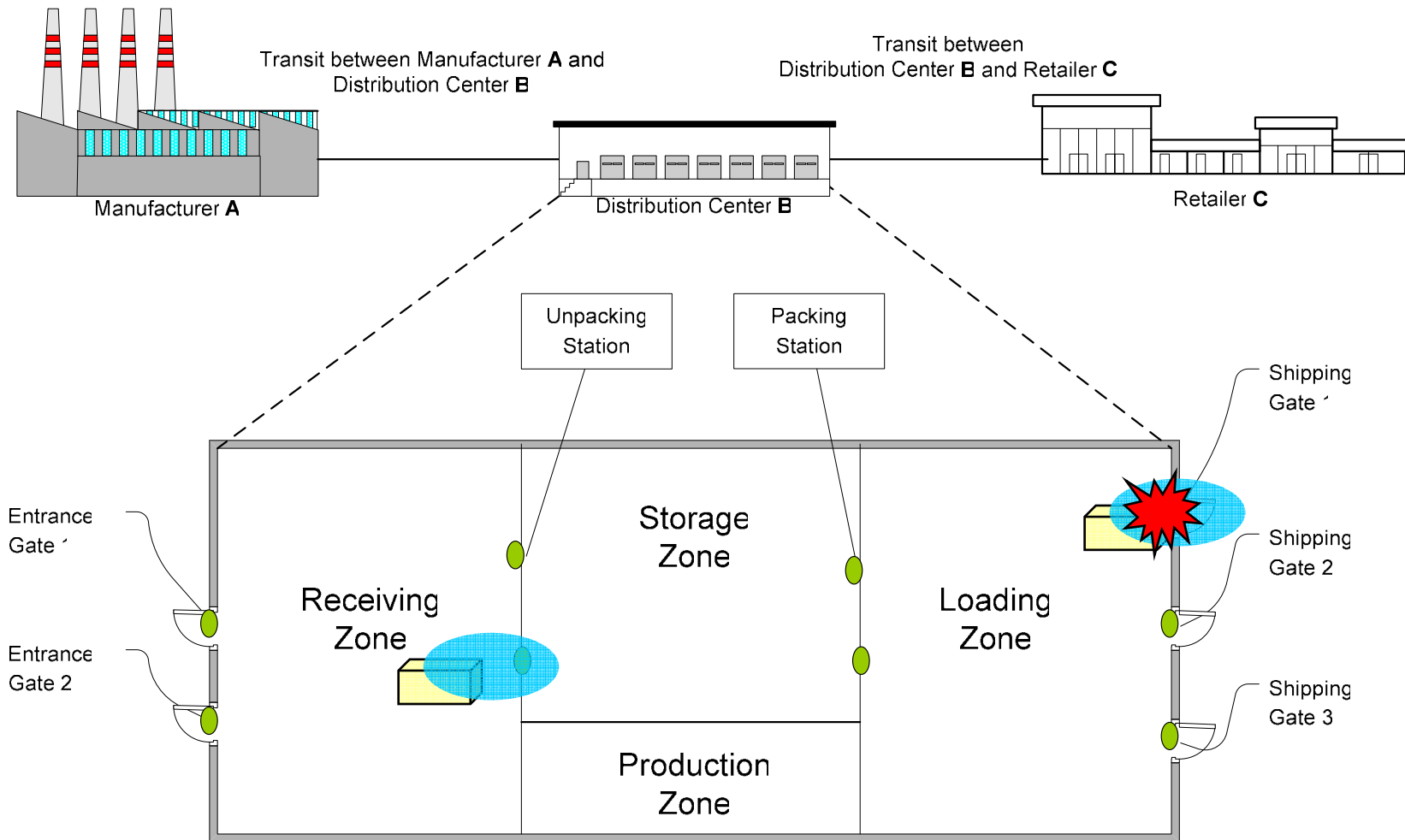
■ Maintenance

- ◆ Routing maintenance
- ◆ Preventive maintenance

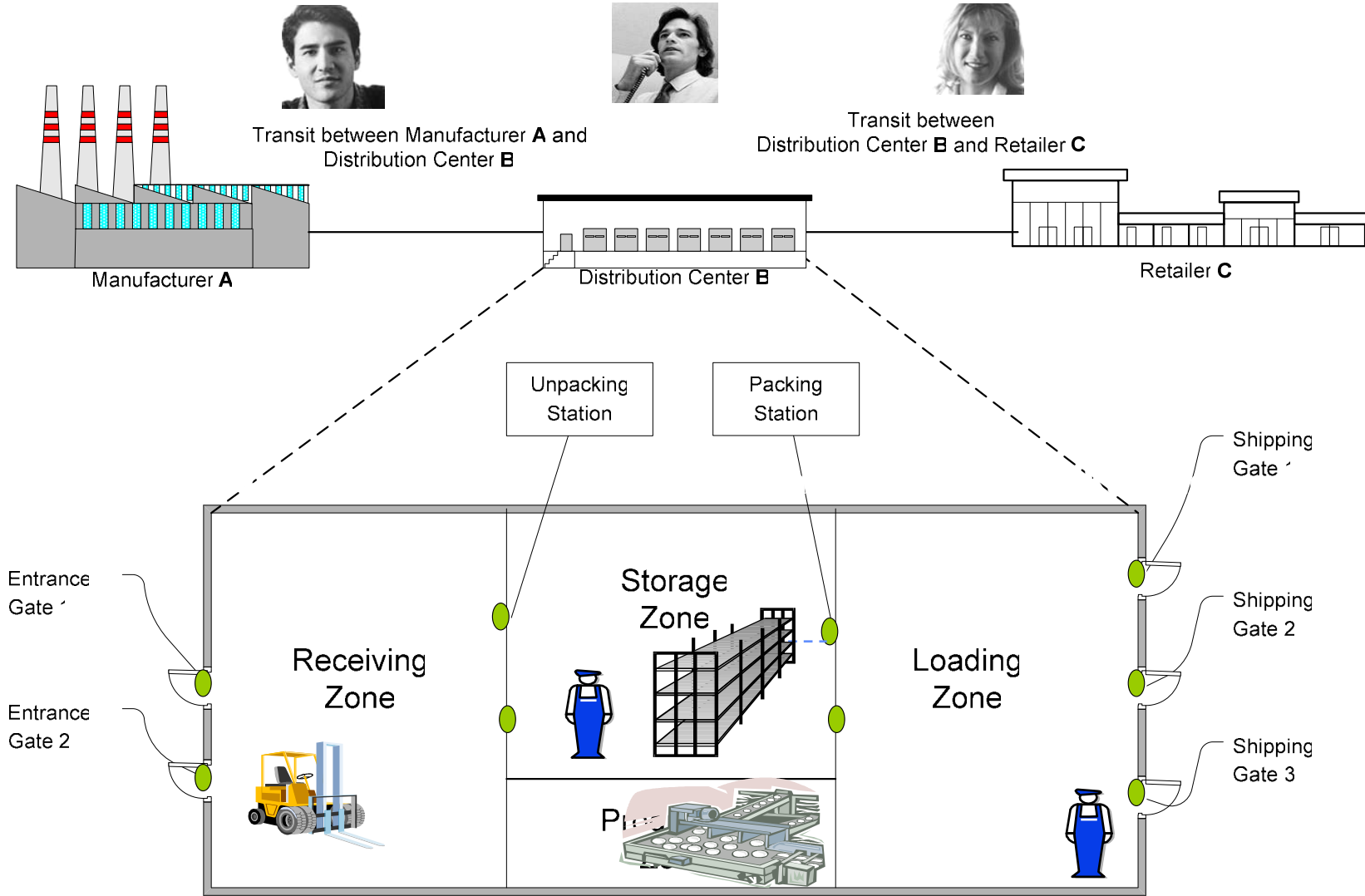
Logistic Operations



Asset Management



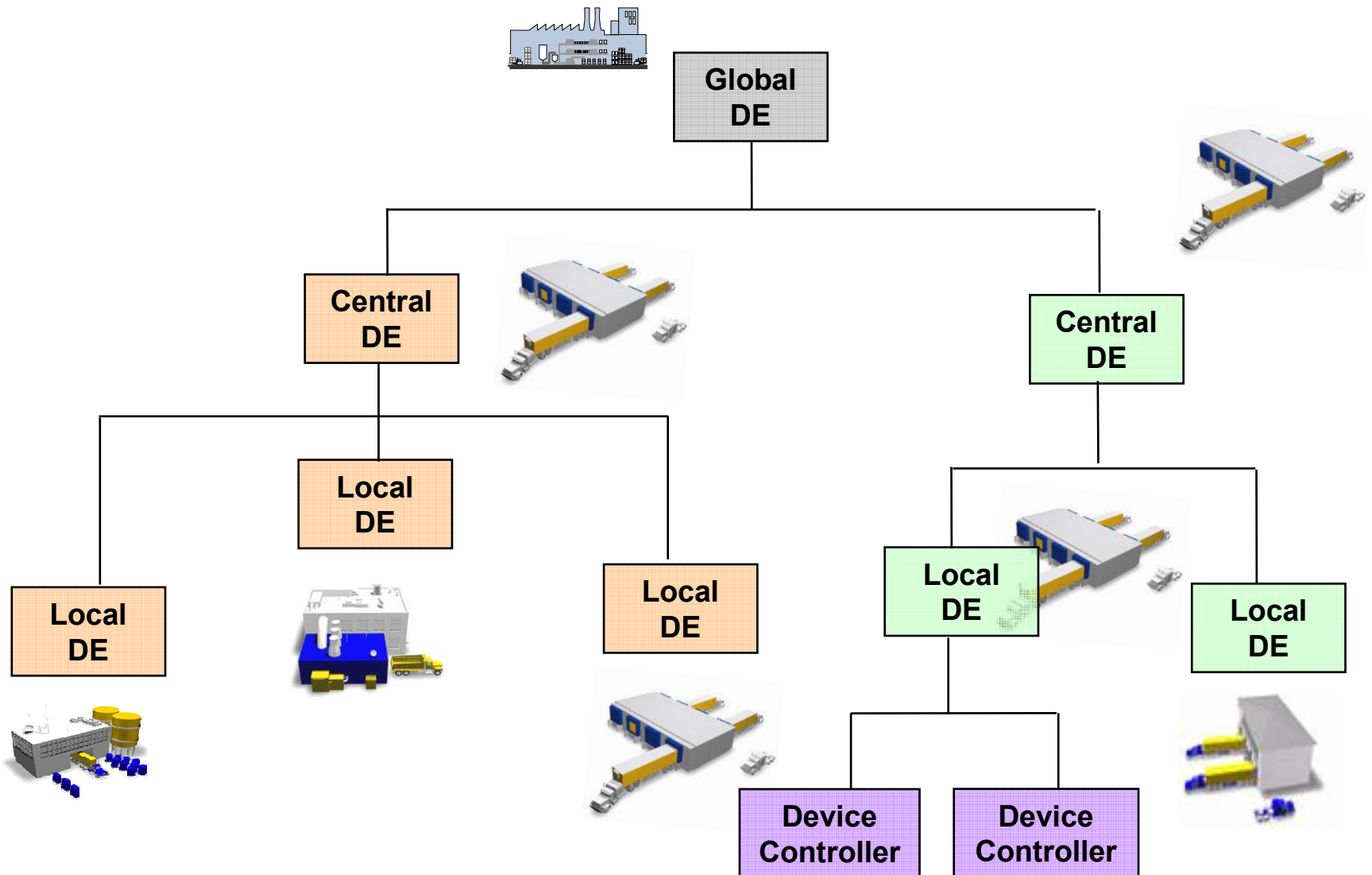
Maintenance



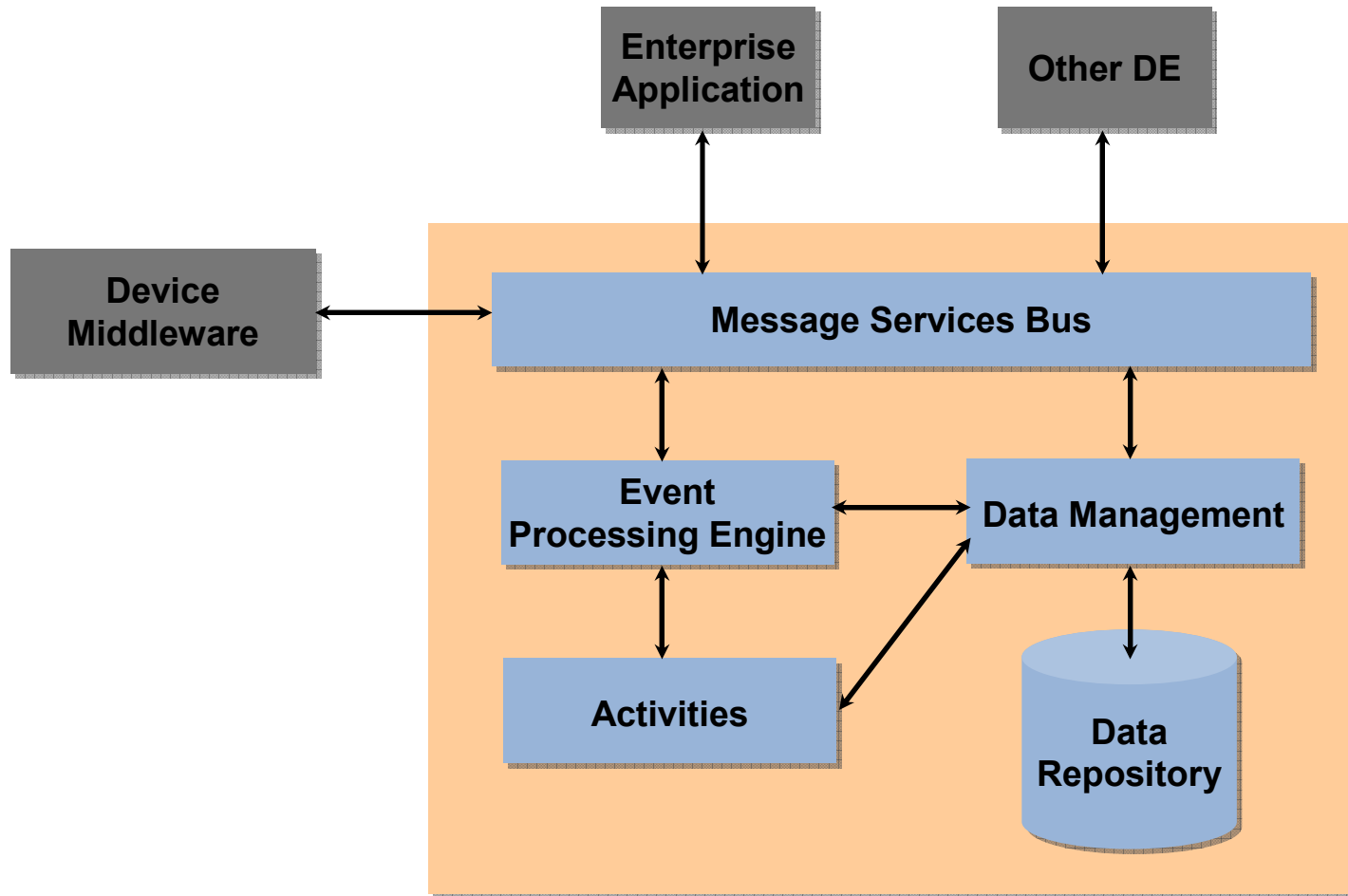


Event Processing

A Hierarchical and Distributed Data Middleware



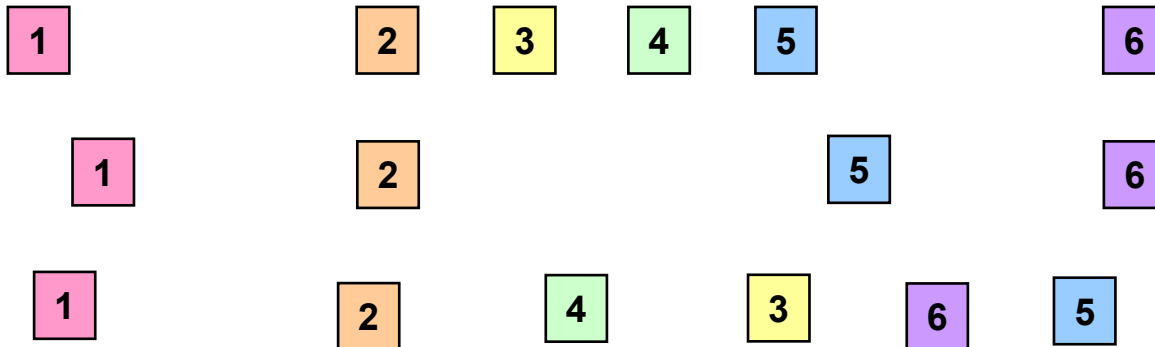
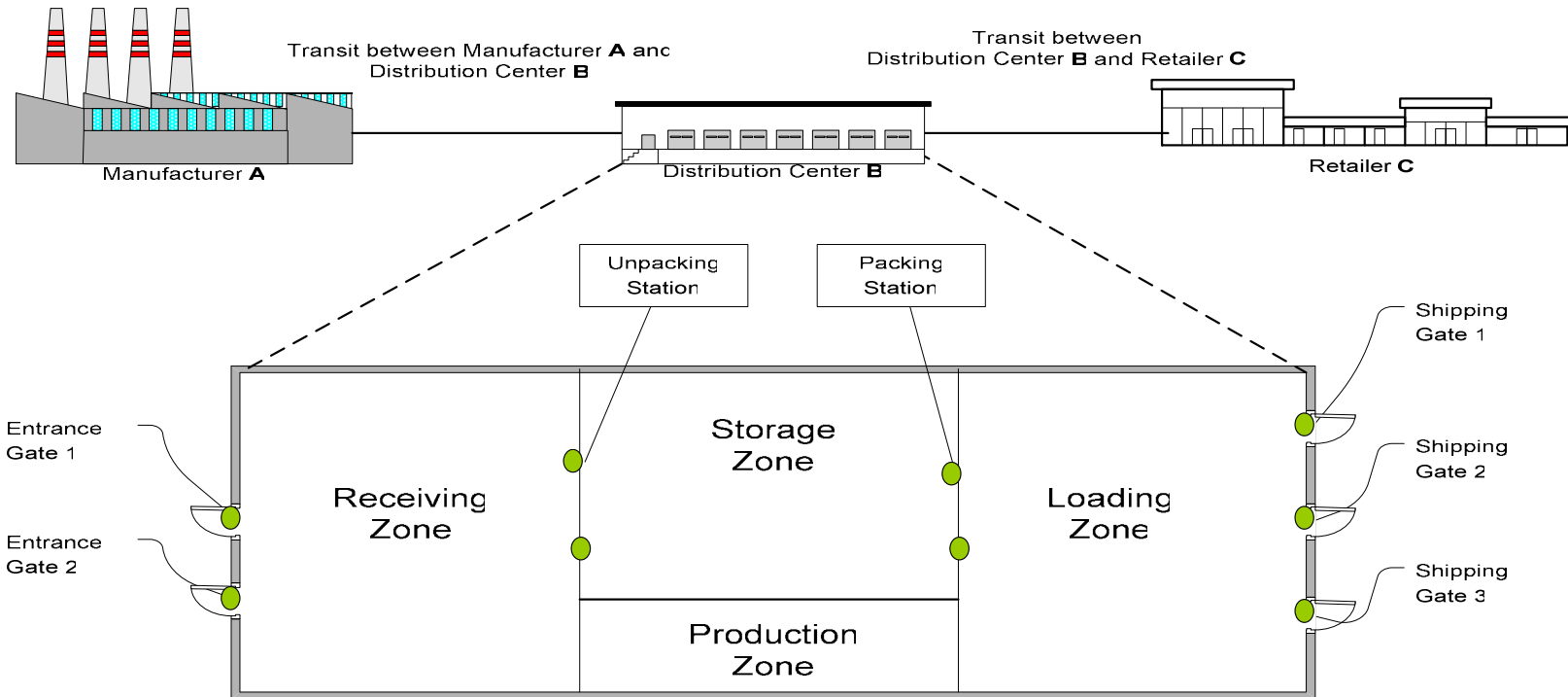
Conceptual Architecture for a Data Engine (DE)



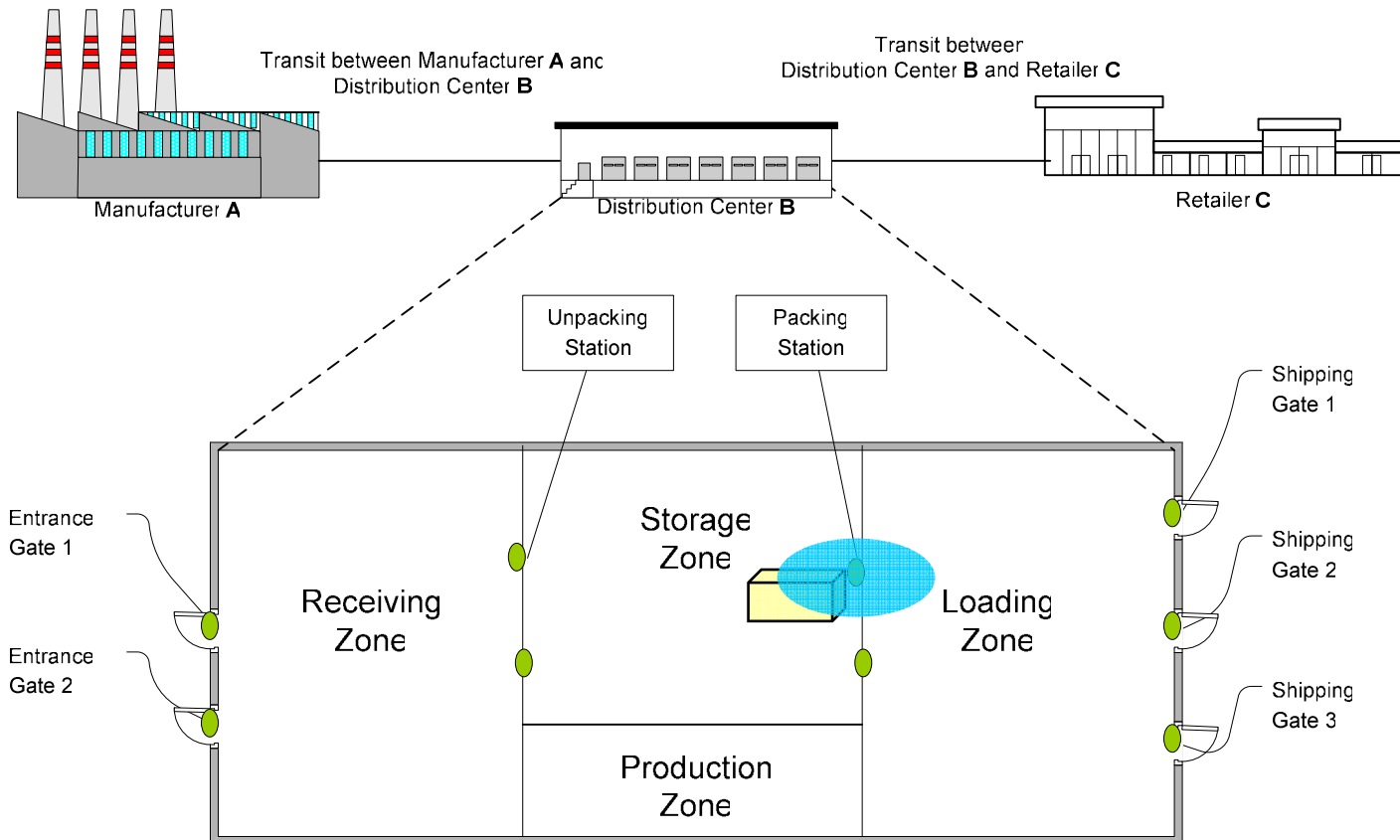
Challenges

- Large data and event volume
- Incomplete and out-of-order Events
- RFID is an enabling technology
- Multiple business processes associated to a single reading
- Push down business context

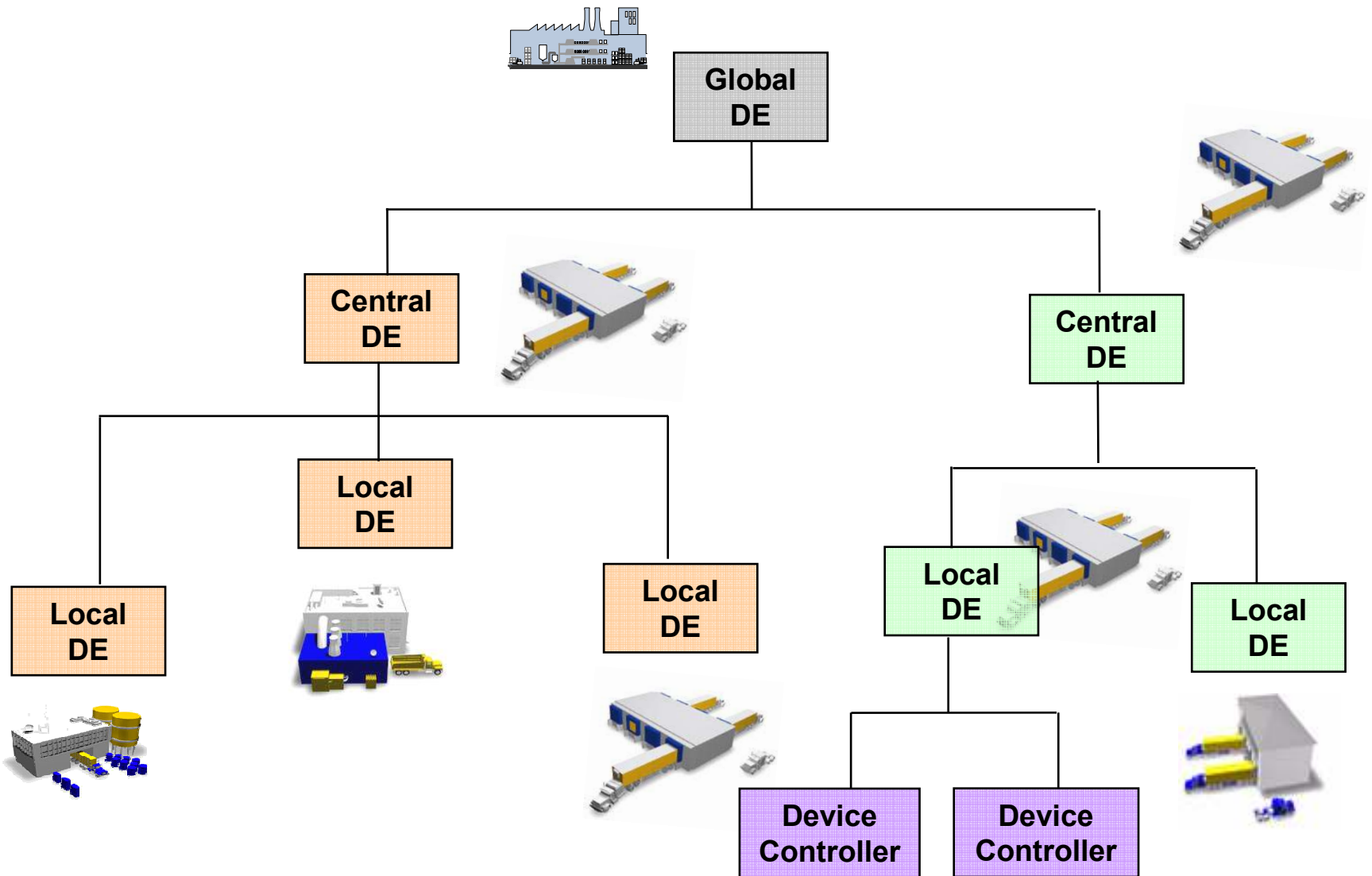
Incomplete and Out-of-Order Events



Multiple Business Processes Associated to a Single Reading



Push Down Business Context



Wish List

- **A hierarchical and distributed Complex Event Processing Infrastructure**
- **Coordinate and synch from different layers**
- **Easy to be customized by the context from multiple business applications**
- **High performance and scalable**
- **Easy to integrate with existing business applications**
- **Easy to add new activities (processing)**



Q&A

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