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SIMATIC IT

Manufacturing Execution System

Achieving Manufacturing Excellence

FMF – Finnish MES Forum

Theme Day: MES Market Survey

11.5.2011

Accenture, Helsinki

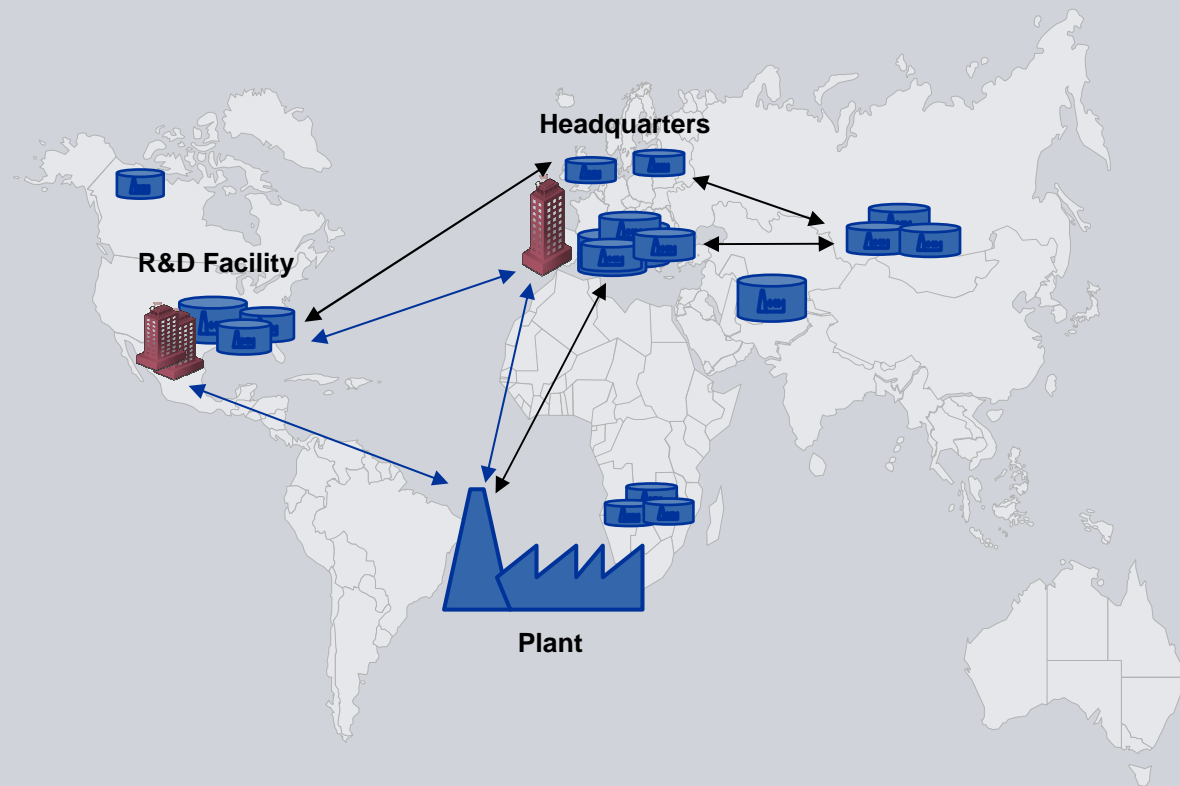
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Manufacturing Excellence

Manufacturers value creation processes start at the plant

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- Each plant has its own strategy and they all operate in a very individual way
- Manufacturing operations need to be transparent and coordinated, worldwide
- Successful coordination can only occur through seamless integration of operating levels
- Manufacturers need the right technological enabler to coordinate their manufacturing and R&D processes
- Cross plant visibility can help to optimize global business



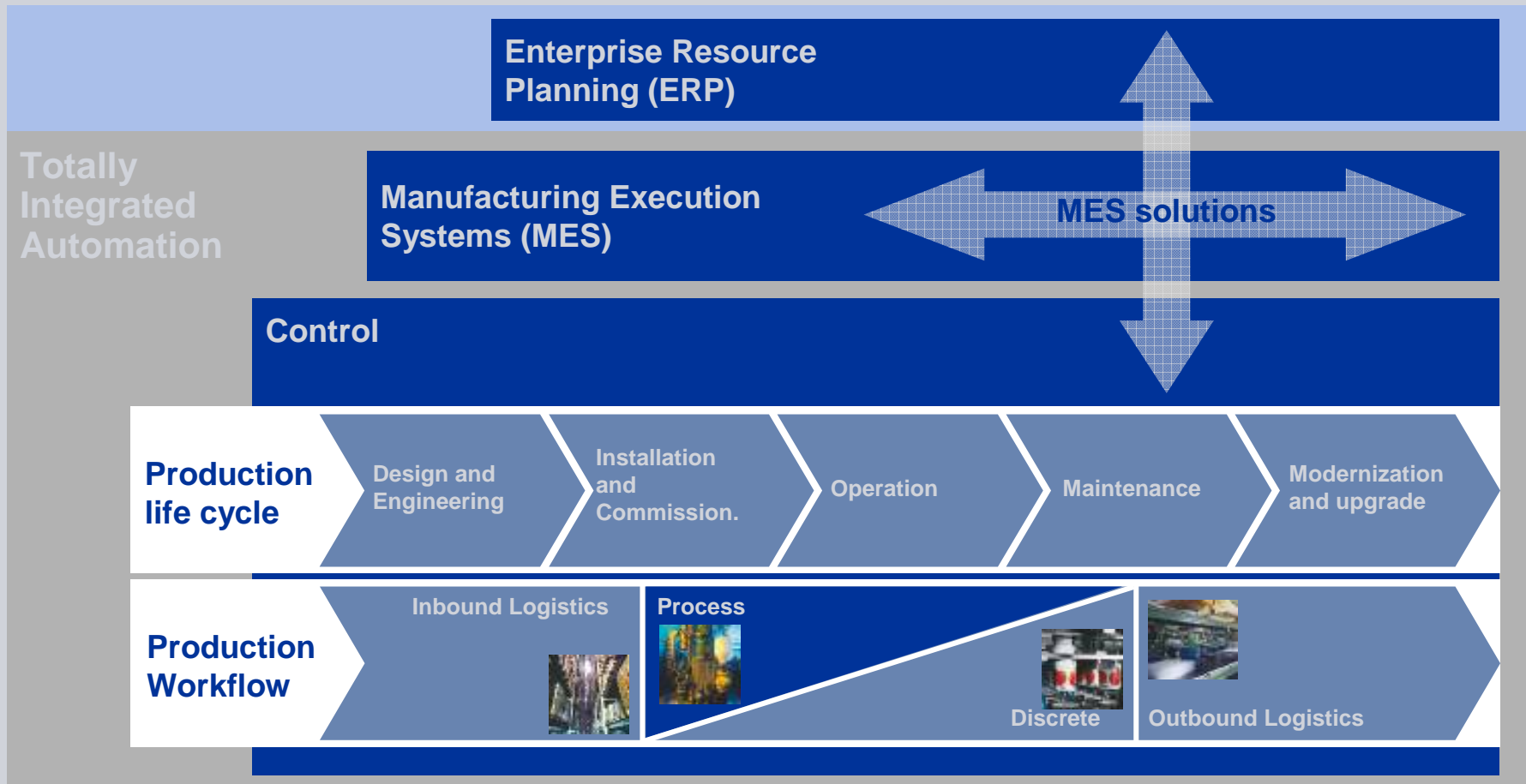
SIMATIC IT offers the right level of responsiveness for today's and tomorrow's business requirements

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SIEMENS Industry Sector

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Our Automation Platform is Totally Integrated Automation (TIA)



TIA seamlessly links the Field Level, Control, MES and ERP Levels while integrating all in- and outbound logistics

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Industry Sector

SIMATIC IT Portfolio

Extensive Functionality, yet Scalable and Modular!

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Intelligence Suite

Real-time data monitoring and historical data collection in a unified environment



R&D Suite

Integrating R&D and manufacturing processes, workflows and data



Production Suite

Production management and execution



Industry Libraries

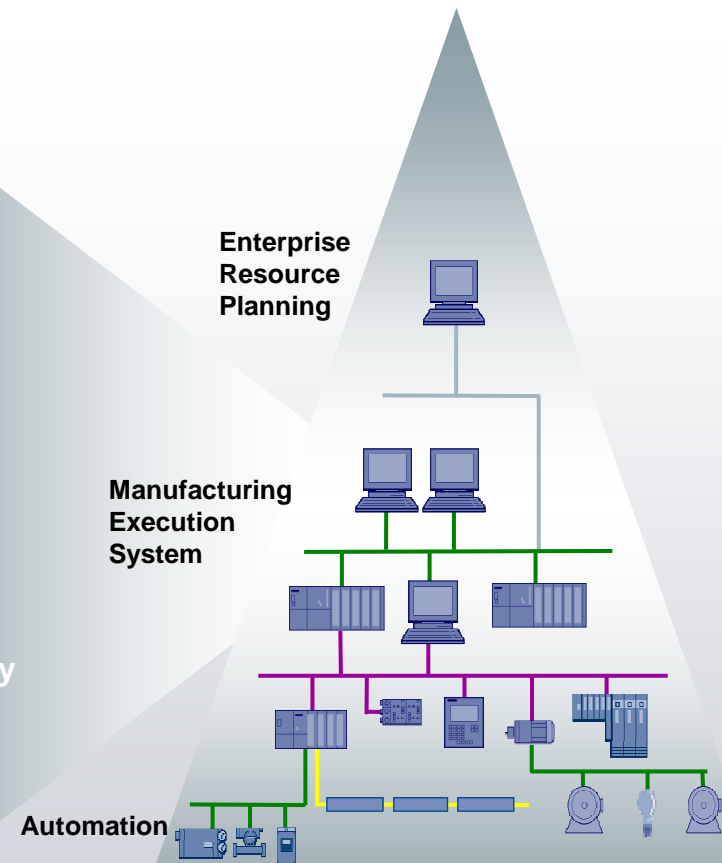
- Discrete Industry Manufacturing
- Process Industry Manufacturing



Value Added Services

A broad concept of Customer Care

- Scalability
- Efficiency
- Profitability
- Consistency
- Flexibility
- Visibility
- Quality
- Transparency



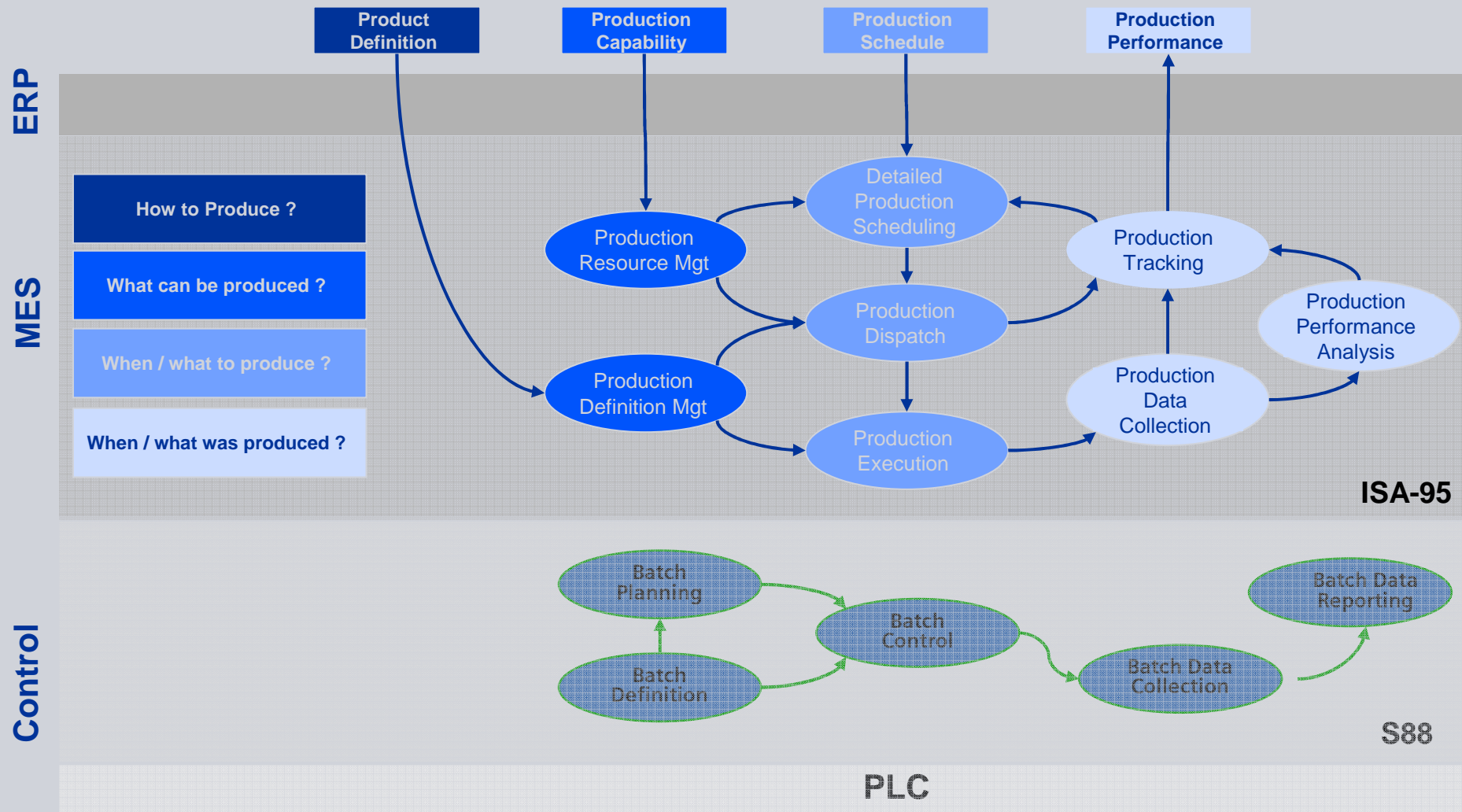
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Industry Sector

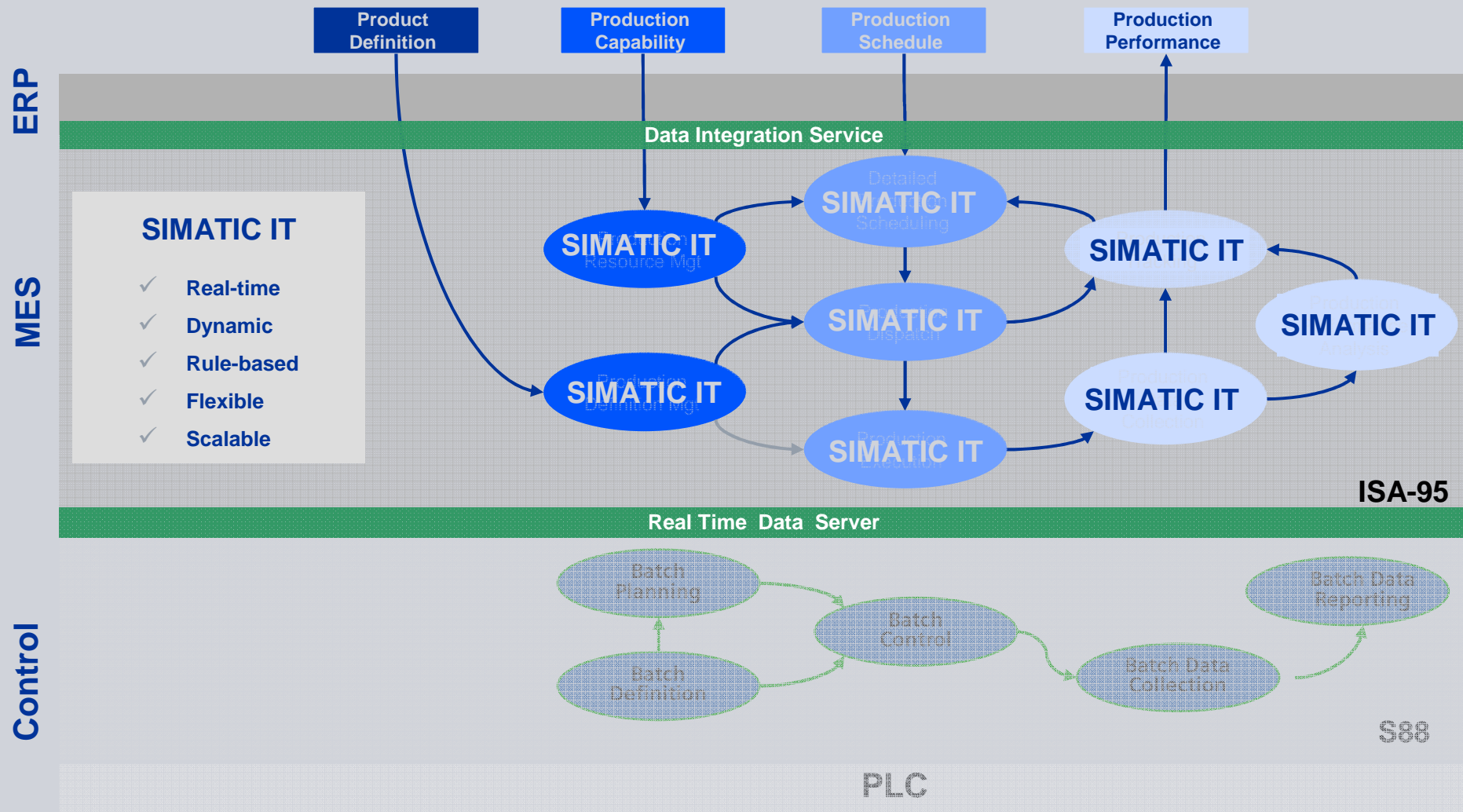
SIMATIC IT Production Suite

Overview

Functional definition of Production Operations



SIMATIC IT Mapping on ISA-95



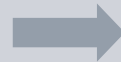
We need to answer some questions...

How to Produce?



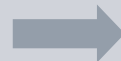
- Import Master Recipes
- Define Operations and Set-Points
- Which resource use?

What can be produced?



- Raw and Finished Materials
- Bill of Materials (BOM)
- Product Definition

When and what to produce?



- Import and manage orders
- Production Scheduling
- Production Execution

When and what was produced?

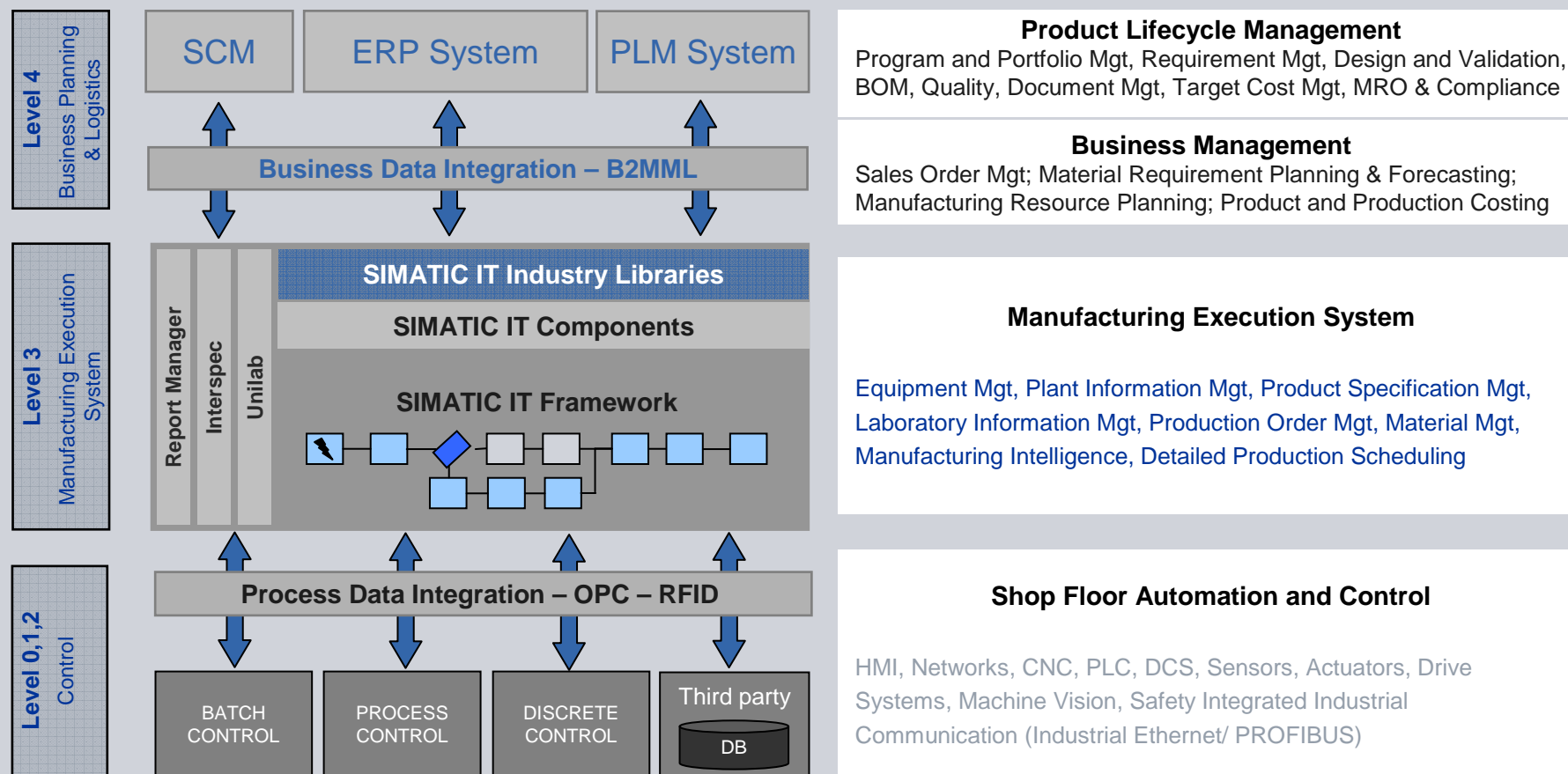


- Materials Genealogy
- KPI Calculation
- Data Collection & Data Analysis

....and SIMATIC IT is the right answer !!!!

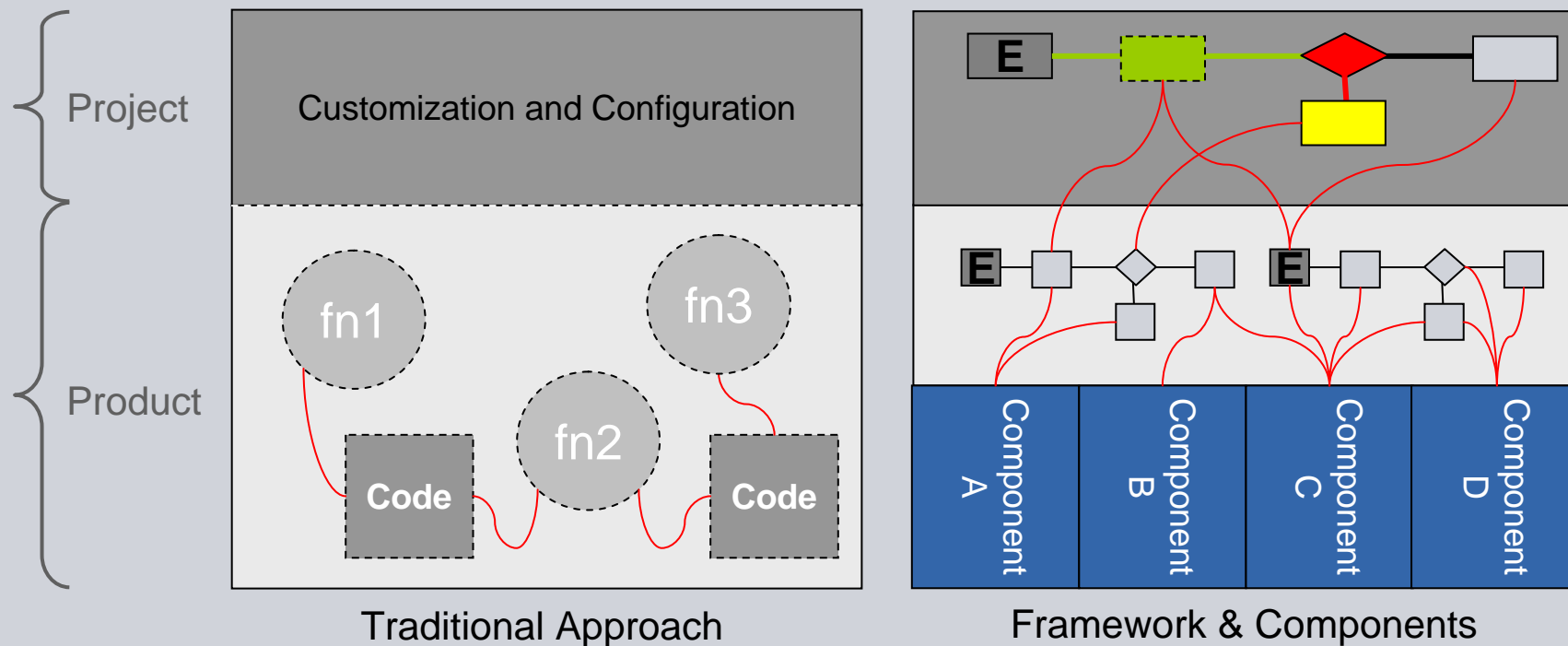
SIMATIC IT Architecture

SIMATIC IT architecture, fully compliant with ISA-95, is based on a Framework and on a set of dedicated Components and Libraries



Traditional versus Framework Approach

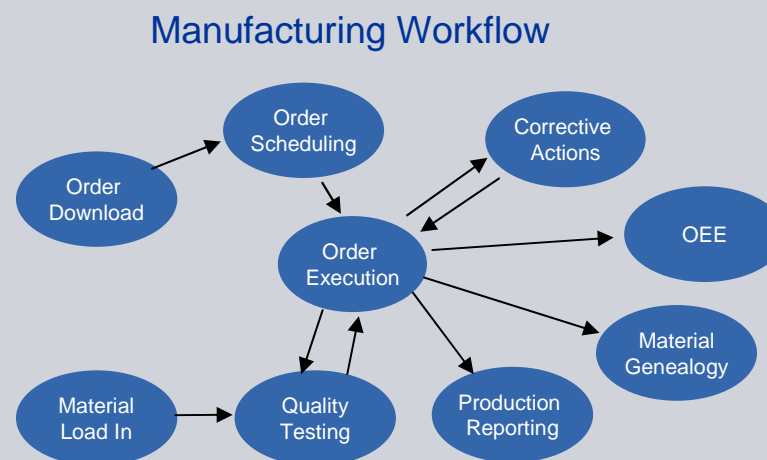
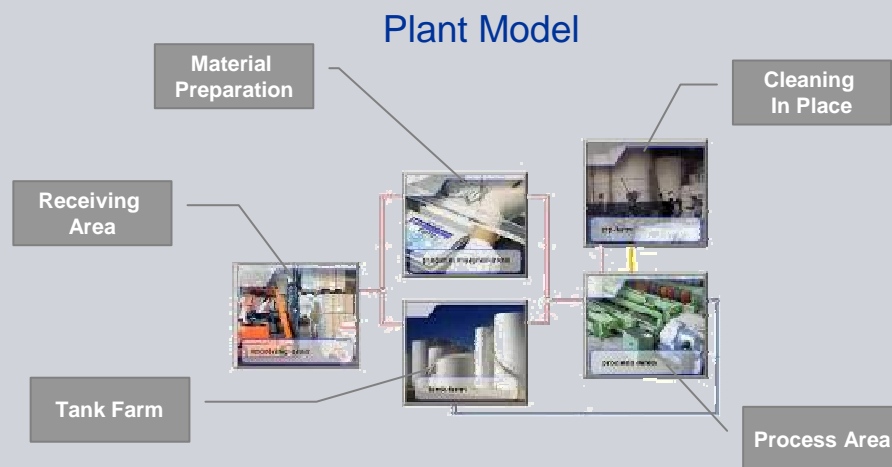
The graphical environment (keeping separated plant model and components) enables defining operations at the corporate level, still enabling customization at the area level (in multi-plant roll-out)



SIMATIC IT Framework & Components

Plant Model and Manufacturing Workflows are centralized in a Framework.

Workflows coordinate basic operations performed by Components

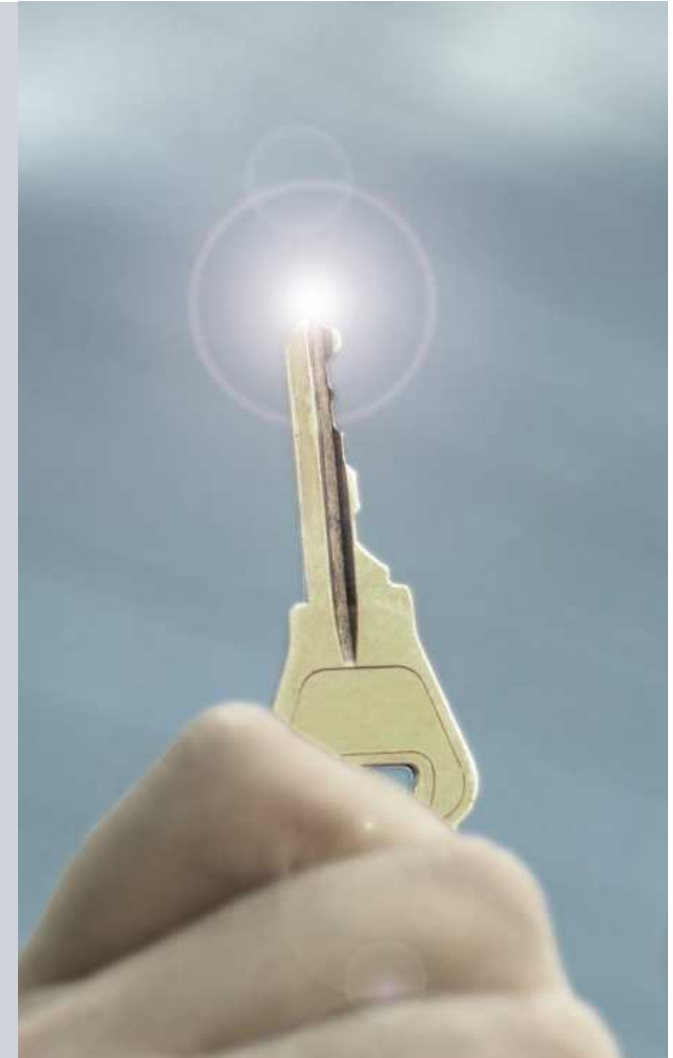


Components

Production Order Manager	Predictive Detailed Scheduler	OEE-DTM	Plant PerformanceAnalyzer
Product Definition Manager	Personnel Manager	SPC	Interspec
Material Manager	Messaging Manager	Client Application Builder	Historian
Shift Calendar	Unilab	Report Manager	At Line test

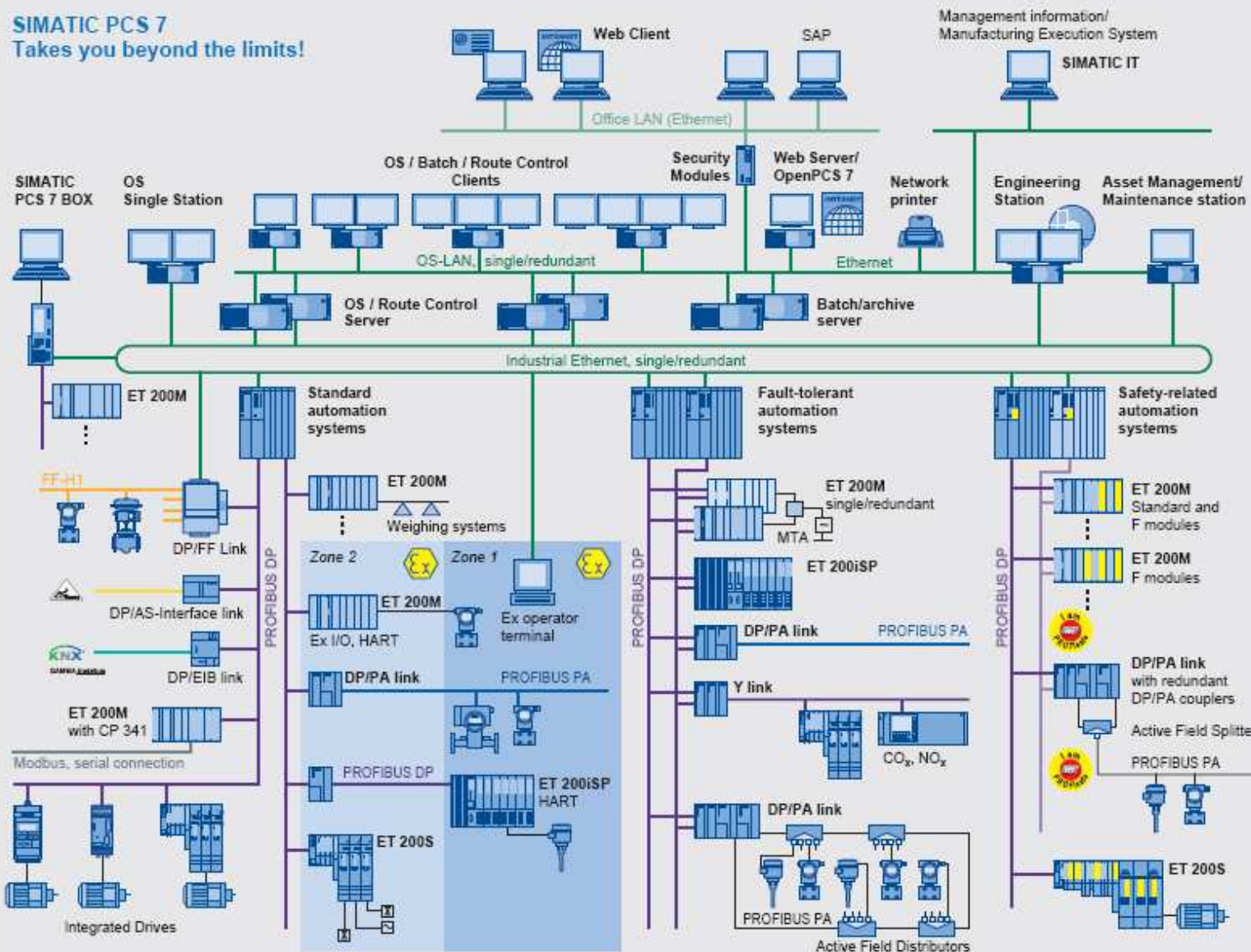
SIMATIC IT key benefits

- Integrated portfolio (MES & ERP, PLM, Control, ...) enabling integrated and standardized processes (plant, R&D, HQ...), resulting in:
 - increased performance/flexibility and cost reductions
 - increased brand value/quality and faster time-to-market
 - better visibility/transparency
- Optimizing market responsiveness
- Real-time capabilities
- Broad range of functionalities
- Scalability
- Lower Total Cost of Ownership (TCO)



SIMATIC PCS7 DCS System

Overview



SIMATIC PCS 7 TOP 10 Pääkohtaa

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- ① **SIMATIC Platform** Markkinajohtaja – Korkea laatu, maailmanlaajuinen logistiikka ja tuki, jatkuva tuotekehitys
- ② **One Stop Shop** Kaikki komponentit suunniteltu ja valmistettu itse
- ③ **TIA Concept** Kattaa kaikki automaatiotoiminnot – raaka-aineista pakkaukseen, kentältä ERP tasolle
- ④ **Scalability** 100 -> 100.000 I/O's , PCS 7 Lab -> Laajat client-server laitokset

⑩ Integroitu Batch / Route Control System

- 21 CFR Part 11 / S88 yhteensopiva

⑦ Korkea käytettävyys - Flexible Modular Redundancy (FMR)

⑨ Tehokas Operointi&Engineering

- Single point of entry (Process Object View)
- Asiakaskohtaiset kirjastot
- SMART Alarm Management
- FDA Tuki
- Security (Logon, Firewall etc.)
- APC integroitu

⑧ Integroitu Plant Asset Management

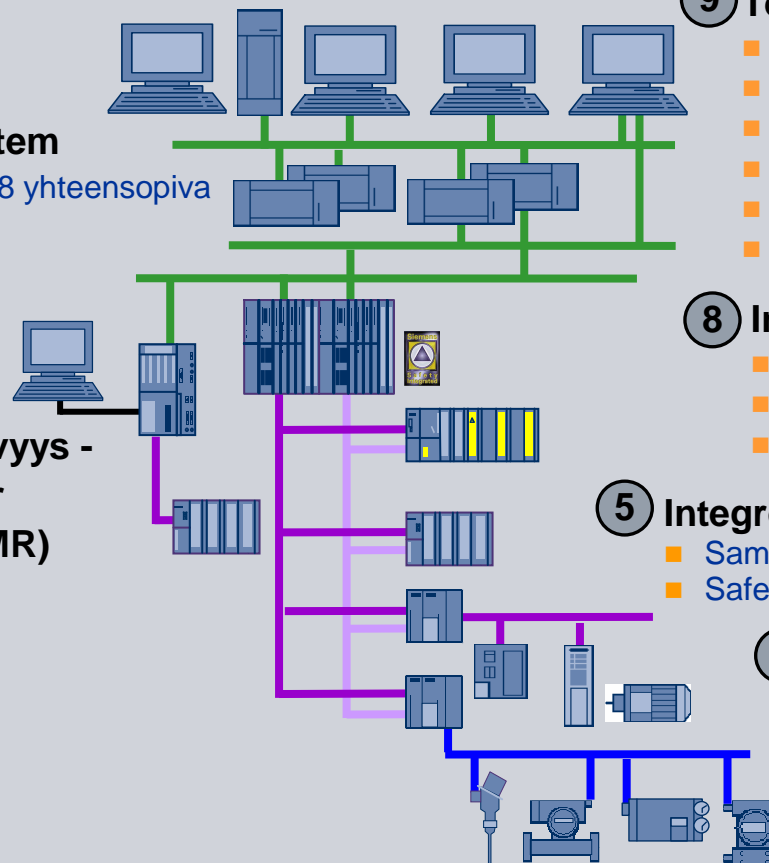
- Diagnostiikka näyttöjen automaattinen luonti
- Helppo vikojen paikannus
- Laitos Assettien laadun mittaus

⑤ Integroitu Fail Safe Technology

- Sama hardware S7-400
- Safety Matrix

⑥ Hajautettu arkkitehtuuri

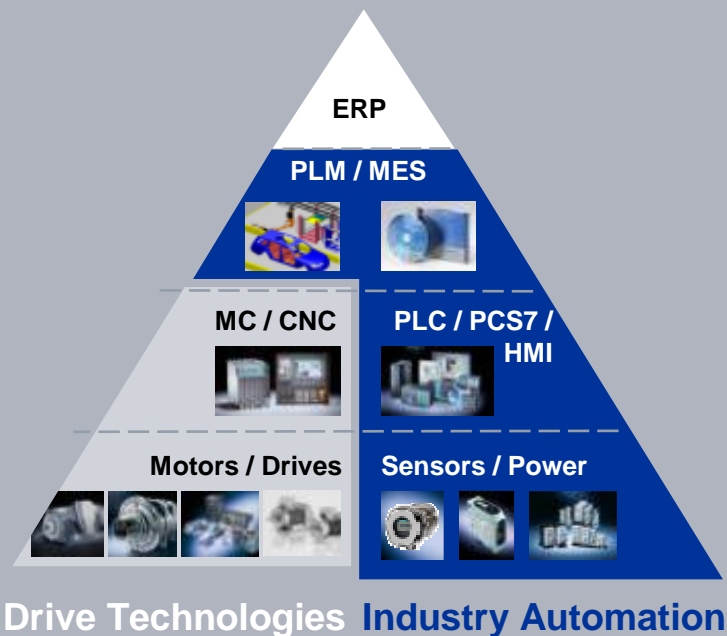
- Profibus = World No.1 fieldbus
- Hajutettu I/O's, moottorit, Käytöt, analysaattorit, Älykkäät kentälaitteet jne.
- HART
- FF interface
- PC based Automation



The Siemens MES portfolio is fully integrated with the automation portfolio

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Totally Integrated Automation



Productivity

Energy efficiency

Reliability

Security

Industry Automation portfolio



Automation Systems



Process Control Systems



Operating Control and Monitoring Systems



Low Voltage Controls and Distribution



Process Instrumentation



PLM Software



Manufacturing Execution Systems



RFID Systems



Industrial Communications

Thank you for your attention!

For more information, please contact:

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