Siemens PLM Software

Overview

28th of May 2008
Bulgaria
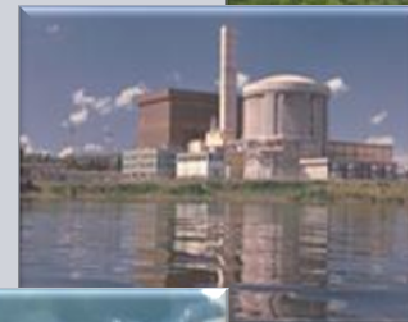
Colin Johnson

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Objective:

*"A high level overview of Siemens Lifecycle
offerings to Support Configuration Management & Plant Lifecycle
NPP"*

Agenda:

1. Siemens PLM Software overview

2. What's Is PLM

3. Teamcenter Solution

Siemens PLM Software

Siemens Offers the Largest Integrated Product Portfolio for Industrial Automation

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Industrial Software PLM, MES	Automation and Control Systems	Sensor and Communication Systems	Electric Motors, Power Conversion and Motion Control Systems	LV Power Devices, Control Products and Systems

Siemens PLM So...
Factory design
PLM
Product design

Siemens A&D
Automation design
TIA
TIP
Manufacturing

Siemens automation product portfolio contains more than 137,000 products

Siemens PLM Software

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Siemens PLM Software Profile

Division
- Siemens PLM Software
- Independent within Siemens Industry Automation
- HQ – Plano, Texas
- Workforce of 7,750

Products
- Product Lifecycle Management Software & Services

Market presence
- 51,000 customers
- 4.8 million seats of software

Siemens PLM Software

Delivering Value Across Industries
51,000 Customers, Operating 4.6M Seats Across the Globe

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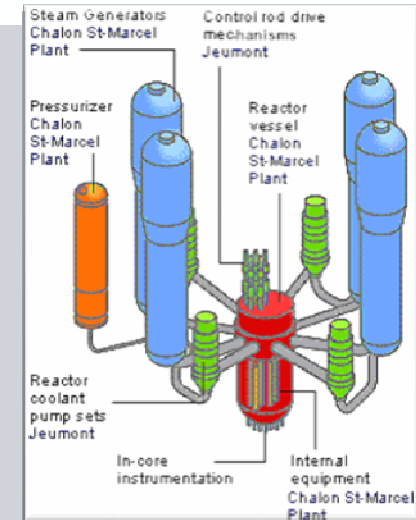| AEROSPACE DEFENSE	AUTOMOTIVE TRANSPORT	MACHINERY EQUIPMENT	HIGH TECH ELECTRONICS	CPG RETAIL MEDICAL

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Areva NP Reactors

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Activity:
➢ Design of nuclear reactors, control command and services,
➢ Manufacturing of reactors and mechanical equipments
Owned by:
▪ 66% by Areva
▪ 34% by Siemens

▸ Project France at T&D Division: Material Flow Management

▸ Tecnomatix Plant Simulation (previously known as eM-Plant),

▸ Material flow management from ore (Zircon) to delivering nuclear pipes to end customers

▸ Organization to change from a single- to multi-product triggered by the renovation program of PWR (Pressurized Water Reactor) sites in North America

> ▸ Implementation of decision-making tools on material flow for planning departments and for product line managers
> ▸ Possible application extension to 5 different sites

▸ Project UK: Material Flow Management

> ▸ Tecnomatix Assembly/Test-Expert is used to program assembly and test-equipment for electronic manufacturing at Stafford
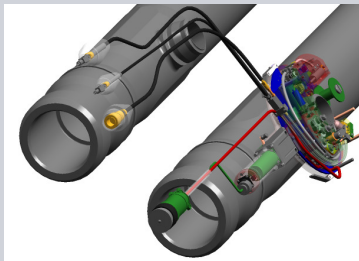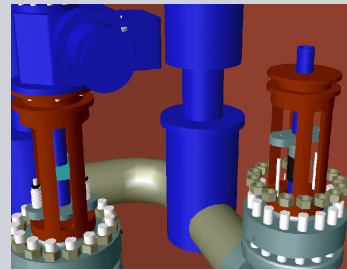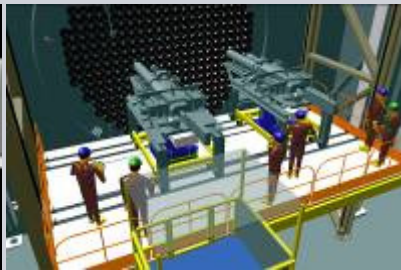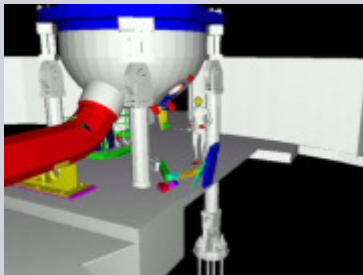
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ROBOTICS	PROCESS OPTIMIZATION	TRAINING for PLANNED OUTAGES	REMOTE TOOLING	REACTOR DESIGN
eM-Workplace/ ROSE/ eM-Assembler	eM-Workplace/ eM-Assembler	eM-Workplace/ eM-Assembler/eM-Human	eM-Workplace/ eM-Assembler	eM-Workplace/ eM-Assembler

| DESIGN PROGRAMMING MONITORING CONTROL DATABASE | DESIGN OPTIMIZATION PROCESS LOGIC SCHEDULING PROCEDURES | OPTIMIZATION TRAINING COMPONENT DATABASE MAINTENANCE PROCEDURES **VIRTUAL REALITY** | DESIGN CLEARANCES CYCLE TIMES | DESIGN MAINTENANCE VISUALIZATION **VIRTUAL REALITY** |

Siemens PLM Software

TOSHIBA

Toshiba Nuclear Energy

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| Customer Challenges	Solution Component	Solution Value
Reduce Plant Support Costs - Maintenance and repair costs - Ongoing support costs - Re-engineering costs	**TEAMCENTER** Single secure source	Reduced plant support costs by 30%
Increase Efficiency of Power Plant - Reduce scheduled downtime - Reduce time to make unscheduled maintenance and repairs	Digital backbone Configuration management Program based security	Reduced retrieval time for information by 50%
Streamline Plant Processes & Improve Quality - Standardized operating procedures - Sharing of Best Practices across locations	Workflow Ad-hoc reviews Digital signoffs	Reduce maintenance errors by 60% Reduce duplication of effort by 45%

Yoko Abe IT Specialist at Toshiba:

"By automating documents and document processing, and establishing more efficient workflows, Teamcenter is helping us create a standard that covers all stages of engineering from plant design, to manufacturing, construction and operations and Maintenance"

- *Immediate savings of **$10 million dollars** per year by implementing TeamCenter*

- ***50% reduction** in the number of documents created during the design and engineering process.*

Requirements Management:
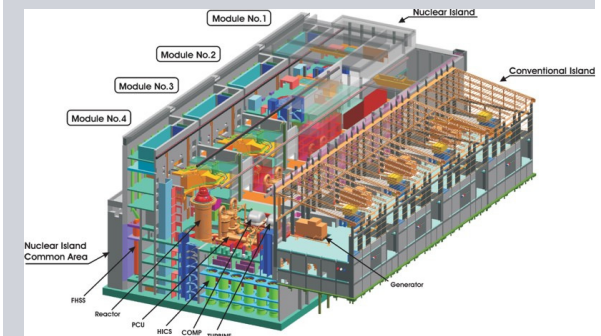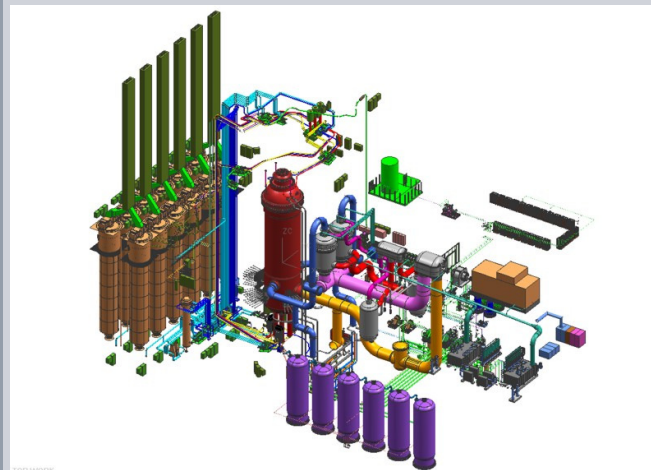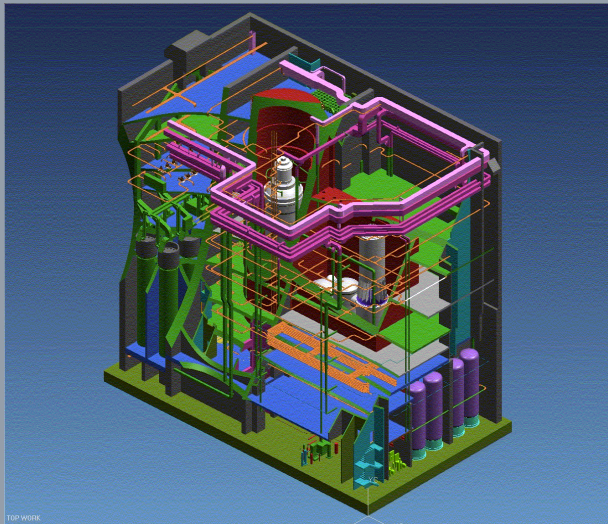## Pebble Bed Modular Reactor (PBMR)
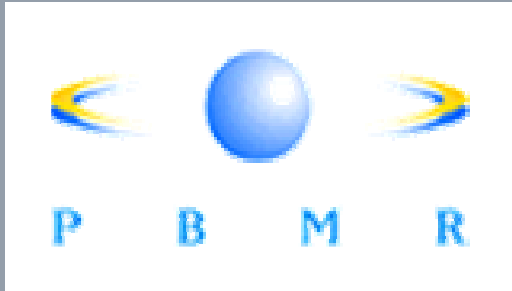
Business Issue:
- Track compliance to requirements and standards

Siemens Solution Focus:
- Share product requirements with engineers through Teamcenter Engineering integration
- Provide traceability to contractual requirements
- Support engineering, regulatory and user documentation requirements .

Siemens PLM Software

What is Plant Lifecycle Management (PLM)?

> A **strategic business approach**, that enables companies to effectively **manage and collaborate** with all **intellectual capital** required to **plan design, construct and operate** plants throughout their **entire lifecycle**
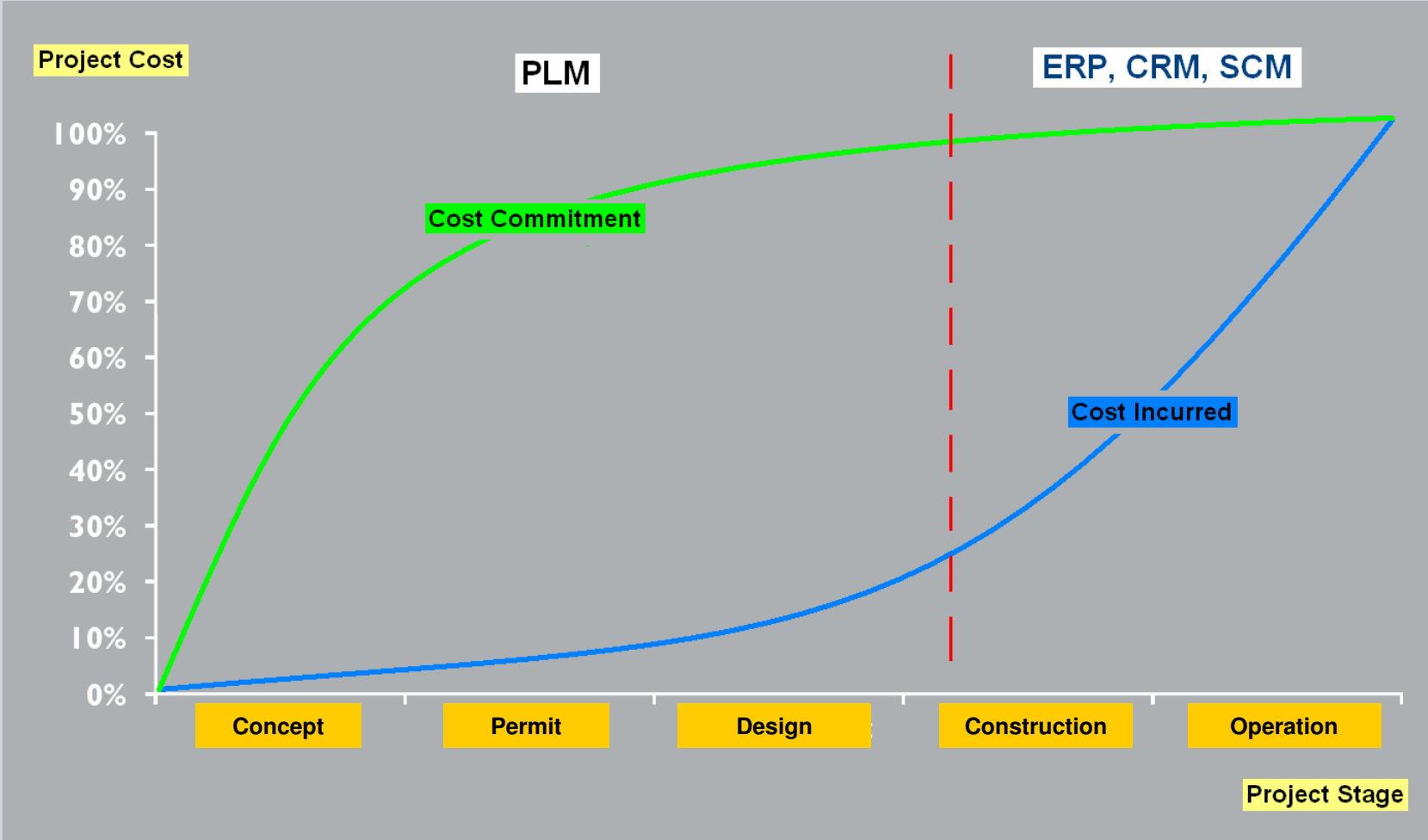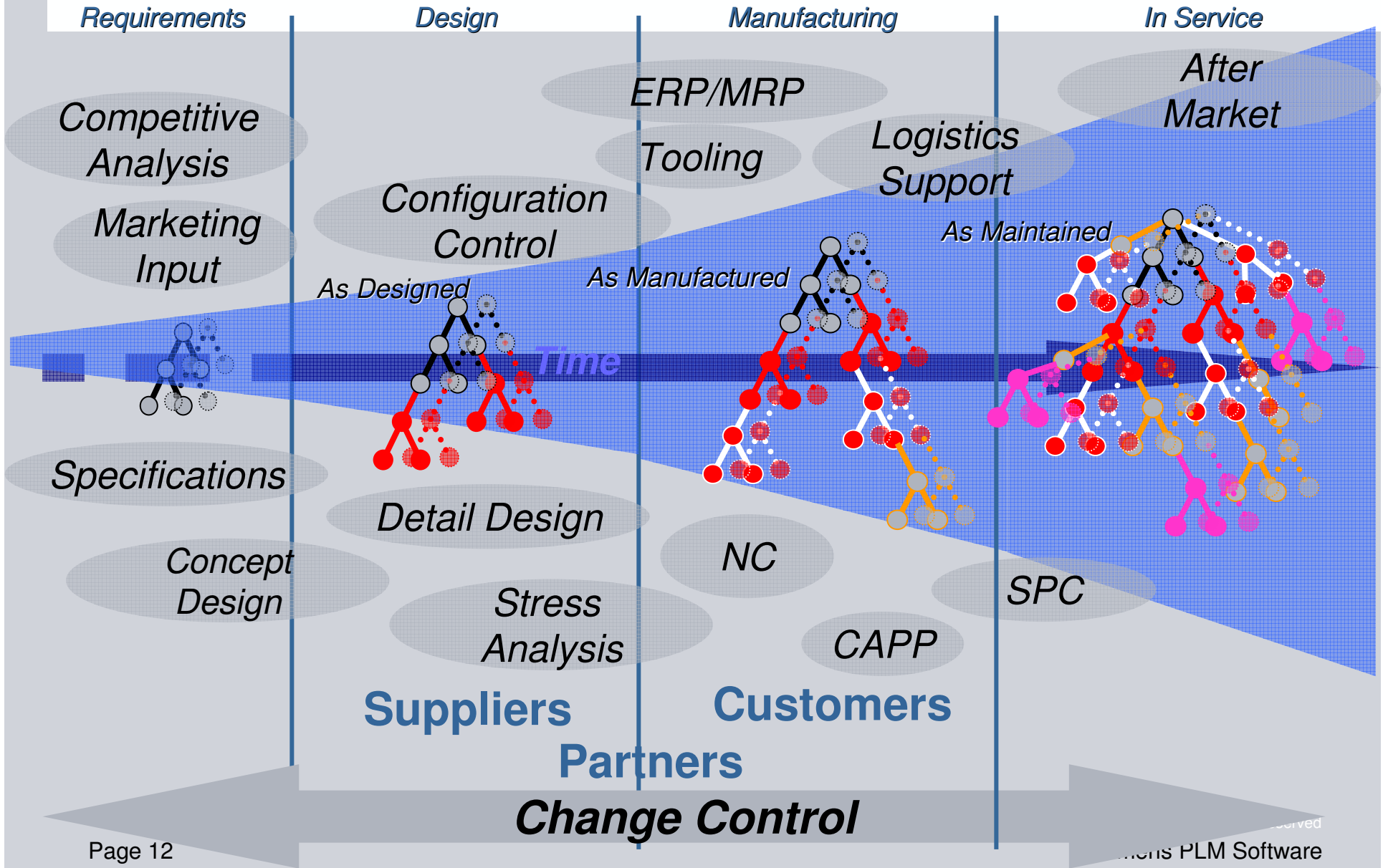
DESIGN

CONSTRUCT

PLAN

OPERATE

Validation

Mfg. Engineering & Sourcing

Manufacture & Build

Custom Engineering & Configuration

Delivery

Install & Commissioning

Product Engineering

Maintenance & Retrofit

Requirements & Planning

Decommissioning Disposal & Recycling

Sales & Quotation

s PLM Software

Committed Costs On A Project

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Enterprise Knowledge Management

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Requirements *Design* *Manufacturing* *In Service*

Competitive Analysis

Marketing Input

Configuration Control

ERP/MRP

Tooling

Logistics Support

After Market

As Designed

As Manufactured

As Maintained

Time

Specifications

Detail Design

Concept Design

Stress Analysis

NC

CAPP

SPC

Suppliers **Customers**

Partners

Change Control

Obstacles to Productivity
Lower productivity

Intellectual property not captured or re-used

COLLABORATION

Business processes not automated or integrated

BUSINESS PROCESSES

Complex user interfaces with multiple entry points

APPLICATIONS / PRESENTATION

Multiple data stores

A B C D E ...

CAPTURED KNOWLEDGE / DATA STORES

Hardware/Operating System   Network/Infrastructure   Database/Management System

PLATFORM INFRASTRUCTURE

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Overcoming the Obstacles to Productivity
With Teamcenter

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Intellectual property captured and re-used

Business processes automated and embedded

Simple user interface with secure access

Consolidated, single source of knowledge

COLLABORATION

BUSINESS PROCESSES

APPLICATIONS / PRESENTATION

Knowledge

CAPTURED KNOWLEDGE / DATA STORES

TEAMCENTER

Hardware/Operating System | Network/Infrastructure | Database/Management System
PLATFORM INFRASTRUCTURE

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Introducing Teamcenter 2007

Systems Engineering & Requirements Management

Extended application and systems integration - **Leverage existing expertise and investment**

Systems architecting - **Yield better product results from better requirements**

Requirements traceability - **Deliver compliant products**

Requirements management - **Achieve portfolio, program and product objectives**

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Systems Engineering & Requirements Management - Key Capabilities

Embedded requirements management
Fine-Grained Document Import/Export
- Import / parse requirements specifications to create matching structure in Teamcenter
- Export requirements documents in Microsoft Word format

Integrated Microsoft Word interface for editing requirements

Edit requirements or any Item using Microsoft Excel "Live" integrations

New RM Module

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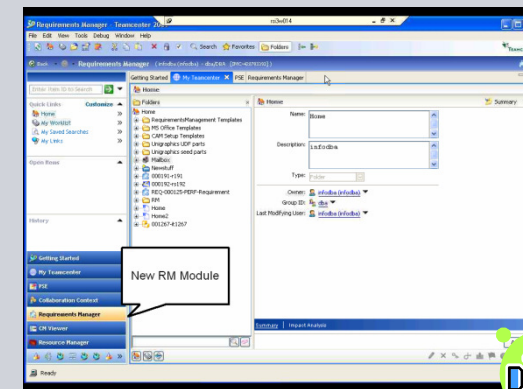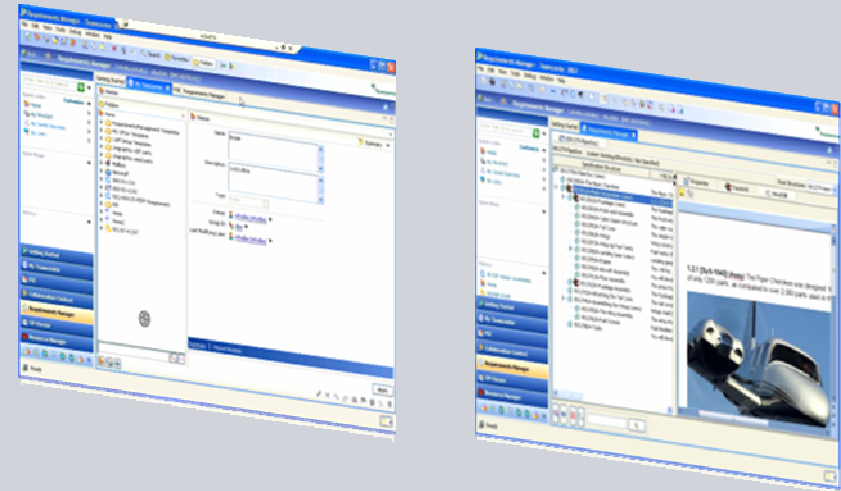
Engineering Process Management

Extend utilization of Product & Process knowledge
Engineering Change Management -
Requirements, project resource, and schedule visibility to capture & automate business workflows
Design Anywhere Build Anywhere -
Integrate global design teams with real-time visual collaboration
Single Source of Product & Process Knowledge – with a single repository of requirements, products, processes and project information

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Engineering Process Management
Key Capabilities

Multi CAD Engineering Integration
- MCAD/ECAD/CAE
- CAM
- CASE & ESM Management

Engineering structure and configuration management
- Master Equipment List (MEL)
- Multiple BOM & Lifecycle representations

Engineering change and process management
- Change Management - Revision/version control
- Workflow & Process Management

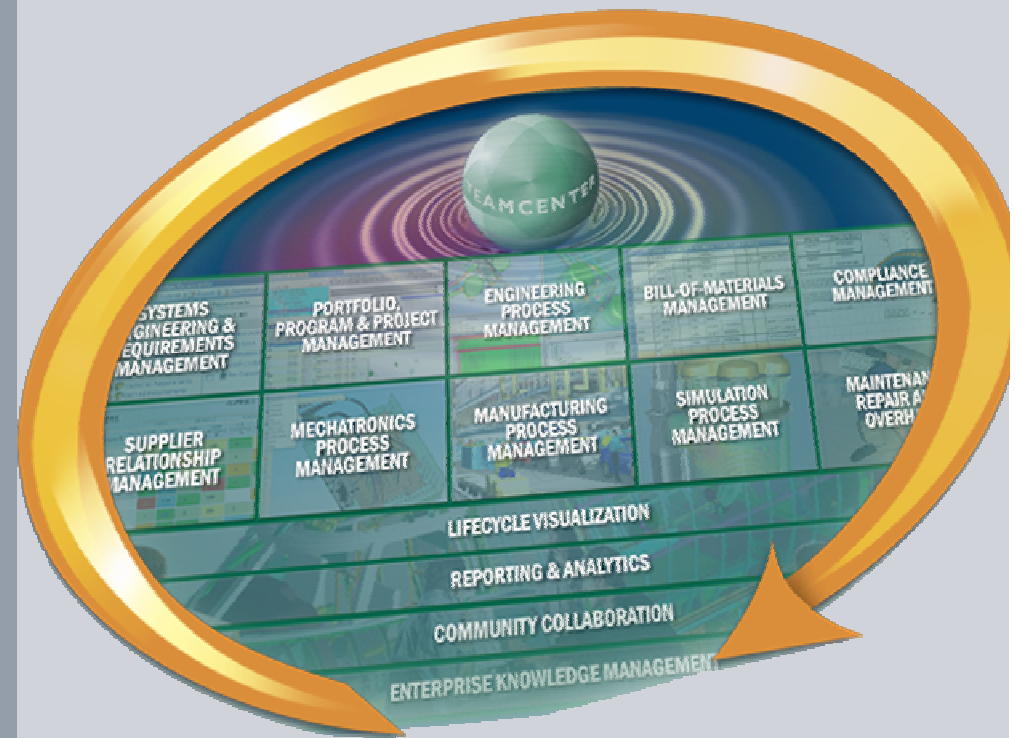Distributed, multi-site, capabilities for Engineering, Design and Development

Siemens PLM Software
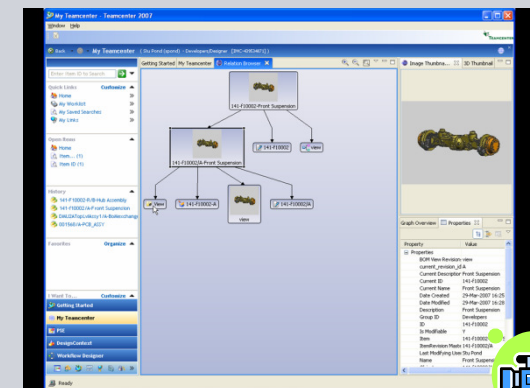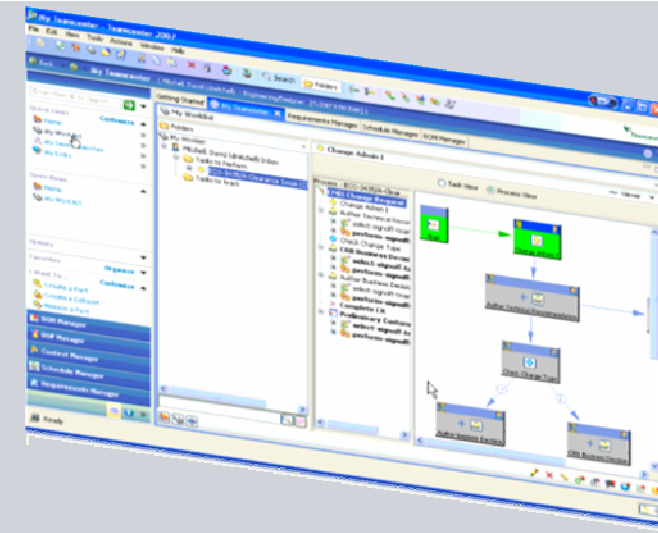
Teamcenter
Powering End To End PLM

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Teamcenter Solves
• **Requirements Management**
• **Configuration Management**
• **Knowledge & Data Capture**
• **Transparency Of Data & Process**

At the Same Time Has Best In Class MRO, Collaboration

Siemens PLM Software

Teamcenter
Powering End To End PLM

Expand your solution as business grows

Connect your processes

Eliminate manual data re-entry from one process to the next

For More Detailed Overview We Will Be Demonstrating Teamcenter

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Management Dashboard
Transparency Of Process & Visibility Of Data

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Thank You!