accenture

PRION

Enabling Siemens PLM Software for the AEC Industry

Lake Constance 5D-Conference 2013

Constance, 28th-29th of October

PRION group – Who we are!

COMPANY

- Founded as German GmbH in 1998
- PRION is a part of Accenture since October 1st 2013
- One of the worldwide leading Siemens PLM C&SI Partner

PORTFOLIO

- End-to-End PLM & CAD Services: Consulting-Design-Implementation-Rollout-Support-Migration
- Exclusively focused on Siemens PLM Technology – global C&SI Alliance Partner
- Combined offering together with Accenture for the PLM market

TEAM

- >350 experts, 20 nationalities, 120 German-speaking
- Teamcenter, Tecnomatix, NX, I-DEAS, Solid Edge

VISION

- Being part of Accenture, provide comprehensive and best-in-class service offering for the PLM market
- Follow our global customers

GEOGRAPHIES

- EMEA | AMERICA | APAC

Presentation Overview

1. The PLM world – Where we are coming from
2. BIM - PLM for the AEC Industry
3. BIM Services for the Siemens PLM Platform
4. PRION Point Solutions for the AEC Industry
   - NX and JT
   - Teamcenter
5. Current Status and Availability
6. Additional Concepts and Outlook

Product **L**ifecycle **M**anagement – Where we are coming from

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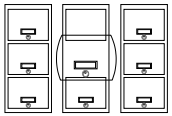
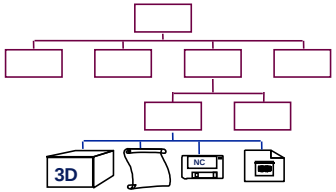
What is PLM?

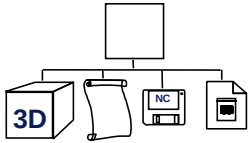
Data Vaulting



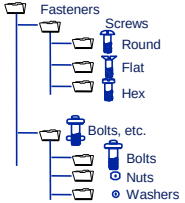
Parts, Design & Bills-of-Material Management



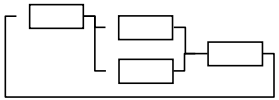
Document - Management



Data Classification-Management



Change & Release Management



PLM…

- is about product data, information and knowledge
- concerns itself with the entire life of the product from inception to end-of-life
- is an approach that is more than software or processes
- crosses boundaries: functional, geographical, and organizational
- combines the elements of people in action, processes and technology
- drives the next generation of lean thinking

Source: Grieves 2006

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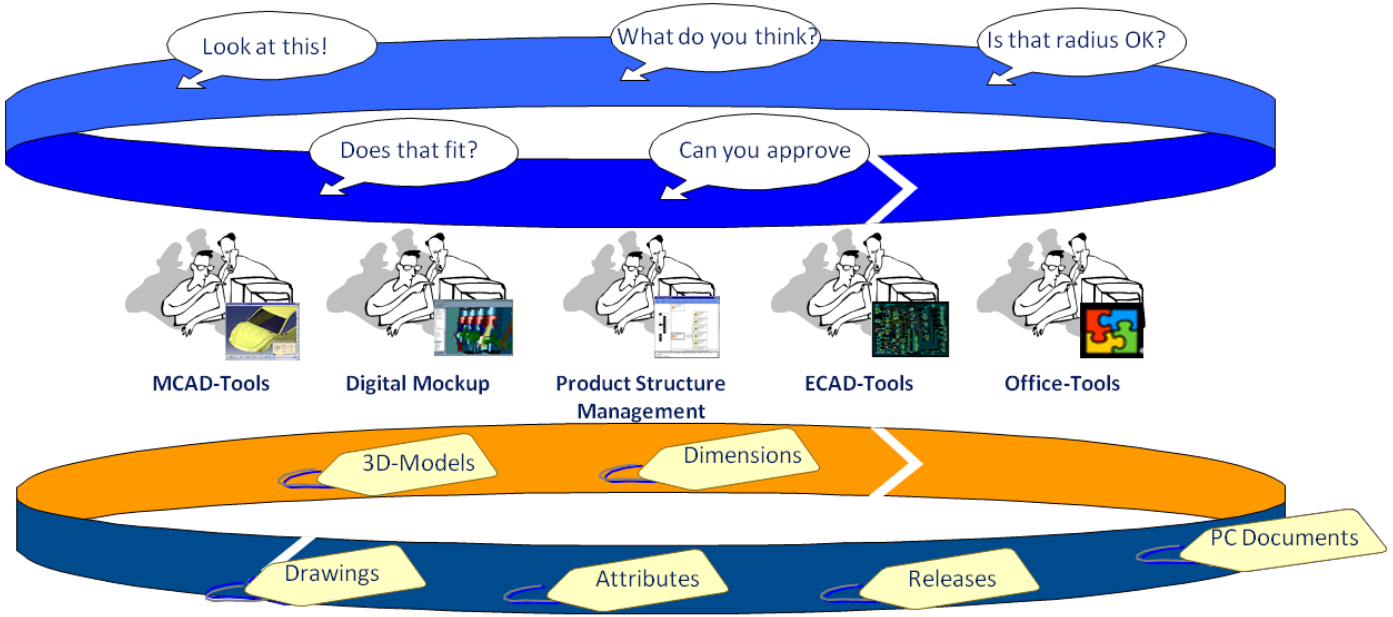
PLM as a Collaboration Platform



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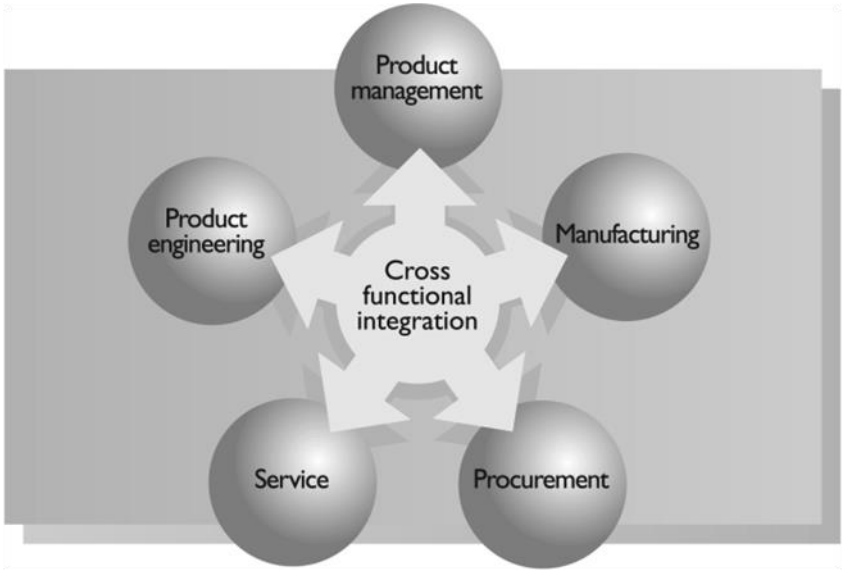
PLM – Key Business Drivers

Cross Functional Integration leveraging *Standardization* and *Reuse* are the key enabler for added value across process disciplines



- Accelerate time to market
- Reduce product development costs
- Increase innovation & create markets
- Rapidly respond to market demands
- Optimize compliance management

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BIM - PLM for the AEC Industry?

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BIM – Building Information Model

What it is…

- An **integrated methodology** for the AEC industry with respect to
  - Planning
  - Design
  - Build
  - Operations
  - Decommissioning
- An **open** platform
- **Based on standards**
- **Not** only geometry but all relevant building information ***5D=3D+Schedule+Cost***
- **Not** a software solution

What it does…

- BIM enables **data and process integration** throughout the life cycle of a building
- BIM **facilitates data exchange** between different engineering and planning disciplines in the construction industry
- **Improves availability and quality** of building information
- **Supports virtual worksgroups** between
  - Architects and Engineers
  - Owners and Clients
  - Constructurs
  - (Sub) Contractors

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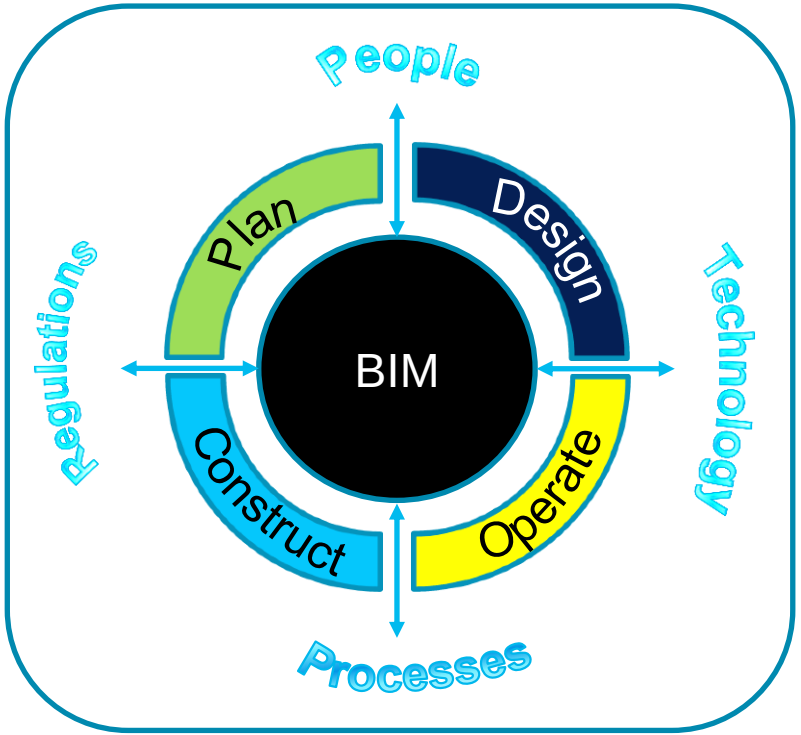
BIM – PLM for the AEC Industry



A central data storage

- Supports **digital representation** of physical and functional characteristics **of a facility**
- Acts as **shared knowledge resource** for information about a facility for all disciplines involved
- forming a **reliable basis for decisions** during its life-cycle
- Available **from** earliest **conception to demolition** of a building

Usage

- **Planning and design** phase of the project
- Data Access throughout the **building life cycle**
- Management of **cost**, **construction**, **project**, **facility** and **operation**

Benefits

- Improved **visualization**
- Improved productivity due to **easy retrieval of information**
- Increased coordination of construction **documents**
- **Embedding and linking of vital information** such as vendors for specific materials, location of details and quantities required for estimation and tendering
- Increased **speed of delivery**
- **Reduced costs**

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BIM Services for the Siemens PLM Platform

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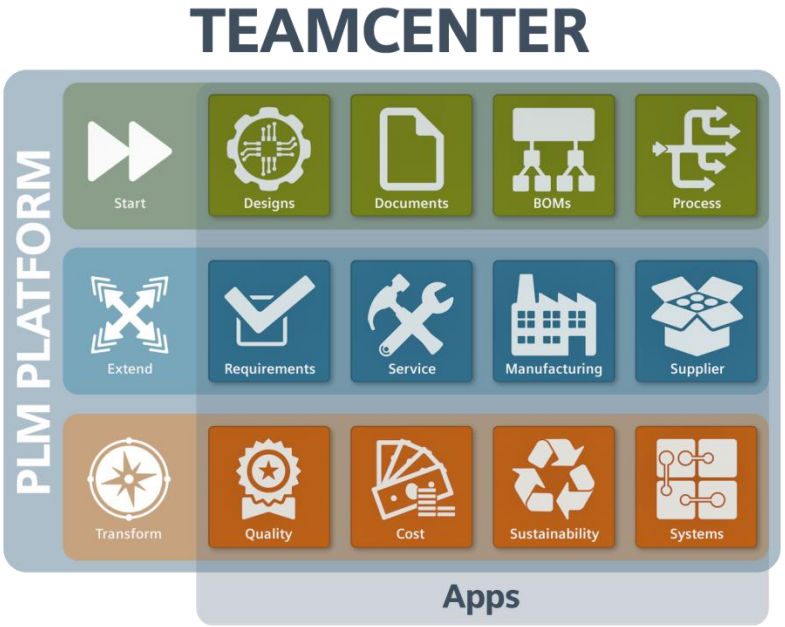
Introducing the Siemens PLM Software Portfolio

Solutions backed by…

- Enterprise Knowledge Foundation
- Platform Extensibility Services
- Life-Cycle Visualization



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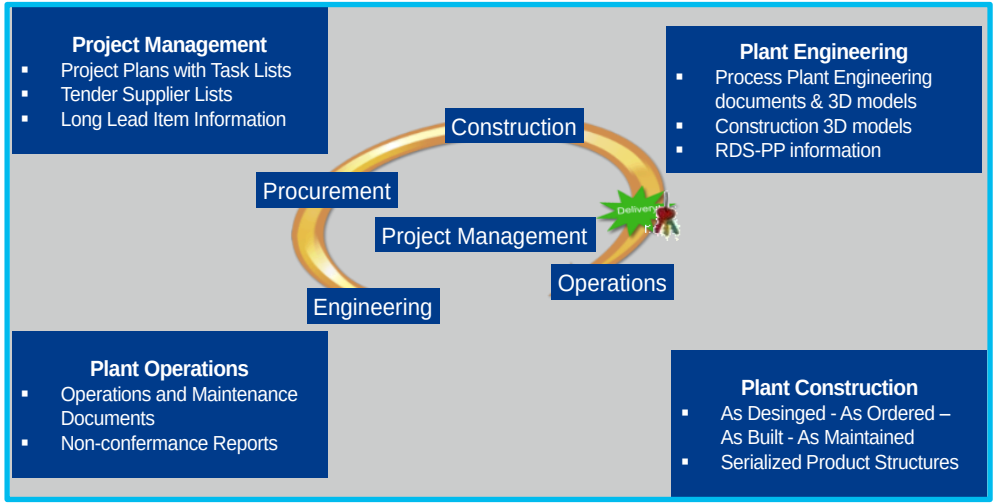
BIM Services for Siemens NX and Teamcenter – Why?

- **Business Drivers**
  - **PLM software used in discrete manufacturing industries gain momentum in the AEC industry due to**
    - Extended 3D and visualization capabilities
    - Part centric BOM approach
    - Change and Release Management
    - Manage product template development & certification
    - Derive and Manage Project BOM
    - Manage and release production orders based on Project BOM
  - **PLM for Plant Life-Cycle Management and Plant Engineering**
    - Engineer-Procure-Construct Processes (EPC)
    - Integrated Plant and Process Management
    - AEC Data Management and Data Exchange
    - BOM Configuration and Change Management
- **Potential Use**
  - **Building and Construction Site Mockup and Visualization**
  - **Data exchange based on open standards (IFC)**
  - **Integration with Plant Design and Engineering**
  - **Order-BOM to ERP Handover**



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Siemens PLM Software - COTS Support for BIM

- **Basic BIM Support through Siemens Platform**
  - ***Teamcenter BOM and Configuration Management***
    - ***Supporting As-Designed/As-Planned/As-Built BOM view*** *- digital representation of physical and functional characteristics of a facility*
    - ***Order-BOM Integration –*** *product-customer-order management*
  - ***Teamcenter to ERP connection***
  - ***Teamcenter Engineering Process Management -*** *shared knowledge resource for information about a facility*
    - ***Parts and materials management***
    - ***Document management***
  - ***Teamcenter Lifecycle Management -*** *forming a reliable basis for decisions during its life-cycle*
    - ***Change Management***
    - ***Release Management***
  - ***Teamcenter As-Designed to As-Maintained -*** *defined as existing from earliest conception to demolition*
- **PRION extension for the construction industry**
  - **PPM Connector (Teamcenter Primavera Connector)**
  - **PDMS Integration with Teamcenter**
  - **IFC2NX and IFC2JT Interfaces and Translators**
  - **BIM data model support for NX and Teamcenter (coming)**

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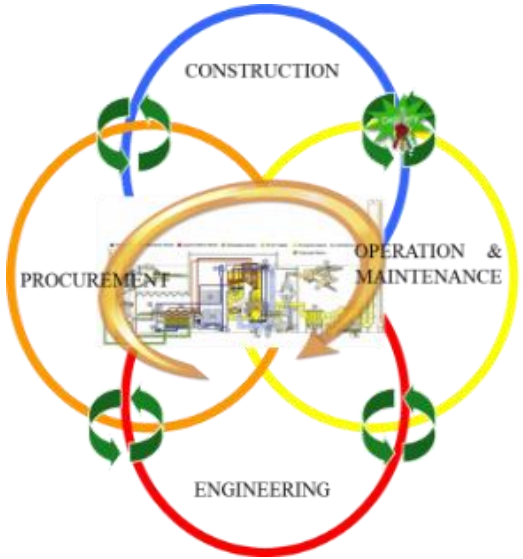
PRION Point Solutions for the Industry

Program/Project Management	• Integrated Project/Program Management • PPM Tools for Planning • Teamcenter for Execution Management
Plant / Process Management	• Integration/Interface with Plant Design/ Engineering Tools • Conformance Management – End to End Change Propagation and Control
AEC Data Management	• IFC (ISO 16739) - Bidirectional Translation to NX • IFC (ISO 16739) – Unidirectional Translation to JT • BIM Models and Structure Support in Teamcenter
Tender- Proposal Management	• Process and Data Management of the proposal Engineering Function • System driven Proposal, BOQ and Schedule Creation
BOM & Configuration Management	• Order – BOM to ERP Handover Process and Data Management • Configuration Management to manage Serialized parts
Supplier & Collaboration Management	• Teamcenter based Vendor Data Management • Teamcenter based Tendering and bidding Process • Teamcenter Community / SharePoint based collaboration



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PRION Point Solutions for the AEC Industry

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Current Status

- **PRION**
  - IFC Translators
  - PPM Connector
  - PDMS Integration

- **NeoApps**
  - AEC Drafting
  - LandXMLIntegrator

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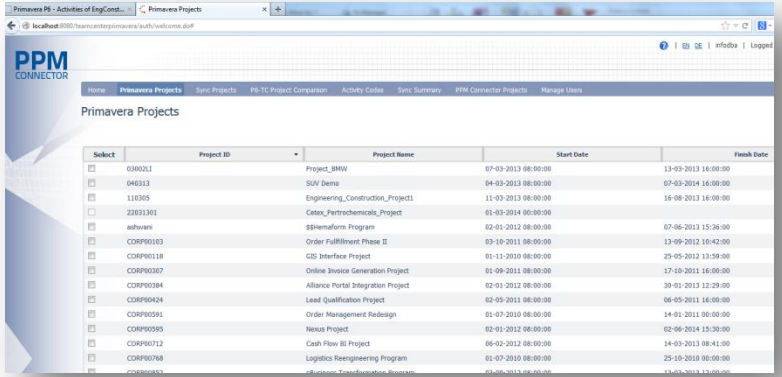
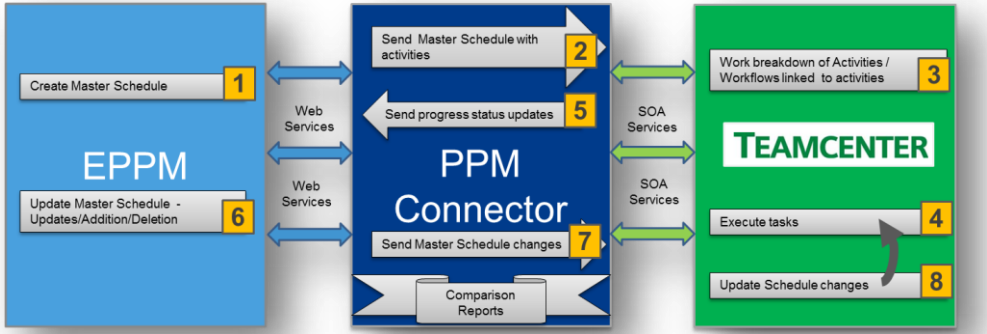
PPM Connector





Key Features

- Bi-directional synchronization of schedules
- Synchronize – tasks, calendar, resources, time, status
- Manage activity level tasks, linked to lifecycle states in Teamcenter
  - Progression in lifecycle states indicate status and % completion
  - Capture time and costs
  - Capture resource utilization
- Compare schedules –
  - Schedules at different time stamp

Advantages

- Improve operational efficiencies and delivery projects on time
- **Eliminate scheduling bottlenecks** with top-down enterprise planning
- **Increase productivity** with automated process integration
- **Synchronize work activities across disparate teams and product assemblies** with fully work integrated planning and execution systems

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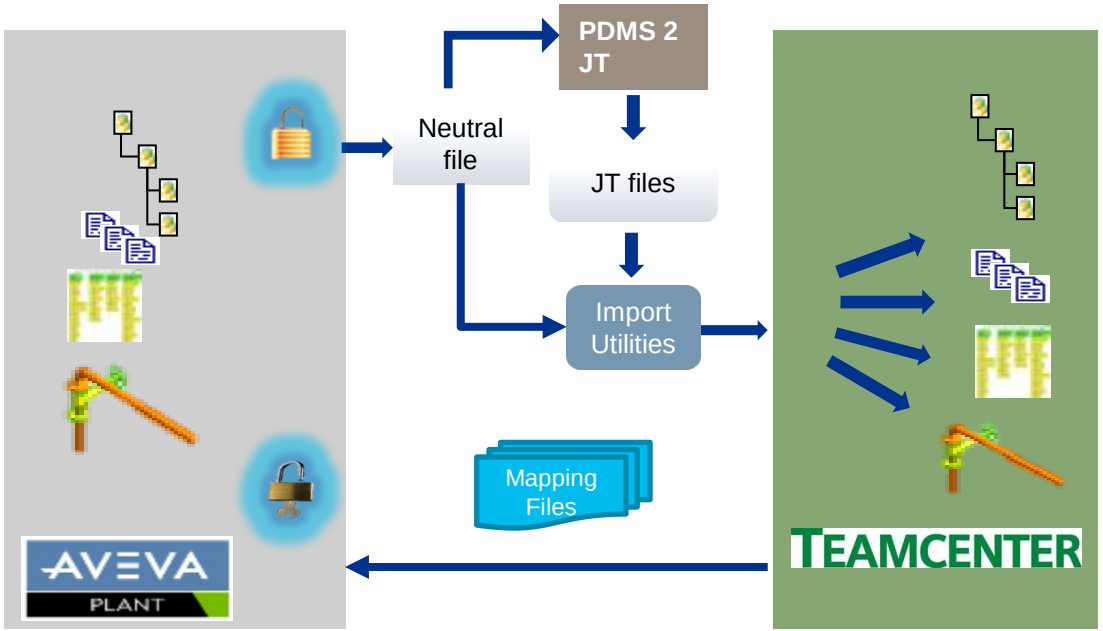
PDMS – Teamcenter Integration



- Multilevel Plant Structure can be Sync Between PDMS , Teamcenter
- Plant data can be managed and further processed through Teamcenter
- Check-out & check-in in PDMS, Teamcenter
- Revision management in Teamcenter
- Change Management in Teamcenter
- Geometry (JTs) of Equipment, piping, cable trays and HVAC etc.
- Lightweight visualization synchronization for digital mockup

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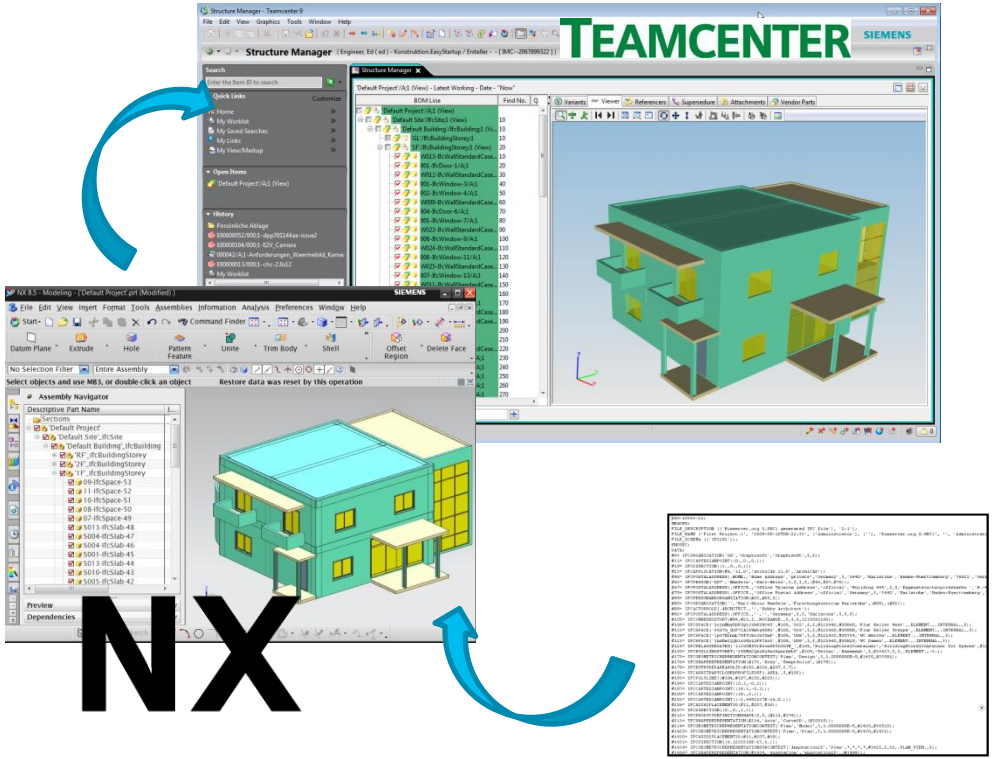
IFC Translator for NX and Teamcenter



- **Supports bi-directional data exchange between NX and IFC**
  - Geometry conversion
  - Spatial Structure Translations
  - Assembly support
- **Part-centric approach serving downstream PLM processes**
  - Offers BIM compliant data model
  - Supports exchange of IFC property sets and material information with CAD session
- **Plugs into the Teamcenter PLM platform**
  - Data access
  - Lightweight Visualization using JT-Format
  - Revision control
  - Change and Release control
  - Object classification
    - Part families
    - Classification hierarchy
    - Attribute dictionary
- **Webservice enabled**

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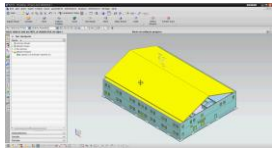
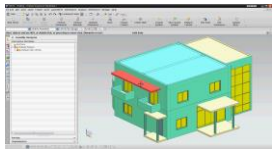
IFC2NX/IFC2JT – Presentation Movies

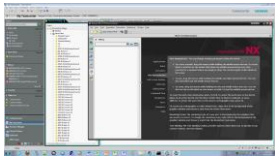
- Import IFC Model

- Browse IFC Structure in NX
  - Show Properties
  - Visual Reporting
  - Drawing Creation





- IFC -> NX -> JT -> Teamcenter -> NX



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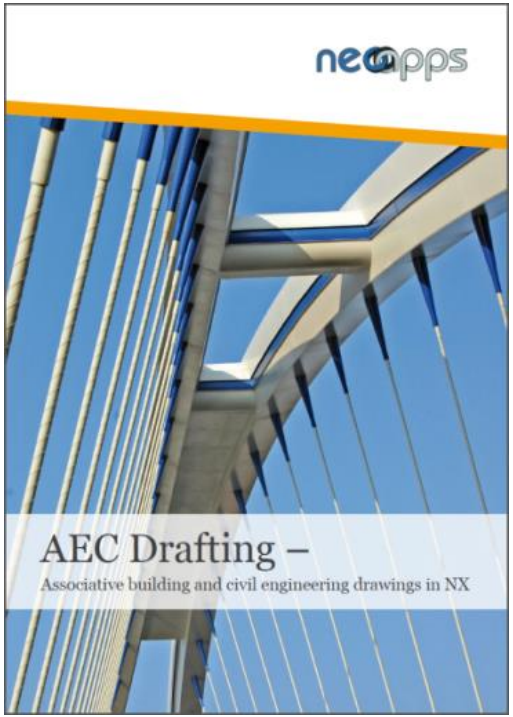
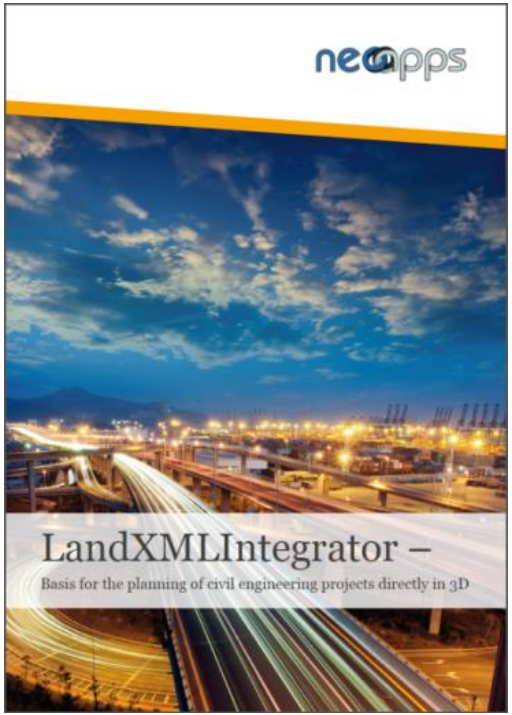
NeoApps AEC Suite

Interactive Solutions for the AEC Industry for the CAD/CAM System NX from Siemens PLM

- **AEC Drafting**
- **LandXMLIntegrator**





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Extended Concepts and Outlook

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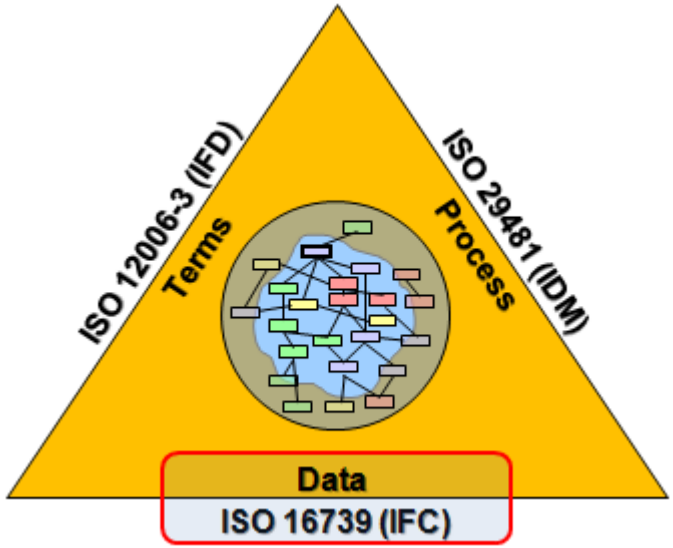
Future Development Focus



Source: buildingSMART

- **Provide BIM model server capabilities to the Siemens PLM platform**
  - BIM data model template
  - BIM object classification
  - Comprehensive Data exchange capabilities
  - Support direct IFC data management and visualization from within Teamcenter
  - Extend IFC2JT conversion capabilities
  - Pre-configured change and release workflows suited for BIM
  - Project Reporting capabilities
  - Translator Certification

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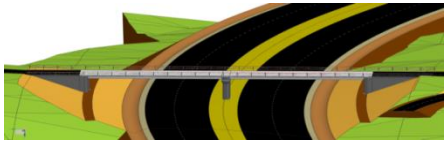
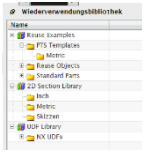
NeoApps – What‘s Next?

- **AEC Bridge Wizard**
  - **Template based design of bridges**
- **3D Reinforcements**
  - **Fast creation of reinforcements in 3D**
- **AEC Object Library**
  - **Reuse-Library for AEC (symbols, joints, abutments,…)**
- **AEC Formwork Wizard**
  - **Automated creation of formwork plans**





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Thank You!

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