

CMI User Day - Product Strategy



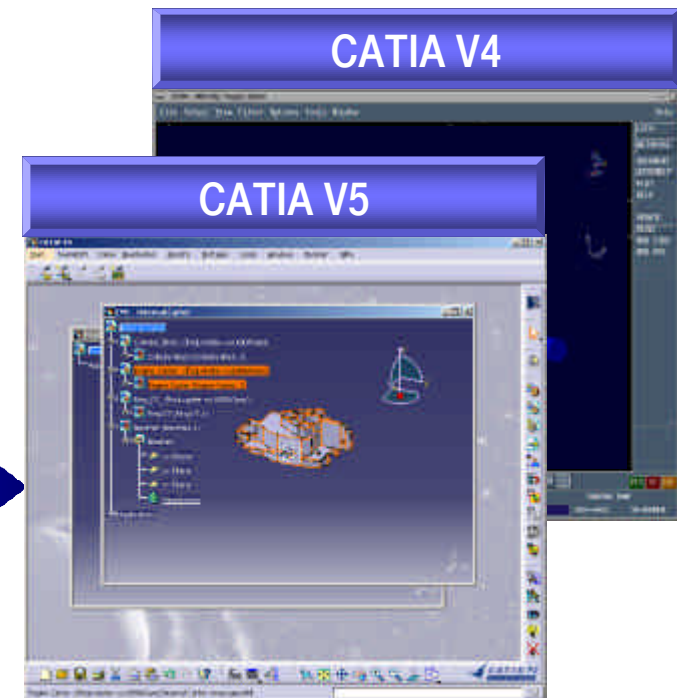
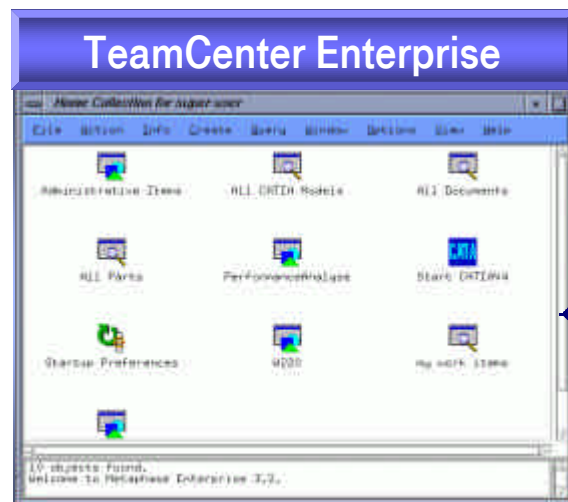
CMI User Day 2003
New Orleans, USA

Tino Schlitt
T-Systems PLM Solutions

Product Development / Strategy

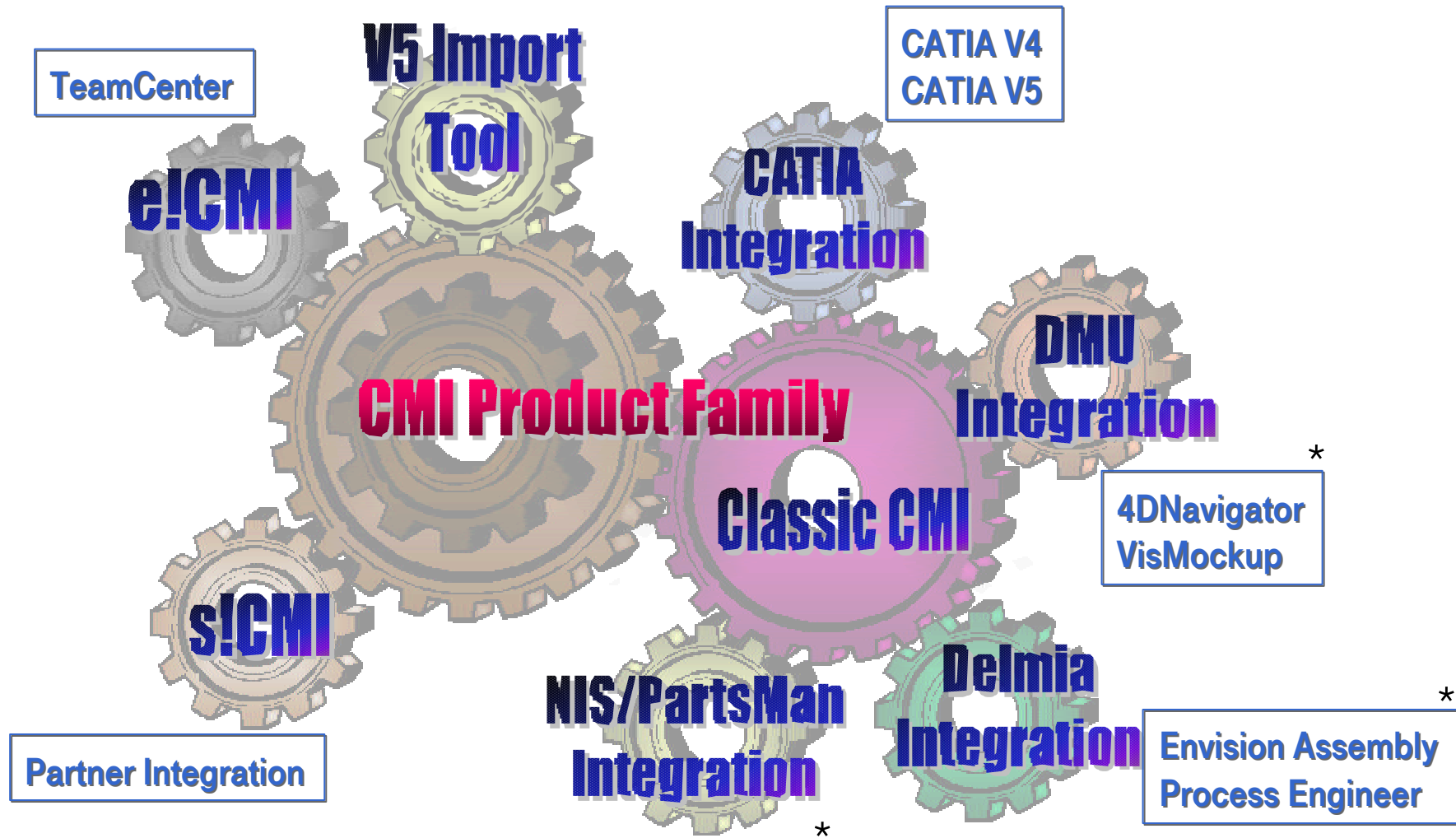
CATIA Metaphase Interface - Overview

- Integration of CATIA V4 / V5 and TeamCenter Enterprise
- TeamCenter Enterprise as global PDM system
- Product since 1995
- Assembly functionality in CATIA V4
- Integration of bill of material and geometry data
- Wide range of customization possibilities
- www.cmi-support.com



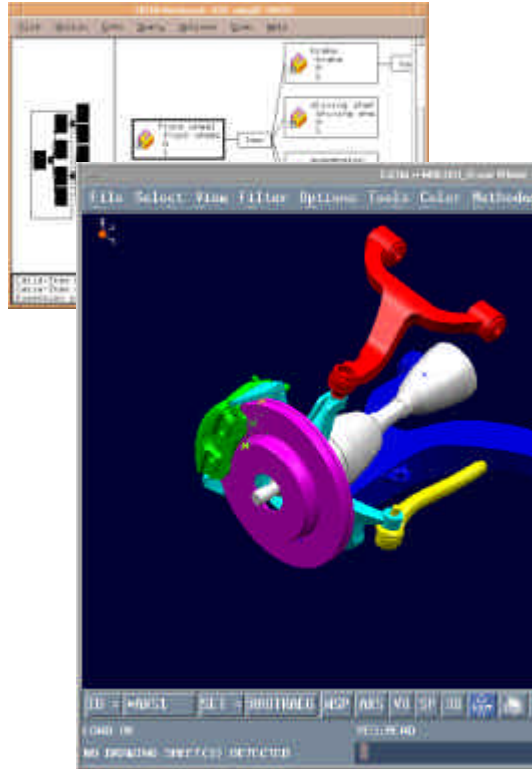
Product Development / Strategy

The CMI product family.



* = customer specific development

Product Development / Strategy CATIA V4 Integration.



Key features

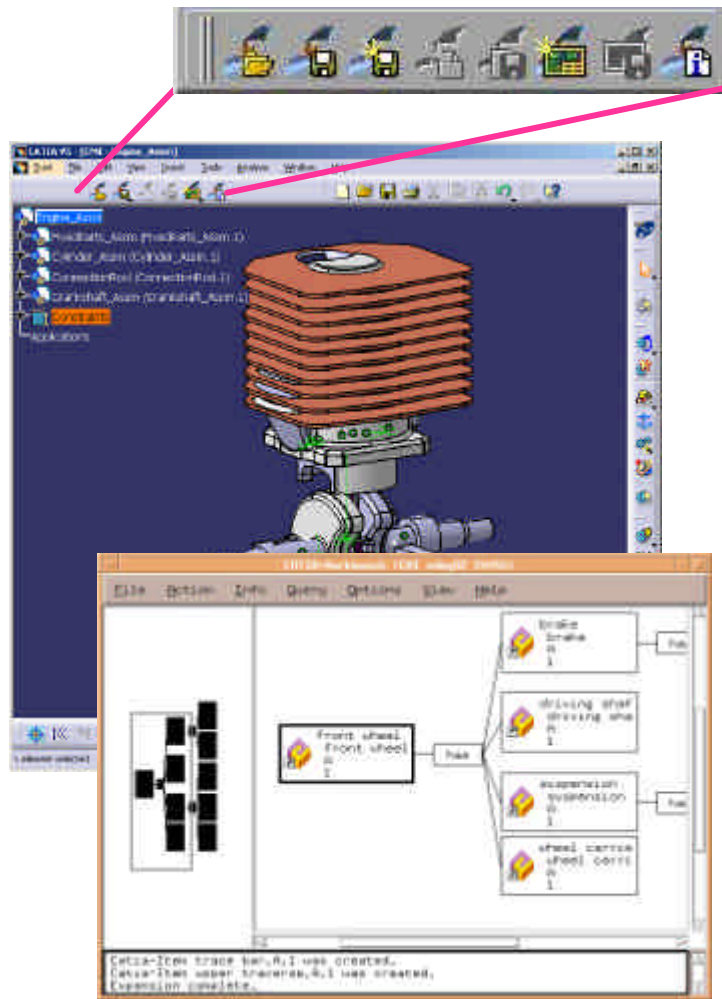
- Integration of bill of material and geometry data
- Access control of CATIA V4 data in Teamcenter
- Change and usage control in collaborative product development in the distributed world
- Simultaneous management of CATIA V4 data and structures
- CATIA V4 data in workflow and company wide access
- Working with multiple level product structures in CATIA V4
- Consequent separation of the CAD relevant actions from PDM relevant actions

Technical highlights

- Modification of the position of parts in the product structure
- Search for CATIA V4 data by different attributes
- Plot file integration for CATIA V4 models with automatic drawing title block filling

Product Development / Strategy

CATIA V5 Integration (CMI 8.3).



Key features

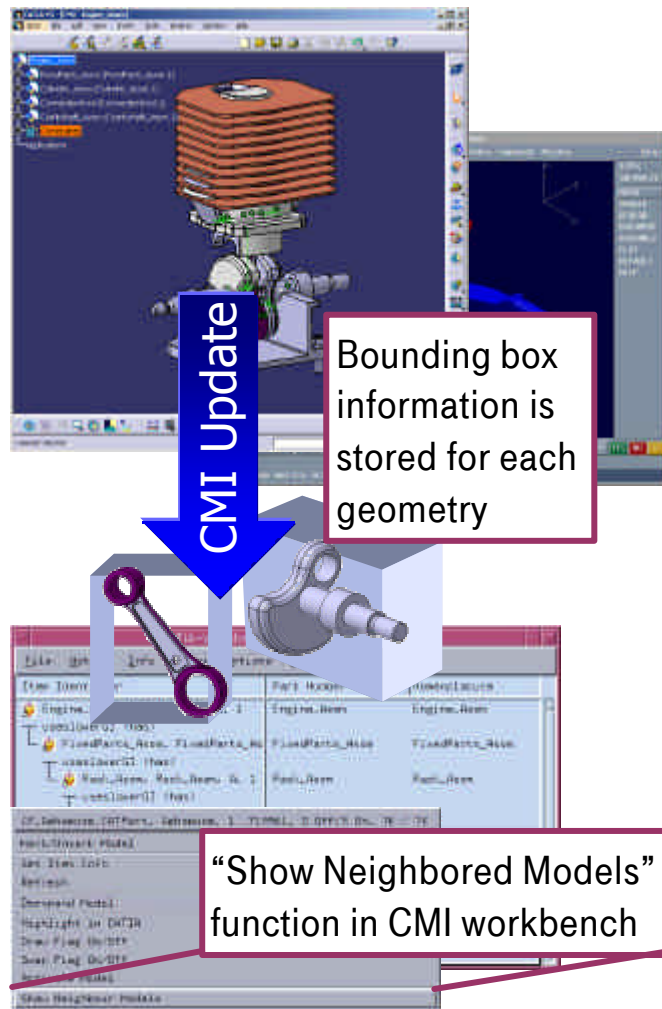
- Support of Win2000 and UNIX
- Data management of CATParts, CATDrawings and CATProducts
- Neighborhood search facility integrated in Teamcenter
- Handling of transformations (analogous to CMI CATIA V4 integration)
- Parallel support of CATIA V4 and V5
- Bi-directional communication

Technical highlights

- Full support of CMI workbench functionality
- CMI workbench content in single or multiple windows
- Consistent handling of CATProducts: constraints, application data, technological links, ...
- Create/Save As for CATParts/CATDrawings
- Create for CATParts added into a CMI product structure

Product Development / Strategy

Neighborhood Search Facility



Key features

- Bounding box creation for CATIA V4/ V5 geometries
- Neighborhood search for CATIA V4 and V5 geometries
- Pre-selection for DMU research in DMU Navigator

Technical highlights

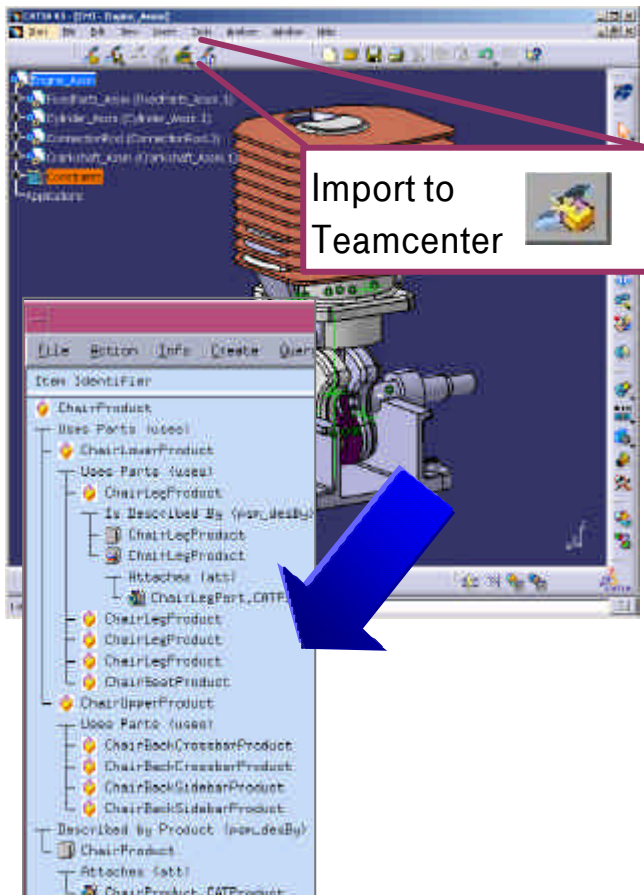
- Model orientated, tightly wrapped bounding box
- Fast collision detection algorithm
- Recognition of multiple instances of a model
- Combination of geometrical researches

Strategy

- Volume based search
- Dynamic update of DMU-file with “CMI-Update”
- High performance multi-level expand

Product Development / Strategy

CATIA V5 – Teamcenter Import Tool.



General

- Interactive tool to generate a Teamcenter product structure out from a native CATIA V5 assembly
- Transfer of CATIA V5 data to a Teamcenter work location

Key Features

- Automatic generation of Teamcenter product structure
- Customization points for pre- and post-processing on transfer

Strategy

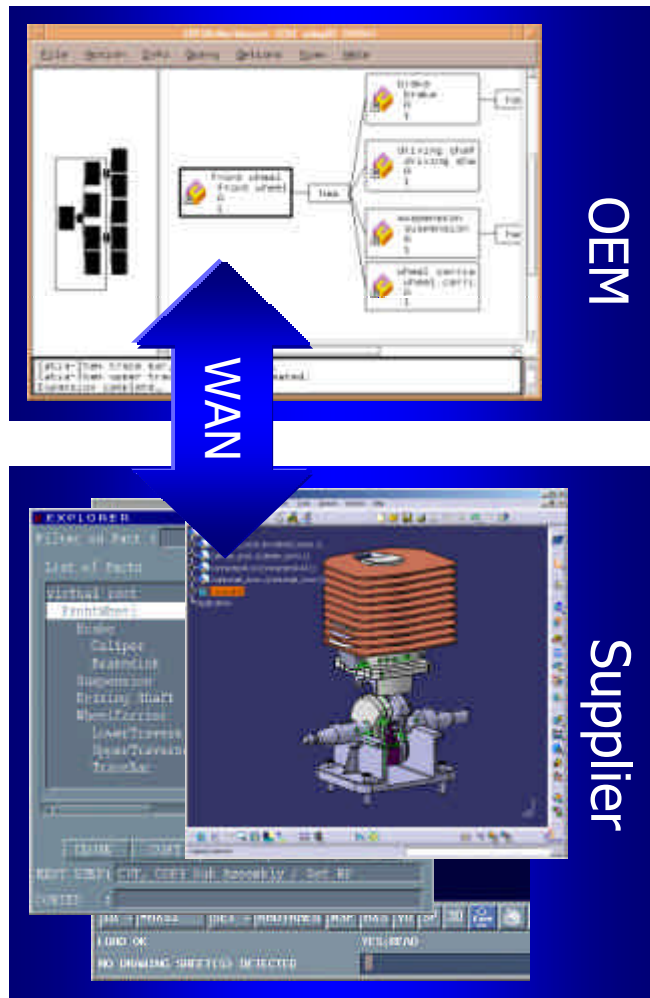
- Transfer initiated by a batch tool as well as interactively
- Mapping possibilities for CATIA V5 entities and attributes to destination classes and attributes of a customization
- Transfer of physical CATIA V5 data to defined vaults/work locations

Prerequisites

- CATIA V5 structure needs to be CMI conform
- For customer specific Teamcenter environments a customization of the Import Tool may be needed.
- CMI needs to be installed

Product Development / Strategy

s!CMI The supplier integration.



Key features

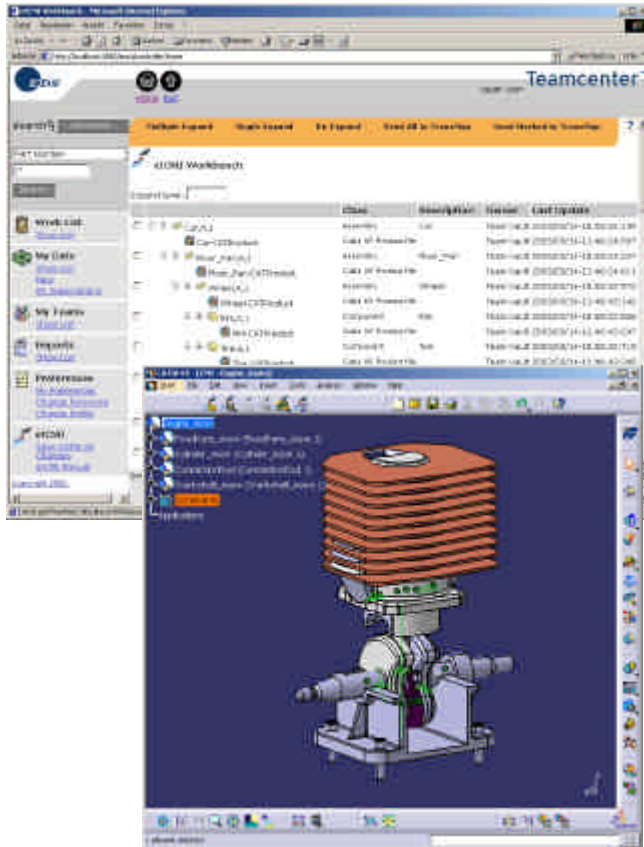
- s!CMI is a lean integration of off-site CATIA workplaces into the PLM system TeamCenter
- s!CMI is based on CMI technology
- Available for CATIA V4 and CATIA V5
- The partner can work off-site with product structures provided by the customer

Technical highlights

- Full control over the suppliers design context
- CMI Workbench functionality at OEM site without the need of Teamcenter
- Structured position transformation (V4)
- Product structure browser (V4)
- Supplier works in the context of the OEM
- Modify CATParts and CATProducts (V5)
- Automatic import/export of position and structure information

Product Development / Strategy

e!CMI – CMI goes web.



General

- Web-based solution of standard CMI product
- Allows suppliers, partners and customers to interact quickly in collaborative environment via web browser

Benefits

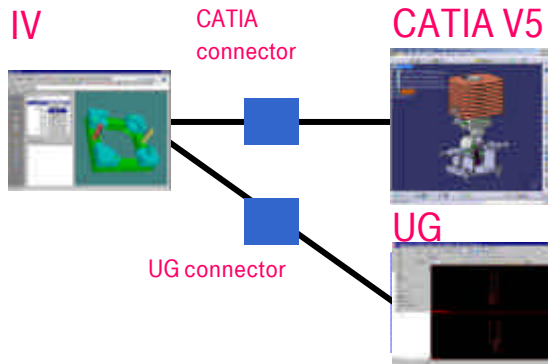
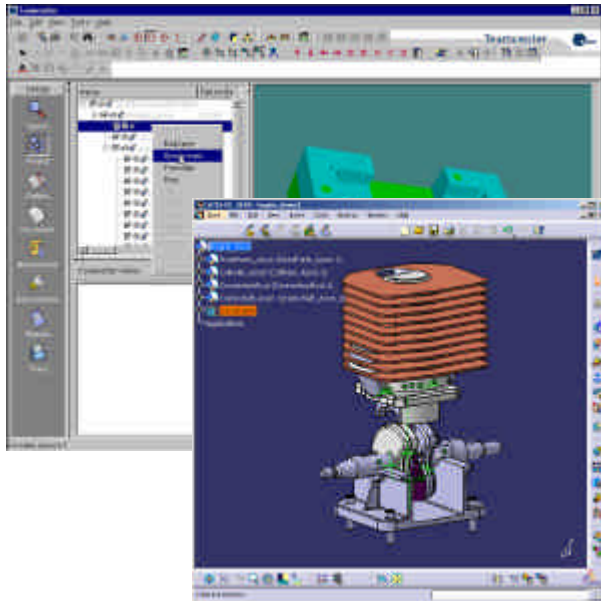
- All changes are immediately visible to all logged-in participants
- Web-native thin client lets users work with web browsers that they already use and understand
- No installation of a special PDM software is required
- Easy access of data whenever and wherever

Key Features

- Search for CATIA V5 data by different attributes every time from anywhere (Browser, Mobile, PDA)
- Download of single CATIA models and entire assembly structures (upload in development)

Product Development / Strategy

TC Enterprise Intelligent Visualization – CATIA V5 Connector



General

- CAD focused Teamcenter application to support design process
- Focuses the review and approve business process
- embedded visualization

Status

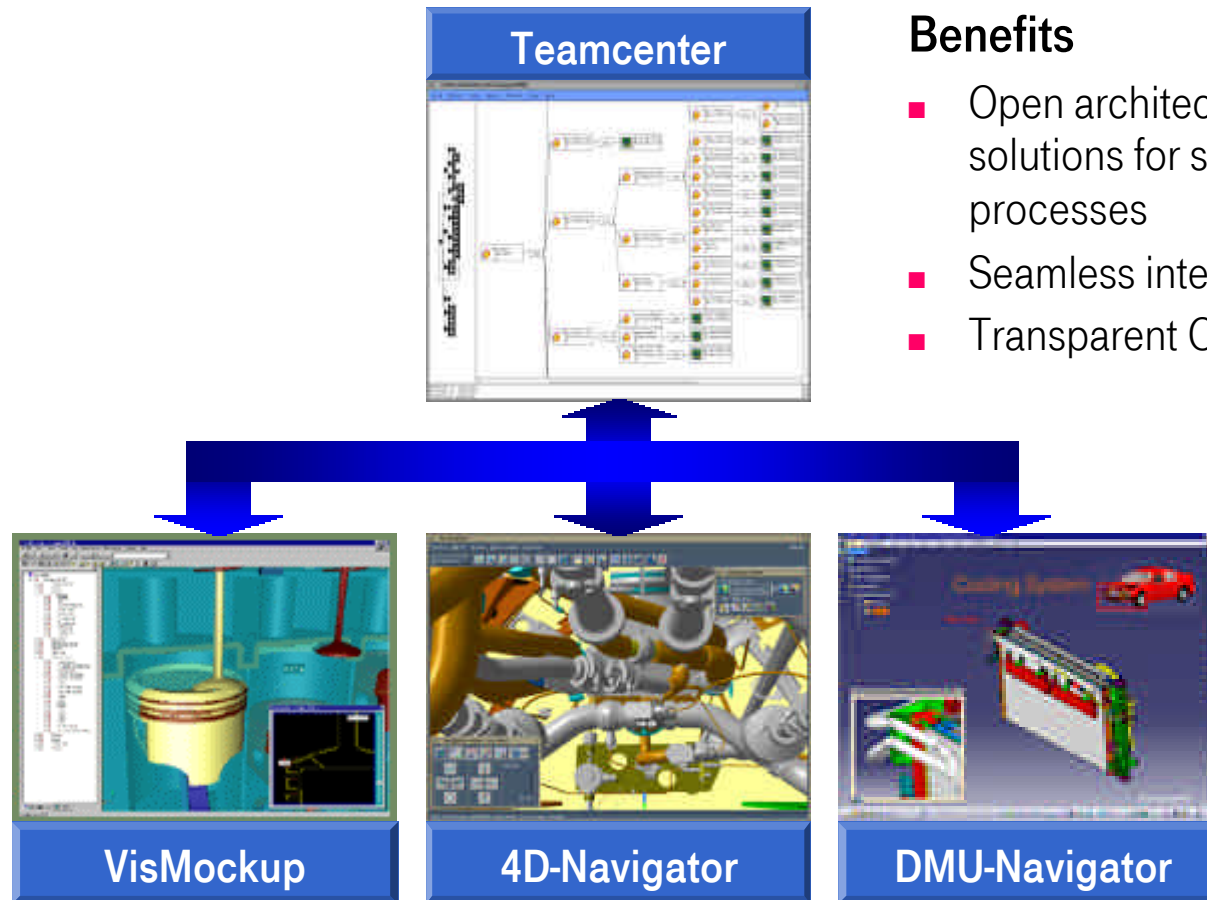
- First (beta) release is planned for mid of this Year

Benefits

- Combination of product structure and visualization of CATIA V5 data without the CAD system
- Multi-CAD support with one application

Product Development / Strategy

DMU integration.

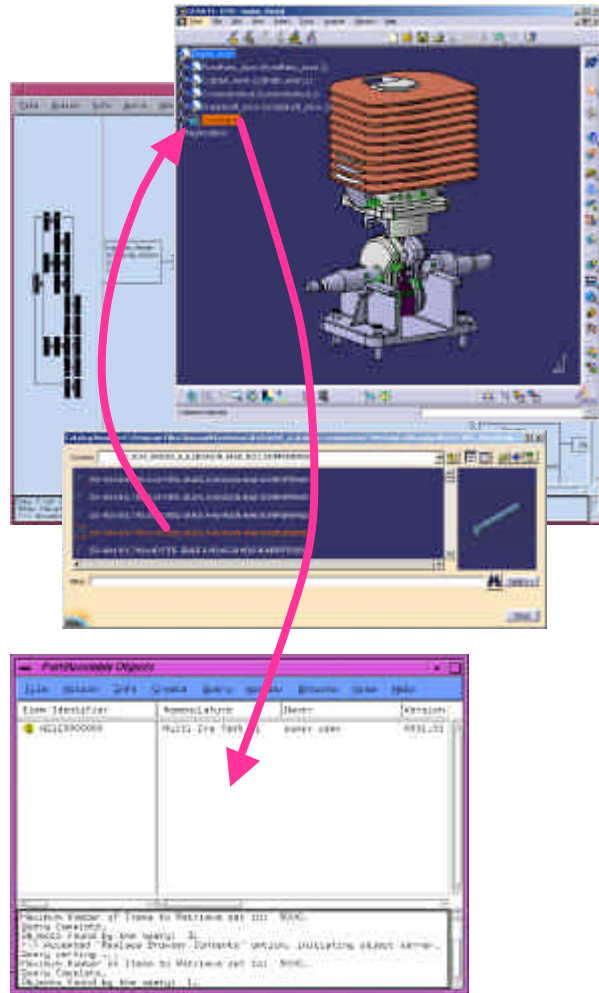


Benefits

- Open architecture enables customer specific solutions for support of individual DMU processes
- Seamless integration of PDM, CAD and DMU
- Transparent CMI Workbench concept

Product Development / Strategy

Standard Part Integration – The Concept.



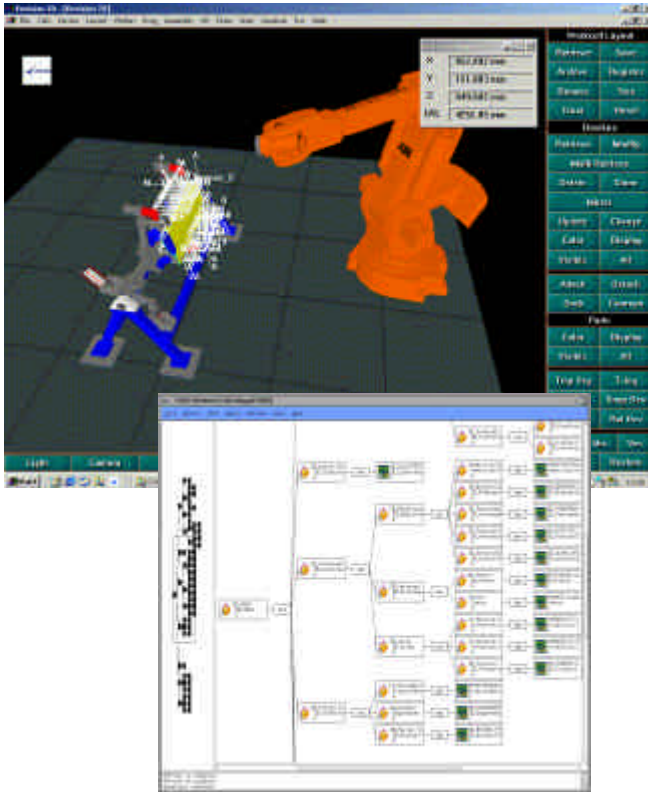
General

- Support of interactive assembling of standard parts into an existing CMI product structure in CATIA or Teamcenter

Strategy

- Connection of external (legacy) standard part applications to Teamcenter
- Direct support of CAT Catalogs with CMI
- Creation of standard part instances in Teamcenter product structure

Product Development / Strategy Delmia integration.



General

- Customer specific solution
- Currently supports ENVISION Assembly (Process Engineer planned in near future)

Benefits

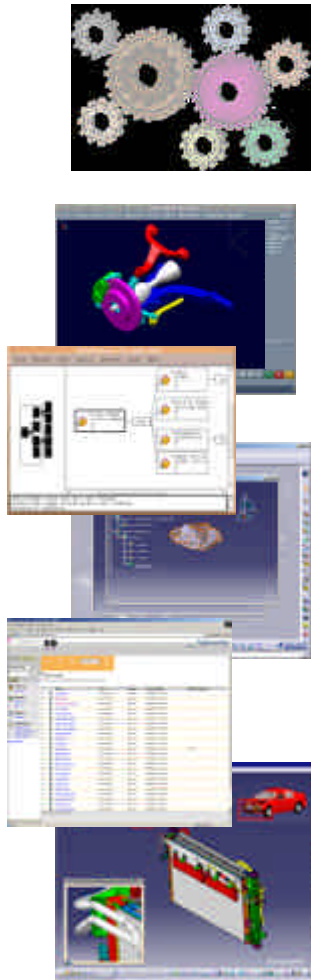
- Supplies BOM structure with respective object information, easy linking geometric data and their corresponding transformation in a simple way
- Simple adaptation of the interface and integration of further systems
- Takes the user one step closer to an integrated planning and manufacturing environment
- Ready for further simulation- and planning-applications

Key Features

- Intuitive CMI Workbench concept
- Open meta data exchange based on XML

Product Development / Strategy

Planned CMI Enhancements – Connect the future –



■ CMI Product Family

- Teamcenter ADS module support
- Support of Intelligent Visualization (Rich Client) technology
- Volume based search in Teamcenter
- Customer specific enhancements

■ CMI CATIA V4

- Feature enhancements
- Ongoing full support of CMI CATIA V4

■ CMI CATIA V5

- Standard Parts Integration (external tools, CAT Catalog)
- Integration of CATIA V5 component concept
- Support of global CATIA V5 caching concept
- Enhanced product structure manipulation features (e.g. replace, add, drop functionality)

CMI Release Plan 2003

Software Version	Delivery Date	Base Software	OS Level CATIA Client	Functionality/ Changes
CMI 8.3	January 2003	Metaphase 3.2 Teamcenter CF 2.0 Teamcenter Enterprise 3.0 CATIA 4.1.8- 4.2.4 CATIA V5 R8/R9/R10	AIX 4.3 HP-UX 11.0 IRIX 6.5 Solaris 2.8 Win 2000	<ul style="list-style-type: none"> ◆ Embedded product support ◆ CMI info button ◆ Status panel for CMI actions ◆ CATIA V4/ V5 Bounding Box support ◆ CATIA V5 standard property support ◆ Document centric <ul style="list-style-type: none"> - Virtual CATProduct support - Enhanced CATProduct management ◆ Multi Quantity Support for CATIA V5 ◆ neighborhood search in CMI workbench
s!CMI 1.0	January 2003	see CMI 8.3	see CMI 8.3	<ul style="list-style-type: none"> ◆ Lean supplier integration for CATIA V4 and V5 ◆ Modify/ Save Positions and CATPart/ CATProduct files
e!CMI 1.0	January 2003	Teamcenter CF 2.0 Teamcenter Enterprise 3.0 Web Application Server CMI 8.3 CATIA V5 R8/R9/R10 MS Internet Explorer	Win2000	<ul style="list-style-type: none"> ◆ Web access with TeamCenter Thin Client and CMI ◆ Browse product structures on remote CATIA client ◆ Modify/ Save positions and CATPart/ CATProduct files
CMI Import Tool 1.0	January 2003	Metaphase 3.2 Team Center CF 2.0 CATIA V5 R8/R9/10 CMI 8.3	see CMI 8.3	<ul style="list-style-type: none"> ◆ Import native CATIA V5 structures into Metaphase/ TeamCenter database

CMI Release Plan 2003

Software Version	Delivery Date	Base Software	OS Level CATIA Client	Functionality/ Changes
CMI 8.4	August 2003	Metaphase 3.2 Teamcenter CF 2.0 Teamcenter Enterprise 3.0 CATIA 4.1.8- 4.2.4 CATIA V5 R8/R10/R11	AIX 4.3 HP-UX 11.0 IRIX 6.5 Solaris 2.8 Win2000	<ul style="list-style-type: none"> ◆ Extended CATIA properties support ◆ ADS module support ◆ Volume based search for geometries in CMI workbench ◆ Remove Sub-tree from product structure in CATIA V5 ◆ Add new part to product structure in CATIA V5 ◆ Support of non-BOM CATIA V5 product structures ◆ Highlight in workbench for CATIA V5 ◆ CMI Pul-Down menu in CATIA V5
s!CMI 1.1	August 2003	see CMI 8.4	see CMI 8.4	<ul style="list-style-type: none"> ◆ Multi supplier session support ◆ Supplier session info button in CMI
IV CATIA V5 connector 1.0	August 2003	Teamcenter Enterprise 3.0 Teamcenter CDS module Web Application Server CATIA V5 R8/R10/R11	see CMI 8.4	<ul style="list-style-type: none"> ◆ 1st version of CATIA V5 connector

In Definition with EDS

Product Development / Strategy

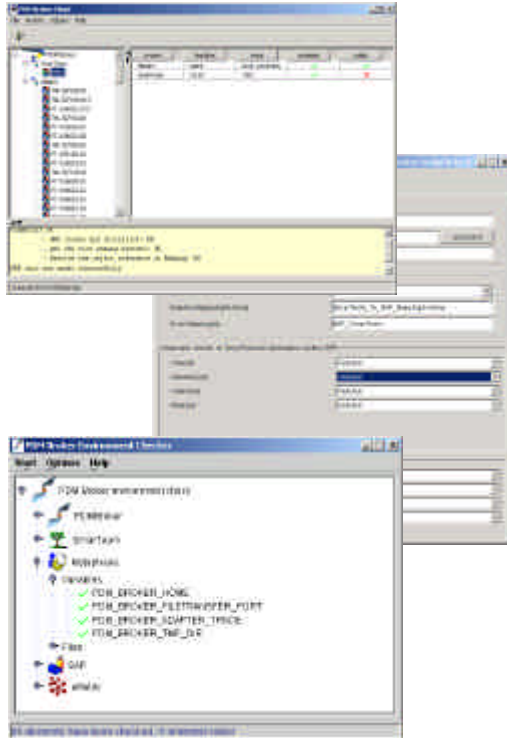
PDM-Broker - Overview

- Synchronization of different PDM & ERP Systems
- No leading System
- Adapter concept for connection of additional systems
- Available adapters: TC Enterprise 2.0, SmarTeam/CATIA Team PDM, SAP
- PDM-Broker 2.0 is available
- <http://www.pdm-broker.com>



Product Development / Strategy

PDM-Broker – Benefits & Techn. Highlights



Benefits

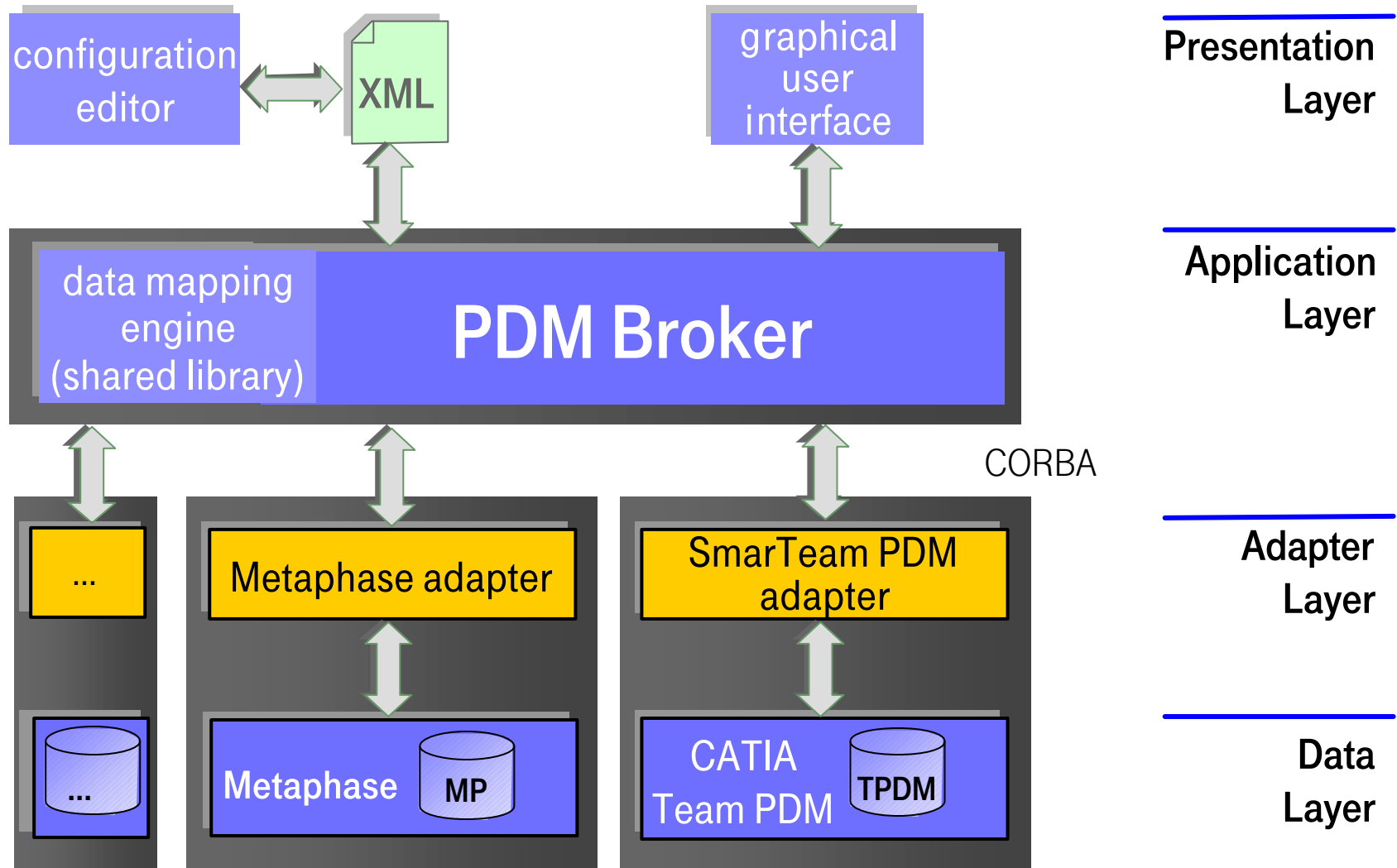
- Support of different PDM/ERP systems by using the flexible adapter concept
- Safe synchronization of local and global product structures and product data
- PDM-Broker ensures data consistency

Technical Highlights

- Customer defined mapping for the different data models
- Object locking in different systems
- Flexible adjustments of the system behavior

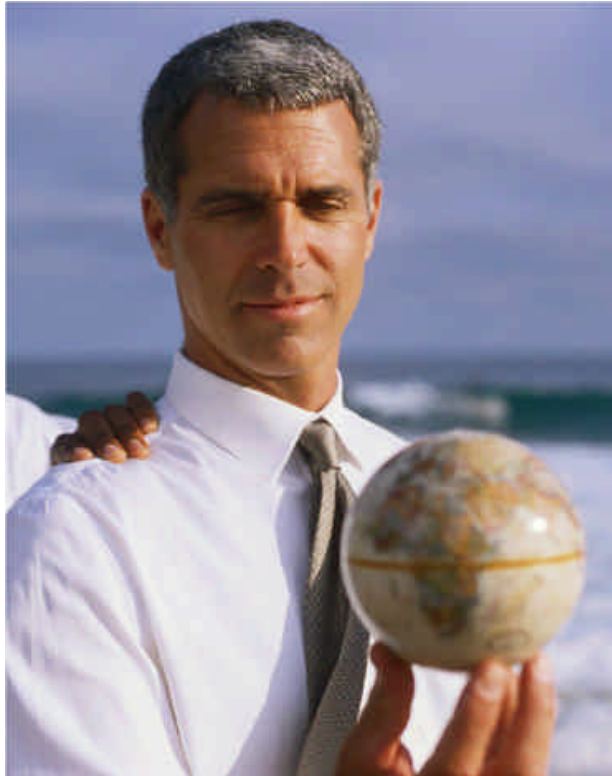
Product Development / Strategy

PDM-Broker - Architecture



Product Development / Strategy

PDM-Broker - Strategy



Planned PDM-Broker Adapters

- eMatrix (First Release Q2/2003)
- Enovia LCA
- Imagemaster

Toolkit for development of new adapters