

# CMI – CATIA Teamcenter Integration Product Overview

T-Systems PLM Applications

**T Systems**

Let's power  
higher performance



# CMI – CATIA Teamcenter Integration

## CATIA – PLM Integration Solutions

### CATIA to Teamcenter Unified Integration

- CMI RII – Rich Client embedded (CATIA V4, V5 and V6)

### CATIA to Tc Enterprise Integration

- CMI – Classic Client (CATIA V4 and V5)

### DMU - Functionality

- CMI - Tc Visualization Integration
- COM/FOX CATIA - JT Translator
- CMI RII – Embedded Tc Visualization Suite

### Supplier Integration

- CMI Reconnect Functionality
- CMI Import / Export Functionality
- CMI CITRIX Integration

**CMI PLM**

**Product Suite**

### CATIA to PDM Integration Solutions

- SAM - Step Assembly Manager (CATIA V4 and V5)
- PDM Workbench

### Standard Part Management

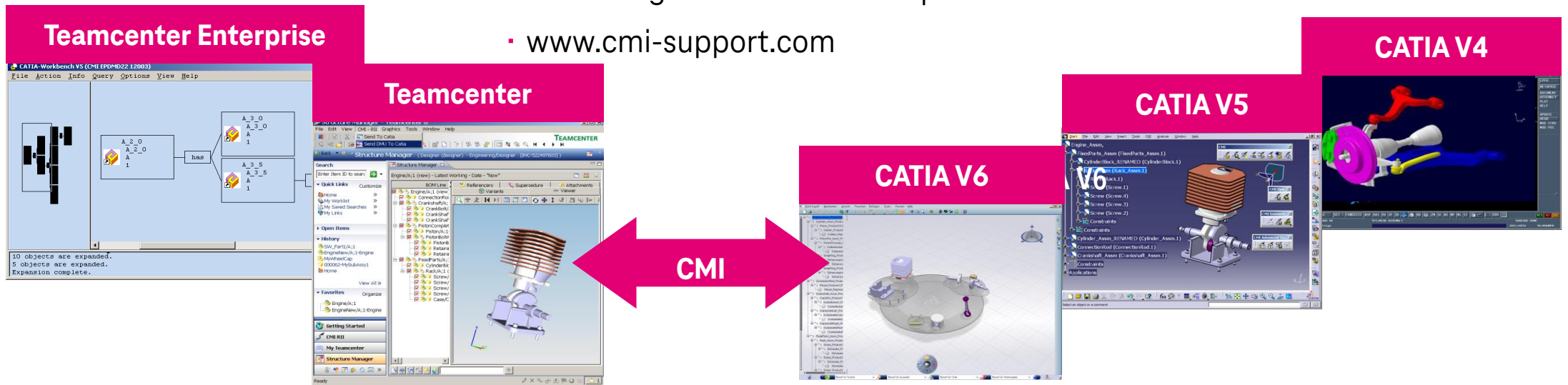
- CMI – CATALOG Management
- CMI Standard Part Functionality

# T-Systems' Teamcenter CATIA Integration

## CATIA Teamcenter Integration – Overview



- Product since 1995
- Teamcenter as global PDM system
- Integration of CATIA V4 / V5 and Teamcenter
- Assembly functionality in CATIA V4
- Integration of bill of material and geometry data
- Wide range of customization possibilities
- [www.cmi-support.com](http://www.cmi-support.com)



# T-Systems PLM Solutions

## Our Partners

### Siemens PLM Software



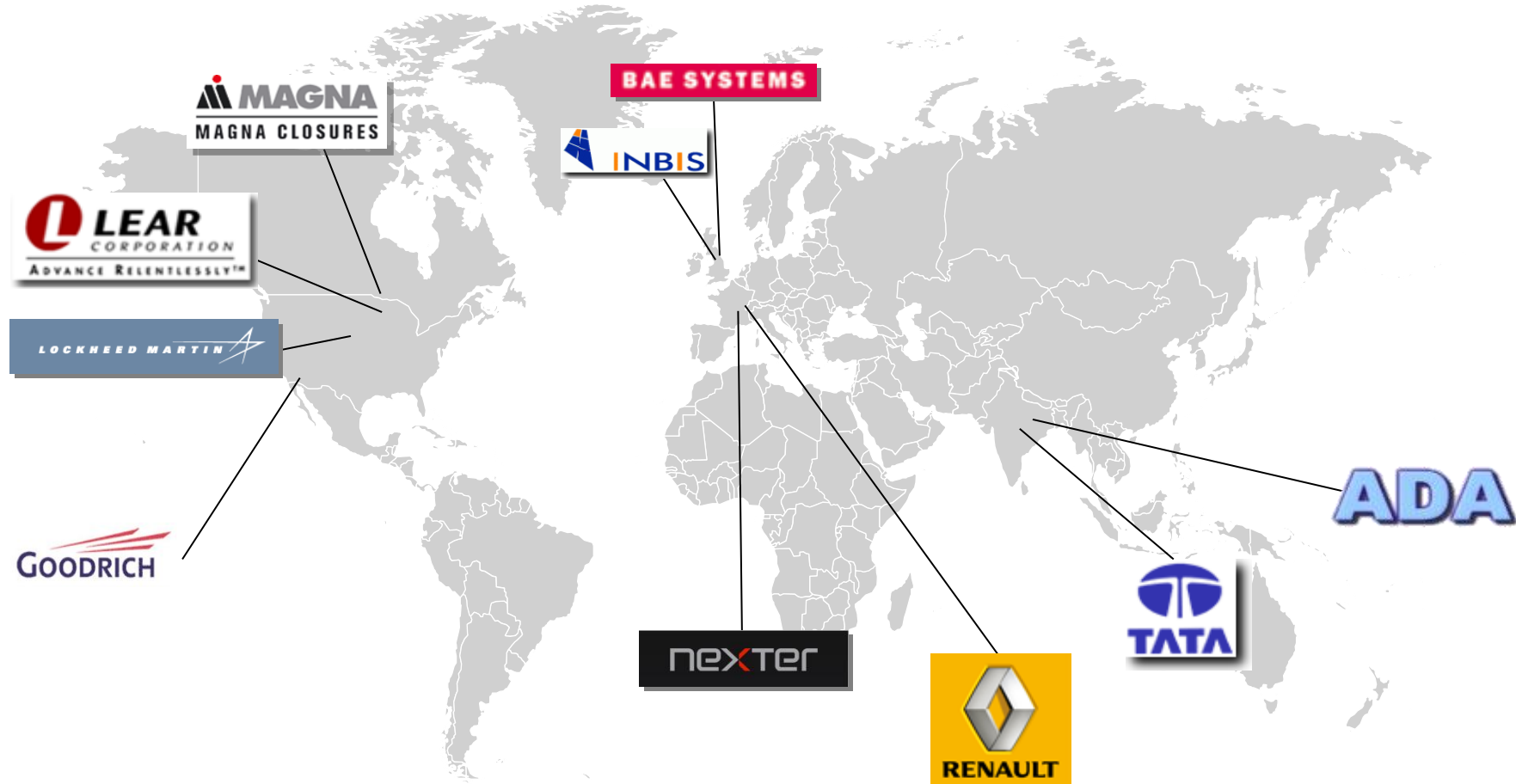
- Development Partnership
- Reseller Agreement for CMI
- Service Agreement
- JT Open Partner

### Dassault Systèmes



- CAA V5 Gold Partner
- DS V6 apps Community Partner
- Service and Integration Agreement

# CMI – CATIA Teamcenter Integration Customer Extract



# CMI – CATIA Teamcenter Integration

## Customer Reference Project @ LOCKHEED MARTIN



### Services for Lockheed Martin

- Integration of CATIA V4, CATIA V5, Delmia and Teamcenter
- CMI standard product customization
- Various levels of consulting and support (onsite consulting / coaching/ specification / implementation / training / development / roll-out & UHD)



### Locations

- US (development)
- worldwide partner/ supplier integration

### PDM Project

- JSF (Joint Strike Fighter) project
- about 3,000 CAD / 9,000 PDM seats
- 390 floating CMI licenses
- More than 740 CMI licenses in the JSF consortium

### Applications

- CATIA V4
- CATIA V5
- Teamcenter

# CMI – CATIA Teamcenter Integration Customer Reference Project @ **BAE SYSTEMS**

## Services for BAE Systems Aerostructures

- Providing the CATIA V4/V5 – Teamcenter Integration CMI
- CATIA V4/V5 migration consulting
- CATIA V5 process consulting
- Teamcenter customization



## Locations and Projects

- Warton, UK
- Preston, UK
- JSF, MAS
- Eurofighter Consortium
- Regional Aircraft

## PDM Project

- Migration CATIA V4 to V5
- Migration from VPM to Teamcenter
- CMI CATIA V4/V5 integration
- Training

## Installation Base

- 5 airplane projects
- about 400 CAD seats
- about 2,000 PDM seats

# CMI – CATIA Teamcenter Integration Customer Reference Project @ **TATA MOTORS**

## Services for TATA

- CMI standard product customization
- Onsite Workshops
- Multi-Quantity and CATALOG support
- LINUX Server support
- CMI RII Teamcenter Unified CATIA Integration



## Locations

- TATA Motors in Pune, India
- TATA European Technology Centre
- DAEWOO, Korea
- Trilix, Italy

## PDM Project

- Project name : PDM2
- 864 floating CMI licenses
- over 2,500 PDM seats

## Applications

- CATIA V5
- Teamcenter Enterprise / Teamcenter
- Teamcenter Visualization



# CMI – CATIA Teamcenter Integration

## CMI Functionality - Added Value

### Knowledge Management

- Management of design tables

### Specific Integrations

- CMI Archive to package specific data

### DMU in configuration context

- Neighborhood and volume based search
- Global cache management (CGR file control)

### Design In Context

- Product variant and configuration management
- Identification

### Assembly/ Part Management

- Product structure creation/ modification
- BOM synchronization

### Concurrent Engineering

- User access and life cycle control

**Knowledge Management  
(Design Table, CATIA Catalog)**

**Specific Integrations  
(Analysis, Process, Electrical)**

**Configured DMU**

**Design In Context**

**Assembly Management**

**Part Management**

**Document Management**

CMI functional scope

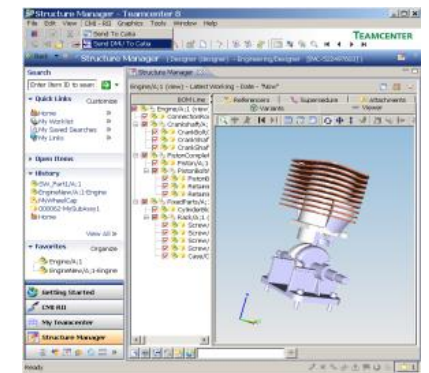
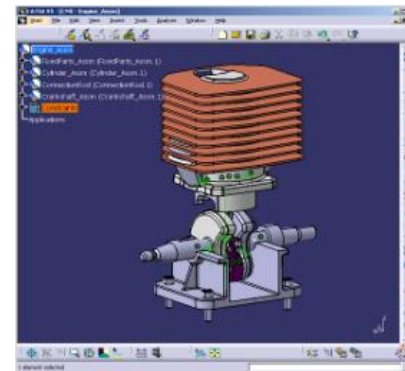
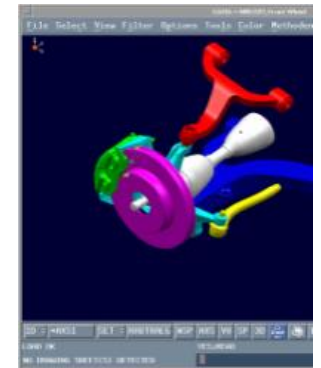
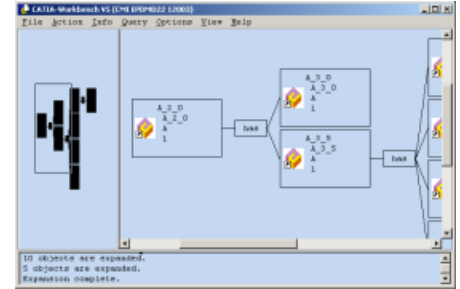


# CMI – CATIA Teamcenter Integration

## CMI Core Functionality

- Support of CATIA local and released caching, file transfer caching
- Register / Create of parts, documents and CATIA files
- Bounding Box Creation and position matrices management
- Bi-directional object identification: Highlight, CMI Info, Check In/Out Dialog
- Drawings: CATDrawings, CATDrawing links, drawing frames
- CMI Archive (Black Box)
- CATIA Design Table
- Inertia information
- Flexible part management: Alternate Shape Representations
- Occurrence dependent CAD data: Modified on Assembly
- Configurable Node Behavior for CATIA Component support
- Read & Re-Read
- Update & Synchronize

- CATIA Property/ TC Attribute Mapping
- “CMI Workbench”-mode in CATIA
- Non-BOM CAD data management: Auxiliary CATIA file support
- CATIA V4 Integration with assembly management
- CATIA Catalog support
- V4/V5 mixed data structures
- Support of alternate shape representations (JT, CGR, V4)



# CMI – CATIA Teamcenter Integration

## Benefits of the T-Systems CATIA Teamcenter Integration Product

### 01

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#### **Saving time and money**

- T-Systems' CATIA-integration comes with established use cases from more than 40 small-size to big-size / global acting customers.
- Provides unfiltered and direct access to the CATIA integration provider.

### 02

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#### **Risk mitigation**

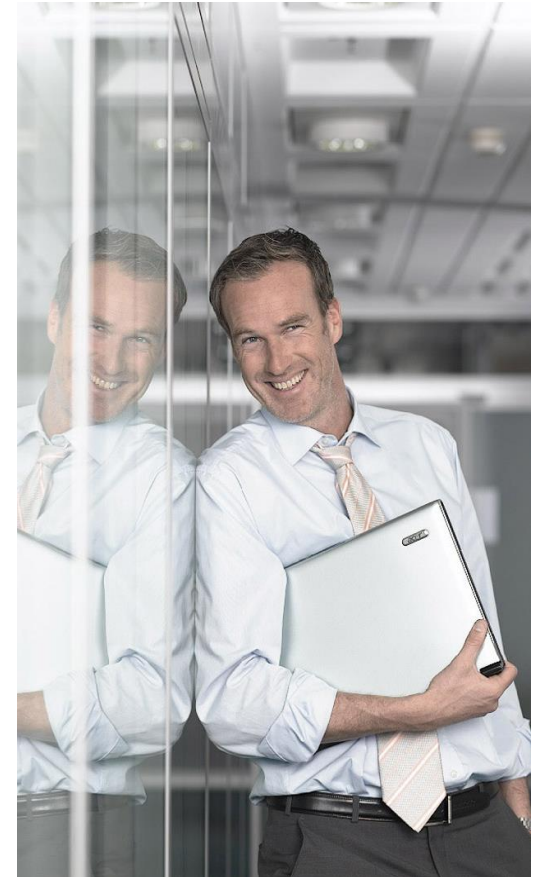
- Vendor independence to ensure customer requirements come first.
- The Teamcenter CATIA integration certified by Dassault Systèmes.
- Strong partnership with Dassault Systèmes and Siemens PLM.
- Bullet proven over years in customer productive environment.

### 03

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#### **Access to broader PLM market expertise**

- Merging the internal knowledge of Siemens PLM and Dassault Systèmes products.
- T-Systems can leverage its Know-How of different PDM / CAD systems. (Teamcenter, Matrix / ENOVIA, Windchill, SmarTeam, CATIA, NX, etc.)
- PLM consultancy, customizing and core development in a nutshell.



# CMI – CATIA Teamcenter Integration

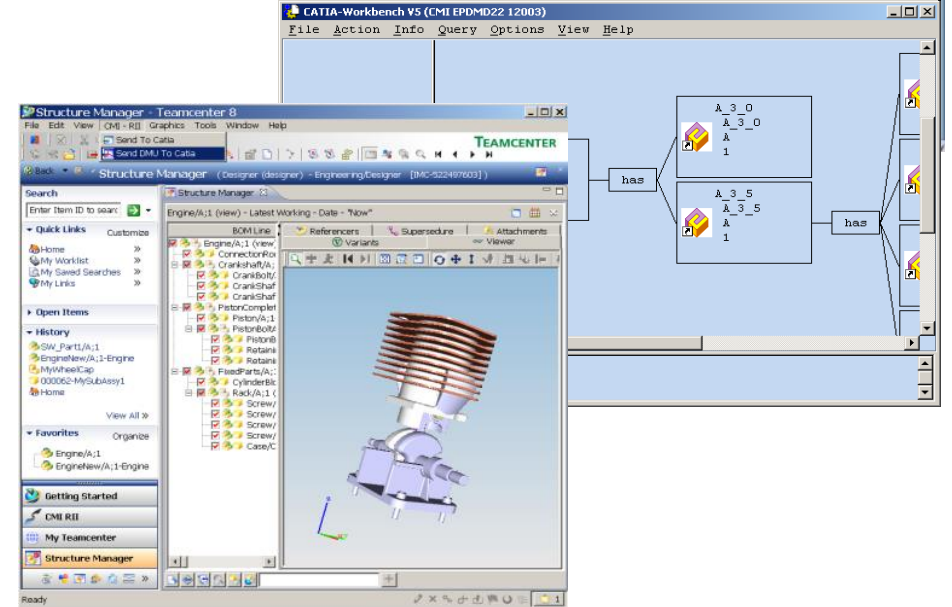
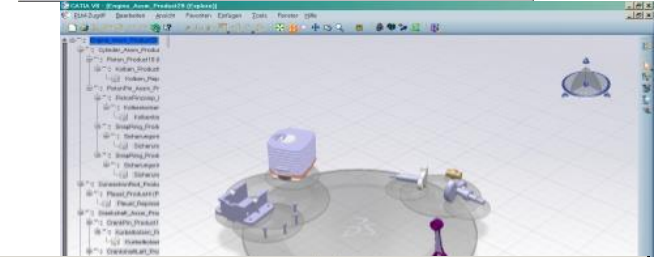
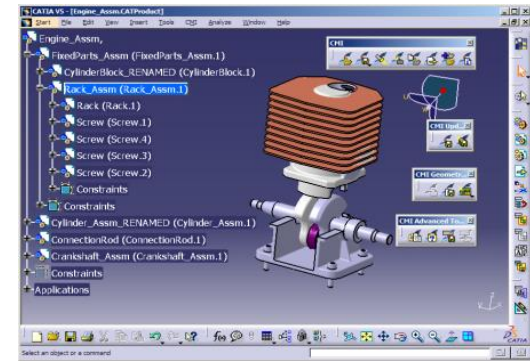
## Flexibility and Robustness as the Basis for Success

### Flexibility

- T-Systems as the producer of the CATIA integration can react flexible and provide fast response to customer requests.
- Direct and fast implementation of customer specific design processes.
- Short and direct communication channel.
- Customer specific releases on demand.

### Robustness

- Stable communication between Teamcenter and CATIA.
- High Performance.
- Easy going handling of huge data.
- „On-the-fly“ repair of inconsistencies in CATIA, e.g., UUID conflicts.
- Ensures consistency of the transfer of CATIA structures to Teamcenter.
- Complete functionality is proven in production.
- No CATIA data loss if the Teamcenter Client hangs up.



# CMI – CATIA Teamcenter Integration

## Examples for Powerful Functionality (1)

### High performance load management

- Support of the CATIA load option: „Do not activate default shapes on open“
- Support of the CATIA local Cache Management
- Get Original Geometry functionality
  - Explicit transfer and load of CATParts for selected CATIA nodes
  - Load into CATIA session → Visualization Mode → Design Mode
- Expand for Visualization for lightweight load of reference and surrounding structures
  - Complete substructures are represented by a single CATPart or CGR
- Load product structures without attached CAD Data to CATIA
  - Use of template CATProducts or temporary/embedded structures
  - On-the-fly creation of CATProducts

### Reconnect and Import-/Export functionality

- For interactive data exchange with partners and reintegration of off-line data
- Mapping of original OEM attributes at Import and Export

# CMI – CATIA Teamcenter Integration

## Examples for Powerful Functionality (2)

### DMU

- Global Caching concept based on the CATIA Released Cache feature:
- Teamcenter serves CATIA with CGR files for lightweight loading.
- Cache-less DMU functionality with Volume/Neighborhood search
- Bounding boxes are provided by the integration

### Catalog Management

- CATIA Catalogs managed in Teamcenter
- Catalogs can be used to manage standard parts, template structures, drawing frames, CATScripts, ...

### Configurable Node Behavior

- Use and support of CATIA Components to manage Standard Parts, external reference geometry, ...
- Any kind of CATIA structure can be managed in Teamcenter: Piping, electrical data
- The integration classifies and detects Components, ignores, jumps over, stops at ...

### Customizing model to implement customer specific PLM logic

- Allows to customize the integration to support specific business logic.

### Context menus in CATIA V5 tree for easy recognition and easy to use

# CMI – CATIA Teamcenter Integration

## Examples for Powerful Functionality (3)

### **Management of different types of geometry data**

- Auxiliary geometry: models that are not reflected as Items in a product structure
- Mod On concept
- management of diverging representations and positions in product structures
- geometry management controlled by assembly instantiation
- Alternative geometries (e.g. envelope curves, light weight CATParts)

### **Integrated JT-Support**

- Content of the integrated JT-Viewer is used to control the content of the CATIA session

### **Virtual Workbench and Add Temporary**

- Allows to compare different versions of a product structure in one single CATIA Window

### **CATProcess and CATAnalysis support**

- Comes with defined use case descriptions

### **CMI Archive for drastically load reduction in PDM and easy use of non-product structure data**

- Zip and package whole CATIA structures in a single Dataset

# CMI – CATIA Teamcenter Integration

## Services around CMI

### Product

#### Product development

- New Software Releases
- Maintenance
- Bug fixing



#### Support

- Installation
- 1st and 2nd level Support
- Workshops, Customization, Introduction, Training, ...



### Projects

#### Consulting

- CAD / PDM processes
- Specification of requirements
- Definition of pilot program
- Migration
- Performance



#### Implementation services

- Customer specific requirements
- Configuration and Customization
- Additional tools
- Operating

