

CMI – CATIA Teamcenter Integration Product Overview

T-Systems PLM Applications

 **T Systems**



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

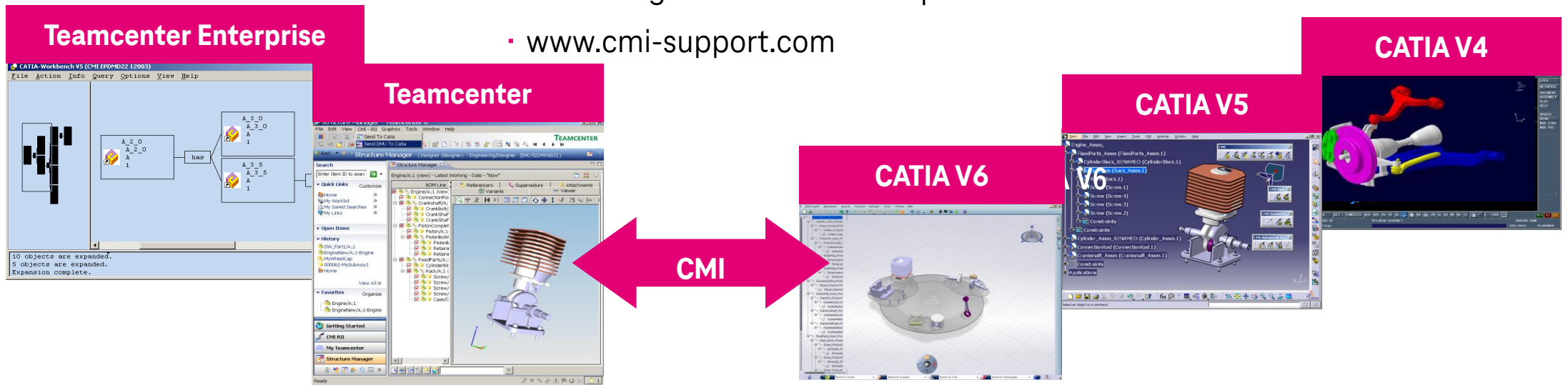
- CMI – CATALOG Management
- CMI Standard Part Functionality

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



T-Systems PLM Solutions

Our Partners

Siemens PLM Software



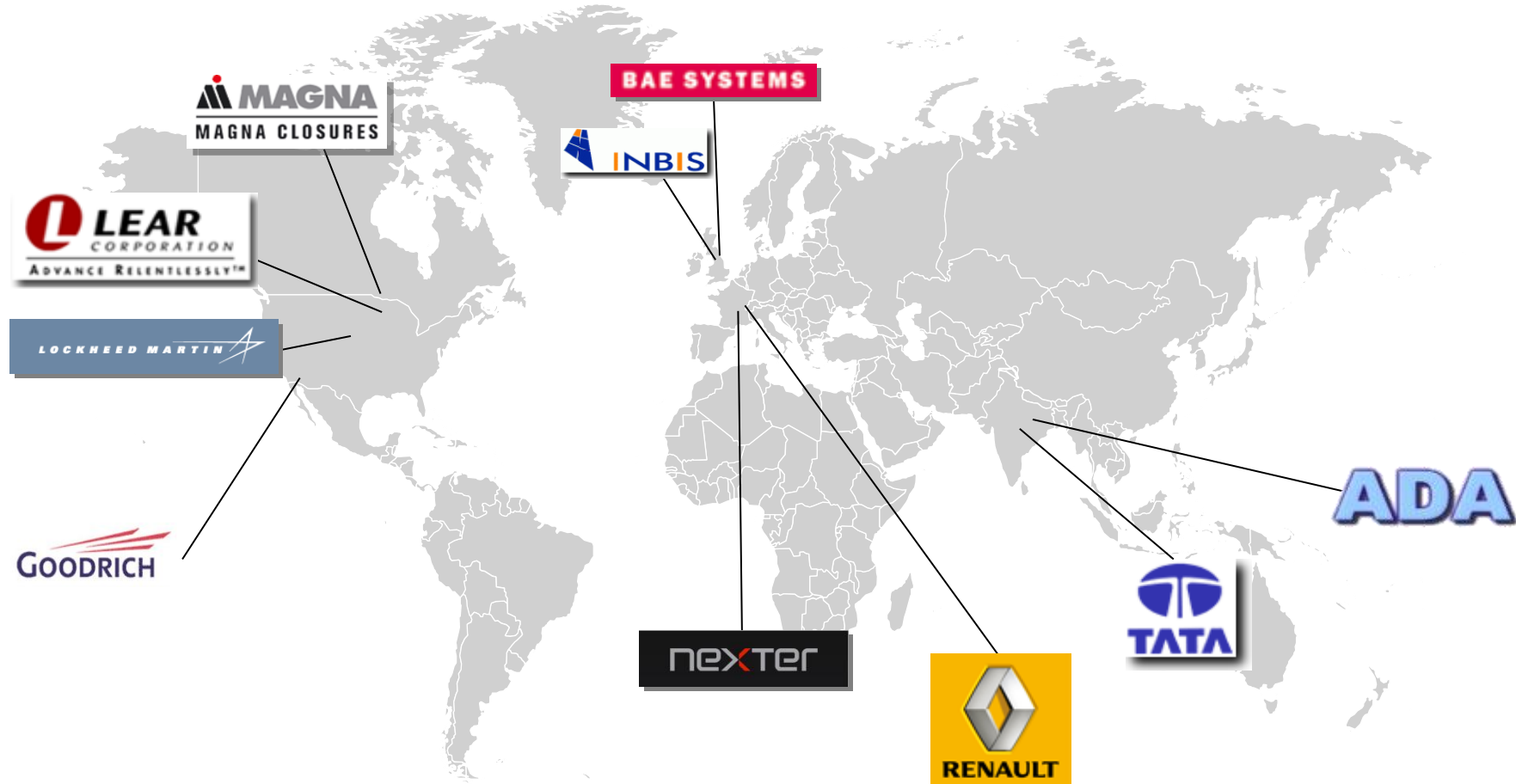
- Development Partnership
- Reseller Agreement for CMI
- Service Agreement
- JT Open Partner

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

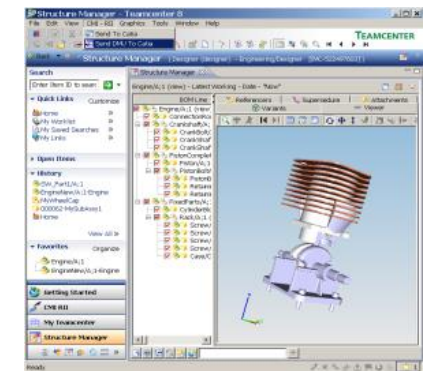
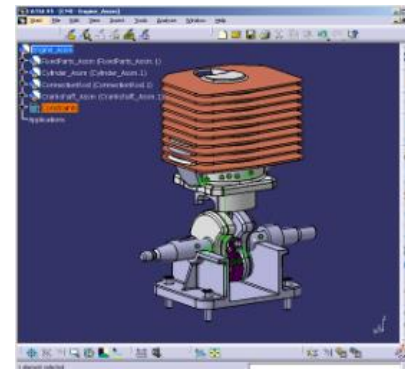
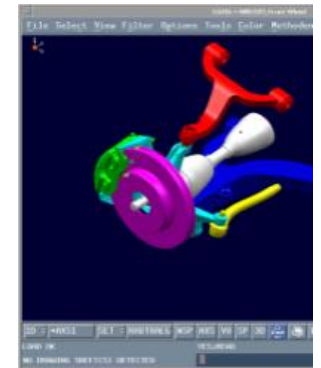
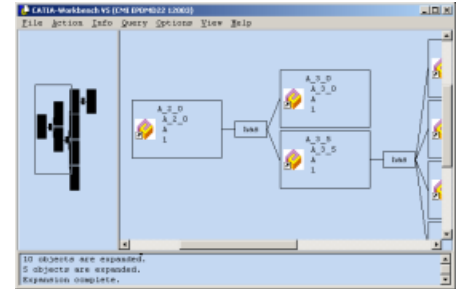
CMI functional scope



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

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

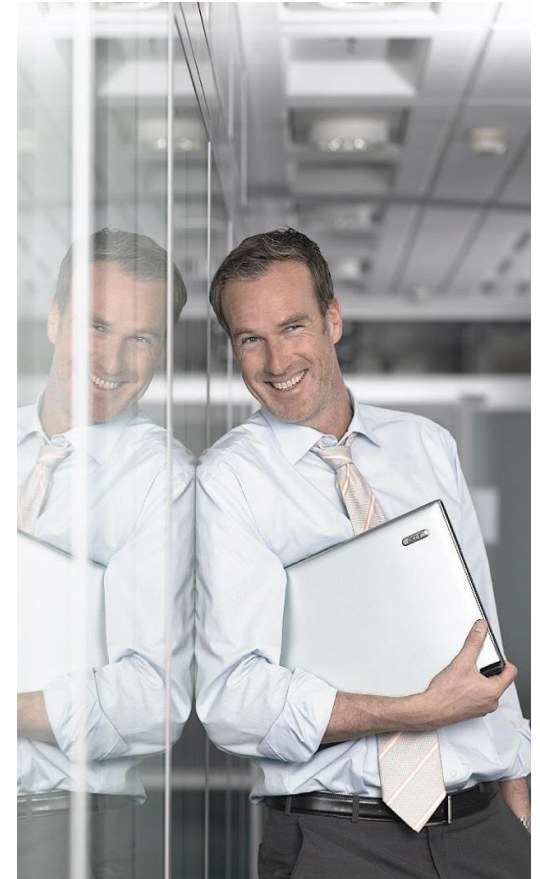
Risk mitigation

- 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

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

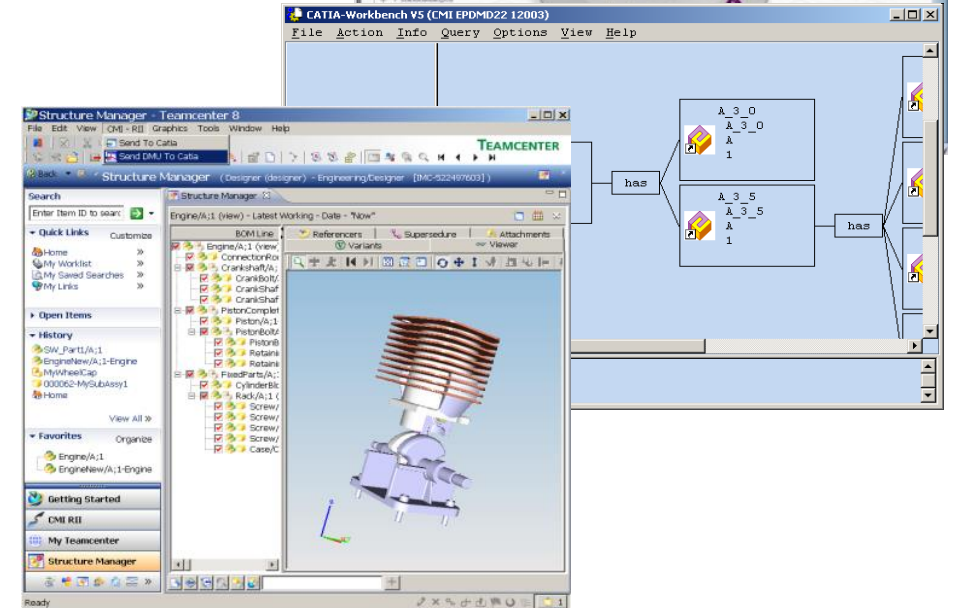
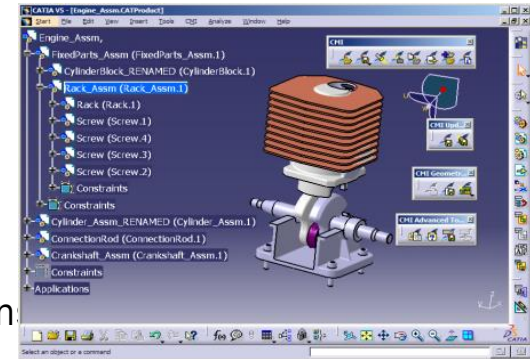
Flexibility and Robustness as the Basis for Success

Flexibility

- T-Systems as the producer of the CATIA integration can react flexible and provide fast response.
- 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

