TechniaTranscat:

Share complete data throughout the extended 3D Enterprise
Agenda

1. TechniaTranscat Introduction
2. 3D Master
3. TechniaTranscat Software for CATIA
4. Neutral formats and customer examples
5. TechniaTranscat Software for JT
Our Company Profile

1. TechniaTranscat Company Profile

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- More than 4000 customers worldwide
- 400 employees
- 30 years in PLM
- 19 offices in Europe, India and US
- Since 07/2015 part of Swedish Addnode Group AB partnering with Technia
More Time for Intelligent Engineering!

- 3D data available for everyone!
- Improved data quality for all purposes!
- Data is up-to-date!
- See modifications to previous releases!
- Process assurance!
- Compliance!
PLM Essentials for CATIA, ENOVIA and JT
One portfolio - 6 Product Lines – 40 Products

- Standardized global workplaces
- Company and industry standards
- Enhanced user experience and upgradability
- Integrations to PLM and ERP
- 3D Digital Enterprise

High quality and validated engineering data support collaborative product creation process. Q-Checker, xCompare and CAVA for CATIA allow establishing company standards / ensuring compliance to industry regulations / verifying the release process.

Today innovation results from a virtual experience in a collaborative environment. The entire enterprise instantly participates and benefits.

With TechniaTranscat’s Lite3D platform – based on JT – all users easily access complete 3D data.

Standardized global workplaces provide a maximum of flexibility and control.

With myPLM administrators manage user groups, license rights and environments, engineers can work on any task right away – supported by a simple usable start tool.

Get more value out of your ENOVIA system by enhancing overall productivity, performance, upgradability and end user adoption rates with the Value Components. By providing pre-built enhancements to standard ENOVIA functionality, the Value Components can lead to faster and higher returns on PLM investments.

To operate an enterprise PLM solution, the right knowledge and tools are required. With more than 30 years of experience TechniaTranscat developed a portfolio of expert tools that enable its administrators to dramatically improve the service delivered to their end users.

Integration Framework will reduce the cost and complexity of your enterprise integrations to PLM systems, while bringing up the flexibility and speed of implementation.

The Integration Framework connects ENOVIA and many enterprise software, enabling smooth integrations to other systems like ERP.
2. 3D Master

Affects everybody

- **Creators vs. Consumers**
  - User Ratio ~ 1:10
  - 90% of non-CAD users are using 2D
  - Experts vs. rare use

- **Benefits of neutral formats**
  - 3D for all processes up to long term archiving
  - Engineering design (CAD) separated from downstream
  - Multi-CAD in product development
  - Reduced license costs

- **Openness and Standards: Working groups and initiatives**
  - JT ISO → Standardized neutral format
  - LOTAR → Aerospace - Initiative for “Long Term Archiving”
  - SASIG / ProSTEP iViP → STEP AP 242 as common basis of Aerospace- and Automotive standards
Influences model content

- **3D Master models contain**
  - Geometry
  - Production related information
  - Change management

- **Requires**
  - 3D modelling standard
  - Users that follow these rules

- **Q-Checker and xCompare supports the verification regarding**
  - existence
  - correctness
  - consistence throughout model revisions
Is everything there and correct?

- **Examples:**
  - Wrong start model used
    - Features are not ordered correctly
    - Result: Downstream processes can’t access required information
  - Missing Meta Data
    - supplier name, material, weight, surface treatment, legal notes, ...
    - Result: Parts cannot be released
  - FT/A Fake dimension
    - Result: Errors in subsequent processes and in manufacturing of parts

- **Q-Checker:**
  - World’s leading system for quality assurance with more than 2000 customers
  - More than 400 highly customizable checks
  - “Users friend” due to extensive explanations
  - Many automatic healings
The Q-Checker portfolio

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- Interactive and batch mode
- Check seal (internal/external)
- Many automatic healings

- Standard integration platform for any PDM
  - ENOVIA V6
  - ENOVIA V5
  - ENOVIA V4
  - Matrix One
  - SmarTeam

- Write Check results to a database
- Statistical evaluations
Q-Checker for CATIA
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Methodology definition and roll-out
- Define CAD standards and methodology right in CATIA
- Teach users company standards with Q-Checker
- Users save time by data re-use / in collaboration

PDM quality governance
- Make Data Quality visible in PDM
- Allow only appropriate data to be released
- High user acceptance

Enhance user productivity
- Support users and enhance skills
- Automated healings
- Targeted training

Use Cases Q-Checker

Supplier monitoring
- Ensure incoming data is usable
- Monitor and evaluate suppliers
- Proof ROI and guarantee continuous improvement
More than 100 OEMs using Q-Checker today

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Dr. Ing. h. c. F. Porsche AG
Successful Change Management

- At model change is not only sufficient to know only about geometrical changes, but also changes in the additional information are important because they are essentially for the 3D Master process.
- xCompare identifies all differences in geometry and metadata (e.g. FT/A dimensions, annotations, tolerances, etc.) and presents the results right in CATIA.
Handle Model Modifications

• Track ALL design and engineering changes
  • For V5 Parts, Products, Drawings, Cgrs, JT and SMG
  • Feature-based comparison detects ALL design changes, including geometric, topologic and annotation (FT&A)
• Fully integrated with CATIA V5 or LiteBox3D
• Interactive and Batch Comparison
  • Easy to integrate in DX and PDM workflows
• Detailed and flexible reporting
  • Detailed xml report of all modifications with screen captures
  • Highly customizable through style sheets
xCompare for internal and supplier processes

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Data Model Comparison (V5/V5, JT/JT)
- Support "3D Master" / "Model Based Definition" initiatives
- Compare FT&A, Tolerances
- Compare Parameter, Attributes

Geometry and Drawing Comparison (V5/V5, JT/JT)
- See all geometry differences between two model revisions
- Find modifications in drawings
- Modifications in design effect manufacturing/tooling model

Release Validation and Documentation (V5/V5, JT/JT)
- Highlight and document modifications between releases
- Automated integration to PDM and Data Exchange

Conversion Validation (V5/JT, V5/SMG)
- Compare CATIA data to exported JT or SMG
- Automated validation in conversion process

Use Cases xCompare
4. Overview of different neutral formats

- Results of ProSTEP iViP Analysis „3D-Formate im Engineering-Umfeld - ein Vergleich“ (Edition 2, 2013)
  - Formats: STEP / 3DXML / JT / 3D PDF
  - Application areas: Viewing / Data exchange / Digital Mock Up (Process chain) / Documentation and Archiving
  - Criteria: Free of change Viewer / Converter and Software / Software Development Kits / Compression and Data size / Standardization
JT = Process format
# Content and Downstream Usage

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## JT ISO

<table>
<thead>
<tr>
<th>Content</th>
<th>BoundingBox</th>
<th>tessellation</th>
<th>LOD 3</th>
<th>LOD 2</th>
<th>LOD 1</th>
<th>BREP / exact Geometry</th>
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<td>Assembly structure (JT / AP242 XML / PLMXML)</td>
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<th>Product Planning</th>
<th>Service (Viewing)</th>
<th>Project Planning (Viewing)</th>
<th>DMU</th>
<th>Documentation</th>
<th>High End - visualization</th>
<th>Data exchange</th>
<th>LTA</th>
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<td>(Viewing)</td>
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File size
JT Workflow Forum has elaborated 30 JT Use Cases so far
JT in use at OEMs

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- Additional Examples
  - BMW
  - ATK
  - Airbus
  - Suzuki
  - Nissan
  - Hyundai
  - Proctor & Gamble
  - Honda
  - GM
  - Volvo Cars
  - ...

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Page 29  2014-09-18

Siemens PLM Software
Siemens MS LMV paperless drawings with JT
Design and Manufacture without drawings

Why replace the technical drawing??

- Information loss in derivation of downstream objects (from 3D to 2D drawing)
- All subsequent processing (CAD-CAM linkage) on the 3D model
- Reduction of cycle time
- Innovation - create in 3D - ready on the basis of the 3D model

1908: Technical drawing of a locomotive
1886: Technical drawing
2013: 3D JT with PMI

Source: Siemens / JT Open 2014

- Product Development in house
- Manufacturing external
- Required:
  - Ease of use 3D format enabling the manufacturing suppliers to access required information → JT
  - Intuitive JT Viewer → LiteBox3D
Data freedom with JT at ATK
Using JT with PMI to improve manufacturing processes

Source: Siemens / JT Open 2014
**PLM Vision**

*Make it Visual*
- BoM & design data are managed in one integrated solution
- Design artifacts are change controlled & integrated to the BoM, forming a Bill of Information
- Visual Reporting facilitates improved decision making
- Collaboration across extended enterprise is supported with appropriate information access
- Design geometry is easily shared across the extended enterprise (including suppliers)

*Make Value Flow*
- Downstream flow of product & process data enables success of Manufacturing and Product Support
- Sales & Marketing strategy linked to product flow
- JT represents the geometry master & is the common currency for downstream processes

**Current PLM Environment**

"JT enables Visualization"
- 35 sites generate JT data in TcEng
- Over 250,000 translation attempts per month
- Over 99% JT availability measured against current product model BoM's

Source: Caterpillar/ JT Open 2012
• Translation validation between V5-JT with xCompare

Source: BMW AG / ProStep iViP 2015
Big Picture 2015: Global Cooperation Processes based on JT

- Translation validation between V5-JT with xCompare
- JT data quality proven with LiteComply/Q-Checker JT
- JTSP: Viewing components based on LiteBox3D
- Writing of JT properties

Daimler Downstream JT usage

- Packaging/DMU
- CAE/FEM
- Virtual Reality
- Digital Manufacturing
- Design in Context in NX
- Tolerance Studies
- Logistics Planning
- Digital After-Sales

More than >12.5 Million* JT files stored in the PDM-System of the Daimler AG

*Status as of 09/2016

Mercedes-Benz
5. Lite3D Portfolio

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*LiteBox*³D

**Viewing & Navigation**
Desktop and web-based viewer for JT and TIFF

**Validation**
Model comparison V5/JT und JT/JT

**Process Compliance**
LiteComply
Data quality for JT und TIFF

**Data Simplification & IP Protection**

**LiteDrop**
IP Protection and Data reduction

Can be integrated, extendible

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LiteBox3D - *Viewer for Desktop and Web-based*

**Easy access to 3D Master data**

- Desktop (Free and Pro Version)
  - Most User friendly JT viewer on the market
- Web-based
  - Based on WebGL and modern browsers
  - No Plugin required on client side
  - API to integrate the viewer and add ons into own web-based application

Some „3D Master“ features

- Display of properties
- Support of model views
- Highlighting of faces linked to PMIs
- Printing of Model views
Do you really want to provide everything to everybody?

Take care: 3D Master JT files are extremely valuable

Master JT File
- LODs
- B-Rep
- PMIs
- Attributes

- Service
- Selling
- Finance
- Calculating

Bidding & Inquiry
- LODs (low accuracy) only

High end Visualization
- B-Rep only

Manufacturing / Shop floor
- LOD & PMIs

After Sales
- LOD (finest) & Properties

Others…. i.e. viewing by web
- As small as possible
Lite3D supports neutral formats

Viewing and more
- View JT, PLM XML, STEP AP242, Tiff
- Measure, red-line, ...
- Integration in any application (PDM, ERP, ...)
- Web ready

Collaboration with JT
- Free viewer for supply chain (upgrade to pro version possible)
- Validation of incoming data
- Internally verify data conversion to JT with xCompare V5/JT

IP Protection
- Reduce data on the fly
- Support of “Master JT file” concept

Data Validation
- xCompare JT/JT
- xCompare V5/JT or V5/SMG
- LiteComply

Use Cases Lite3D

Lite3D
Thank you!

Questions?

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#1 knowledge company in PLM

Transforming vision into value