AP242 DAY
COMPDM
27th of November 2019, Hamburg
BASICS OF COMPDM
COMPDM OVERVIEW
Integration of PLM, CAD and STEP

- Exchange of product structure data
- Conversion between multiple formats and systems
- Client/Server architecture
- Rich client for end user and administrators
- Web client for end users
- Clients do not require a CAD/PLM installation

Current release is 2019R2 available since July 2019
COMPDM
Efficient Data Exchange

Basic Concepts of COMPDM

- Easy to configure and to adapt to individual data models, mappings, transformation methods and import/export processes
- Based on automatic analysis of new data; system suggests mapping
- Adaptations to business logic can be performed by customers, even if complex or very specific; customer’s IP is thus protected
- Preconfigured for major PLM and CAD systems
- Very sophisticated reconciliation capabilities before data is imported into PLM system
- Optional tagging of data exchange information in PLM system
- Designed to handle large amounts of data (data storage, performance)
- Integration with data exchange monitor TRUfusion Enterprise™ by Rocket Software for seamless end-to-end data exchange
PRIME USE CASE
Supplier DEX in Multi-OEM Environment

Supplier PLM
Teamcenter, Aras Innovator, ENOVIA VPM V4, 3DEXPERIENCE (ENOVIA V6), Windchill

Exchange to partner:
- geometry
- positioning
- structure
- PLM properties also within CAD system
- configuration effectivities

Easy installation
- Installer
- Auto-recognition of CATIA/NX data model

Easy to configure
- GUI based
- driven by PLM customization

Trigger export by event in PLM

Create assembly files if necessary
Apply customer naming rules
Map properties
Remove IP properties

Update PLM structure & docs
Convert to local file naming rules
Map properties
Analyze contained properties and compare

Legacy CAD product structure formats: CATIA V5, NX
Neutral product structure formats: STEP AP214, STEP AP242 XML
OTHER USE CASES
Big Bang Data Migration with COMPDM

Source
- Structured product data
- Other data
- CAD Data

Migration & Synchronization
- Identification of scope and potential migration strategy
- Description of target PLM objects and product structure
- Identification of typical testcases

Customer

Customer and T-Systems utilizing COMPDM

Target
- PLM system

Mass data handling for big bang scenarios
- Optional data conversion or archiving during migration
- Scheduled execution
  - Batch or user-controlled
  - Intermediate storage, if requested

Fast track agile implementation of initial mapping

Verify, refine and complete use cases and mapping

Migration of test scenarios

Smoke test prior to final execution

Big Bang with initial load (manual or semi-automatic)

Implementation of triggers and logic for delta calculation and delta updates
EFFORTS FOR DATA EXCHANGE

Manual Export  |  Data Export  |  Rule-based Modification of Data (manually)  
| Quality Checking  |  Routing  |  Partner & Process Management  

Manual Export  |  Data Export  |  Rule-based Modification of Data (manually)  
| Quality Checking  |  Routing  |  Partner & Process Management  

Data Reception  |  Quality Checking  |  Rule-based Modification of Data (manually)  

Data Import and Reconciliation  (manually)  

Data Reception  |  Quality Checking  |  Rule-based Modification of Data (manually)  

Data Import and Reconciliation  (by process)  

Manual Import  |  With COMPDM/TRUfusion

Manual Import  |  With COMPDM/TRUfusion

Process logging

Process logging

Process logging

Process logging
## COMPDM META DATA FUNCTIONAL CAPABILITIES

<table>
<thead>
<tr>
<th>PDM and other meta data information</th>
<th>AP242 edition</th>
<th>Implementation Format</th>
<th>Level of implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;As Design&quot; product structure</td>
<td>1 TC</td>
<td>X</td>
<td>X</td>
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<tr>
<td>&quot;As Planned&quot; product structure</td>
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<tr>
<td>&quot;As Built&quot; product structure (including &quot;individual product&quot;)</td>
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<td>Traceability links between product views</td>
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<tr>
<td>Document structure</td>
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<tr>
<td>Person and organization</td>
<td>1 TC</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Classification</td>
<td>1 TC</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Multiple Identifiers, multiple identifier roles</td>
<td>1 TC</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Multiple languages</td>
<td>1 TC</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Alternate/Substitute parts</td>
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<tr>
<td>Interoperability with AP242 CAD interfaces</td>
<td>1 TC</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Customized PDM properties</td>
<td>1 TC</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Configuration management - based on effectivities</td>
<td>1 TC</td>
<td>X</td>
<td>T</td>
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<tr>
<td>Configuration management - based on specifications</td>
<td>1 TC</td>
<td>X</td>
<td>A,T,V</td>
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<tr>
<td>Change management</td>
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<td>Contract management</td>
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<td>Project management</td>
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<td>Delta change management</td>
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<td>Interface management</td>
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<tr>
<td>Mating definition</td>
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</table>

Legend:
- Aras (A),
- Teamcenter (T),
- 3DExperience (3),
- VPM V4 (V),
- Windchill (W),
- All (X)
## CAD Functional Capabilities of COM/FOX (CATIA V5)

<table>
<thead>
<tr>
<th>CAD Information</th>
<th>AP242 Edition</th>
<th>Implementation</th>
<th>Level of Implementation</th>
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</thead>
<tbody>
<tr>
<td><strong>3D geometry</strong></td>
<td></td>
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</tr>
<tr>
<td>3D exact BREP representation</td>
<td>ed1</td>
<td>JT</td>
<td>X</td>
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<tr>
<td>3D tessellated BREP representation</td>
<td>ed1</td>
<td>JT</td>
<td>X</td>
</tr>
<tr>
<td>3D tessellated curved triangle representation</td>
<td>ed2</td>
<td></td>
<td></td>
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<tr>
<td>3D scan</td>
<td>ed2</td>
<td></td>
<td></td>
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<tr>
<td>presentation (color, layers, transparency, invisibility, etc)</td>
<td>ed1</td>
<td>JT</td>
<td>X</td>
</tr>
<tr>
<td>3D texture</td>
<td>ed2</td>
<td></td>
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<tr>
<td><strong>3D PMI (Product &amp; Manuf. Information)</strong></td>
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<tr>
<td>graphic presentation</td>
<td>ed1</td>
<td>JT</td>
<td>X</td>
</tr>
<tr>
<td>semantic representation</td>
<td>ed1</td>
<td>JT</td>
<td>X</td>
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<tr>
<td><strong>3D machining form feature</strong></td>
<td></td>
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<tr>
<td>Milling, Turning, Drilling, etc</td>
<td>ed1</td>
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<tr>
<td><strong>Validation</strong></td>
<td></td>
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<tr>
<td>Validation Properties (3D geometry, PMI, assy structure, composite)</td>
<td>ed1</td>
<td>PMI, JT</td>
<td>X</td>
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<tr>
<td>Equivalence validation (shape)</td>
<td>ed2</td>
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<tr>
<td><strong>assembly structure</strong></td>
<td></td>
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<tr>
<td>1 STEP file with assembly structure and 3D geometry</td>
<td>ed1</td>
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<tr>
<td>1 assembly with references to CAD 3D files</td>
<td>ed1</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>nested assembles with references to CAD 3D files</td>
<td>ed1</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>3D assembly constraint</td>
<td>ed1</td>
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<tr>
<td><strong>Kinematics</strong></td>
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<tr>
<td>Motion</td>
<td>ed1</td>
<td></td>
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<tr>
<td>Mechanism</td>
<td>ed1</td>
<td>X</td>
<td>X</td>
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<tr>
<td><strong>Composite design</strong></td>
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<tr>
<td>ply definition based on exact surface</td>
<td>ed1</td>
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<tr>
<td>ply definition based on explicit 3D tessellated solid BREP</td>
<td>ed1</td>
<td></td>
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<tr>
<td><strong>Electrical Wiring Harness</strong></td>
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<tr>
<td>topology</td>
<td>ed2</td>
<td></td>
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<tr>
<td>wire list</td>
<td>ed2</td>
<td></td>
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<tr>
<td><strong>Additive Manufacturing</strong></td>
<td></td>
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<tr>
<td>build orientation, part placement, support, etc</td>
<td>ed2</td>
<td></td>
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<tr>
<td><strong>STEP compressed file</strong></td>
<td>ed1</td>
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EXAMPLE FOR A CONCRETE ON-GOING SCENARIO:
LONG TERM ARCHIVING
LONG-TERM ARCHIVING @ AEROSPACE COMPANY
WORKFLOW AND APPLICATIONS INVOLVED
LONG-TERM ARCHIVING @ AEROSPACE COMPANY

SUMMARY OF REQUIREMENTS

Create the long term information for **product structures including 3D objects + MS-Office documents** delivered from Teamcenter as part of the release workflow and archive this information in a dedicated archive application.

Provide (view/export) the long term information from the archive application.

Concerning product structure and 3D archiving, there are different steps which need to be done:

- **Export** of the meta information, product structure data and 3D objects from the Teamcenter PDM application => COMPDM/TRUFusion
- **Conversion** of the product structure information (meta data, positioning etc.) to a long-term format (**nested** STEP AP242 BO Model XML) => COMPDM
- **Conversion** of the 3D objects to a long-term format (STEP AP242 Part21) => Theorem converter
- **Checking/Reporting** of the quality of the STEP conversion (mandatory for certification) => 3D_Evolution®
- **Signing+Timestamp** of the released product structure data and 3D objects with an electronic signature => SecPKI®
- **Archiving** for long-term purposes of all objects (STEP, report, signatures) in ImageMaster®
- **Provide feedback information** (i.e. the success of the archiving) to Teamcenter => COMPDM/ImageMaster®
NEXT STEPS
COMPDM Roadmap

Version 2019R1
- Filename mapping templates
- Web Client (end user view)

Version 2020R1
- Consolidation
- Improve handling

Version 2020R2
- Improve management of complex mappings
- Creo Module
COMPDM
Fast-track agile PLM Integration

Execute first data exchange processes within a few hours ...

- Download COMPDM from our web site:
- Obtain a test license for the period of one month
- Schedule 2 to 3 web sessions, where T-Systems will support setup and customizing of COMPDM (max. 8 hours). We will help you to ...
  - Install COMPDM
  - Connect to your PLM system(s) *
  - Define a first set of representations, i.e. relevant objects and attributes from your PLM customizing
  - Define first data exchange methods to export and/or import data
- Schedule a review session with T-Systems to evaluate results and discuss way forward:
  - Abandon project without losing any money
  - Or: Rent or buy long-term license and order suitable support project to finalize customizing

* except for ENOVIA VPM V4

Learn to know about how COMPDM works without losing money ...

Free of charge
THANKS FOR YOUR ATTENTION.

CONTACT

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