Industry Forum 2019
Find, Reuse & Control in the context of SAP ECTR

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Groz-Beckert KG
Agenda

- Personal introduction
- Company presentation
- Overview CAx/PLM environment at Groz-Beckert
- Find, Reuse & Control 0.0: Need for something new
- Find, Reuse & Control 1.0: Overview of the new processes and benefits
- Find, Reuse & Control 2.0: Outlook into the future
Personal introduction
Personal introduction

Daniela Dapper, 32 years old

- 2005 – 2008: University of Tübingen, study program „Diploma in mathematics“
- 2008 – 2013: Combination study program at Groz-Beckert
  - University of applied sciences Albstadt-Sigmaringen, study program „mechanical engineering“
  - Professional education in industrial mechanics

- 2013 – 2016: Design engineer, mechanical construction, Groz-Beckert
- 2016 – today: Software developer, Information Management Technical Systems, Groz-Beckert

Professional focus:
- Project work and coordination (implementation of PARTsolutions, among other things)
- Data cleansing in the environment of CAD and PLM
- User support
Company introduction
<table>
<thead>
<tr>
<th>Founding year</th>
<th>Turnover 2018 €</th>
<th>Employees</th>
<th>Countries</th>
</tr>
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<tbody>
<tr>
<td>1852</td>
<td>745 mill.</td>
<td>9,282</td>
<td>150</td>
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At home in the textile world

Albstadt

Headquarters
Facets of precision

Around 70,000 different archived product types for textile production and joining methods

70,000

Textiles are found in fashion and medicine, in architecture, in vehicles, in aerospace technology, as well as household textiles and floor coverings and numerous other applications.
Product sectors and overview

Knitting  Weaving  Felting  Tufting  Carding  Sewing

Further informations: www.groz-beckert.com
Overview CAx/PLM environment at Groz-Beckert
Overview CAD/PLM systems

- **Machine construction**
  - SAP
  - ECTR
  - FCTR
  - NX
  - NX CAM
  - E3.Series
  - PARTsolutions

- **Tool construction**
  - SAP
  - MatrixOne
  - NX
  - NX CAM
  - ECTR
  - FCTR
  - PARTsolutions

- **Product construction**
  - SAP
  - MatrixOne
  - NX
Installation overview of CAD/PLM systems

- > 200 CAD seats, 8 locations
  
  **Europe**
  - Albstadt (167) (56x Remote Citrix HDX 3D)
  - Heiningen (2) (Remote Citrix HDX 3D)
  - Raesfeld (7)
  - Stolberg (3+1) (HiCAD + AutoCAD) (Remote Citrix HDX 3D)
  - Budweis (13)
  - Luzice (3) (Remote Citrix HDX 3D)
  - Derlijk (2) (Remote Citrix HDX 3D)
  - Solidian (3)
  - Portugal (1) (AutoCAD)

- **Asia**
  - Đà Nẵng (4) (Remote Citrix HDX 3D)

**Actual version**
- SAP ECTR: 5.1.13.1
- NX: 11.0.2 MP11
  - Approx. 1,900,000 CAD files
Find, Reuse & Control 0.0

Need for something new
Potential of improvement

- Time saving at the requisition process of a CAD model of a new standard or purchased part including the creation of the related SAP material
- Current approach:
Potential of improvement

- Better quality and better handling of CAD models for new standard or purchased parts

- Example scenario: A clamping force block is to be placed in the CAD system to perform a collision check.

- Current approach:

```plaintext
Konstrukteur sucht
Kaufteil beim
Herasteller online

Download des 3D-
Modells in einem
neutralen Format

- Login erforderlich
- nicht jeder User ist berechtigt
- meist step-Format
- Eigenschaften: 1 (toter) Körper,
  Hubstellung wird bei der
  Generierung angegeben und bleibt fix

Generierung von
NX-Parts
(mehrere
Einzelmodelle)

Anlegen von
UDM's für jedes
ET + BG im ECTR

Import jedes einzelnen
Modells in das
corresponding UDM

Import nur durch IT möglich, User
hat keine Berechtigung

Verknüpfung der
Einzelteile im CAD-
System zur gewünschten
Hubstellung
```
Potential of improvement

Avoidance of duplicates

Current approach:
- Arbitrary creation of self-developed CAD models and SAP master records through the construction department
- Uncontrolled increase of database and stock

Profile of a duplicate:
- Weight: 20 to 200 kg
- Type of fur: white, woolly, soft, warm fur
- Colour of face, leg: black
- Facial expression: Eh..??
- Special features of the original: white fur cap

Find, Reuse & Control 1.0

Overview of the new processes and benefit
New processes

- Time saving at the requisition process of a CAD model of a new standard or purchased part including the creation of the related SAP material

Future strategy:
New processes

- Better quality and better handling of CAD models for new standard or purchased parts

- Example scenario: A clamping force block is to be placed in the CAD system to perform a collision check.

- Future strategy:
New processes

- Avoidance of duplicates

Future possibilities:
- Due to a specific search of duplicates of available 3D model geometries, existing duplicates can be detected and new duplicates can be avoided
- Already during the construction process a search of similar parts can be executed, which offers the opportunity to fall back on existing parts.
Project schedule

12/2016 – 03/2018
• Test and set-up phase (trial licenses)

03/2018 – 01/2019
• Test and set-up phase (productive licences)

01/2019
• Go-Live Keyuser (planned 09/2018)
Project schedule

Construction sites during the project

- **Integration** of the software into specific procedures of Groz-Beckert
  - Document creation via ECTR to NX
  - Material creation with a GB specific SAP transaction out of the PARTdatamanager
  - Opening and placing of individual parts out of ECTR to NX via PARTdatamanager

- Automatic generation and import of step files into the PARTsolutions database

- **Mapping** of the existing standard and purchased parts at GB (approx. 80,000 parts, thereof 25,000 prioritised)
  - Bad quality of material master
  - No standardized material specifications
  - Automated mapping without additional expense is not possible
  - Internal data preparation and internal mapping (Start: standard parts, approx. 8,000 parts)
  - **Main reason for delayed Go-Live**

Internal effort (until end of 2018): approx. 1050 h
Benefit, ROI (Return on Investment)

**Calculation basis:**
- Time saving at the creation of new standard and/or purchased parts (2017: 3588 parts)
- Expense of material requisition + 3D model creation (2017: approx. 1500 h)

- Internal effort of approx. 1050 h is not considered
- Savings achieved through a search of duplicates and similar pieces are not considered
Find, Reuse & Control 2.0

Outlook into the future
Outlook into the future

Further strategy

- Mapping of purchased parts (including purchased parts, which are not available in the provided catalogues)
- Rollout of the software to further departments, e.g. NC programming, purchasing department,…
- Definition and handling of standards (traffic light system, preferred ranges)

Further developments

- Jump into SAP transactions out of the PARTdatamanager (Access to stock, triggering of purchase orders,…)
- Integration of PARTdatamanager into Ectr
Abstract

- The software enables the users to find and use standard and purchased parts as well as individual parts fastly and efficiently.

- The designer can work more freely and is not as dependent on the standardization department.

- Duplicates can be avoided.

- The support during the project by CADENAS was excellent!
