GROZ-BECKERT

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

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Groz-Beckert KG

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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

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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)
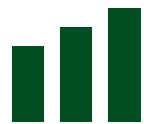- Data cleansing in the environment of CAD and PLM
- User support

Company introduction

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Facts and figures

Founding year	Turnover 2018 €	Employees	Countries
1852	745 mill.	9,282	150

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At home in the textile world

Albstadt

Headquarters

Hamburg

Berlin

Frankfurt

Stuttgart

Munich

Facets of precision

Products for knitting, weaving, tufting, carding and sewing, as well as producing nonwovens

70,000

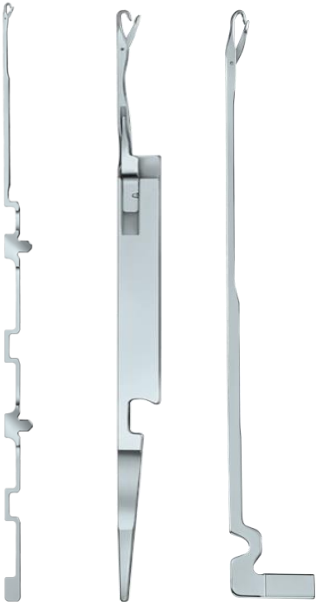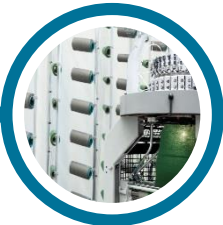Around 70,000 different archived product types for textile production and joining methods

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 |

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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
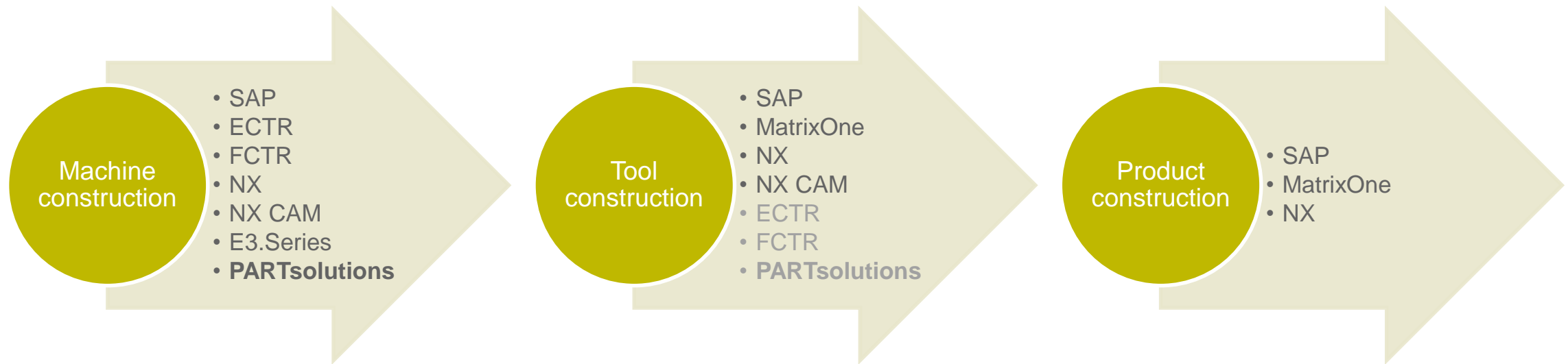
Installation overview of CAD/PLM systems

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- ▪ > 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**
    - » Dà Nẵng (4)   (Remote Citrix HDX 3D)

- ▪ Actual version SAP ECTR: 5.1.13.1
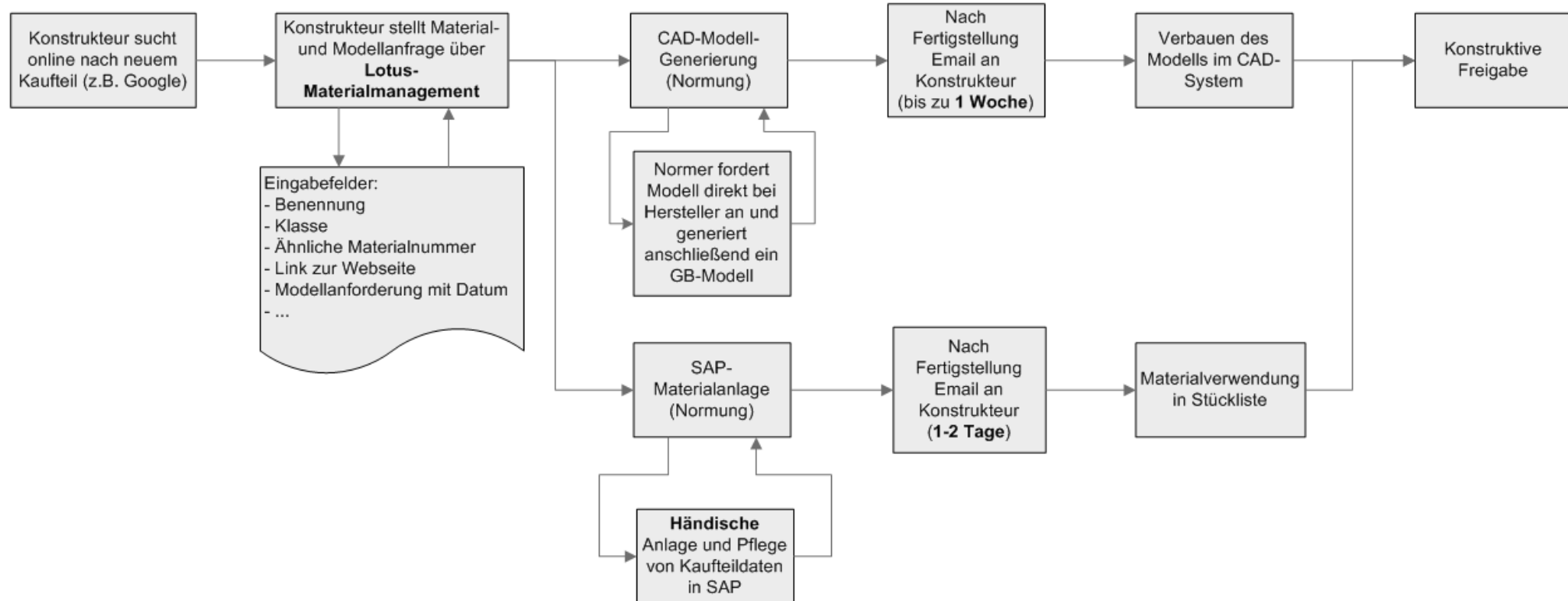- ▪ Actual version NX: 11.0.2 MP11
  - Approx. 1.900.000 CAD files

Europe

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Germany
Belgium
Portugal
Czech Republic

Asia

1

Vietnam

Find, Reuse & Control 0.0
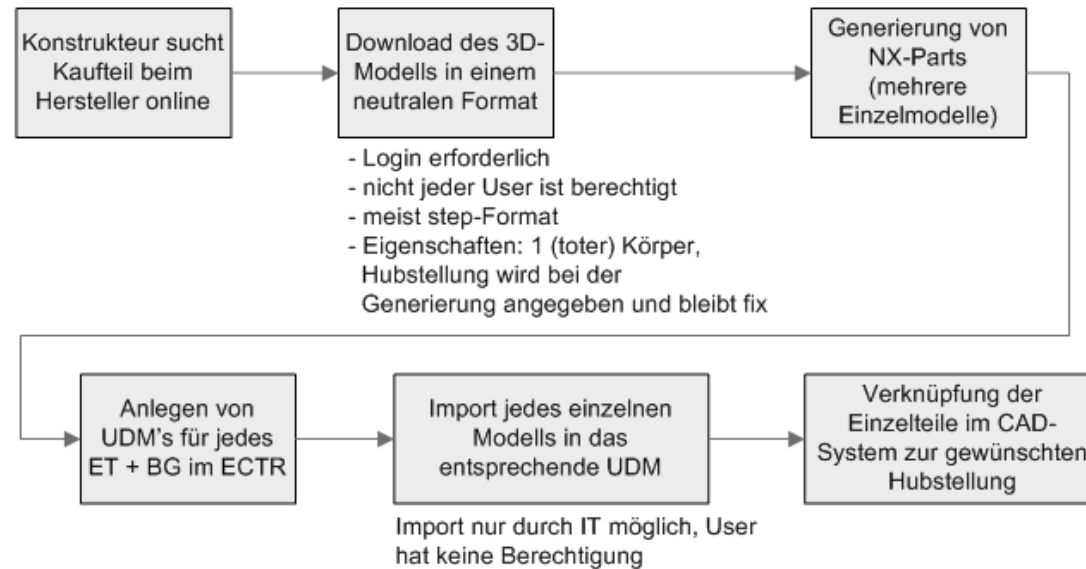
Need for something new

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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 fo 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:

| Konstrukteur sucht Kaufteil beim Hersteller online | → | Download des 3D-Modells in einem neutralen Format | → | Generierung von NX-Parts (mehrere Einzelmodelle) |

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

| Anlegen von UDM's für jedes ET + BG im ECTR | → | Import jedes einzelnen Modells in das entsprechende UDM | → | Verknüpfung der Einzelteile im CAD-System zur gewünschten Hubstellung |

Import nur durch IT möglich, User hat keine Berechtigung
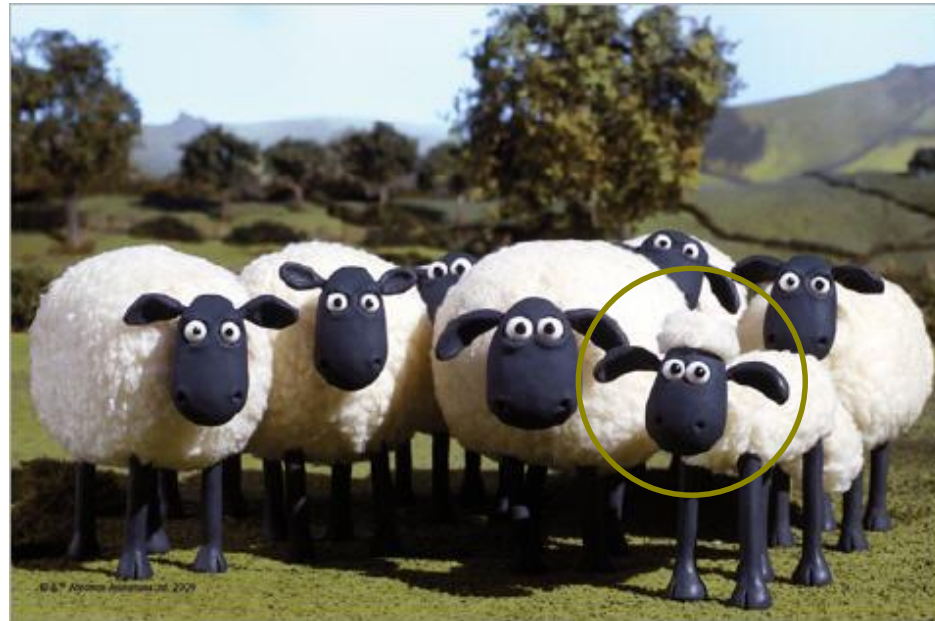
Potential of improvement

■ **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

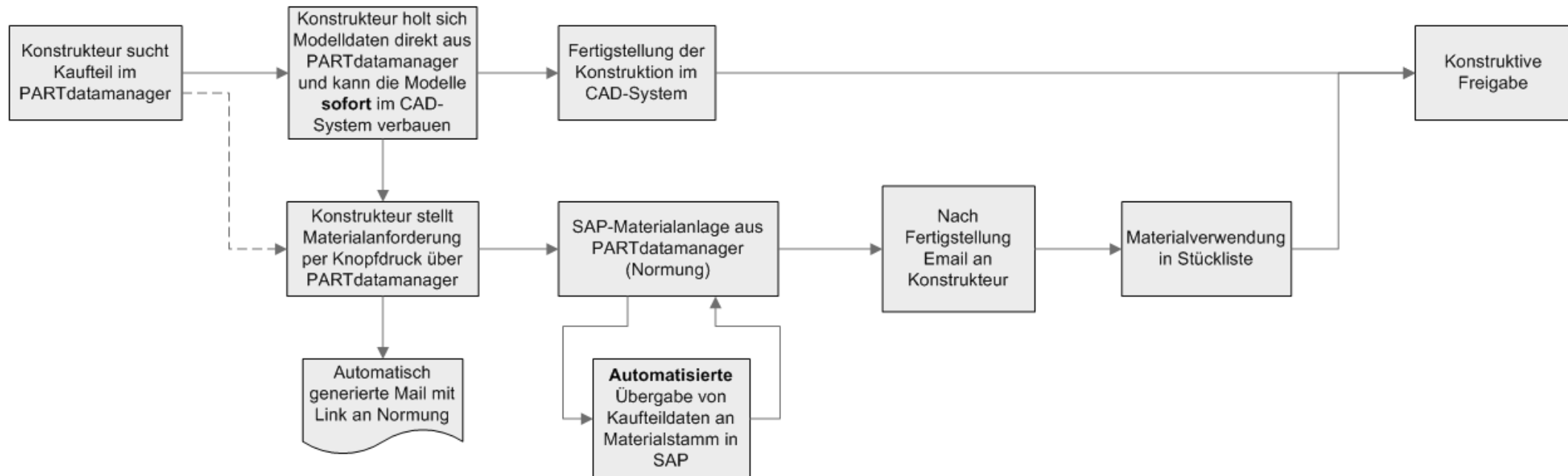Quelle: http://www.mabainformatik.ch/produkte/dubex-dublettenpruefung/dubletten-beispiel/index.html

Find, Reuse & Control 1.0

Overview of the new processes and benefit
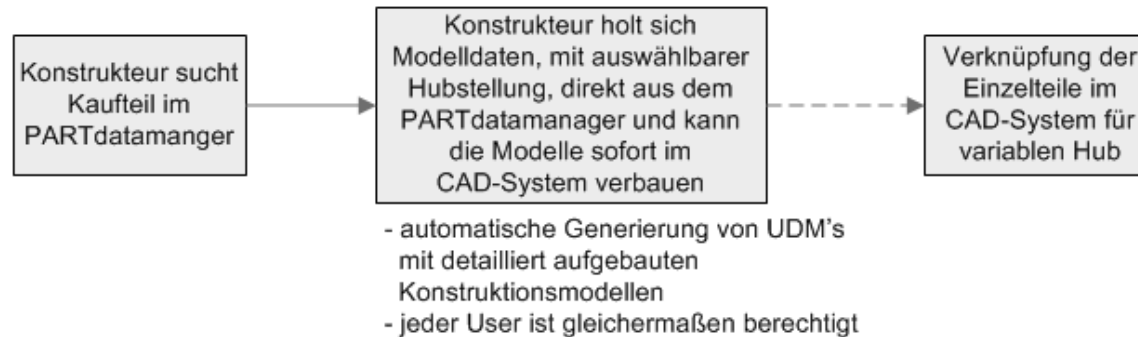
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New processes

- **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 fo new standard or purchased parts**

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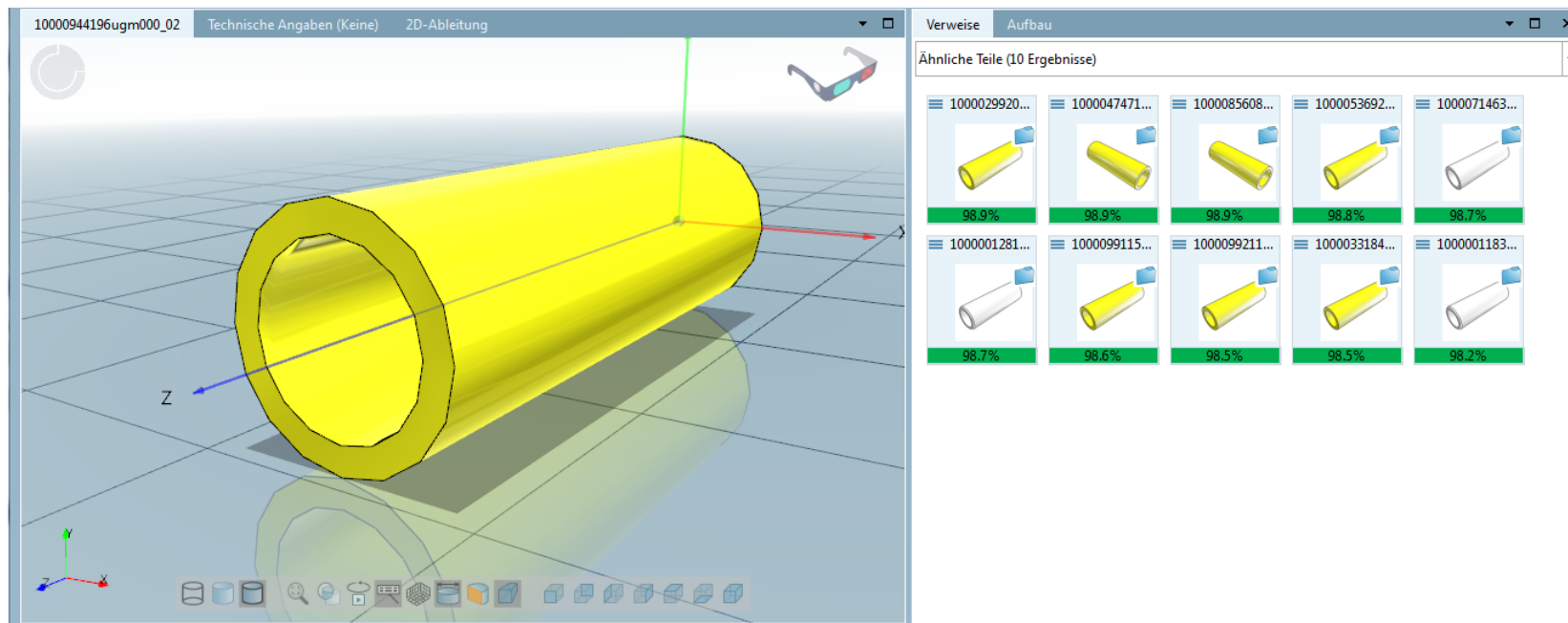
▌ Future strategy:

```
┌─────────────────┐     ┌─────────────────────┐       ┌──────────────────┐
│ Konstrukteur    │     │ Konstrukteur holt   │       │ Verknüpfung der  │
│ sucht Kaufteil  │ ──> │ sich Modelldaten,   │ ----> │ Einzelteile im   │
│ im              │     │ mit auswählbarer    │       │ CAD-System für   │
│ PARTdatamanger  │     │ Hubstellung, direkt │       │ variablen Hub    │
└─────────────────┘     │ aus dem             │       └──────────────────┘
                        │ PARTdatamanager und │
                        │ kann die Modelle    │
                        │ sofort im           │
                        │ CAD-System verbauen │
                        └─────────────────────┘
```

- automatische Generierung von UDM's
  mit detailliert aufgebauten
  Konstruktionsmodellen
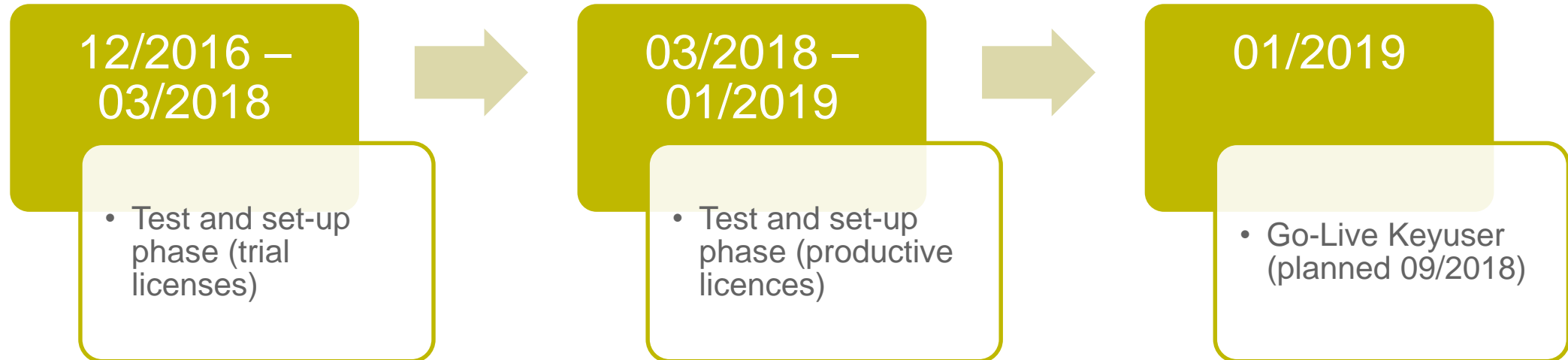- jeder User ist gleichermaßen berechtigt

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 adn 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)
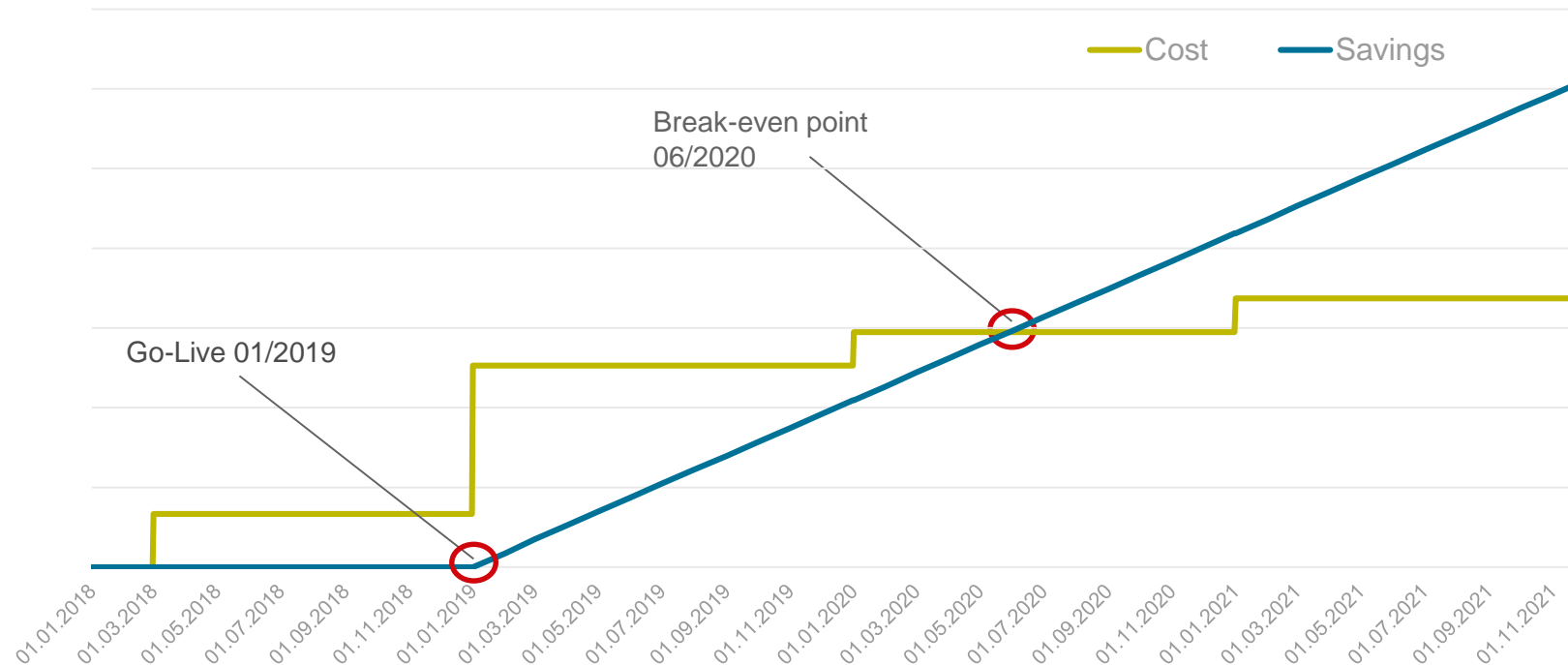
- Internal effort of approx. 1050 h is not considered
- Savings achieved through a search of duplicates and similar pieces are not considered

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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!

Quelle: https://shaundasschaf.de/news/endlich-weltmeister-shaun-gratuliert-zum-vierten-titel

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