Configure to Order

A project report on the implementation of a holistic approach to a manufacturer of special transport trailers

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Configure to Order: A project report …

1. Introduction of Faymonville
2. Configure to Order
3. Challenges and objectives
4. A holistic approach
5. Summary

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Introduction of Faymonville

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Faymonville

- European leading manufacturer of semi-trailers for the special haulage industry.
- 185.000.000 € turnover in 2014
- ± 1500 produced units in 2014
- 3 manufacturing plants (BE-LU-PL)

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Areal views of the manufacturing plants Büllingen / Belgium

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Areal views of the manufacturing plants Lentzweiler/Luxembourg

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Areal views of the manufacturing plants Goleniow / Poland

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Some examples of products

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Configure to Order

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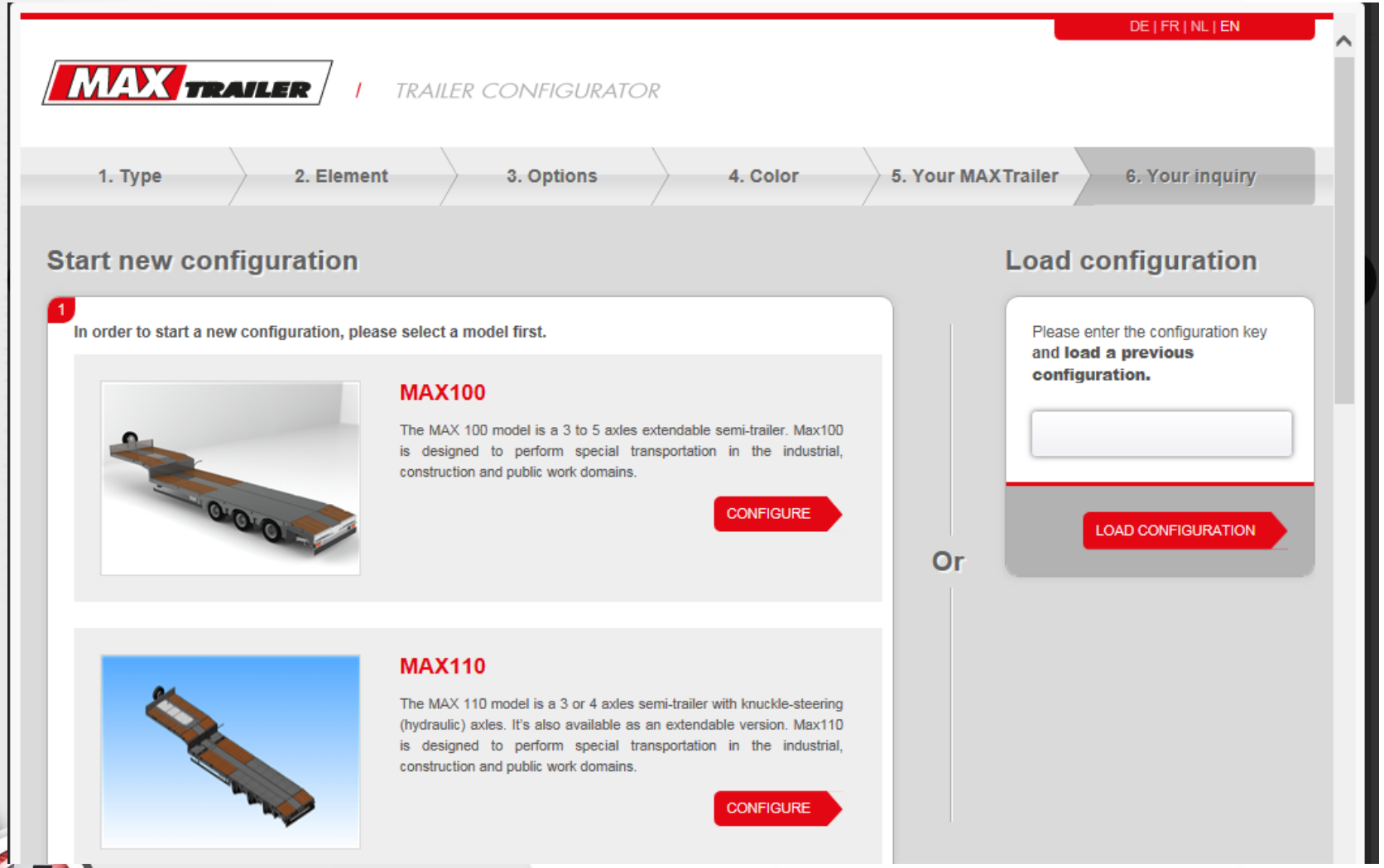
Configure to Order

- Why configure to order ?
  - Product variability
  - Leadtime from order to production
  - Think it once, reuse it many times
  - Possibility of stable BOMs → less logistics issues (BOM is known at order from customer)

CTO at MaxTrailer



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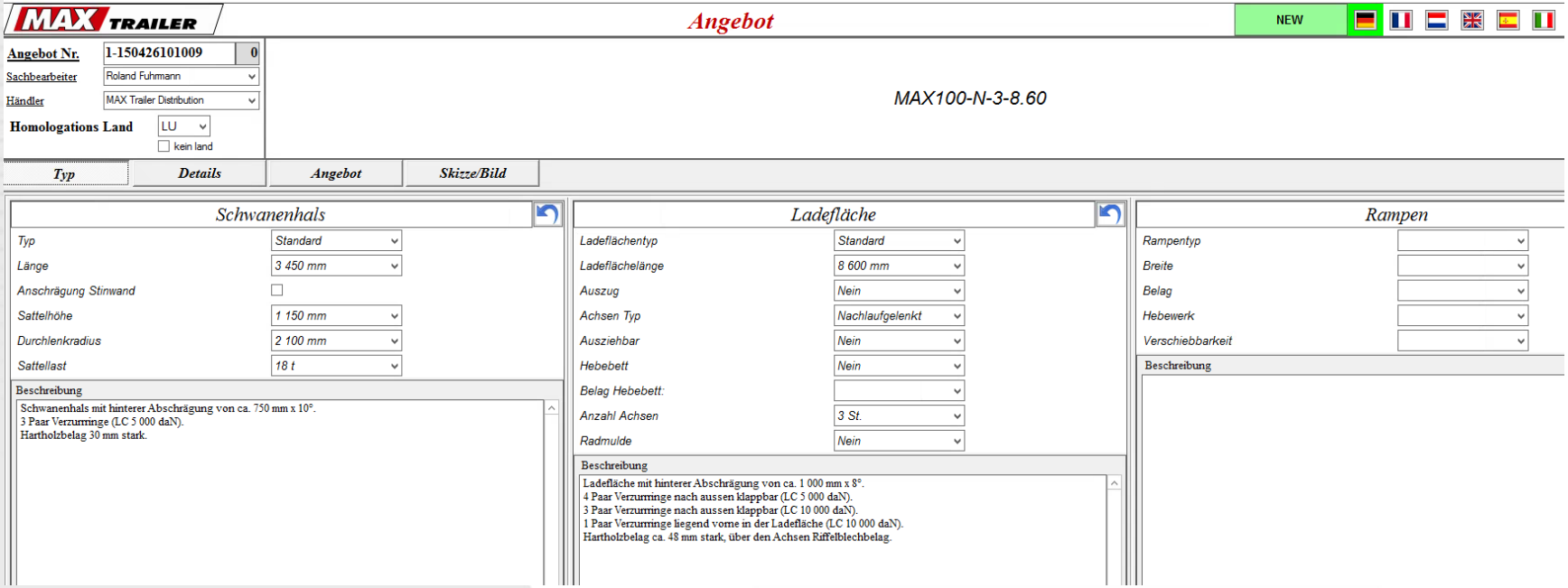
CTO at MaxTrailer



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Challenges and objectives

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Challenges

- Integration of existing offering/configuration tool
- Integration of different authoring systems
  - M-CAD: Solidworks
  - E-CAD: E3
- Solidworks is not used in an overloaded way
- E3 is a 150% defined design file

Risks

- Impact of Change Management → data quality of configured products
- Organization change needed → mandatory
- All to be done in a running system

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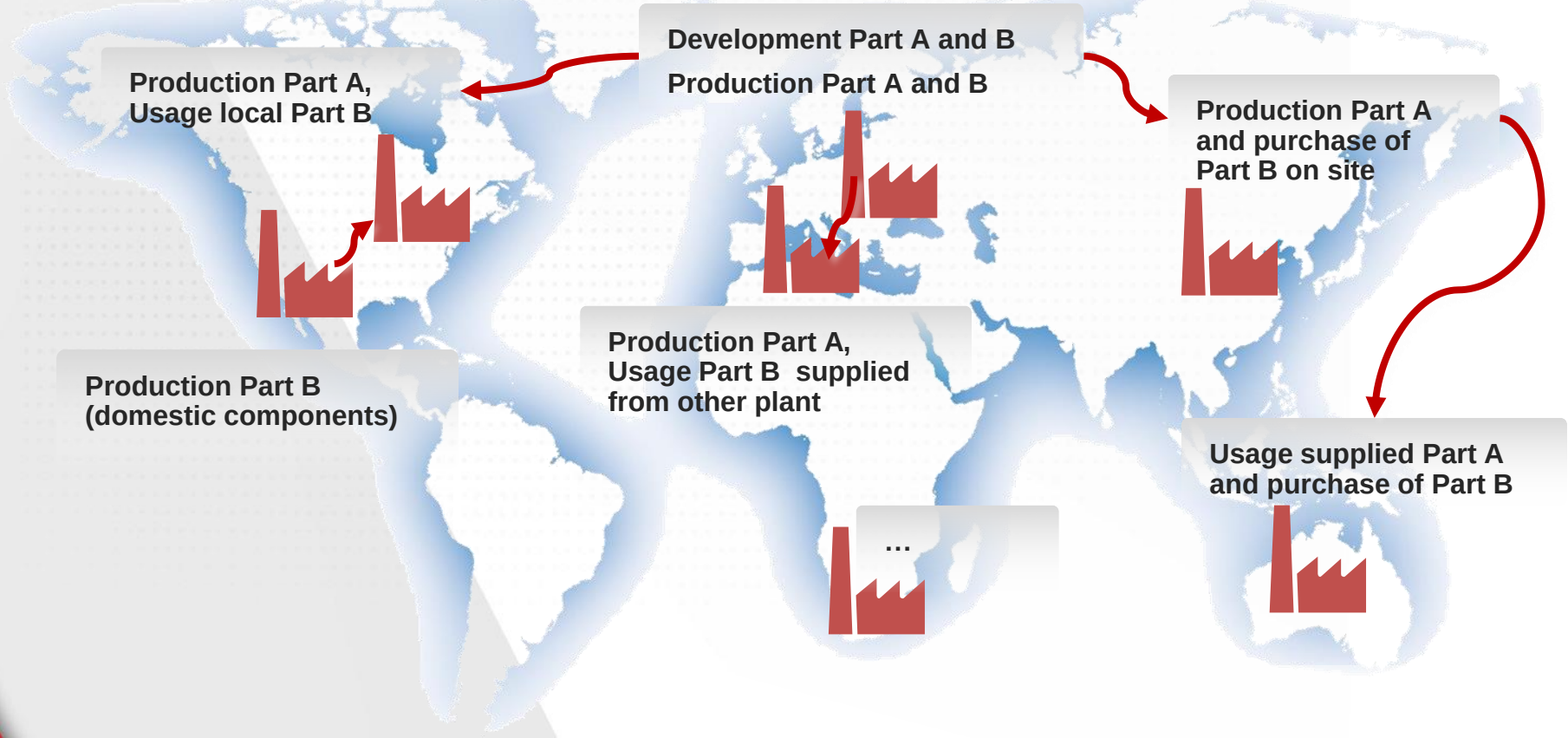
Objective

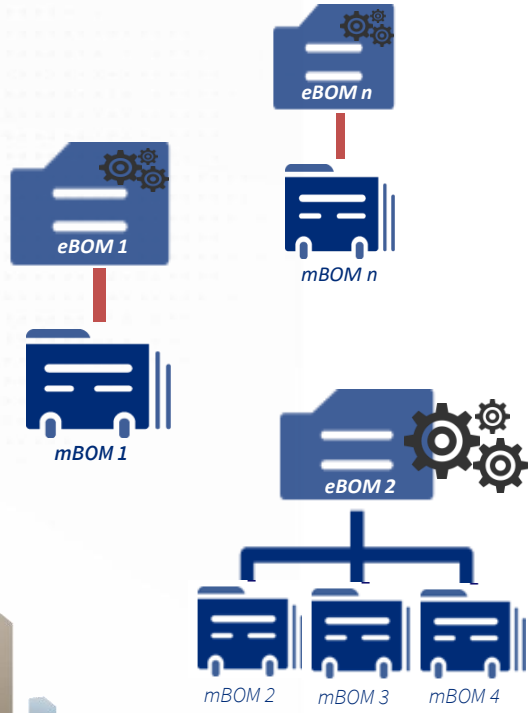
- Short time between analysis and live system
- Integration of existing systems
- Migration of existing data

- Target: shorter time between order and production
- Creating a platform for smarter ECM
- Integrated BOM management

Globally distributed manufacturing planning



Order specific manufacturing



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A holistic approach

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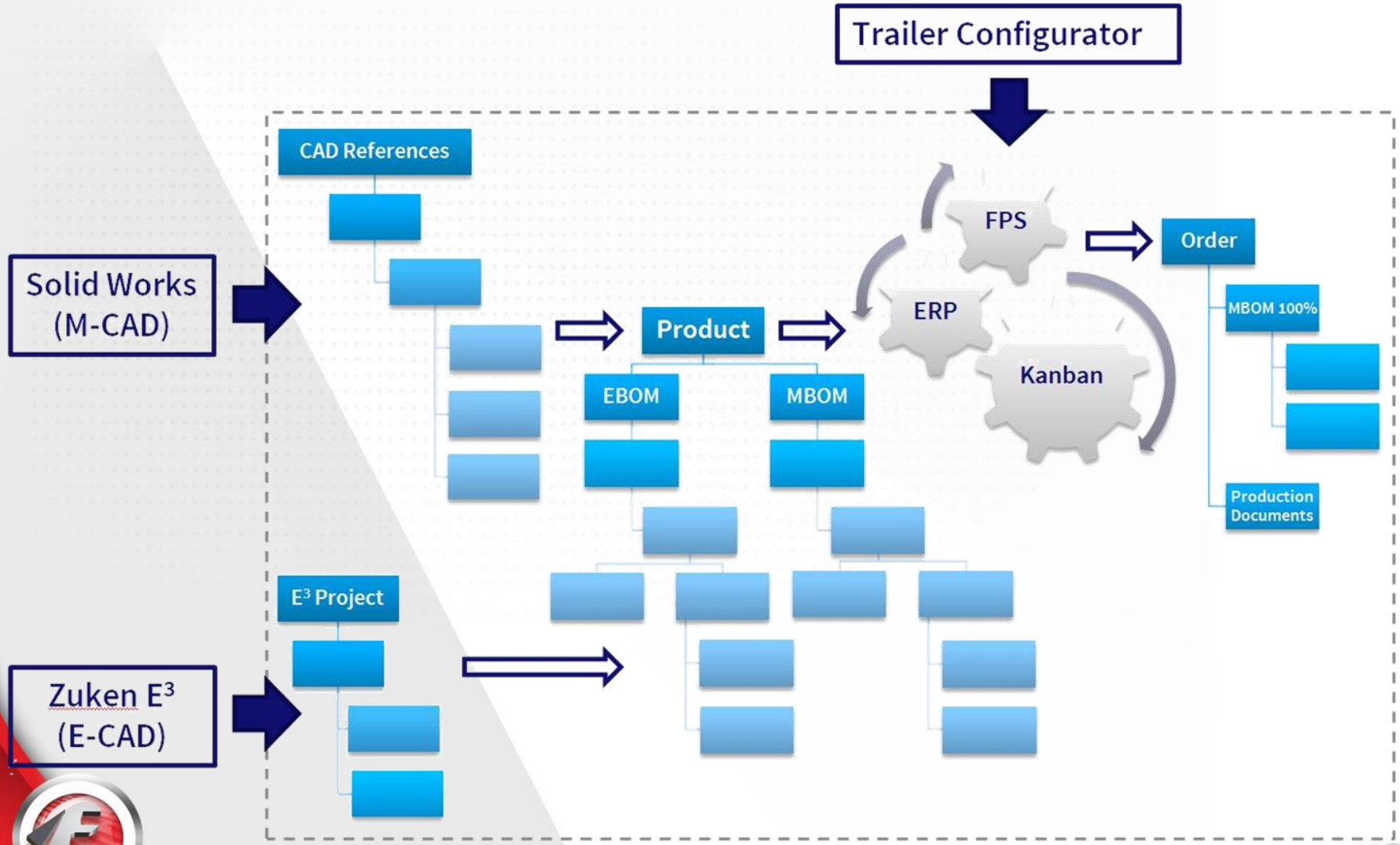
System Overview



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Overall Potential

- Logistic optimization (cost, risk, quantities, flexibility, ...)
- Site-specific manufacturing capabilities and processes – also with large differences between the sites
  - IT Systems, level of automation personnel qualification, material compliance, safety regulations, environmental restrictions, …
- Several BOMs to a product or a product component - Transportation of changes
- The more important: close gaps between development and production!

eBOMs and mBOMs

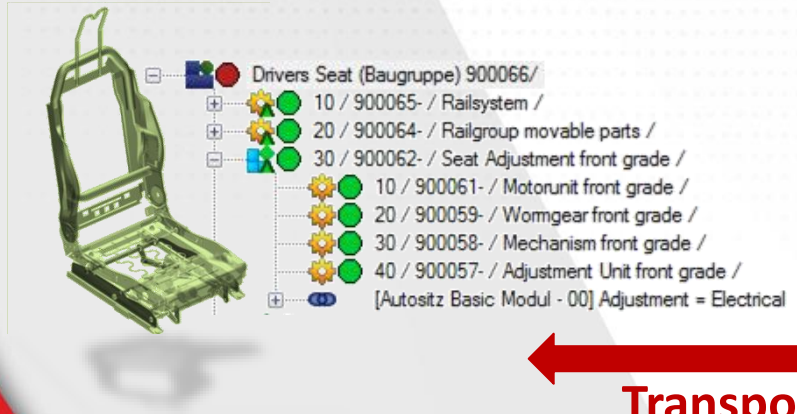
Engineering BOM (eBOM)
Reflects the product as designed

Often closely linked to the product structure driven by CAD (mechanical, electrical)

Manufactoring BOM (mBOM)
Reflects assembling levels

Including logistical parts, pseudo-components, logical units

Integration of lubricants, transit devices, …



BOM Pos	Part No.	Part name	Quantity
10	900065	Rail systems	1
20	900064	Rail mov. P.	4
30	…	…	…

Transport changes
Completeness check

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mBOM - "sovereignty"? Four Reasons for PLM System

1. The synchronization of the BOM in the ERP system is not well supported.
2. The PLM system is leading for technical changes (ECM).
3. Companies operating multiple ERP systems or instances.
4. The central production planning supplies several production sites.

> "Synchronization of mBOMs is messy by default."
>
> *Oleg Shilovitsky*
> *http://beyondplm.com/2014/05/09/manufacturing-bom-is-the-next-cool-thing-in-plm*

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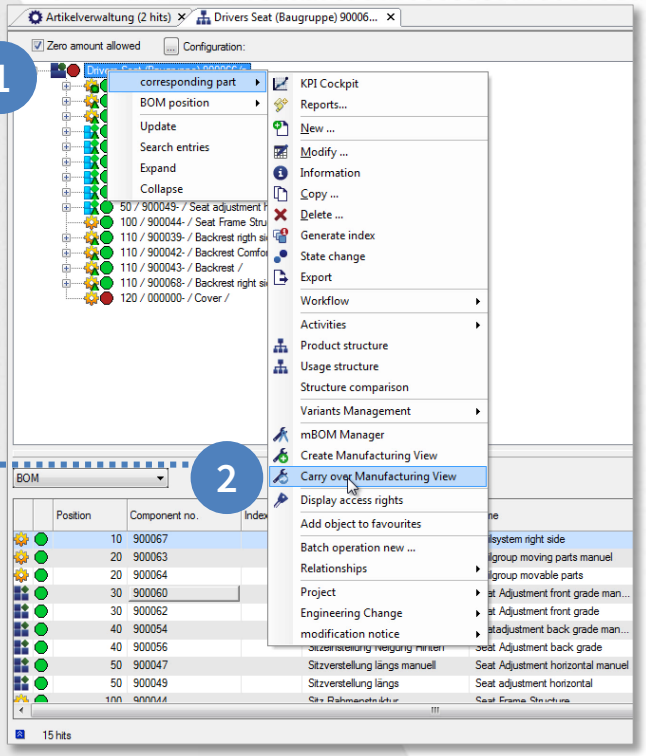
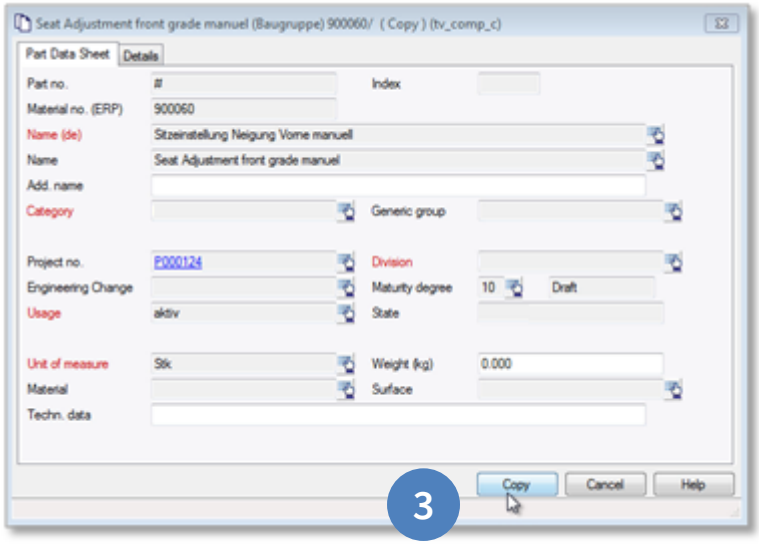
Building and maintaining plant or order-specific mBOMs

The starting point is the eBOM consisting of various sub assemblies and parts.

Context menu functions to carry out manufacturing view





In the manufacturing point of view, just let other details such as the development of reference or the manufacturing facility can be opened or modified.

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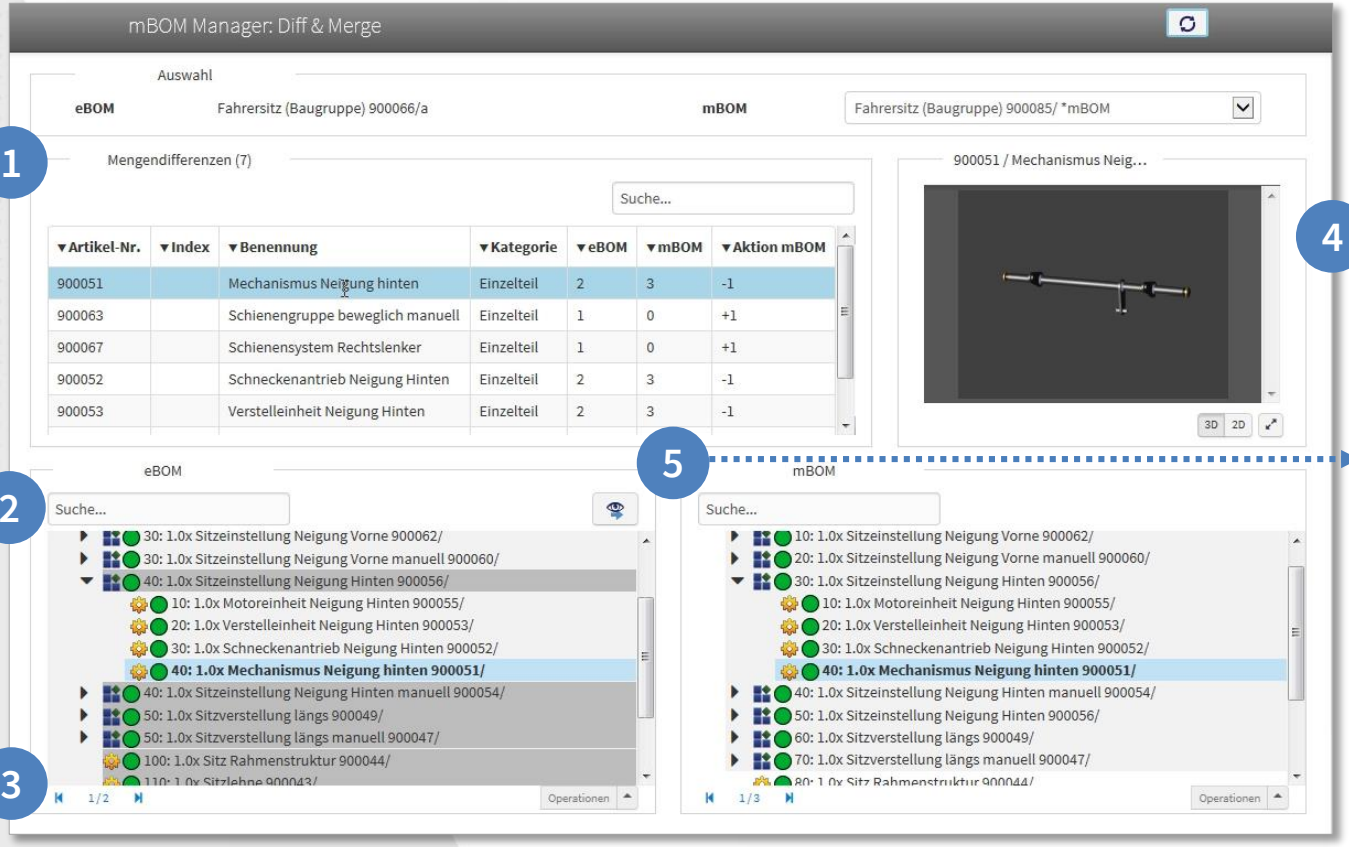
The mBOM Manager Difference Analysis

Clear description of quantity differences

Search within the eBOM

Navigation elements to quickly navigate to specific usages, articles or terms



2D and 3D preview window - can be enlarged to full screen

Clear side-by-side structure representation of eBOM and mBOM

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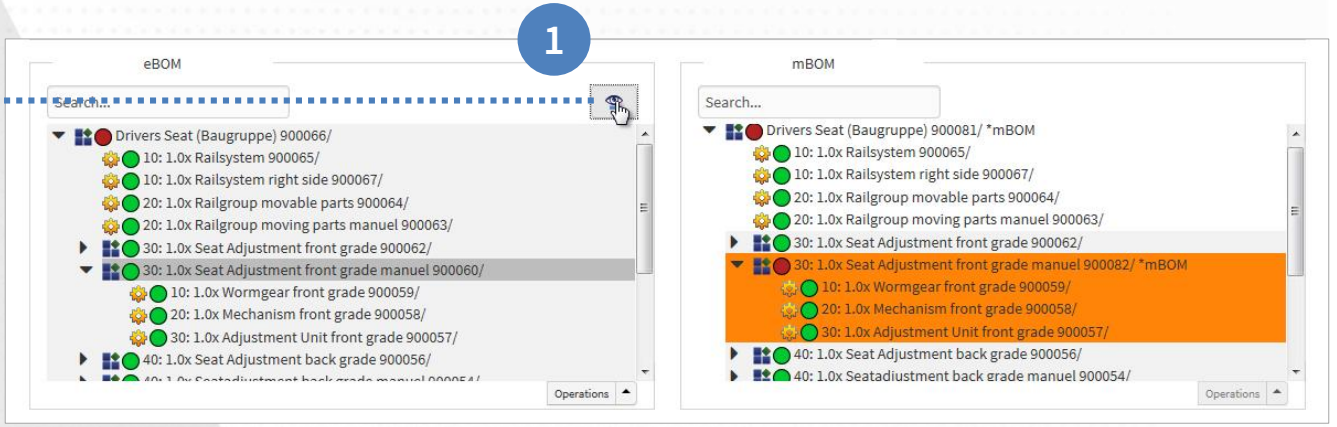
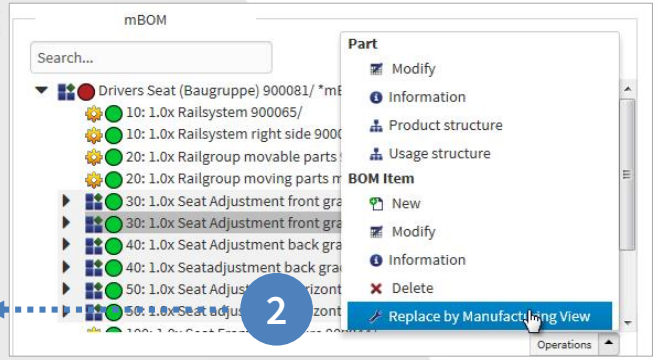
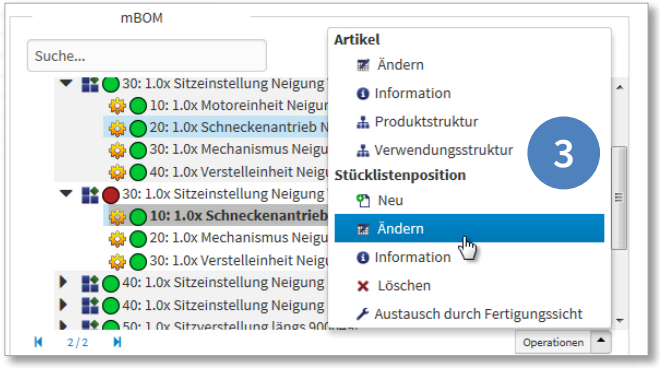
The mBOM Manager Synchronization

Highlighting components on both sides



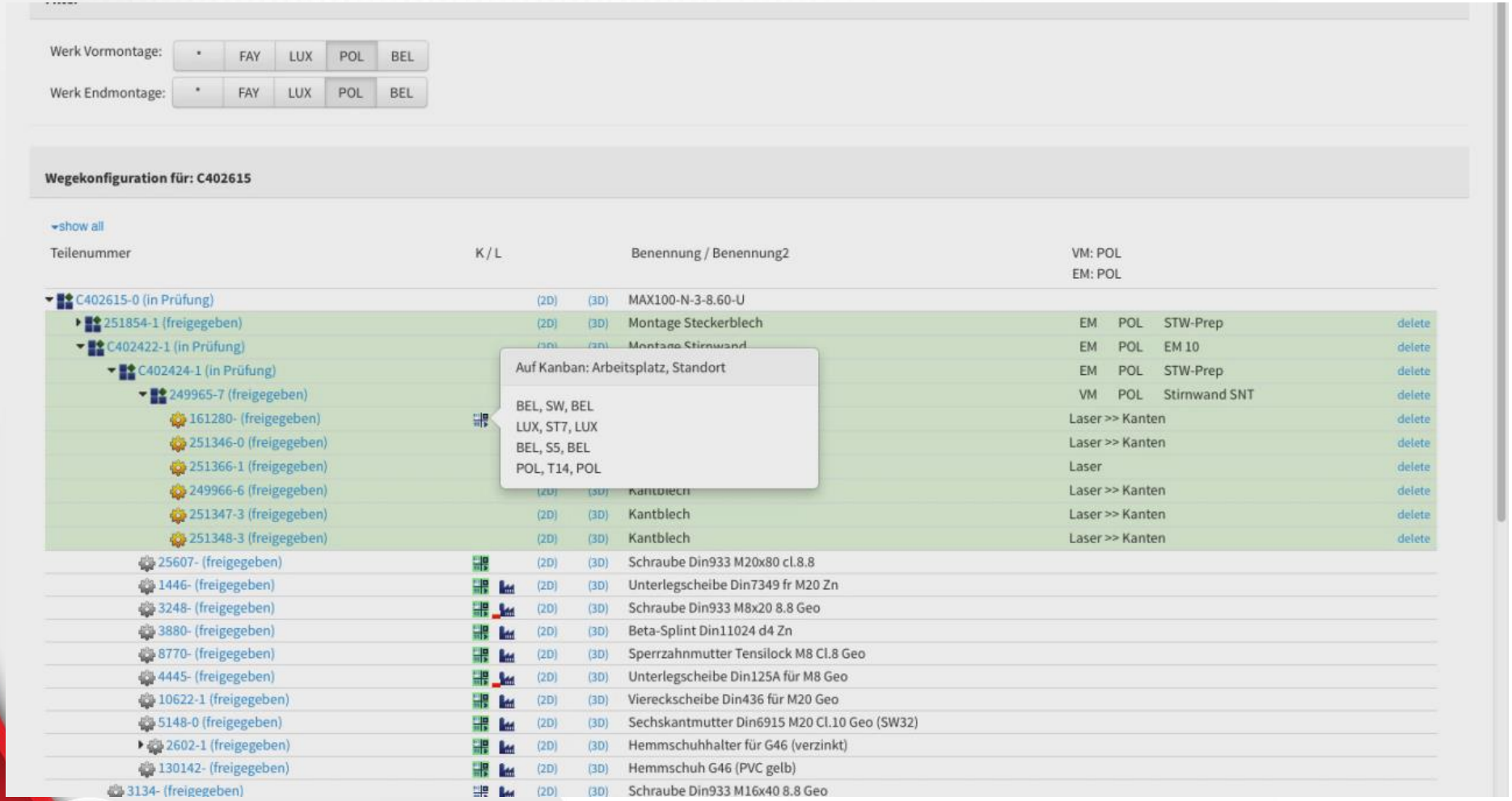
Customize assemblies replacement by manufacturing point of view





Independing changes of mBOM

Production Planning



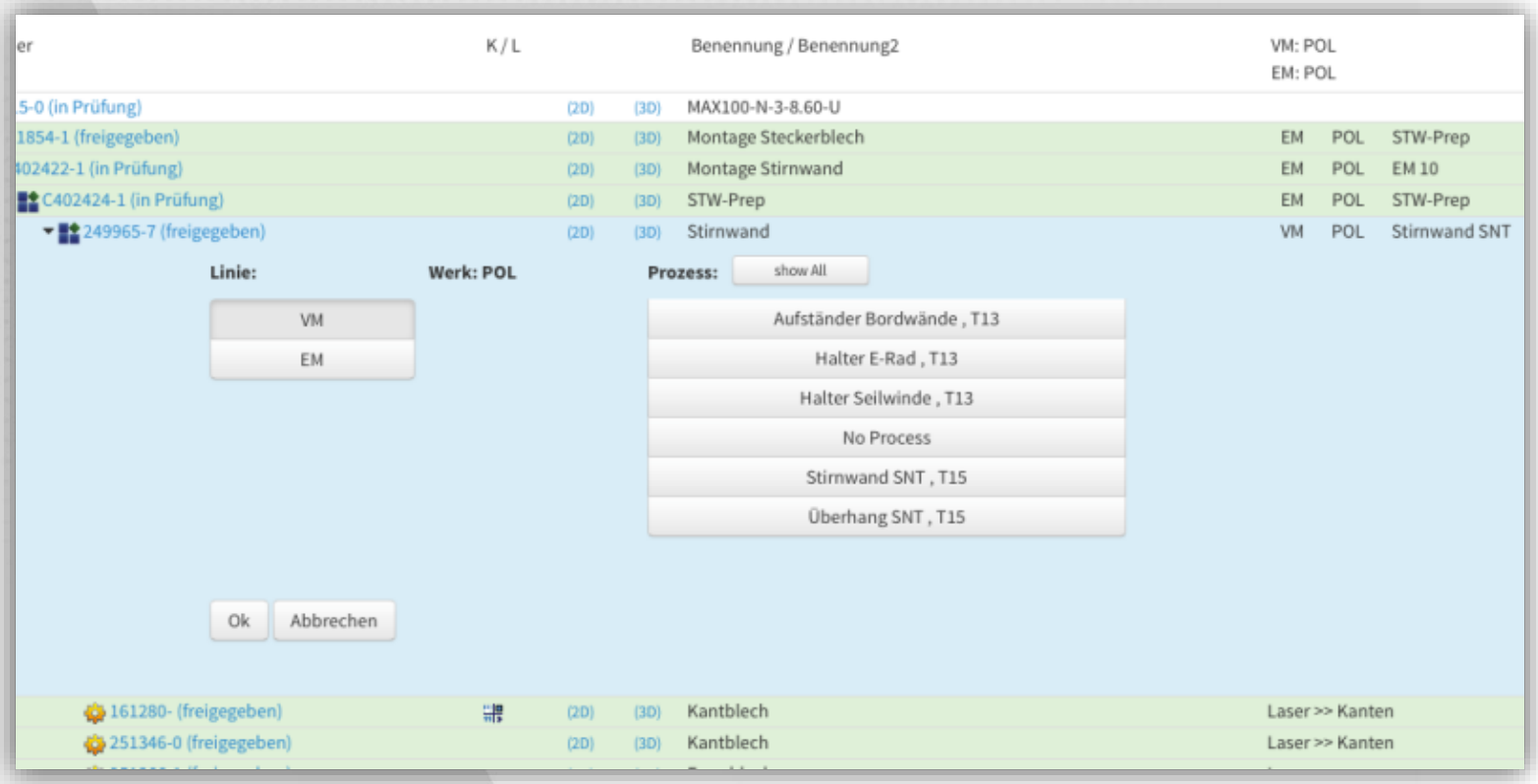
Production Planning Requirements

- Easy maintenance of manufacturing processes using an mBOM to generate production documents
  - Per plant and line
  - In respect of:
    - Kanban
    - Stocks
    - Process Constraints (routing configurations)
- Easy and quick viewing of 2D or 3D

Production Planning Features

- Product structure (mBOM)
- Live Kanban and stock information
- Process assignment
- Filters for pre- and final assembling Country
- Assignment of item processing
- Integrated 2D/3D preview

Production Planning Features



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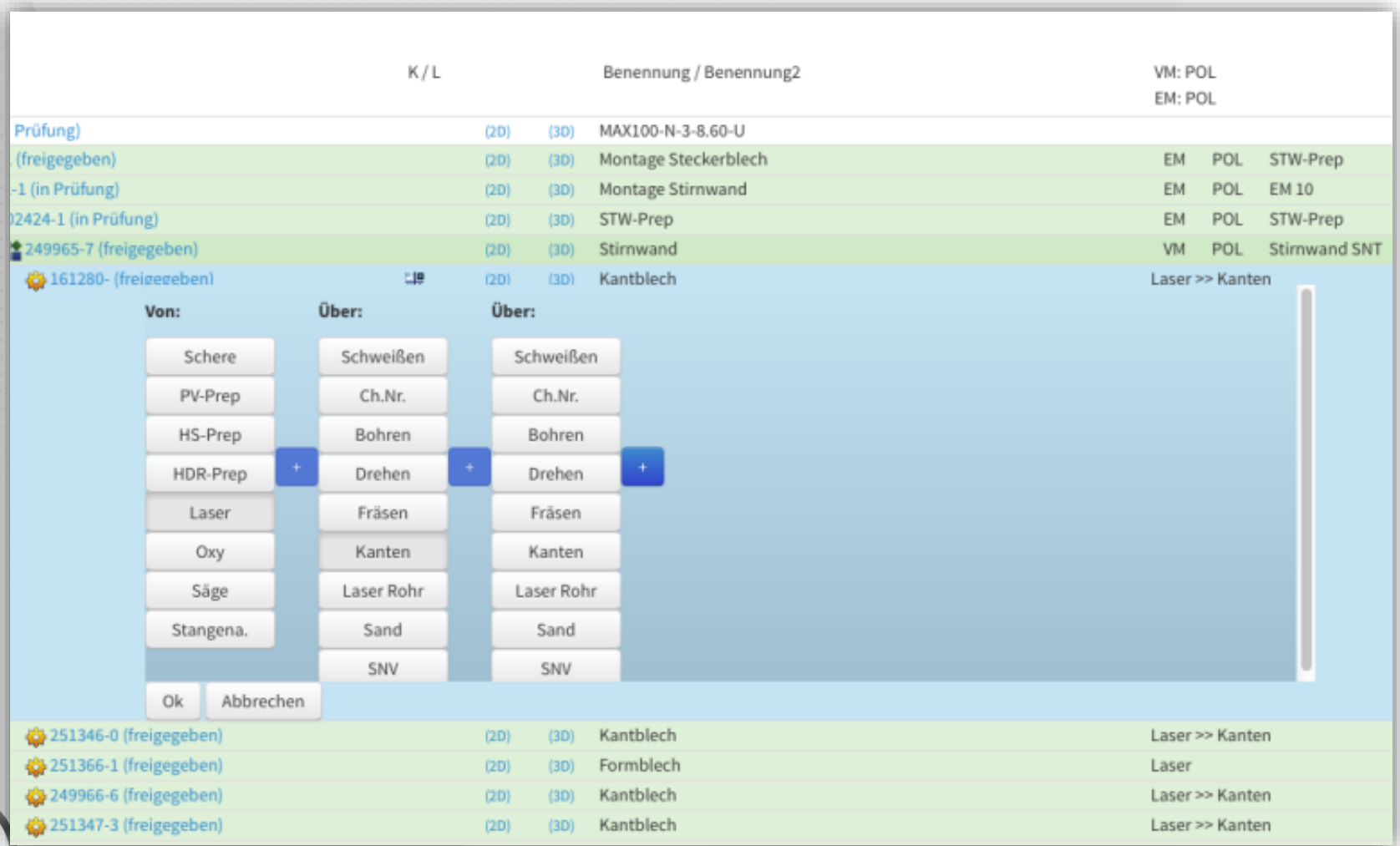
Production Planning Features



Summary

- Analysis and implementation time of 6 months (from signing contract to go live)
- Existing data have been migrated
- BOM management enabled and logistics issues solved

Not yet : shorter time from order to production

Outlook

- Introduction of an integrated variants model for the E-CAD side (E3.EDM, variants and options)
- Up to now, only MaxTrailer in new system. Further product lines in the pipeline
- Generation of manuals