



IMPLEMENTATION OF A STRATEGIC PART MANAGEMENT AT STADLER RAIL

Tobias Wild, 7. März 2018, Augsburg

STADLER

-
1. **Speaker**
 2. Stadler Rail
 3. Project background
 4. Realisation
 5. Lessons Learned

SPEAKER



Tobias Wild (1989, CH) – development engineer at Stadler Bussnang AG (CH)

- Apprenticeship as draftsman at GDELS Mowag GmbH
- B.Sc. ZFH in Mechanical Engineering at Winterthur
- Since 2014 mechanical development engineer at Stadler Bussnang AG
- Project manager for the implementation of a strategic part management

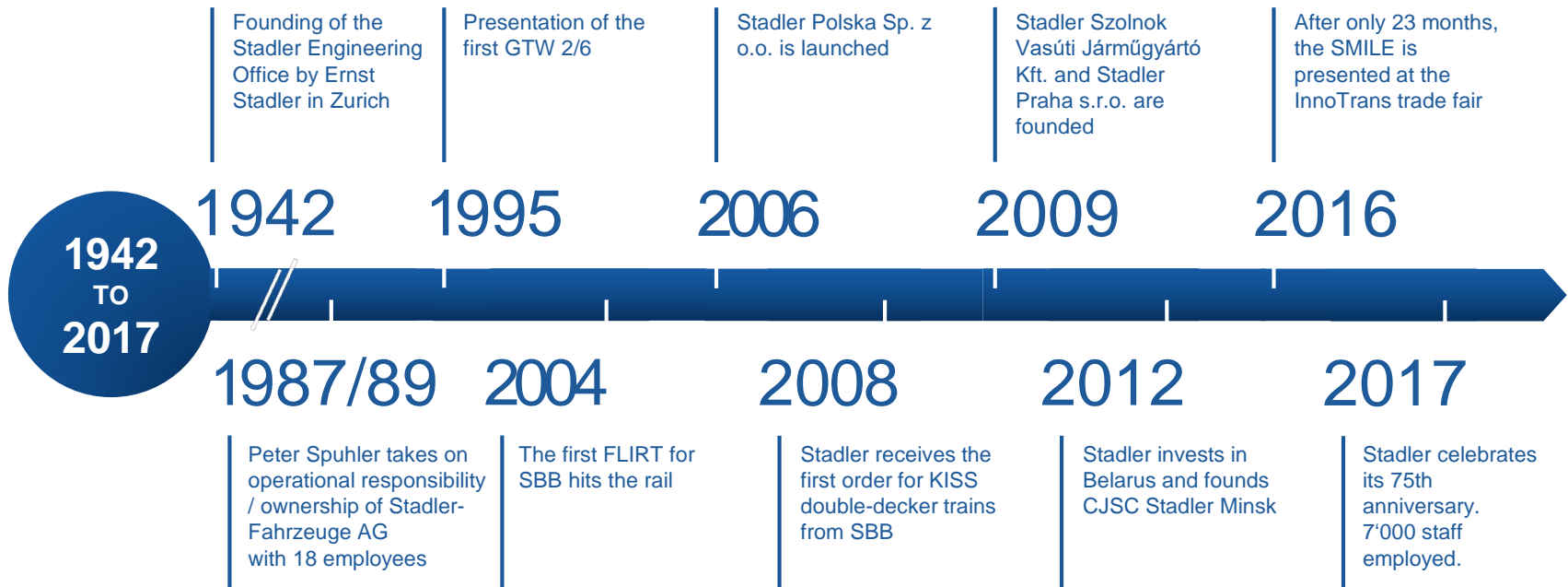
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STADLER RAIL



HISTORY

STADLER RAIL GROUP



STADLER SUCCESS STORY

START: BUSSNANG



1962 1. ASSEMBLY FACILITY
IN BUSSNANG



2018 STADLER BUSSNANG
TODAY

DIVISIONS

STADLER RAIL GROUP

SWITZERLAND



Bussnang 1900 employees



Altenrhein 950 employees



Salt Lake City (USA)
80 employees

GERMANY



Pankow 1000 employees



Velten 40 employees



Reinickendorf 60 employees



Chemnitz 60 employees

CENTRAL EUROPE



Siedlce (PL) 800 employees



Prague (CZE) 60 employees



Minsk (BLR) 450 employees



Środa (PL) 250 employees

SPAIN



Valencia 900 employees



ERION 30 employees
ERION (F) 20 employees

COMPONENTS



Winterthur (CH)
260 employees



Bienne (CH) 110 employees



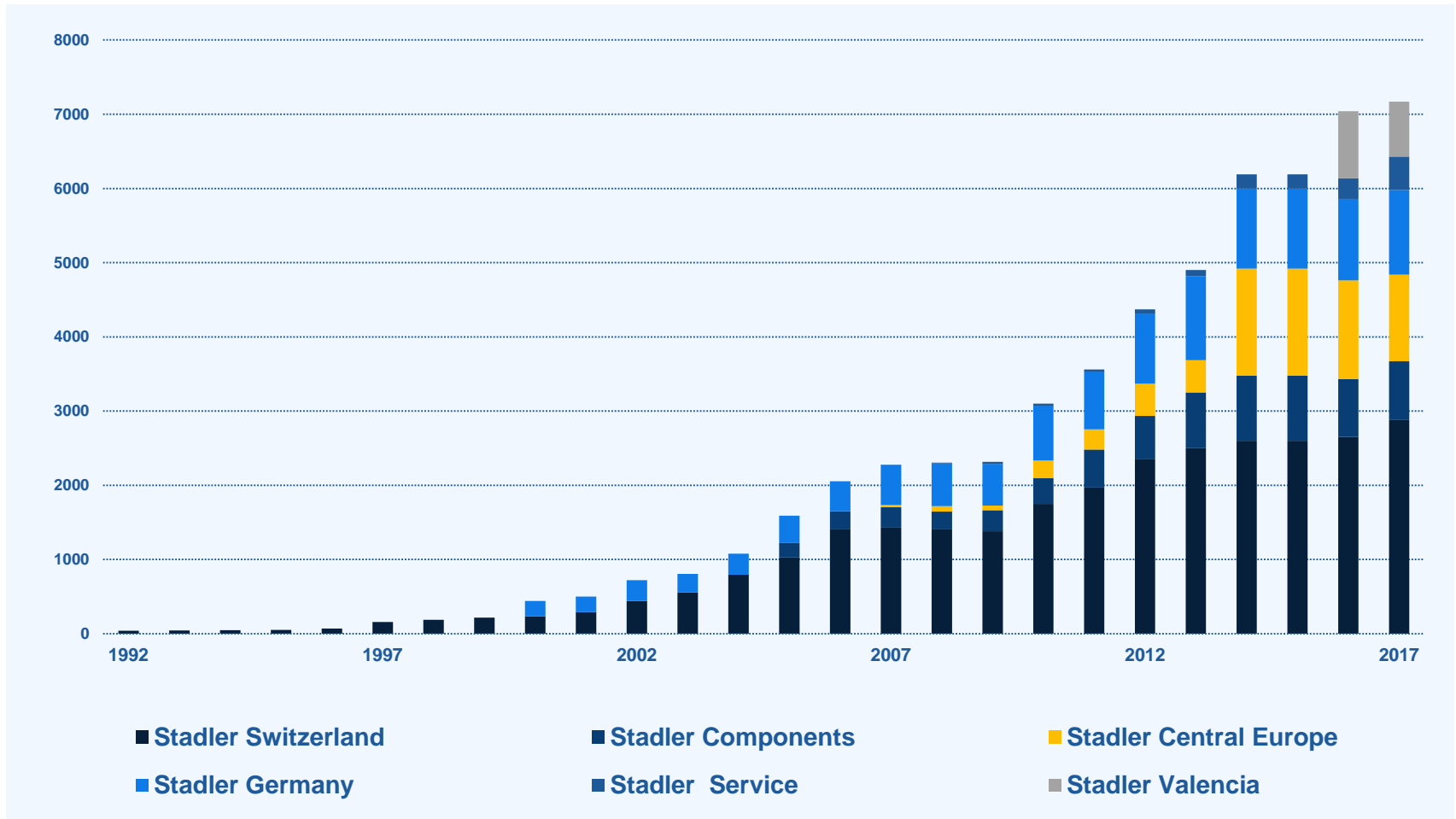
Szolnok (HUN)
400 employees

SERVICE



- Switzerland** 70 employees
- Austria** 20 employees
- Algeria** 100 employees
- Hungary** 70 employees
- Italy** 10 employees
- The Netherlands** 80 employees
- Poland** 30 employees
- Sweden** 20 employees
- Stadler UK** 150 employees

STAFF DEVELOPMENT STADLER RAIL GROUP



ALMOST 7000 UNITS SOLD IN 36 COUNTRIES



>29

SMILE



>1400

FLIRT



>250

KISS



>600

GTW (articulated multiple units)



>500

Regio Shuttle



>300

METRO



>800

LRV



>2200

Locomotives



>400

Tailor-made



>400

Coaches

RACK AND PINION LOCOMOTIVES, SPECIALITIES



MRS, BR: 7



Schneebergbahn AT, 1



zb, CH: 3 (2 HGm, 1 Gm)



MGN, CH: 2



JB, CH: 1



Schafbergbahn, AT: 2



FGC, ES: 2

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INITIAL SITUATION

huge assortment

Today, the plm system of stadler contains over 1800 different articles for hexagon head screws.

There are a few projects, which defined a standard assortment, but in all other projects, every screw can be used in the engineering process.

This fact has a large impact on:

- Engineering
- Purchasing (higher prices because of smaller amounts)
- Logistics (large warehouses, longer set-up times)
- Production
- Repairing / Service



INITIAL SITUATION

duplicates



We have a lot of parts in our system which are identical or very similar to each other. At the moment, we are good in reinventing the wheel.

Artikel

Artikel-Nr	12146034	Version	000	Besitzer	BUS
Benennung	Gewindestift I-6kt und Kegell	Description			
Benennung	BN1424 M12x12	Description			
		ersetzt durch			
Stadler Stat		Lebenszykl	Freigegeben		
Dokument-Nr		Version		Pos ET Zc	
Werkstoff	St 45 H GEOMET	DIN-UPG			
	<input type="checkbox"/> Vertraulich	kg / Stk	0.009	gewogen	
Hersteller <input type="checkbox"/> Hersteller zwingend					
Hersteller		Artikel Index			
Artikel Nr		Typ			
Klassierung	4 NORMTEIL	DIN Kennun		ME	STK
Bemerkung	ISO4026 / DIN913				

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Artikel

Artikel-Nr	12114871	Version	000	Besitzer	BUS
Benennung	Gewindestift I-6kt und Kegell	Description			
Benennung	BN1424 M12x12	Description			
		ersetzt durch			
Stadler Stat		Lebenszykl	Freigegeben		
Dokument-Nr		Version		Pos ET Zc	
Werkstoff	St 45 H GEOMET	DIN-UPG			
	<input type="checkbox"/> Vertraulich	kg / Stk	0.011	gewogen	
Hersteller <input type="checkbox"/> Hersteller zwingend					
Hersteller		Artikel Index			
Artikel Nr		Typ			
Klassierung	4 NORMTEIL	DIN Kennun		ME	STK
Bemerkung	Norm: ISO 4026				

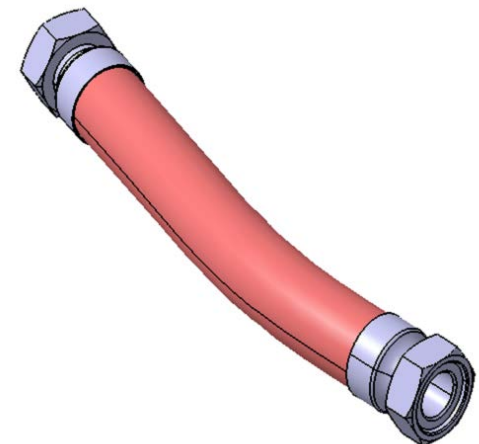
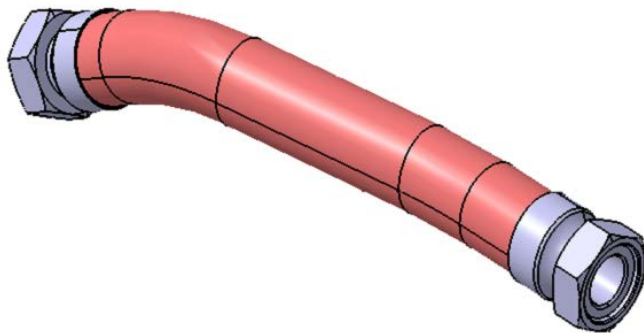
INITIAL SITUATION

duplicates

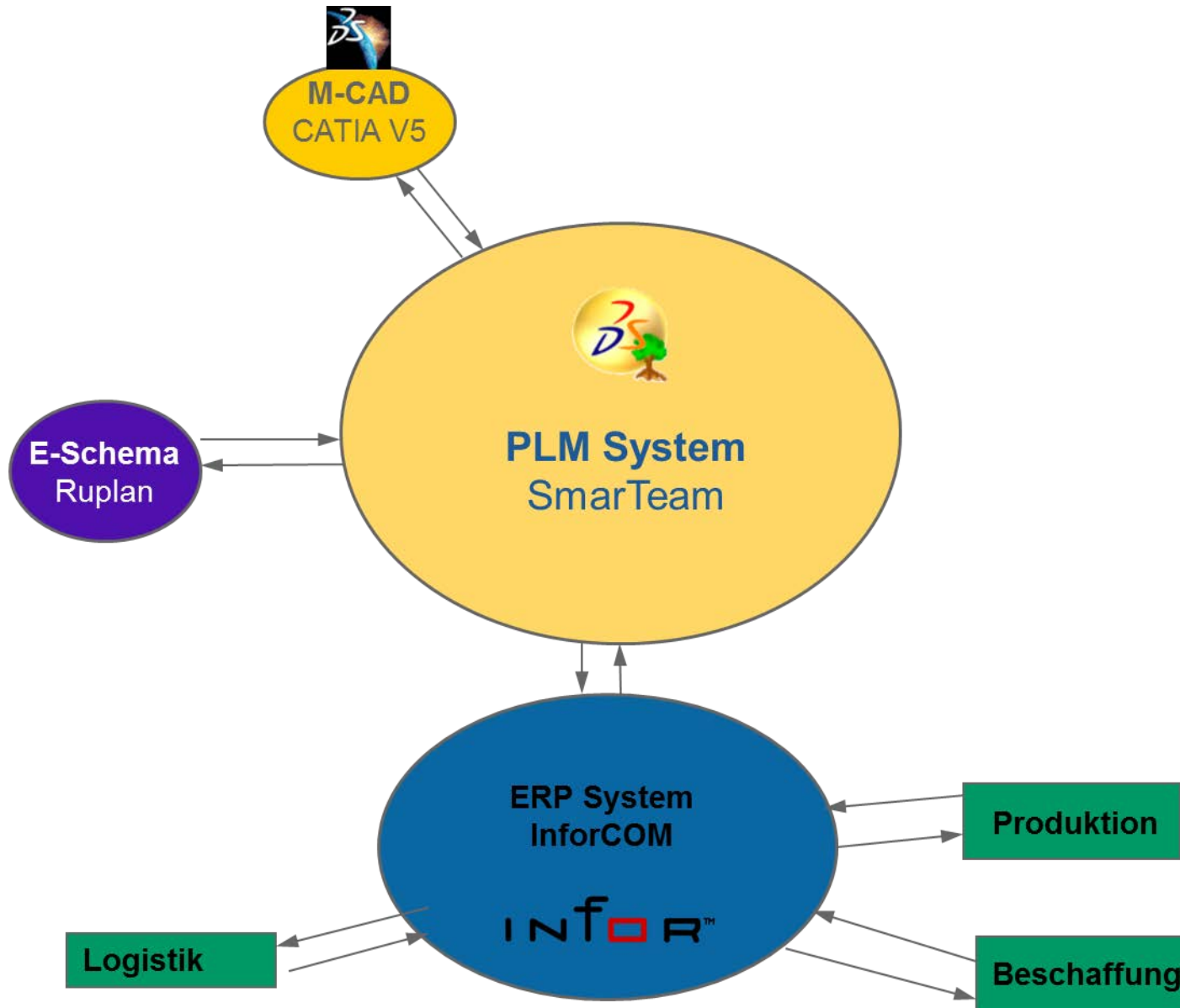
Second example:

A flexible metal tube is used in different installation positions. In our system it sometimes gets different articlenumbers for the same part.

Artikelnummer	Revision	Benennung 1	Benennung 2	Werkstoff 1
12078264	000	Metallschlauch ASSIWELL 088 DN40x550	DOL-42 / DOL-42	1.4541
12080383	000	Metallschlauch ASSIWELL 088 DN40x550	DOL-42 / DOL-42	1.4541



SOFTWARE INFRASTRUCTURE UNTIL NOW



-
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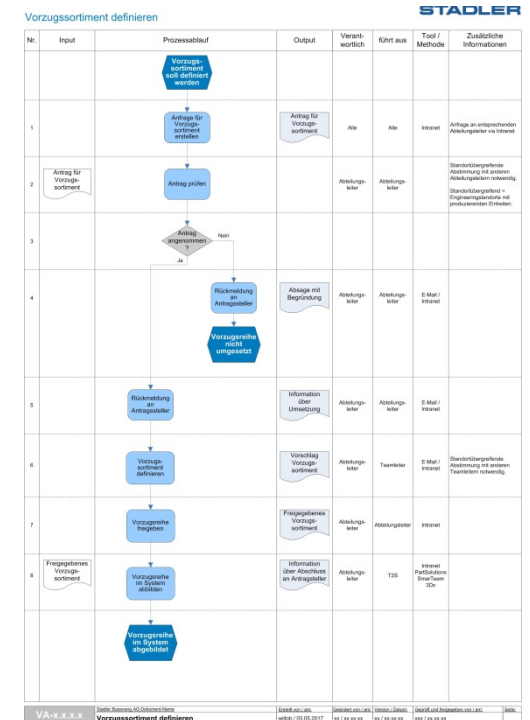
ACTIVITIES

process for standard assortments

Stadler has defined and implemented a process to define standard assortments for all sites.

Challenges:

- Different vehicle types per site
- Different supplier / products used per site
- Standard assortment should be living in the future



ACTIVITIES

implementation of PartSolutions

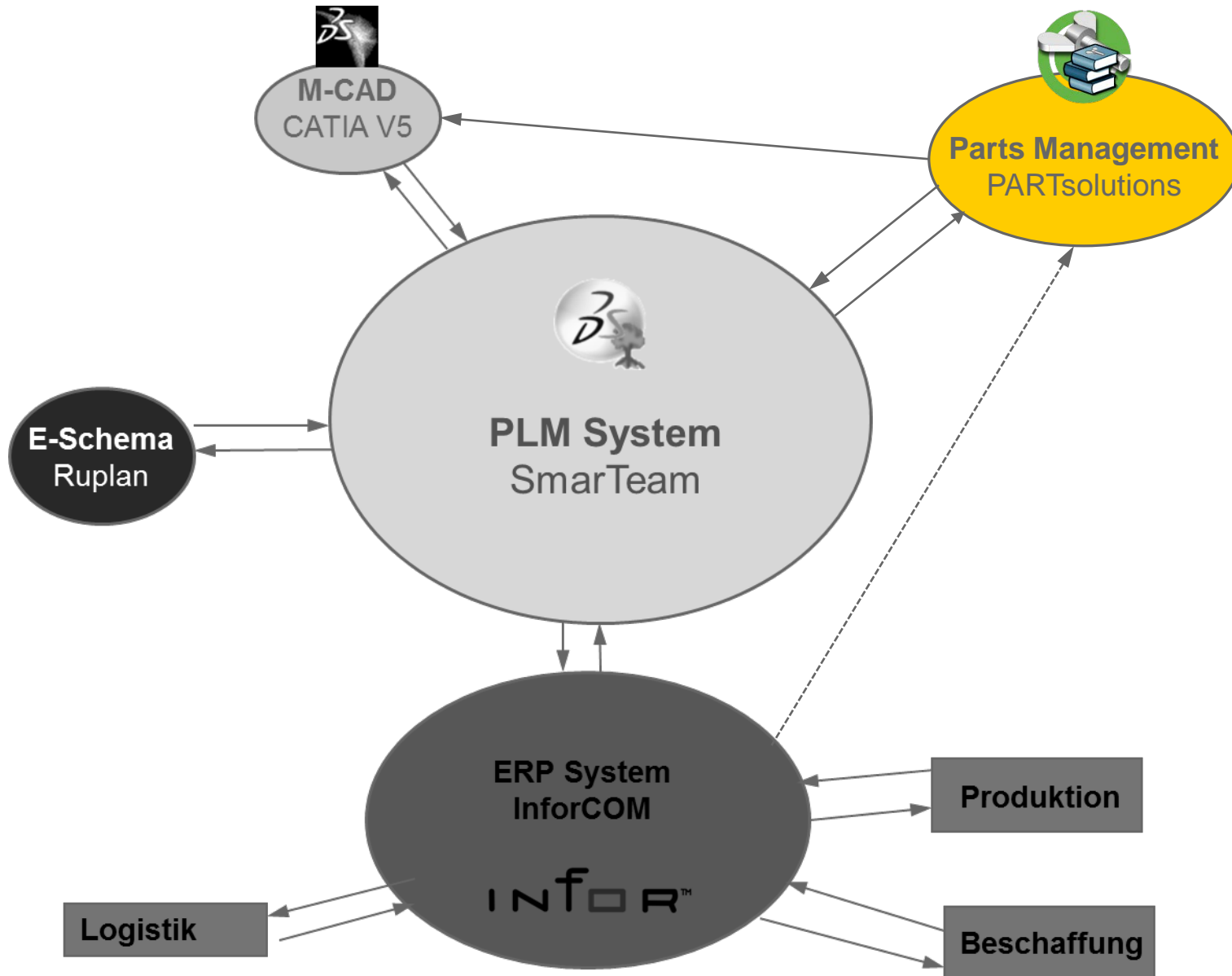
Implementation of PARTsolutions by CADENAS.



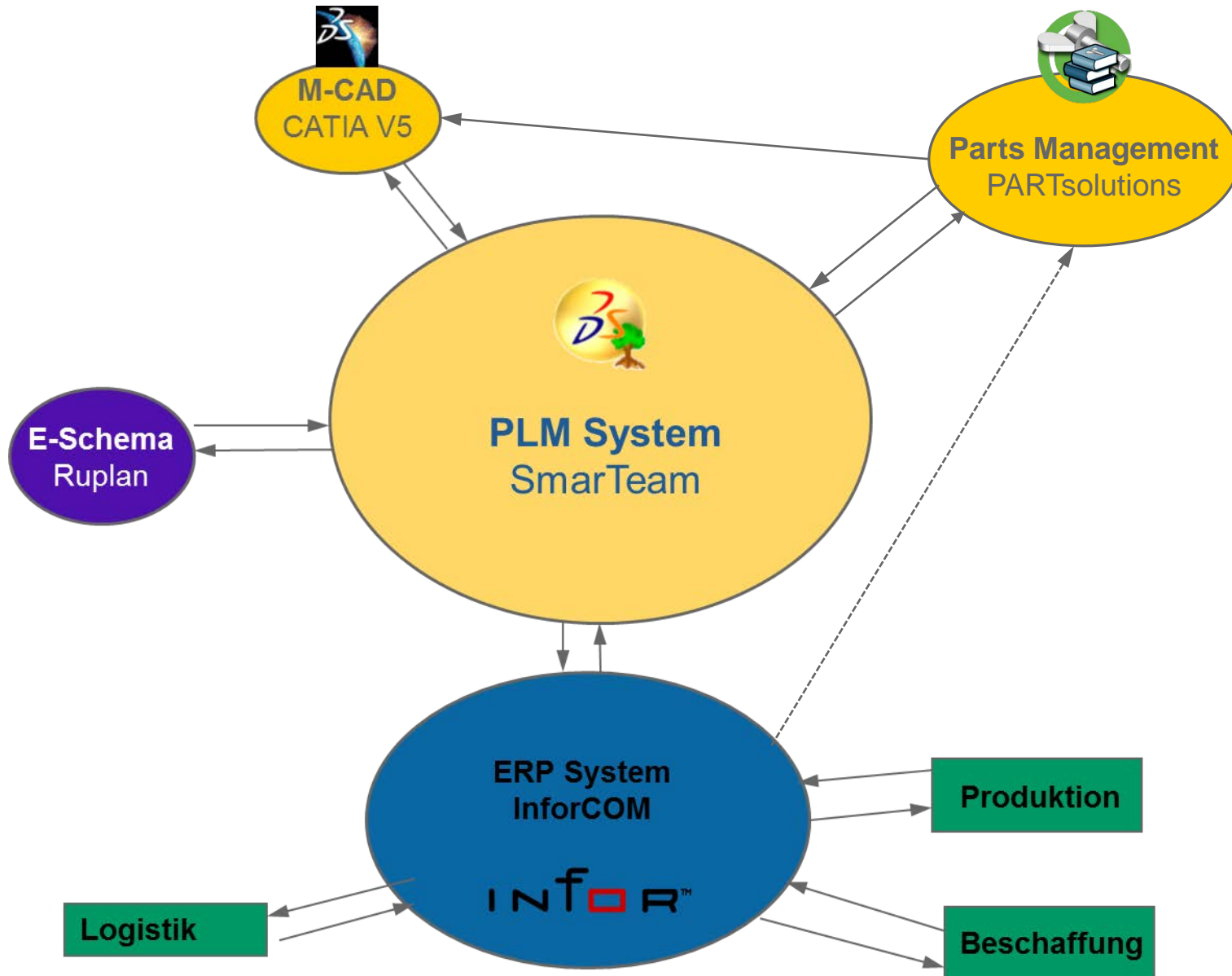
Key features for Stadler:

- Multiple CAD catalogues included
- Management of standard assortments
- Geosearch
- Generation of dublet reports

SOFTWARE INFRASTRUCTURE NEW



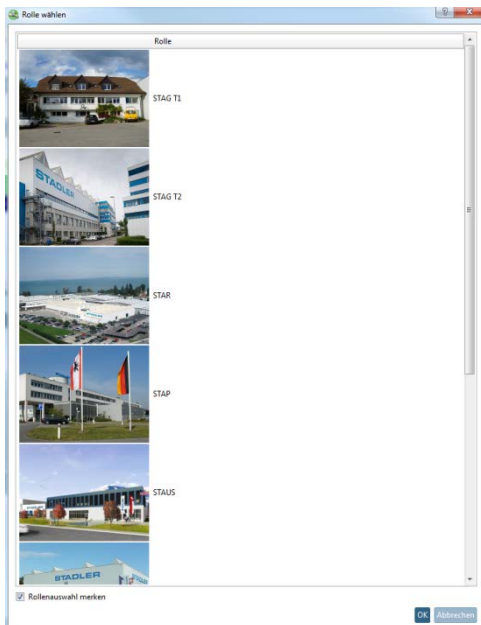
SOFTWARE INFRASTRUCTURE NEW



IMPLEMENTATION OF A STD. ASSORTMENT

Management through user roles:

- Each site has its own user role
- Each part has its own status for each site
- Every users can use every site role
(→ engineering for other sites)
- Management of the article data and catalogues via special team
- Management of the standard assortment via nominated people at the site



* BU1_STAT STAG T1	* BU2_STAT STAG T2	* PA_STAT STAP	* AR_STAT STAR	* WI_STAT STAWI	* US_STAT ST AUS	M
Freigabe	Ausnahme	Nominiert	Freigabe	Keine Verwendung (StdOrt)	Freigabe	1

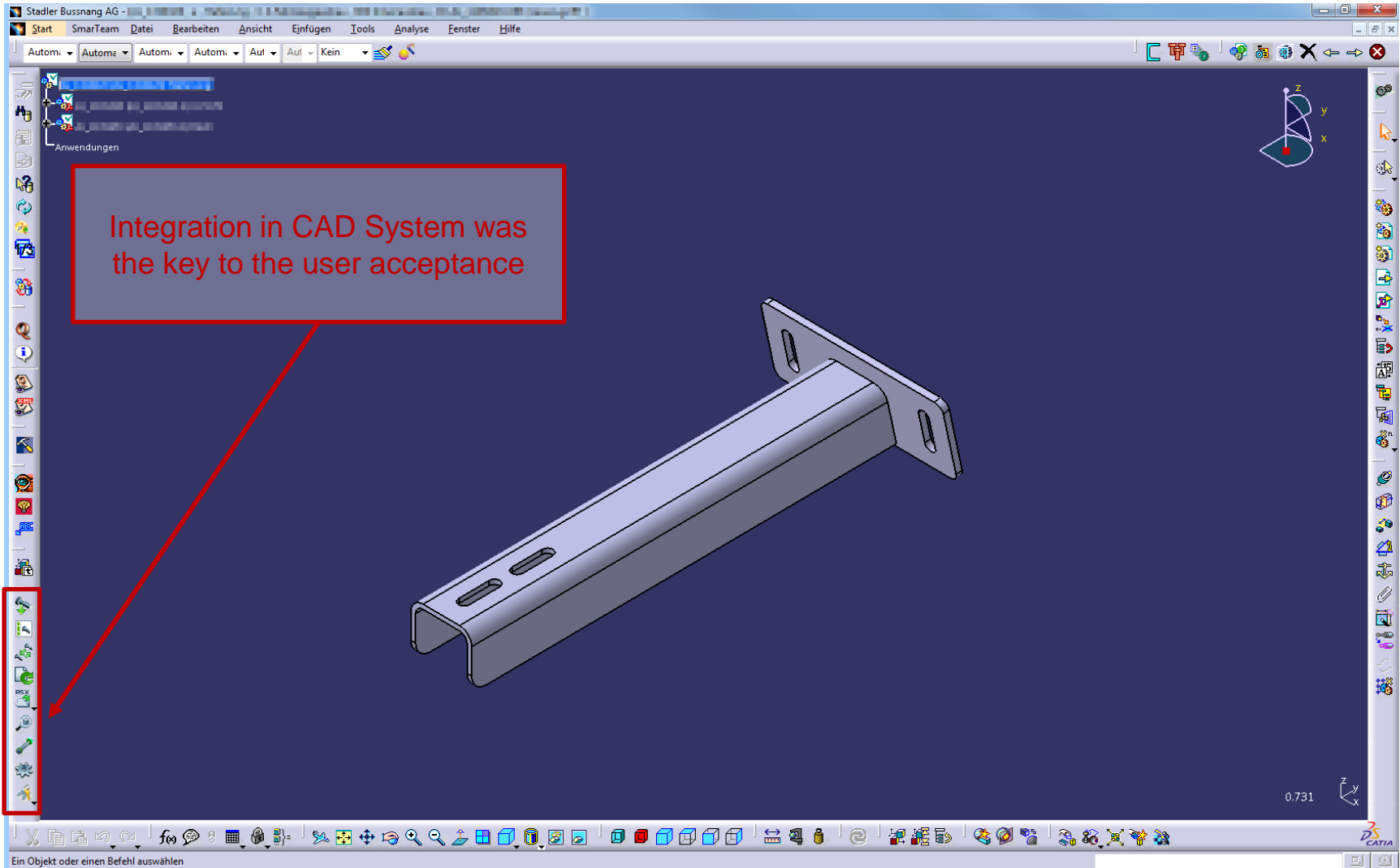
IMPLEMENTATION OF THE STD. ASSORTMENT



- Standard assortment
- Only for exceptions
- Not for use at this site

PARTSOLUTIONS

CATIA Integration



MAINTENANCE OF STANDARD- AND CATALOGPARTS

Nominees / Article master data team

Until now

Article master data team

- Create parts in the plm system
- Create / acquire 3D-models
- Maintenance of all parts and 3D-models

new

Article master data team

- Create parts in the plm system (via PSOL)
- Create / acquire 3D-models
- Maintenance of all parts and 3D-models

Nominees

- Define the standard assortment
- Maintain the standard assortment

PARTSOLUTIONS

PARTdataManager

PARTdataManager 10.00 - PARTsolutions by CADENAS - norm\commonpool\schrauben\iso_4014.prj

Suchbegriff(e) für Volltextsuche: Suchen in allen Katalogen nach **Teilefamilien und Einzelteilen**

Suchfunktion hinzufügen: **A=3 Variablenuche** **Geometrische Suche (3D)** **Skizzensuche (2D)** **Farbsuche** **Rohteilsuche** **Topologiesuche**

Suche starten **Cloud Navigator starten** **Suchvorlagen**

Assistent **Teileauswahl** **Teileansicht**

Sechskantschraube ISO 4014 M4x25

	S_DOKNR	S_ARTNR	STAP_DOK	STIDV6	*BU2_STAT	MAT_NAME	IDNR	D	D3	P	L	LS	LG	B	BX1	BX2	BX3	C
	Dokument...	Artikel-Nr	STAP Doku...	3DX Nr	STAG T2	Werkstoff	Identnum...	Gewinden...	Gewindeke...	Gewindest...	Nennlänge...	Schaffläng...	Abstand d...	Gewindela...	B für L <= ...	B für 125<...	B für L > 2...	Höhe des ...
1	M4x25	BU_1573425	12089246		Freigabe	Stahl 8.8 - vzb		4.000	3.141	0.700	25	7.500	11.000	14.000	14.000	20.000	33.000	0.400
2	M4x25	BU_1573158	12066011	PA_1238391	Freigabe	INOX A2-70		4.000	3.141	0.700	25	7.500	11.000	14.000	14.000	20.000	33.000	0.400
3	M4x30	BU_1573426	12089247		Freigabe	Stahl 8.8 - vzb		4.000	3.141	0.700	30	12.500	16.000	14.000	14.000	20.000	33.000	0.400
4	M4x30	BU_1573159	12066012	PA_1238393	Freigabe	INOX A2-70		4.000	3.141	0.700	30	12.500	16.000	14.000	14.000	20.000	33.000	0.400
5	M4x35	BU_1573160	12066013	PA_1238394	Freigabe	INOX A2-70		4.000	3.141	0.700	35	17.500	21.000	14.000	14.000	20.000	33.000	0.400
6	M4x35	BU_1573427	12089248		Freigabe	Stahl 8.8 - vzb		4.000	3.141	0.700	35	17.500	21.000	14.000	14.000	20.000	33.000	0.400
7	M4x40	BU_1573161	12066014	PA_1238397	Freigabe	INOX A2-70		4.000	3.141	0.700	40	22.500	26.000	14.000	14.000	20.000	33.000	0.400
8	M4x40	BU_1573428	12089249		Freigabe	Stahl 8.8 - vzb		4.000	3.141	0.700	40	22.500	26.000	14.000	14.000	20.000	33.000	0.400
9	M5x25	BU_1573163	12066016	PA_1238402	Freigabe	INOX A2-70		5.000	4.019	0.800	25	5.000	9.000	16.000	16.000	22.000	35.000	0.500
10	M5x25	BU_1573430	12089250		Freigabe	Stahl 8.8 - vzb		5.000	4.019	0.800	25	5.000	9.000	16.000	16.000	22.000	35.000	0.500
11	M5x30	BU_1573164	12066017	PA_1238403	Freigabe	INOX A2-70		5.000	4.019	0.800	30	10.000	14.000	16.000	16.000	22.000	35.000	0.500
12	M5x30	BU_1573431	12089251		Freigabe	Stahl 8.8 - vzb		5.000	4.019	0.800	30	10.000	14.000	16.000	16.000	22.000	35.000	0.500

Verweise **Teileinformationen** **Aufbau**

Sprache: **Deutsch**

Normnummer: ISO 4014

Beschreibung: Sechskantschrauben mit Schaft, Produktklassen A und B

Firma: commonpool

Letzte Änderung: 12.10.2017 13:17:19

Einheit: mm

Pfad: norm\commonpool\schrauben\iso_4014.prj

Projekttyp: 3D-Projekt

Sechskantschraube ISO 4014 M4x25 **Technische Angaben**

12.10.2017 #213 - STAG T2 Admin

CURRENT PROJECT STATUS

Completed tasks

- ✓ Definition of the requirements
- ✓ Definition of the underlying processes
- ✓ Testing of PARTsolutions inside a testenvironment
- ✓ Creation of training material
- ✓ Roll out PARTsolutions and standard assortment workflow
- ✓ Usertraining

Open tasks

- Implementation of GEOsearch
- Generation of duplicate reports
- Precise cleaning up of existing data

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LESSONS LEARNED

reducing the diversity of parts

High dependency of the standard assortment regarding

- Range of products
- In-house supplier
- Customer requirements
- Regional availability
- Historical background



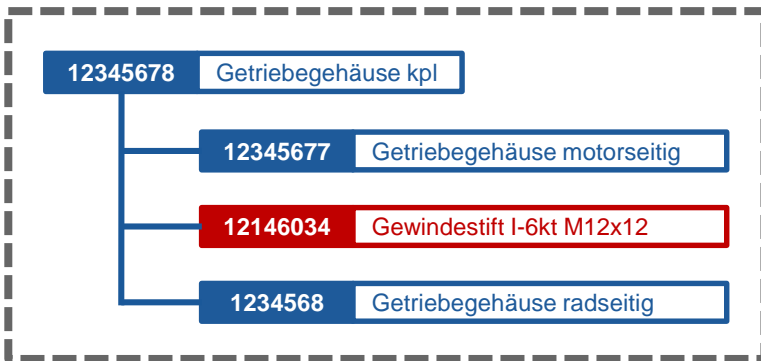
**As first step we had to synchronise the working methodology.
Example: Design guidelines**

LESSONS LEARNED

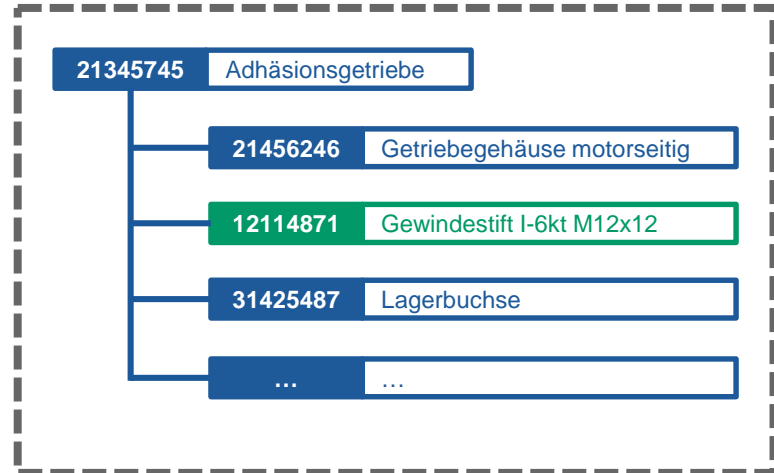
reducing duplicates

Duplicates are often used in various projects / sites.

Project 1, site CH



Project 2, site D



- Which one of these is the «duplicate»?
- Affected projects / assemblies
- Affected documents (manuals, maintenance manuals,...)
- Affected suppliers
- Exchange in all structures or tinkering in PLM/ERP?

It needs a logic how to handle duplicates before you can clean them up.



**THANKS A LOT
FOR YOUR ATTENTION**

STADLER