

Presentation for Company XY

Data Excellence

Empowering Digital Transformation

Karlsruhe, 14.03.2026

Data Excellence:

Empowering Digital Transformation

simus systems specializes in delivering **software solutions focusing on data transparency**, tailored for the manufacturing industry.

2002
Founded

Owner-managed
Located in Karlsruhe

250+
Customers

400+
Projects

Industries

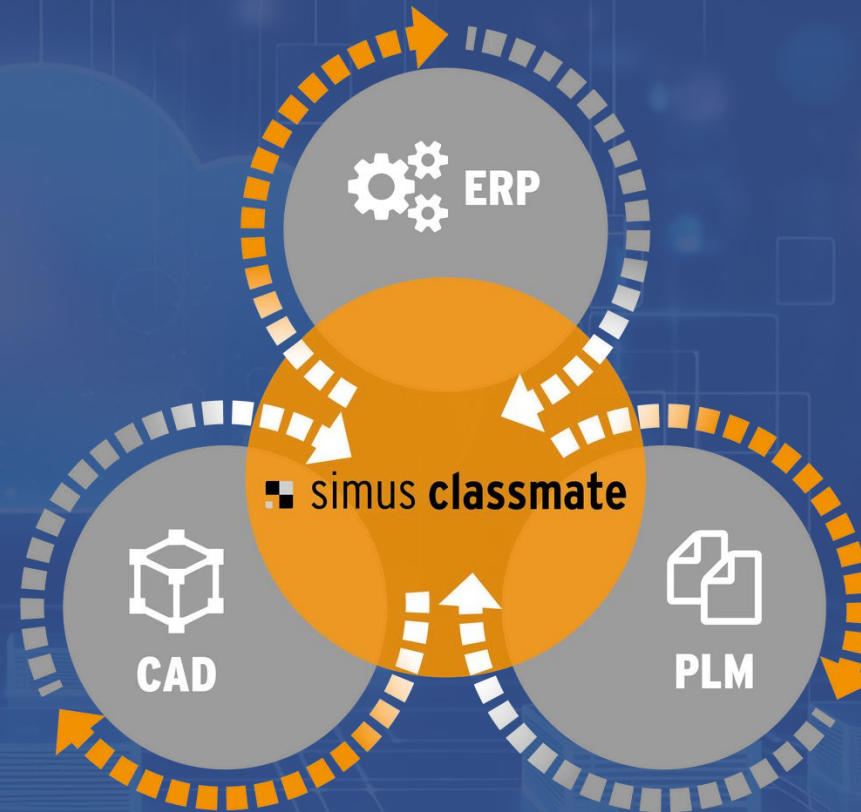
Mechanical and plant engineering, special machine construction, automotive, electronics



Adding Structure to your Data.

Our innovative solutions work at the interfaces between ERP, CAD and PLM systems, adding intelligent functionality to these systems.

In this way, we help companies become more profitable, more sustainable, and more future-proof.



simus classmate

classmate DATA

Analysis, classification and preparation of master data

classmate CAD

Geometric analysis and classification of CAD models

classmate COSTPILOT

Flexible and dynamic project cost controlling

classmate FINDER

Fast and precise search engine for structured data

classmate DRAW

AI-based analysis of technical drawings

classmate PLAN

Automated determination of manufacturing costs & emissions

Creation of routings



 **costing24**

Online calculation

Installation Options



 **simus classmate**

On-Premise / Local Installation

Advantages of our On-Premise solution:

- Data sovereignty
- Complete access control
- Adherence to individual compliance requirements
- Offline access



 **simus connect**

SaaS / Cloud Installation

Advantages of our SaaS solution:

- No hardware costs
- No update effort
- Faster implementation
- No backup effort
- High reliability
- Available from anywhere
- No database administration





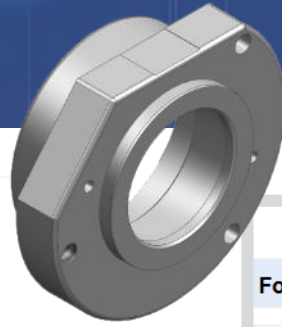
Analysis, structuring and rule-based revision of textual data sets

Goals:

- Clean master data
- Find duplicates
- Standardization
- Data preparation for migration
- Classification
- Data enrichment
- Merge data

ident	Type cheese head screw	Thread	Screw length [mm]	Rotational direction	Self locking
920601	cheese-head w. internal hex	M8	35.00 mm	RH	No
920602	cheese-head w. internal hex	M8	30.00 mm	RH	No
921731		M3	10.00 mm	RH	No
921732		M4	8.00 mm	RH	No

920601	SCREW,CYL.W/HEX.SOC- M8X35 1.4301 DIN9	M8X35 1.4301 DIN912	DIN 912
920602	SCREW,CYL.W/HEX.SOC- M8X30 3.7035 D912	M8X30 DIN 912 3.7035 GRADE 2	DIN 912
921731	CYLINDER SCREW	M3X10	ITTECH
921732	CYLINDER SCREW	M4X8	ITTECH



Geometric analysis and classification of 3D models, integrated into the CAD system

- Geometric similarity search
- Customizable set of rules
- Flexible connection to databases and ERP/PDM/PLM systems

Goals:

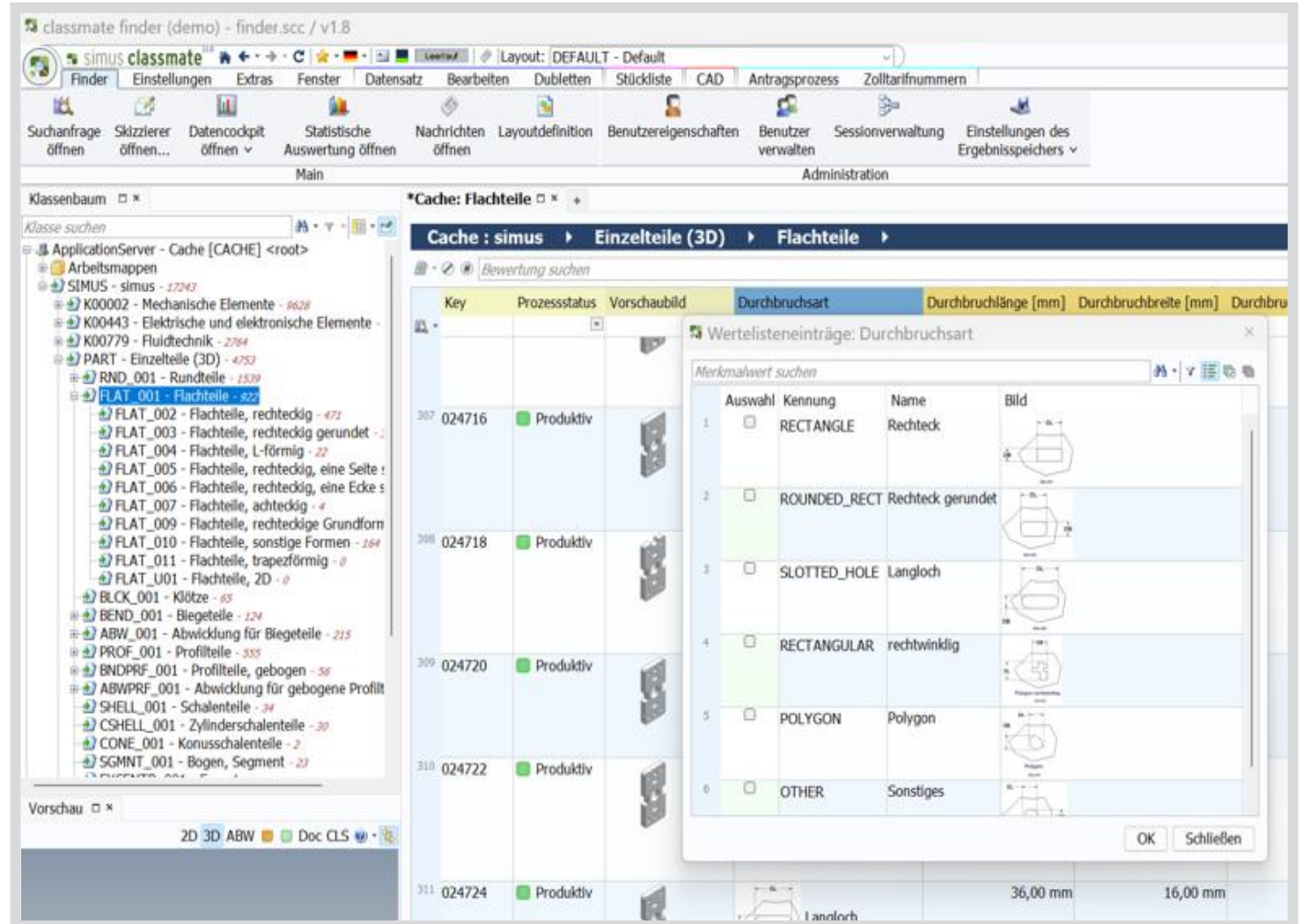
- Quickly find existing models
- Increase reuse rate
- Reduce engineering costs

Form elements			
▼ Form element holes			
Total qty. of holes:	5		
Qty. of holes:	2	1	2
Hole alignment:	linear alignment	single hole	linear alignment
Attachment of hole alignment:	rotational part step face	rotational part step face	rotational part step face
Qty. of bolt circles:	-	-	-
Bolt circle diameter [mm]:	-	-	-
Edge distance-1 [mm]:	4,38 mm	-	14,29 mm
Edge distance-2 [mm]:	5,37 mm	-	5,20 mm
Spacing-1 [mm]:	42,13 mm	-	-
Spacing-2 [mm]:	-	-	46,00 mm
Qty. spacing-1:	2	-	1
Qty. spacing-2:	1	-	2
Hole form:	threaded through hole	threaded through hole	threaded blind hole
Hole diameter [mm]:	4,20 mm	4,20 mm	2,50 mm
Hole depth [mm]:	10,00 mm	10,00 mm	9,00 mm
Hole-basis fit:	-	-	-
Thread information (cleaned):	M5	M5	M3
Metric nominal thread dimension:	M5	M5	M3 <guess>
Tapped hole diameter [mm]:	5,00 mm	5,00 mm	3,00 mm
Tapped hole depth [mm]:	10,00 mm	10,00 mm	9,00 mm








Fast and precise "search engine" for structured data







- Wide range of search options
- Optimal for large databases
- Graphically supported search
- Results from different sources (PDM, ERP, CAD)
- Similar part search / sub-area search
- Local installation (FINDER)
- Browser based (easyFINDER)



The screenshot displays the 'classmate finder (demo) - finder.scc / v1.8' application. The main window shows a search results table with columns: Key, Prozessstatus, Vorschaubild, Durchbruchart, Durchbruchlänge [mm], and Durchbruchbreite [mm]. A 'Werteliste' window is open, showing a table of search results for 'Durchbruchart'.

Key	Prozessstatus	Vorschaubild	Durchbruchart	Durchbruchlänge [mm]	Durchbruchbreite [mm]
307 024716	Produktiv		RECTANGLE		
308 024718	Produktiv		ROUNDED_RECT		
309 024720	Produktiv		SLOTTED_HOLE		
310 024722	Produktiv		RECTANGULAR		
311 024724	Produktiv		POLYGON	36,00 mm	16,00 mm

The 'Werteliste' window shows the following details:

Auswahl	Kennung	Name	Bild
1	RECTANGLE	Rechteck	
2	ROUNDED_RECT	Rechteck gerundet	
3	SLOTTED_HOLE	Langloch	
4	RECTANGULAR	rechtwinklig	
5	POLYGON	Polygon	
6	OTHER	Sonstiges	

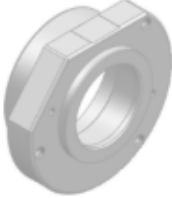


Preliminary costing, CO2 emissions and routings automatically from the CAD model

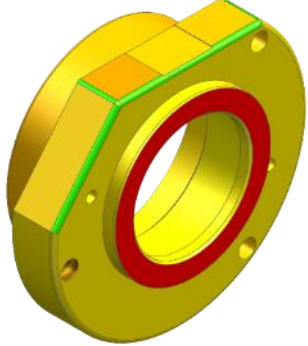
- Integrated in Solid Edge, SolidWorks, NX, Creo Parametric, Inventor and CATIA

Goals:

- **Design:** Early knowledge of manufacturing costs and emissions
- **Work preparation:** Accelerate work planning
- **Purchasing:** Actively set target prices
- **Contract manufacturing:** Create quotes quickly



ident: TURN2
 Description (CAD): Flansch
 Latest geometric classification on: 13.03.2024 17:23:33
 Material (CAD): Rd EN 10278-EN 10088-3-X10CrNiS18-9 (1.4305)+C700
 Reference lot size: 10
PLAN quota: 1,00
 Manufacturing cost [EUR]: 35,25
 Purchase price [EUR]: 49,04
 Purchase price incl. progr. [EUR]: 67,04
 Dimensions [mm]: 62x22
 Dimensions flattened [mm]:
 Manual Inputs:
 Warning hint:
 CAD system: PTC Creo



> Programming		12,50
> Rough shaping		18,92
Machining	Machines	thu [min] Time [min] Cost [EUR]
> Rough shaping		
Machining	Machines	thu [min] Time [min] Cost [EUR]
Sawing	Saw	1,23 1,36 0,68
Interim deburring	Interim deburring machine	0,15 0,17 0,08
Centric drilling	Mill-turning machine	0,46 1,07 1,78
Rough facing	Mill-turning machine	0,17 0,62 1,03
Finish facing	Mill-turning machine	0,24 0,75 1,25
Rough straight turning	Mill-turning machine	0,62 1,85 3,08
Finish straight turning	Mill-turning machine	0,37 1,35 2,25
Axial drilling	Mill-turning machine	0,34 1,15 1,92
Thread axial drilling	Mill-turning machine	0,46 1,31 2,18
Rough contour milling	Mill-turning machine	0,06 0,29 0,48
Finish contour milling	Mill-turning machine	0,04 0,24 0,40
Form milling	Mill-turning machine	0,08 0,42 0,71
Rough milling	Mill-turning machine	0,39 1,12 1,86
Finish milling	Mill-turning machine	0,25 0,73 1,22



Online tool - Determine manufacturing costs in seconds

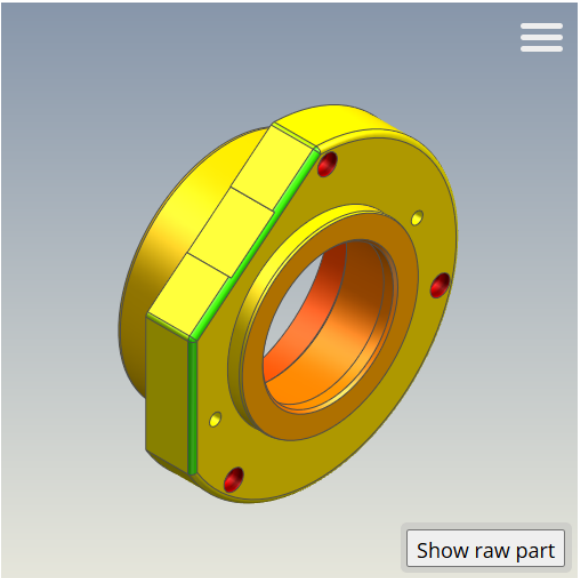
- Simple calculation solution with the calculation engine of classmate PLAN
- Turned, milled and sheet metal parts
- Simple configuration options
- Cost-effective subscription model

Advantages:

- Ideal for individual components
- Quick calculation
- Intuitive handling
- Browser based

1 CHOOSE MODEL ————— 2 ADJUST TECHNOLOGY DATA ————— 3 CALCULATION RESULT

3D preview of the selected model



Show raw part

Select new model ↻

The calculation for your part is ready!

The distribution of the manufacturing costs is highlighted in color in the 3D preview.

Move the cursor to the colored faces to see detailed information. Change the lot size and see how much the manufacturing costs vary.

Model: ⓘ ID0_12JISVYW5_18N_MAMITZDO

Material group: Steel (alloyed)

Semi-finished product: ⓘ RD 65 EN10088-3-X8CrNiS18 1.4305

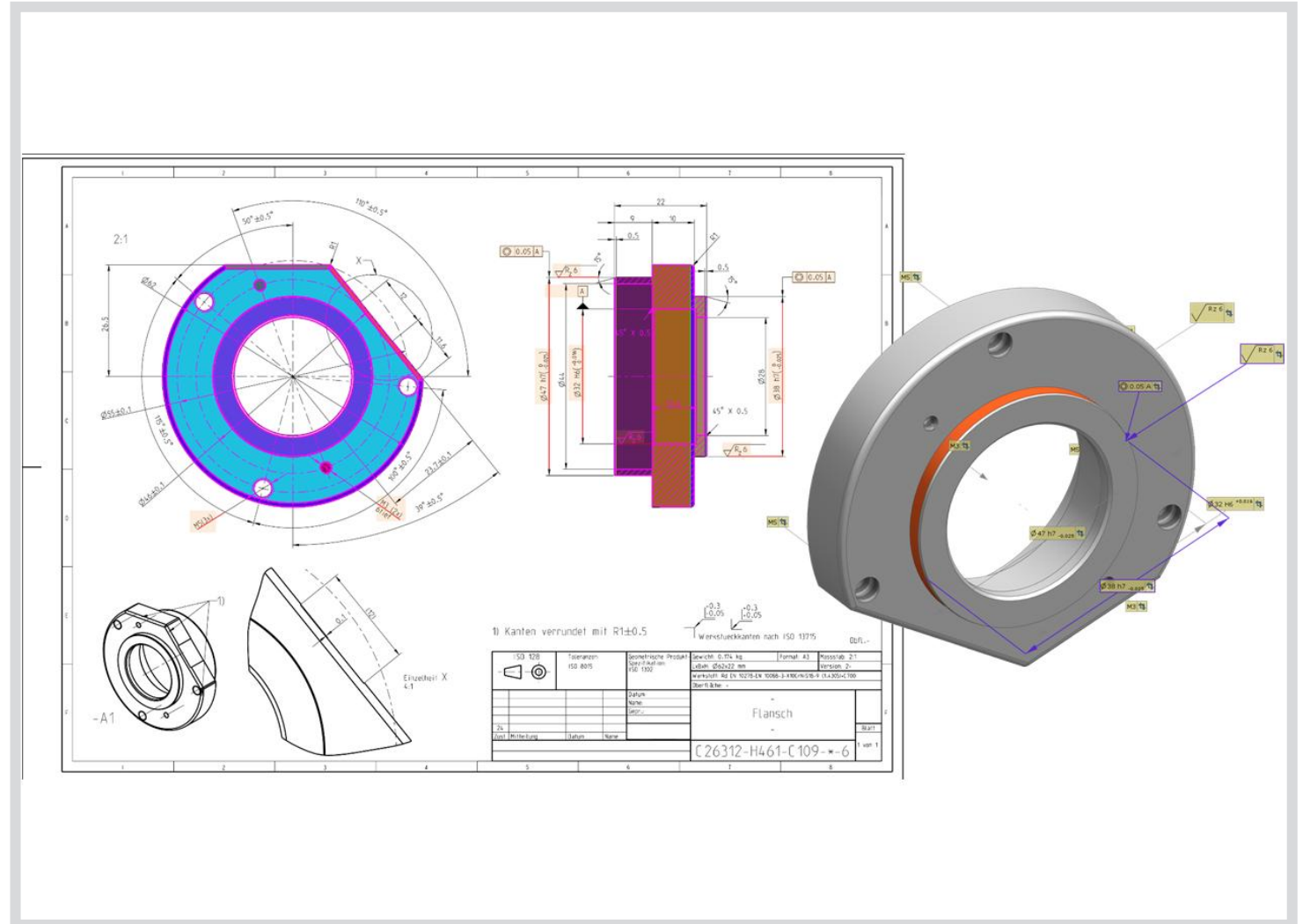
Lot size: ⓘ	<input type="text" value="1"/>
Calculation variant: ⓘ	<input type="text" value="Variant 1"/>
Manufacturing costs: ⓘ	€99.40 (per unit)
Purchase price: ⓘ	€125.72 (per unit)
Purchase price incl. programming: ⓘ	€282.84 (per unit)
CO ₂ Emission: ⓘ	3.155 kg (per unit)



AI-based analysis of technical drawings and mapping to the S3D model

Success factors:

- Assignment of drawing information to the S3D model
- Time savings due to automatic data capture and transfer
- Consistent, complete and correct data throughout the entire digital process
- Greater calculation accuracy thanks to a better data basis
- Similar part search based on 2D drawings





Progressive calculation of development projects

- Reliable cost planning that grows with the project
- Flexible structure
- Documentation of project progress
- Dynamic integration of sources

Goals:

- Quick overview of current costs at the touch of a button
- Simple target / actual comparison
- Target costing applied

The screenshot displays the classmate COSTPILOT software interface. On the left, there is a vertical toolbar with icons for home, search, and various project management functions. The main area shows a hierarchical tree of project elements under 'PSR - Project'. A table below the tree lists the elements with their respective costs. The table has columns for '#', 'Σ', 'Σk', 'ME', 'MEK#1', 'HK#1', and 'HK#n'. The row for 'ASM - Pressure regulator|LR-1/8|DB-7-O-MINI' is highlighted in yellow. On the right side, there is a 3D model of a pressure regulator and a detailed view of its properties, including its ID (PP-011850), type (Assembly), and short description (Pressure regulator|LR-1/8|DB-7-O-MINI).

Element	#	Σ	Σk	ME	MEK#1	HK#1	HK#n
PSR - Project	1	1	1	piece	1.557,03 €	15.238,42 €	15.238,42 €
ASM - grouping table LI-RE	1	1	1	piece	1.557,03 €	15.238,42 €	15.238,42 €
ASM - PROTECTIVE COVER LI RE	1	1	1	piece	249,94 €	1.648,84 €	1.648,84 €
ASM - SWITCHBOARD+PNEU MECH 1064x 560x253 VA	1	1	1	piece	259,19 €	3.565,64 €	3.565,64 €
ASM - GROUPING THRUST ACCESSORIES LI>RE	1	1	1	piece	10,96 €	179,12 €	179,12 €
ASM - FRAME ACCESSORIES	1	1	1	piece	40,00 €	481,59 €	481,59 €
ASM - pneumatics	1	1	1	piece	72,30 €	3.230,36 €	3.230,36 €
PRD - Set collar A 4 - V2A	6	6	6	piece	0,01 €	12,52 €	75,12 €
ASM - PRESSURE REGULATOR+MANOMETER FESTO LS	2	2	2	piece	4,34 €	395,08 €	790,16 €
PRD - Sealing ring 1/8	5	10	15	piece	0,01 €	2,21 €	11,05 €
ASM - Pressure regulator LR-1/8 DB-7-O-MINI	1	2	2	piece	3,20 €	246,04 €	246,04 €
PRD - Manometer MA40-10-1/8-EN	1	2	2	piece	0,84 €	55,94 €	55,94 €
PRD - Reducing nipple G1/8AG-G1/4IG	1	2	2	piece	0,12 €	32,80 €	32,80 €
PRD - Sealing ring 1/4	1	2	2	piece	0,01 €	12,95 €	12,95 €
PRD - Double threaded nipple G1/8-G1/4	1	2	2	piece	0,12 €	30,99 €	30,99 €
PRD - Throttle check valve GR-1/8-B	1	2	2	piece			
PRD - push-in fitting NPQM-L-G18-Q6-P10	2	4	6	piece			
PRD - Mounting bracket Pressure regulator 125985	2	2	2	piece	0,13 €	25,37 €	50,74 €
PRD - Valve 5/2 VUVVG-L14-M52-AT-G18-1R8L	2	2	2	piece	0,58 €	241,89 €	483,78 €
PRD - screw plug G1/8	2	2	2	piece	0,01 €	40,49 €	80,98 €
PRD - VENTIL SWITCH-ON VALVE MS6-3/8 L/R	1	1	1	piece	1,71 €	429,14 €	429,14 €
PRD - Sealing ring 3/8	5	5	7	piece	0,02 €	11,24 €	56,20 €
PRD - Threaded bolt SW22x32,0 VA	1	1	1	piece	0,51 €	50,99 €	50,99 €
PRD - Switch-on valve MS6-EM1-3/8-AG	1	1	1	piece			
PRD - Reducing nipple G1/2AG-G3/8IG	1	1	1	piece	0,18 €	54,06 €	54,06 €



Other possible uses of the software



Create and maintain material master data centrally:

Maintaining high data quality in the long term



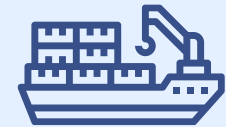
Text standardization:

Standardized texts at the touch of a button



Product group assignment and supplier selection:

Support for technical purchasing



Customs tariff numbers:

Support with the selection of customs tariff numbers



classmate modules for SAP®: Flexible use for numerous application scenarios

Administration support:

- Creating and maintaining classification structures
- Data migration

User support:

- Maintaining objects
- Searching for data records
- Evaluating data records



 simus classmate

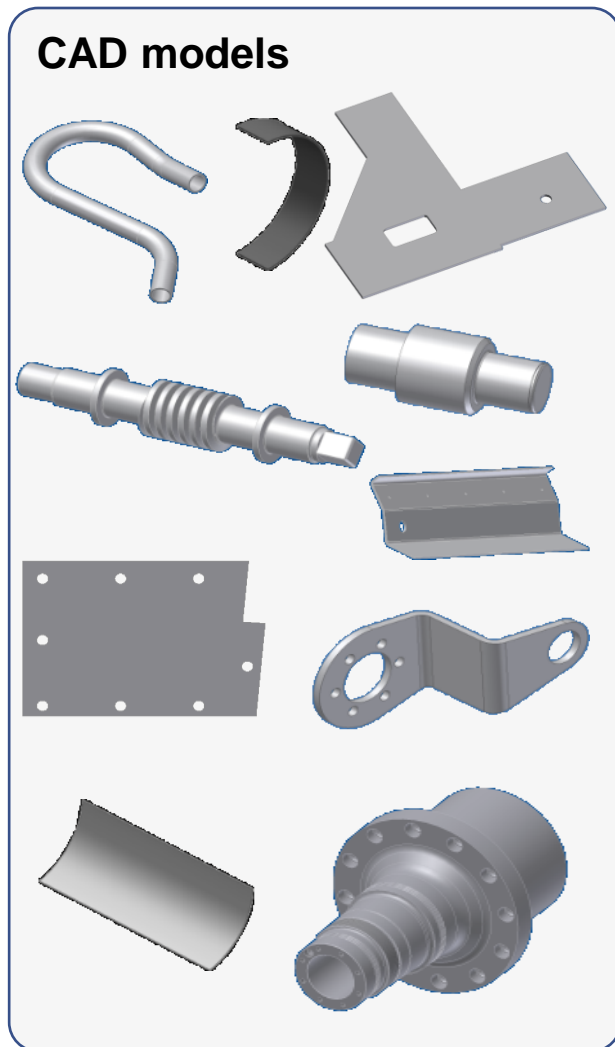


 **classmate** CAD

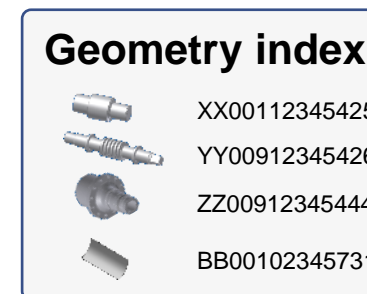
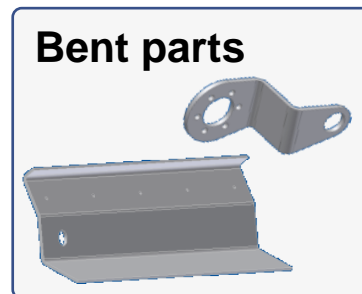
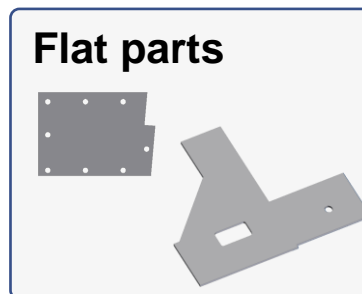
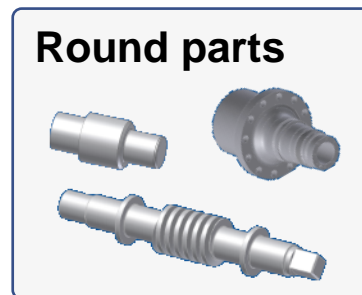
Geometric Classification

Finding Models with Ease

Automatic Classification of CAD Models



classmate CAD



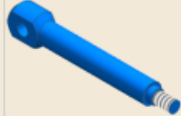



Example of Round Model Classification

Class structure

2D/3D preview

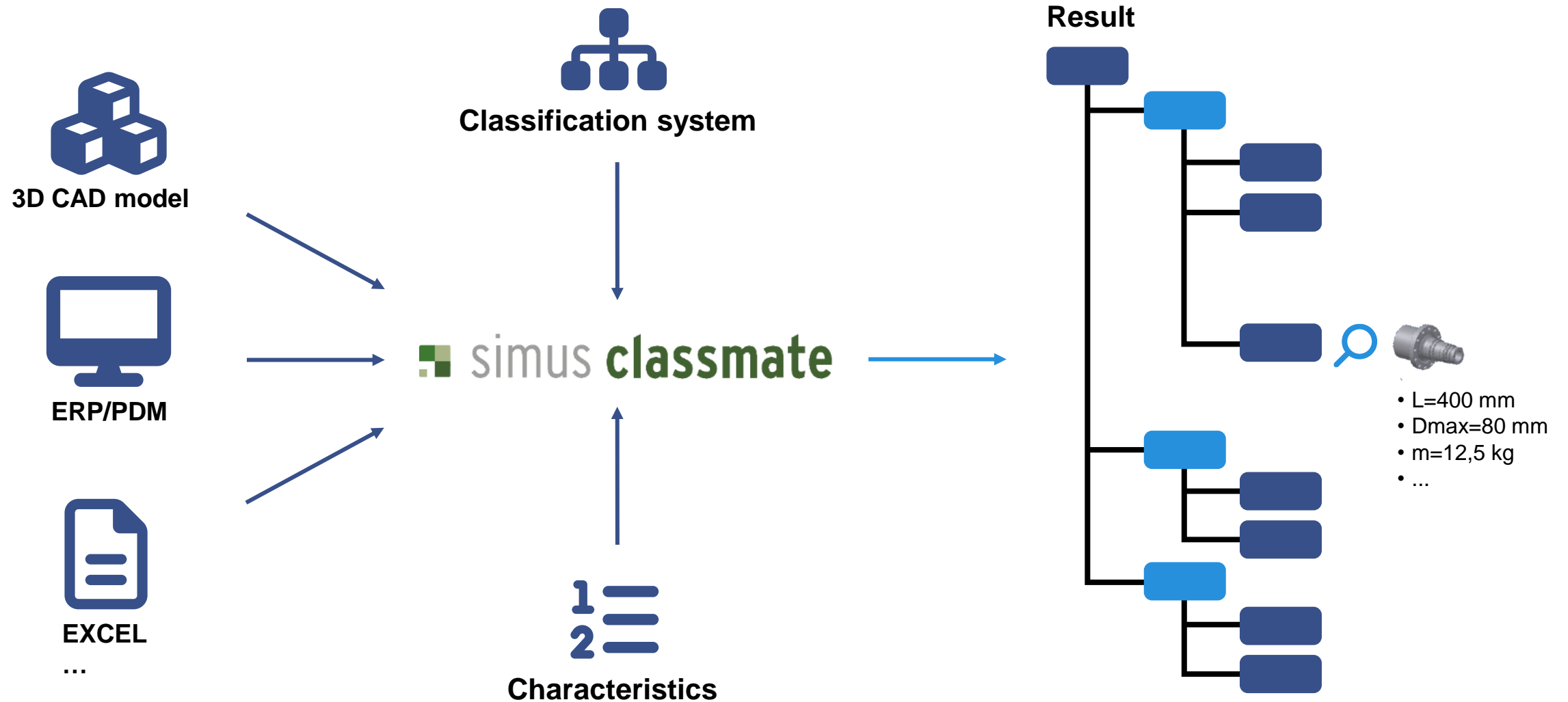
Geometric features

The screenshot displays a CAD software interface with three main panels. On the left is the 'Class tree' showing a hierarchical structure of part classes. The 'round parts, massive, ascend. one side' class is highlighted. Below the class tree is a 'Preview' window showing a 3D model of a blue bolt. On the right is a 'CAD: *Classified data: round parts, massive, ascend. one sid...' window containing a table of classified data for the bolt. The table has 22 rows and 2 columns: 'Name' and 'Valuation'. The data includes material ('Edelstahl'), dimensions (total length, width, height, rotational length, outer diameter), hole characteristics (quantity, alignment, attachment, form, diameter, depth), and small diagrams for hole alignment and form.

Name	Valuation
1 key	IV0010491
2 preview	
8 material	Edelstahl
9 total length [mm]	117,00 mm
10 total width [mm]	21,00 mm
11 total height [mm]	14,00 mm
12 rotational length [mm]	117,00 mm
13 outer diameter max. [mm]	20,95 mm
14 total quantity of holes	1
15 quantity of holes	1
16 hole alignment	 single hole
17 attachment of hole alignment	 rotational part girthed face
18 edge distance-1 [mm]	10,50 mm
19 edge distance-2 [mm]	11,00 mm
20 hole form	 through hole
21 hole diameter [mm]	8,00 mm
22 hole depth [mm]	14,00 mm

Element count: 22 rows with 2 columns

simus classmate – Rule-Based Data Preparation



Visions – Aims

- Automatic classification of any 3D CAD model
- No effort for the designer to
 - Sort the part into the respective class
 - Describe the characteristics of a part
- Always 100% correct values, regardless of
 - Daily condition
 - State of knowledge
 - Personal interpretation
 - Modelling methodology
- Easy and quick localization of existing CAD models

By reusing a single existing part companies
can save up to
several thousands of euros per part and year!





 **classmate** FINDER

The “Search Engine”

Clear View of your Data

easyFINDER Search Cockpit

Layout: Default EF ▾

Search text: Search ✕

Material description: 🇺🇸 Demo

Search in: All classes

21 results (0.404 seconds)

#	ident	Process status	Preview	Drawing	Material description	Standard (purged)	Mater
1	024714	Productiv			Demoplatte-1		1060 L
2	024716	Productiv			Demoplatte-2		1060 L
3	024718	Productiv			Demoplatte-2010		1060 L
4	024720	Productiv			Demoplatte-3-1		1060 L
5	024722	Productiv			Demoplatte-3		1060 L
6	024724	Productiv			Demoplatte-4		1060 L
7	024726	Productiv			Demoplatte-g		Materi
8	024728	Productiv			Demoplatte-g1		Materi
9	024730	Productiv			Demoplatte-g2		Materi

ident: 024714
Process status: ● Productiv
Material description: Demoplatte-1
Material: 1060 Legierung

Classification

Class identifier: FLAT_009 PLAN_BLECH PLAN_FRAES PLAN_BLECH_VAR2 PLAN_FRAES_VAR2 PLAN_COMPARE BF

Internal features

Length x width x height

Total length [mm]: 250,00 mm
Total width [mm]: 120,00 mm
Total height [mm]: 25,00 mm

Characteristics

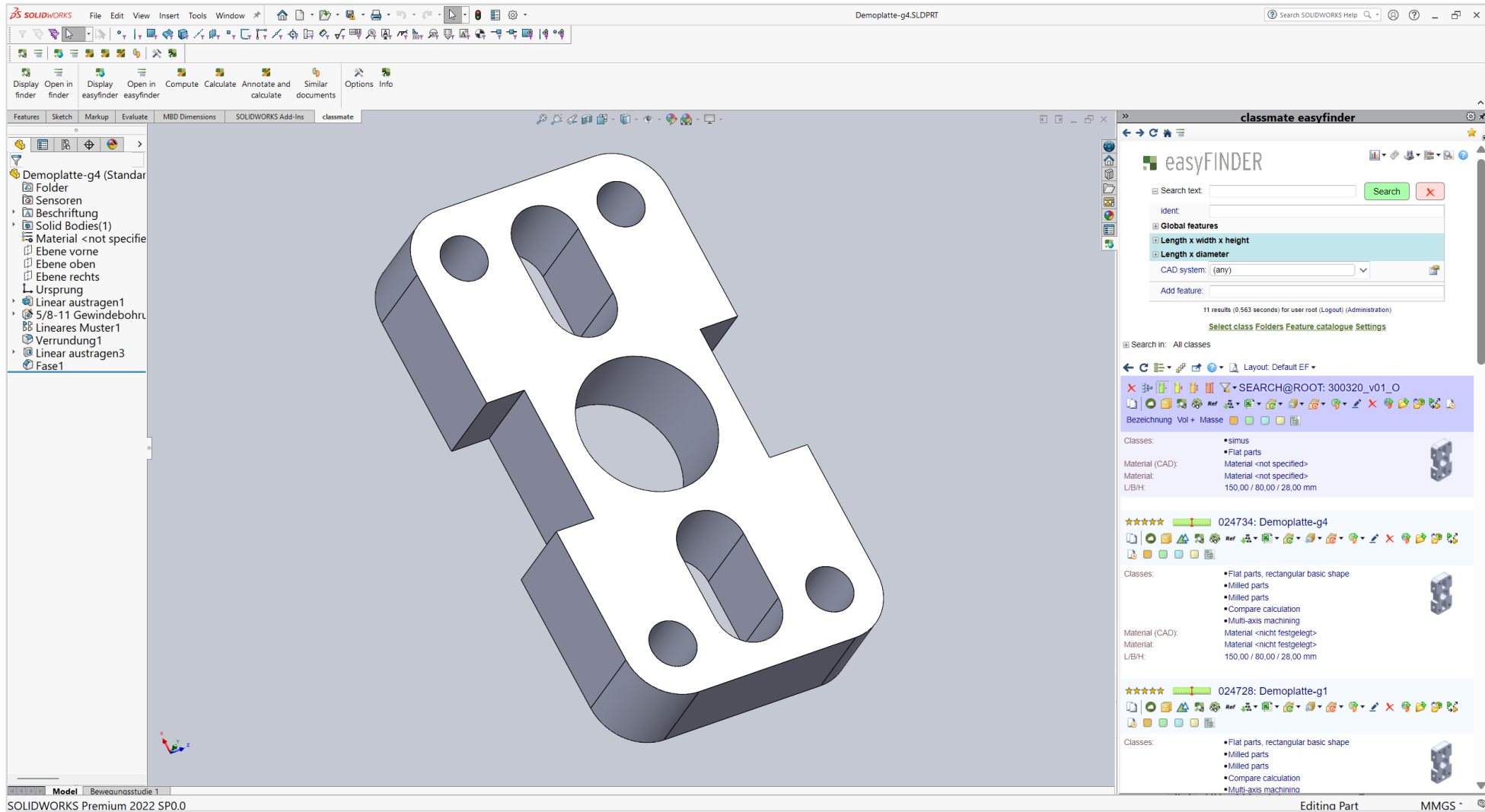
Flat part height [mm]: 25,00 mm
Flat part length [mm]: 250,00 mm
Flat part width [mm]: 120,00 mm
Kopie von flat part width [mm]: 799,40 mm
Flat part brutto volume [mm3]: 706904,39 mm3
Inner cutting length [mm]: 632,08 mm
Total cutting length [mm]: 1431,48 mm

Form elements

Form element holes

Total qty. of holes:	6		
Qty. of holes:	1	1	4
Hole alignment:	single hole	single hole	grid alignment old
Attachment of hole alignment:	flat part flat side <small>Bild 002</small>	flat part flat side <small>Bild 002</small>	flat part flat side <small>Bild 002</small>
Qty. of bolt circles:	-		
Bolt circle diameter [mm]:	-		
Edge distance-1 [mm]:	125,00 mm	28,05 mm	27,05 mm
Edge distance-2 [mm]:	60,00 mm	58,36 mm	22,98 mm
Spacing-1 [mm]:	-		
			195,91 mm

easyFINDER – CAD Integration (Example of Similarity Search)



Reference part

Results

classmate FINDER – Search Query via Feature Values

classmate editor (demo) - finder.scc / v1.9

Cache: Flat parts

Cache : simus > Parts (3D) > Flat parts

Search for valuation

ident	Process status	Preview	Cutting shape	Cutting length [mm]	Cutting width [mm]	Cutting contour length [mm]	Cutting contour minR [mm]	Material description	Size	standar
34	19855	Productiv						TF_PL_5_40x40_M8		
33	19854	Productiv								
34	19853	Productiv								
35	19801	Productiv								
36	19800	Productiv								
37	19797	Productiv								
38	19788	Productiv								
39	19787	Productiv								
40	19786	Productiv								

Preview

2D 3D FLAT Doc CLS

Element count: the first 500 rows with 30 columns (1 row(s) and 1 column(s) selected)

List of values items: Cutting shape

Selected	Identifier	Name	Image
<input type="checkbox"/>	RECTANGLE	rectangle	
<input type="checkbox"/>	ROUNDED_RECT	rectangle rounded	
<input type="checkbox"/>	SLOTTED_HOLE	slotted hole	
<input type="checkbox"/>	RECTANGULAR	right-angled	
<input type="checkbox"/>	POLYGON	polygon	
<input type="checkbox"/>	OTHER	other	

OK Close

classmate FINDER – Search Query via Feature Values

classmate editor (demo) - finder.scc / v1.9

simus classmate

Finder Settings Extras Windows Dataset Edit Duplicates BOM CAD material application Tarif Codes

classmate editor Open search query view Open sketcher... Open data cockpit Show statistics Show messages Layout definition Edit user Manage users Manage sessions Settings of data destination Administration

Application Main

Class tree

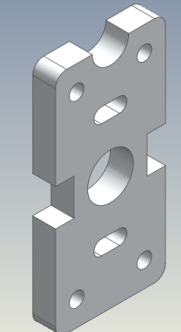
Search class

Cache <root>

- Cache
- Folders
- simus - 17240
 - Mechanical components - 9628
 - Electric and electronic elements - 717
 - Fluid technology - 2764
 - Parts (3D) - 4398
 - Round parts - 1149
 - Flat parts - 292**
 - Flat parts, rectangular - 471
 - Flat parts, rectangular rounded - 33
 - Flat parts, L-shaped - 22
 - Flat parts, rectangular, one side beveled - 2
 - Flat parts, rectangular, one edge beveled - 12
 - Flat parts, octagonal - 4
 - Flat parts, rectangular basic shape - 214
 - Flat parts, other shape - 162
 - Flat parts, trapezoid shape - 0
 - flat parts, 2D - 0
 - Blocks - 65
 - Bending parts - 123
 - Flat pattern, Bending parts - 214
 - Profile parts - 555
 - Profile parts, bent - 56
 - Straight tube pattern of bent profile parts - 35
 - Shell parts - 34
 - Cylindrical shell parts - 30
 - Cone shell parts - 2
 - Arch, segment - 23
 - Excenter - 9

Preview

2D 3D FLAT Doc CLS



*Cache: Flat parts (filtered)

Cache : simus Parts (3D) Flat parts

Search for valuation

ident	Process status	Preview	Spacing-1 [mm]	Spacing-2 [mm]	Qty. spacing-1	Qty. spacing-2	Cutting shape	Cutting length [mm]	Cutting width [mm]	Cutting contour length
14 020343	Productiv						SLOTTED_HOLE slotted hole	10.54 mm	4.83 mm	26
15 020377	Productiv		50.80 mm	0.00 mm	2	1	slotted hole	30.23 mm	4.83 mm	65
							slotted hole	14.88 mm	14.88 mm	43
							slotted hole	19.05 mm	4.83 mm	43
							slotted hole	14.88 mm	14.88 mm	43
16 024714	Productiv		125.00 mm	0.00 mm	2	1	slotted hole	36.00 mm	16.00 mm	90
17 024716	Productiv		125.00 mm	0.00 mm	2	1	slotted hole	36.00 mm	16.00 mm	90
18 024718	Productiv		125.00 mm	0.00 mm	2	1	slotted hole	36.00 mm	16.00 mm	90
19 024720	Productiv		125.00 mm	0.00 mm	2	1	slotted hole	36.00 mm	16.00 mm	90

Search feature

- (Select all)
- Key
- Preview
- Classification
- Internal features
- Process
- Length x diameter
- Characteristics
- Form elements**
 - Form element holes
 - Form element grooves
 - Form element cuttings
 - Total qty. of cuttings
 - Qty. of cuttings
 - Cutting alignment
 - Edge distance-1
 - Edge distance-2
 - Spacing-1
 - Spacing-2
 - Qty. spacing-1
 - Qty. spacing-2
 - Cutting shape
 - Cutting length
 - Cutting width
 - Cutting faces
 - Cutting contour length
 - Cutting contour minR
- Form element notches
- Surface finish
- Form and location tolerances
- Fittings and dimension tolerances
- Purchase classification
- Global features
 - text gen.
 - text gen. (BASE)
- Duplicates

Element count: 65 rows with 30 columns (1 row(s) and 1 column(s) selected)

classmate FINDER – Quick Search / Search Result

classmate editor (demo) - finder.scc / v1.8

simus classmate v1.8

Finder Einstellungen Extras Fenster Datensatz Bearbeiten Dubletten Stückliste CAD Antragsprozess Zolltarifnummern

classmate editor Suchanfrage öffnen Skizzierer öffnen... Datencockpit öffnen Statistische Auswertung öffnen Nachrichten öffnen Layoutdefinition Benutzereigenschaften Benutzer verwalten Sessionverwaltung Einstellungen des Ergebnisspeichers

Administration

Klassenbaum

Klasse suchen

ApplicationServer - Cache [CACHE] <root>

- Arbeitsmappen
 - SIMUS - simus - 1/245
 - K00042 - Mechanische Elemente - 9628
 - K00443 - Elektrische und elektronische Elemente - 717
 - K00779 - Fluidtechnik - 2/94
 - PART - Einzelteile (3D) - 4/25
 - RND_001 - Rundteile - 1/30
 - FLAT_001 - Flachteile - 2/2**
 - FLAT_002 - Flachteile, rechteckig - 4/2
 - FLAT_003 - Flachteile, rechteckig gerundet - 3/3
 - FLAT_004 - Flachteile, L-förmig - 2/2
 - FLAT_005 - Flachteile, rechteckig, eine Seite schräg - 2
 - FLAT_006 - Flachteile, rechteckig, eine Ecke schräg - 12
 - FLAT_007 - Flachteile, achteckig - 4
 - FLAT_009 - Flachteile, rechteckige Grundform - 2/15
 - FLAT_010 - Flachteile, sonstige Formen - 164
 - FLAT_011 - Flachteile, trapezförmig - 0
 - FLAT_U01 - Flachteile, 2D - 0
 - BLCK_001 - Klotze - 66
 - BEND_001 - Biegeteile - 124
 - ABW_001 - Abwicklung für Biegeteile - 2/15
 - PROF_001 - Profiltteile - 3/35
 - UNDRPF_001 - Profiltteile, gebogen - 56
 - ABWPRF_001 - Abwicklung für gebogene Profiltteile - 3/5
 - SHELL_001 - Schalentelle - 34
 - CSHELL_001 - Zylinderschalenteile - 30
 - CONE_001 - Konusschalenteile - 2
 - SGMNT_001 - Bogen, Segment - 23
 - EXCENTR_001 - Exzenter - 9
 - OTHR_001 - Sonstige Teile - 1632
 - SPE_001 - Spezielle Teile - 12
 - SGMNT_U01 - Bogen, Segment, 2D - 0
 - ASSEMBLY - Baugruppen (3D) - 8/21
 - PLAN - Kalkulation/Arbeitsvorbereitung - 5402
 - FK - Finkaufsklassifizierung - 4/515
 - ADMIN - Admin - 2/20

ApplicationServer - eClass [ECLASS]

Vorschau

2D 3D ABW Doc CLS

*Cache: Flachteile (gefiltert)

Cache : simus Einzelteile (3D) Flachteile

Bewertung suchen

Key	Prozessstatus	Vorschaubild	Klasse	Lrot [mm]	Da max. [mm]	Di min. [mm]	Flachtellhöhe [mm]	Flachtelllänge [mm]	Flachtellbreite [mm]	Flachtellaußenkonturlänge [mm]	Merkmal suchen
1 024734_NEU	Produktiv		FLAT_009 PLAN_BUECH PLAN_FRAES PLAN_FRAES_VAR2 PLAN_COMPARE FM				25,00 - 30,00 mm	150,00 mm	80,00 mm	482,25	
2 024726	Produktiv		FLAT_009 PLAN_FRAES PLAN_FRAES_VAR2 PLAN_COMPARE FM				25,00 mm	150,00 mm	80,00 mm	490,83	
3 024728	Produktiv		FLAT_009 PLAN_FRAES PLAN_FRAES_VAR2 PLAN_COMPARE FM				28,00 mm	150,00 mm	80,00 mm	490,83	
4 024730	Produktiv		FLAT_009 PLAN_FRAES PLAN_FRAES_VAR2 PLAN_COMPARE FM				28,00 mm	150,00 mm	80,00 mm	465,08	
5 024732	Produktiv		FLAT_009 PLAN_FRAES PLAN_FRAES_VAR2 PLAN_COMPARE FM				28,00 mm	150,00 mm	80,00 mm	473,66	
6 024734	Produktiv		FLAT_009 PLAN_FRAES PLAN_FRAES_VAR2 PLAN_COMPARE FM				28,00 mm	150,00 mm	80,00 mm	482,25	

Merkmal suchen

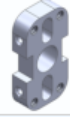
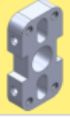
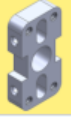
- (Alle auswählen)
- KEY - Key
- PREVIEW - Vorschau
- CLASSIFICATION - Klassifikation
- INTERN - Interne Merkmale
- PROCESS - Prozessinformationen
- LD - LxDxDi
- SML - Klassenmerkmale
- Formelemente
 - BOHRUNG - Formelement Bohru
 - NIUT - Formelement Nuten
 - DURCHBRUCH - Formelement D
- AP_CNT_ALL_MW - Ges
- APO_M02_MW - Anzahl I
- APO_M03_1_MW - Rand
- APO_M03_2_MW - Rand
- APO_M04_1_MW - Tellu
- APO_M04_2_MW - Tellu
- APO_M05_1_MW - Anzal
- APO_M05_2_MW - Anzal
- APT_M01_MW - Durchbr
- APT_M02_MW - Durchbr
- APT_M03_MW - Durchbr
- APT_M07_MW - Durchbr
- APT_M08_MW - Durchbr
- AUSKLINKUNG - Formelement A
- OBERFLAECHENGUETTE - Oberfl
- FORM_LAGE_TOLERANZEN - Fo
- PASSUNGEN_MASSTOLERANZ
- EK - Einkaufsklassifizierung
- PCF_GLOBAL - PCF Kalkulation/F
- GLOBAL - Globale Merkmale
- TXT_GEN - Textgenerierung
- TXT_GEN_GD - Textgenerierung
- DUPLICATES - Dublettenanalyse

Anzahl Elemente: 6 Zellen mit 34 Spalten (1 markierte Zelle(n), 1 markierte Spalte(n))

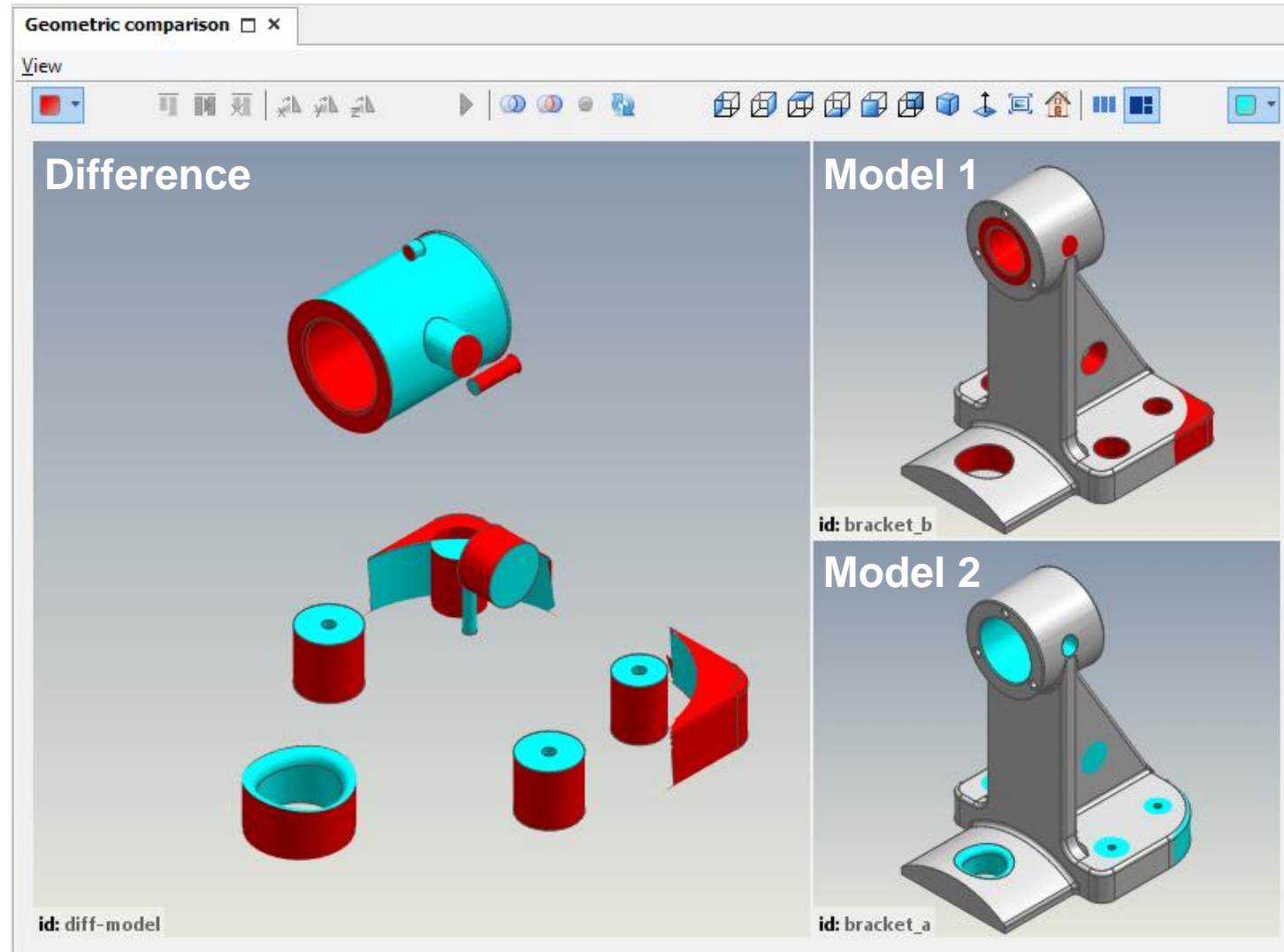
classmate FINDER – Text-Based Comparison

- Differences to the comparison data record are highlighted in color

*Cache: Flat parts (filtered) □ ×

#	Name	Valuation	Valuation	Valuation
1	ident	024730	024732	024734
...				
3	Preview			
4	Class identifier	FLAT_009	FLAT_009	FLAT_009
...				
8	Kopie von flat part width	465.08 mm	473.66 mm	482.25 mm
9	Flat part brutto volume	294085.53 mm ³	299495.90 mm ³	303704.63 mm ³
...				
11	Total cutting length	1028.76 mm	1037.34 mm	1045.92 mm
12	Material description	Demoplatte-g2	Demoplatte-g3	Demoplatte-g4

classmate FINDER – Geometric Comparison



classmate FINDER – Duplicate Identification

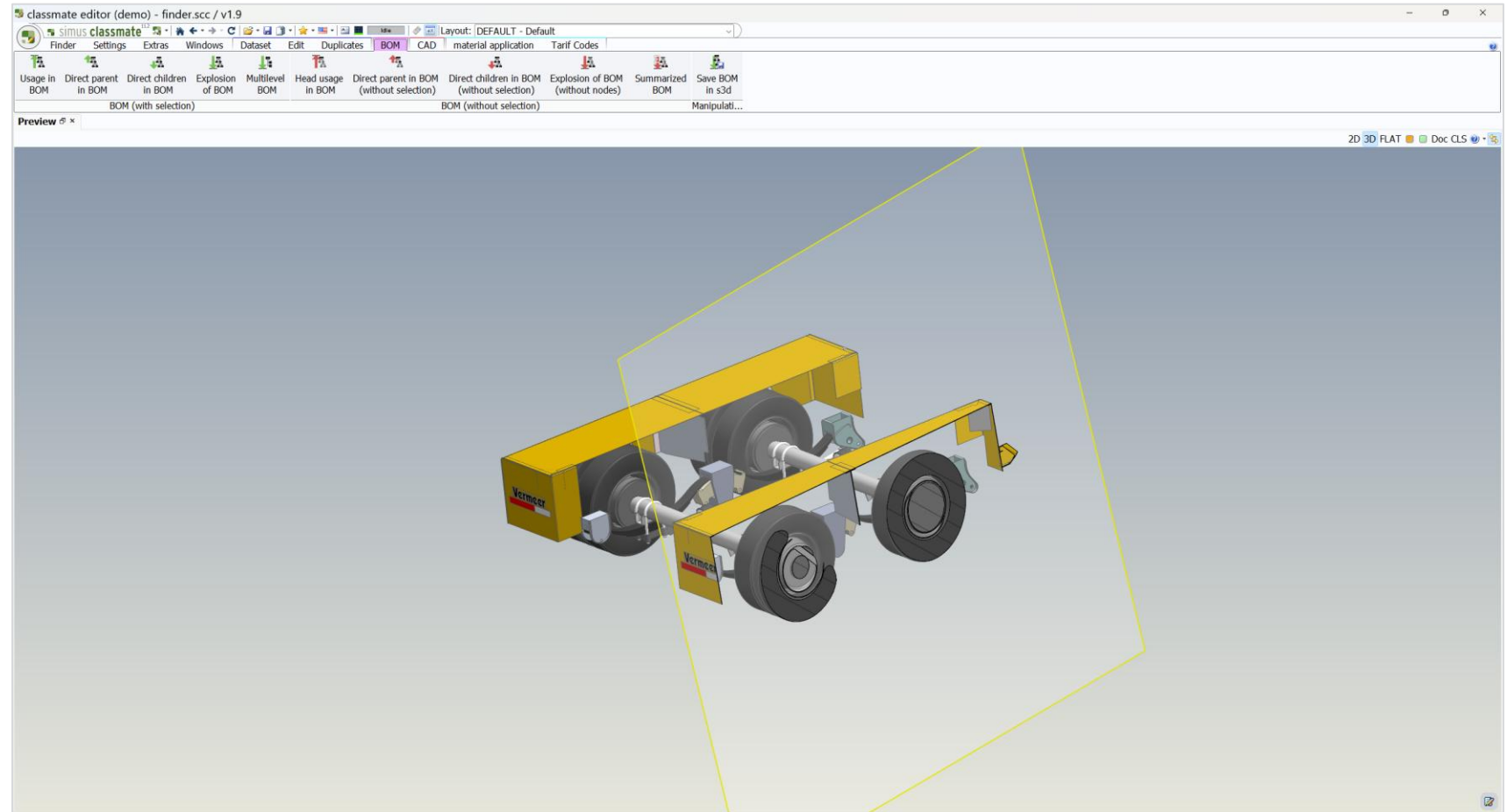
Cache : simus ▶ Parts (3D) ▶ Round parts ▶

Search for valuation Display type: Display geometrically identical groups

ident	Process status	Preview	Class identifier	Total length [mm]	Total width [mm]	Total height [mm]	Rotational length [mm]	Outer diameter max. [mm]	Inner diameter min. [mm]	Qty. of s
331 PP-011218	Productiv		RND_005 PLAN_DREH PLAN_DREH_VAR2 PLAN_COMPARE DK	102.50 mm	22.00 mm	22.00 mm	102.50 mm	22.00 mm		
332 PP-011164	Productiv		RND_005 PLAN_DREH PLAN_DREH_VAR2 PLAN_COMPARE DK	102.50 mm	22.00 mm	22.00 mm	102.50 mm	22.00 mm		
333 IV0010361	Productiv		RND_004 PLAN_DREH PLAN_DREH_VAR2 PLAN_COMPARE DK	168.91 mm	24.51 mm	24.51 mm	168.91 mm	24.51 mm		
334 IV0010360	Productiv		RND_004 PLAN_DREH PLAN_DREH_VAR2 PLAN_COMPARE DK	168.91 mm	24.51 mm	24.51 mm	168.91 mm	24.51 mm		
335 016103	Productiv		RND_005 PLAN_DREH PLAN_DREH_VAR2 PLAN_COMPARE DF	107.00 mm	20.00 mm	20.00 mm	107.00 mm	20.00 mm		
336 016267	Productiv		RND_005 PLAN_DREH PLAN_DREH_VAR2 PLAN_COMPARE DF	107.00 mm	20.00 mm	20.00 mm	107.00 mm	20.00 mm		
337 020463	Productiv		RND_008 PLAN_DREH PLAN_DREH_VAR2 PLAN_COMPARE DF	63.50 mm	19.05 mm	19.05 mm	63.50 mm	19.05 mm	7.87 mm	
338 020385	Productiv		RND_008 PLAN_DREH PLAN_DREH_VAR2 PLAN_COMPARE DF	63.50 mm	19.05 mm	19.05 mm	63.50 mm	19.05 mm	7.87 mm	
339 IV_EMBE...	Productiv		RND_005 PLAN_DREH DF	11.65 mm	6.34 mm	6.34 mm	11.65 mm	6.34 mm		

classmate FINDER – Integrated Viewer

- Setting a sectional plane
- View the model tree / BOM structure
- Hide elements
- Measuring dimensions
- ...



Partial Matching (1)

- Geometric features of individual models can be searched for in other models (individual parts and assemblies) using the partial matching

The screenshot displays the Simus software interface. On the left, a 'Class tree' shows a hierarchy of models, including 'SIMUS - simus - 12242'. Below it, a 'Preview' window shows a 3D model of a circular component with a vertical slot. The main area is a 'Cache: simus (filtered)' window containing a table with 15 columns: 'ident', 'Process status', 'Preview', 'Class identifier', 'Total length [mm]', 'Total width [mm]', 'Total height [mm]', 'Rotational length [mm]', 'Outer diameter max. [mm]', 'Inner diameter min. [mm]', and 'Material'. A context menu is open over the table, with 'Partial matching on geometry' selected. The menu also includes options like 'Similarity search', 'Open dataset in classmate easyfinder', and 'Export process report'. At the bottom, a status bar indicates 'Element count: 74 rows with 15 columns (1 row(s) and 15 column(s) selected)'.











ident	Process status	Preview	Class identifier	Total length [mm]	Total width [mm]	Total height [mm]	Rotational length [mm]	Outer diameter max. [mm]	Inner diameter min. [mm]	Material
IV0010678	Productiv		OTHERASSEMBLY PLAN_ASM	200.00 mm	40.00 mm	30.00 mm				Lever C
IV0010679	Productiv		OTHERASSEMBLY PLAN_FRAES PLAN_ASM	200.00 mm	40.00 mm	30.00 mm				Lever C
			OTHERASSEMBLY PLAN_ASM	200.00 mm	40.00 mm	30.00 mm				Lever C
							49 mm	34.98 mm		Turnbu
							49 mm	34.98 mm		Turnbu
			OTHERASSEMBLY PLAN_ASM	2182.67 mm	1624.79 mm	477.00 mm				Vortex
			RNDASSEMBLY PLAN_ASM	1607.00 mm	1420.00 mm	354.00 mm	354.00 mm	1420.00 mm	1288.00 mm	Vortex
			RNDASSEMBLY PLAN_FRAES PLAN_ASM	1607.00 mm	1420.00 mm	354.00 mm	354.00 mm	1420.00 mm	1288.00 mm	Vortex
			CHELL_001 SMPASSEMBLY PLAN_BLECH BR	1300.00 mm	1300.00 mm	340.00 mm				Vortex

Partial Matching (2)

Cache: simus (filtered) Cache: simus

Cache : simus

Search for valuation

Rating [de]	Matched Parts	ident	Process status	Preview	Class identifier	Total length [mm]	Total width [mm]	Total height [mm]	Rotational length [mm]	Outer diameter max. [mm]
0 ★★★★★		IV0010679	Productiv		OTHERASSEM PLAN_FRAES PLAN_ASM	200.00 mm	40.00 mm	30.00 mm		
1 ★★★★★		IV0010678	Productiv		OTHERASSEM PLAN_ASM	200.00 mm	40.00 mm	30.00 mm		
2 ★★★★★		IV0010680	Productiv		OTHERASSEM PLAN_ASM	200.00 mm	40.00 mm	30.00 mm		
3 ★★★★★		IV0010008	Productiv		OTHR_004 PLAN_FRAES PLAN_FRAES_VAR2 PLAN_COMPARE FM	70.00 mm	40.00 mm	30.00 mm		
4 ★★★★★		IV0010683	Productiv		OTHERASSEM PLAN_ASM	2182.67 mm	1624.79 mm	477.00 mm		

Preview

2D 3D FLAT Doc CLS

Selected faces: 3

Element count: 4 rows with 17 columns (1 row(s) and 17 column(s) selected)

classmate modelmonitor

The screenshot shows the SolidWorks CAD environment with a 3D model of a mechanical part. The classmate easyFINDER interface is open, displaying a list of similar parts and manufacturing costs. A toast notification is overlaid on the interface, showing the results of a calculation. The toast includes the text 'New calculation results', '9 similar parts found', and '38.08 € manufacturing...'. Below this text are five small 3D models of the part, each with a star rating. A red circle highlights a magnifying glass icon over one of the models. The background interface shows a table of similar parts with columns for 'min]' and 'Time [min]', and a 'Cost [EUR]' column. The table includes rows for 'Hole milling', 'Form milling', 'Programming', 'Additions', and 'Calculation full costs'.

	min]	Time [min]	Cost [EUR]
Hole milling		3-axis milling n	
Form milling		3-axis milling n	
Programming			
Additions			
Calculation full costs			

- Display of the number of similar models and manufacturing costs in the information window (toast)
- Complete presentation of results can be accessed with one click in easyFINDER

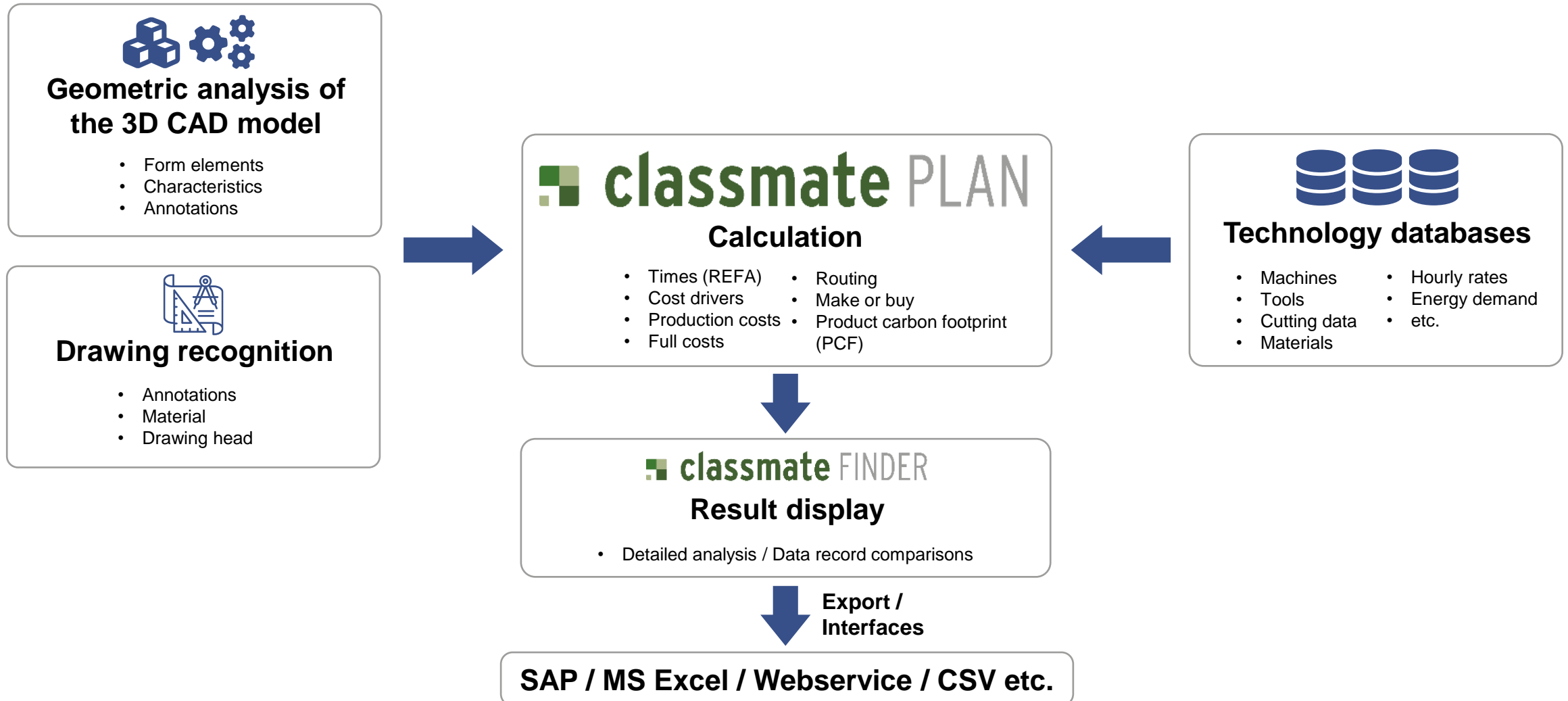
 classmate PLAN

Preliminary Calculation, Emissions and Routings

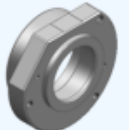
Design Stage Costing

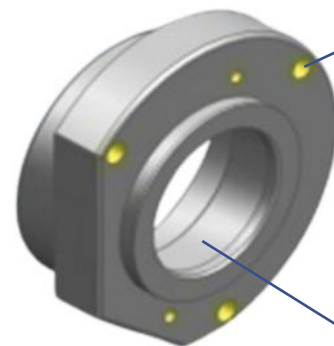


Architecture classmate PLAN


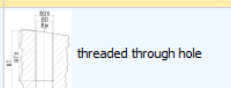
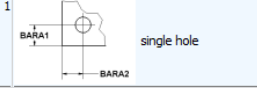
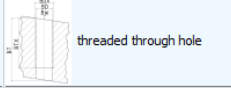


Geometric Analysis

Name	Valuation
Key	TURN2
Preview	
Class	RND_010 PLAN_DREH PLAN_DREH_VAR2 PLAN_COMPARE REFERENZ
Description (CAD)	Flansch
Material (CAD)	Rd EN 10278-EN 10088-3-X10CrNiS18-9 (1.4305)+C700
Material ID	00006052
Material description	Material number: 1.4305 description: X8CrNiS18 price per kilo: 4.33 density: 7.9
Dimensions flattened [mm]	
Dimensions [mm]	62x22
Total length [mm]	62.00 mm
Total width [mm]	54.70 mm
Total height [mm]	22.00 mm
Rotational length [mm]	22.00 mm
Outer diameter max. [mm]	62.00 mm
Inner diameter min. [mm]	28.00 mm



Main characteristics (excerpt)

Quantity	Hole alignment	Hole form	Diameter	Depth	Thread
Qty. of holes	Hole alignment	Hole form	Hole diameter [mm]	Hole depth [mm]	Thread information (cleaned)
2	 linear alignment BARA1 BARA2 BARA3 BARA4 BARA5 BARA6 BARA7 BARA8 BARA9 BARA10	 threaded through hole	4,20 mm	10,00 mm	M5
1	 single hole BARA1 BARA2	 threaded through hole	4,20 mm	10,00 mm	M5

Example: form element drilling including dimensions

Di min	Shape	Quantity	Diameter	Length
Inner diameter min. [mm]	Inner shape	Qty. of inner shoulders	Inner shoulder diameter [mm]	Inner shoulder length [mm]
28,00 mm	 one-sided ascending	3	28,00 mm 32,00 mm 44,00 mm	2,50 mm 10,50 mm 9,00 mm

Example: form element internal shape including dimensions

Example of Technology Database (Excerpt)

Milling machine (excerpt)

Name	Bewertung
Object	M5B
Ref operation	FRAES_CNC
Hourly Rate [EUR/h] full costs	95
Type	CNC 5-axis
Power max. whole machine [kW]	45
Power to power level [kW]	22,5
	31,5
	27
	9
	2,25
tr basic [min]	15
tr basic to clamping [min]	2
tr/ clamping device [min]	4
tr/tool flat [min]	1
processing time limit for additional factor on set...	10
	30
	60
additional setup time based on factor on te until processing time limit [min](<=)	0,5
	0,35
	0,2
Additional factor on setup time from te via max...	0,1
factor allowances	0,11
traversing time / object [min]	0,033
	0,044
Lmin (>=) for traversing time [mm]	0
	500
Lmax (<) for traversing time [mm]	500
tool changing time [min]	0,15




End mill (excerpt)

Object	Milling tool diameter [...]	No. of te...	Immersion depth ma...
F04XL		4	4
F05XL		5	4
F80		80	8
F63		63	8
F50		50	7
F40		40	6
F32		32	5
F25		25	4
F20XL		20	4
F20L		20	4
F20		20	4

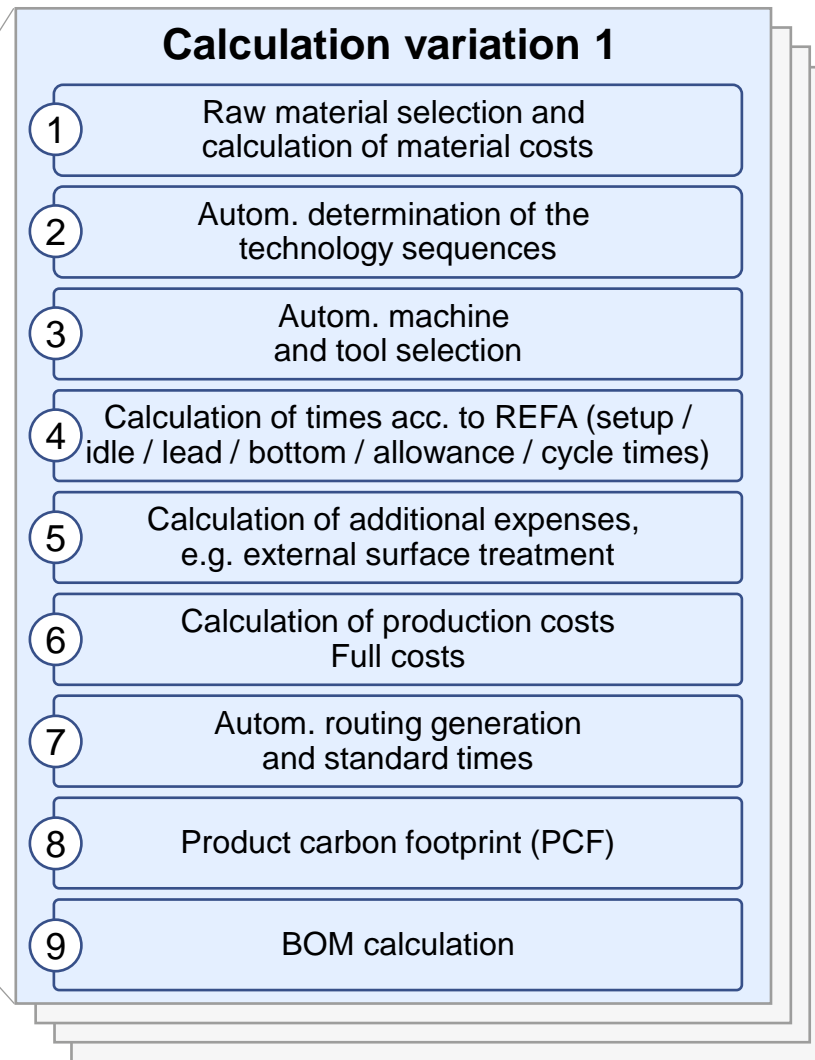
Disk milling cutter (excerpt)

Object	Milling tool diameter [...]	Cutting width [m...	Cutting depth
SF1	100		1
SF1.6	125		1,6
SF2	160		2
SF2.5	160		2,5
SF3	200		3
SF3.5	50		3,5
SF4	50		4
SF4.5	63		4,5
SF5	50		5
SF6	50		6
SF8	50		8

Calculation Process with classmate PLAN


Calculation

- Times (REFA)
- Cost drivers
- Production costs
- Full costs
- Routing
- Make or buy
- Product carbon footprint (PCF)

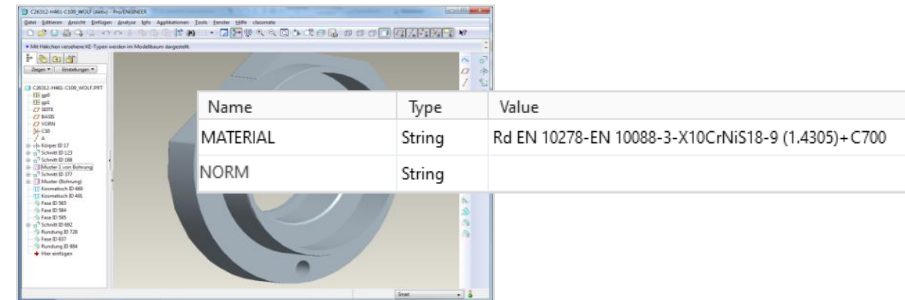


Step 1: Raw Material and Material Costs – e.g. Turned / Milled Part

Material group

- Material group (Steel, Alu, ...) of the CAD file properties is required at least to make the cutting values selectable.
- Calculation of material costs are based on prices per kilogram.
- Cutting volume is based on the bounding cube and bounding cylinder respectively, if necessary with surcharges.

Semi-finished parts

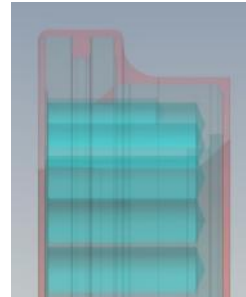
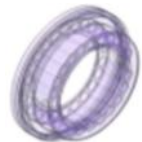


- Raw material costs from ERP
- Raw material dimensions from ERP

Forging blank



Finished part

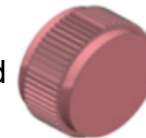


Differential volume

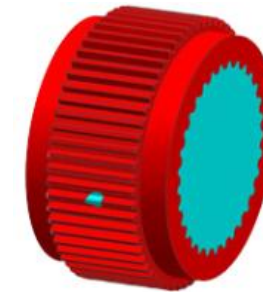
- Raw material costs from ERP
- Exact calculation of the cutting volume

Castings / Forgings, Blanks

Semi-finished part



Finished part



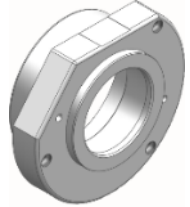
Differential volume

- Costs for semi-finished part from ERP
- Exact calculation of the removal volume

Rework / Semi-finished parts

Step 2 & 3: Technology Sequence, Machine and Tool Selection

3D model + material



1 Geometry objects

Status	Status as image
1	SAEGEN-0
2	ZWISCHENGRATEN-0
3	PLANDREHEN-0
4	PLANDREHEN-1
7	ABSATZ_AUSSEN-2
8	VORBOHREN_ZENTR-0
9	ABSATZ_INNEN-0
10	ABSATZ_INNEN-2
11	TASCHE-0
12	ZW_EBENE-0

OUTER_SHOULDER-0

4 Possible processing methods and machines

Status	Status as image
1	SAEGEN-0:saegen@SAW
2	ZWISCHENGRATEN-0:zwischengraten@IDE
3	PLANDREHEN-0:plandrehen_schrupp@TSC TBC TM TMB+plandr
4	PLANDREHEN-1:plandrehen_schrupp@TSC TBC TM TMB+plandr
7	ABSATZ_AUSSEN-2:langdrehen_schrupp@TSC TBC TM TMB+lan
8	VORBOHREN_ZENTR-0:bohrungdrehen_zentr@TSC TBC TM TMB#
9	ABSATZ_INNEN-0:langdrehen_schrupp@TSC TBC TM TMB+lang
10	ABSATZ_INNEN-1:langdrehen_schrupp@TSC TBC TM TMB+lang
11	ABSATZ_INNEN-2:langdrehen_schrupp@TSC TBC TM TMB+lang
12	TASCHE-0:schruppfraesen@M3S M3M M3B M5S M5M M5B TM TM

OUTER_SHOULDER-0: external straight turning@TSC | TBC | TM | TMB

6 Selected technology sequence

Status	Status as image
1	SAEGEN-0:saegen@SAW
2	ZWISCHENGRATEN-0:zwischengraten@IDE
3	PLANDREHEN-0:plandrehen_schrupp@TM
4	PLANDREHEN-0:plandrehen_schlicht@TM
8	ABSATZ_AUSSEN-0:langdrehen_schlicht@TM
9	ABSATZ_AUSSEN-1:langdrehen_schrupp@TM
10	ABSATZ_AUSSEN-1:langdrehen_schlicht@TM
11	ABSATZ_AUSSEN-2:langdrehen_schrupp@TM
12	ABSATZ_AUSSEN-2:langdrehen_schlicht@TM

OUTER_SHOULDER-0: external straight turning@TM

Technology database

Object	Basic processing techniques	Name	Lmax (<=) [mm]	Wmax (<=) [mm]
TM	General turning (all)	Mill-turning machine	500	500
	Bores with driven tools (all)			
	Eccentric turning (all)			
	Rolling			
	General milling (all)			
	Circular milling (all)			
Disk milling				
TBC_HQ	General turning (all)	CNC Turning Machine	1000	950
	Axial and radial bores (all)			

3 Information of the 3D model

Dimensions [mm]	20x24
Outer diameter max. [mm]	20.00 mm
Material description	
Rotational length [mm]	24.00 mm

5 Automatic selection process according to customer specifications

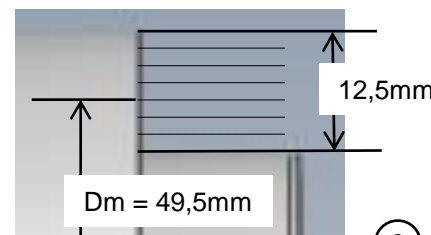
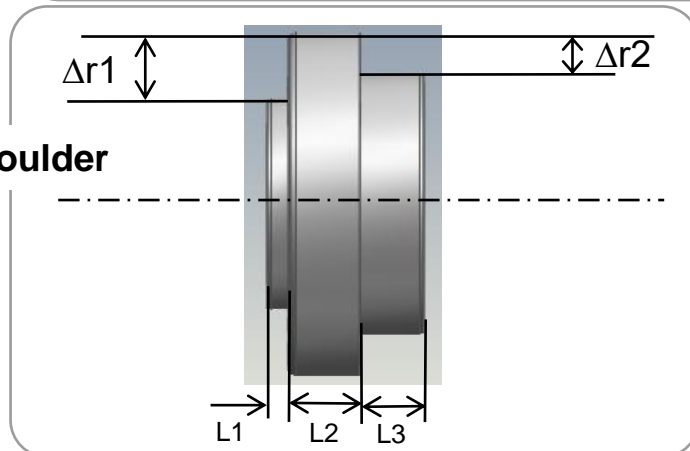


Step 4: Main Time Determination – e.g. External Straight Turning (Roughing)

Technology database

Cutting values Plain turning outside	Turning tool	Material group	Turning rough	Turning finish	Turning precision	Cutting speed rough turning	Cutting speed finish turning	Cutting speed precision turning	Feed rate rough turning	Feed rate finish turning	Feed rate precision turning	
	Object	REF turning tool	Ref...	turni...	turni...	turni...	cutting spe...	cutting spe...	cutting sp...	feed ra...	feed r...	feed r...
	00012275	Outer slow	VA	① 2	0.5	0.2	② 150000	240000	240000	0.15	0.08	③ 0.05
	00012291	Outer medium	VA	3	0.5	0.2	170000	240000	240000	0.25	0.08	0.05
	00001772	Outer fast	VA	4	0.4	0.1	175000	240000	290000	0.45	0.2	0.1
	00009210	Outer slow	Ti	2	0.5	0.2	75000	120000	120000	0.075	0.04	0.025
	00009214	Outer medium	Ti	3	0.5	0.2	100000	120000	120000	0.125	0.04	0.025
	00009206	Outer fast	Ti	4	0.4	0.1	87500	120000	145000	0.225	0.1	0.05

Total feed per shoulder



Number of feeds:
 $\Delta r2 / \text{feed roughing}$
 → next integer
 → 5 feeds

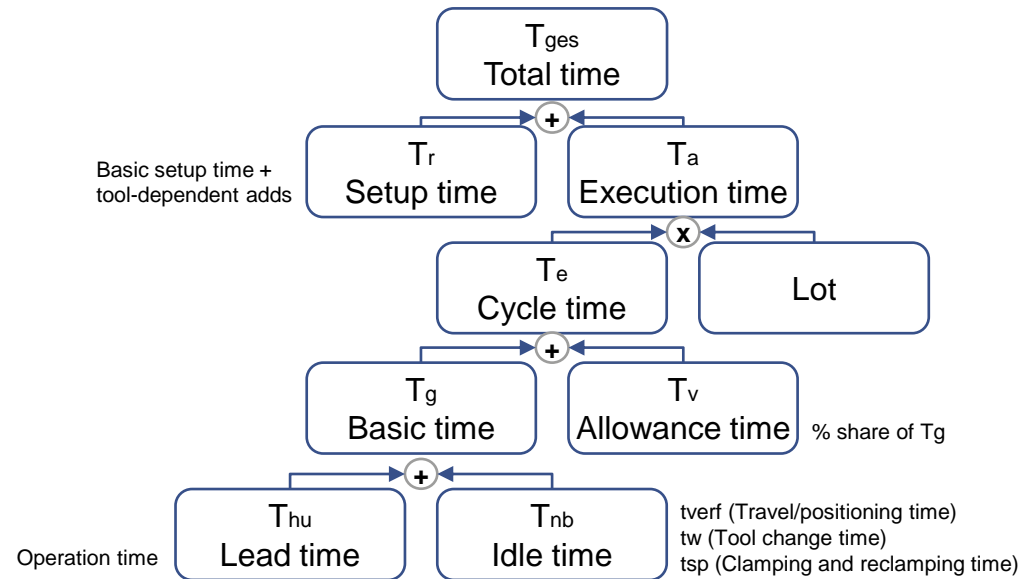
①

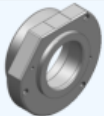
Rpm = Cutting speed roughing / (Dm * PI) = 1093 U/min

Cutting time roughing = 5 * L3 / (rpm * feed rate roughing) ③

= 5 * 9mm / (1093 U/min * 0.25 mm/U) = 0.164min

Step 4: Process Time Calculation acc. to REFA

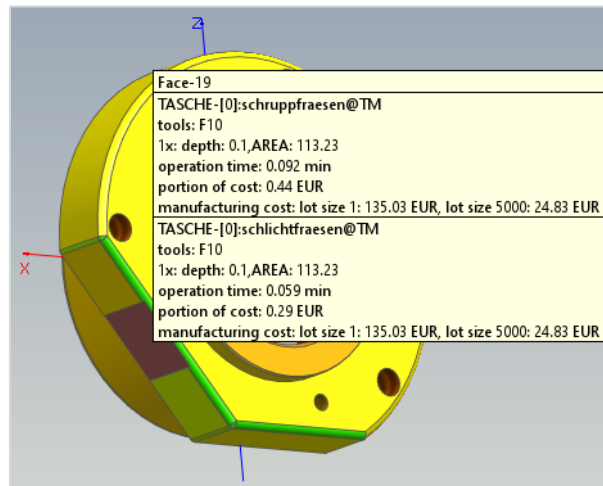


Calculation variation 1	Preview	Machines	Setup time		Lead time		Idle time		Basic time		Allowance time		Cycle time		Setup time (sum)		Cycle time (sum)		
			T_r [min]	t_{hu} [min]	T_{nb} [min]	T_g [min]	t_v [min]	T_e [min]	Setup time total [min]	Total production time per unit [min]									
		Saw	5.000	1.291	0.000	1.291	0.142	1.433											
		Interim deburring	0.000	0.150	0.000	0.150	0.017	0.167											
		Mill-turning machine	44.080	3.632	6.352	9.984	1.098	11.083											
		Cylindrical grinding machine	30.000	1.852	0.000	1.852	0.204	2.056											
		Deburring (manual)	1.000	0.600	0.000	0.600	0.066	0.666											
													80.08						15.41

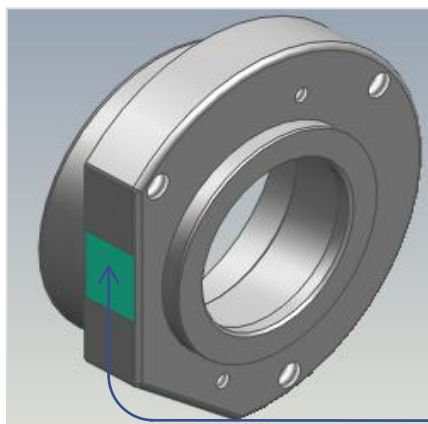
Calculation variations X

Step 4: Detailed Direct Costs

Cost driver



Geometric reference



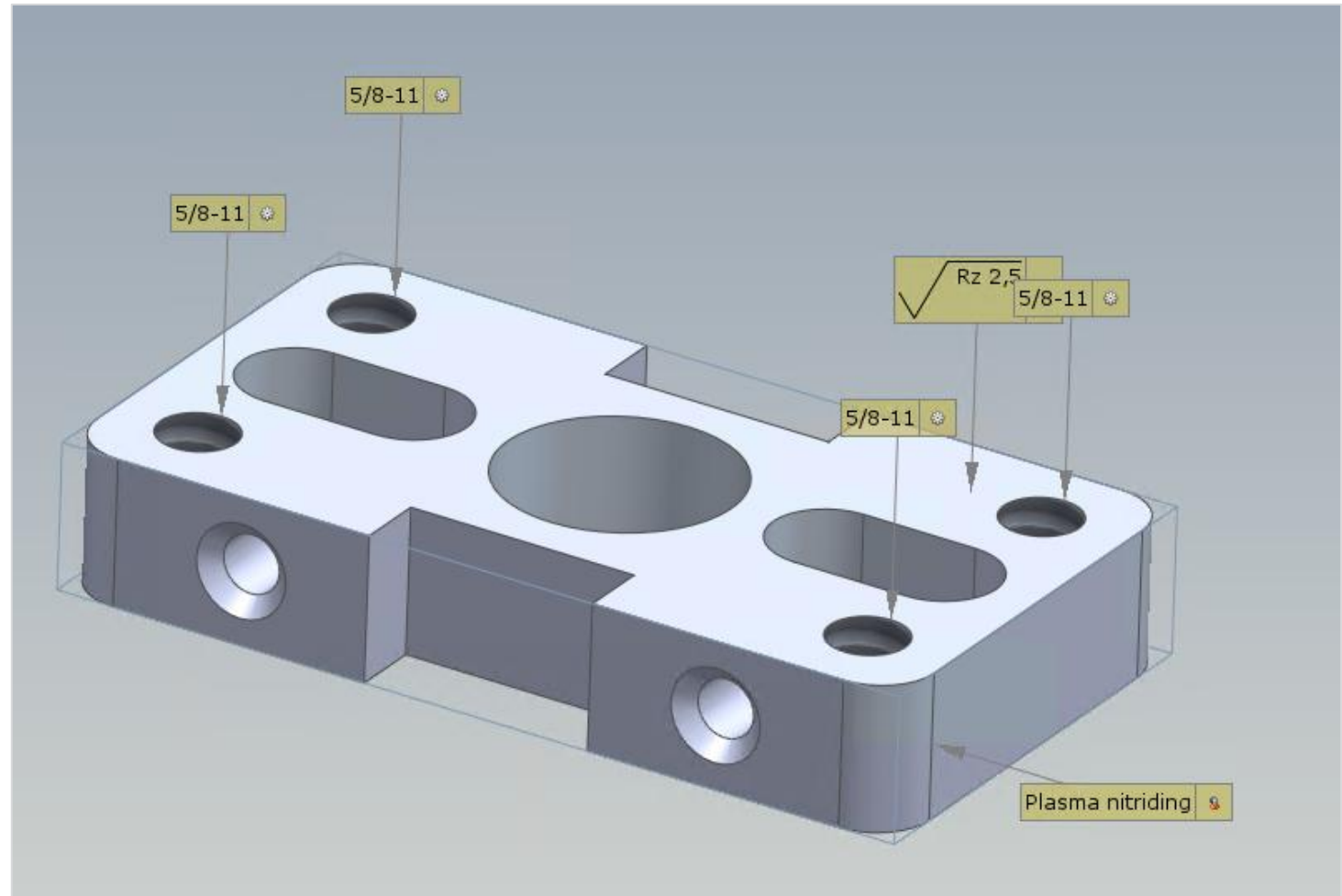
Lead time

Share of cost

Machining objects	Info	Non-influencable activity time f. object	Share of cost for machining object
SAEGEN-[0]:saegen@SAW	1x: diameter: 65.0	1.291	0.717
ZWISCHENGRATEN-[0]:zwischengraten@IDE	1x: deburring after sawing	0.150	0.083
PLANDREHEN-[0]:plandrehen_schrupp@TM	1x: diameter: 62.0, DISTANCE: 17.0 +[5.0+0.62+5.0]	0.091	0.525
PLANDREHEN-[0]:plandrehen_schlicht@TM	1x: diameter: 62.0, DISTANCE: 17.0 +[5.0+0.62+5.0]	0.125	0.635
PLANDREHEN-[1]:plandrehen_schrupp@TM	1x: diameter: 62.0, DISTANCE: 17.0 +[5.0+0.62+5.0]	0.091	0.525
PLANDREHEN-[1]:plandrehen_schlicht@TM	1x: diameter: 62.0, DISTANCE: 17.0 +[5.0+0.62+5.0]	0.125	0.635
ABSATZ_AUSSEN-[0]:langdrehen_schrupp@TM	1x: diameter: 38.0, length: 5.0, raw material diameter: 65.0, fit h7	0.193	0.778
ABSATZ_AUSSEN-[0]:langdrehen_schlicht@TM	1x: diameter: 38.0, length: 5.0, raw material diameter: 65.0, fit h7	0.037	0.260
ABSATZ_AUSSEN-[1]:langdrehen_schrupp@TM	1x: diameter: 62.0, length: 10.0, raw material diameter: 65.0	0.055	0.321
ABSATZ_AUSSEN-[1]:langdrehen_schlicht@TM	1x: diameter: 62.0, length: 10.0, raw material diameter: 65.0	0.113	0.512
ABSATZ_AUSSEN-[2]:langdrehen_schrupp@TM	1x: diameter: 47.0, length: 11.0, raw material diameter: 65.0, fit h7	0.162	0.759
ABSATZ_AUSSEN-[2]:langdrehen_schlicht@TM	1x: diameter: 47.0, length: 11.0, raw material diameter: 65.0, fit h7	0.095	0.537
VORBOHREN_ZENTR-[0]:bohrungdrehen_zentr@TM	1x: diameter: 27.0,length: 26.0,raw material inner diameter: 0.0	0.485	1.830
ABSATZ_INNEN-[0]:langdrehen_schrupp@TM	1x: diameter: 28.0,length: 4.5,raw material inner diameter: 0.0,predilled inner diameter: 27.0,dimensional tolerance 0.1/-0.1	0.013	0.263
ABSATZ_INNEN-[0]:langdrehen_schlicht@TM	1x: diameter: 28.0,length: 4.5,raw material inner diameter: 0.0,predilled inner diameter: 27.0,dimensional tolerance 0.1/-0.1	0.019	0.285
ABSATZ_INNEN-[1]:langdrehen_schrupp@TM	1x: diameter: 32.0,length: 10.5,raw material inner diameter: 0.0,predilled inner diameter: 27.0,fit H6	0.063	0.347
ABSATZ_INNEN-[1]:langdrehen_schlicht@TM	1x: diameter: 32.0,length: 10.5,raw material inner diameter: 0.0,predilled inner diameter: 27.0,fit H6	0.051	0.306
ABSATZ_INNEN-[2]:langdrehen_schrupp@TM	1x: diameter: 44.0,length: 11.0,raw material inner diameter: 0.0,predilled inner diameter: 27.0	0.159	0.666
ABSATZ_INNEN-[2]:langdrehen_schlicht@TM	1x: diameter: 44.0,length: 11.0,raw material inner diameter: 0.0, predilled inner diameter: 27.0	0.073	0.380
TASCHE-[0]:schrupfraesen@TM	1x: depth: 0.1,AREA: 113.23	0.092	0.444
TASCHE-[0]:schlichtfraesen@TM	1x: depth: 0.1,AREA: 113.23	0.059	0.291
ZW_EBENE-[0]:schrupfraesen@TM	1x: depth: 5.86,AREA: 214.31 (including subpockets 113.23 Face-19)	0.147	0.627

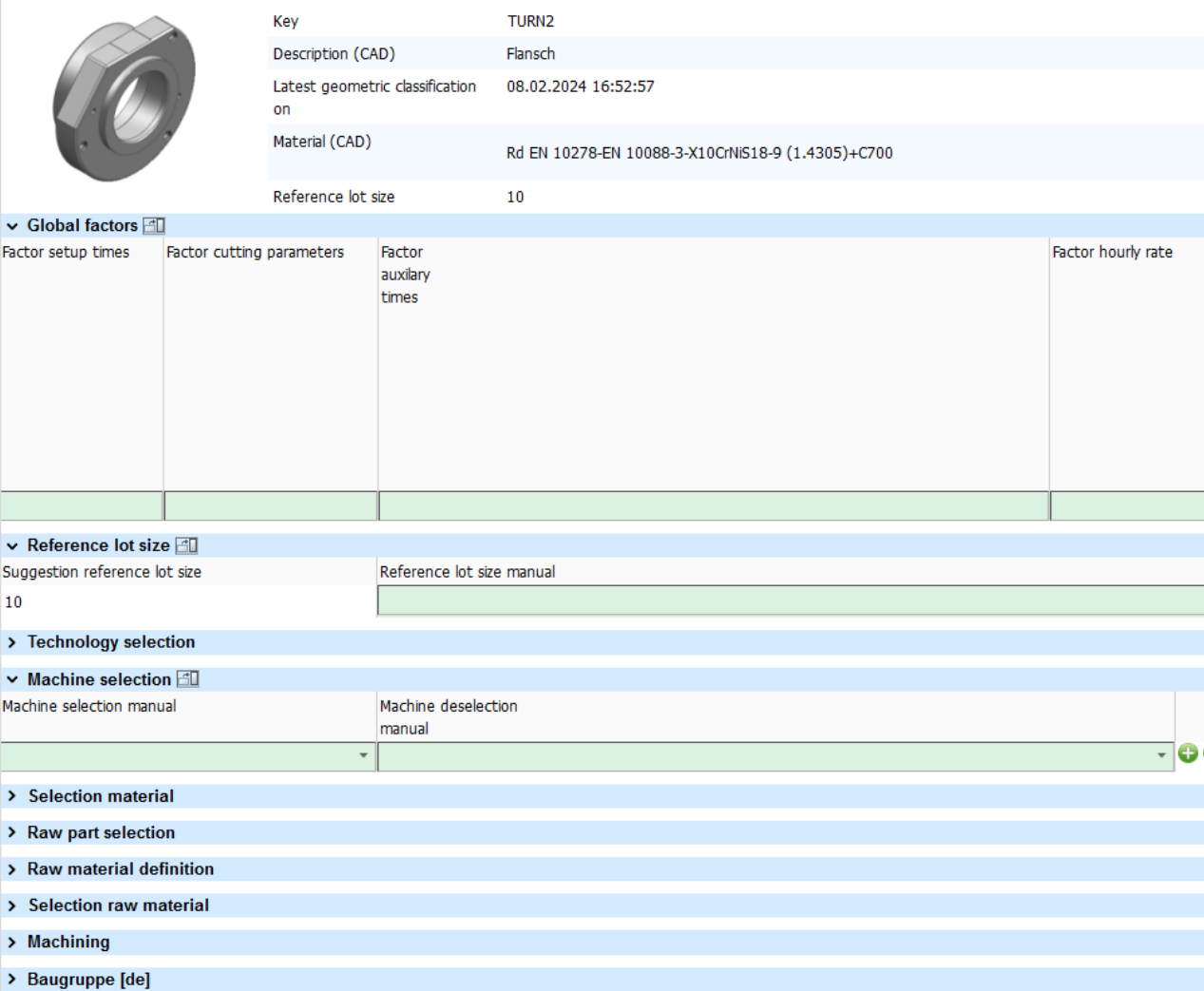
Step 5: Calculation of Additional Expenses / Influence

- Area-based or global influence
- Influencing factors can be individualized



Step 5: Calculation of Additional Expenses / Influence

- Global influence
- Influencing factors can be customized and expanded



Key: TURN2

Description (CAD): Flansch

Latest geometric classification on: 08.02.2024 16:52:57

Material (CAD): Rd EN 10278-EN 10088-3-X10CrNiS18-9 (1.4305)+C700

Reference lot size: 10

Global factors

Factor setup times	Factor cutting parameters	Factor auxiliary times	Factor hourly rate

Reference lot size

Suggestion reference lot size: 10

Reference lot size manual: [input field]

Technology selection

Machine selection

Machine selection manual: [dropdown]

Machine deselection manual: [dropdown]

Selection material

Raw part selection

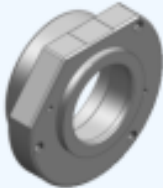
Raw material definition

Selection raw material

Machining

Baugruppe [de]

Step 6: Result of Production Costs Determination

Preview	Machines	Setup costs (total)	Cycle costs (total)	Setup costs / Machine	Cycle costs / Machine	Lot grading	Production costs
Preview	Machines	Setup time total [min]	Total production tim...	Set-up cost f. machine cost [...]	Cost per unit f. machine cost ...	Lot	Manufacturing cost...
	Saw	80.08	15.41	2.50	0.72	1	135.03
	Interim deburring			0.00	0.08	2	79.92
	Mill-turning mac...			73.47	18.47	5	46.85
	Cylindrical grindi...			30.00	2.06	10	35.83
	Deburring (man...			0.50	0.33	25	29.22
						50	27.01
						100	25.91
						500	25.03
						1000	24.92
						2000	24.86
					5000	24.83	

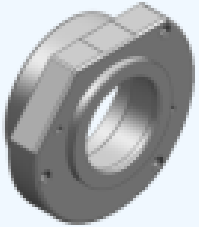
Step 6: Machine-Related Costs / Production Costs

Direct comparison of different calculation variations

Calculation variation 1

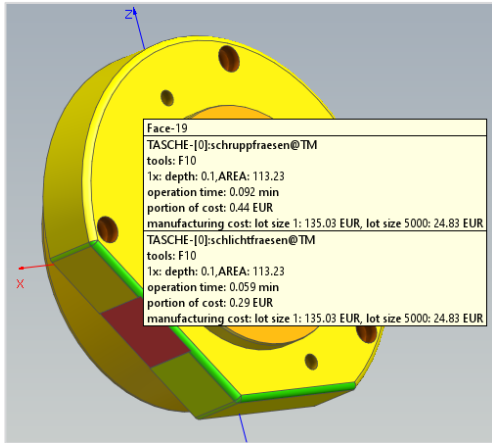
Preview	Machines	Setup time total [min]	Total production tim...	Set-up cost f. machine cost [...]	Cost per unit f. machine cost ...	Lot	Manufacturing cost...
	Saw	80.08	15.41	2.50	0.72	1	135.03
	Interim deburring			0.00	0.08	2	79.92
	Mill-turning mac...			73.47	18.47	5	46.85
	Cylindrical grindi...			30.00	2.06	10	35.83
	Deburring (man...			0.50	0.33	25	29.22
						50	27.01
						100	25.91
						500	25.03
						1000	24.92
						2000	24.86
						5000	24.83

Calculation variations X

Preview	Lot	Manufacturing cost...	Manufacturi...
	1	135.03	101.84
	2	79.92	62.26
	5	46.85	38.51
	10	35.83	30.60
	25	30.60	29.22
	50	25.85	27.01
	100	24.26	25.91
	500	23.47	25.03
	1000	22.84	24.92
	2000	22.76	24.86
	5000	22.72	24.83

Step 6: Detailed Analysis / Cost Driver

Cost driver



Change history

Name	Validation	Validation	Validation
Time [s]	08.02.2024 18:27:18	08.02.2024 18:27:03	08.02.2024 18:27:03
Change list [s]	27782	27277	27277
Modifier [s]	job anycustomer_mn_interaction_man	job anycustomer_mn_interaction_man	job anycustomer_mn_interaction_man
Key	TURNO2	TURNO2	TURNO2
Previous			
Object 3D	3DPartTurbo-TURNO2.3D	3DPartTurbo-TURNO2.3D	3DPartTurbo-TURNO2.3D
Class	RND_030	RND_030	RND_030
PLAN_DRHN	PLAN_DRHN_1482	PLAN_DRHN_1482	PLAN_DRHN_1482
PLAN_COMPARE12	PLAN_COMPARE12	PLAN_COMPARE12	PLAN_COMPARE12
SP	SP	SP	SP
REFERENZ	REFERENZ	REFERENZ	REFERENZ
Modification date	08.02.2024 18:27:18	08.02.2024 18:27:03	08.02.2024 17:35:39
Latest geometry classification on latest assembly calculation	08.02.2024 18:27:15	08.02.2024 18:27:01	08.02.2024 17:35:37
Latest assembly calculation	08.02.2024 18:27:18	08.02.2024 18:27:04	08.02.2024 17:35:42
Duration of rule calculation	7.4 s	11.8 s	5.5 s
3D validation messages	Face-34: spherical face direction [0.426, 0.0, 0.777] not equal to [1.0,0] Face-36: spherical face direction [0.426, 0.0, 0.777] not equal to [1.0,0] Model-0: found remanishing main axes for model "Model-1" "TURNO2" model = [0.0, -1.0, 0.0](-0.777, 0.0, 0.426)[0.426, 0.0, -0.777]; computed = [0.0, -1.0, 0.0][0.0, 0.0, -1.0][1.0, 0.0, 0.0] Dimension-31: <dim-ref> refers to non-existent feature "U1" Dimension-32: <dim-ref> refers to non-existent feature "U1"	Face-34: spherical face direction [0.426, 0.0, 0.777] not equal to [1.0,0] Face-36: spherical face direction [0.426, 0.0, 0.777] not equal to [1.0,0] Model-0: found remanishing main axes for model "Model-1" "TURNO2" model = [0.0, -1.0, 0.0](-0.777, 0.0, 0.426)[0.426, 0.0, -0.777]; computed = [0.0, -1.0, 0.0][0.0, 0.0, -1.0][1.0, 0.0, 0.0] Dimension-31: <dim-ref> refers to non-existent feature "U1" Dimension-32: <dim-ref> refers to non-existent feature "U1"	Face-34: spherical face direction [0.426, 0.0, 0.777] not equal to [1.0,0] Face-36: spherical face direction [0.426, 0.0, 0.777] not equal to [1.0,0] Model-0: found remanishing main axes for model "Model-1" "TURNO2" model = [0.0, -1.0, 0.0](-0.777, 0.0, 0.426)[0.426, 0.0, -0.777]; computed = [0.0, -1.0, 0.0][0.0, 0.0, -1.0][1.0, 0.0, 0.0] Dimension-31: <dim-ref> refers to non-existent feature "U1" Dimension-32: <dim-ref> refers to non-existent feature "U1"
PLAN key	Log created: 2024-02-08 18:27:05.760 2024-02-08 18:27:05.760 - PLAN_KONFIG2.read@Data_P... 2024-02-08 18:27:11.230 - PLAN_KONFIG2.read@Data_P... 2024-02-08 18:27:12.285 - use recognizeShaftShoulder: 0 2024-02-08 18:27:12.272 - use recognizeShaftShoulder: 0 2024-02-08 18:27:12.272 - use recognizeShaftShoulder: 1 2024-02-08 18:27:13.068 - empty - read@Data - empty	Log created: 2024-02-08 18:26:51.605 2024-02-08 18:26:51.598 - PLAN_KONFIG2.read@Data_P... 2024-02-08 18:26:51.003 - PLAN_KONFIG2.read@Data_P... 2024-02-08 18:26:50.968 - use recognizeShaftShoulder: 0 2024-02-08 18:26:54.657 - use recognizeShaftShoulder: 0 2024-02-08 18:26:54.660 - use recognizeShaftShoulder: 1 2024-02-08 18:27:02.027 - empty - read@Data - empty	Log created: 2024-02-08 17:35:37.875 2024-02-08 17:35:35.571 - PLAN_KONFIG2.read@Data_P... 2024-02-08 17:35:34.028 - PLAN_KONFIG2.read@Data_P... 2024-02-08 17:35:34.089 - use recognizeShaftShoulder: 0 2024-02-08 17:35:34.094 - use recognizeShaftShoulder: 0 2024-02-08 17:35:34.815 - use recognizeShaftShoulder: 1 2024-02-08 17:35:37.663 - empty - read@Data - empty
Description (CAD)	Flansch	Flansch	Flansch
Material (CAD)	Rd EN 10278 EN 10088-3-X 1.4305 H-C700	Rd EN 10278 EN 10088-3-X 1.4305 H-C700	Rd EN 10278 EN 10088-3-X 1.4305 H-C700
Material ID	00006052	00006052	00006052
Material description	dim="Name":Flansch; 1.4305 Beschreibung: 1.4305 H-C700 Abmessungen: 4.33 Dichte: 7.8 inn-Nominalnummer: 1.4305 description: 1.4305 H-C700 price per Mtr: 4.33 density: 7.8	dim="Name":Flansch; 1.4305 Beschreibung: 1.4305 H-C700 Abmessungen: 4.33 Dichte: 7.8 inn-Nominalnummer: 1.4305 description: 1.4305 H-C700 price per Mtr: 4.33 density: 7.8	dim="Name":Flansch; 1.4305 Beschreibung: 1.4305 H-C700 Abmessungen: 4.33 Dichte: 7.8 inn-Nominalnummer: 1.4305 description: 1.4305 H-C700 price per Mtr: 4.33 density: 7.8
Surface treatment			

Preview	Machining objects	Info	Non-influen...	Share of cost f...	Time slice t...	Tools
	SAEGEN-[0]:saegen@SAW	1x: diameter: 65.0	1.291	0.717	1.433	Sawing CSM on Saw
	ZWISCHENGRATEN-[0]:zwischengraten@IDE	1x: deburring after sawing	0.150	0.083	0.167	Interim deburring on Interim deburring
	PLANDREHEN-[0]:plandrehen_schrupp@TM	1x: diameter: 62.0, DISTANCE: 17.0 +[5.0+0.62+5.0]	0.091	0.525	0.315	Facing (roughing) TTFM on Mill turning machine
	PLANDREHEN-[0]:plandrehen_schlicht@TM	1x: diameter: 62.0, DISTANCE: 17.0 +[5.0+0.62+5.0]	0.125	0.635	0.381	Facing (finishing) TTFM on Mill turning machine
	PLANDREHEN-[1]:plandrehen_schrupp@TM	1x: diameter: 62.0, DISTANCE: 17.0 +[5.0+0.62+5.0]	0.091	0.525	0.315	Facing (roughing) TTFM on Mill turning machine
	PLANDREHEN-[1]:plandrehen_schlicht@TM	1x: diameter: 62.0, DISTANCE: 17.0 +[5.0+0.62+5.0]	0.125	0.635	0.381	Facing (finishing) TTFM on Mill turning machine
	ABSATZ_AUSSEN-[0]:langdrehen_schrupp@TM	1x: diameter: 38.0, length: 5.0, raw material diameter: 65.0, ft h7	0.193	0.778	0.467	Longitudinal turning (external; roughing) TTOM on Mill turning machine
	ABSATZ_AUSSEN-[0]:langdrehen_schlicht@TM	1x: diameter: 38.0, length: 5.0, raw material diameter: 65.0, ft h7	0.037	0.260	0.156	Longitudinal turning (external; finishing) TTOM on Mill turning machine
	ABSATZ_AUSSEN-[1]:langdrehen_schrupp@TM	1x: diameter: 62.0, length: 10.0, raw material diameter: 65.0	0.055	0.321	0.193	Longitudinal turning (external; roughing) TTOM on Mill turning machine
	ABSATZ_AUSSEN-[1]:langdrehen_schlicht@TM	1x: diameter: 62.0, length: 10.0, raw material diameter: 65.0	0.113	0.512	0.307	Longitudinal turning (external; finishing) TTOM on Mill turning machine
	ABSATZ_AUSSEN-[2]:langdrehen_schrupp@TM	1x: diameter: 47.0, length: 11.0, raw material diameter: 65.0, ft h7	0.162	0.759	0.455	Longitudinal turning (external; roughing) TTOM on Mill turning machine
	ABSATZ_AUSSEN-[2]:langdrehen_schlicht@TM	1x: diameter: 47.0, length: 11.0, raw material diameter: 65.0, ft h7	0.095	0.537	0.322	Longitudinal turning (external; finishing) TTOM on Mill turning machine
	VORBOHREN_ZENTR-[0]:bohrungdrehen_zentr@TM	1x: diameter: 27.0, length: 26.0, raw material inner diameter: 0.0	0.485	1.830	1.098	Turning drill hole D10xL27.0 on Mill-turning machine
	BOHR-[0, 1, 2]:bohrungdrehen_axial@TM	3x: diameter: 4.2, total depth: depth: 10.0 +safety distance: 2.0+Z: 2.94+14.94, THREAD: 5.0x0.8, AXIAL BORE HOLE	0.259	1.292	0.775	Drilling DSF 4.2 on Mill-turning machine Countersink drill 45.0 on Mill-turning machine
	BOHR-[0, 1, 2]:gewindedrehen_axial@TM	3x: diameter: 4.2, total depth: depth: 10.0 +safety distance: 2.0+Z: 2.94+14.94, THREAD: 5.0x0.8, AXIAL BORE HOLE	0.323	1.402	0.841	Thread drilling STSF 5.0x0.8 on Mill-turning machine
	BOHR-[3, 4]:bohrungdrehen_axial@TM	2x: diameter: 2.5, total depth: depth: 9.0 +safety distance: 2.0+Z: 0.0+11.0, THREAD: 3.0x0.5, AXIAL BORE HOLE	0.092	0.647	0.388	Drilling DSF 2.5 on Mill-turning machine Countersink drill 45.0 on Mill-turning machine

Detailed analysis

Machining objects

BOHR-[0, 1, 2]:bohrungdrehen_axial@TM	0.259
BOHR-[0, 1, 2]:gewindedrehen_axial@TM	0.323

Non-influen...

	0.259
	0.323

Info

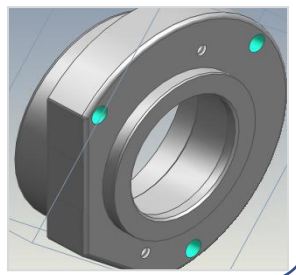
3x: diameter: 4.2, total depth: depth: 10.0 +safety distance: 2.0+Z: 2.94+14.94, THREAD: 5.0x0.8, AXIAL BORE HOLE
 3x: diameter: 4.2, total depth: depth: 10.0 +safety distance: 2.0+Z: 2.94+14.94, THREAD: 5.0x0.8, AXIAL BORE HOLE

Share of cost f...

	1.292
	1.402

Tools

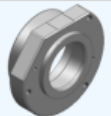
Drilling DSF 4.2 on Mill-turning machine
 Countersink drill 45.0 on Mill-turning machine
 Thread drilling STSF 5.0x0.8 on Mill-turning machine



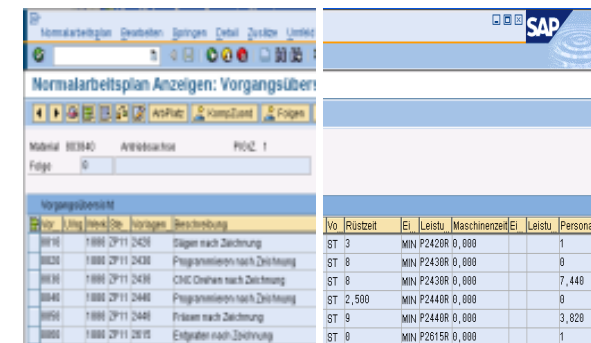
Geometric reference

Step 7: Routing Generation

Calculation variation 1

Preview	Operation number	Control key	Work center	Operation short text trans	Standard time tr	Standard time te	Standard time tp	Long text
	0010	PP01	SAW	Sawing raw-material on length: 26.0mm	5.000	1.430	0.140	TURN2: Sawing raw-material on length: 26.0mm
	0020	PP01	IDE	Interim deburring	0.000	0.170	0.020	1x: diameter: 65.0 TURN2: Interim deburring
	0030	PP01	TM	Programming machine: Mill-turning machine	75.000	0.000	0.000	TURN2: Programming machine: TM
	0040	PP01	TM	1. dp. Turning (CNC) Machining with driven tools 2. dp. Turning (CNC)	44.080	11.080	7.450	TURN2: 1. dp. Turning (CNC) 1x: diameter: 62.0, DISTANCE: 17.0 +[5.0+0.62+5.0] 1x: diameter: 38.0, length: 5.0, raw material diameter: 65.0, fit h7 1x: diameter: 62.0, length: 10.0, raw material diameter: 65.0 1x: diameter: 27.0,length: 26.0,raw material inner diameter: 0.0 1x: diameter: 28.0,length: 4.5,raw material inner diameter: 0.0,predilled inner diameter: 27.0,dimensional tolerance 0.1/-0.1
	0050	PP01	DEBM	Deburring	1.000	0.670	0.070	TURN2: Deburring 1x: number of remaining edges: 6
	0060	PP01	RG	Circular grinding	30.000	2.060	0.200	TURN2: Circular grinding 1x: AREA: 0.1 dm2,fit H6

ERP Export

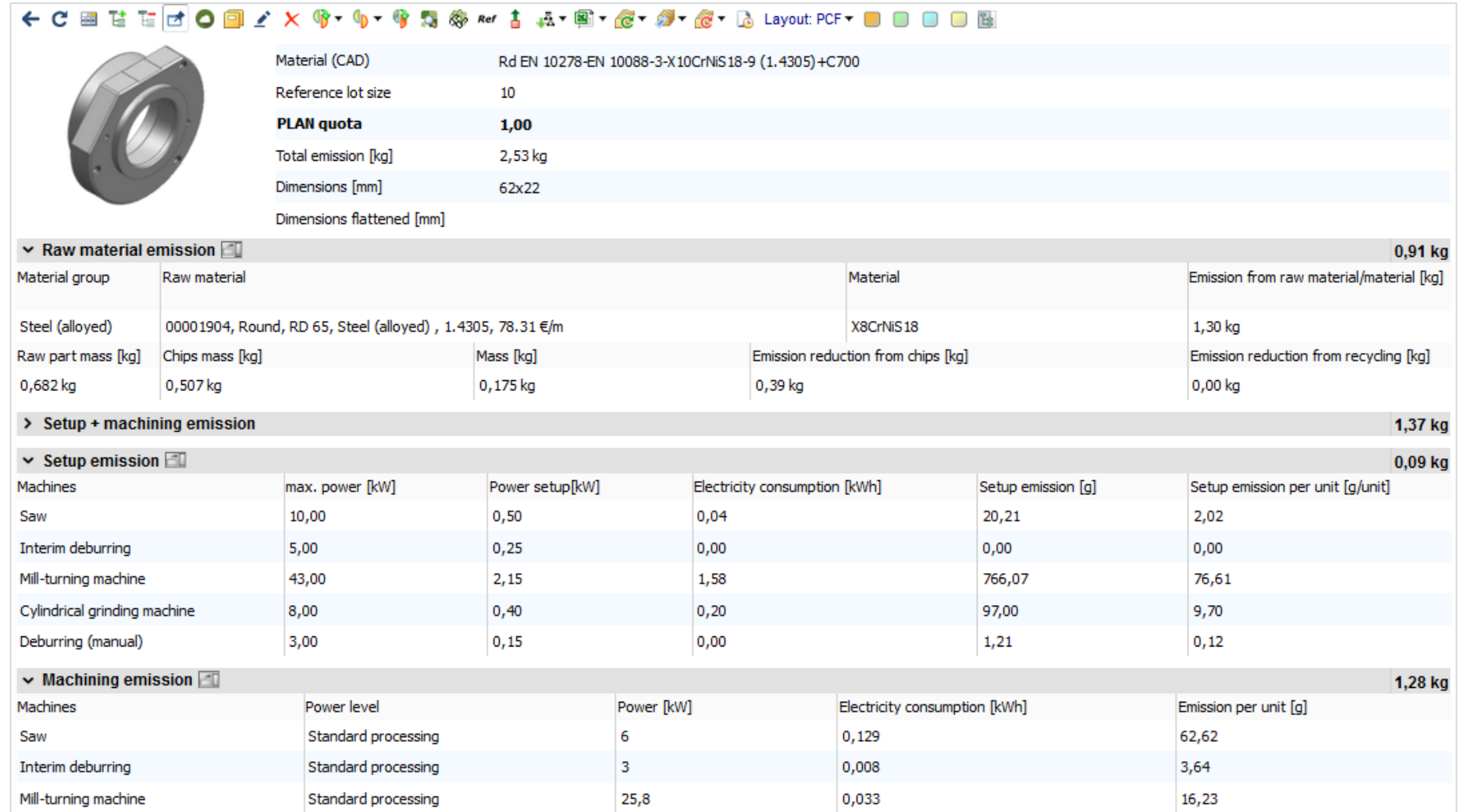


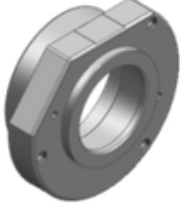
Stp	Menge	WZ	Bezeichnung	Vo	Rüstzeit	Ei	Leistu	Maschinenzeit	Ei	Leistu	Personal
0010	1.000	PP01	Sägen nach Zeichnung	ST	3	MIN	P2420R	0,000			1
0020	1.000	PP01	Programmieren nach Zeichnung	ST	8	MIN	P2430R	0,000			0
0030	1.000	PP01	CNC Drehen nach Zeichnung	ST	9	MIN	P2430R	0,000			7,440
0040	1.000	PP01	Programmieren nach Zeichnung	ST	2,500	MIN	P2440R	0,000			0
0050	1.000	PP01	Fräsen nach Zeichnung	ST	9	MIN	P2440R	0,000			3,820
0060	1.000	PP01	Endgabel nach Zeichnung	ST	0	MIN	P2615R	0,000			1

Calculation variations X

Step 8: Product Carbon Footprint (PCF)

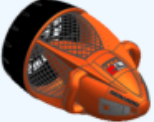
- Detailed determination of emissions
- Selection of the underlying electricity mix possible



	Material (CAD)	Rd EN 10278-EN 10088-3-X10CrNiS18-9 (1.4305)+C700			
	Reference lot size	10			
	PLAN quota	1,00			
	Total emission [kg]	2,53 kg			
	Dimensions [mm]	62x22			
	Dimensions flattened [mm]				
Raw material emission				0,91 kg	
Material group	Raw material	Material	Emission from raw material/material [kg]		
Steel (alloyed)	00001904, Round, RD 65, Steel (alloyed) , 1.4305, 78.31 €/m	X8CrNiS18	1,30 kg		
Raw part mass [kg]	Chips mass [kg]	Mass [kg]	Emission reduction from chips [kg]	Emission reduction from recycling [kg]	
0,682 kg	0,507 kg	0,175 kg	0,39 kg	0,00 kg	
Setup + machining emission				1,37 kg	
Setup emission				0,09 kg	
Machines	max. power [kW]	Power setup[kW]	Electricity consumption [kWh]	Setup emission [g]	Setup emission per unit [g/unit]
Saw	10,00	0,50	0,04	20,21	2,02
Interim deburring	5,00	0,25	0,00	0,00	0,00
Mill-turning machine	43,00	2,15	1,58	766,07	76,61
Cylindrical grinding machine	8,00	0,40	0,20	97,00	9,70
Deburring (manual)	3,00	0,15	0,00	1,21	0,12
Machining emission				1,28 kg	
Machines	Power level	Power [kW]	Electricity consumption [kWh]	Emission per unit [g]	
Saw	Standard processing	6	0,129	62,62	
Interim deburring	Standard processing	3	0,008	3,64	
Mill-turning machine	Standard processing	25,8	0,033	16,23	

Step 9: Result of a BOM Calculation

Assembly / Parts list structure

Preview	Article ID	Price [EUR]	ERP price	CLM price (p...)	CLM calc. batch sz.	Unit Price Used [EUR]	Unit price used*number	Info	Calculation result
	1x S_ZS06 SEASCOOTER FINAL	6465.02			10	16.5	16.5	Sum, Price incomplete	6465.02
	1x C_UPPER CONE MESH	655.14		655.14	10	655.14	655.14	Price from CLM, Quota: 0.99, Calculati...	
	1x S_ZS06 BATTERY & GEARBOX FINAL	1470.59			10	10.74	10.74	Sum, Price incomplete	
	1x S_BATTERY COVER_FINAL	1142.53			10	1.35	1.35	Sum	
	1x C_BATTERY COVER_FINAL@PART_0	4.15		4.15	10	4.15	4.15	Price from CLM, Quota: 1.0, Calculatio...	
	1x C_BATTERY COVER_FINAL@PART_1	1137.03		1137.03	10	1137.03	1137.03	Price from CLM, Quota: 1.0, Calculatio...	

Calculation on the basis of single parts

Standard / Purchased parts:
Pricing from ERP system as standard

Drawing parts:
Post calculation value from ERP if available, otherwise:
preliminary costing result from simus classmate

Calculation lot size configurable

Mounting lump sums can be considered

Modifications of an assembly as for example
subsequently added bore holes can be considered

Currently Supported Processing Methods (1/3)

Milling operations

- Roughing, finishing, fine finishing, hard machining
- Face milling, peripheral milling
- Form milling, deburr milling, circular milling, disk milling
- Taking the clamping situation into account
- Planning levels, slopes, chamfers, radiuses
- Circumferential groove, T-Slots
- Outer and inner contours
- Pockets, grooves
- Bore holes, threads
- Milling engravings



Internal broaching

- Hexagon socket
- Square socket



Turning operations

- Roughing, finishing, fine finishing, burnishing, hard machining
- Internal and external straight turning, face turning, eccentric turning
- Turned recesses, grooves, plane grooves
- Cutting-off
- Screw threads
- Driven tools
- Bar loaders
- Double spindle machining



Gear cutting

- Gear hobbing
- Gear shaping
- Gear broaching



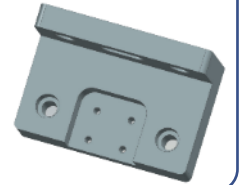
Grooves

- broaching
- ...



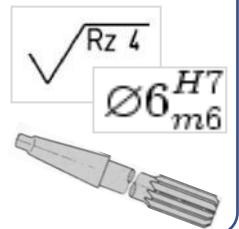
Drilling

- Through holes, blind holes
- Countersunk holes, stepped holes
- Threads
- Deep hole drilling



Finishing works

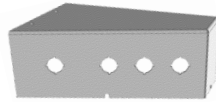
- Consideration of surface finish, dimensional tolerances / fits, shape and position tolerances
- Fine finishing on cutting machines
- Reaming
- Roller burnishing
- Flat grinding
- Cylindrical grinding
- Coordinate grinding
- Flat polishing
- Cylindrical polishing



Currently Supported Processing Methods (2/3)

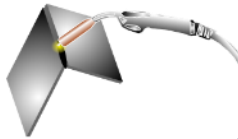
Sheet metal forming

- Punching, nibbling, embossing, thread-forming
- Laser cutting
- Flame cutting
- Plasma cutting
- Water jet cutting



Welding

- Manual welding
- Robot welding
- Spot welding, stud welding
- Machining / Chipping in the assembly context



Forming

- Bending / Edge folding (sheet metal, bars, pipes)
- Stamping-bending
- Straightening
- Cylinder production: deep-drawing presses
- Cylinder production: flanging machines



Pipe lasering

- Rectangular pipes, square pipes, round pipes
- Friction drilling
- Profile loader



Sawing

- Panel saw
- Band saw

Angle grinding, cut-off grinding

- Cutting
- Chamfers



Primary shaping processes

- Injection moulding
- 3D print MJF
- (Sand casting)



Currently Supported Processing Methods (3/3)

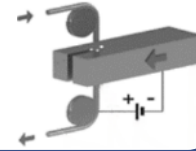
Heat treatments

- Hardening
- Annealing
- Tempering
- Quenching and tempering



Erode

- Die sinking
- Wire eroding



Programming

- Determination of programming costs
- Optionally as part of the processing costs



Surface treatments

- Powder coating
- Varnishing
- Galvanizing
- Black-oxide
- etc.



Assembly calculation

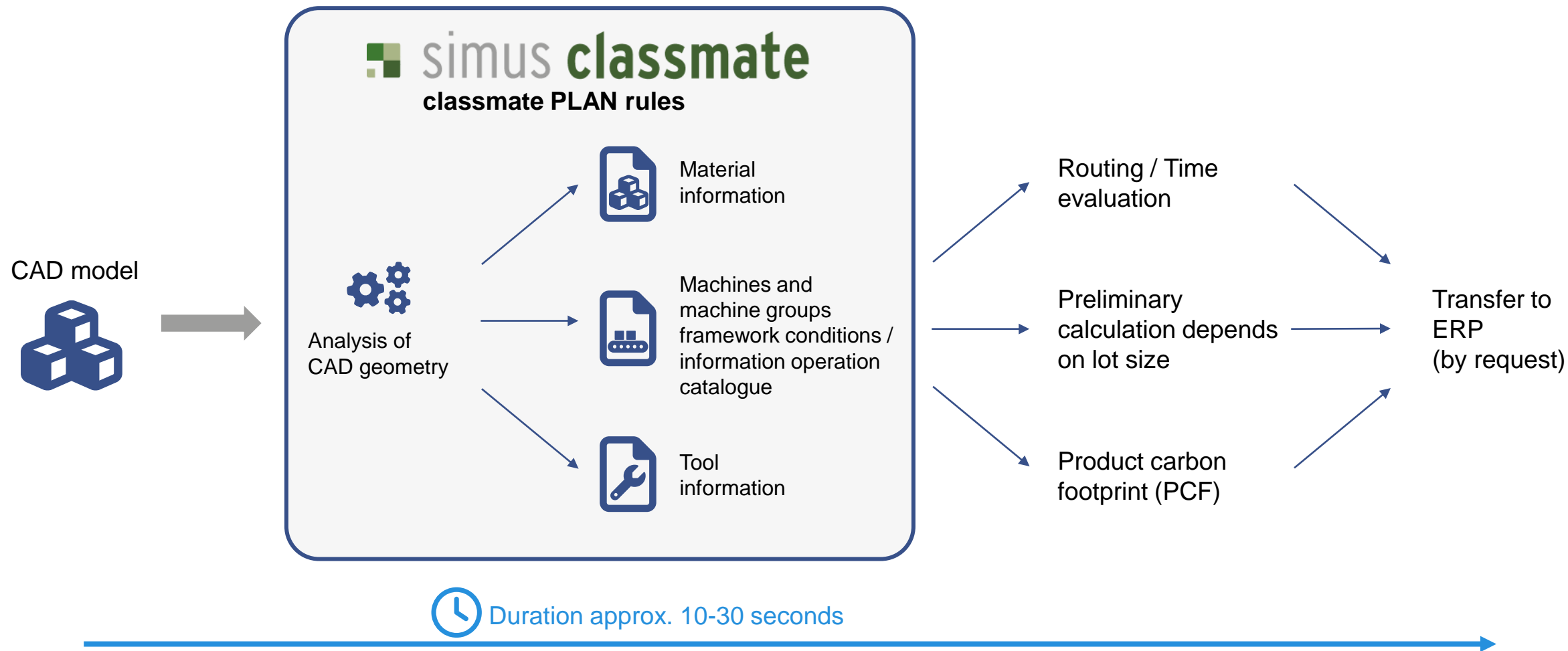
- Lump sum for assembly
- Depending on the amount of parts, the volume, the weight, the type of the parts in the assembly context
- Machining / Chipping
- Pressing
- Staking



Other operations

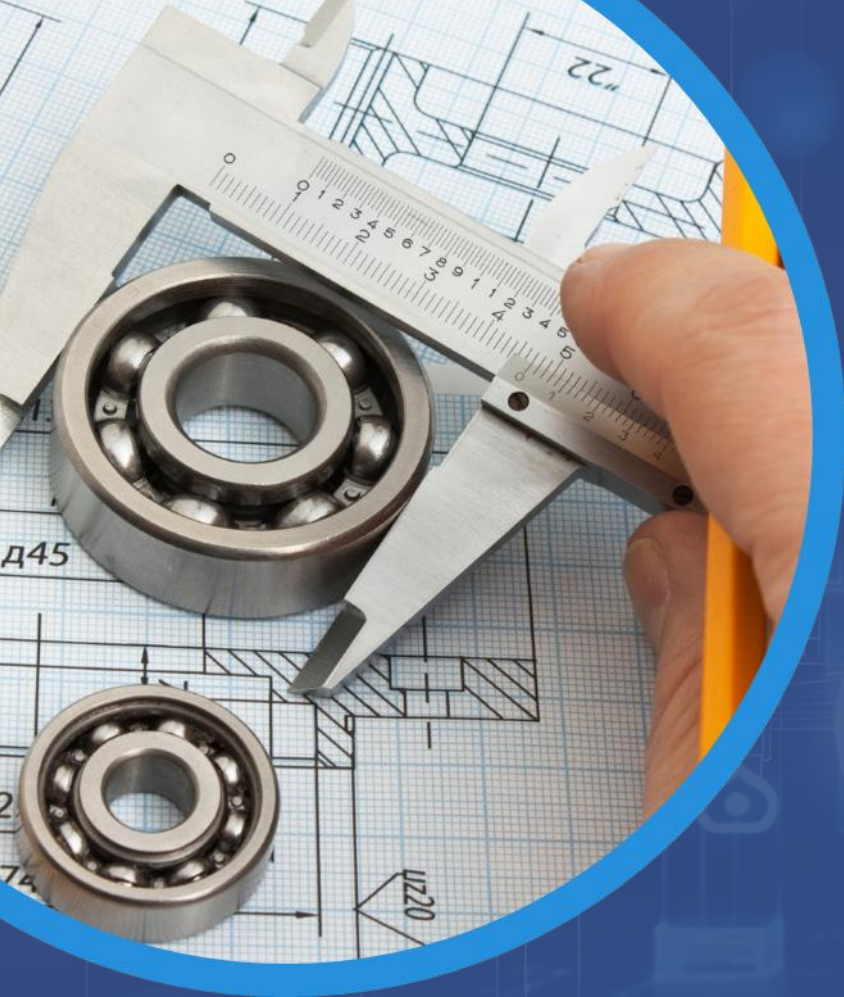
- Deburring
- Laser signature
- Checking
- Cleaning
- Transport

Schematic Approach and Operation Duration



Software Presentation





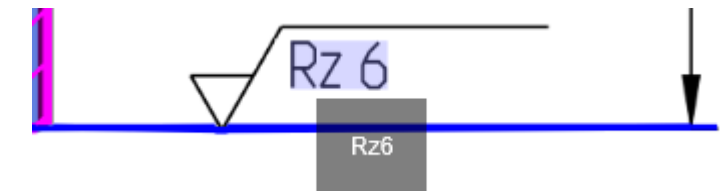
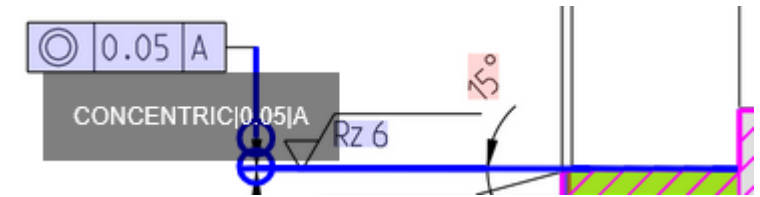
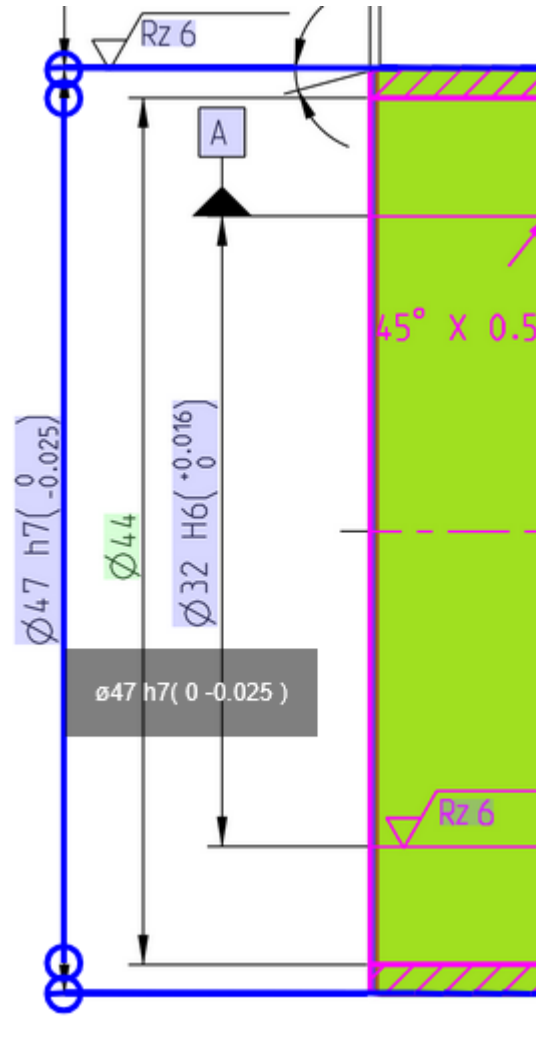
AI-Supported Drawing Recognition

Capture Drawing
Information with AI and
Assign it to the 3D Model

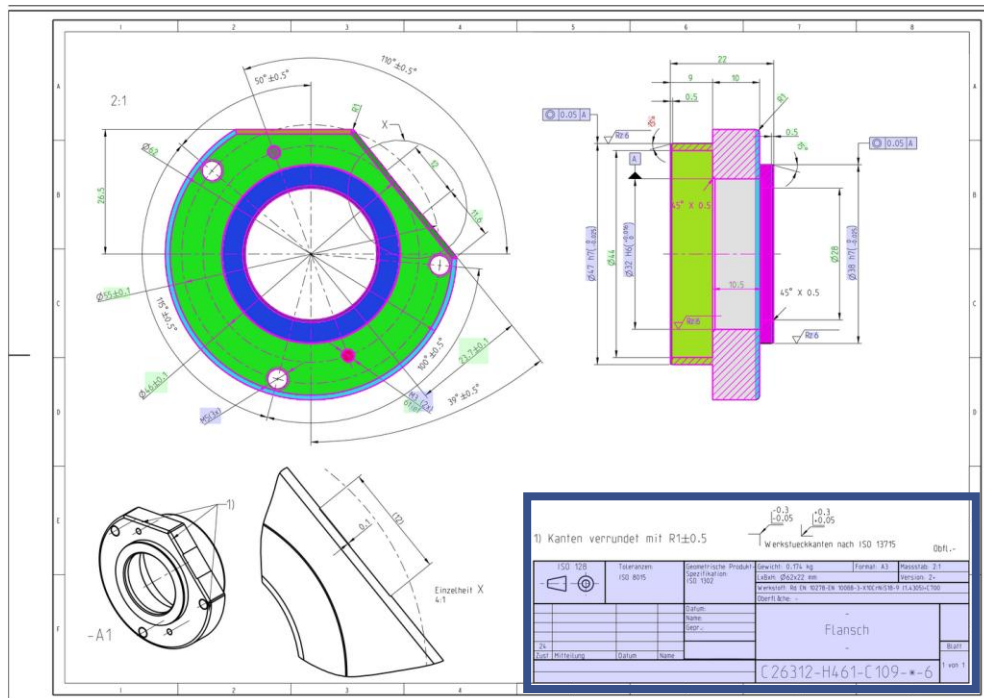
Examples of Highlighted Annotations

Dimension line data is found and processed

→ Area allocation possible



Drawing Head – Analysis



Data can be read out

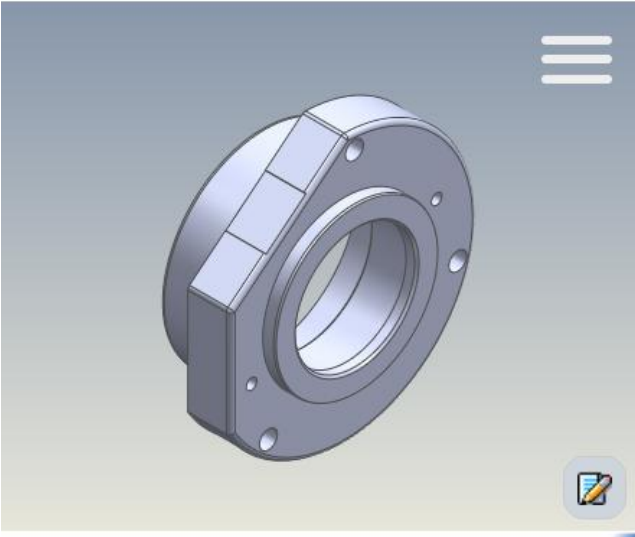
LxBxH: $\varnothing 62 \times 22$ mm
 Werkstoff: Rd EN 10278-EN 10088-3-X10CrNiS18-9 (1.4305)+C700

Goal:

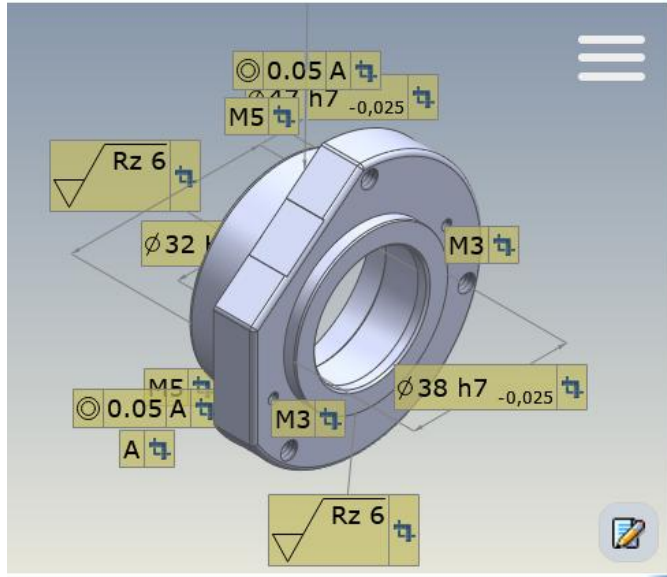
- Checks with dictionary to detect spelling mistakes or unknown materials

Werkstoff: Rd EN 10278-EN 10088-3-X10CrNiS18-9 (1.4305)+C700
 Oberfläche: Werkstoff: Rd EN 10278-EN 10088-3-X10CrNiS18-9 (1.4305)+C700

Calculation of Manufacturing Costs after Drawing Recognition



ident: TURN2-2
Type: TURN2-2
Latest geometric classification on: 06.05.2025 15:17:04
Reference lot size: 1
PLAN quota: 1,00
Manufacturing cost [EUR]: 95,28
Purchase price [EUR]: 132,57
Purchase price incl. progr. [EUR]: 294,60
Dimensions [mm]: 62x22



ident: TURN2-2
Type: TURN2-2
Latest geometric classification on: 06.05.2025 15:21:56
Reference lot size: 1
PLAN quota: 1,00
Manufacturing cost [EUR]: 131,24
Purchase price [EUR]: 182,60
Purchase price incl. progr. [EUR]: 362,63
Dimensions [mm]: 62x22

More precise cost calculation due to automatic extraction of shape / position tolerances and other PMIs from the drawing

In this example: **Increase in costs by 37% (taking into account the annotations and the resulting change in production processes)**

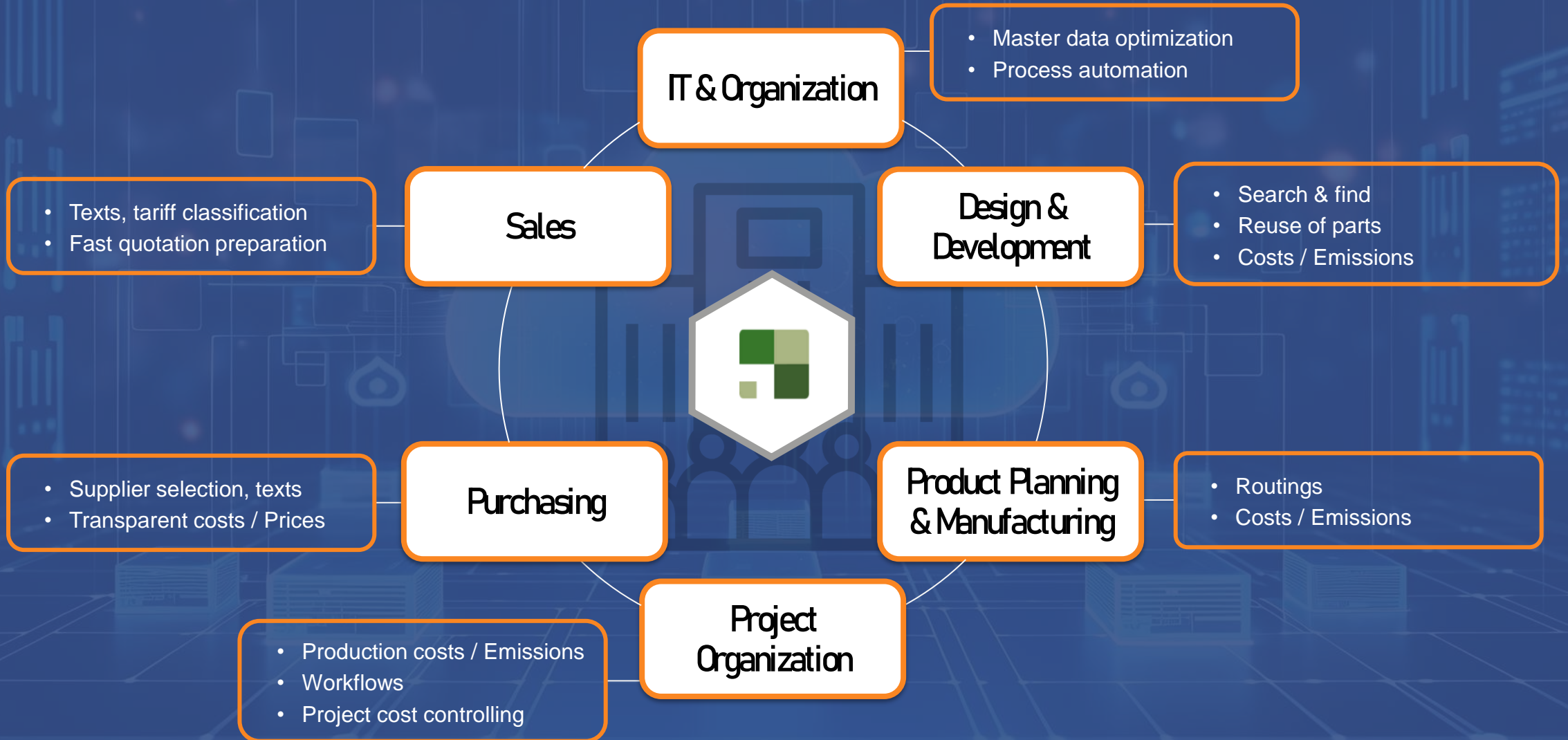


 **classmate** PLAN

Merchandise Category Assignment / Supplier Screening

Support for Technical Purchasing

Benefits for the Entire Company



Thank you for your attention.

I look forward to your questions.

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