



eCATALOG  
SOLUTIONS

## SMART PARTS

Intelligent CAD models  
for the engineering process



# CADENAS Technologies AG

## CADENAS Gruppe

CADENAS

SETTING STANDARDS

Company  
& Logo



Founded in 1992  
100 % privately owned  
Process chains  
(CADENAS hisp. chains)

Your speakers



Thomas Lang  
Branch Manager



Sascha Heinemann  
Key Account Manager



Employees



~ 300 worldwide





# CADENAS business divisions

Connects manufacturers and industry

CADENAS

SETTING STANDARDS

eCATALOG  
SOLUTIONS

THE ELECTRONIC  
PRODUCT CATALOG

COMPONENT MANUFACTURERS



> **600** catalog manufacturers from all industries cooperate with CADENAS

**Potential** (in general)

Engineers and purchasers

PARTsolutions > 450.000

PARTcommunity > 8.800.000

APP „CAD Models“ > 450.000

PART  
SOLUTIONS

THE STRATEGIC  
PARTS MANAGEMENT



INDUSTRY



> **10.000** companies with  
> **450.000** users utilize our parts management system PARTsolutions.

**154** of them are among the **TOP 1000** global players from Germany

**Purchase and engineering departments** use CADENAS very frequently for **product design** as well as **manufacturing equipment and tooling** in **ET/NT and KT!**



# Was sind Smart Parts?

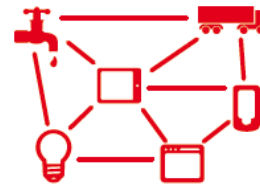
## Herausforderungen der 4. industriellen Revolution

18th century

19th century

20th century

21st century



Internet of Things  
Networking of components

2014

4TH INDUSTRIAL REVOLUTION  
based on a cyber physical system



Programmable Logic  
Controller (PLC), Modicon 084

1969

3RD INDUSTRIAL REVOLUTION  
by using electronics in IT for  
further automation of production



Assembly line production  
of the Ford model T

1914

2ND INDUSTRIAL REVOLUTION  
by introducing mass production  
with the help of electric power



First mechanical power loom

1784

1ST INDUSTRIAL REVOLUTION  
by introducing mechanical  
production lines

END OF 18TH CENTURY

BEGINNING OF 20TH CENTURY

BEGINNING OF THE 70IES

TODAY

COMPLEXITY ▲



The more components communicate with each other, the more intelligent digital data has to be



# What are smart parts?

## How CAD models get smart

### Neutral CAD Format

Simple CAD model, the engineer has to convert and rework and enrich with further manufacturer information first.

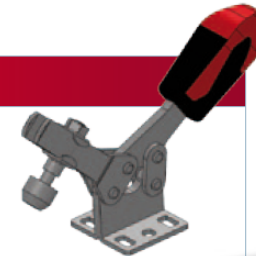


Post-processing:  
12 MINUTES

VS

### Native CAD format

Intelligent CAD model with all design information that can be used immediately in the design without any search effort.

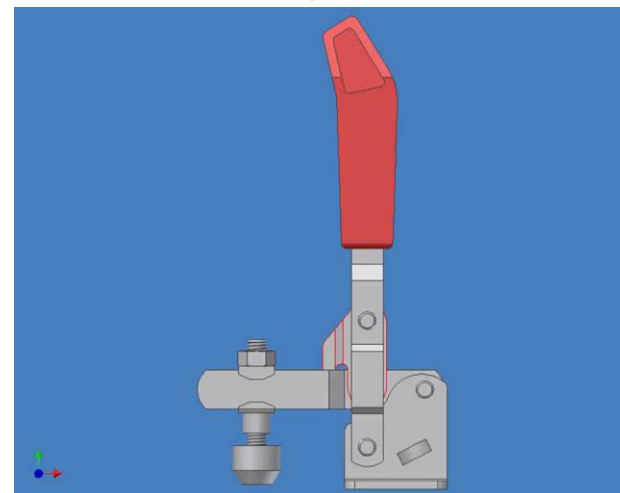


Immediate  
use

“Technology from the last century“



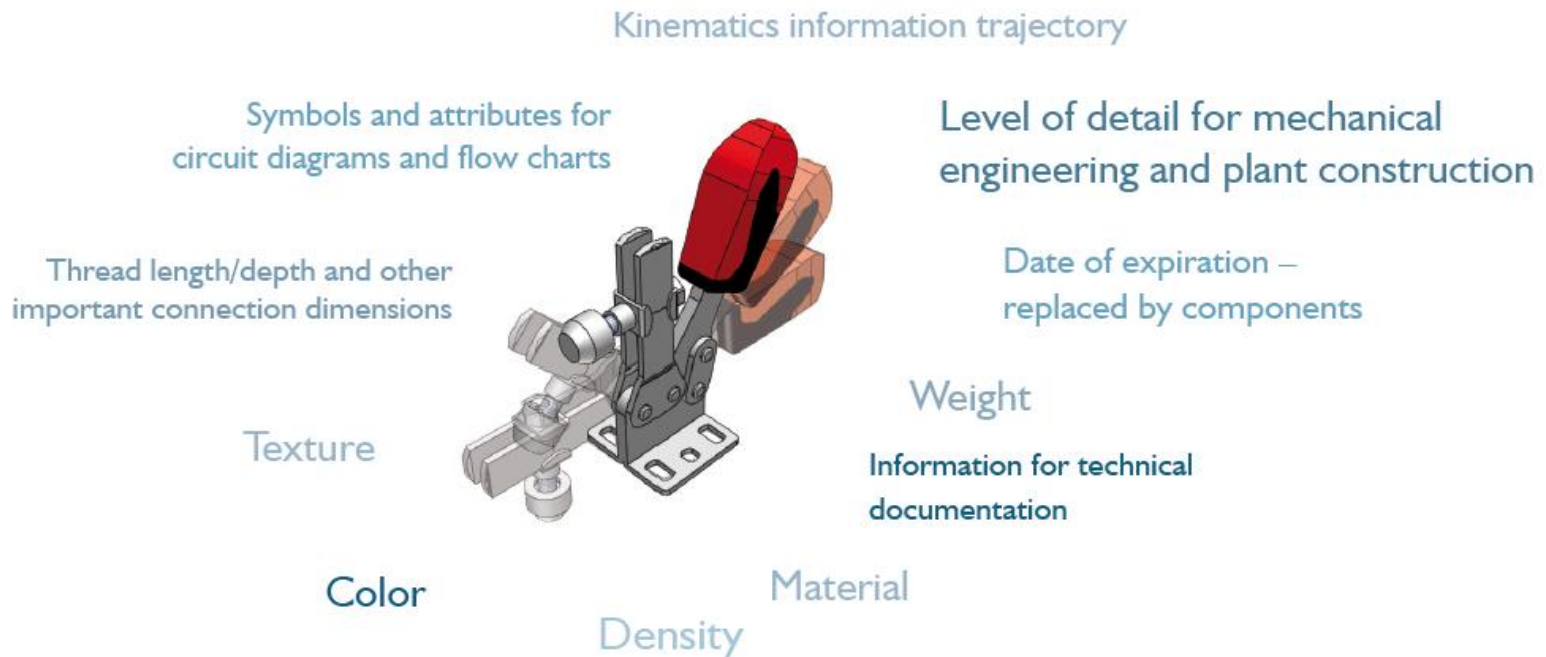
3D model by CADENAS





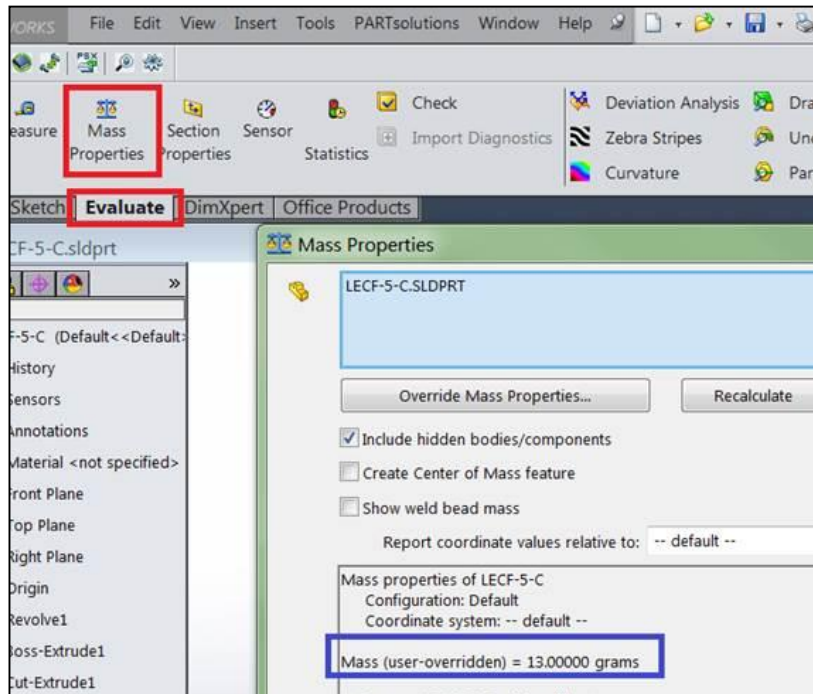
# What are smart parts?

More than geometry and kinematics





# Why decision makers need smart parts? Weight and centers of mass



- Allows calculation of the total weight
- For maximum load and perfect weight distribution
- Minimizing the total weight
- Reducing the transport costs
- Comply with safety regulations
- Ideal warehouse planning

	CH	M	LF	R	H	H1	H2	S	D	D1	NOT	FMAX	PMAX	MASS
eClass 7.1:	Catalog Nu...	Thread	Length Of ...	Length [mm]	Height H [...]	Height H' [...]	Height h [...]	Height s [...]	Diameter D...	Diameter d...	No. Of Teeth	Maximum l...	Largest tig...	Mass [g]
1	LECF-3-C	M3	7	30	29	32.5	24	4.2	13	10	18	13	0.95	14
2	LECF-4-C	M4	9	30	29	32.5	24	4.2	13	10	18	31	1.70	14
3	LECF-5-C	M5	9	30	29	32.5	24	4.2	13	10	18	62	2.70	13
4	LECF-6-C	M6	9	30	29	32.5	24	4.2	13	10	18	110	3.80	12



# Why decision makers need smart parts?

## Materials and substances

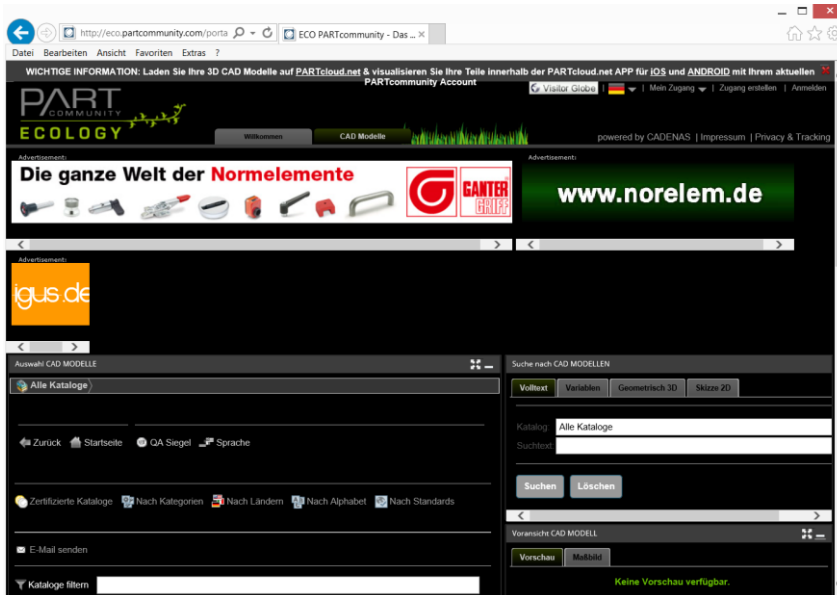


- Avoiding contact corrosion
- Compatibility in the field of application (Temperature, rust, etc.)
- Magnetism
- Reducing the weight (e.g. by using aluminium)
- Better rendering through material definition



# Why decision makers need smart parts?

## Environmental standards



eco.partcommunity.com



- Only if individual components are compliant to REACH, RoHS, etc., the end product will be as well
- Traceability for documentation
- Meeting supplier requirements can be viewed





# Why decision makers need smart parts? Coloring

eCATALOG  
SOLUTIONS

## Smart Parts

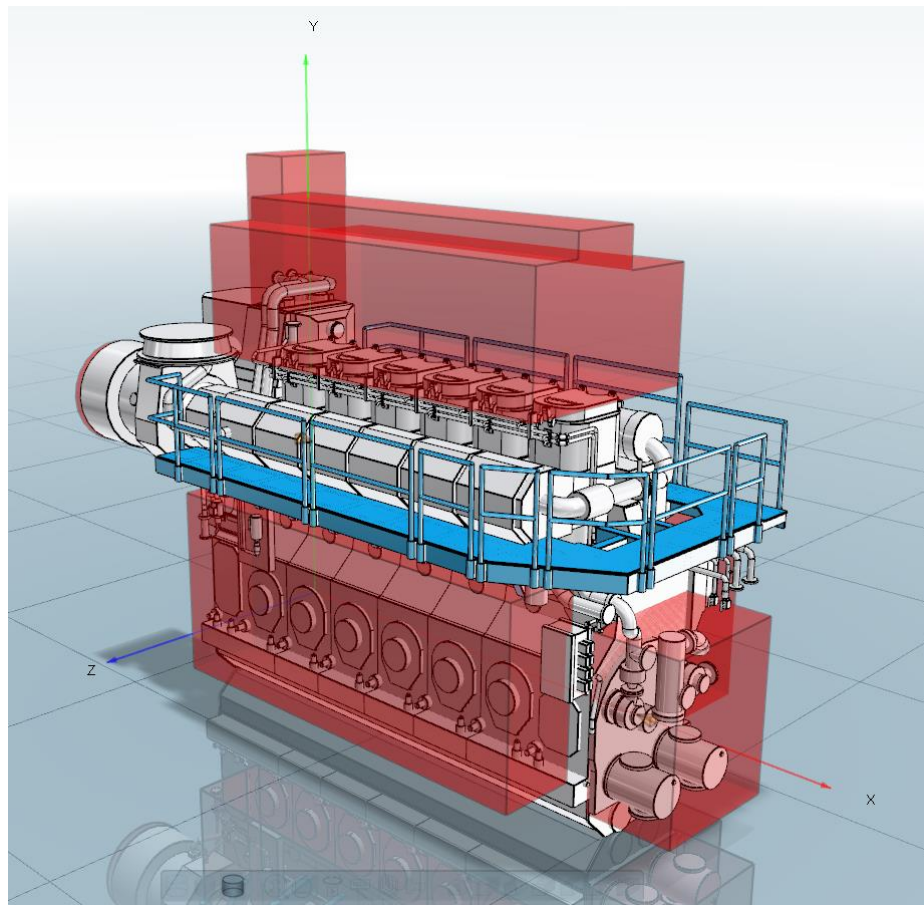


- Recognition of brand-name products
- Labelling important functions  
e.g.: emergency switch, connections
- Allows color search for engineers and developers
- Create renderings



# Why decision makers need smart parts?

## Collision- & working spaces

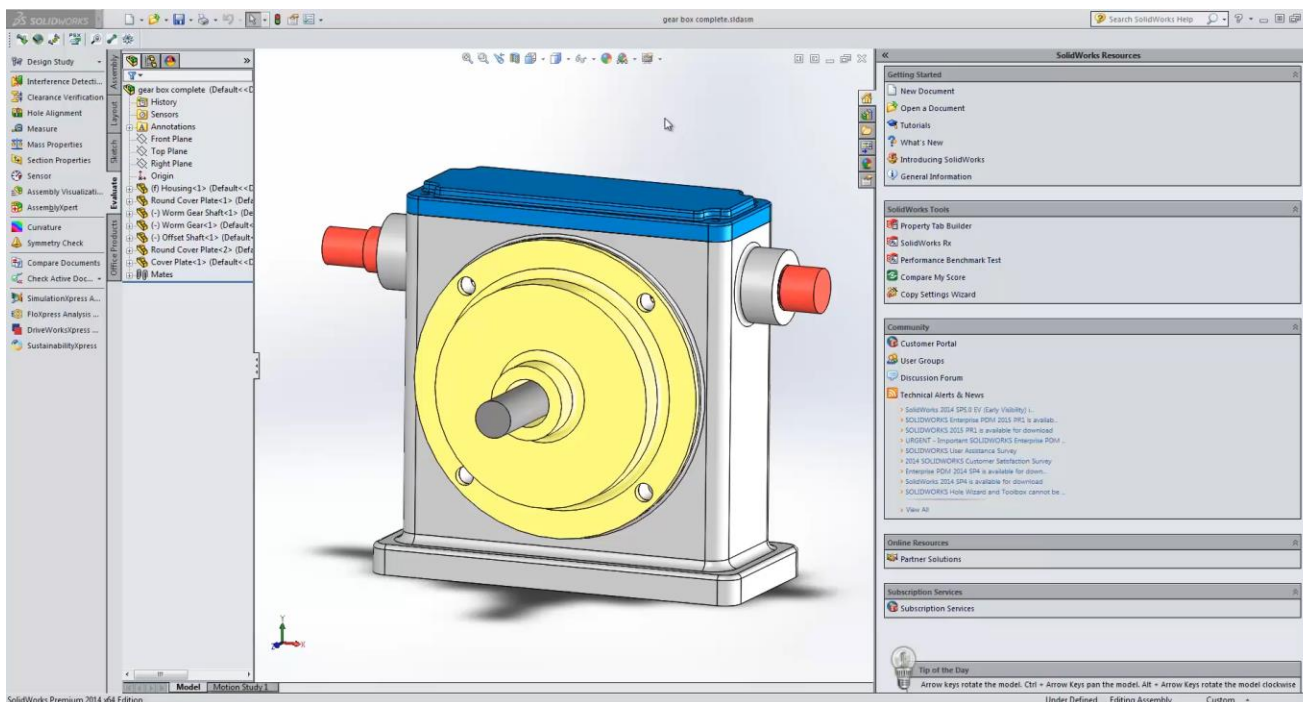


- Avoids exchanging parts by placement in blocked spaces
- Movement space for adjustable elements can be seen at once
- For a smooth cooperation between design and techniques

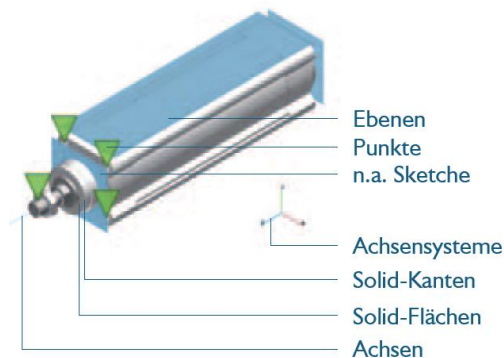


# Why decision makers need smart parts?

## Intelligent placement

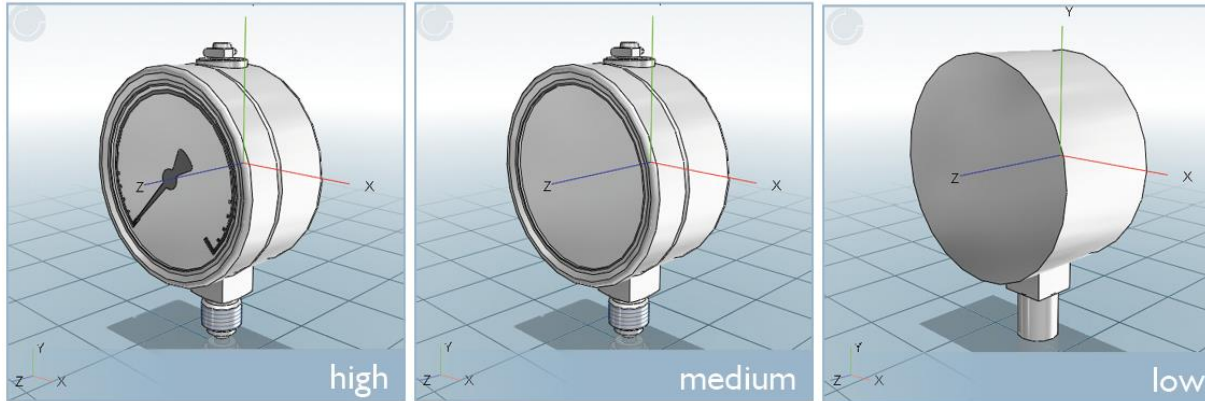


- Makes it easier to insert and exchange CAD models
- Allows fast and interactive experimenting
- Reduces placement mistakes



# Why decision makers need smart parts?

Level of detail



- Different applications need different details:
  - Design High
  - Engineering Medium
  - Plant engineering Low
- No information overflow
- Optimizing computer performance
- Renderings need a high LOD

# Why decision makers need smart parts? End of life

**DIN 84**  
Zylinderschrauben mit Schlitz  
30.04.14  
mm

**ISO 1207**  
Zylinderschrauben mit Schlitz  
08.05.14  
mm

DIN 84	
Bezeichnung:	Zylinderschrauben mit Schlitz
Einheit:	mm
Letzte Änderung:	30.04.2014 13:10:49
Ablaufdatum:	01.05.2014 02:00:00

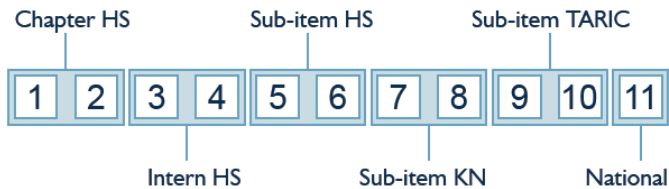
ISO 1207	
Bezeichnung:	Zylinderschrauben mit Schlitz
Einheit:	mm
Letzte Änderung:	08.05.2014 14:30:54

- Planning security with new developments due to advance notice
- No tedious searching for alternative components
- Expired parts can be hidden



# Why decision makers need smart parts?

## Custom tariff numbers



- Reduces search efforts at the customer and supplier
- Increases the creation of customs documents
- Avoids subsequent payments on importation
- Makes it easier to comply with guidelines for the labelling of goods for instance “Made in Germany“
- Selecting the supplier does not only depend on the price but also on the transportation costs
- Makes procurement of spare parts easier

# Why decision makers need smart parts?

## Labeling standardized parts





















Alle Kataloge Standards DIN 9x 93x DIN 933

Suchtext  Alle Kataloge

Zurück Startseite Suchergebnis Sprache QA Siegel Zu Pin Board hinzufügen Pin Board anzeigen

Zertifizierte Kataloge Nach Kategorien Nach Ländern Nach Alphabet Nach Standards

Nach Hersteller filtern: Alle Kataloge 41 Treffer

 	SFS Unimarket: Sechskantschrauben mit Gewinde bis Kopf, Produktklassen A und B - DIN 933 (ISO 4017) - FN 110 - rostfrei A2
 	SFS Unimarket: Sechskantschrauben mit Gewinde bis Kopf, Produktklassen A und B - DIN 933 (ISO 4017) - FN 112 - rostfrei A4
 	SFS Unimarket: Sechskantschrauben mit Gewinde bis Kopf, Produktklassen A und B - DIN 933 (ISO 4017) - FN 236 - 8.8, verzinkt blau
 	SFS Unimarket: Sechskantschrauben mit Gewinde bis Kopf, Produktklassen A und B - DIN 933 (ISO 4017) - FN 319 - Polyamid 6.6
 	SFS Unimarket: Sechskantschrauben mit Gewinde bis Kopf, Produktklassen A und B - DIN 933 (ISO 4017) - FN 8270 - 8.8, verzinkt blau
 	SFS Unimarket: Sechskantschrauben mit Gewinde bis Kopf, Produktklassen A und B - DIN 933 (ISO 4017) - FN 8271 - 8.8, verzinkt blau
 	SFS Unimarket: Sechskantschrauben mit Gewinde bis Kopf, Produktklassen A und B - DIN 933 (ISO 4017) - FN 85 - Messing, blank
 	SFS Unimarket: Sechskantschrauben mit Gewinde bis Kopf, Produktklassen A und B - DIN 933 (ISO 4017) - FN 89 - Messing, vernickelt
 	SFS Unimarket: Sechskantschrauben mit Gewinde bis Kopf, Produktklassen A und B - DIN 933 (ISO 4017) - FN 91 - 8.8, verzinkt blau
 	SFS Unimarket: Sechskantschrauben mit Gewinde bis Kopf, Produktklassen A und B - DIN 933 (ISO 4017) - FN 94 - 10.9, schwarz

- Companies are looking for “standard parts“ for cost efficient products
- “Standard parts“ guarantee security and quality



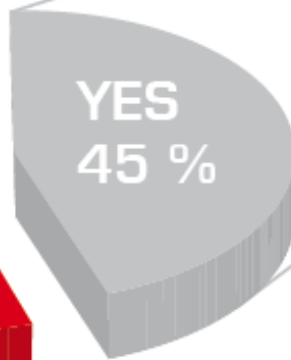
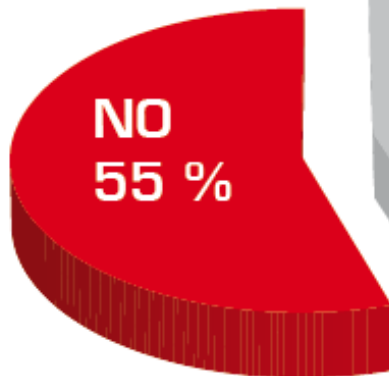


# Why decision makers need smart parts?

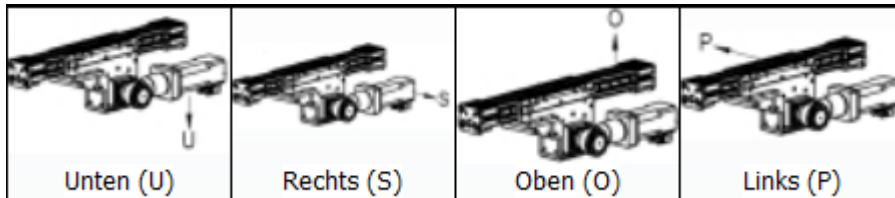
## Symbols & translations

Of these 45 %

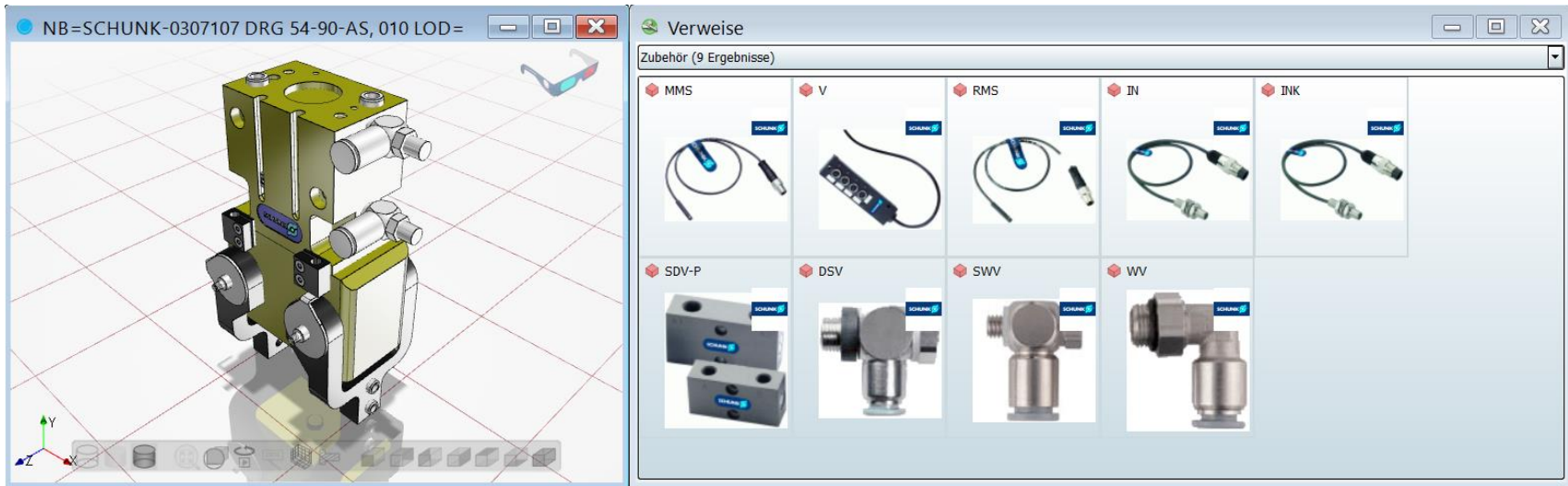
Existing command of the English of engineers:



- Misconceptions lead to incorrect product selection
- For international merchandising the decision makers have to understand the products
- Pictures say more than a thousand words



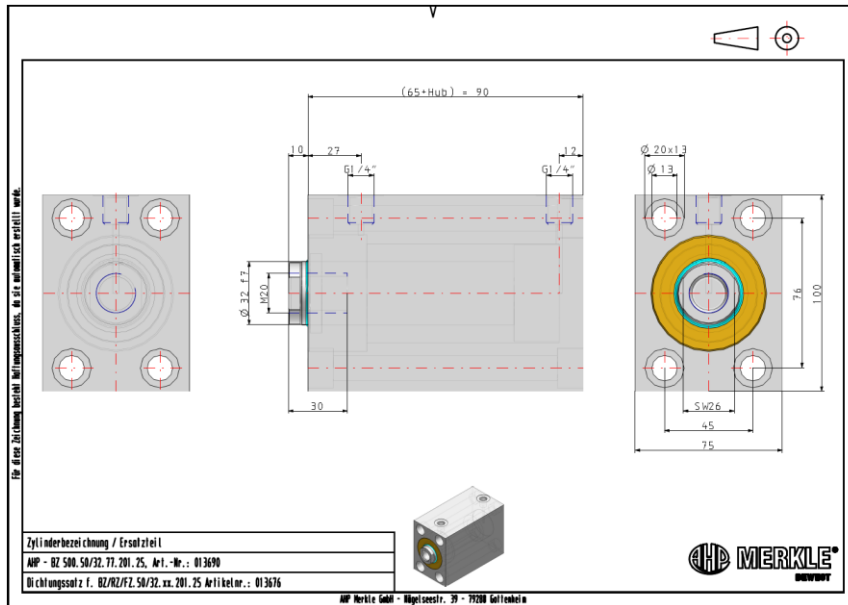
# Why decision makers need smart parts? Accessories & spare parts



- Simplified creation of spare parts lists
- More effective procurement
- Saves search effort for suitable or necessary accessory
- All parts are from a single source and guarantee perfect interaction
- Helps to avoid wrong accessory orders

# Why decision makers need smart parts?

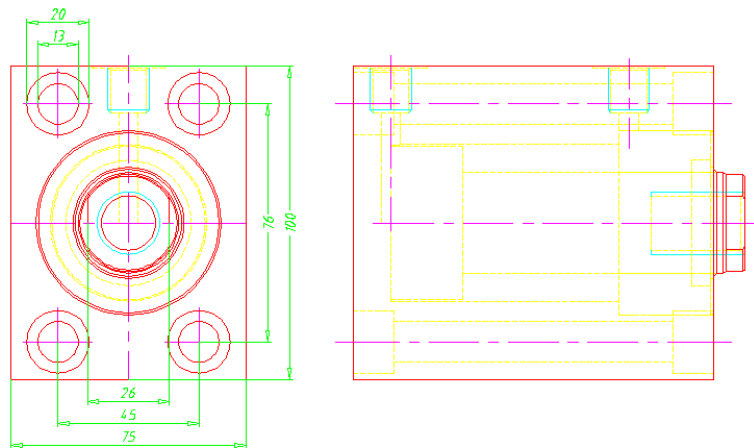
## Automatic 2D dimensioning



- Automatic creation of technical drawings and 2D derivations
- Supplies all important component information at a glance
- Deposited metrics in the electronic product catalog allow it to generate 3D PDF data sheets



Visit our workshop on this topic!  
Last chance: today at 2 p.m.





# Why decision makers need smart parts?

## Automatic 2D dimensioning

eCATALOG  
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Smart Parts

NB=6ZR\_500.50/32.77.201.25.2L (DH=02.0.021)10Norm0110202.530000000000010bz) LOD =

Ansicht

- erstellen
- hieben
- ändern
- ieren
- ieren
- ergrund bleiben
- ßen (Strg+F4)
- etrisch
- elle Ansicht

Kombinationsansichten

ere Ansichten auf einem Blatt, teilweise mit en. Schnelle, schattierte Ansichten sind möglich.

- isichten + Isometrie im Rahmen (ANSI)
- isichten + Isometrie im Rahmen (DIN)
- isichten + Isometrie im Rahmen (UIS)
- isichten + Stückliste im Rahmen (ANSI)
- isichten + Stückliste im Rahmen (DIN)
- jektionsansichten (EU)
- jektionsansichten (US)
- isichten + Isometrie im Rahmen (UIS)
- jektionsansichten (EU)
- jektionsansichten (US)

LMaßstab:

ormodus: Schattierte Darstellung

rformat:

eri Maßstab:

eichnungsansicht auf Blatt optimieren

Einstellungen/Sichtbarkeit

- Dick
- Dünn
- Gestrichelt
- Strichpunktirt
- Gewinde etc.
- Bemaßung
- Versteckt
- Gruppiert
- Stenzen
- Baugruppenkomponente

Bemaßungen

- AUTO-1213
- AUTO-1214
- AUTO-1215
- AUTO-1216
- AUTO-1217
- AUTO-1218
- AUTO-1219
- AUTO-1220
- AUTO-1221
- AUTO-1222
- AUTO-1225
- AUTO-1224
- AUTO-1225
- AUTO-1226
- AUTO-1227
- AUTO-1228
- AUTO-1229
- AUTO-1230
- AUTO-1231
- AUTO-1232
- AUTO-1233
- AUTO-1234
- AUTO-1235
- AUTO-1236
- AUTO-1237
- AUTO-1238

Attribut	Wert
ID	AUTO-1213
Typ	HORIZONTAL
Ansichten	Vorne+Z
Startpunkt	BZ500GEHAUSE@bm_bz_gehaeuse_d1_senk
Endpunkt	BZ500GEHAUSE@bm_bz_gehaeuse_d1_senk_1
Position	BBOX
Optionale Parameter	
Text	Ø (AUTOMATIC)x(BZ500GEHAUSE@BDT)
Schriftgröße	FONTHEIGHT
Bedingung	ALTER=4 AND STECKER=21) OR (D=50 AND BF=21 AND SCHALTER=4 AND STECKER=41)
Pfeilgröße	
Pfeilfaktor	
Genauigkeit	1
Basisdimension	
Textverschiebung	
Ausrichtung	links
Ausrichtung (Automatisch)	<input type="checkbox"/>

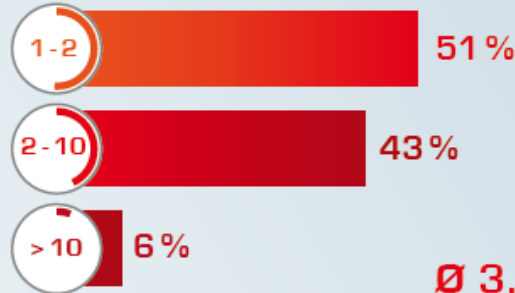




# Why decision makers need smart parts?

## Smart parts ease searching

How many hours do you approximately invest per week to get the manufacturer information you need?



Ø 3,9 hours/per week

Source: CADENAS survey 2014

### Expenses per engineer to obtain information



Calculation is based on the average total of working hours:

- 8 hours per day
- 230 days per year
- 39 years until retirement
- 80 € costs per hour



**14,466.49 EUR** per year



**882** working days in the life of an engineer

### Expenses for the German economy



830,000 engineers in the Federal Republic of Germany are working in the area of design & construction

Source: VDI, Ingenieure auf einen Blick 2012

corresponds to

**12,000,000,000 EUR**

per year





# Why decision makers need smart parts?

## Directly deliver smart CAD models to your clients via web

eCATALOG SOLUTIONS

DER ELEKTRONISCHE PRODUKTKATALOG

Your own download portal

The screenshot shows the zipatec website interface. At the top, there's a navigation bar with 'Produkte', 'Kontakt', 'Katalog', 'CAD-Daten', and 'Vertriebsregion'. The main content area features a large image of a 'GREIFMODULE' (gripper module) with a 3D CAD model. Below the image, there's a table of variants under the heading 'AUSFÜHRUNGEN'. The table lists various models like GM ZDF, GM ZDF-E, GM ZDF-K, GM ZDF-D, GM ZDF-A, and GM ZDF-B, each with a 'Produktlink' and a 'Zuletzt' date. To the left of the table, there are sections for 'Umsatzidee', 'Leistungsmerkmale', 'Produktfunktionen', and 'Anfrage senden'. The 'Anfrage senden' section includes a form with fields for Name, Firma, Straße, PLZ, and Stadt, and a 'Abschicken' button. At the bottom of the page, there's a footer with contact information and a logo for 'CAD ENAS'.

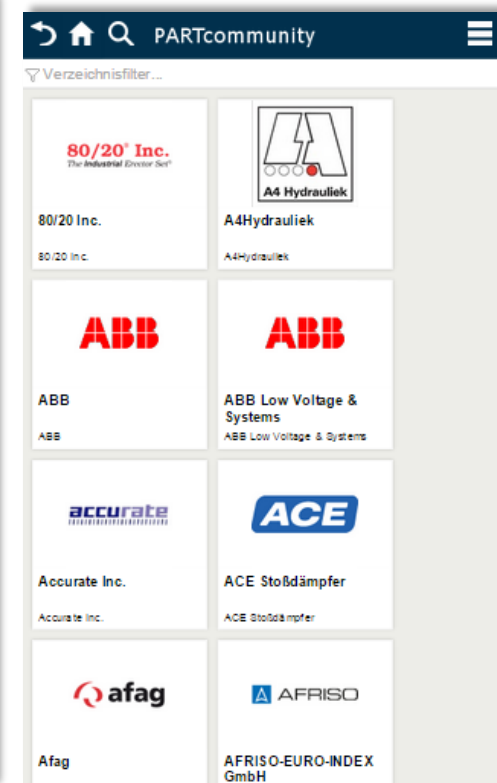
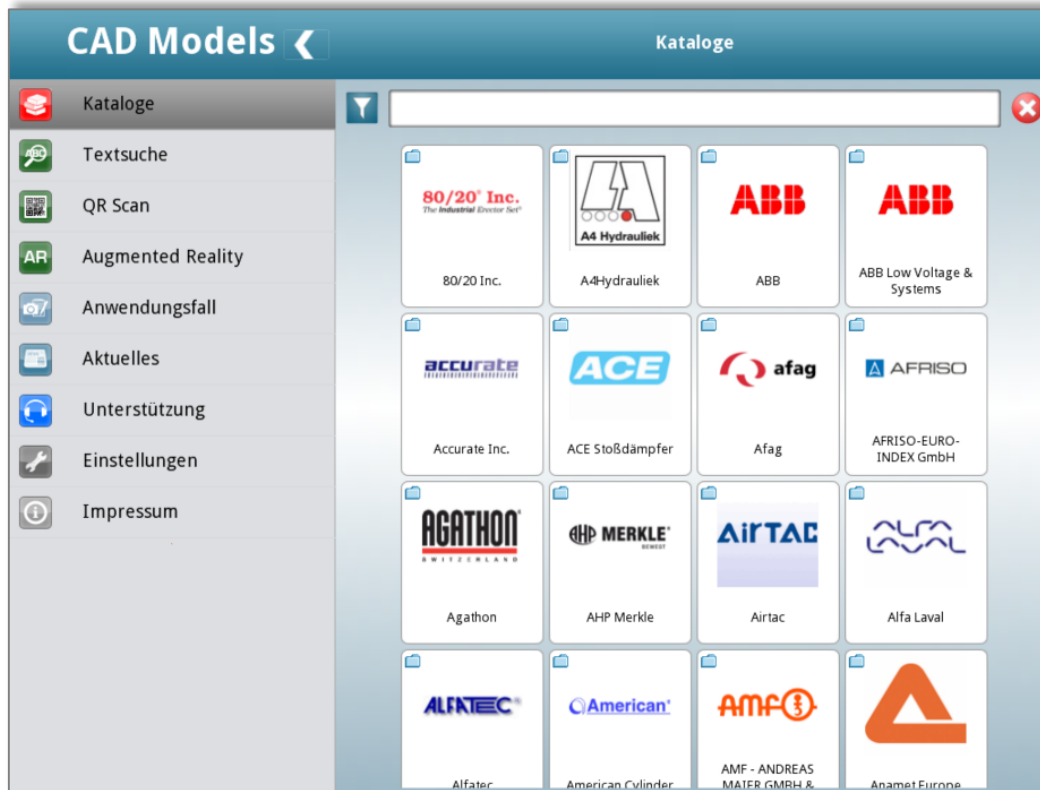
Integration into your website





# Why decision makers need smart parts?

Available everywhere with your own app



Whether with our general CADENAS app or your own app: your data is available everywhere

With the web app also available for Blackberry and all other mobile operation systems



# Which possibilities does eCATALOG solutions offer?

**70** Partner portals

More than **100.000** Companies

over **8.800.000** user







from **195** different countries

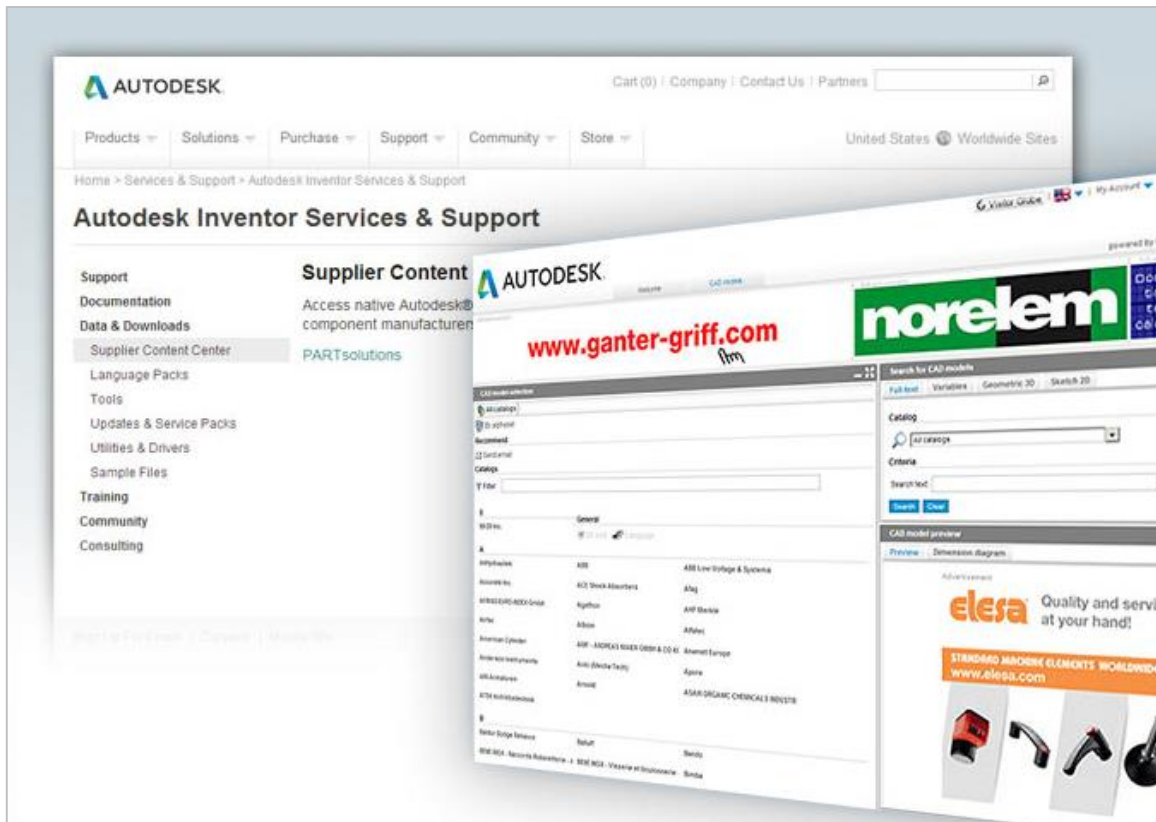
In nearly every industry sector





# Which possibilities does eCATALOGsolutions offer?

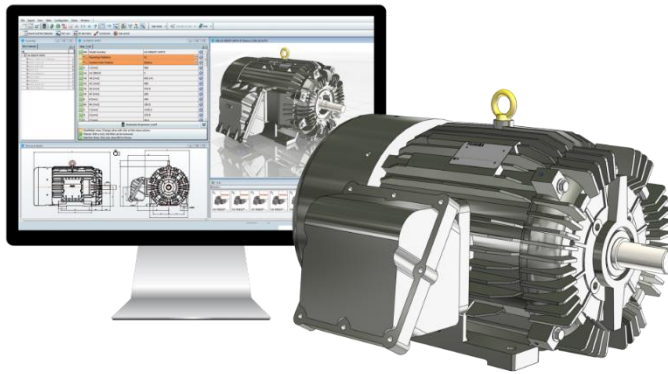
-   download
-   directIntoCad
-   email



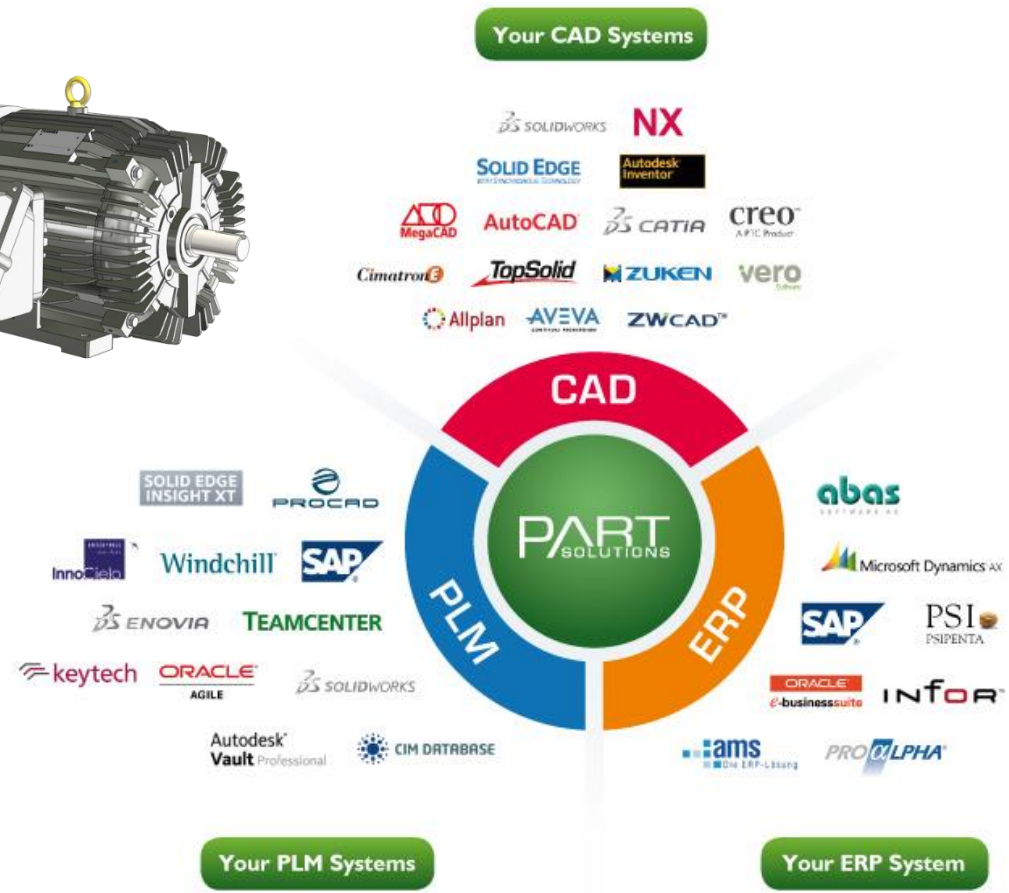
The screenshot displays the Autodesk Inventor Services & Support website. The main navigation bar includes links for Products, Solutions, Purchase, Support, Community, and Store. The page title is "Autodesk Inventor Services & Support". A sidebar on the left lists various support options: Support, Documentation, Data & Downloads, Supplier Content Center (highlighted), Language Packs, Tools, Updates & Service Packs, Utilities & Drivers, Sample Files, Training, Community, and Consulting. The main content area features a "Supplier Content" section with the text "Access native Autodesk component manufacturers" and "PARTsolutions". Below this is a search interface for CAD models, including a search bar, a dropdown menu for "Catalog", and a search button. The search results show a list of suppliers and their products, such as "www.ganter-griff.com", "norelem", and "elesa".



# Which possibilities does eCATALOG solutions offer?



Thanks to PARTsolutions your products are not only available online but also first hand at the workplaces of engineers and purchasers



Which possibilities does  
eCATALOGsolutions offer?

eCATALOG  
SOLUTIONS

Smart Parts



Haven't got any Smart Parts in  
your catalogs, yet?

Your contact persons stand right  
before you!



# Thank you

for your attention

Questions ?  
Feedback ?

**Thomas Lang, Branch Manager Esslingen**

---

Phone.: +49/(0)711 / 900 377 - 31

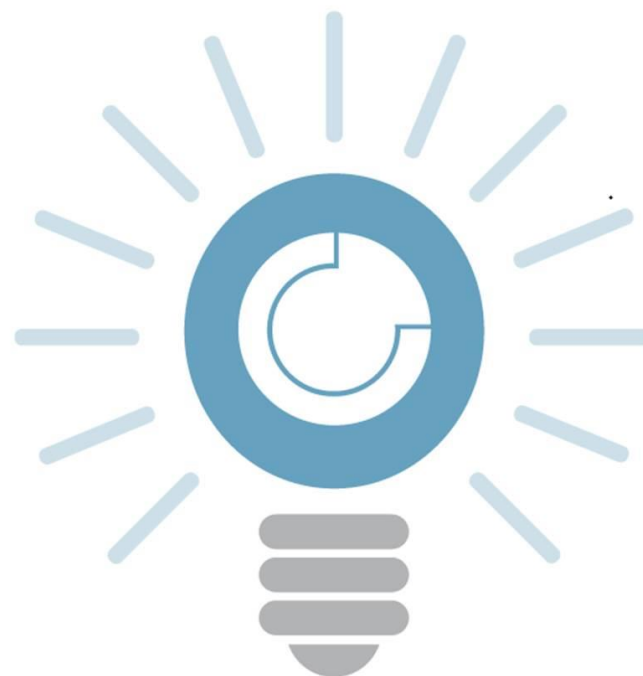
E-mail: [T.Lang@cadenas.de](mailto:T.Lang@cadenas.de)

**Sascha Heinemann, Key Account Manager**

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Phone.: +49/(0)711 / 900 377 - 32

E-mail: [Sa.Heinemann@cadenas.de](mailto:Sa.Heinemann@cadenas.de)



CADENAS  
THE INNOVATION COMPANY





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