

# SIMUFORM<sup>®</sup> SIMILIA

## Power additive for virtual layout

Automotive Circle  
Car Body Parts  
27.-29.September 2022 | Bad Nauheim, Germany

Initial situation

New approach

Process automation

Summary

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**Efficiency**  
Knowledge on all relevant data  
**just-in-time**  
from any source, at any time, at any place.





# Heterogenous engineering data, storage and access

STAMPAK



Local site A

File based data

Feasibility check



Local site B

File based data

Simulation



- NVH



- Crash



- Fatigue

Local site A,B,C (spread information)

Document management system

Technical documents and requirement sheets



Global storage

SIEMENS PDM-PLM System



Geometry CAD design

Local site B

ERP-System

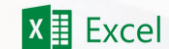
Supply chain management



Local site C

File based data

Cost calculation



Supplier based storage

Local database

Process, tool and manufacturing design.

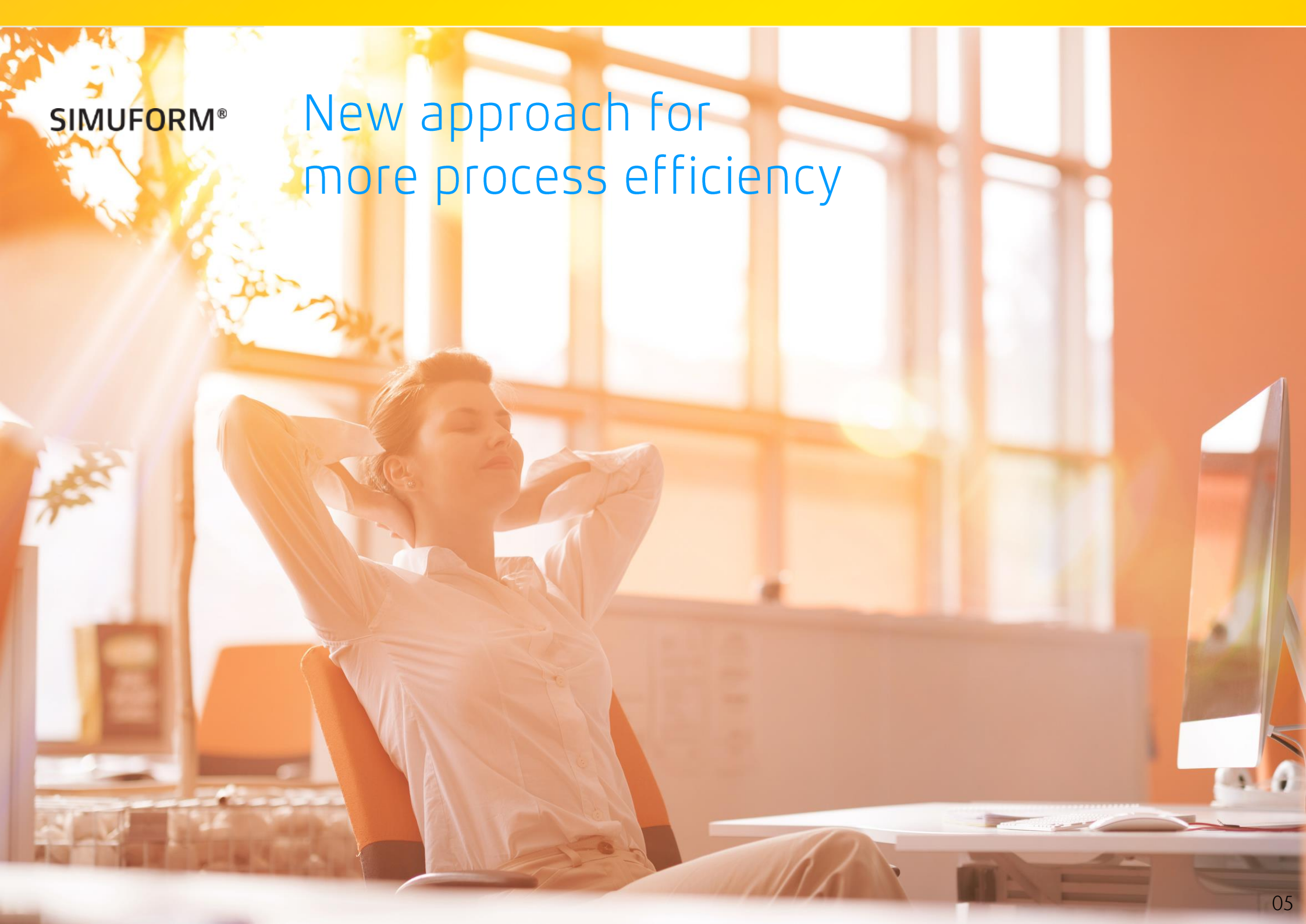


## Pain points

- Loss of engineering know-how
- Redundant work is costly in terms of time
- Redundant work is costly in terms of resources
- Lack of quality due to higher failure probability
- In total: Loss of efficiency

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New approach for  
more process efficiency

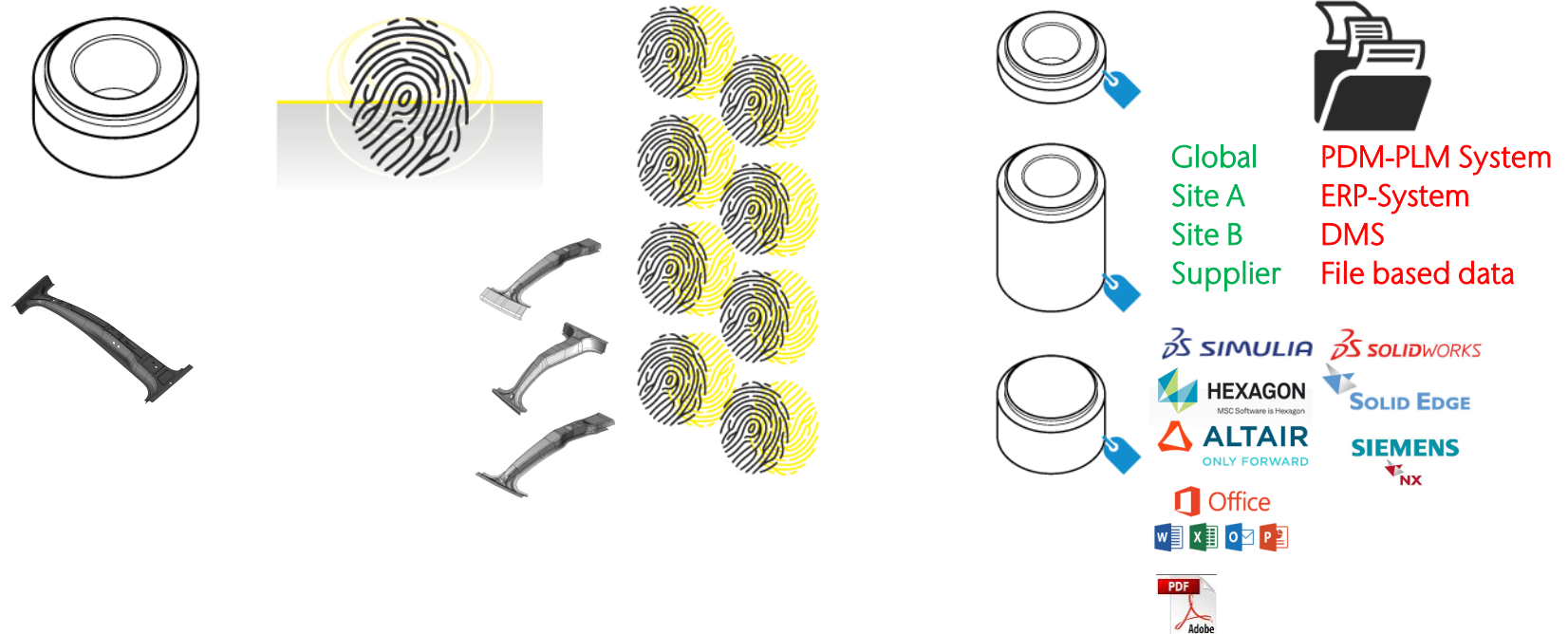
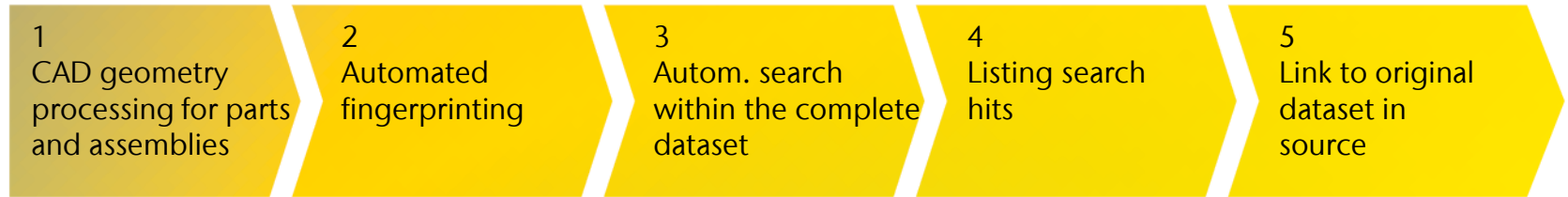


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## New approach: Deep dive into smart search technology

- ⊕ Automated data processing.
- ⊕ > 0.5 Mill. geo queries per second
- ⊕ In memory computing
- ⊕ Invariant 3D-search
- ⊕ Format independent
- ⊕ Storage independent
- ⊕ Location independent

- 1) 3D-GEO-FINGERPRINT for fast geometrical retrieval.
- 2) Sophisticated and automated data indexing.
- 3) Integrated business logics for smart data-mesh.



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# Fast data and information access

- ⊕ Fast visualisation
- ⊕ Fast search within all accessed data
- ⊕ View all meta data
- ⊕ Integrated 3D-CAD-Viewer
- ⊕ Filtering ability
- ⊕ Sophisticated geometry retrieval
- ⊕ Integration in CAD systems
- ⊕ Linking data to its origin, PDM / ERP / Engineering system.

The screenshot displays the SIMUFORM SIMILIA software interface. The main window shows a search results table with columns for 'Vorschau', 'Originaldateipfad', 'Originale Datei...', 'Originalverzeichnis...', 'Pfad in KB', 'Produktreihe', 'Prozessplan', 'Qualitätsklasse', 'Reorganisation...', 'SAP-IDENT Gr...', and 'Sicherheitsklasse'. The table contains 10 rows of data. On the right side, there is a 3D model viewer showing a mechanical part, and a detailed attribute list for the selected model 'B-pillar\_002.igs'.

Vorschau	Originaldateipfad	Originale Datei...	Originalverzeichnis...	Pfad in KB	Produktreihe	Prozessplan	Qualitätsklasse	Reorganisation...	SAP-IDENT Gr...	Sicherheitsklasse
		2.2 MB		/SimuForm Par...				2020-09-17		
		2.2 MB		/not classified				2020-09-17		
		2.2 MB		/SimuForm Par...	A10	FLP-667	4	2020-09-17	S-611657	1
		2.2 MB		/SimuForm Par...	M12-7	FLP-62	5	2020-09-17	S-677657	1
		4.3 MB		/SimuForm Par...	M12-7	FLP-82	1	2020-09-17	S-677637	1
		5.6 MB		/SimuForm Par...	L22-9	FLP-19	1	2020-09-17	S-877657	1
		5.6 MB		/SimuForm Par...	A10	FLP-82	3	2020-09-17	S-679657	3
		3.0 MB		/not classified				2020-09-17		
		3.0 MB		/SimuForm Par...	A10	FLP-62	5	2020-09-17	S-657885	1
		3.0 MB		/SimuForm Par...	L22-5	FLP-62	5	2020-09-17	S-319681	3

The attribute list on the right shows the following details for 'B-pillar\_002.igs':

- Attribut: Pfad in KB, Inhalt: /KB/SimuForm Parts & Assemblies/Autom...
- Attribut: BxHxT, Inhalt: 126.82 x 477.18 x 1285.34 mm
- Attribut: Einfügedatum, Inhalt: 2013-05-26
- Attribut: Gesamtfläche, Inhalt: 736651.13 mm²
- Attribut: Modelldurchmesser, Inhalt: 1376.91 mm
- Attribut: Modellgröße 1, Inhalt: 126.82 mm
- Attribut: Modellgröße 2, Inhalt: 477.18 mm
- Attribut: Modellgröße 3, Inhalt: 1285.34 mm
- Attribut: Originaldateipfad, Inhalt:
- Attribut: Originale Dateigröße, Inhalt: 4.3 MB
- Attribut: Originalverzeichnis, Inhalt:
- Attribut: Reorganisationsda..., Inhalt: 2020-09-17
- Attribut: Volumen, Inhalt: 0.00 mm³
- Attribut: AP Controlling, Inhalt: Stern
- Attribut: AP Einkauf, Inhalt: Ross
- Attribut: AP Fertigung, Inhalt: Mann
- Attribut: AP Konstruktion, Inhalt: Rüber
- Attribut: AP Logistik, Inhalt: Mustermann
- Attribut: AP Qualität, Inhalt: Reich
- Attribut: AP Vertrieb, Inhalt: Held
- Attribut: Ausfühvariante, Inhalt: Long
- Attribut: Baugruppenreihe, Inhalt: H05
- Attribut: Betriebsmittel, Inhalt: WKZ78

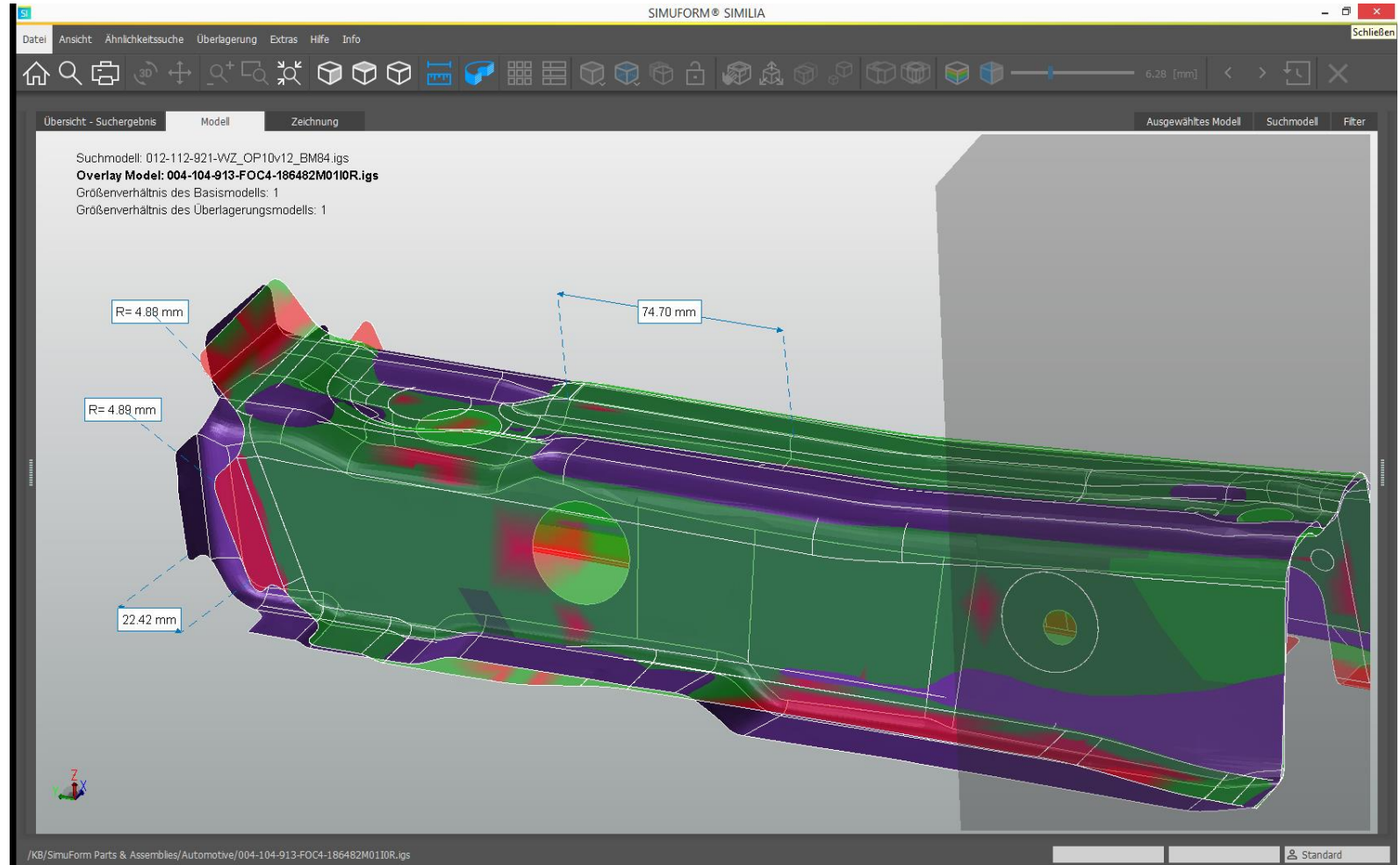




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# Controlled visualization access

- ⊕ Sophisticated 3D-Visualisation.
- ⊕ Automated part overlay
- ⊕ Red-green differential view
- ⊕ Measuring ability
- ⊕ Qualified model validation
- ⊕ Multi-CAD-Technology
- ⊕ Independent from core system





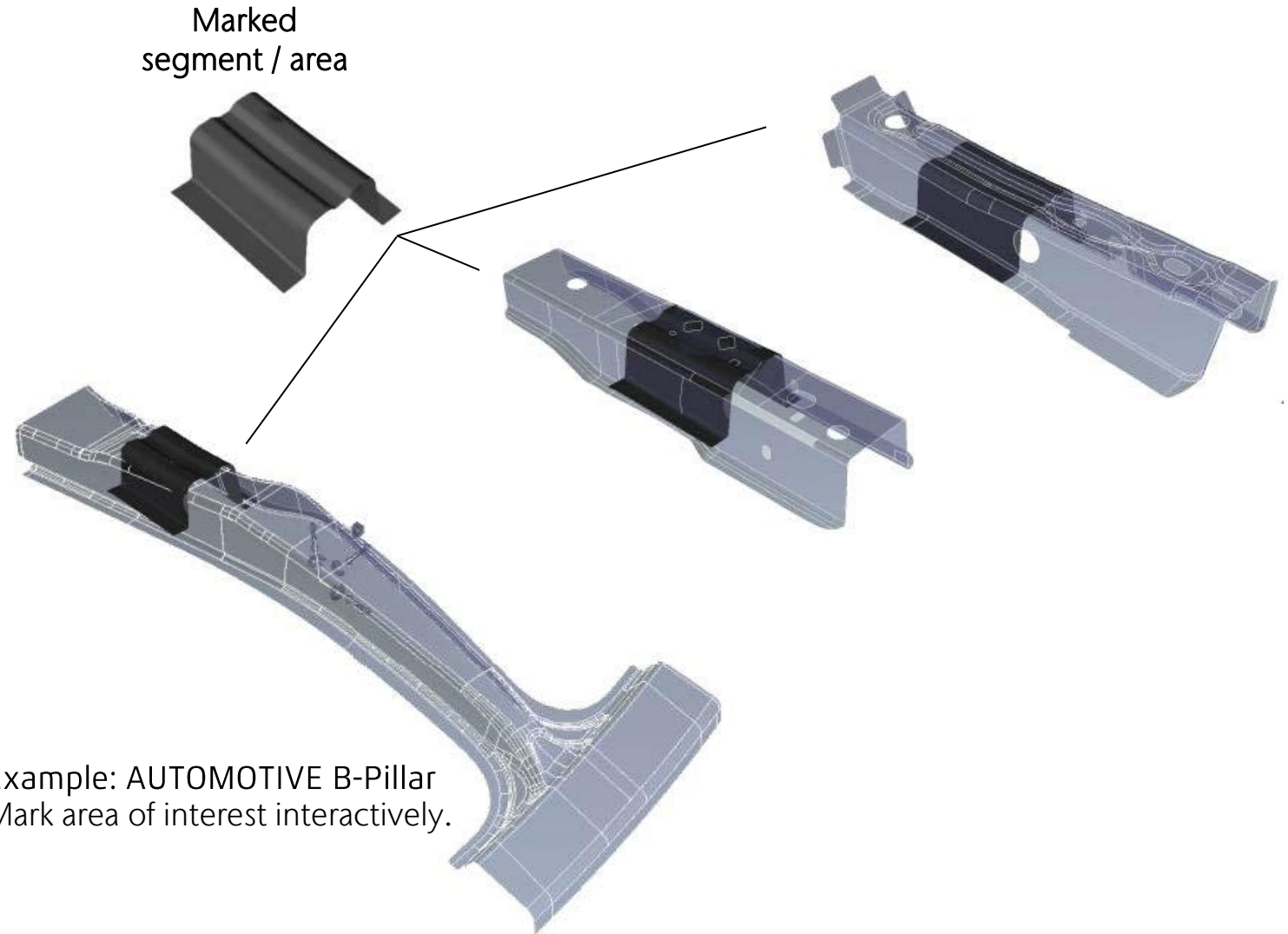
## Segment search ability

Sub domain search

SEGMENT  
SEARCH

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- ⊕ Subdomain search for geometry elements
- ⊕ Interactive selection
- ⊕ Filtering operability
- ⊕ Multi-CAD-Technology



# Automation & intelligence solutions

## Product

## Description

### SIMILIA Automation & GATEKEEPER



Server application to monitor and check data quality and prevent duplicates at early stage automatically. Integrate it in workflows and get reports and information.

**Result:** High data quality and cost reduction by systematic data monitoring and reviewing.

### SIMILIA Target Costing



Server application for automated cross-checking bill of materials to identify best suppliers for better pricing.

**Result:** More pricing confidence and better control on BOM pricing, incoming supplier quotes within supply chain management and purchasing.

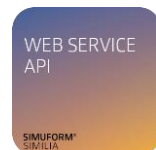
### SIIMILIA Product Intelligence



Server application for automated detection of assembly structures, part and assembly usage-references within the complete product diversity.

**Result:** Significant cost reduction by eliminating costly materials and identifying high performance materials automatically.

### SIMILIA Web Service API



Web service for integrating specific functionality into core applications using modern web technology (REST).

**Result:** Seamless functionality integrated into core IT-Systems and mobile applications at site.



## Key benefits Summary



- Efficient data and know-how reuse
- Access to similar engineering data
- Less friction in data access (Just-in-time access)
- Less redundant engineering work
- Fast support for prototyping tasks  
(access to similar reusable components)
- Fast support for process design  
(grab existing manufacturing know-how)
- Fast early stage cost estimation / calculation  
(Similarity based cost estimation)





SIMUFORM®

„Fast time to market is the ace in your hand to be successful today. SIMILIA helps us playing aces.“

Ingolf Planer, President & CEO  
AME AG



Thank you!