

Automotive Technology

Company Presentation

January 2020

thyssenkrupp Automotive Technology



engineering.tomorrow.together.



thyssenkrupp

Our Businesses

Key indicators – fiscal year 2018/19

Components Technology¹



Elevator Technology



Industrial Solutions



Marine Systems



Materials Services



Steel Europe



Sales [€ mn]

6,871

7,960

4,002

1,800

13,880

9,065

Adj. EBIT [€ mn]

233

907

(170)

1

107

31

Employees

34,964

53,081

16,062

6,013

20,340

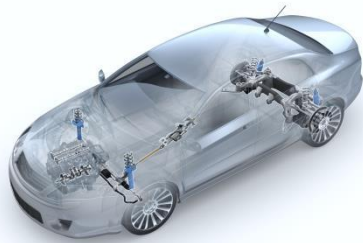
28,278

¹ Following a portfolio change effective October 01, 2019, the Components Technology business area will be continued under the name Automotive Technology from January 01, 2020.



Components and services for the automotive industry

Automotive Technology



€5.4 bn sales
25,000 employees



Steering



Damper



Automotive Systems¹



Camshafts



Springs & Stabilizers



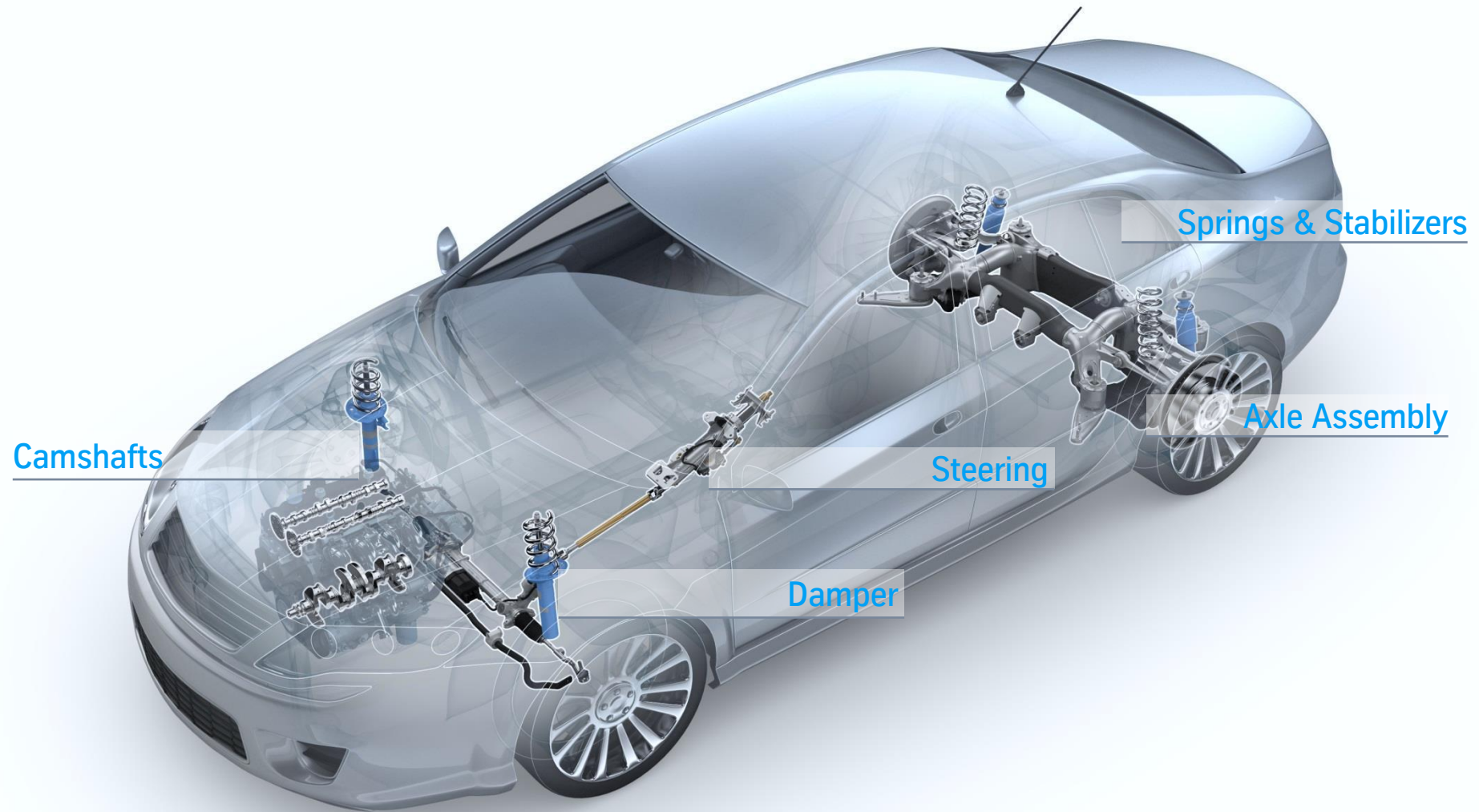
System Engineering

Our competencies: Mission critical chassis and powertrain components & plant engineering services

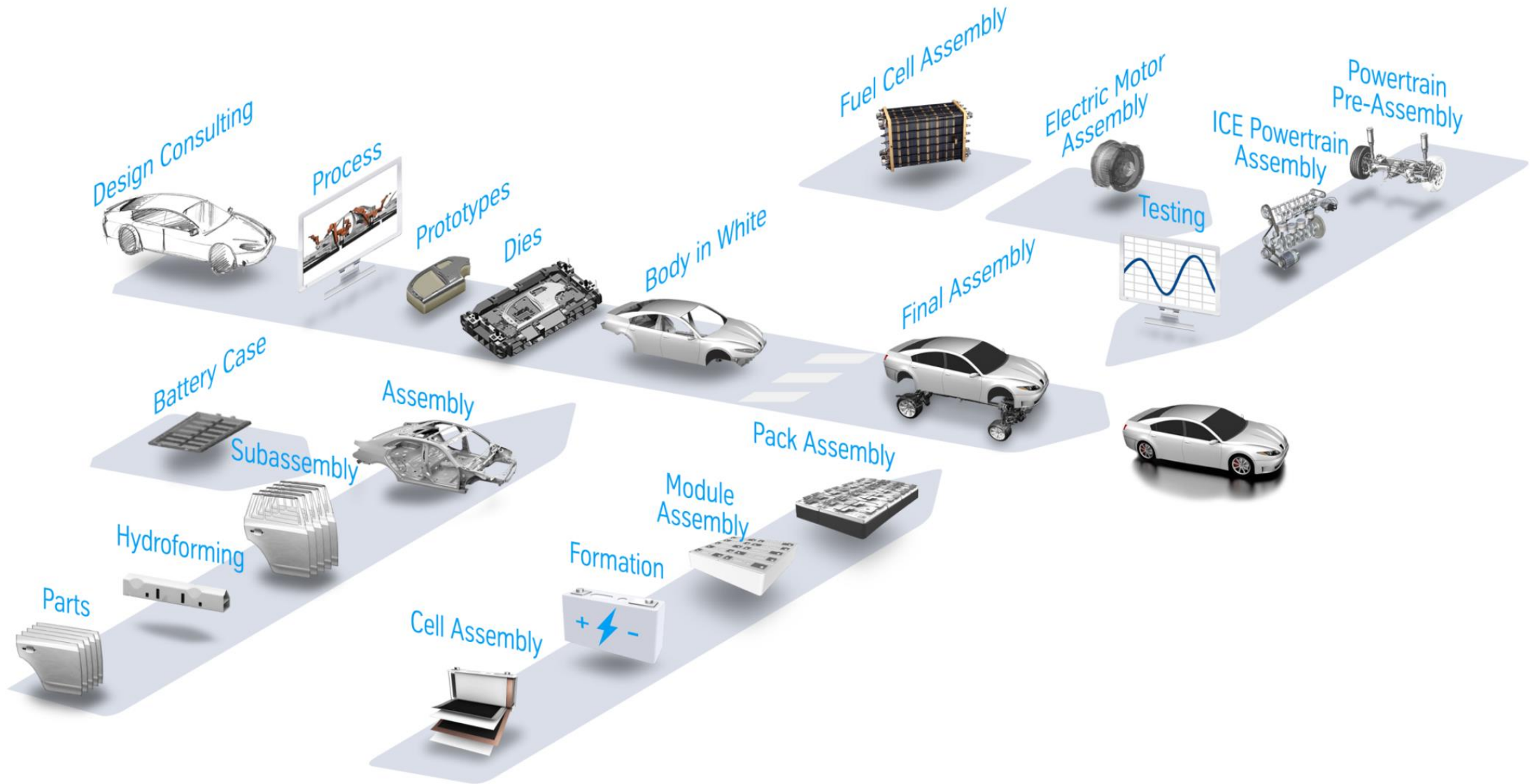
1. System assembly and just-in-sequence supplier for automotive customers



Our products in Light Vehicles



Our Plant Engineering Services for the Automotive Industry



Leading market positions as an automotive supplier



9 out of 10
premium light vehicles
are driven by our
components

Every **fourth** car in the
world is equipped with
thyssenkrupp steering
components!

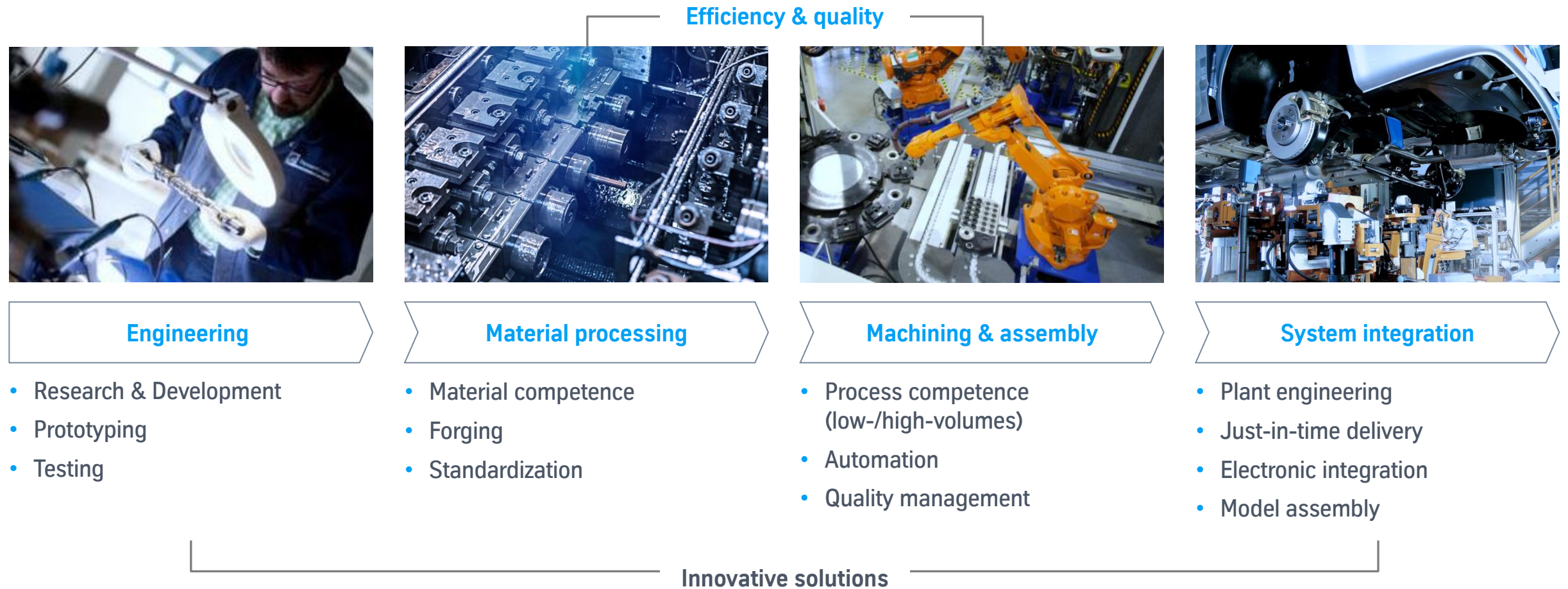
thyssenkrupp **Bilstein**:
One of the world's most
prominent brand for
high performance shock
absorbers.

Over **100 million** vehicles
worldwide rely on our
valvetrain solutions

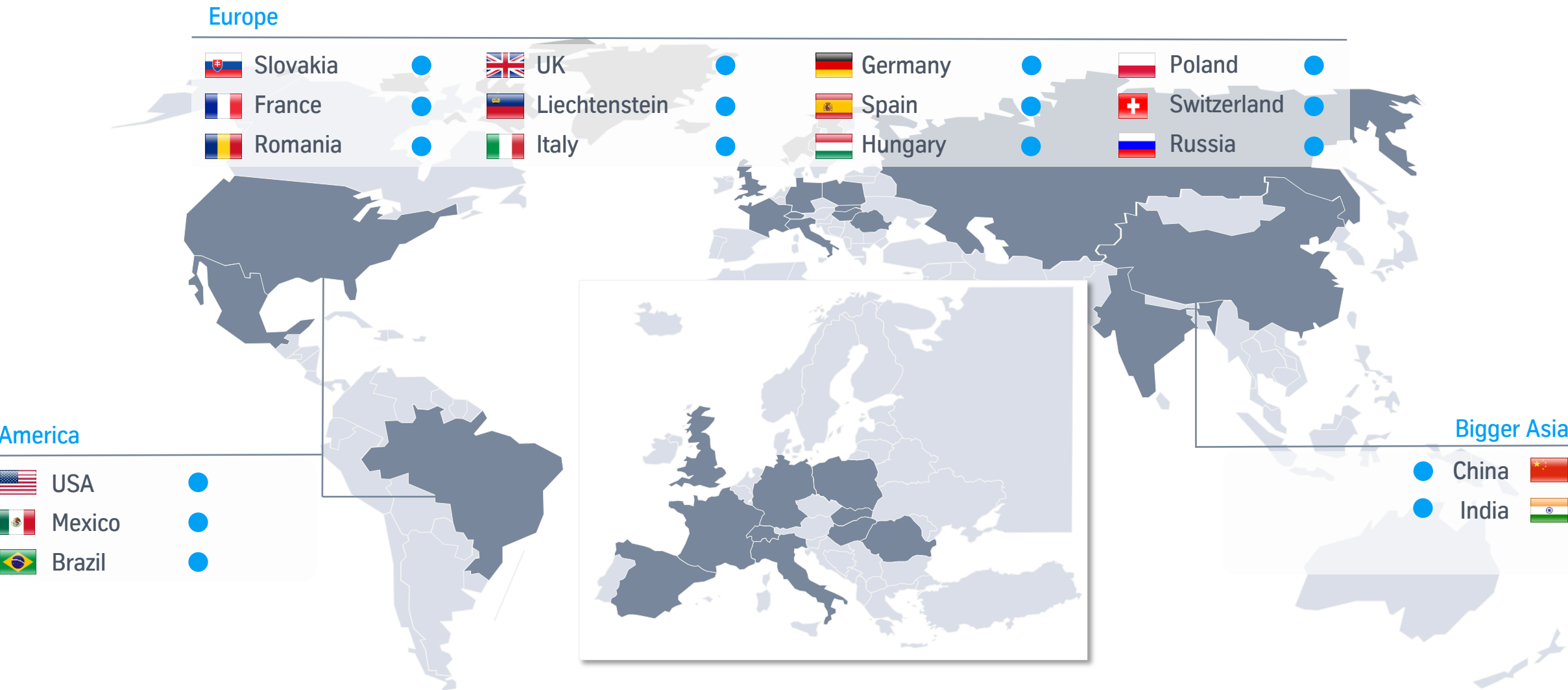


Our strength: Integrated value chain

Focus on efficient, robust processes and innovative solutions



Business Segment Automotive Technology: More than 60 production sites worldwide



Business Unit Steering

Products: Steering systems

16 sites worldwide



Business Unit Steering - Products

Cold forging

Wire/rod material is formed into finished parts. Advantages: High-temperature/acid-resistant parts, recyclable, lower weight, high material/energy efficiency.



Steering gears

Hydraulic or electric steering gears directly or indirectly transmit the movement of the steering wheel to the tie rods. thyssenkrupp offers a wide range of solutions from standard to high axle loads.



Steering columns

As well as precision steering, the central element of the steering system provides maximum safety in the event of an accident. We meet all requirements across the spectrum from budget cars to luxury-class vehicles.



Column-EPS (Electric Power Steering)

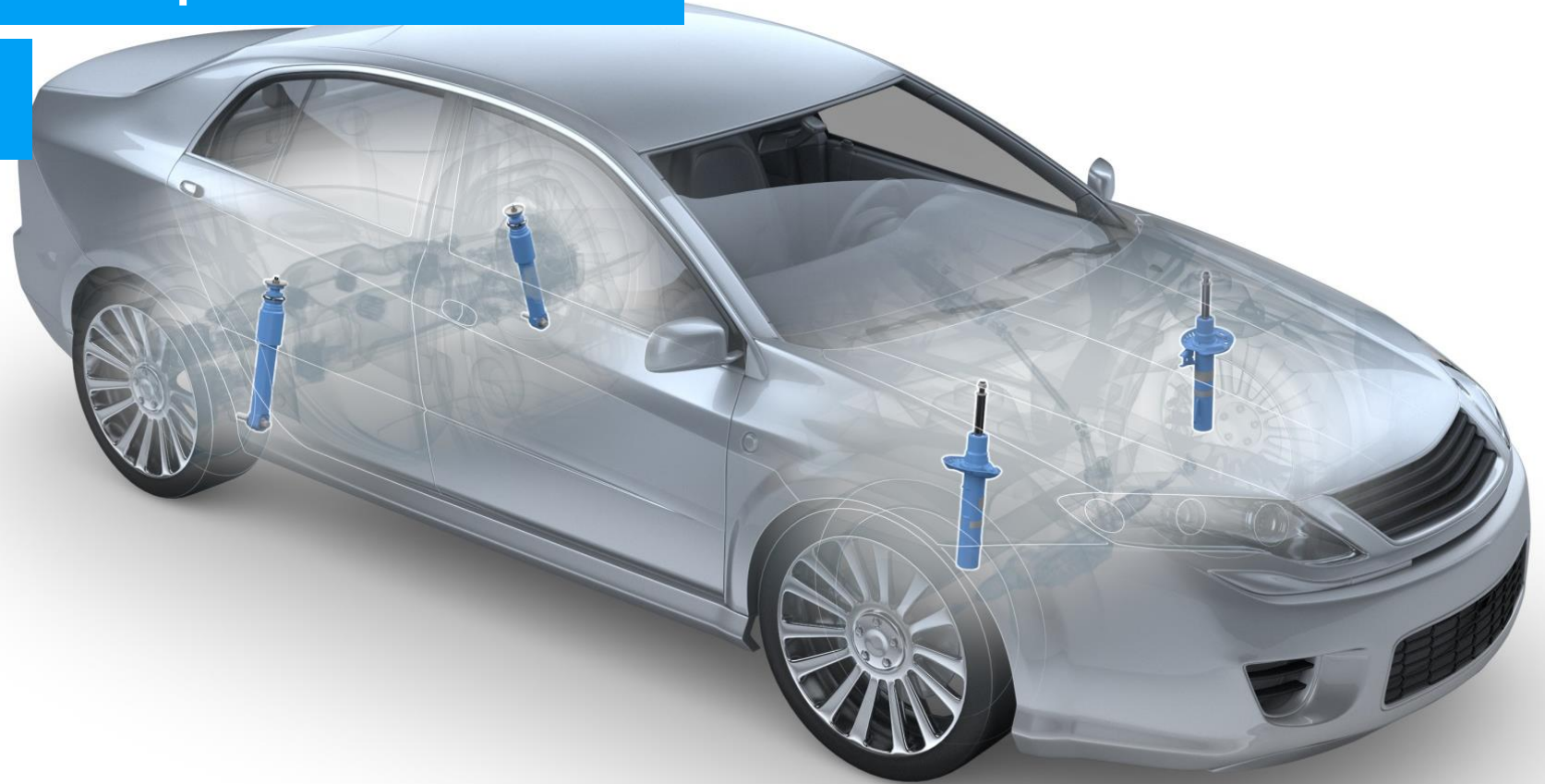
Column-EPS provides steering assistance with an electro-mechanical power unit mounted on the upper column. This system is specially designed for the high acoustic requirements and existing installation space in the cockpit area.



Business Unit Damper

Products: Dampers & Suspension struts

7 sites worldwide



Business Unit Damper – Products

Conventional dampers

The classic hydraulic gas-pressure shock absorber is used in most automobiles today. For our partners in the auto industry we are constantly developing new solutions to improve road holding and driving enjoyment.



Modules/Suspension struts

Springs ensure comfort and safety in vehicles. We offer complete suspension strut modules with steel and air springs that can be combined with all damper designs.



Electronically adjustable dampers

Sensors detect the current driving situation. A control unit records this information and optimizes the damping force for each damper individually. This provides greater safety as well as higher driving comfort.



Aftermarket

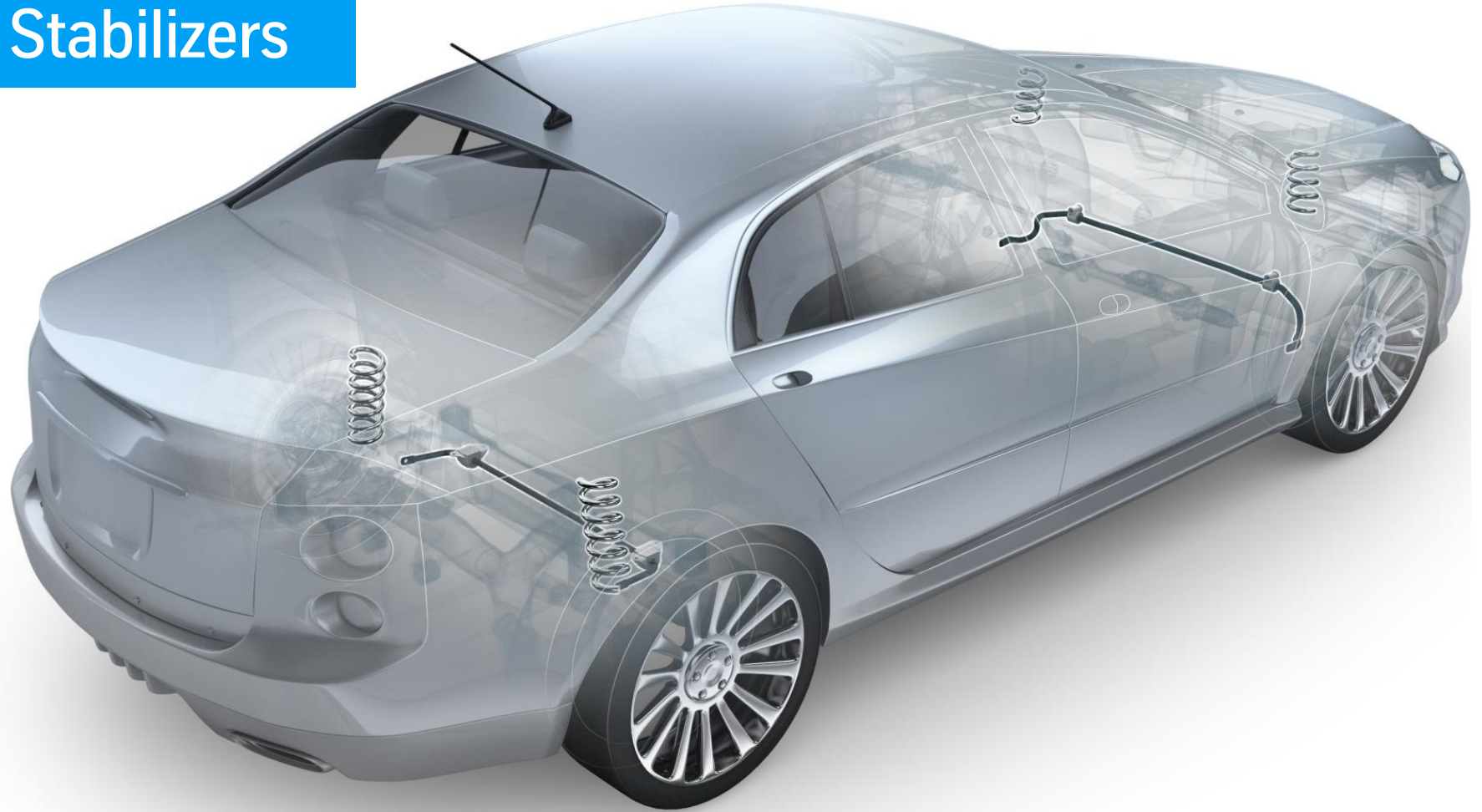
Stock replacement, tuning and motorsports – throughout the world thyssenkrupp products stand for outstanding suspension quality and performance.



Business Unit Springs & Stabilizers

Products: Springs & Stabilizers

9 sites worldwide



Business Unit Springs & Stabilizers – Products

Coil springs

Optimum combination of minimum weight, optimum packaging space, maximum robustness and minimum costs.



ThermoTecSpring®

Springs developed by us that are almost 20% lighter than conventional suspension springs. By saving weight they help lower fuel consumption and reduce emissions.



Stabilizers

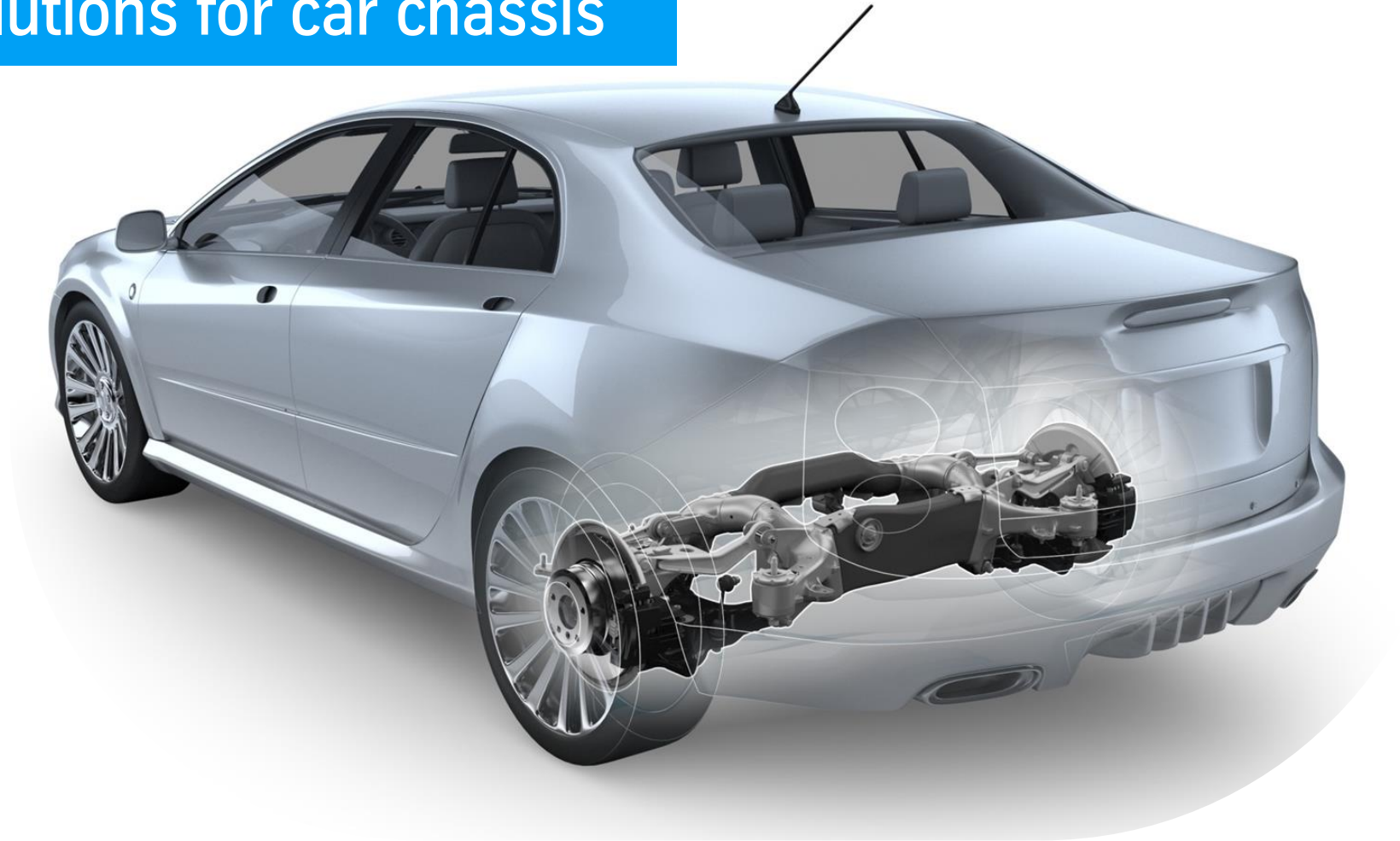
Stabilizers prevent the vehicle body from swaying and ensures better positioning. We offer a large portfolio enhanced weight reduction with no compromise on function and long service life.



Business Unit Automotive Systems

Services: System solutions for car chassis

8 sites worldwide



Business Unit Automotive Systems – Services

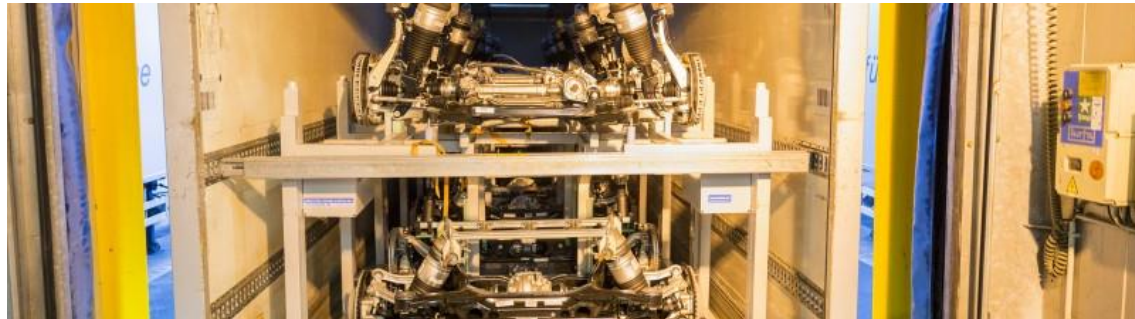
Module assembly

Module assembly includes the assembly of individual components that are grouped into smaller assembly units and ordered separately by the OEM.



Just-in-sequence/Just-in-time

We deliver chassis systems to OEMs just-in-time and just-in-sequence. Though synchronous with the sequence of the production requires the utmost from systems and processes.



System assembly

Front and rear axle assembly and on request assembly of powertrain. Specially installed assembly lines are used for these complex systems.



Other services

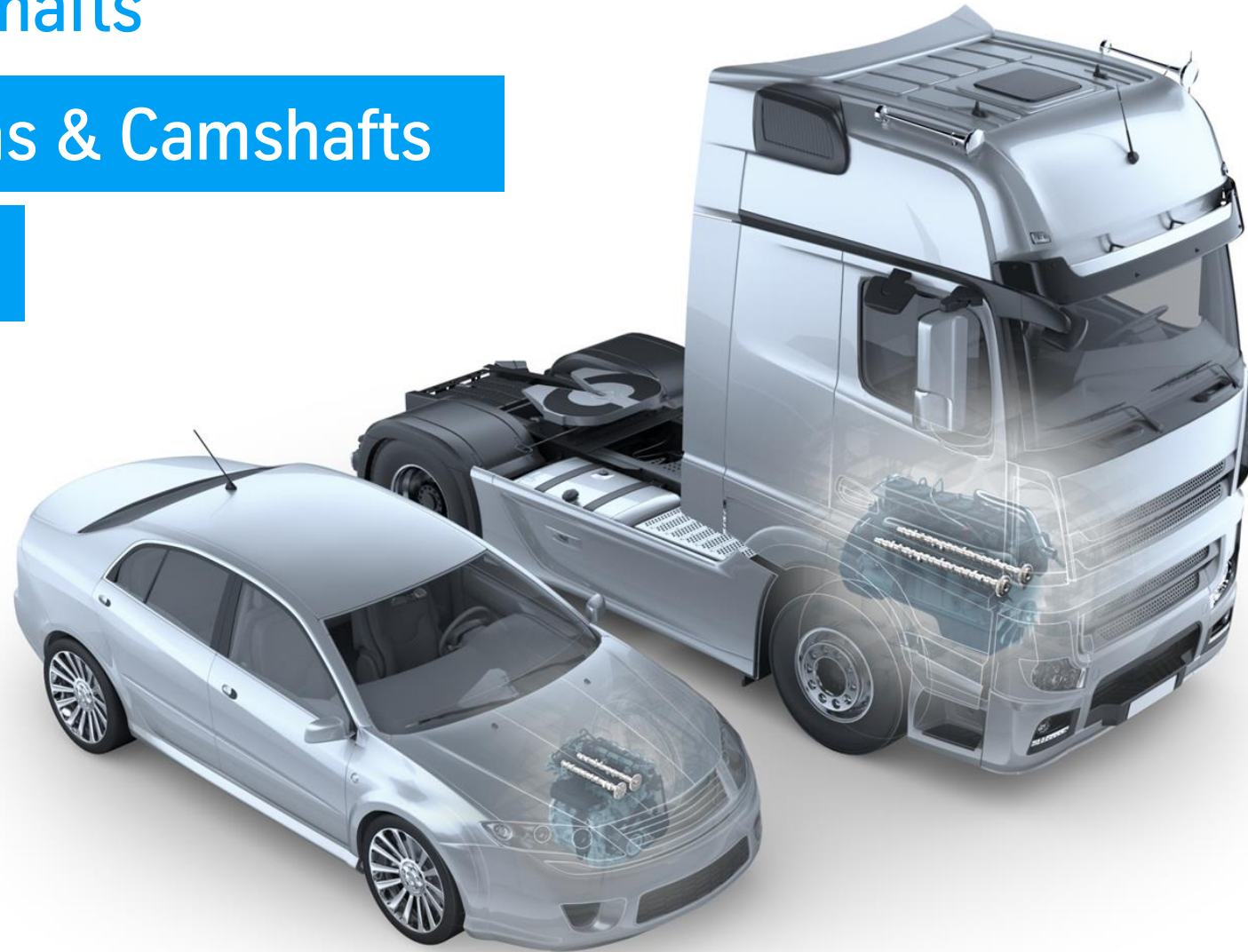
In the business area of axle assembly, we offer a series of additional services. For example, these include supplier management and assembly services as well as logistics and quality management.



Business Unit Camshafts

Products: Valve trains & Camshafts

10 sites worldwide



Business Unit Camshafts – Products

Integrated camshafts

High-precision manufacture for optimized grinding processes and reduced manufacturing costs. Weight savings of up to 40% compared with conventional camshafts.



Variable valve train

Development of fully adjustable and multi-step valve train systems for reduced fuel consumption and lower emissions.



Integrated oil separation system

System for cleaning of blow-by gases integrated in the engine interior. Reduced space requirements compared with cyclone separators.



Camshaft modules

Processes developed by us help save costs, reduce friction losses and lower CO₂ emissions.



Electric mobility

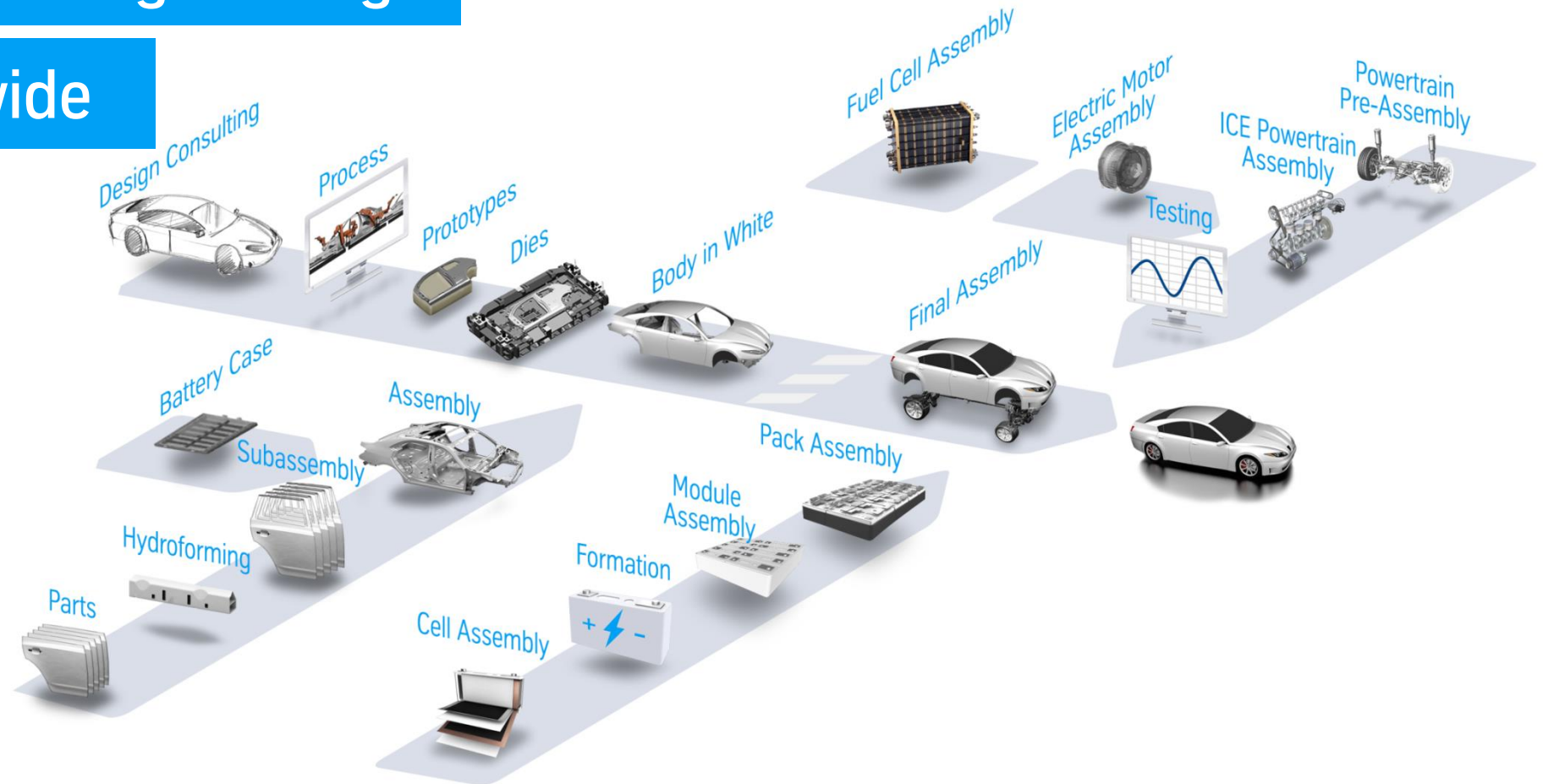
Development and production of rotor and gear shafts for electric drive systems and axles.



Business Unit System Engineering

Services: System Engineering

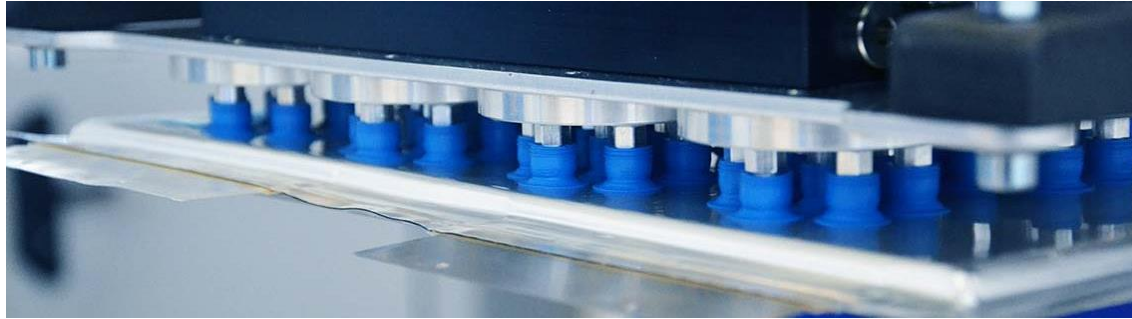
15 sites worldwide



Business Unit System Engineering – Services

Battery Solutions

As a system integrator we plan, design, and implement the production lines for the manufacture of Li-ion cylindrical, pouch, and prismatic can cells, supercapacitors, battery modules and battery packs.



Powertrain Solutions

Our product range is structured modularly, including all the components for manual, semi- and fully automatic assembly of engines, transmissions or axles. We also offer pre-assembly of cylinder heads and gear sets.



Car Body Solutions

Our product portfolio covers a broad range of services ranging from joining of individual parts via subassemblies to the assembly of complete car bodies and add-on parts.



Lightweight Solutions

We accompany the entire process from component advice, planning, development, design and production, to the handover of systems ready for final assembly.



Global Service

We deliver highly qualified support for the entire service life of our products.

