Mobility moves us all. As room on the road is getting more and more scarce, public transport becomes a more viable option for mobility regardless of location. ZF offers groundbreaking solutions with proven and innovative technology. We contribute to increasing the satisfaction of vehicle manufacturers, operators, drivers and passengers everywhere. Aiming to reduce costs, fuel consumption, accident rates and emissions, ZF aims to innovate the public transport sector by improving bus technology effectively and systematically.

ZF’s image in the commercial vehicle sector is characterized by state-of-the-art engineering knowledge, outstanding technological developments and innovative products. An essential part of our success story is the interdependence of diverse disciplines within the ZF Group.

**System as a principle!**

It is therefore no coincidence that ZF has always attached great importance to the system concept – the perfect interaction of different components in a larger whole.

When Count Zeppelin founded ZF over 100 years ago, everything was based on the idea of a functioning overall system: The zeppelin was meant to fly. And transmissions were important modules to this end. We are still driven by the desire to offer our customers more than just a single good product – we want to provide them with effective overall systems.

Today, ZF offers solutions with driveline and chassis technology systems from a single source. From basic mechanical transmissions, intelligent automatic-shifting transmission systems to electrical drive solutions with inverter and control software. From driveline components, such as clutch systems, to auxiliary brakes. From steering systems and axles to dampers, mountings and cabin suspensions.

ZF is dedicated just as passionately to the subject of lightweight construction as to the efficiency of the entire vehicle. Every day, we are working on the topics of electrification, automation and digitalization of commercial vehicles. All against the backdrop of increasing the safety, cost-effectiveness and comfort of commercial vehicles and reducing emissions.

According to our slogan “See. Think. Act.”, we offer driver assistance systems that reduce costs as well as emissions and minimize the risk of accidents on the road. To achieve this, we use our ProAI supercomputer, which receives its information from sensors, processes this mass data and passes it on to the actuators in the vehicle in the form of control instructions.

For effective interaction in the vehicle, we systematically bundle all these subject areas into functional units and systems – for the benefit of vehicle manufacturers, fleet operators and drivers alike. These systems are developed in-house across business units and thus are optimally coordinated with one another. Increasingly often, we use a single electronic unit, in which the data from our various components converge.

This results in advantages for the manufacturer – not only in terms of purchasing and logistics, but also, for example, in case of service issues. They benefit from having the same contact person for all questions. And fleet operators can be sure that they will always be competently supported on all technologies and that they will reduce workshop visits by completing them with one stop if possible.

The integration of WABCO further strengthens our expertise in the areas of autonomous driving, vehicle safety and efficiency. Including the WABCO company in the ZF family is therefore also a sign that we are continuing and expanding our fundamental system approach.
We want to make public transportation a feasible alternative to private car use. That’s why our driveline and chassis specialists are working on groundbreaking solutions that will benefit municipalities as well as transport companies, and of course also passengers. Our objectives are clear: environmental sustainability, safety, efficiency and comfort.

Over the years, ZF has increasingly become a more comprehensive supplier in the commercial vehicle industry, playing off its entire system expertise. Everything we do is simultaneously geared toward optimally harmonized driveline and chassis systems and their functions, as well as new electric solutions and driver assistance systems.

For buses with proven technology, nothing surpasses our city bus classic EcoLife: a fully automatic transmission system, featuring an integrated torque converter and retarder together with an electronic control unit. Supplemented by the ZF AV 133 portal axle with an efficiency package and in combination with the engine, an extremely efficient and perfectly harmonized driveline comes along that equals a long service life. We deliver these and all other axles complete with mounting as well as suspension and damping elements.

In addition, we offer supplementary front axle and steering systems and other essential components: control arms, tie rods and suspension joints with precisely defined rigidity for excellent wheel guidance, plus dampers that support driving safety functions such as lane centering assist, braking and acceleration and that reduce vibration loads.

In modern electric vehicles, the CeTrax electric central drive with a harmonized inverter and control unit replaces the combustion engine (including transmission) without requiring a chassis re-design. Here again, our exceptional system expertise is shown: Together with the AV 133 portal axle, the design of the zero-emission drive duo offers clear service life advantages.

The AxTrax AVE electric portal axle with integrated near-wheel motors is installed in the same way as the conventional portal axle AV 133 and enables a completely level passenger cabin with plenty of additional space behind the portal axle. We also supply AxTrax AVE as a complete system with inverter and electronic control unit.

In addition, ZF offers digital solutions, for example in the area of fleet management, and expands its offering with important aspects of autonomous driving, vehicle safety and efficiency. Thus, as a systems supplier for the entire city bus, ZF is near unbeatable.

Find out more about ZF’s technology at www.zf.com/bus
Suitable for all bus applications. Whether in city or inter-city operation, the EcoLife automatic transmission is the ideal transmission for any application.

The powershift transmission has an optimal gear ratio spread combined with especially high mechanical efficiency, closing the torque converter shortly after takeoff to use engine output effectively. Combined with the torque converter ratio, the six gears produce a maximum total spread of 13.75.

TopoDyn Life shift software controls the gear shifts. This program always selects the right gear as the topography changes, while accounting for all other driving resistance values.

The hydrodynamic torque converter with standard torsional damper enables high input torques at low engine speeds. This reduces noise level and cuts fuel consumption by 5 percent compared to automatic transmissions with fewer than 6 gears.

The integrated primary retarder is incorporated into the vehicle’s brake management and supports high braking power even at low speeds. This effectively reduces strain on the vehicle’s service brakes. The dual cooling system reliably protects against overheating and extends oil-change intervals.

All second-generation transmissions are now fully compatible with the start/stop feature. Developers at ZF managed to make the EcoLife 2 more robust while simultaneously reducing its weight by 20 kg. Overall, the numerous improvements lead to a consumption and CO2 reduction of up to 3% compared to the first generation.

EcoLife 2 and ZF-DriveLife also increase the digitalization of service and maintenance. The digitalized service packages reduce maintenance and repair costs, allow work to be planned and increase vehicle availability. ZF-DriveLife does not predict breakdowns. ZF-DriveLife prevents them!

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Reduction in fuel consumption

System-dependent, by up to

10%
Front Axle Systems and Chassis Technology for City Buses

A pleasure for both sides thanks to ZF low-floor axles: Passengers appreciate barrier-free access to spacious passenger compartments while drivers appreciate a small turning radius and high comfort.

Safety and reliability characterize the entire ZF system and all its individual components. Examples are the ZF independent suspension system RL 82 EC for full low-floor, low-entry and double-decker buses and the RL 55 EC for midibuses. Heralding a new era in axle technology: Weight and strength-optimized components combined with an adapted suspension and damping system guarantee benchmark driving safety and driving comfort. The high level of wheel deflection substantially reduces the turning radius. Other advantages: high axle load, reduced body roll, increased roll stiffness.

Excellent vehicle handling + steering precision = active safety! The arrangement of the maintenance-free control arms optimized for kinematics guarantees precise axle guidance in all driving situations. Just like suspension joints, these control arms have targeted elastokinematic properties, which contribute to damping of both vibration and noise. ZF damper technology supports acceleration, braking and lane centering assist. Jolts and noise are insulated and the technology itself causes hardly any hydraulic flow noise. The CDC intelligent damping system also compensates for uncomfortable rolling – as, for example, in the case of electric buses with roof batteries. Due to this, the ZF system and valve technologies guarantee optimal results for vehicle handling, comfort and safety – precisely tailored to the requirements of passengers and drivers.

The THP steering gear series offers exceptional steering comfort, compact design as well as top performance and reliability values.

As a combination of hydraulic power steering and electric actuator, ReAX reduces the steering forces during maneuvering and stabilizes vehicle handling at high speeds. In addition, ReAX allows for lateral vehicle control when integrated into driver assistance systems. Depending on the configuration, ReAX can be installed either on the steering wheel column or the steering gear.

The Global Column series of adjustable steering columns provides both infinite tilt and telescope adjustment throughout the range of motion for maximum driver comfort.
Rear Axle Systems and Chassis Technology for City Buses

Efficiency, safety and comfort: The low-floor concept ensures fast boarding and exiting. This increases average speed on the route, benefiting both operators and passengers.

Complete driven axle systems including air springs, dampers and axle guidance are available from ZF. ZF portal axles provide continuous step-free passenger compartments with no raised platforms. The wide range of ratios also covers electric drive concepts such as trolley and hybrid drives.

Our AV 133 driven axle features specially ground bevel gears that ensure smooth running and a low noise level.

The AVN 132 non-driven portal axle is designed as a middle or tag axle for city buses with three or more axles. It can be used in both pusher and puller systems.

For low-entry buses with centrally arranged engines, ZF offers the AV 133 T-Drive solution or the A 133 single rear drive axle.

The successor to the A 132 is capable of direct drive and noticeably contributes to reduced fuel consumption.

From a single source. Best for you! A complete package with torque rods and dampers with clear advantages: more comfort, less wear and weight savings thanks to lightweight construction. All package benefits result in lower maintenance, fuel consumption and bearing wear, plus longer service life.

A great ride wherever you sit. When the bus drives over bumps, dampers rapidly damp vibrations between axle and body in addition to the suspension. Optimally coordinated, they ensure passenger comfort and safety even on the back seats. In addition, the CDC intelligent damping system also compensates for uncomfortable rolling in the case of electric buses with roof batteries.
With optimized efficiency, reduced weight, improved oil circuit, more powerful gearing and better acoustics, the fourth generation of the AV 133 low-floor portal axle is a market success. Now, a new efficiency package offers even more advantages.

The solution for smart cost savings

Savings thanks to greater performance – that’s what you get from the optional efficiency package. ZF simulations demonstrate that a diesel bus saves up to 750 liters of gasoline within the first five years. Alternatively, an electric bus achieves an increased range of up to 3300 kilometers. Longer oil-change intervals help keep maintenance costs down and reduce oil consumption. Furthermore, CO₂ emissions drop by 2000 kilograms. All this means the efficiency package pays for itself after just three years.

The package is comprised of a friction-value-optimized portal drive, a membrane axle breather and the semi-synthetic oil ZF-EcoFluid XL. The membrane breather specifically developed by ZF prevents oil leakage and makes it nearly impossible for water to get in, under correct maintenance and usage. Vehicle manufacturers no longer have to grapple with the often complicated routing of the breather hose.

These three factors reduce loss in the axle system by 12 to 18 percent. The result is that an oil change is only necessary after 300,000 kilometers instead of the usual 180,000 kilometers. A distinct advantage of the AV 133 with efficiency package is that it is completely interchangeable with the standard axle, allowing for vehicle manufacturers to change over at any time.

The efficiency package also anticipates future statutory requirements for energy saving. It is expected that, starting in 2022, buses in the EU will be subject to CO₂ regulations and will have to display energy consumption labels. Vehicles equipped with the efficiency package will attain better results from the VECTO Simulation (Vehicle Energy Consumption Calculation Tool) than standard-axle vehicles.

Advantages at a glance
- Reduction of CO₂ emissions
- Reduced fuel consumption
- Efficiency increase with membrane breather
- Oil-change intervals extended to 300,000 km with ZF-Ecofluid XL
- Interchangeable with the AV 133 standard axle
Modern coaches offer everybody on board safety, comfort, power and maneuverability. And we supply driveline and chassis technology to this end. We want passengers and drivers to be relaxed and safe while on the road – with ZF complete systems.

**Ideal balance: because we’re all in the same bus.**
ZF driveline and chassis technology are two sides of the same coin. We are continuously working on system solutions, such as the synchronization between ZF rear axle and transmission systems: whether fully automatic like EcoLife CoachLine or with automated shifting like TraXon. We deliver the transmission system complete with integrated clutch, retarder and electronic control unit. Extended by the suitable ZF driven axle, this makes for a complete and efficient driveline. This combination results in minimal fuel consumption, a longer service life and a low noise level. We deliver all other axles complete with mounting as well as suspension and damping elements.

A large variety of different ZF components contribute to the overall travel experience: clutches and torque rods, steering and tie rods, suspension joints or dampers. They all ensure safety in traffic, offer passengers and bus drivers additional comfort, protect the vehicle and save fuel.

Power steering systems enable easy maneuvering and stabilize the vehicle at cruise speed. The steering columns are continuously variable and can be adjusted to fit the requirements of the driver.

Moreover, ZF also offers digital solutions that simplify the management of entire vehicle fleets. These range from the telematics system to services such as predictive maintenance.

With the product range of the newly added WABCO Group, ZF is expanding its portfolio to include further, important aspects of automated driving as well as vehicle safety and efficiency.

We guarantee highly developed technology systems that are purpose-built for coaches. ZF offers top-notch consultancy and worldwide service, to ensure your needs are met every time.

Find out more about ZF’s technology at www.zf.com/bus
EcoLife CoachLine – The Automatic Transmission for Coaches

Hilly roads, narrow curves, high altitudes with reduced engine output, back to intercity or city traffic. Stop and Go. Slow driving. Frequent braking and acceleration. For this mix, ZF has developed the new, independent product family EcoLife CoachLine especially for coaches – for engines between 1,200 and 2,800 Nm.

Based on the second generation of EcoLife, CoachLine guarantees high average speed at the lowest engine speeds – now also in top high-performance coaches with up to 2,800 Nm in combination with longer axle ratios.

Without tractive force interruption, and designed for a significantly higher service life, the EcoLife CoachLine shows its advantages over manual and automated manual transmissions.

The engine always brings its full torque to the road – without tractive force interruption and without loss of speed when changing gears. Despite fast acceleration even on uphill gradients, passengers will not notice any gear shifts.

The standard integrated TopoDyn Life driving program makes a major contribution by activating the correct shift strategy to deliver optimum fuel consumption, based on topography and driving resistance. Brake force is adjusted automatically while fuel consumption and noise are kept at a low level.

Since the primary retarder does not depend on the output speed, it delivers maximum deceleration almost until it reaches a standstill. With the CoachLine, downshifting until first gear during retarder operation allows for further fuel savings through the engine fuel cut-off.

The dual cooling system, with the transmission heat exchanger and the increased retarder heat exchanger, enables reliable braking with the retarder even on long downhill gradients and reliably protects against overheating.

The oil quantity, which is nine liters larger than the city bus version, also extends the oil change interval. Depending on the OEM, this can be up to 480,000 kilometers.

**Developed for harsh requirements**

The torque converter used in the improved EcoLife transmission is even more powerful than its predecessor. With the reinforced, standard torsional damper, it is designed to handle up to 2,800 Nm of engine torque, and the engine can run at low speeds. This enables slow maneuvering without clutch wear.

The torque converter lock-up clutch significantly helps cut fuel consumption. After a short start-off phase, the transmission works purely mechanically, which guarantees maximum energy efficiency.

The tried and tested EcoLife Coach, which is based on the first EcoLife generation, is still available for a transitional period.

**A new product family specifically for coaches**

- 8 different transmission types for engines from 1,200 to 2,800 Nm
- Gear changes without tractive force interruption, on uphill gradients just as in the city center
- TopoDyn Life – driving resistance-dependent shift control
- Reliable braking even on long downhill gradients, thanks to the integrated primary retarder and dual cooling concept
- Increased retarder heat exchanger
Comfort, reduced fuel consumption, low weight, better performance, longer service life and less maintenance – with the TraXon automated transmission system, we are on the way towards achieving a new standard of efficiency.

An extremely compact, robust and versatile basic transmission with the highest efficiency of its class is at the core of our latest innovation. The space-saving design and newly developed gear sets make TraXon a benchmark in power-to-weight ratio.

TraXon can transmit up to 2,800 Nm of torque. Thanks to various design features such as optimized housing geometry, generating-ground gears and an integrated rattle-damper in reverse gear, the noise level is one third below its predecessor model.

Modular in design, TraXon can be combined with additional systems. The wear-free ZF transmission brake Intarder, with up to 4,000 Nm of brake torque, is integrated into the transmission housing and can be included in the vehicle’s brake management system.

Thanks to the shared oil circuit, the Intarder has the added benefit of cooling the transmission oil or rapidly heating it to the optimum operating temperature.

A feature of TraXon is PreVision GPS predictive shifting strategy, offering the option of linking the transmission to GPS data and digital maps. This avoids unnecessary shifting due to terrain or location. Further functions support the driver during maneuvering and hill starts, or save fuel in start-stop driving. As a result, the bus is on average more fuel-efficient, and faster at the same time.

Thanks to the integrated torsional damper in the clutch, fewer vibrations are transmitted from the engine to the transmission. The ConAct concentric clutch actuation system operates gently for reduced stresses on the driveline.

The new A 133 axle has a direct drive ratio and can thus be combined with TraXon’s direct drive version to noticeably reduce fuel consumption and CO₂ emissions.

Individual components such as transmission oil or clutch disks are part of the digital service package Predictive Maintenance.

### Advantages at a glance
- High torque range up to 2,800 Nm
- Less fuel consumption thanks to maximum transmission spacing
- Less transmission noise
- Perfectly harmonized clutch with ConAct clutch release
- Control electronics with many intelligent additional features
- Intarder integrated, wear-free additional brake

### Transmission efficiency in direct drive

99.7%
Automatic and Manual Transmissions

With its wide range of transmissions, ZF meets the requirements of sophisticated markets and applications. The price/performance ratio and operation efficiency excel – while continuously providing palpable comfort for passengers and drivers.

ZF offers its PowerLine 8-speed powershift transmission for school and midibuses. ZF’s intelligent electronics and non-wearing torque converter achieve double digit fuel savings. The integrated twin torsional damper reduces vibrations, making driving quieter and significantly increasing driving comfort.

The intelligent transmission control provides a wide spectrum of driving functions, such as hill start aid and a start/stop function.

Our EcoShift modular-design, 6-speed transmission series replaces conventional 6-speed transmissions in city and intercity buses as well as coaches. It stands out with its improved efficiency and operating comfort.

Shifting is easy, precise and noise-optimized, while the transmission itself is lightweight and compact. EcoShift offers benefits such as pressure oil lubrication, resulting in lower churning losses. ZF offers transmission extension modules as well, with ServoShift shifting assistance, ZF-Intarder transmission brake and an additional cooling system.

For light motorized buses, Ecolite completes the range of manual transmissions. Ecolite is easy to use and runs quietly thanks to state-of-the-art synchronous technology.

Transmissions and clutches come from one source, with single-disk clutches for push or pull-type applications contributing noticeably to cost-effective pricing. We specially craft clutch designs for each application, ensuring optimal adjustment for each transmission.

ZF’s dual-mass flywheel achieves outstanding separation of engine irregularities and effectively eliminates rattling and humming noises.
Driveline and Chassis Technology for Coaches

Only axle systems specifically developed for coaches guarantee the safety and comfort necessary for long-distance travel.

ZF’s independent suspension development is based on the double control arm principle. Thanks to reduced body roll and a comparatively small turning radius, both passengers and drivers benefit from a feeling of active safety, resulting from improved vehicle handling and high steering precision in both coaches and midibuses.

Rear axle systems specially developed for coaches are characterized by reduced weight, low-noise operation, reduced propshaft deflection angles and service-friendly compact bearing units. The axle system’s weight including suspension elements is less than 1,000 kilograms – a reduction in weight without affecting vehicle stability.

ZF torque rods form the longitudinal, transverse or diagonal connections between the axle and the frame. In combination with precise axle guidance, they contribute to reduce tire wear. V-links serve to absorb longitudinal and lateral forces with the torque rods, assuming all axle guidance tasks.

Intelligent lightweight design and the optimization of functions go hand in hand with cost reduction and the improvement of dynamic driving properties. The main focus is always placed on the chassis as a safety part. Additional chassis safety is appreciated by our customers who use ZF components, such as stabilizers or damping systems like CDC.

The THP series steering gear offers exceptional steering comfort, compact design as well as top performance and reliability values. As a combination of hydraulic power steering and electric actuator, ReAX reduces the steering forces during maneuvering and stabilizes vehicle handling at high speeds. In addition, ReAX allows for lateral vehicle control when integrated into driver assistance systems. The Global Column series of continuously variable steering columns delivers maximum driver comfort.
Damping Technology
With Extra Stability
and Comfort

High comfort is a core requirement in coaches. This is where innovative damping technology by ZF makes all the difference. PCV provides immediate damping force, stabilizing the vehicle quickly without as much hydraulic noise.

Various axle and engine designs, along with positioning of batteries, loading areas and other weight sources, affect mass distribution and center of gravity, additionally impacting noise level and acceleration behavior. The chassis needs dampers to quickly dampen vibrations caused by the interaction between the axle and body. Our PCV Premium Comfort Valve is the right solution for buses, regardless of driveline type. PCV makes it possible to precisely adjust the damping characteristic to the conditions of the individual vehicle. Moreover, PCV minimizes hydraulic flow noises and the transmission of non-damper noises to adjacent assemblies.

Precise adjustment to widely differing buses
The core of our PCV technology is a new piston valve design. With a large selection of parameters, it is possible to create characteristic curves that meet customer requirements and vehicle requirements even more precisely. This is another new standard for the bus market set by ZF.

Safety due to regulated damping force
A significant increase in damping force in the low damper speed range reduces rolling and pitching motions to a minimum. At medium velocities, the modified oil feed system provides a slow rise in the damping force. To keep the vehicle uniformly stable and to prevent the vehicle body from pitching and subsequently rocking, the damping force increases again at high compression speeds.

Advantages at a glance
- Greater comfort without loss of stability
- Strong damping of axle movement at low deflection speed possible
- Smooth transition to the next force level
- Minimization of the noise in the vehicle
- No external control systems

![Characteristic curve of conventional shock absorbers](image)
![Characteristic curve of the PCV](image)
Customers worldwide rely on ZF products for buses. Responding to international demand, the global player ZF is present in all markets. Our system components are produced at various locations on several continents. The key aspects here are market development through adapting products to specific market requirements and best-cost-country considerations which play a decisive role in production and procurement. This applies equally to transmissions and clutch components or chassis parts.

ZF supports the international expansion of established customers while also adding partners from new market regions to its customer portfolio. This enables ZF to provide a tight network of highly qualified contacts close to international customers at all levels and in all regions. Our global presence also guarantees service support with standardized ZF quality. The expertise of ZF really counts, especially when it comes to complex servicing or repairs.

Apart from spare parts, exchange units and operating supplies – such as transmission oil – the ZF locations also offer special maintenance programs for fleet owners, training for customer repair shops and modification of vehicles to special use cases.

On Site – Worldwide

ZF is there to serve its customers, always nearby with more than 650 service partners around the globe ready to help drivers, owners or fleet operators whenever they need professional support.

Our Wide Range of Services From a Single Source

As a technology leader, ZF is not only a manufacturer, but also a reliable partner that supports you throughout the lifecycle of your vehicles and applications. Wherever you may need us, ZF Aftermarket supports you with its own comprehensive service network and the entire range of aftersales services from a single source. Quickly, directly, reliably. Here are our strong quality products and excellent services at a glance:

**Extended Coverage Program (ECP)**
You're fully covered with the ZF program for repair risks, including repair and maintenance of transmission, axle and electric drive systems by ZF Customer Service. As a fleet owner with a contract with ZF, you pay a fixed price and the ZF service organization renders the service for your ZF transmissions.

**Life Cycle Cost Coverage Program (LCC)**
This program to cover life cycle costs means ZF provides all preventive and corrective maintenance of transmissions and axles produced by ZF. This ensures top vehicle availability.

**Driveline consultancy**
A bus provides optimum economy when all driveline components – from the engine and transmission to the rear axle – work accurately and in perfect harmony. ZF’s experts support you in advance, and not only give you advice for the transmission design but also when determining and designing the drive axle for your specific needs.

**Digital services for fleet management**
ZF offers a complete range of flexible telematics solutions that can be configured as you like. They record the operating data of the vehicle and transmission with an on-board unit and send them continuously to a web portal, where they are evaluated by various applications (“apps”). The results are made available to registered users worldwide. In addition, it is also possible to network entire bus fleets.

**Spare parts business, remanufacturing, technical training and more**
From our large number of logistics centers, we ensure delivery of genuine spare parts from the various ZF product brands. Furthermore, we offer warranty-backed industrial remanufacturing of ZF and non-ZF products such as clutches, torque converters, steering systems and transmissions. Naturally, we also provide technical training for fleet operators and auto repair shops. Our specialists in maintenance and repairs of ZF units are responsible for this. We also provide extensive documents, such as catalogs as well as repair and installation instructions.
The ZF Group

Groundbreaking technologies for future mobility.

ZF Friedrichshafen AG is a worldwide leading technology company whose comprehensive solutions enable cars, commercial vehicles and applications in industrial technology to see, think and act.

In its "Next Generation Mobility" corporate strategy, ZF has anchored the goal of making tomorrow’s mobility clean, safe, automated, comfortable and available to everyone everywhere. To achieve this, the Group is active in four fields of technology: Vehicle Motion Control, Integrated Safety, Automated Driving and Electromobility.

The Group offers its innovative system solutions both to established vehicle manufacturers and to the newly established providers of transport and mobility services. The company contributes to reducing emissions and protecting the climate, since ZF electrifies vehicles in a wide range of categories.

On May 29, 2020, ZF acquired WABCO Holdings Inc. and integrated it into the Group as the Commercial Vehicle Control Systems Division. With this addition to its own Commercial Vehicle Technology Division, ZF is not only a systems supplier with many years of experience offering a complete product range in the passenger car segment, but now also covers the commercial vehicle range with the same comprehensive portfolio.

As a result of the latest acquisition, ZF Friedrichshafen is now represented with 160,000 employees worldwide at around 260 locations in 41 countries. In 2019, the two then-independent companies achieved sales of €36.5 billion (ZF) and $3.4 billion (WABCO).