Twice the steering power: ZF launches next generation AKC active rear axle steering system in volume production

- **Latest Generation AKC offers rear steering angle of up to ten degrees**
- **Steer-by-wire" rear axle steering improves agility of longer electric vehicles**
- **Volume production to begin December 2020 in full-size luxury car**

Friedrichshafen, Germany. The second generation of ZF's AKC (Active Kinematics Control) active rear axle steering is improved with targeted technical developments. A greater steering angle of up to ten degrees increases the agility of long vehicles and "Steer-by-wire" technology simplifies the integration into automated driving functions. ZF's position as market leader in vehicle motion control is underlined by this product launch on a prestige brand.

The AKC active rear axle steering system is a ZF success story. Available with either a central controller having a single, larger and centrally placed actuator or dual actuators (a system especially suitable for sports car design). The AKC system transforms car rear axles into additional steering systems helping to enhance vehicle safety, comfort and driving dynamics. The first generation (dual actuator) system, went into series production in 2013. To date, AKC has been installed in more than 500,000 vehicles across numerous international car manufacturers.

"In this second generation of AKC, we have further improved performance and increased networking capability, making it fit for the requirements of automated and electrified mobility," says Ingo Hermansa, Senior Vice President of the Chassis Actuators Product Line at ZF.

The central actuators have an increased actuating force of 11 kN (previously 8 kN), which makes them suitable for vehicles weighing up to 3.5 t. An improved adjustment stroke now allows the rear wheels to turn by up to ten degrees (previously 4.5 degrees). Thus, the new system primarily supports battery-powered vehicles (BEV). Thanks to their lithium-ion batteries, these vehicles are not only heavier, they often have a longer wheelbase and energy storage units usually placed between the axles. Without rear axle steering, these vehicles would be more difficult to maneuver, especially in urban environments.

Another innovation of this AKC generation is the "steer-by-wire" system, which is based on a new electronic architecture. Thanks to state-of-the-art cyber security, the control unit developed by ZF is protected against hacker attacks and works together with current parking and steering assistants. Thus, even larger sedans can be steered easily through narrow alleys and parking garages.

Prestige Product Launch
Dr. Peter Holdmann, Head of ZF's Car Chassis Technology Division, comments on the start of production of the second AKC generation: "The demand for active rear axle steering systems by ZF continues to pick up speed. For this purpose, we recently opened a fourth assembly line at the location in Lebring, Austria. We can now produce over one million units per year there".

The second generation AKC will celebrate its premiere this December on a luxury class model from a renowned international manufacturer. The turning circle of this car is now two meters smaller than in the previous generation. Further models with rear axle steering are to follow.

"In the best sense, the new generation of our AKC is an evolution of proven ZF capabilities. In addition to improved maneuverability at low speeds, it also helps to ensure driving safety at higher speeds," said Dr. Holdmann. "This latest order and the use of our product in sports car models underlines the broad application possibilities of our technology

and also our position as market leader in the Vehicle Motion Control segment."

For ZF, the term Vehicle Motion Control means the linking of all longitudinal, lateral and vertical dynamic systems in the vehicle, steering, braking and damping systems for example, by means of intelligent chassis control software. Through consistent further development in this segment, ZF supports automobile manufacturers in optimizing the driving experience, driving pleasure, and safety of their models.

Captions:
1) Greater steering angle and for use in battery-electric vehicles: ZF has introduced the second generation of the Active Kinematics Control (AKC) active rear axle steering system.
2) Dr. Peter Holdmann is Head of ZF's Car Chassis Technology Division: "Customers worldwide expect optimum safety, dynamics and comfort - features to which our Active Kinematics Control can contribute significantly.
3) Ingo Hermansa oversees the product line for chassis actuators at ZF and also led the further development of the active rear axle steering.

Images: ZF

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ZF, which acquired WABCO Holdings Inc. on May 29, 2020, now has 160,000 employees worldwide with approximately 260 locations in 41 countries. In 2019, the two then-independent companies achieved sales of €36.5 billion (ZF) and $3.4 billion (WABCO).

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