Dedicated Hybrid Transmission

Vitesco Technologies Supplies Renault with Actuator Module for Electrified Transmissions

› In the dedicated hybrid transmission of the Renault E-Tech platforms, the gears are shifted by an actuator module manufactured by Vitesco Technologies
› It contributes making hybrid vehicles more attractive for the end user and better utilizing the CO₂ savings of hybrid technology
› The major order marks the entry into an innovative new technology
› With this new form of electrification, Vitesco Technologies is industrializing a forward-looking development

Regensburg, Nuremberg, Germany. December 15, 2020. The electrification of the drive system is the most important technological pioneer for clean, locally emission-free and highly efficient mobility. In addition to battery-powered electric vehicles, electrification also enables hybrids. In hybrid drive trains, the electric drive system works in a close team together with the combustion engine, offering major global benefits in reducing the CO₂ fleet emissions of a manufacturer.

Similar to the new full hybrid from Renault, where an electrical actuator module from Vitesco Technologies now takes control of the gear changes in the automatic transmission. Renault has integrated the actuator module in its E-Tech platform, which is used for example in the Clio, but also in the Mégane, Arkana or Captur.

For Vitesco Technologies, a leading international manufacturer of modern drive technologies and electrification solutions, this means implementing a new technology at large series production level: the automatic transmission for the full hybrid Clio E-Tech is the first dedicated hybrid transmission used by Renault in Europe. With this new form of electrification, a considerable simplification of the mechanical components in the transmission means that it will be possible to offer the full hybrid at the price level of a diesel vehicle with automatic transmission. As a result, the actuator module for transmission electrification is helping to make hybrid vehicles more attractive for the buyer and allowing better utilization of the CO₂.
savings of hybrid technology. The order includes a three-digit million Euro amount throughout the entire term.

"CO₂ reduced mobility must be affordable before it is rolled out. Electrification in the transmission can play a key role here," explains Wolfgang Breuer, Executive Vice President Electronic Controls business unit at Vitesco Technologies. "We promoted this new method of applying electrification very early on and as an experienced series supplier, we are now able to start production on an industrial scale. The order placed by Renault further consolidates our position in the hybrid drive market."

**Mechatronic Solution for the Hybrid Market**

Vitesco Technologies has been successfully developing electronics for automatic transmissions for decades. The company commands a leading global position in the manufacture of transmission control units. The new actuator module is the result of extensive competence in the field of control technology, expertise in actuators and an outstanding knowledge of electrification. Two electric motors delivering 100 W of power initiate the gear shifts. The dedicated hybrid transmission in the Clio E-Tech does not feature a friction clutch and so gear shifts are initiated via a claw coupling, which reduces friction losses and further increases the efficiency of the drive while reducing the installation space required. A front-transverse installation will also be possible in more compact vehicles as a result. The module uses more cost-effective direct current motors, weighs less than 1 kg, and therefore sets a major benchmark in this new market.

"Just a few years ago, something like this would never have been technically feasible," explains Stephan Rebhan, Executive Vice President Technology & Innovation at Vitesco Technologies. "Only now is the control technology powerful enough to implement a claw coupling concept of this kind. It was therefore just the right time to industrialize our long-standing development." When the claws are engaged, the two electric motors in the actuator module work with such speed and precision that the driver does not notice the absence of the friction clutch because the gear shifts in less than 150 milliseconds. "The rubber band effect, whereby the gear shift
noticeably lags behind the request from the accelerator pedal, does not occur here.*

Vitesco Technologies is a leading international developer and manufacturer of modern drive technologies for sustainable mobility. With smart system solutions and components for electric, hybrid and combustion powertrains, Vitesco Technologies makes mobility clean, efficient and affordable. The product portfolio includes electric drives, electronic control systems, sensors and actuators, and exhaust gas aftertreatment solutions. In 2019, Vitesco Technologies, a Continental business area, recorded sales of EUR 7.8 billion and employs almost 40,000 people at around 50 locations worldwide. Vitesco Technologies is headquartered in Regensburg, Germany.

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