

Marquardt brings cell phone based smart car access into series production

### **The future of Keyless Go has begun**

- PnD3 platform from Marquardt makes smartphone-based access suitable for mass use in passenger cars and commercial vehicles
- Cyber-secure integration of smartphones using a digital key
- High level of flexibility with UWB, NFC, and BLE

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*Rietheim-Weilheim, October 2021* – Marquardt makes your vehicle key as smart as your cell phone by turning your cell phone into a universal key. The mechatronics specialist's drive authorization system, called PnD3, combines the latest ultra-wideband technology (UWB) with near-field communication (NFC), as well as, Bluetooth Low Energy (BLE) and is ready for series production. The PnD3 seamlessly closes the gap between a smartphone and a drive authorization system (DAS). Vehicle manufacturers will receive a highly flexible, modular solution for different vehicle types. It is compatible with other Marquardt components, so it can form a complete solution from a single source. Secure transfer of the digital key also opens up new possibilities for fleet managers, car-sharing providers, and car rental companies.

### **Into the future with PnD3**

The flexible PnD3 architecture allows a modular scope from simple to highly complex utilization, both for passenger cars and commercial vehicles. Marquardt is therefore making cell phone-based Keyless Go technology affordable and suitable for the masses. In addition to the standard configuration, the number of UWB modules may vary, and the provision of NFC and BLE is selectable too. The software development kit (SDK) allows unlimited smartphone applications to be adapted to the vehicle manufacturer's design. Marquardt offers the central, easy-to-integrate control unit (ECU) in a scalable and compact design; including, a waterproof version designed specifically for commercial

vehicles. Other compatible components are immobilizers, door handle sensors, or electric vehicle charging flaps.

### **Focusing on safety and user benefits**

Security against hackers was one of the main focuses while the PnD3 platform was being developed. The core of the PnD3 is the new ultra-wideband technology following the Car Connectivity Consortium (CCC) Standard; which Apple and other smartphone manufacturers began supporting in 2019. It enables cyber-secure storage of the digital vehicle key in the smartphone – and opens up brand-new potential applications in combination with the precise UWB driver localization. “We invested in UWB technology early on, so we have very profound expertise,” explained Wolfgang Stehle, Head of Marquardt’s Entry and Authorization Systems Product Segment. “So, with a smaller number of UWB modules on the vehicle, we achieve more secure and swifter localization of the smartphone near the vehicle thanks to our algorithm. And the complete compatibility of all our components results in perfectly synchronized processes – even in critical situations.” As a TIER1 supplier, Marquardt has many years of expertise in car access systems. Marquardt introduced the first Keyless Go system in 2001 and unveiled the first secure UWB system in 2019.

### **The standard of the future: digital key sharing**

Thanks to the integration of the smartphone into the driving authorization systems, gestures can also be recognized in the future with the help of UWB technology. Windows, doors, or the trunk would open without the use of additional sensors. “The ability to digitally share the digital key simply but securely via 'key sharing' also provides quick assistance in the event of a lost key - it significantly simplifies the process of handing over and returning vehicles for car rental companies or fleet managers,” remarked Jörg Fischer, Global Product Line Manager Smart Access. In addition, delivery services could place ordered goods directly in the vehicle. In 2022, the first

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manufactured vehicles will be delivered with the new PnD3 system;  
series production at Marquardt started at the end of 2020.

### Press photo:



***Marquardt\_Press\_PnD3\_1:*** Marquardt's PnD3 system makes the vehicle key as smart as the cellphone.



***Marquardt\_Press\_PnD3\_2:*** The Marquardt PnD3 system's precise driver localization offers brand-new potential applications.

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