Autonomous driving is the central motivator for using camera-based sensor systems in the passenger compartment. Stationary camera solutions are the key to extending functions such as authentication processes, occupant detection and comfort settings.

Together with the American start-up company facetec Inc., we are developing a camera solution that can be used on any platform – both with mobile devices and with a stationary camera. Continuous consistency is one major advantage. Where, for example, the use of fingerprints quickly reaches its limits in the event of injury or contamination, camera-based sensors can be used for a variety of functions.

We implement a biometric authentication process in the vehicle. The camera in the passenger compartment detects whether the authorized person is sitting in the driver’s seat or not. For example, the start process is only released if a positive match was made. In addition, passenger-specific settings, such as personal chassis settings or seat position, can be linked to the process.

The possible applications are numerous. Commercial users, in particular, benefit from the high level of security.

Strong partners for more security
By expanding the biometric authentication process, IAV and facetec are creating a new driving experience with the user-friendly ZoOm app. IAV’s automotive expertise combined with facetec’s security focus offers numerous application options for comfort and security settings in the vehicle.
Camera-based biometrics inside the vehicle

Easy and clever.
The ZoOm app developed by facetec is suitable for both mobile and stationary devices. After registering once, ZoOm can be used on several devices regardless of the platform. Occupants are detected quickly and easily once connected to the vehicle. Biometric authentication consists of a 3D face scan. An intelligent solution permits automatic recognition of changeable personal features including glasses, beards or make-up. Occupant detection with ZoOm also works under different lighting conditions.

Secure and comfortable.
ZoOm's 3D mapping provides a high level of security. Unauthorized persons, external threats and identity theft can be stopped with the app. Integrating ZoOm in the vehicle permits many conceivable uses including occupant detection or comfort settings such as adjusting the seating position or selecting your favorite radio station. ZoOm is also useful in hazardous situations. If, for example, the occupants' gestures would aggravate the course of an accident, the app could counteract the vehicle functions and prevent the airbag from triggering.

Versatile and smart.
Biometric comparison makes the system very secure. This solution is particularly relevant in the commercial vehicle sector or for car-sharing providers. There are also advantages in terms of insurance ratings. By ensuring that only the authenticated group of vehicle users will actually drive the vehicle, insurance companies can be confident that no unauthorized people will have access to the vehicle and its functions.