

## MOTHERSON X TRINAMIX

# Frictionless Vehicle Access — Smart B-Pillar

trinamiX and Motherson jointly develop a Smart B-Pillar for convenient and secure access to vehicles.

## The Challenge

Motherson, a key player in the automotive industry, sought to enhance its existing product portfolio with advanced vehicle access features. To achieve this, it partnered with trinamiX to develop a Smart B-Pillar solution that combines user convenience with elevated security. The challenge lay in securely performing driver facial authentication with robust anti-spoofing, enabling “safe access” from the vehicle’s exterior environment, and integrating camera technology discreetly behind body panels. Additionally, the solution needed to ensure eye safety from infrared lighting and prevent image saturation in bright sunlight.

## The Solution

trinamiX’s face authentication technology, based on its patented Beam Profile Analysis, was integrated into a real-world demonstrator with Motherson, coordinated by the innovation team, by jointly developing a Smart B-Pillar. The solution combined 2D facial recognition with a 3D liveliness

detection system using dot projection to enhance security. The design was optimized for face scanning from an ergonomic, standing position of the driver. To ensure optimal optical performance, the surface material and contour of the B-Pillar had to be precisely calibrated during development.

## The Outcome

The Smart B-Pillar demonstrator successfully showcased a high level of user convenience by enabling facial recognition-based vehicle access, while also enhancing protection against theft and unauthorized use. The entire camera system was seamlessly integrated within a standard B-Pillar trim assembly, allowing compatibility with existing vehicle architectures and supporting larger-scale production. Looking ahead, the next steps include promoting the solution to OEMs for potential series integration, adapting the system for various surface materials and finishes to achieve full shy-tech integration, and developing a unified control system for all technologies housed within the B-Pillar.

## trinamiX

trinamiX enables innovative features for secure and convenient driving

trinamiX's solution improves the security and safety of cars by providing the highest level of face authentication with spoof detection, enabling easier access and convenience to users.

## trinamiX

A brand of  
BASF – We create chemistry

### Headquarters

Ludwigshafen am Rhein, Germany

### Founded

2015

### No. Employees

51+

### Website

[trinamixsensing.com](https://trinamixsensing.com)

## Acknowledgement

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The basis of the program is the partnership that develops between startups and the corporate business units. The two entities hold an equal footing from the get-go: together they evaluate the potential for a joint venture, move forward to pilot the technology, and work to achieve the ultimate goal – a successful production-ready implementation.

Designed with the intention to exceed startup acceleration, STARTUP AUTOBAHN powered by Plug and Play moderates a community for collaboration with a focus on implementable results.

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