

RESEARCH REPORT
ABOUT Automotive

Global Automotive Biometric Driver Identification Market

Forecasts to 2030



JULY 2021



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Publishing Group

ABOUT Publishing Group
29 Barnfield Road
Harpenden
Hertfordshire
AL5 5TH
United Kingdom

Email: sales@aboutpublishinggroup.com
www.aboutpublishing-auto.com

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SCOPE OF REPORT

Biometrics is the measure and analysis of how someone behaves. It can be applied for both verification and identification purposes. Biometric verification is used to check that a person is who they claim to be, while biometric identification determines who the person is based on a measured biometric factor. There are a number of characteristics that can be used for biometric identification, including fingerprints, iris and facial geometry.

While most of us are accustomed to using our fingerprint to unlock our phones, can biometrics be used to reliably unlock our cars? In pushing back the technical boundaries, some automakers are exploring the application of fingerprint sensors, retinal scans, and facial recognition and even gait tracking in order to replace the conventional key fob for accessing a car and starting its engine.

In-car biometrics can do more than unlock cars, however. The technology can be applied to detect driver health by monitoring their heart rate, blood pressure, drowsiness, levels of blood alcohol content, and even trigger warnings about a potential epileptic seizure. In-car biometrics can also assist the driver to personalise settings, including cabin temperature, radio and seat adjustment.

Although there are a number of potential uses for automotive applications, most current experiments using biometrics are taking place in the access control and personalisation area.

This report sets out analysis of the global automotive biometrics driver identification market, providing intelligence on the main drivers, opportunities and challenges facing the sector. It also provides detailed regional and global forecasts across three biometric applications in cars, namely fingerprint, facial and iris recognition. The scope of this report therefore includes:

The current status of automotive biometrics:

- How will tomorrow's car use biometrics?
- What is happening – and in which cars?
- Why does it matter and what are the next steps?

Market opportunities of automotive biometrics:

- What is the market potential?
- How fast will the market grow for fingerprint, facial and iris recognition?
- What are the opportunities to create additional value of the driver-facing camera for digital commercial purposes?
- Is the automotive industry facing a biometric boom?
- What is the big picture?

Ulrich Lueders, Director Strategy & Portfolio, Business Unit Human Machine Interface at Continental believes that gesture control can be a supportive means of interaction in the car if we are talking about simple and intuitive gestures. During an interview with the author, he said: "We see a certain potential for this functionality to expand into more cars in the future. A decisive factor is the cost for the interior sensing technology which is needed to realize gesture recognition. Looking at the upcoming legislation for driver monitoring systems, interior cameras will also move into lower segment vehicles. With this, basic gesture control will not necessarily be an exclusive feature for high-end cars any longer."

Dr Alexander van Laack, Director, Cockpit of the Future – North America at Faurecia agrees that gesture controls have limited applications. During another interview with the author of this report, he said: "If you look at the BMW 7 Series, when they introduced a gesture, they made it a mandatory feature, you had to take it basically, and then they had three gestures and three functions that you can control. The question is: will people pay money for it? The difficulty with the gesture as we know it from a few years ago, we had to use very complex time-of-flight cameras and 3D capable cameras, but what is possible today with image processing and video analytics basically is that we can use cameras that might be inside the car already for other reasons, e.g. driver monitoring to actually recognise a certain level of gesture. In that case, you do not have much of an overhead that you pay for this camera because it will be inside the car anyway for other purposes. This is something we have shown, in a way where we can use software upgradability to make more use of hardware, and we believe that this is a way how the consumer in the future will interact more multi-modal by actually choosing the modality that he wants to use. If you want to use gesture for some functions, why shouldn't you be able to do so? I don't believe that you will control your whole car with gestures, I still believe gesture will be just a support function and you will most likely have your voice interaction as one of the main interaction functions inside the car, and then afterwards the touch functionalities for certain buttons that will still exist."

7.3 APPLICATIONS

A profitable brand with a market share growing around the world, **DS Automobiles** is accelerating its development with DS 4. Its infotainment system, known as DS Iris System, features a new interface that takes the usability of a smartphone with a tactile, seamless and responsive interface based around the idea of profiles that can be personalised with icons. The settings and display load automatically on start-up. Controlled by voice and gesture, the system incorporates a personal assistant capable of recognising what's said to it so that the system can carry out requests. This is supported by a unique gesture control system, DS Smart Touch, located on the centre console. This is a screen that you can use with your fingertips. The user making a gesture towards one of the pre-entered favourite functions is enough. The

BIOMETRICS IN CONNECTED VEHICLES

9.1 KEY POINTS

- In addition to advances in autonomous vehicles, automakers are adding more connectivity to cars. Such connected vehicles and self-driving or autonomous vehicles will require some mechanism for authorising a driver or passenger access to the vehicle.
- With the rapid increase in wireless network resources, automakers are working towards a connected vehicle that takes advantage of high network data speed to provide users with various services, such as voice-controlled applications, infotainment and vehicle diagnostics. Cars can already be unlocked using an app embedded on a smartphone. Connected vehicles can be directly coupled to each other via RF (Radio Frequency) wireless communications and other peer-to-peer communication technology.
- Connected cars incorporate a variety of communication devices, such as those embedded within the car and/or user equipment of the driver and/or passengers within the car. These devices have the substantial computing power and wireless data links that couple the respective devices to the communication network.

9.2 Q&A WITH DrivingVisionNews

During this research, we caught up with Daniel Stern, Chief Editor of DrivingVisionNews—the global vehicle lighting, driver assistance, and vehicle interior industries' journal of record. Here, we learn more about the use of ambient lighting in the context of the shift toward more CASE (connected, autonomous, shared and electric mobility) and biometric applications.

Not so long ago, car interior lighting consisted of central and side headliner lights, complemented by low-level ambient lighting mainly in the cockpit area. What's your assessment of the stage of progress with ambient lighting?

Interior lighting is in galloping growth right now, and this is likely to continue and accelerate for the foreseeable future. It's push- and pull-driven by burgeoning co-evolution of lighting technology and new use scenarios brought on by the CASE revolution in personal mobility.

Looking just at ambient lighting, the days of a few 5-watt light bulbs overhead are in the distant past. Now we've got variable-colour lighting with a variety of different control strategies, e.g. driver-selectable, music-responsive. We are seeing high-concept installations such as the Rolls-Royce Starlight Headliner. Automakers are integrating lighting elements into the design and configuration of interior components, controls, and displays in novel ways.

Global Automotive Biometric Driver Identification Market

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This exclusive new report provides analysis of the emerging and fast-growing automotive biometrics driver identification market, including intelligence on the main drivers, opportunities and challenges facing the sector. It also provides detailed regional and global forecasts across three biometric applications in cars, namely fingerprint, facial and iris recognition.

This report provides fresh, unbiased insight in a number of areas, including:

The current status of automotive biometrics:

- How will tomorrow's car use biometrics?
- What is happening – and in which cars?
- Why does it matter and what are the next steps?

Market opportunities of automotive biometrics:

- What is the market potential?
- How fast will the market grow for fingerprint, facial and iris recognition?
- What are the opportunities to create additional value of the driver-facing camera for digital commercial purposes?
- Is the automotive industry facing a biometric boom?
- What is the big picture?

The report also covers 36 key players pushing back the technical boundaries in the automotive biometrics arena.

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- Chapter 2: Next steps for automotive biometrics
- Chapter 3: Automotive biometrics timeline
- Chapter 4: Fingerprint recognition
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- Chapter 14: Key suppliers advancing automotive biometrics

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