



# BMW Group: Balancing Top Class Security With Top Class Customer Experience In Car Sharing



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The trend away from private car ownership towards shared ownership and shared usage models has been evident for some time. Mobile devices are at the heart of enabling new business opportunities within this emerging mobility sector. However, the sharing economy brings new use cases and use models with it that impact platform security and user experience.

## The Client

BMW Group offers vehicles which are factory ready for deployment as car sharing assets and uses Approov to ensure maximum platform security with minimal customer impact across all use cases.

## The Challenge

Most car sharing vehicles are regular models where car sharing hardware and software are retrofitted into the car prior to being added to the car sharing providers' fleet. This adds an additional step into the process of setting up, running, and maintaining a car sharing service. OEMs who take ownership for the delivery of vehicles which are immediately capable of delivering a comprehensive car sharing service, including all the required security measures, are highly differentiated in the market.

It's clear that the mobile app is a critical component in the system since it is the main user touchpoint for searching, booking and executing car sharing activities, in particular locking and unlocking the vehicles. As such, the inherent security via the mobile app is critical to the success of the car sharing platform. Further, traditional mobile 'app as a key' approaches which work well for car ownership use cases do not scale into the car sharing world.

In addition to delivering excellent security, it is vital to provide outstanding support for customer use cases which have previously shown to be troublesome for traditional car sharing offerings. Specifically, use cases where a constant Internet signal cannot be assured, such as in underground parking or in remote countryside. There are well reported cases of users not being able to open their shared vehicle because the access mechanisms relied on Internet connectivity.

## How Approov API Threat Protection Helped

The goal is to minimize the risk of car theft or fraudulent use of the car sharing service, while ensuring the smoothest user experience possible. Given the scale of unique individuals using the service it is clear that security mechanisms which rely on binding mobile app instances to specific physical mobile phone devices are not appropriate. Not only do such approaches insert undesirable friction into the customer experience since they require user device registration with the service, such hardware binding approaches may have negative GDPR implications.

It is clear that security techniques which are based purely on the mobile app software are the only practical solution. Unfortunately, most such solutions require secrets such as API keys to be stored in the mobile app code. This is not a good path to go down because there are so many cases where such secrets have been extracted from the app or the API and exploited at scale, to the detriment of the business.

Approov is a software only security solution for mobile apps and APIs which does not depend on mobile device characteristics and does not require any secrets to be stored in the mobile app. Using its patented 'DNA test', Approov attests that the API request is coming from a genuine instance of the mobile app and that it is running in a safe environment.

There remained the question of how the use case of intermittent Internet connectivity could be supported. Following a short development project, Approov was enhanced to work over Bluetooth, such that the car can authenticate the mobile app directly. This capability is now available to all Approov customers.

## The Results

Considerable testing was done with the BMW Group's Car Sharing Platform after Approov had been integrated. A range of use cases and deployment scenarios were considered using vehicles with BMW Group's own testing fleet initially, and then within pilot projects set up between them and their car sharing provider partners, such as ShareNow.

The BMW Group Car Sharing Platform, including the Approov SDK, has already been deployed in several thousand vehicles and we will continue to work closely with the team to ensure the highest levels of security and end user experience on an ongoing basis.

## Summary

Car sharing is a huge business opportunity within the sharing culture megatrend. Alongside the enthusiasm of the commercial potential of car sharing, platform providers must place security considerations if the full potential of the opportunity is to be realized. Approov has been shaped to deliver the security piece of this vision.



To see Approov API Threat Protection in action and get more information, contact us for a free demo.

[www.approov.io](http://www.approov.io)