Giesecke+Devrient

Info Brochure

Dual-SIM Dual-Active
eSIM management for automotive

Seamless connectivity for the driver

Today users usually couple their phones via Bluetooth in the car to place calls or to mirror media to the infotainment screen if supported. Alternatively car makers offer the purchase of subscriptions for the consumption of infotainment services and WIFI hot spot in the car. Dual-SIM Dual-Active (DSDA) is a new concept leveraging eSIM technology. Here the car's telematic unit comes with two built-in SIMs. One SIM is used to run the telematics services, the second SIM is reserved for the user. The user can now add the car to its existing data plan of its preferred operator -alike a smartwatch- where upon an eSIM profile is provisioned to this 2nd SIM. From this moment the user enjoys the convenience of seamless call handovers when leaving or entering the car and bring seamless connectivity into the car based on the existing data plan. The solution also enables the management of multiple subscriptions for different users of a vehicle.

Facing up to the challenges

Greater connectivity means greater complexity, and industry stakeholders wanting to stay ahead of the connectivity curve are working to address this. OEMs are examining new ways of dealing with these issues in their pursuit of the connected car of the future. Today, for example, drivers can connect their devices to their vehicle via Bluetooth to make phone calls or use apps. In this scenario, the vehicle serves as a convenient display and input device for the cell phone, but the vehicle's Bluetooth capability must be compatible with endless mobile device models, each with thousands of software versions. As a result, some consumers report that they struggle to achieve connectivity because of complex Bluetooth pairing.

Manufacturers are also getting to grips with mulitple connections for the various infotainment and telematics services that are competing in bandwidth capacity and real time needs, which often means juggling multiple mobile operators that are competing on service and data capacity. Furthermore, they must find solutions to the problem of metal coated car windows interfering with cell phone connectivity when handsets are used inside the car.

Smart and flexible connectivity with eSIM management

All new cars are equipped with eSIM technology to enable eCall, telematics and other OEM-centric services. This technology has been established on the market since 2012. The eSIM management ensures global connectivity in line with country specific regulatory rules for telecommunications services such as prohibition of permanent roaming, data privacy laws for local data hosting and eCall compliancies.

The amount of data exchanged between the car and the backend is growing rapidly, similar to many other cases in the IoT world. In some cases, the car's connectivity is also being used to enable user-centric services such as streaming music data, etc.

But in this case, the OEM and the user are competing for connectivity bandwidth. In addition, phone calls and other ID-related services are difficult to handle because, for example, the car's phone number is not necessarily associated with the user of a car.

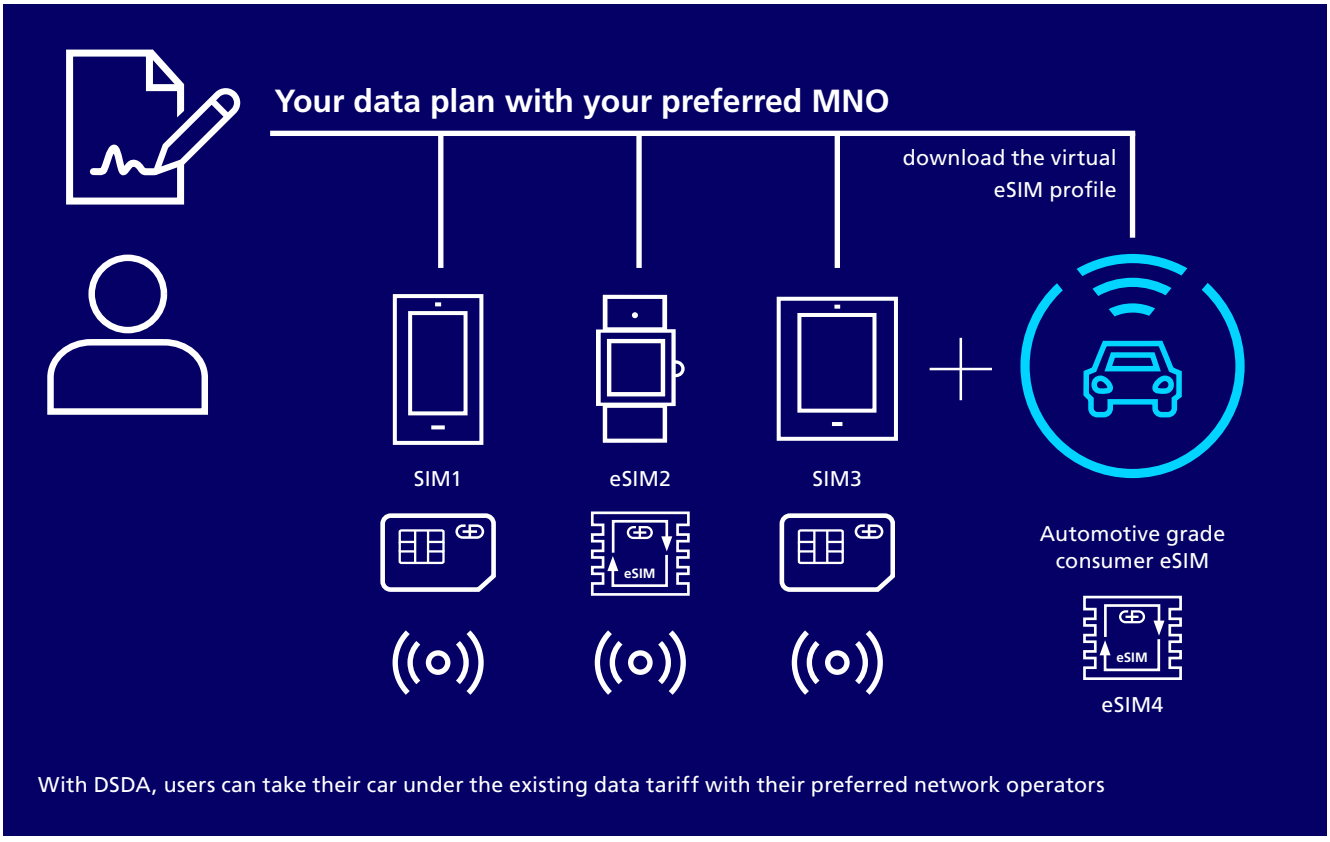
To overcome these hurdles, the idea of installing a second eSIM in the car was born. With eSIM management, users can seamlessly bring their data plan, phone number, and other related services into the car while driving it.

What managing a vehicle is all about

With the eSIM management solutions, consumers and OEMs can stay connected all the time, at the same time. Drivers and passengers use their existing data plans with their preferred MNO partners to connect the infotainment system of the vehicle to the network and enjoy, for example, the seamless connection to streaming services such as Spotify.

OEMs can utilize the connectivity function to enable eCall and telematic services. What's more, the eSIM management solution protects vehicles throughout their lifecycles by providing highly secure over-the-air access for updates.

Bring the user's mobile ID into the vehicle



With DSDA, users can take their car under the existing data tariff with their preferred network operators

Flexible connectivity management

Dual-SIM Dual-Active (DSDA) allows carmakers to deliver the reliable security, privacy, performance, and convenience that consumers demand. New usage and business models open up, enabling you to offer unique, integrated services directly to consumers. Providing a convenient way to become instantly connected in the vehicle and to get access to a personalized digital experience.

For car manufacturers, this goes beyond technology. With these solutions, OEMs can position their brands for the future – and thereby increase customer loyalty, improve user experience, and grow their businesses.

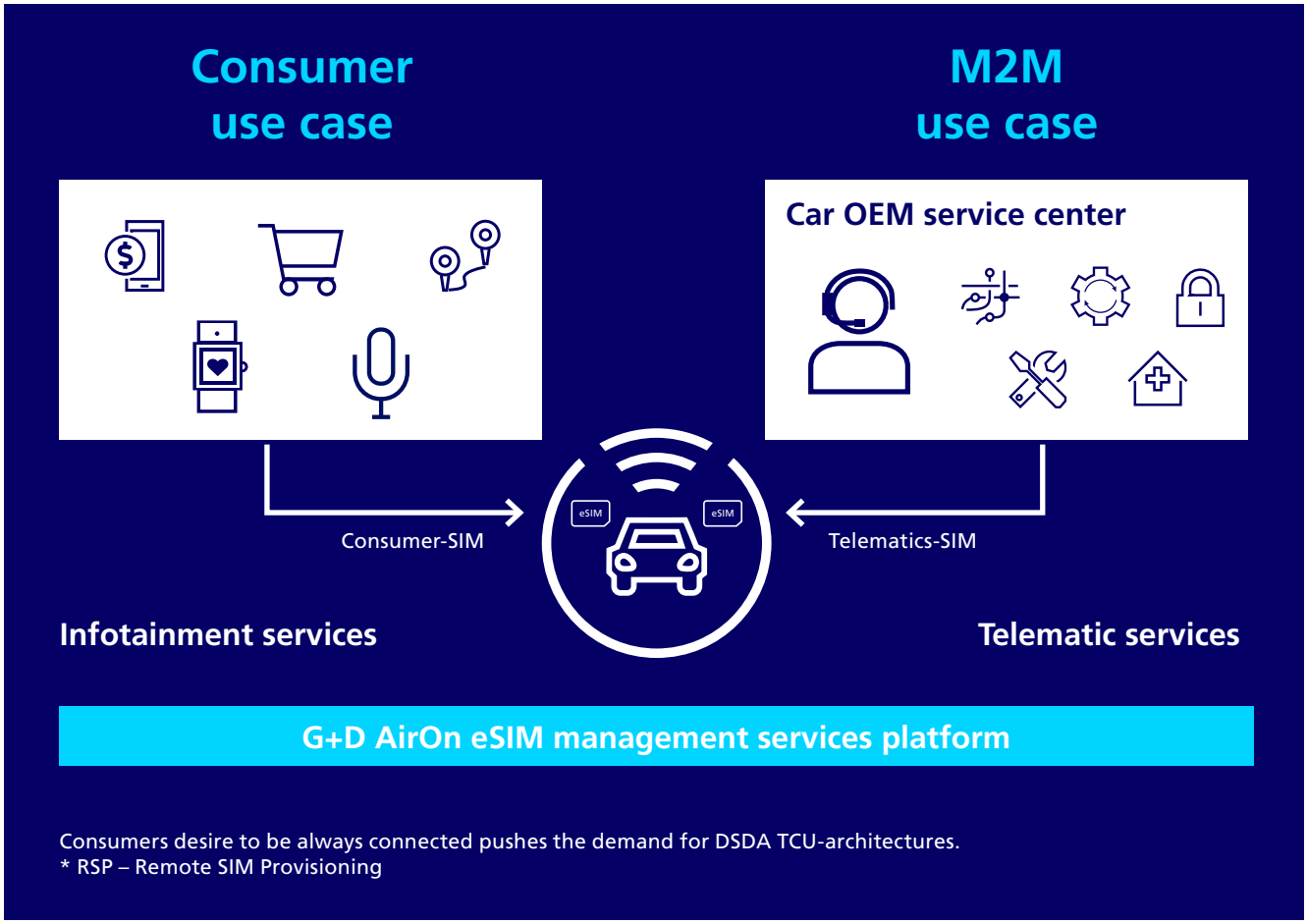
A convenient and secure digital user experience is the maxim in the new era. The vehicle automatically identifies the driver and connects the corresponding mobile data plan quickly, and seamlessly, with no delays. The car might activate the eSIM when a driver enters the vehicle and de-activates when he leaves.

Shared mobility services, such as car-sharing or vehicle rental services, are gaining in popularity. Users expect these types of cars to also instantly recognize and securely connect to their private data plans. These solutions will make it easy for customers to use their streaming services in every vehicle.

As personalized experiences in the digital age become standard, media usage also changes. Streaming is increasingly replacing the classic in-car radio. Consumers expect media and infotainment continuity across devices. G+Ds eSIM management solutions enable OEMs to offer this to their customers.

Wireless data reception and signal quality are also important cornerstones of the digital experience. DSDA uses the external car antenna, thereby providing the best possible connection. Consumers will be delighted because being online in the car won't automatically mean battery drain. The external car antenna also spells good news for 5G, which uses extremely high-frequency millimeter wave bands that could have trouble penetrating through car windows. With DSDA, the future is always connected.

DSDA brings the consumer / RSP eSIM architecture to the car



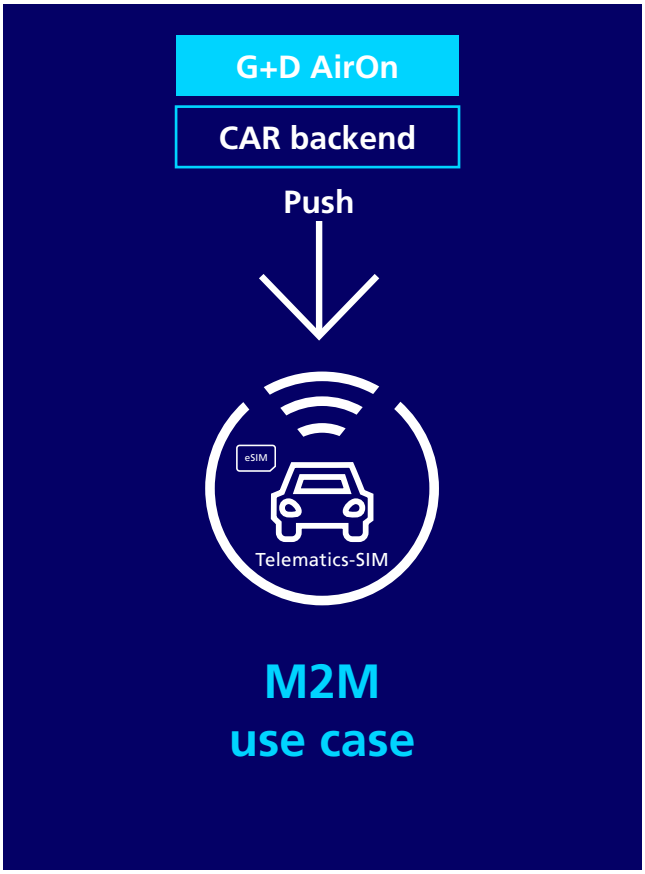
Consumers desire to be always connected pushes the demand for DSDA TCU-architectures.
* RSP – Remote SIM Provisioning

Adoption of consumer use case to the car

In the past the eSIM management of the telematic eSIM followed the GSMA specification SGP.02, which was also referred to as M2M use case. This architecture is typically used for headless devices where the management of eSIMs is always initiated from the G+D AirOn backend as a SMS-based PUSH service.

The Consumer eSIM management follows the GSMA SGP.22 specification. In this so called consumer use case, for example, a subscription can be downloaded to a device simply by scanning a QR code. This PULL mode is typically used for consumer devices and is user initiated. For the DSDA use case this would mean that carmakers would have to maintain two different backend solutions and two different eUICC types.

The innovation of the G+D DSDA solution is that it offers a single management platform for the consumer and the M2M use case. Both eSIMs can be managed centrally via a common G+D AirOn backend.



DSDA is available and ready for use. The first production cars have been equipped with this technology since 2021.

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