AirOn360® ID Hub – Links connected cars and IoT devices to all mobile network operators

Connecting a mobile device or even a car via an embedded SIM (eSIM) is convenient and state of the art, even if by far not all IoT devices support this technology yet. But the trend is clear: the eSIM market is growing very fast.

For example, eSIM management makes it possible to manage the connectivity of the IoT device or a vehicle via a central IT platform. The so-called provisioning of the vehicles or devices is done completely digitally and typically takes place at the car manufacturer's, which has contracts with various network operators worldwide and can transfer or change the corresponding subscription to the eSIM. So far, mobile connectivity in the vehicle has mainly been used for telematics services and automatic emergency calls (eCalls). For some time now, it has become increasingly important to also enable driver-related services for media streaming, etc. In years past, vehicle manufacturers offered connectivity packages to the drivers for those services. Acceptance levels were very low and the "sharing" of the telematics eSIM with the driver sometimes led to competition for network connection bandwidth or simply that drivers were not able to use their own telephone number and contract in the vehicle.
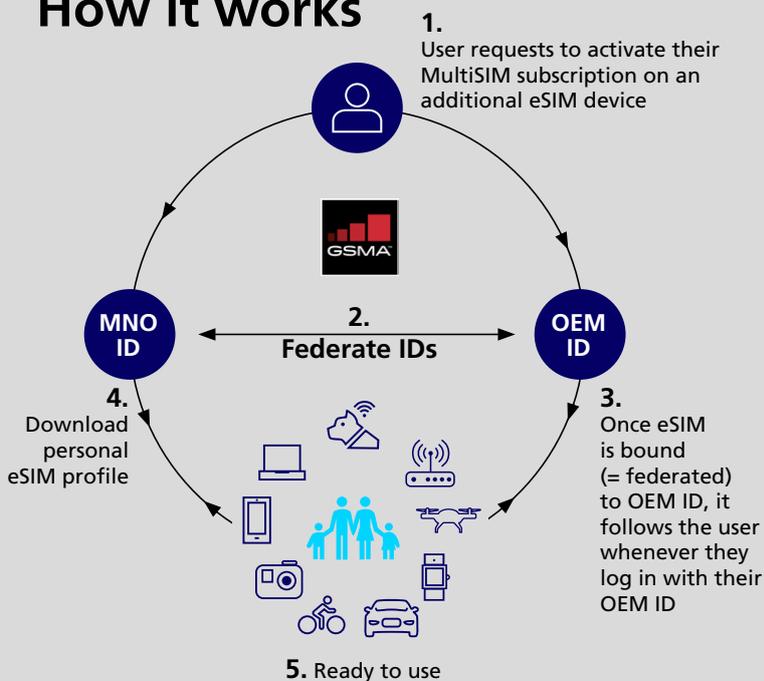

G+D brings the personal eSIM to the vehicle and provides a platform solution to massively reduce complexity for vehicle OEMs and IoT device manufacturers as well as MNOs

How it works

1. User requests to activate their MultiSIM subscription on an additional eSIM device

2. Federate IDs

3. Once eSIM is bound (= federated) to OEM ID, it follows the user whenever they log in with their OEM ID

4. Download personal eSIM profile

5. Ready to use

MNO ID

OEM ID

How can I download and manage my pivate subscription in different devices?

Convenient eSIM services for multiple devices

For a few years now, some mobile operators have been offering the option of connecting different devices under one contract, with all devices connected via the same phone number. These so-called MultiSIM and OneNumber services are useful, e.g. if the user wants to connect a smartphone, smartwatch and/or tablet under the same contract. The clear advantage is that the user is always connected and reachable via one number, no matter which device is used. In addition, the user may also swap subscriptions between different devices or, for example, activate them only for a limited period of time.

For some devices, it may also be useful to link the subscription to the current user of the device. In other words: in this case, the subscription follows each user. A car shared by several drivers in a family would be an example. This would be similar for other shared IoT devices. Not to mention that sharing devices is a big, fast-growing trend.

However, to enable eSIM management and associated additional services for cars, smartphones and IoT devices, both the device/car manufacturer and the MNO must support these use cases. In order to make the user experience simple, fast, and straightforward, the IT systems of the device manufacturers and those of the MNOs must interact, which means that both parties must integrate their systems for managing customer identities, subscriptions, and eSIM devices via an interface. This interface and the related uses cases are defined in the GSMA standard for Automotive Identity, AID.02. For a limited number of integrations between MNOs and the car/device OEMs, the effort via this GSMA interface is manageable. Considering the total number of MNOs, and car/device OEMs worldwide, the integration effort is huge and will make it very difficult to achieve an attractive business case.

This is where G+D's AirOn360® ID Hub comes into play.

Use case: Personal eSIM to enable connectivity for drivers

Since 2021, BMW, for instance, has started to equip all new vehicles with the Dual-SIM Dual-Active (DSDA) solution. This means two independent eSIM modules controlled by the AirOn360® eSIM management platform from G+D[1]. One eSIM, the "telematics eSIM" is used for eCalls, navigation, and traffic information services, the other "consumer eSIM" is for personal services regarding passengers.
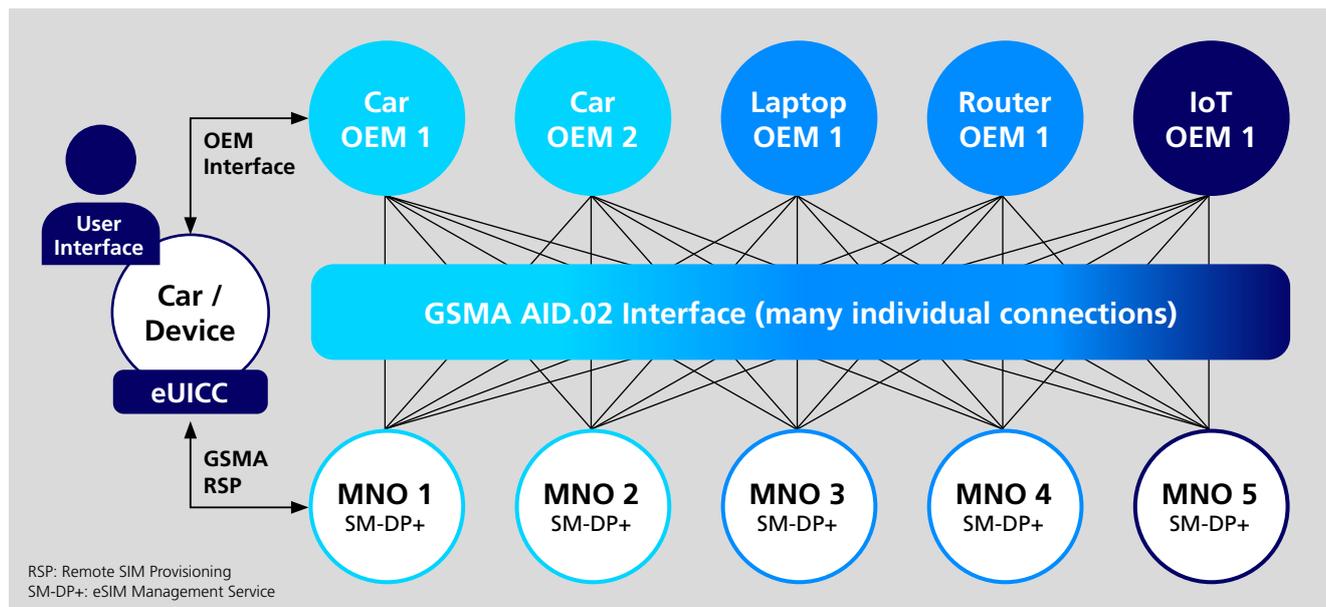
With this service, the driver's own mobile phone contract can be used in the vehicle. It is activated when the driver enters the vehicle. To make this possible, the car OEM's IT system must communicate with the systems of the mobile phone

operators. The interface required for this was adopted in the AID.02 standard by the GSMA in May 2022. This means that all vehicle and IoT device manufacturers and mobile network operators can upload a personal eSIM profile to the car or IoT device via this specification.

However, this creates a great deal of complexity and high degrees of integration effort. Each manufacturer must connect individually with all relevant mobile network operators via this interface. Overall, this involves quite a lot of technical and administrative work.

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[1] Press release: Connected Car runs with G+D technology, 2022

Ecosystem with individual connections

OEM Interface

User Interface

Car / Device

eUICC

GSMA RSP

Car OEM 1 · Car OEM 2 · Laptop OEM 1 · Router OEM 1 · IoT OEM 1

GSMA AID.02 Interface (many individual connections)

MNO 1 SM-DP+ · MNO 2 SM-DP+ · MNO 3 SM-DP+ · MNO 4 SM-DP+ · MNO 5 SM-DP+

RSP: Remote SIM Provisioning
SM-DP+: eSIM Management Service
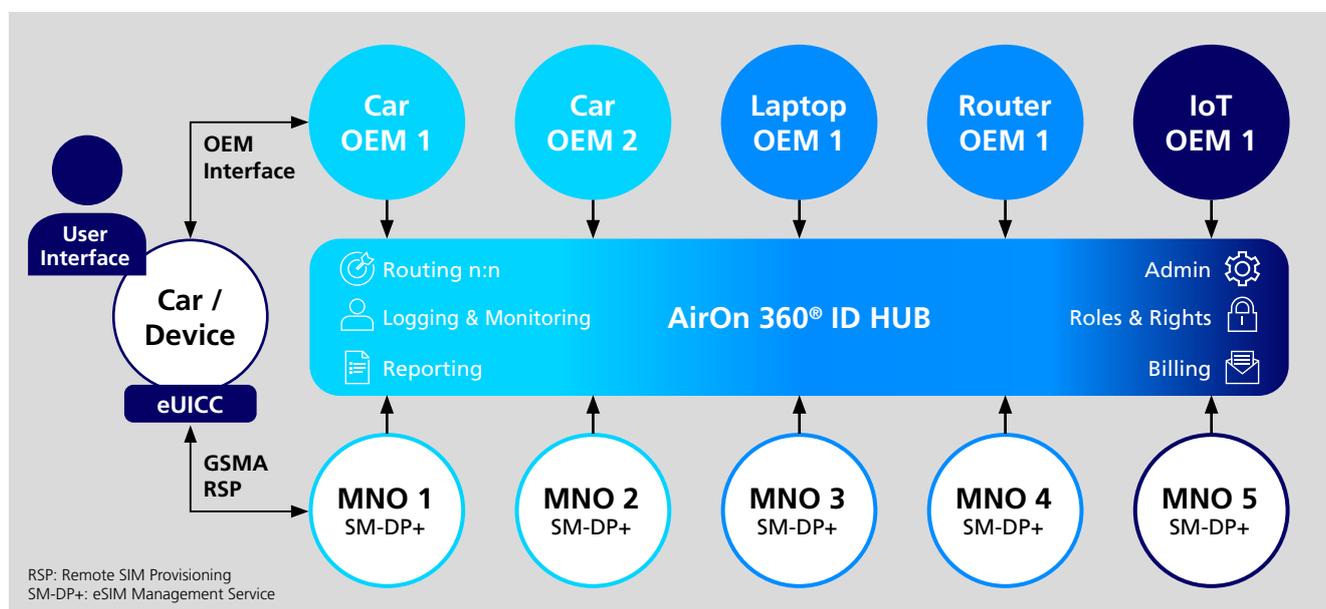
Simplifying connectivity management for cars and IoT

The AirOn360® ID Hub enables OEMs to upload an eSIM profile to the car or IoT device with just one connection to the ID Hub, instead of hundreds of direct connections to mobile operators. The identity of the driver or the IoT device owner is thus linked to the driver's or device owner's contract with the MNO. The AirOn360® ID Hub supports the GSMA standard for ID federation by routing the communications from the vehicle/IoT device manufacturer to the correct mobile operator and back again.

With an ever-growing ecosystem, IoT/automotive OEMs can expand the list of available mobile networks without additional effort and mobile operators can offer their customers new possible vehicles or IoT devices.

Advantages for OEMs and MNOs

- Only one integration per stakeholder
- Massive reduction of complexity and costs
- Additional revenue potential for MNOs and OEMs
- Increased scalability in a steadily growing ecosystem
- Providing automotive and IoT customer segments with the best onboarding journey

Ecosystem with AirOn360® ID Hub

OEM Interface

User Interface

Car / Device

eUICC

GSMA RSP

Car OEM 1 · Car OEM 2 · Laptop OEM 1 · Router OEM 1 · IoT OEM 1

Routing n:n
Logging & Monitoring
Reporting

AirOn 360® ID HUB

Admin
Roles & Rights
Billing

MNO 1 SM-DP+ · MNO 2 SM-DP+ · MNO 3 SM-DP+ · MNO 4 SM-DP+ · MNO 5 SM-DP+

RSP: Remote SIM Provisioning
SM-DP+: eSIM Management Service

About Giesecke+Devrient

Giesecke+Devrient (G+D) is a global security technology group headquartered in Munich. As a trusted partner to customers with the highest demands, G+D secures the essential values of the world with its solutions. The company develops technology with passion and precision in four major playing fields: payment, connectivity, identities and digital infrastructures.

G+D was founded in 1852. In the fiscal year 2021, the company generated a turnover of 2.38 billion euros with around 11,800 employees. G+D is represented by 89 subsidiaries and joint ventures in 33 countries.

Further information: **www.gi-de.com**