



Giesecke+Devrient

Entitlement Server

A Game-Changer for mobile operators

Unlocking the Power of eSIM and Wearables



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Introduction

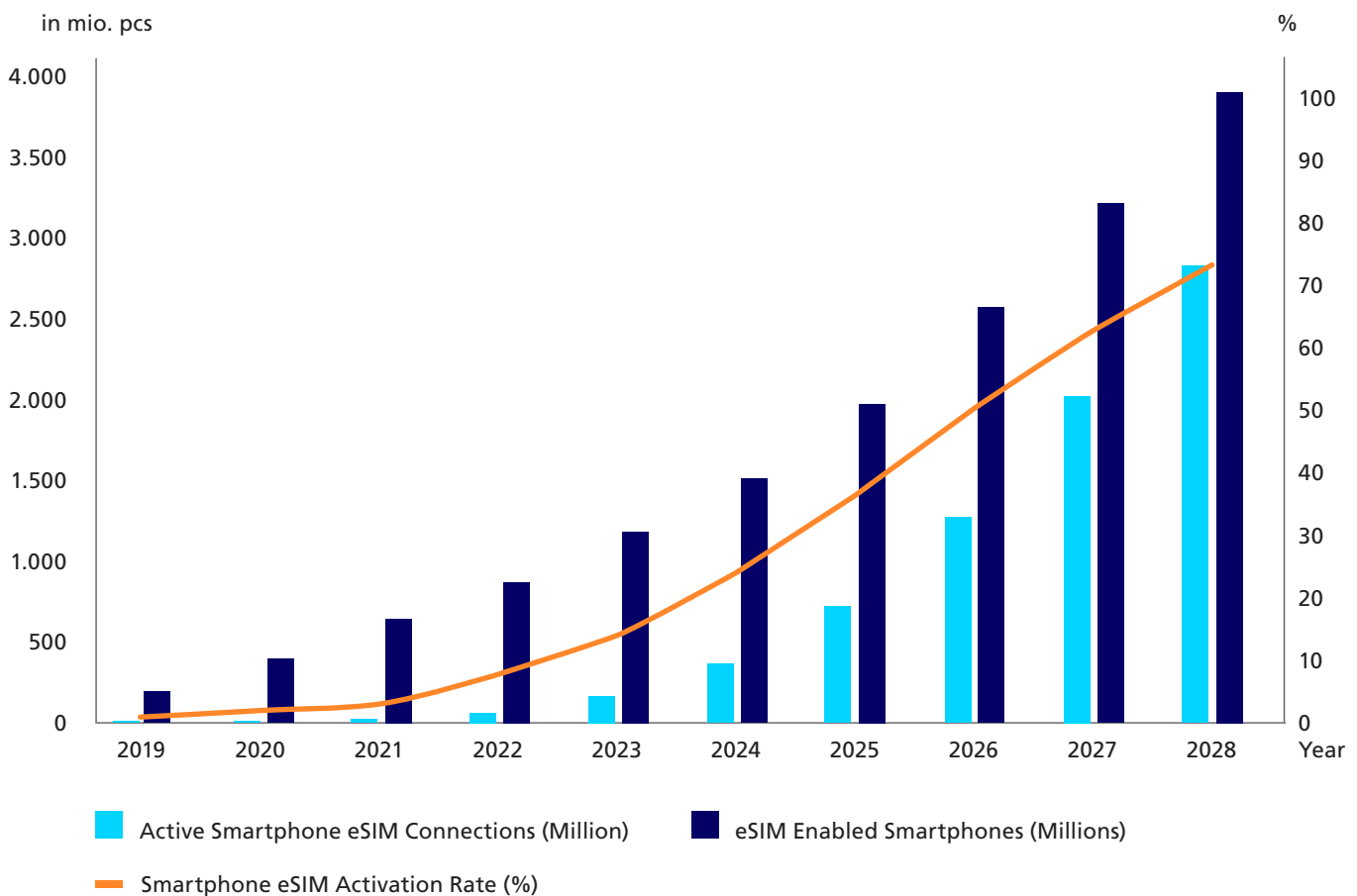
In the ever-competitive consumer service market, customer acquisition and retention play a pivotal role in the success or failure of companies. One of the challenges faced by mobile operators today is the delay customers experience between making a decision to sign up with their chosen operators and that operators eventually providing service. The traditional process of obtaining a physical SIM card can take days, during which customers might reconsider their decision. However, with the advent of eSIM technology, this delay can be dramatically reduced to just a few minutes or a few seconds - provided it is implemented correctly. Giesecke+Devrient (G+D) and its partner NetLync offer a seamlessly implemented eSIM solution called AirOn360® ES that significantly increases the likelihood of customers following through on their decision to sign up with the mobile operators.

The Rise of eSIM

As eSIM-enabled devices become increasingly prevalent, they present mobile operators with an opportunity to provide convenient services that elevate the user experience. Simplified and digital activation processes, device synchronisation, and SIM-eSIM, eSIM-eSIM transfers are among the many benefits that eSIM technology offers. For end-users, eSIM enables hassle-free connection and easy transfer of existing plans, while also allowing multiple cellular plans on a single device.

Furthermore, the growing availability of network services, such as the Apple Watch, and enhanced device features further amplify the potential of eSIM technology. This is where Entitlement services come into play, acting as a vital orchestrator for mobile operators, to deliver exceptional customer experiences, reduce churn, and increase overall customer satisfaction.

Share of smartphones with activated eSIM (in percent)



Entering the Hyper-Growth Phase

eSIM adoption has now passed the inflection point and reached a critical turning point and is ready to enter a phase of hyper-growth, primarily driven by its increasing adoption in smartphones, smartwatches, and cellular IoT applications. This growth trajectory will be further accelerated by the growing awareness of eSIM among mobile operators and OEMs. Notably, Apple's introduction of an eSIM-only iPhone in the US market underscores the diminishing relevance of physical SIM cards and necessitates operator's preparedness across the rest of the world. It is no longer a question of "if" but rather "when" operators must adapt to this technology.

The arrival of an eSIM-only iPhone not only familiarises consumers everywhere with eSIM technology but also encourages other OEMs to consider adopting eSIM in the future. Those who are not equipped with the necessary capabilities, including an SM-DP+ and an Entitlement Server (ES), will risk losing customers to more prepared competitors.



Beyond Smartphones: eSIM and other Device Categories

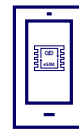
While smartphones continue to be the driving force behind eSIM awareness, eSIM is also appearing in other device categories, such as tablets, drones and wearables. Notably, Apple Watch is gaining significant traction, contributing to the growing prevalence of eSIM technology. This upward trend is reinforced by the global adoption of Entitlements by mobile operators, underscoring the increasing popularity of the Apple Watch and other companion devices powered by eSIM. Commenting on eSIM adoption across different device categories, Chief of Research Steffen Sorrell at Kaleido Intelligence said "With eSIM now supported by mobile

network operators in over 110 countries across the world, the concept of eSIM becoming de facto in many consumer- and business-orientated devices is gradually being realised. This applies especially to cellular-enabled laptops, tablets and smartwatches, which benefit from the form factor optimisation and the provisioning flexibility afforded by eSIM. The explosion of eSIM-enabled smartphones on the market will drive a supply-side migration away from legacy Business Support Systems, which in turn opens the door to a seamless, digital onboarding process for end-users, helping accelerate eSIM connectivity adoption in a range of consumer devices"



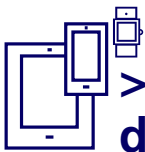
>325 MNOs

Over 325 mobile operators globally support eSIM services for connectivity across more than 110 countries.



3,9bn eSIM devices

By the end of 2028, close to 3,9 billion smartphones globally will be eSIM enabled, growing from 1,1 billion in 2023.



>150 eSIM device models

Over 150 consumer eSIM devices are now available on the market for consumer use.



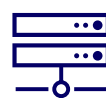
eSIM Transactions increase

eSIM players reporting triple-digit growth in consumer eSIM transactions during 2022, despite smartphone slowdown.



Device User Experience Enhancements

MNOs to invest more heavily in Entitlement and digital BSS solutions in reaction to market forces.



25% more eSIM Platforms

Approximately 160 consumer eSIM platforms were added during the 2021-22 period, a growth of ~25% year on year.

Apple Watch and Entitlements Server

The presence of the Apple Watch has become a revenue generator for many mobile operators - opening up new revenue streams through companion device upselling and subscriptions, increasing Average Revenue Per User (ARPU). Consequently, mobile operators without support for Apple Watch face acquisition and retention challenges, as customers are drawn to mobile operators that offer this popular wearable device. An Entitlement Server is essential for operators offering wearables like the Apple Watch, and fortunately, G+D and NetLync have it covered.



Paving the way for a New Generation of Entitlement Server

Having identified several challenges with existing Entitlement solutions, including the lengthy contracting and deployment timelines, complex commercials and the need to renegotiate with the supplier every time there is a new use case, G+D and NetLync set about developing a brand new approach to Entitlements.

Taking inspiration from successful SaaS-based services provided by Internet companies, G+D and NetLync have brought the same approach into the telecoms world, providing a comprehensive PaaS-based solution known as "AirOn360® E5".

Introducing AirOn360[®] ES

Baseline

Apple Watch* & Wear OS

Rich Communication Services (RCS)

VoLTE

eSIM Quick Transfer

Feature registration

iPad

5G

VoWiFi

Self-onboarding

Mobile operators can independently onboard at their own pace, avoiding delays caused by supplier constraints or high demand from other operators.

Ready for New Use Cases

As OEMs continue to introduce new use cases to support their product roadmap, we provides automatic access to new use cases without requiring a system upgrade. They become instantly available in the Developer Portal.

Developer-led Approach

Enables fast deployment by providing a Developer Portal specifically designed by developers for developers.

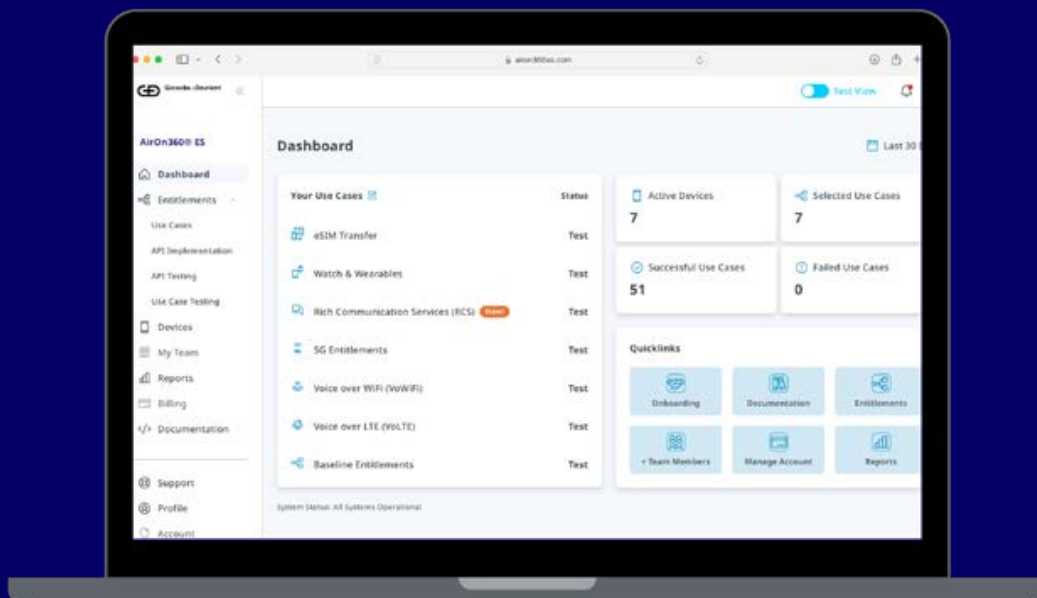
Scalability, security and privacy

Running on AWS (Amazon Web Services), our solution takes care of the scalability, security, and privacy you need to have the perfect Entitlements solution. Whether you have 100 or 100 million devices, we are ready for your network and device traffic.

* currently available for OEM partner carriers only

Risk Free: Try Before You Commit

With a free trial account on our developer portal, your developers can explore use cases, create APIs, and test them risk-free. <https://www.airon360es.com>





“ We expect eSIM use will continue to increase significantly, so mobile operators need solutions that support convenient eSIM management, both from their own and from the customer’s point of view,” explains **Philipp Schulte, CEO of G+D Mobile Security**. “In order to keep their customers satisfied in the long term, network operators should offer users optimal service. Our compelling eSIM Device Transfer offering can play a crucial role in this. ”

“ Providing fast and easy access for operators to Entitlements is our mission. AirOn360® ES offers a new approach to mobile operators to deploy use cases, especially with eSIM Device Transfer and Apple Watch. It enables mobile operators to deploy further eSIM experiences quickly and cost-effectively – with minimal integration effort,” says **Emir Aboulhosn, Co-Founder and CEO of NetLync**. “With AirOn360® ES, we are now continuing our successful cooperation with G+D. ”



About Giesecke+Devrient

Giesecke+Devrient (G+D) is a global SecurityTech company headquartered in Munich, Germany. G+D makes the lives of billions of people more secure. The company shapes trust in the digital age, with built-in security technology in three segments: Digital Security, Financial Platforms and Currency Technology.

G+D was founded in 1852 and today has a workforce of more than 14,000 employees. In the fiscal year 2023, the company generated a turnover of 3 billion euros. G+D is represented by 123 subsidiaries and joint ventures in 40 countries.

Further information: www.gi-de.com



Giesecke+Devrient

Giesecke+Devrient Mobile Security Germany GmbH
Prinzregentenstrasse 161
81677 Munich
Germany

www.gi-de.com
connectivity@gi-de.com

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