

How to unlock the potential of sustainable IoT at scale

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Keynote

Dr. Philipp Schulte

Head of Connectivity & IoT at Giesecke+Devrient

Optimizing sustainability is a global challenge with implications for all areas of life, including IoT in particular

This is the culmination of two megatrends: **sustainability** and **massive IoT**



Businesses across the board are taking their ESG responsibilities seriously. Respondents overwhelmingly agree that environmental issues are important to their senior management.

The IoT industry is facing a multi-dimensional challenge

On the one hand:

A growing number of IoT devices will have a negative impact on CO₂ emissions

80% are planning to increase their **use of IoT solutions** to better measure and understand the impact of their sustainability initiatives within the next 12 months

72% have already **seen the ROI** of IoT solutions for improving sustainability

82% of businesses believe the use of IoT solutions to produce data will help **overcome** deeply ingrained **trust issues** around their peers' ESG claims

On the other hand:

IoT can be used to optimize CO₂ emissions of devices, solutions or entire ecosystems

The key characteristics of massive IoT devices

Production and deployment



- Low device and deployment costs
- Small form factor
- Resource-saving materials
- Fully digital processes
- Simplified supply chain / logistics

Function and operation



- Low operating costs
- Interoperability / standard compliance
- Long service life / low power consumption
- Efficient remote service
- Global connectivity out-of-the-box

Data and service



- Data saving / low bandwidth
- Device-to-cloud security
- Trustworthy / unmodified data
- Application / communication security
- Share / publish data

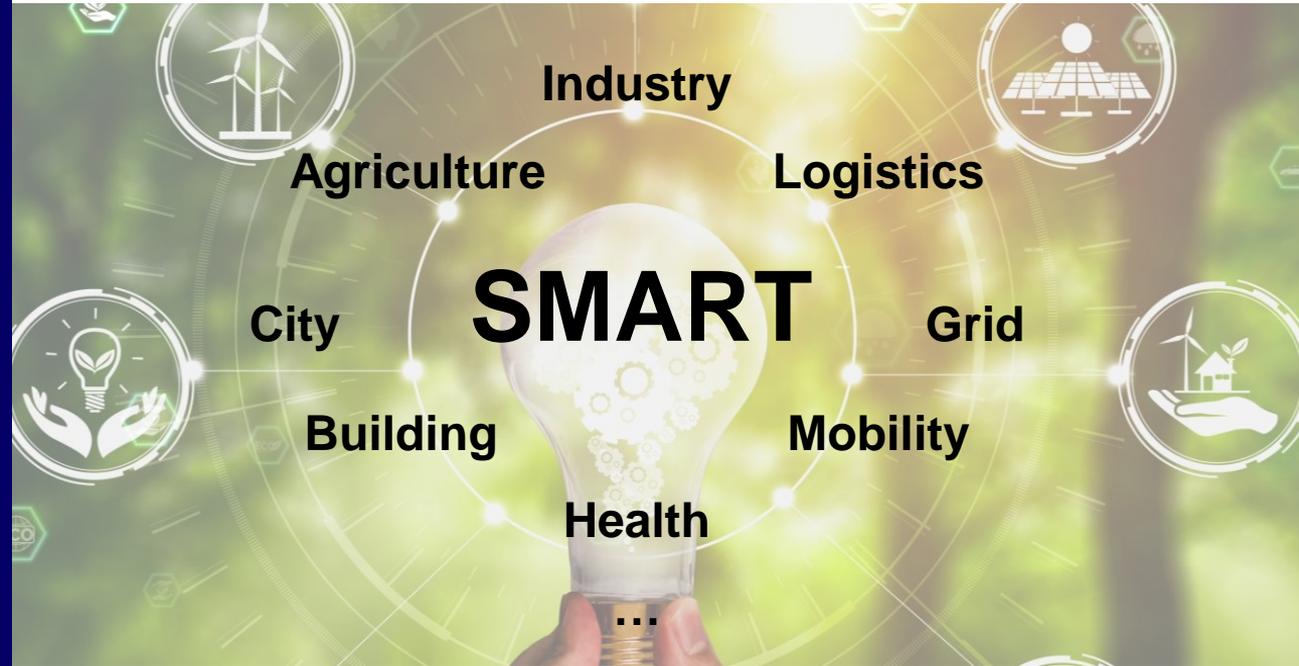
Key enabler



- Flexible connectivity
- Scalable security
- Trusted identification and authentication
- Digital processing and management
- Improved sustainability

Disruptive technologies will empower massive and sustainable IoT in multiple areas

Data makes mobile and massive IoT smart and it opens the door for sustainability improvements



If sustainability is based on data, we need to be sure of the source and whether we can trust it

Enabling Sustainable Connectivity

eSIM is growing fast

G+D has passed the 100 million eSIM consumer profile downloads



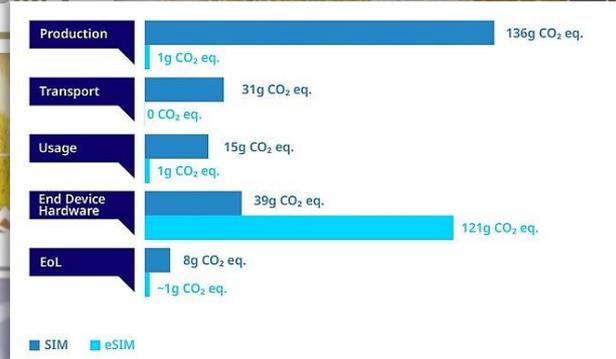
Fraunhofer Institute confirms eSIM's lead in environmental compatibility

Life cycle assessment



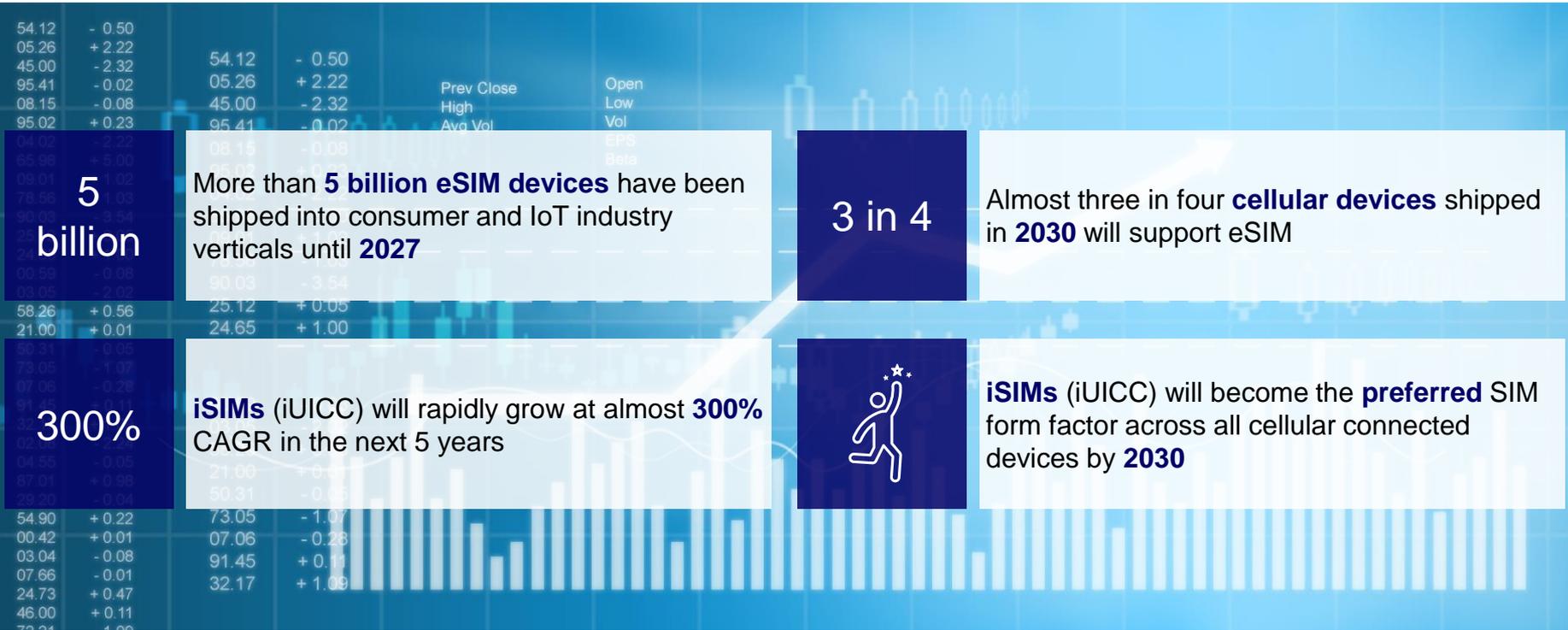
46%

One (1) eSIM emits 46% less CO₂ eq. in product life compared to one (1) SIM card.



Another level of optimization will be achieved with the iSIM especially for massive IoT

In the midterm eSIM and iSIM will coexist, each with a different focus: eSIM focused on broadband IoT, iSIM preferably for NB-IoT and LTE-M



5 billion

More than **5 billion eSIM devices** have been shipped into consumer and IoT industry verticals until **2027**

3 in 4

Almost three in four **cellular devices** shipped in **2030** will support eSIM

300%

iSIMs (iUICC) will rapidly grow at almost **300% CAGR** in the next 5 years



iSIMs (iUICC) will become the **preferred** SIM form factor across all cellular connected devices by **2030**

Empowering massive IoT by addressing the key challenges:

-  Flexible connectivity
-  Scalable security
-  Trusted identification
-  Digital processing
-  Improved sustainability

Born Connected® is our approach to provide global connectivity to massive IoT



- Global bootstrap connectivity
- IoT connectivity with coverage on 600+ networks and 185 countries
- Solutions for in factory profile provisioning
- In field IoT device fleet management...



Being a security technology company means a lot to us:

**G+D is a reliable partner and world leader in providing security.
Contact us!**



Payment

Secure physical, electronic and digital payment transactions



Connectivity

Trusted connectivity for mobile devices in the Internet of Things



Identities

Safeguarding identities and authentication of persons and objects



Digital Infrastructures

Protecting systems, networks and confidential data



Today we are already managing billions of connected things

1+ billion

mobile devices
managed globally

#1

in eSIM management

100+ million

eSIM consumer profile downloads

270+

eSIM customer systems worldwide

8 of the top 10

car manufacturers

trust in G+D's connected car solutions

3+ billion

SIM cards

managed in over 80 countries

#1

iSIM supplier

750+ million

secure SIM OS licenses

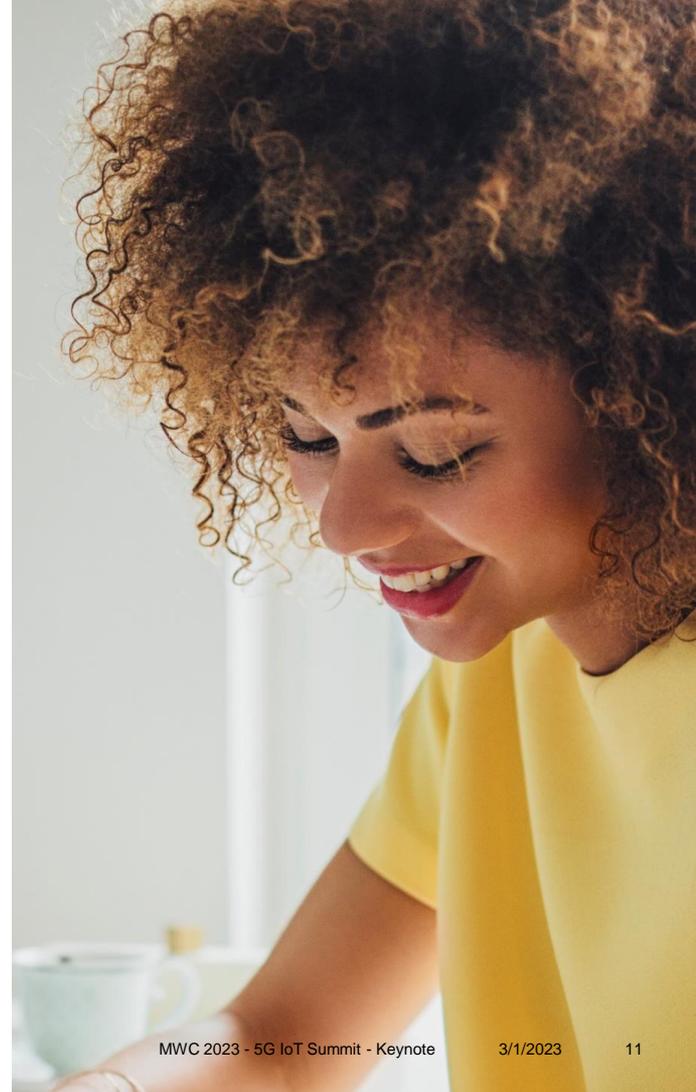
for consumer & IoT devices in the field

160+

OTA customer systems for
M(v)NOs globally

IoT connectivity with **600+** networks

in more than **185** countries worldwide



Creating Confidence



Dr. Philipp Schulte

Head of Connectivity & IoT at Giesecke+Devrient

