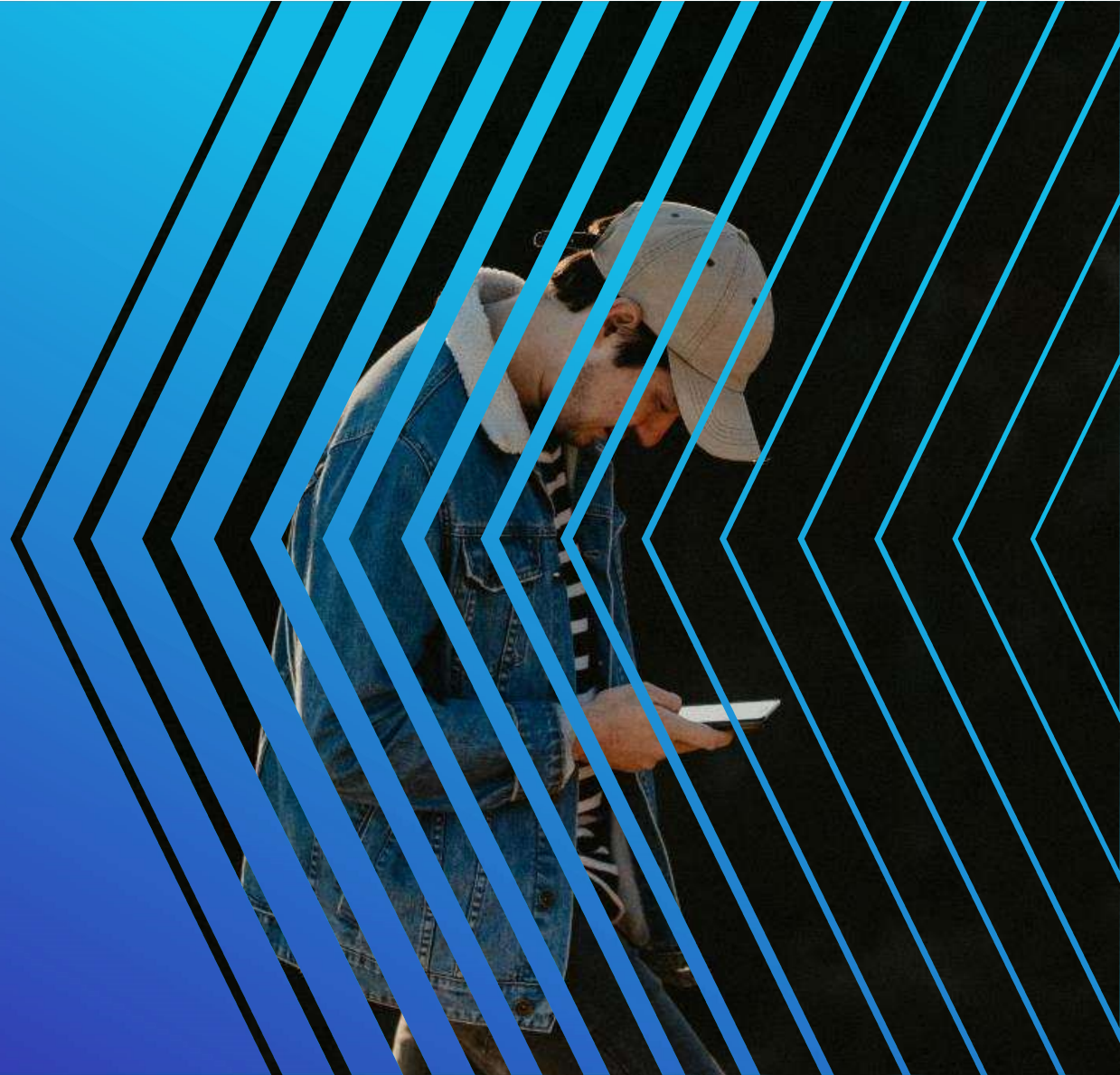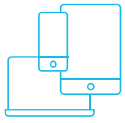# ESIM FOR CONSUMER AND IOT MARKETS DIFFERENT MODELS

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AGENDA

eSIM for Consumer

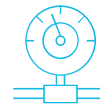Consumer devices: smartphones, laptops, wearables, etc

Overview

Use cases

eSIM for M2M and IoT

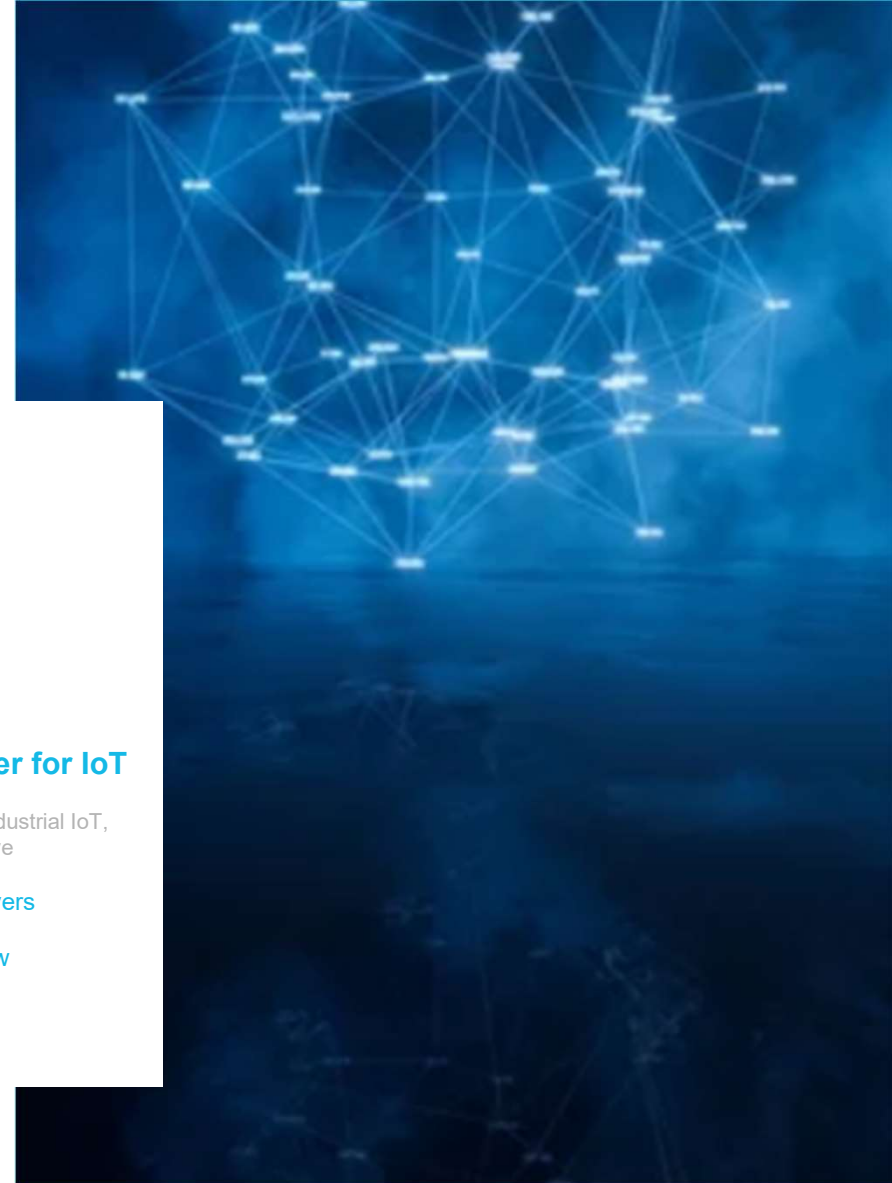Commercial IoT, Industrial IoT, Automotive

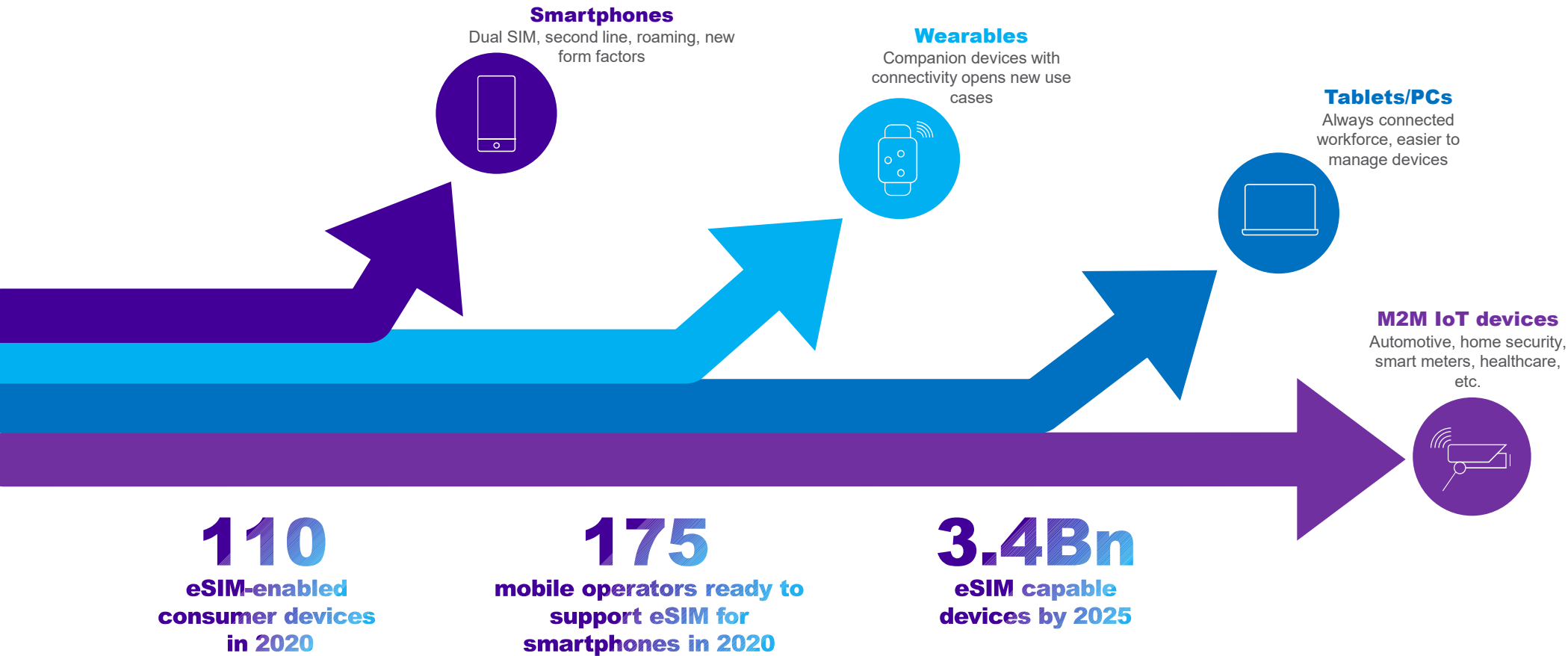Challenges

Overview

Use cases

eSIM Consumer for IoT

Commercial IoT, Industrial IoT, Automotive

Market drivers

Overview

A PROMISING MARKET FOR ESIM

Smartphones
Dual SIM, second line, roaming, new form factors

Wearables
Companion devices with connectivity opens new use cases

Tablets/PCs
Always connected workforce, easier to manage devices

M2M IoT devices
Automotive, home security, smart meters, healthcare, etc.

110
eSIM-enabled consumer devices in 2020

175
mobile operators ready to support eSIM for smartphones in 2020

3.4Bn
eSIM capable devices by 2025

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GSMA'S ESIM CONSUMER SPEC

Consumer devices: smartphones, laptops, tablets, wearables....

MNO 1	MNO 2
SM-DP+	**SM-DP+**

ES9+   ES9+

OEM IS

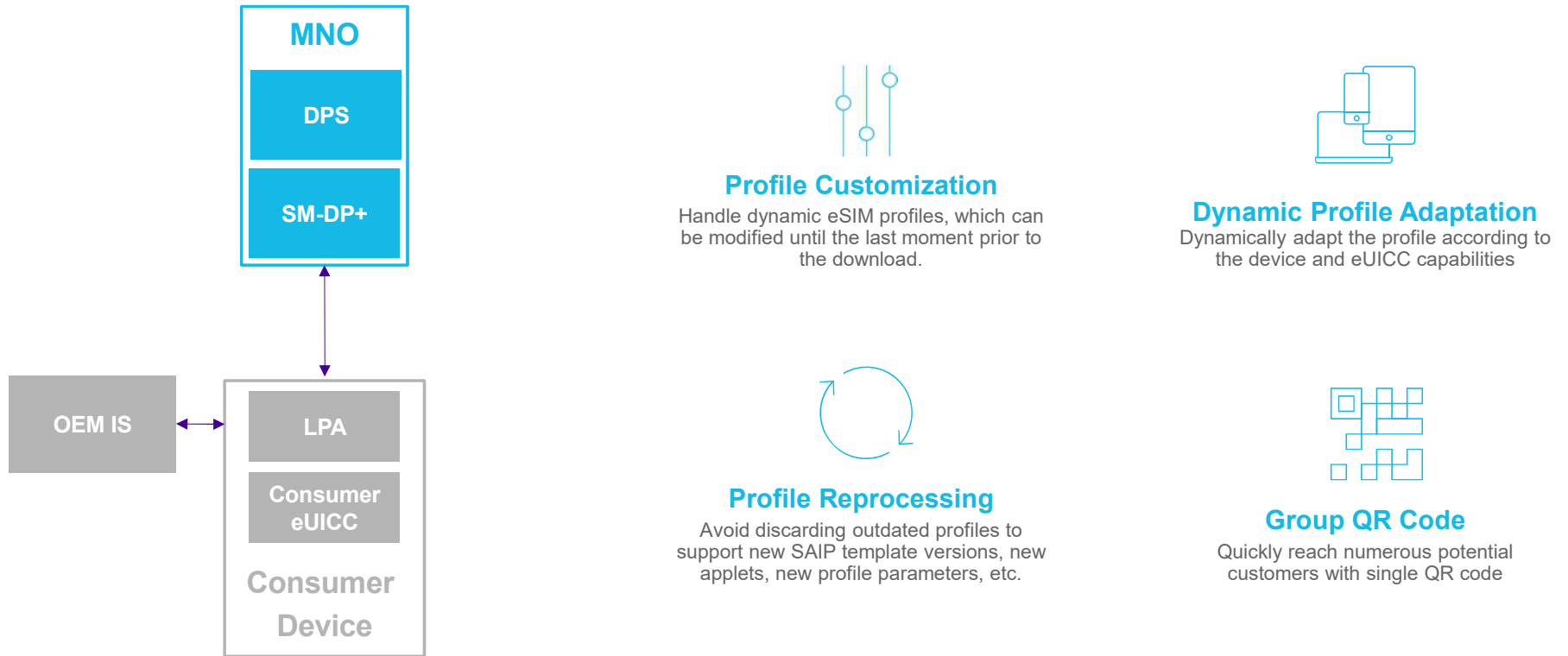**Consumer Device**

- **LPA**
- **Consumer eUICC**
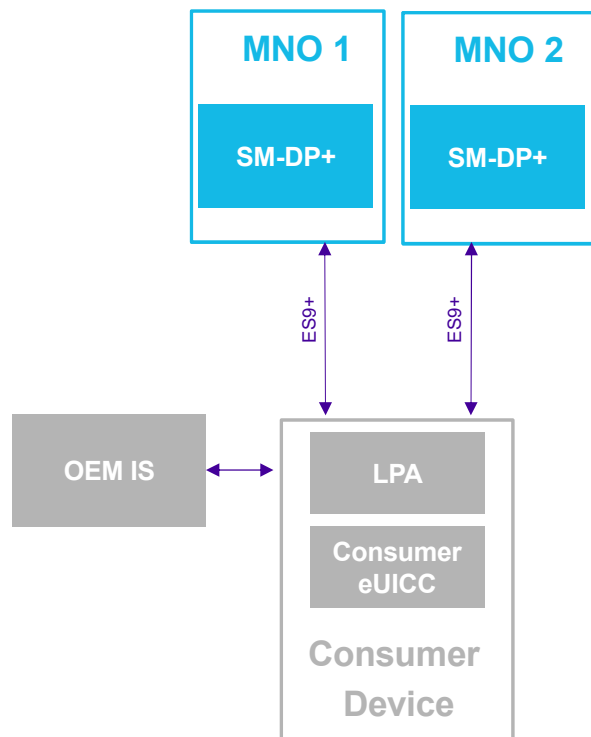
Description
SGP.21, SGP.22, and SGP.23

› Simplified architecture

› "Pull" model

› SIM profiles are downloaded from an **the SM-DP+,** on-demand.

› The LPA **LPA (Local Profiles Assistant).** downloads SIM profiles from the SM-DP+ server and installs them on the eUICC SIM.

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4

KEY DIFFERENTIATORS

With Idemia Digital factory of eSIM Profiles - Digital Personalization System (DPS)

MNO

DPS

SM-DP+

OEM IS

LPA

Consumer eUICC

Consumer Device

Profile Customization

Handle dynamic eSIM profiles, which can be modified until the last moment prior to the download.

Dynamic Profile Adaptation

Dynamically adapt the profile according to the device and eUICC capabilities

Profile Reprocessing

Avoid discarding outdated profiles to support new SAIP template versions, new applets, new profile parameters, etc.

Group QR Code

Quickly reach numerous potential customers with single QR code

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60%
YoY growth in 2021

Telia Company

bité

Allowing easy eSIM activation of connected devices

Smart Connect
Consumer

Improved user
experience for
smartwatches

Fast-track
implementation
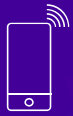
GSMA™

Compliant
with GSMA
specifications

‹‹|›› IDEMIA

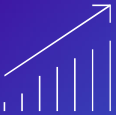**Simplifying eSIM subscription management**

Smart Connect Consumer

eKYC solution facilitating remote onboarding

Benefits

Scalable solution

Improved user experience

Future-proof solution enabling new use cases

France's largest mobile operator

300k+

activations since September 2017

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CONNECTIVITY CHALLENGES FOR IOT

Allow global and always-on connectivity for IoT devices

Complex logistics

› Devices produced in one factory then shipped globally
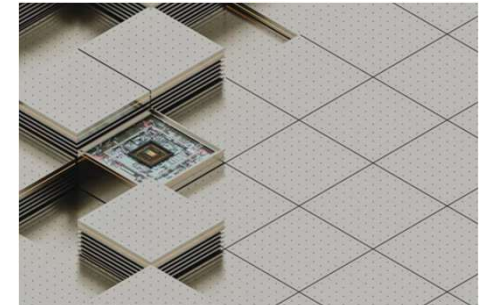› Multiple ordering flows
› Variety of HW and SW

Adaptation to local needs

› Usage of local MNO
› Local regulations
› Optimization of roaming costs
› Management of partners agreement

Lifespan of devices

› In the field for 10 years+
› Technology sunset
› Change of connectivity requirements
› Continuity of service

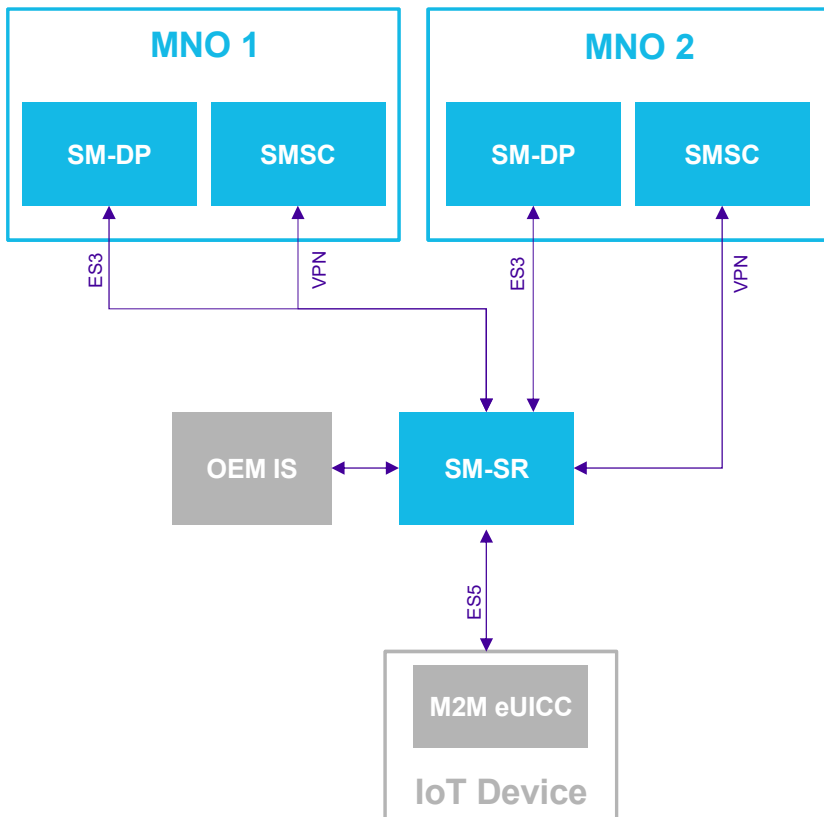**Complex ecosystem**

› Multiple stakeholders
› Complex integration
› Constrained devices
› No human interface on device
› Variety of device capabilities
› Interoperability and security challenges

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GSMA'S ESIM M2M SPECIFICATION

Commercial IoT, Industrial IoT, Automotive

MNO 1
MNO 2

SM-DP **SMSC** | **SM-DP** **SMSC**

ES3 | VPN | ES3 | VPN

**OEM IS** ↔ **SM-SR**

ES5

M2M eUICC
IoT Device

Description
SGP.01, SGP.02, and SGP.11

〉 "**Push**" model: the instructions to the eUICC SIM are pushed from the SM-SR to the eUICC SIM.

〉 **Subscription Manager – Data Preparation (SM – DP)**:

▪ It belongs to Subscription owner (typically MNO or MVNO).

▪ It stores MNO credentials, generates and encrypts MNO profiles on-demand

〉 **Subscription Manager – Secure Router (SM – SR)**:

▪ It belongs to eUICC owner (MNO/MVNO or OEM).

▪ It stores eUICC access information, delivers MNO profiles OTA, and permits remote management of the profiles on an IoT device

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Implementation of

+1.4M

new generation smart meters

Providing connectivity in insurance mode for utilities smart meters
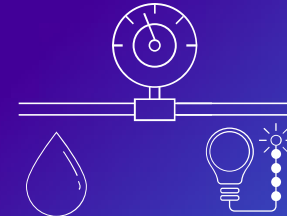
Water meters   Electric meters

IDEMIA Offer

DAKOTA eUICC

Smart Connect M2M
(Remote SIM provisioning)

GSMA

Compliant with GSMA specifications

IDEMIA

Multiple IoT use cases

Connected cars, smart metering, security, smart cities, asset tracking and more

Telstra

IDEMIA Offer

Smart Connect M2M
(Remote SIM provisioning)

Digital Personalization System
Real-time eSIM profile generation

Compliant with GSMA specifications

GSMA

Australia's largest mobile operator

3.2M

IoT devices on Telstra network

Smart Home

Monday 15° Rainy

LIGHTING   VIDEO   SECURITY   TEMPERATURE   VENTILATION

Motion sensor   Eco mode   Sleep mode

You have 2 new messages

⟨⟨⟩⟩ IDEMIA

WHY THE NEED FOR A THIRD SPEC?

The current specifications are not exactly suited for IoT connectivity challenges

01

Why GSMA's M2M spec is not perfectly suited for M2M use cases?

› Labor intensive, costly and time consuming MNO onboarding with multiple integrations:

▪ SM-SR Provisioning

▪ SM-SR <-> SM-SR Connections

▪ SM-SR <-> SM-DP Connections

▪ SM-SR <-> SMS-C Connections

› Need for SMS coverage

› Many countries are requiring regional or local deployments (sovereignty, data protection…)
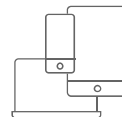
02

Why GSMA's Consumer spec is not suited for M2M use cases?

› LPA to be implemented on device

› Rollback/Fallback mechanism to be implemented

› Not natively designed for Remote management

› End user consent has to be ignored

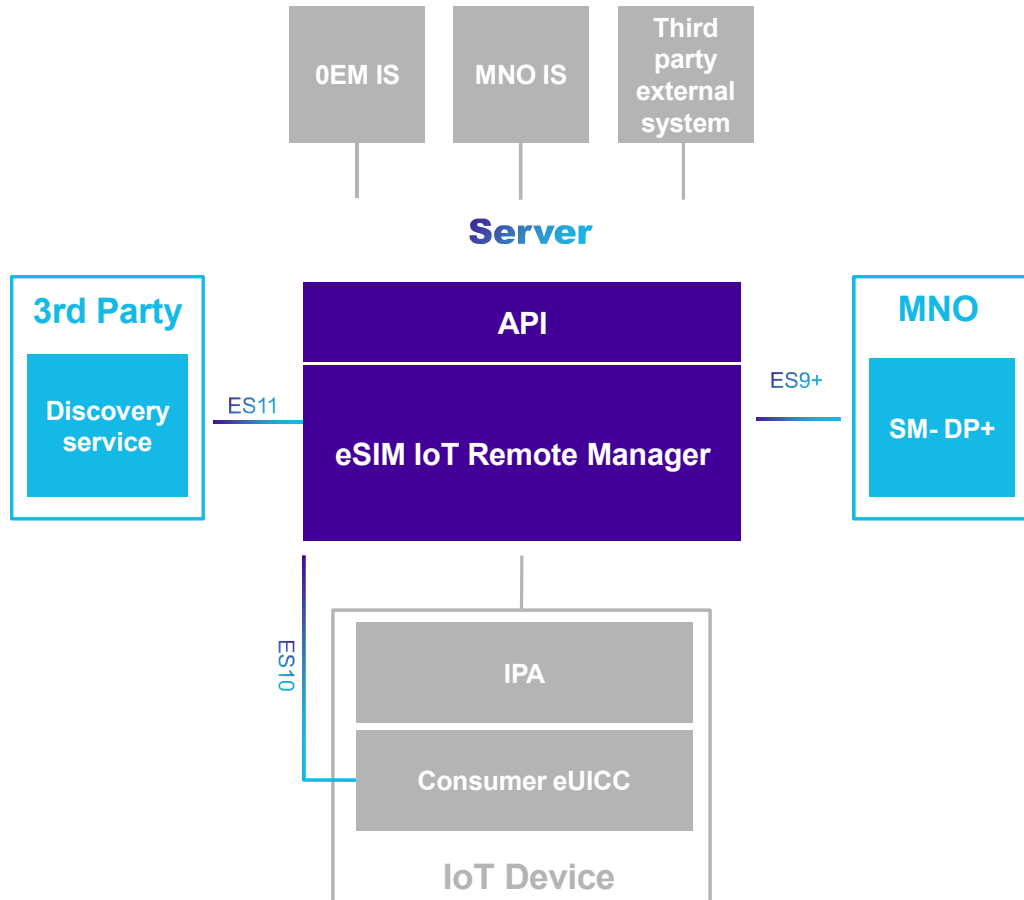› OEM: no control to access to eUICC

› MNOs have no SMDP+ for M2M

03

The need for a dedicated Consumer eSIM for IoT spec

› Taking inspiration from both specs

› M2M and IoT use cases

› Consumer eUICC; SM-DP+; no SMSR

› Push Model: No end-user interactions

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WORKING GROUP 7 SPECIFICATIONS

Architecture overview

Description

〉 No or limited modification of **SM-DP+**

〉 New platform **eIM** : **eSIM IoT remote Manager**

▪ Used for secure remote Profile State Management operations

〉 **IoA: IoT Profile Assistant** (ex LPA)

〉 Used for profile download and interaction with eIM

〉 **eSIM: Consumer eUICC**

▪ Produced with at least one profile enabled for a constant connectivity

〉 Two **interpretations** of the specifications

▪ For non constrained devices: **IPA heavy**

▪ For constrained (and per ext. non constrained) devices : **IPA light**

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TWO FLAVORS OF WG7 SPEC

IPA light and IPA heavy

For non constrained devices

Devices with almost unlimited CPU, memory, and power resources (e.g car)

.

> IPA can be heavy and consume energy
> IPA is very similar to standard LPA deployed on the smartphone

For constrained devices *(and per extension non constrained devices)*

Devices with limited CPU, memory, and power resources

> IPA is very light agent compared to standard LPA deployed on the smartphone

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A comprehensive connectivity offer

Unique supplier of eUICC for smart meters

Smart Connect Consumer

Smart Connect M2M

POC on GSMA Working Group 7 upcoming specification:

› **Consumer eUICC**
› **Consumer Remote SIM Provisioning platform**
› **eSIM IoT Remote Manager**

→ **A pro-active approach with the GSMA**

telenor   telenor | connexion

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IDEMIA VALUE PROPOSITION

A global and proven solution

A complete solution for all use cases
Supports the 3 spec implementations

Proven in large scale deployments and **future-proof** for Consumer and IoT use cases

Incremental approach (Fast track, then GSMA standard functions, then additional features)

Extensive set of use cases addressed
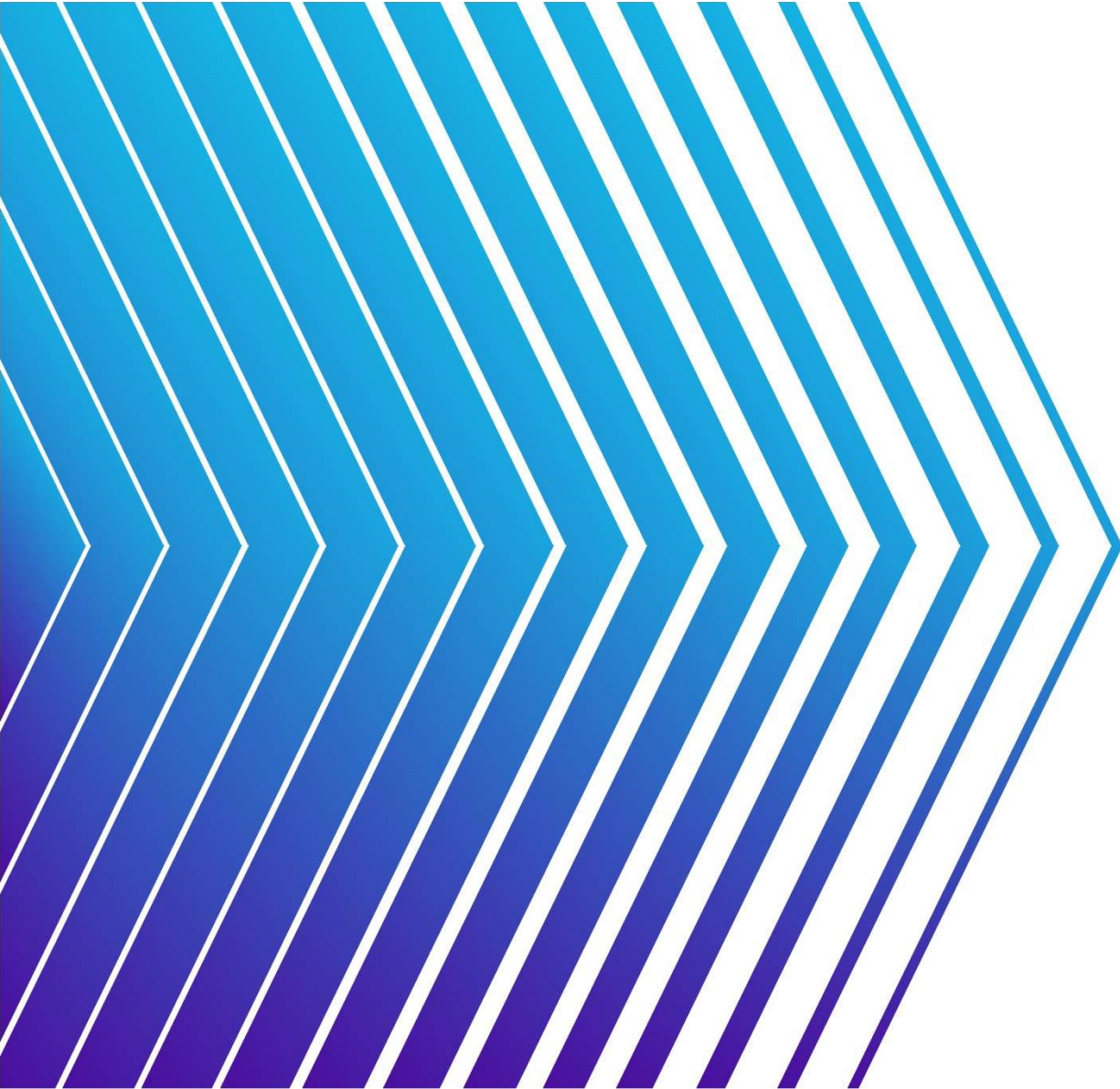with DPS: dynamic profiles, recycle profiles and last minute customization

Cloud native
Fast time-to-market, high availability and reliability, predictable costs.

Secure & certified
Hosted in GSMA SAS-SM certified data centers

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