

— SOLUTION BRIEF · ESIM & REMOTE SIM PROVISIONING

SGP.32 (eSIM): risks & opportunities for enterprises

A practical guide to the GSMA's new IoT eSIM standard – what it changes, where the risks hide, and how a cloud-native, multi-IMSI + SGP.32 approach turns the shift into an advantage.

STANDARD
GSMA SGP.32 – IoT RSP

CERTIFICATION
Expected end of 2025

FOR
Enterprise IoT & connectivity teams

— UNDERSTANDING THE STANDARD

What is SGP.32?

SGP.32 is the emerging GSMA standard for eSIM remote SIM provisioning (RSP) built specifically for IoT deployments. The GSM Association (GSMA) is the global organization representing the interests of mobile network operators (MNOs) and other stakeholders across the mobile communications industry.

Unlike prior standards – SGP.02 for M2M and SGP.22 for consumer devices – SGP.32 is designed to help enterprises switch or "pull" connectivity profiles more independently, improving control and flexibility across global IoT deployments. The standard is still new, however: full certification is expected by the end of 2025, and market adoption is not yet widespread. According to the Transforma Insights report, SGP.32 addresses many limitations of older eSIM standards – but it also introduces new complexities around cost, backend integration, and ongoing compliance.

Evolution from physical SIMs to eSIM

Until 2016, most cellular IoT devices relied on removable plastic SIM cards, well-suited to large-scale or ruggedized deployments. The machine form factor (MFF, now MFF2) introduced more durable, soldered SIM chips. But it quickly became clear that physically swapping SIMs was slow and expensive – especially for global IoT fleets.

Why over-the-air provisioning matters

To streamline connectivity management, the GSMA developed Remote SIM Provisioning (RSP), enabling SIM profiles to be switched securely over the air without manual intervention. This advancement – the embedded Universal Integrated Circuit Card (eUICC), or eSIM – is a crucial benefit for IoT environments.



No more truck-rolls

Eliminate on-site SIM swaps and costly device recalls across the fleet.



Faster deployment

Speed up rollout cycles with profiles provisioned remotely on demand.



Less lock-in

Reduce dependence on any single connectivity provider over the lifecycle.

THE STANDARDS TIMELINE

From SGP.02 and SGP.22 to SGP.32

**SGP.02 – M2M · 2014**

Introduced a "push" model where connectivity providers fully controlled the end-to-end provisioning process.

**SGP.22 –
Consumer · 2016**

Shifted to a "pull" model, letting end users remotely download a new profile – though largely aimed at consumer devices.

**SGP.32 – IoT · 2023**

A "push & pull" model purpose-built for IoT – flexible profile switching and enhanced autonomy for device owners.

While these standards served their respective domains, IoT-specific concerns remained – rigid operator lock-in, limited user control, and constraints around industrial-scale deployments. In May 2023 the GSMA unveiled SGP.32 specifically to address these limitations. By enabling more flexible profile switching, SGP.32 is poised to reduce complexity, lower operational costs, and accelerate worldwide scalability for enterprises. Although final testing and certification are expected by the end of 2025, SGP.32-ready devices may appear sooner – letting forward-looking businesses evaluate and pilot these capabilities now.

BUSINESS RELEVANCE**Cost & complexity**

RSP eliminates physical SIM swaps, minimizing on-site interventions and downtime.

**Global scalability**

Enterprises can "pull" new profiles to meet local regulations, address permanent-roaming constraints, and manage multi-region deployments.

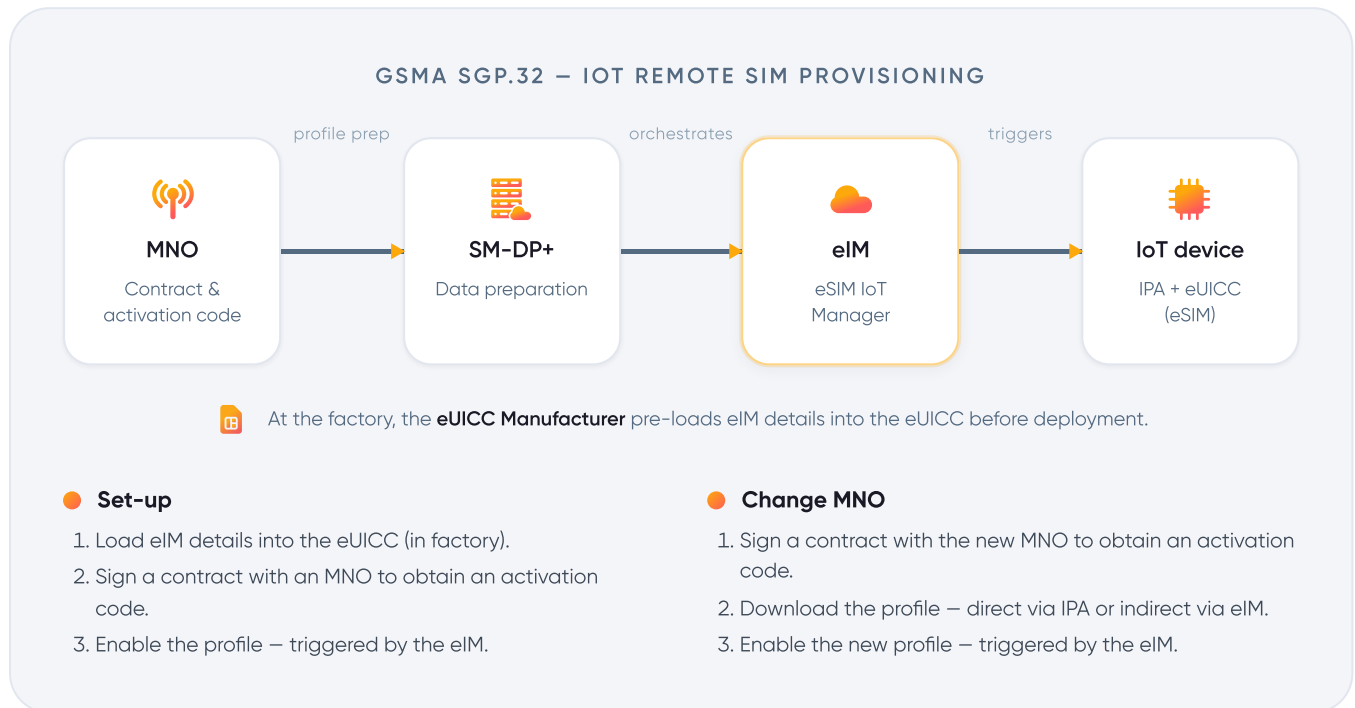
**Future-proofing**

SGP.32 positions organizations to adopt the next generation of IoT standards and stay competitive in a fast-evolving connectivity landscape.

— HOW IT WORKS

The SGP.32 IoT RSP architecture

SGP.32 adds an IoT Profile Assistant (IPA) and an eSIM IoT Manager (eIM) so device owners can trigger profile downloads and switches remotely – without operator-controlled push.



Push & pull

Devices can request profiles, not just receive operator pushes.



Remote management

The IPA handles downloads and switches over the air.



Built for scale

Designed for large, flexible, globally distributed IoT fleets.

— PROCEED WITH EYES OPEN

Risks & unknowns

Because SGP.32 is still evolving, enterprises face real uncertainties. The most important ones to plan around:



Security & regulatory compliance

New features often introduce new vulnerabilities. Ensuring regional compliance – permanent-roaming restrictions, data sovereignty – is critical, and not automatically guaranteed.



Interoperability gaps

Different MNOs may not offer immediate or uniform support for SGP.32, leading to inconsistent experiences across networks.



Commercial complexity

Sourcing multiple carrier contracts, managing eSIM hosting costs, and negotiating with potentially dozens of providers raises both complexity and cost.



Resource constraints

Integrating a brand-new standard into existing connectivity-management systems may require specialized expertise not yet available in-house.



Back-end integration

Even with commercial relationships in place, switching is rarely seamless. Expect back-end work and process changes – managing VPNs, APN settings, polling frequency for new profiles, and differing SLAs – performed in step with eSIM profile switching.



Cost of switching & hosting

Profile switching and profile hosting carry an additional cost, which can exceed USD 1 per profile per month.



Connectivity-management visibility

Without a CMP aggregator that integrates multiple operators, switching to a new eSIM profile can mean losing visibility and manageability in your existing platform.

— THE UPSIDE

Opportunities

Despite the unknowns, SGP.32 offers significant upside for enterprises that adopt it within a managed ecosystem.



Greater freedom

Switch connectivity providers "at the click of a button," limiting lock-in and enabling competitive pricing.



Enhanced flexibility

Overcoming the hardware and UI constraints of older standards, SGP.32 supports a wider variety of IoT use cases.



Future-proofing

Early adoption sets the stage for advanced OTA provisioning, better lifecycle management, and faster time-to-market.

This evolution of SIM technologies lays the groundwork for more streamlined IoT connectivity – empowering enterprises to manage large device fleets efficiently and unlock new revenue through sophisticated remote provisioning. The key is implementing it within a proven, adaptable platform rather than building from scratch.

ANALYST INSIGHT



SGP.32 is a powerful tool, but it's best leveraged as part of a managed service within a broader connectivity ecosystem.

— **TRANSFORMA INSIGHTS**

— AT A GLANCE

SGP.02 vs. SGP.32

The main differences between the M2M standard and the new IoT standard – and what they mean for risk and opportunity.

Criteria	SGP.02 (M2M)	SGP.32 (IoT)
Architecture	• Push model only: the SM-DP+ initiates the download by notifying the device, which then retrieves the profile – no user interaction. • Often requires deeper integration with an MNO-hosted SM-SR. • Suited to traditional M2M with limited user involvement.	• Push & pull model: the device requests the profile from the SM-DP+, typically triggered by the device or user. • Adds an IoT Profile Assistant (IPA) for remote management. • Designed for large-scale, flexible IoT deployments.
Flexibility	• Limited flexibility switching carriers; requires MNO approval. • Primarily one type of connectivity profile.	• High flexibility; switch or add profiles "on demand." • More enterprise control over which MNO profiles are loaded.
Interoperability	• Can be constrained; requires MNO-to-MNO agreements. • Suited to stable, less dynamic environments.	• Improved; simpler to add or remove MNO profiles. • Better for global deployments under diverse roaming or regulatory rules.
Security	• Largely dictated by the provider's platform (SM-SR). • Less user visibility into encryption, updates, or policy.	• Enterprises can enforce stronger policies (encryption, advanced auth). • Ongoing enhancements may address evolving IoT threats.
Migration complexity	• Potentially high: switching providers means negotiating and integrating with existing MNO systems. • Limited control leads to longer timelines.	• Moderate: not fully frictionless, but designed to reduce lock-in and ease provider swaps. • Back-end work (VPN, APN) is still needed, but more enterprise-managed.
Cost implications	• Often includes roaming or profile-management fees set by a single MNO. • Lower up-front cost, but risk of long-term lock-in and roaming charges.	• Dynamic switching can incur hosting fees (~USD 1/device/month in some cases). • Potential long-term savings from reduced roaming and better carrier deals.

— HOW WE HELP

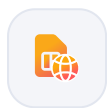
FLOLIVE® is ready for SGP.32

Flolive's cloud-native platform is built to absorb evolving GSMA standards – so enterprises gain next-generation flexibility on top of proven, reliable connectivity.



Cloud-native, future-proof architecture

The platform integrates evolving GSMA standards without major overhauls, so enterprises adopting SGP.32 can enable new features with minimal disruption.



Multi-IMSI + SGP.32 hybrid approach

Beyond eSIM, Flolive's multi-IMSI solutions deliver cost-effective, wide-coverage connectivity. Combining multi-IMSI as the primary profile with SGP.32 for local "pull" provisioning gives enterprises proven reliability and next-generation flexibility.



Global compliance layer

The core platform addresses compliance across jurisdictions – data residency, permanent-roaming regulations, and KYC (Know Your Customer) requirements.

— OVERCOMING THE KEY CHALLENGES

1

Security & regulatory

Built-in encryption and compliance frameworks let you localize connectivity through SGP.32 while maintaining data sovereignty.

2

Cost management

A pay-as-you-grow model and dynamic profile switching reduce roaming fees and overhead – without sacrificing budget control.

3

Operational complexity

A single orchestration layer handles provisioning, monitoring, and billing across any mix of eSIM, multi-IMSI, or standard SIMs.

4

Scalable integration

API-driven connectivity management lets enterprises embed SGP.32 activation into existing workflows – even without deep in-house eSIM expertise.

— WHAT YOU GAIN

Business & operational outcomes



Reduced lock-in & faster switches

As SGP.32 rolls out, Flolive customers can adopt new carriers, switch profiles, or localize connectivity in emerging markets with minimal manual effort.



Lower cost of ownership

Intelligently blending multi-IMSI and eSIM RSP avoids the hidden expense of multiple back-end integrations, contracts, and compliance missteps.



Regulatory peace of mind

Robust compliance support speeds go-to-market across regions that typically pose IoT hurdles – the EU, Middle East, or APAC.



Competitive differentiation

Early SGP.32 readiness signals to partners, investors, and clients that you're at the forefront of IoT innovation – and can open new lines of revenue.

— FUTURE-PROOFED INNOVATION

A proven ecosystem, not a blind bet

Flolive's "cloud-native + multi-IMSI + SGP.32" framework aligns with industry guidance – ensuring enterprises aren't adopting a new standard blindly, but implementing it within a proven, adaptable ecosystem that keeps pace with evolving market demands. The Transforma Insights report underscores the importance of selecting a provider that handles the complexities of back-end integration and multi-operator support – exactly where Flolive is built to deliver.

— WHY FLOLIVE

Your partner for SGP.32-ready IoT connectivity



Future-proof architecture

Adapts alongside new GSMA standards as they mature.



Global compliance expertise

Simplifies data residency and regulatory requirements.



Seamless hybrid solutions

Blends proven multi-IMSI with the promise of SGP.32.



Transparent cost control

Clear billing across all managed profiles.



CMP aggregation

A single pane of glass for monitoring, provisioning, and troubleshooting – whatever SIM or MNO you use.



Interoperability & security

We hold commercial agreements with global profile vendors and handle SIM, RSP, and MNO integration – eliminating the heavy lifting.

— GET READY FOR SGP.32

Ready to stay ahead of the curve?

Start with a connectivity readiness assessment, run a low-risk pilot or proof of concept, then map a phased migration that blends multi-IMSI, existing eSIM standards, and SGP.32 readiness for optimal flexibility.

[Book a readiness consultation](#)[Request a live demo](#)

Flolive – your partner for future-proof, SGP.32-ready IoT connectivity.