

# eSIM Standards Architecture Overview

O<sub>2</sub> Business Solutions, IoT & Campus Networks – 2026

# M2M Specification (SGP.02)

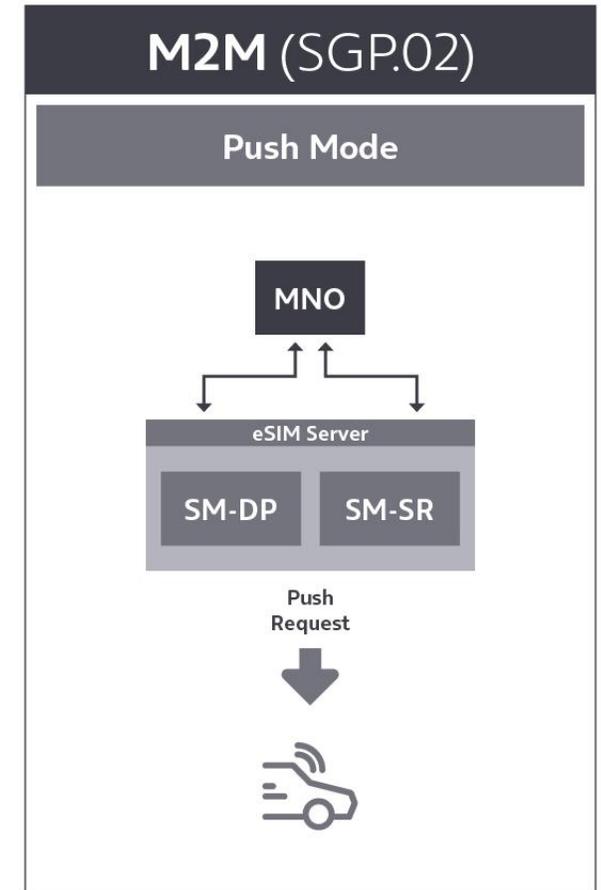
First eSIM standard, developed for industrial and M2M use cases where no user interface is available. Profile management is handled entirely through backend systems.

## Used in:

- Automotive Industry, Industrial gateways, etc.

## SGP.02 Architecture

- Involves Subscription Manager - Secure Routing (SM-SR) and Data Preparation (SM-DP)
- Device manufacturer must pre-configure connectivity with the initial profile
- All operations initiated by backend (no user interaction)
- Secure channel established via SM-SR for profile download and management



SM-DP: Subscription Manager Data Preparation  
SM-SR: Subscription Manager Secure Routing

# Consumer Specification (SGP.22)

Designed for consumer devices

Enables user-initiated profile downloads via device user interface

Uses an LPA (Local Profile Assistant) on the device, which communicates with an SM-DP+ to download operator profiles

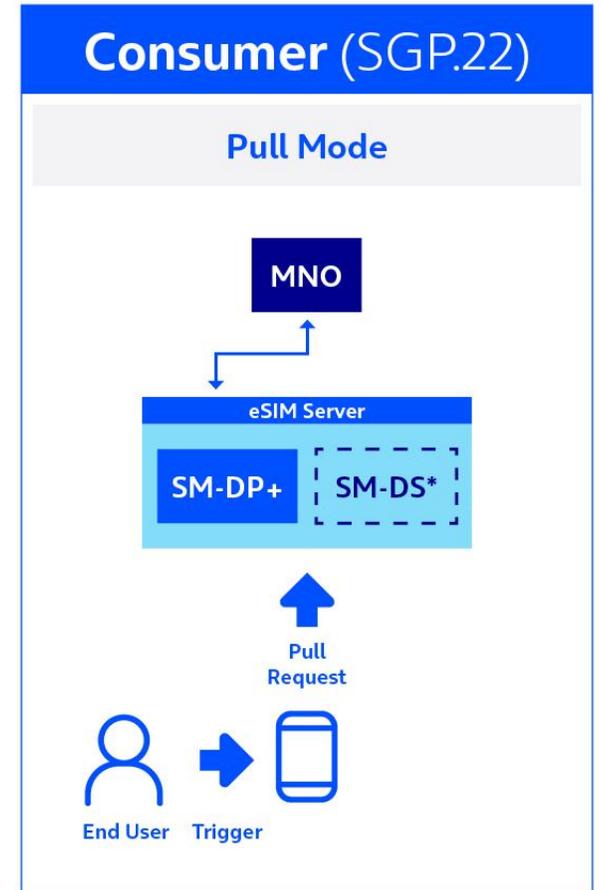
- The user scans a QR code to download and install an operator profile
- Allows switching between mobile operators without changing the physical SIM

## Used in:

- Smartphones, Tablets, Laptops, Wearables etc.

## SGP.22 Architecture

- Simplified structure using SM-DP+ only
- The LPA within the device initiates profile download from SM-DP+
- Enables end users to install, delete and manage profiles
- eSIMs can store multiple profiles
- The number of active profiles at a time depends on device capabilities



\* Optional  
 SM-DP: Subscription Manager Data Preparation  
 SM-DS: Subscription Manager Discovery Server

# IoT Specification (SGP.32)

Designed for IoT devices

Provides a simplified, lightweight architecture that bridges the gap between the M2M and consumer standards.

Supports both pull and push mechanisms for profile provisioning.

Applicable to:

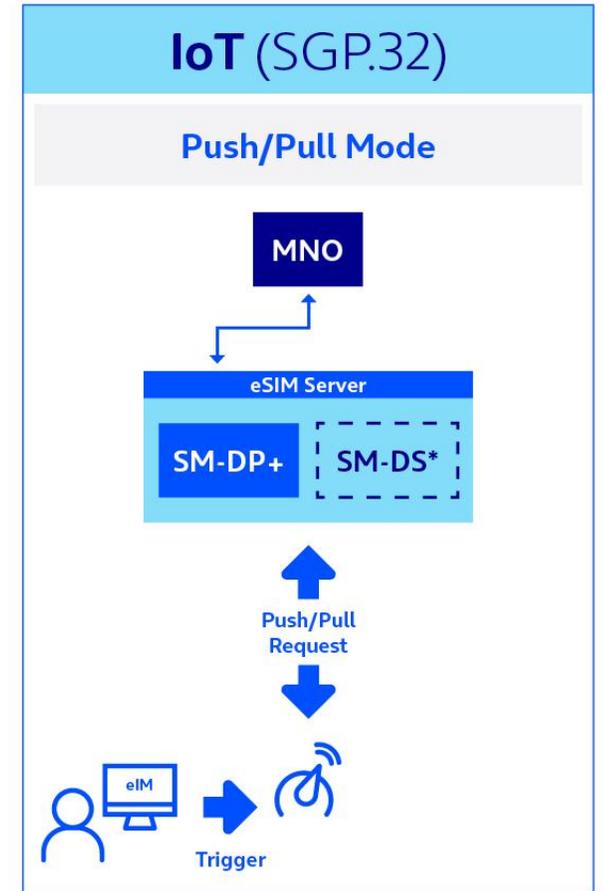
- Devices with no user interface
- Constraint devices using lightweight protocols

Used in:

- Smart metering , Asset trackers , Industrial sensors, etc.

## SGP.32 Architecture

- Does not include an SM-SR component, simplifying the backend architecture
- Profiles can be pulled by the device or pushed by the backend
- Optimized for IoT requirements, including battery efficiency, cost reduction, and device simplicity



\* Optional

SM-DP: Subscription Manager Data Preparation  
SM-DS: Subscription Manager Discovery Server  
eIM: eSIM IoT Manager



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Business  
can do