

# eSIM



# What is SIM vs eSIM?

## SIM Card



Insertable plastic chips coming in three sizes  
**Standard, Micro, and Nano**

**ICCID** (Integrated Circuit Card Identifier ID) unique number identifying the SIM card

**IMSI** (International Mobile Subscriber Identity) identifies the user's subscription, and which networks can be accessed

**One ICCID and IMSI** can be held per SIM card

## eSIM (Embedded SIM)



Can be **soldered** to circuit board or as an **insertable chip**

**EID** (Embedded Identity Document) unique number identifying the eSIM

**eUICC** (Embedded Universal Integrated Circuit Card) allows eSIM to hold and manage multiple carrier profiles, each with its own IMSI

eSIMs can hold multiple carrier profiles but **only one can be active at a time**. (Ericsson's eSIM offers 8 profile slots)

# Why eSIM?

## Efficient Activation Process

- ✔ **Instantly activate devices**
- ✔ **Streamline setup saving time and cost**
  - No more purchasing and storing physical SIM cards
  - Remove staging and network maintenance times for SIM card insertion

## Seamless Connectivity Management

- ✔ **Easily switch between cellular carriers**
  - No service calls to swap SIM cards for carrier changes
  - Better Manage carrier costs through flexible connection management
- ✔ **Activate and manage eSIM carrier connections in bulk**
  - Pre-load EID's and activation codes into NetCloud



# eSIM offers expanded connectivity options

## Eight SIM profile slots

Store SIM profiles from multiple carriers on the device

---

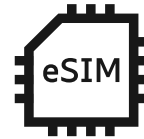
Expand deployment with ease by enabling carriers globally

## Remote eSIM management

Seamlessly provision, manage, and switch between carrier profiles using NetCloud Manager

---

No need to physically change SIM cards to change carrier



## CSV File Uploads

Prepare for deployment by loading EID's and activation codes into NetCloud Manager prior to receiving devices

---

Assign and activate eSIM's in bulk for easy large-scale deployments

## Carrier Profile Management

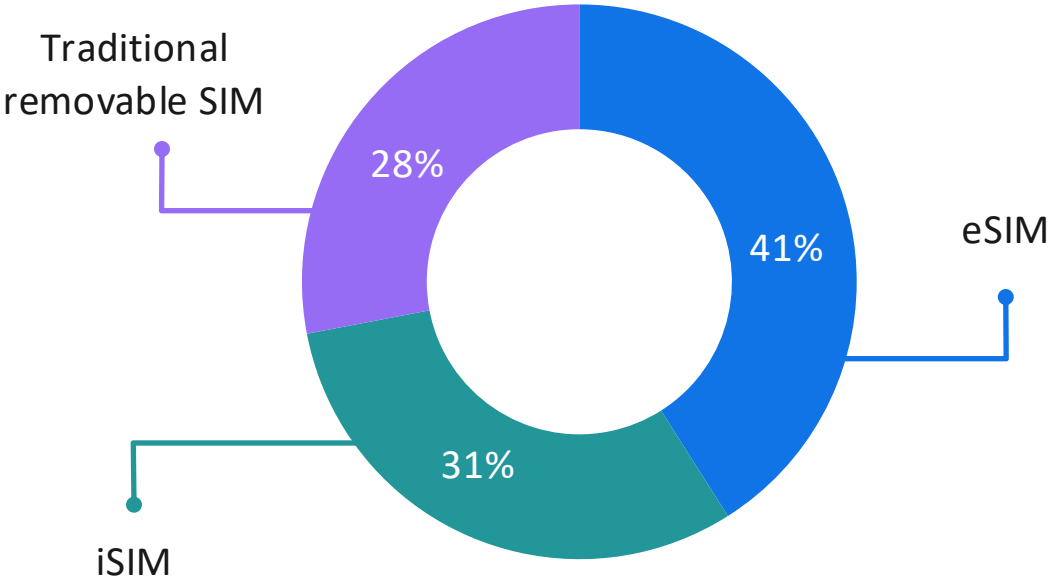
Assign profiles to devices

---

Unassign profiles for reuse or delete them offering flexibility to account management

# eSIM expected to account for more than 40% of the IoT global cellular market by 2030

Average Share



### Scaling up eSIM

Today, a majority of cellular IoT devices use traditional removable SIM. However, recent enhancements on eSIM specs combined with continuous product innovation from eSIM vendors, should help accelerate adoption of eSIM. The number of licensed cellular IoT connections should reach 6 billion globally by 2030, up from 4 billion in 2024, with eSIM taking a growing share of the market.

# eSIM Profile Distribution Model - Overview

## SGP.02

- Requires Bootstrap Profile
- Requires SM-SR Remote SIM Provisioning (RSP) component
- No endpoint change required
- Profiles are pushed from the RSP to the device, automatic
- Typically used for automotive use cases

## Ericsson's eSIM Model

## SGP.22

- ✓ Uses any available WAN connectivity (Bootstrap optional)
- ✓ RSP is managed by MNO or Private Cellular operator
- ✓ Requires Local Profile Assistant (LPA) on endpoint
- ✓ Profiles are pulled from network, user-initiated
- ✓ Used by all smartphones/devices
- ✓ Universally supported

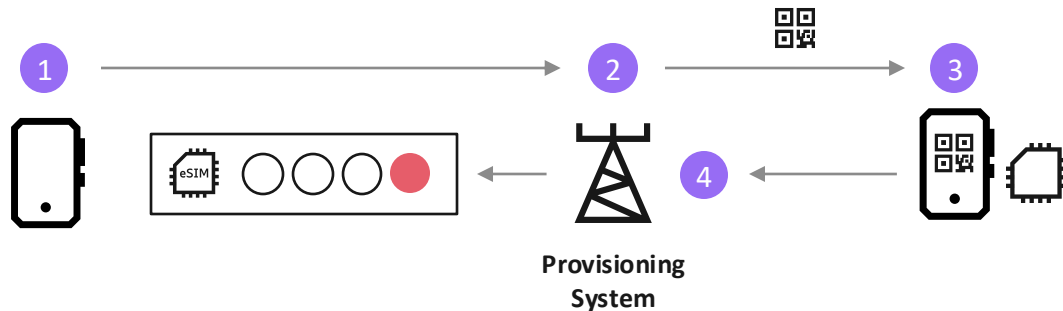
## SGP.32

- Combines the benefits of SGP.02 and SGP.22 eSIM
- Uses SGP.22 SM-DP+
- Requires IoT Profile Assistant (IPA) on endpoint
- eIM middleware for pull-push profile distribution

# eSIM versus Multi-IMSI SIM

## eSIM (eUICC-capable)

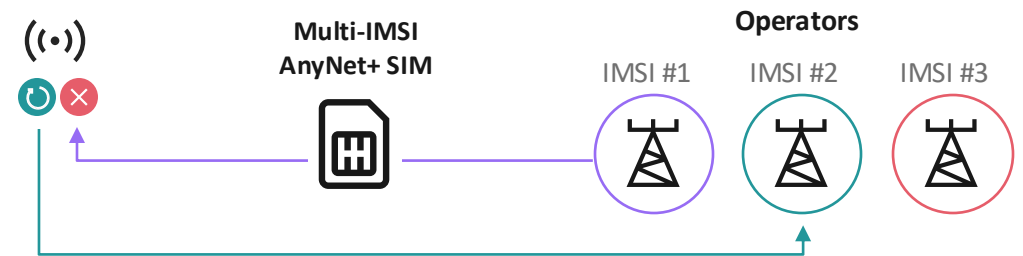
A “virtual” SIM that supports loadable profiles.



- eUICC is software, needs to be stored on/in a UE
- GSMA standards-based configuration and management
- eUICC profiles can be pushed (M2M) or pulled (consumer). The SIM is not in control of the profile change
- Network connectivity must exist for the negotiation with the profile provider and authenticator
- Billing relationship can switch between MNOs or MVNO SIM provider

## Multi-IMSI SIM

Removeable SIM that contains more than one Subscriber ID, and an embedded system that selects which of those identities to use.



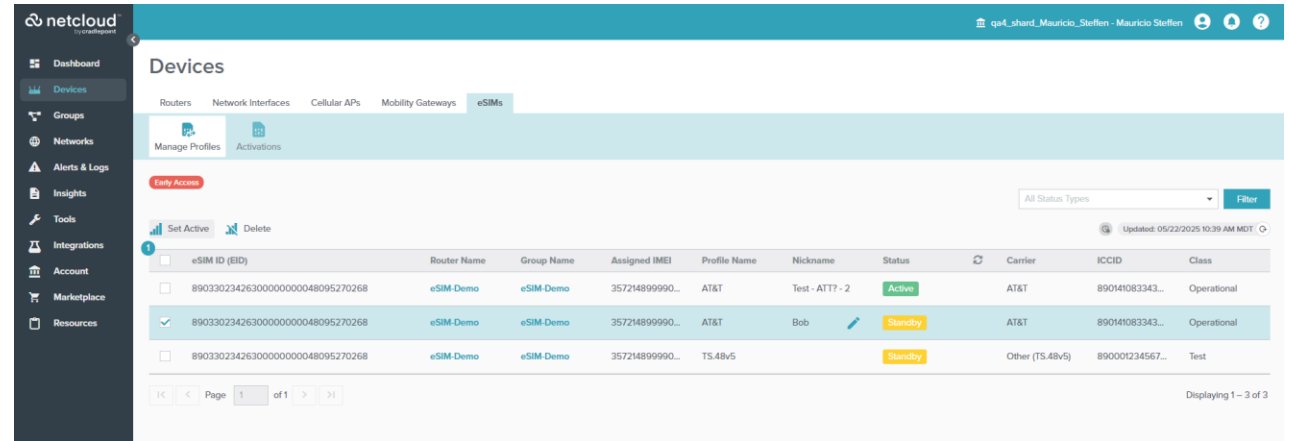
- IMSI profiles are pre-loaded on SIM
- SIM contains logic to select the IMSI it will use, based on criteria programmed into the SIM
- Proprietary configuration and management
- No alternate network connectivity is required, as long as the SIM loads a profile that can attach and pass traffic on an available cellular network
- UE has no control over which IMSI is loaded by the SIM
- Billing relationship is fixed, with SIM provider

# NetCloud offers in-depth eSIM

At the Account and Group levels, you can select one or more profiles to become the Active profile on its eSIM/device

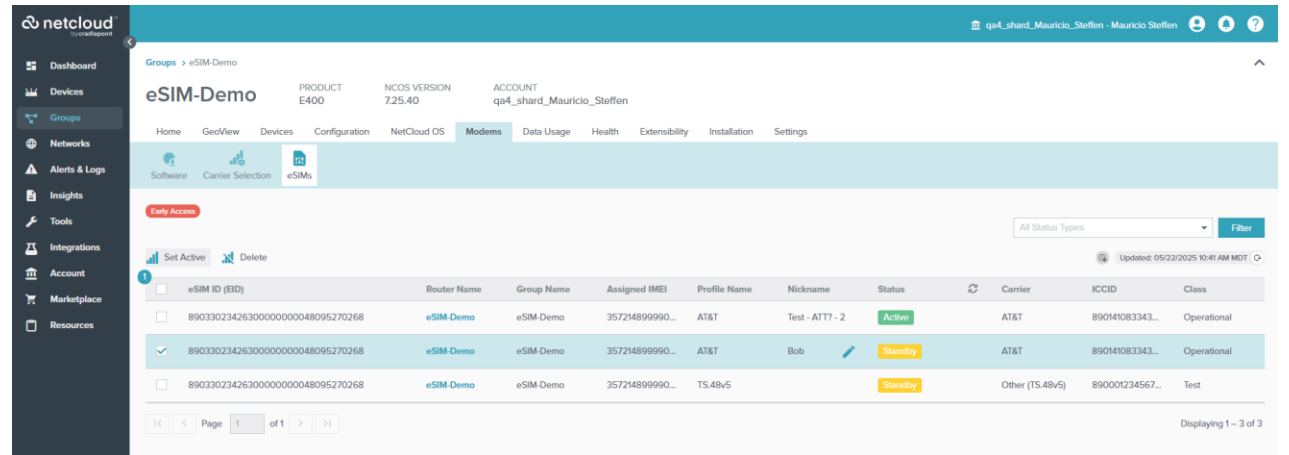
- Device level can only assign one active profile per eSIM

You can also delete one or more profiles that you are no longer using or active.



The screenshot shows the 'Devices' page in NetCloud. The 'eSIMs' tab is selected. A table lists three eSIM profiles. The second profile, 'Bob', is selected with a checkmark and has a 'Standby' status.

eSIM ID (EID)	Router Name	Group Name	Assigned IMEI	Profile Name	Nickname	Status	Carrier	ICCID	Class
890330234263000000048095270268	eSIM-Demo	eSIM-Demo	357214899990...	AT&T	Test - ATT7 - 2	Active	AT&T	89041083343...	Operational
890330234263000000048095270268	eSIM-Demo	eSIM-Demo	357214899990...	AT&T	Bob	Standby	AT&T	89041083343...	Operational
890330234263000000048095270268	eSIM-Demo	eSIM-Demo	357214899990...	TS.48v5		Standby	Other (TS.48v5)	890001234567...	Test

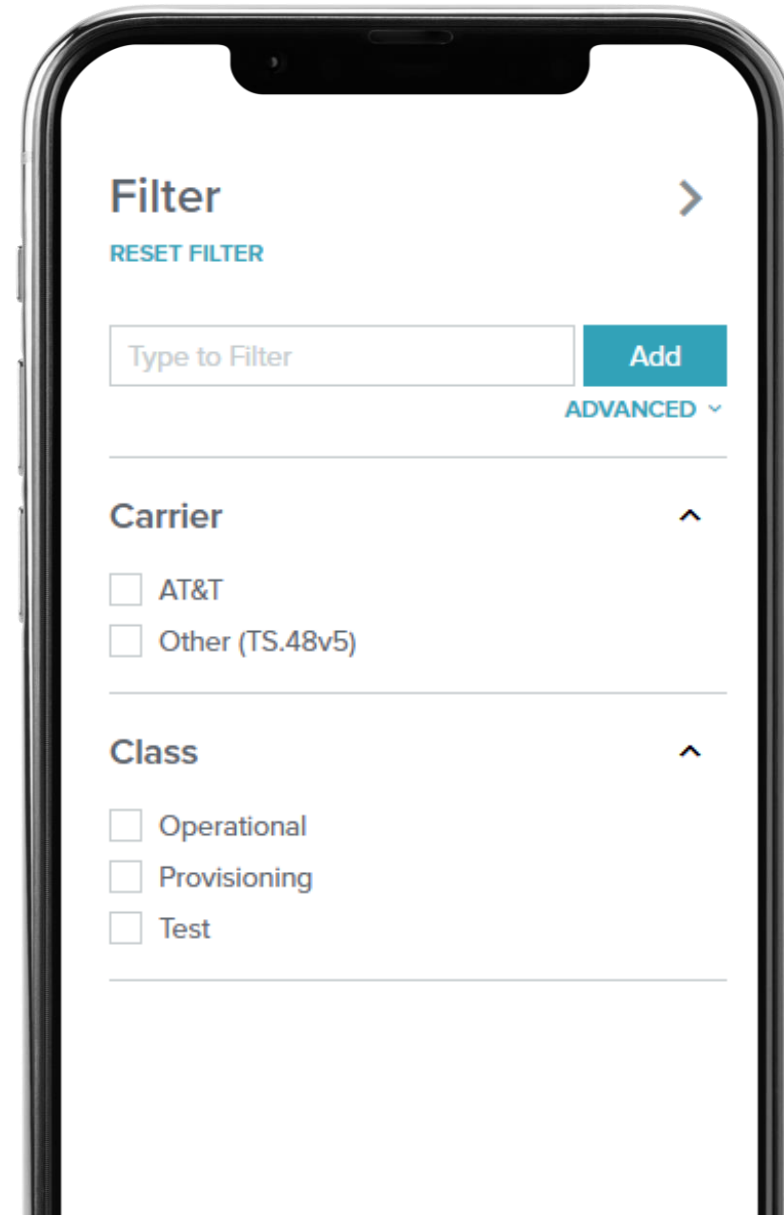


The screenshot shows the 'eSIM-Demo' page in NetCloud. The 'eSIMs' tab is selected. A table lists three eSIM profiles. The second profile, 'Bob', is selected with a checkmark and has a 'Standby' status.

eSIM ID (EID)	Router Name	Group Name	Assigned IMEI	Profile Name	Nickname	Status	Carrier	ICCID	Class
890330234263000000048095270268	eSIM-Demo	eSIM-Demo	357214899990...	AT&T	Test - ATT7 - 2	Active	AT&T	89041083343...	Operational
890330234263000000048095270268	eSIM-Demo	eSIM-Demo	357214899990...	AT&T	Bob	Standby	AT&T	89041083343...	Operational
890330234263000000048095270268	eSIM-Demo	eSIM-Demo	357214899990...	TS.48v5		Standby	Other (TS.48v5)	890001234567...	Test

# NetCloud offers in-depth eSIM

Find profiles by carrier, type of profile,  
or type to filter for Device Name,  
Group, EID, etc.



# Enterprise 5G Coverage model



**Purchase eSIM device**  
Get activation code  
from carrier

**Add eSIM Profile(s)**

Add eSIM Method

Add eSIM Details one at a time  
 Upload CSV File

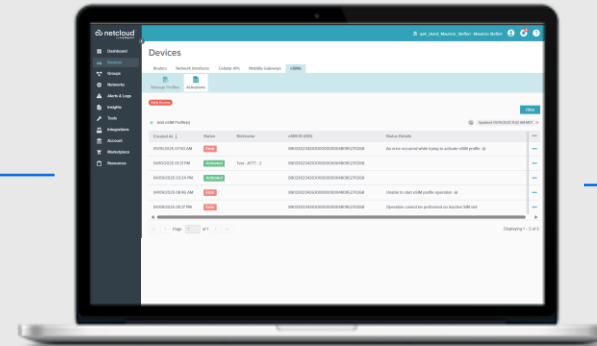
eSIM ID \*

eSIM Activation Code \*

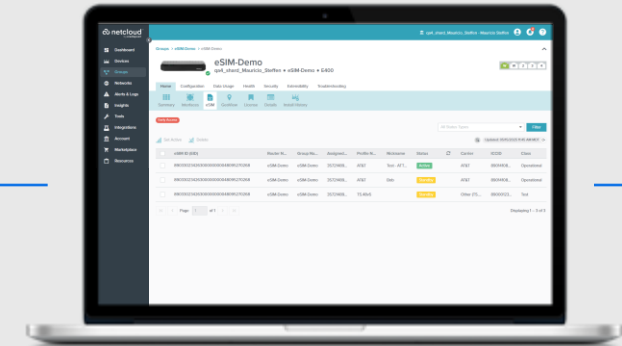
Confirmation Code

Nickname

Manually enter activation code into  
NetCloud UI or bulk load using CSV



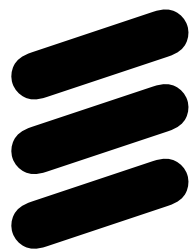
Push activation code from  
NetCloud to the device (requires  
independent WAN)



Device contacts carrier activation server  
Confirms activation code  
Downloads profile to eSIM

Setting profile to 'active'  
causes modem  
remount to reboot\*

For embedded SIMs; in NetCloud,  
in the configuration; select the  
eSIM profile slot number to be  
active



**ERICSSON**