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Multi-IMSI VS eUICC

Is it one or the other, or can customers leverage both?

In the world of IoT, there are two popular choices for multi-network SIMs: Multi-IMSI and eUICC. As IoT devices are often "set and forget" for many years at a time, deployed to remote locations, and used for brand-new and often complex use cases, connectivity requirements need to be holistic and future-focused.

This white paper will look at:

- **Multi-IMSI Solutions For IoT Use Cases**
  The pros and cons of this approach to see business value.
- **The Rise of eUICC**
  If it solves many of the problems, what's holding enterprises back from adoption?
- **Having Your Cake and Eating It, Too**
  Why multi-IMSI and eUICC together should be the next big thing.

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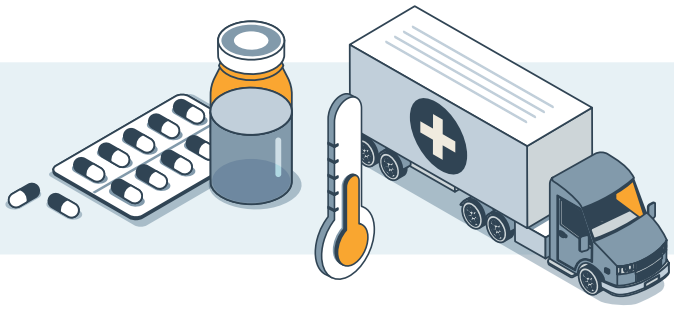
What is Multi-IMSI?

IMSI stands for International Mobile Subscriber Identity. A single IMSI means a single Mobile Network Operator (MNO) relationship. That means if you have one IMSI on a SIM card, you will be able to connect to that operator's network, plus whoever they have roaming agreements with.

A multi-IMSI SIM means you can hold multiple MNO relationships on the same SIM, and switch quickly and easily from one to the other, dynamically downloading new IMSIs to the SIM, depending on where it's located. Once downloaded, the SIM will act exactly as a local SIM. A "nice to have" for mobile consumers who want to beat the high costs of roaming agreements, but critical for IoT. This is because IoT behaves entirely differently from mobile phones.

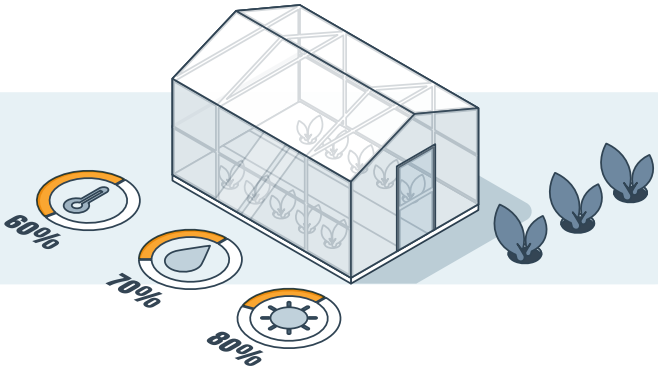
An Energy company might deploy smart meters across a whole region, or even nationwide, covering an area for which no single MNO could offer connectivity.

Pharmaceutical companies might need right visibility and control over their cold chain, as medication or vaccines travel across borders from A to B.



Critical services such as medical IoT demand always-on reliability. A drop in network performance could have a measurable impact on human life.

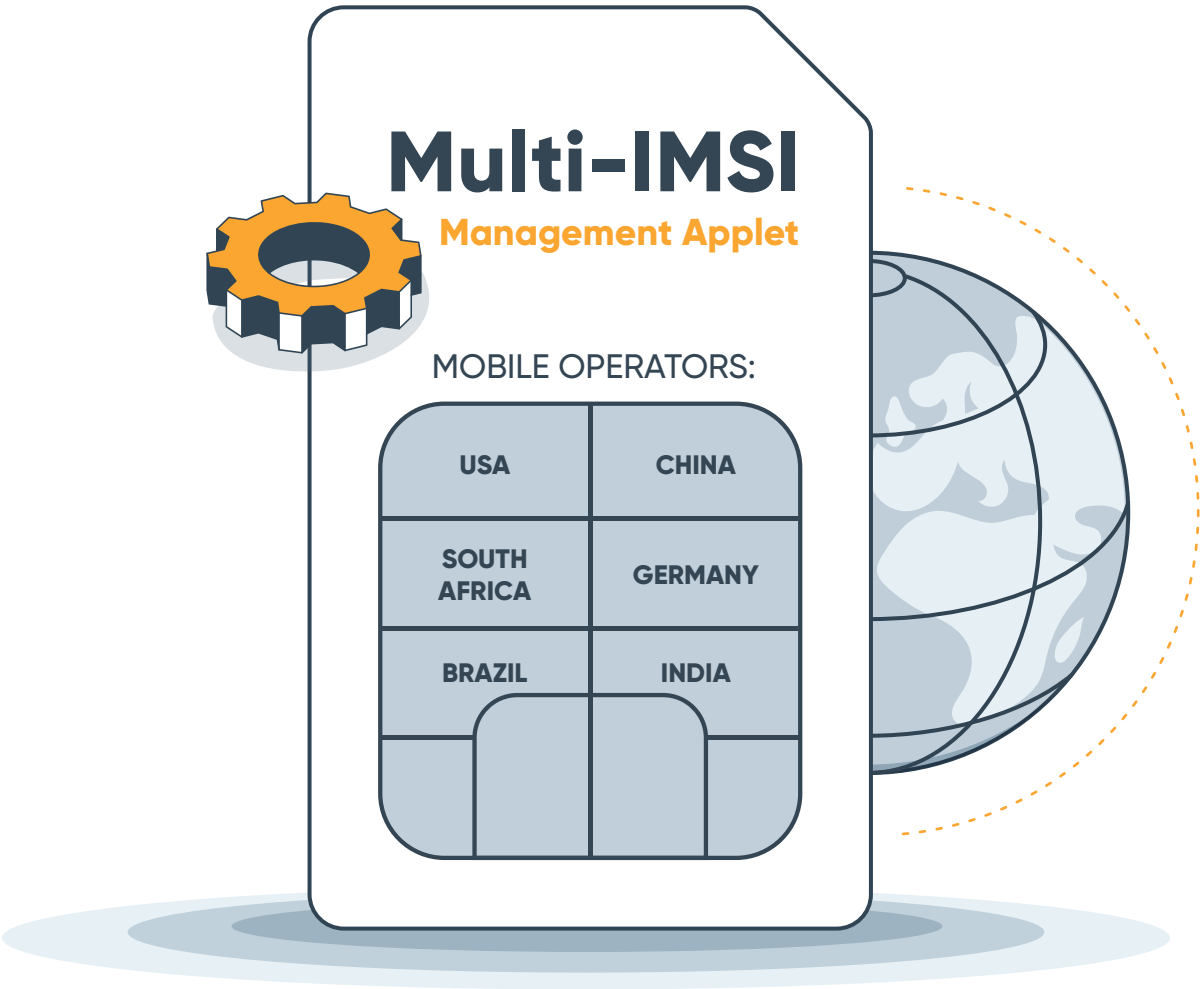
IoT devices in agriculture may sit tight measuring soil samples or temperature for as much as 3-5 years, as their MNO costs rise exponentially compared to the competition.

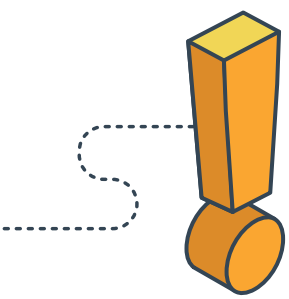


A Telematics company may need to track and monitor vehicles or equipment across different countries, where permanent roaming restrictions limit their connectivity to 90 days.

With a single-IMSI solution, IoT devices can't help but experience gaps in service or availability, or a lack of flexibility that translates poorly on the business' bottom line. With the right multi-IMSI solution, devices can simply switch autonomously as necessary to achieve contextual business goals.

The impact of high MNO costs, potential network faults, and low coverage by any single MNO are suddenly far less important.





What downsides are there to multi-IMSI solutions?

The main CONsideration when looking at adopting a multi-IMSI solution is the single vendor relationship. While this can be looked at as a great plus, easing a lot of the complexity, and eliminating the multiple contracts, service agreements and communication with different mobile operators, it also means you're ultimately locked in to a single connectivity provider.

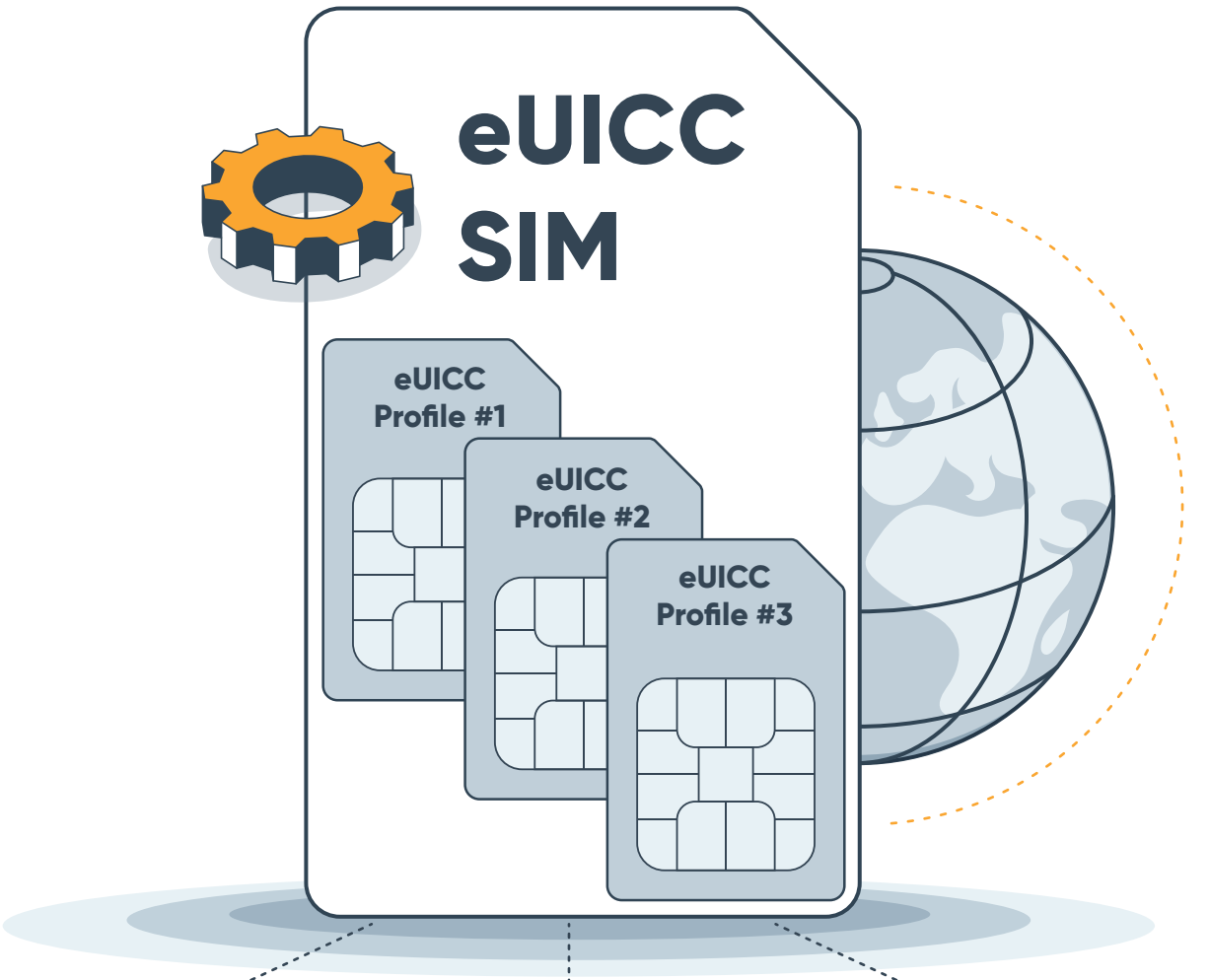
To solve this challenge, enterprises sometimes ask their IoT connectivity provider for measures that will allow them to download new MNO IMSIs in the future, if the need arises.

What is eUICC?

eUICC stands for Embedded Universal Integrated Circuit Card, a GSMA standard that was created around the same time as the growth of embedded SIMs. eUICC was intended to support customers in avoiding MNO lock-in by allowing them to download new profiles to the same SIM in a standardized way.

eUICC is supported across all SIM form factors, including plastic (SIM), embedded (eSIM) or integrated (iSIM).

The common factor is that like multi-IMSI solutions, eUICC can be provisioned over-the-air (OTA), using the GSMA standard. Enterprises can add profiles for new MNOs as necessary, and will be able to make the switch without physically changing the SIM. Each profile can be considered entirely standalone.



Flexible

Switch operators OTA when you encounter a problem, such as a permanent roaming restriction in a specific location, or poor service from your current provider.

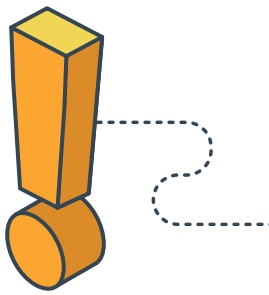
Standard

As eUICC is deployed according to GSMA standards, you have ultimate peace of mind for security and compliance.

Open

No lock-in to any particular MNO, enter into new partnerships for existing devices with no need to physically change the SIM.

What downsides are there to eUICC solutions?



While multi-IMSI solutions offer quick and even autonomous switching for IoT devices, eUICC moves at a slower pace. Most eUICCs will be registered to a specific Subscription Management Secure Routing service (SM-SR), which is responsible for enabling and disabling profiles, and securing the communications. If your chosen MNO isn't an existing partner, you're going to incur heavy costs to integrate.

While you gain from losing the MNO lock-in, you're now not only juggling multiple operator relationships, meaning you'll need to stay on top of each one's SLA, contract, time zone, communication method, and more, you will now be somewhat locked by your eUICC platform (RSP) vendor.

As eUICC interfaces are not 100% standard and compatible, if you ever decide to move from one eUICC platform vendor to the other, you will have to make sure you are able to seamlessly make the move.

Finally, you'll need to factor in license fees for downloading new profiles, which for LPWAN devices for example, can be a data package heftier than the device generates over 12 months. Ouch.

Weighing It Up as eUICC and Multi-IMSI Go Head to Head

	eUICC	Multi-IMSI
OPERATOR SWITCHING	Can be complex/time consuming	Autonomous and flexible
COSTS	License fees for downloading new profiles range between 20c-60c per transaction	No costs for downloading new profiles
OTA DATA USAGE	**Heavy-** Whole profile downloads	**Lightweight-** Just IMSI downloads
CONTRACTS	Multiple operator relationships	Single relationship with a multi-IMSI connectivity provider
AVAILABILITY	**Reactive-** Mandates the device is connected	**Autonomous-** Switching can be done even if the device is not connected
CONNECTIVITY VENDOR LOCK-IN	Somewhat	Somewhat
OPERATOR LOCK-IN	No	No

eUICC can quickly get prohibitively expensive. Not only that, but the lack of autonomous switching and the overheads involved with multiple operator relationships make it hard to see how eUICC could be used for emerging IoT use cases. Where devices travel across different locations, or have tight requirements of availability, security, or compliance - multi-IMSI appears the clear winner.

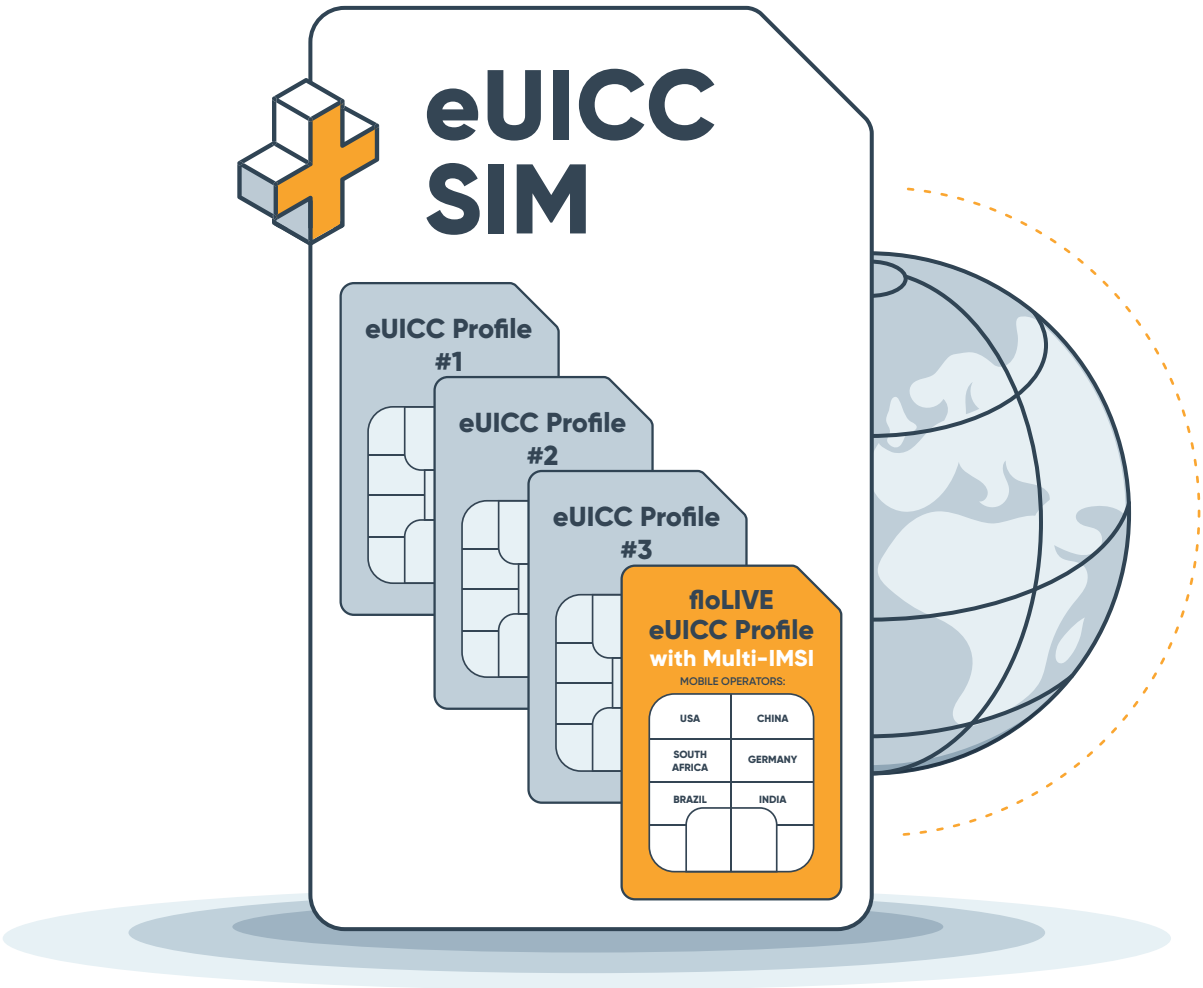
But Wait!

What About Using a Multi-IMSI SIM Approach with eUICC?

Imagine you could wave a magic wand, and streamline the complexity of eUICC, while reducing its costs and speeding up time to value when switching operator relationships.

In fact, imagine you could make eUICC just as simple as a multi-IMSI solution, and still keep the benefits of a single vendor relationship, without the lock-in.

This is the future of IoT connectivity.



By working with a multi-IMSI provider for connectivity services, and placing this as a standard eUICC profile on your eUICC SIM, you can get the best of both worlds. From the multi-IMSI profile you can access dozens of IMSIs, all through a single vendor relationship to streamline overhead and control.

As your devices travel across borders, meet unreliable coverage or availability, come up against difficult compliance regulations, or simply traverse a distance too great to connect via a single operator, they can switch autonomously, or manually OTA.

As you're using eUICC as the vehicle, but relying on a multi-IMSI approach, you're going to see a direct impact on your bottom line, with reduced costs because you won't be paying transaction fees or consuming large amounts of data.

It also streamlines management and control - you can view and manage all of your SIMs from one dashboard, staying on top of all your connected devices without making individual agreements with each operator, and troubleshooting with ease.

Wake up one morning and decide you want to switch to a new connectivity provider?
No worries, as by using an eUICC SIM, you can simply add a new connectivity provider or MNO as an additional profile, removing previous profiles where necessary. No change in the device or SIM will be necessary, and you can sleep well at night knowing you're experiencing absolutely zero lock-in.

Ok, it's time to look at that chart again, but this time with a new contender in the ring.

	eUICC alone	Multi-IMS alone	Multi-IMSI in eUICC-compliant SIM
OPERATOR SWITCHING	Can be complex/ time consuming	Autonomous and flexible	Autonomous and flexible
COSTS	License fees for downloading new profiles range between 20c-60c per transaction	No costs for downloading new profiles	No transaction costs while using multi-IMSI
OTA DATA USAGE	**Heavy** Whole profile downloads	**Lightweight** Just IMSI downloads	**Lightweight** Just IMSI downloads
CONTRACTS	Multiple operator relationships	Single relationship with a multi-IMSI connectivity provider	Single relationship with multi-IMSI vendor
AVAILABILITY	**Reactive-** Mandates the deviceis connected	**Autonomous-** Switching can be done even if the device is not connected	No availability issues
CONNECTIVITY VENDOR LOCK-IN	Somewhat	Somewhat	No
OPERATOR LOCK-IN	No	No	No

eUICC & Multi-IMSI: A Match Made in Heaven

Leveraging the Best of Both Worlds

Imagine that you can use the most secure eUICC solution alongside an advanced multi-IMSI technology. By partnering with floLIVE, enterprises gain access to the world's largest connectivity library, and can therefore get their IoT projects to market quickly, even with new and innovative use cases which defy standard connectivity options.

Here's how it works - as a standard eUICC SIM embedded with floLIVE's multi-IMSI profile. Within this profile, the SIM behaves like a standard SIM and provides its rich features of flexibility, customization, and control.

Customers get cost-effective and simple connectivity, with partnerships from dozens of operators, all easily available from the largest connectivity library of its kind.

Once devices are in the field or on the move, autonomous switching allows for better availability and performance, and a single connectivity management platform provides configuration, customization, OTA provisioning, and more.

And if the day comes that you want to part ways with floLIVE, you can make the switch with ease, simply adding a new MNO or connectivity provider relationship to your eUICC SIM.

We'll miss you and your devices, but we promise - they won't notice a thing.

Want to discuss your plans for IoT connectivity?

Get in touch www.flolive.net

About floLIVE

floLIVE operates the first and largest global, hyperlocal data network of its kind!

With a global carrier library based on an array of interconnected local core mobile networks, we provide centrally-managed local connectivity for any device, anywhere.

Global means no limits on where you do business; local means low latency, high performance, and full compliance.

Our network has been designed to comply with the emergence of privacy acts, data regulations and roaming restrictions.

Best of all, we provide direct access to our network, that lets you control your connectivity as if you were the carrier. Monitor your devices, access real-time network events and usage, switch operators remotely, and troubleshoot failures ahead of time, so your devices never miss a beat.

Let's connect

Get in touch to discuss how we can meet your IoT requirements. We're sure to surprise you.

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