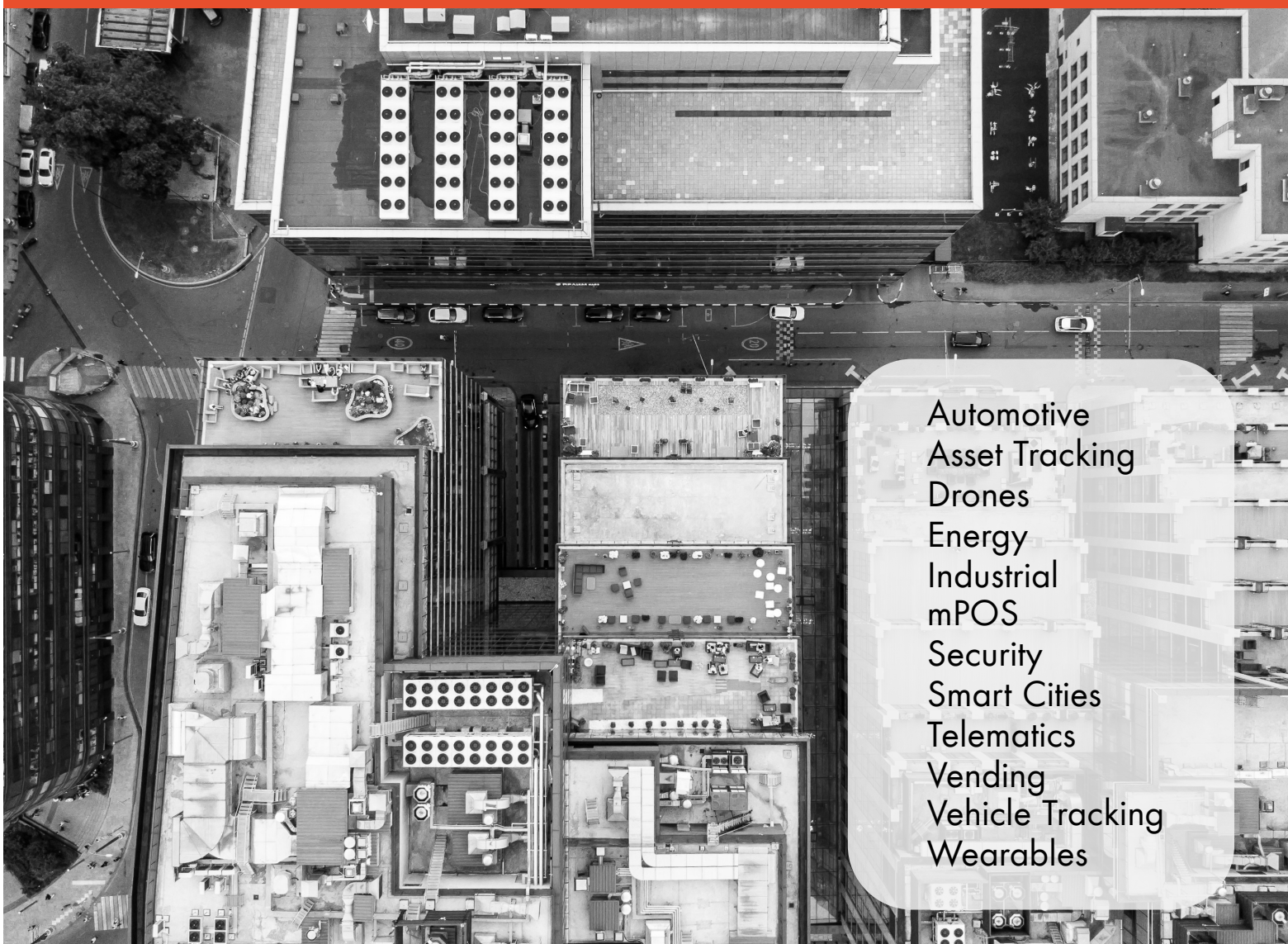
ARKESSA

Five Years Out

REPROGRAMMABLE SIMs

eUICC and embedded SIM technologies will
transform global enterprise IoT,
making it easier and reducing total cost of ownership

eUICC, eSIM, Subscription Management, Over-the-Air



INTRODUCING ARKESSA

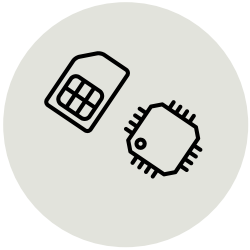
We make IoT Connectivity...

SIMPLIFIED, SCALABLE
and SECURE.

Automotive
Asset Tracking
Drones
Energy
Industrial
mPOS
Security
Smart Cities
Telematics
Vending
Vehicle Tracking
Wearables

Arkessa is an experienced MVNO Service Provider with over 10 years of delivering managed connectivity services to the M2M and IoT markets. Arkessa has extensive experience across the full spectrum of IoT applications including Automotive, Energy, Healthcare, Industrial, Retail, Smart Cities and Transportation.

By removing the commercial and technical complexities of the global Cellular IoT landscape, Arkessa enables our customers to focus on data analytics, new business models, and on delivering superior products and user experience throughout the entire product lifecycle.



Global Reprogrammable SIM/eSIM
(GSMA compliant eUICC)

Connectivity Management
(Monitor and Control)

Global multi-operator access on a single mobile core network

OTA Subscription Management
(SM-SR & SM-DP)

Secure Private Networking
(Secure data-ingest to Cloud)

LOCALISED AND GLOBAL CONNECIVITY WITH eSIM & eUICC

eUICC
Embedded Universal Integrated Circuit Card

eSIM
Embedded SIM

OTA
Over-the-Air

eUICC technology represents a radical change in terms of how Enterprises can select and change service provider profiles based on criteria or business rules of their choosing.

The automotive industry has been especially eager to embrace this new technology because it gives them an exciting new way to optimize costs, increase flexibility, and simplify the logistics involved in car production, distribution and after-sales support.

Car-makers in particular are promoting mobility services such as car-leasing and sharing, parking or charging assistance and can now even extend vehicle longevity or upgrade vehicle functions through over-the-air (OTA) software updates.

Similar models are increasingly adopted across the entire IoT application landscape and eUICC-based solutions will have significant advantages for IoT devices.

Manufacturers can now fit solderable eSIMs on the production line, improving security and removing a source of unreliability.

Enterprises can switch providers without recalling devices meaning costly field visits are no longer necessary. They also have greater liberty from long-term contract commitments and freedom to take advantage of market dynamics in the form of improved pricing or new network coverage options.

OEMs and Enterprises should invest in eUICC if they have active projects, plans or requirements for any of the following:

- Deployments which stay in the field for more than 2 years
- Global supply-chains or distribution networks
- Mobility solutions (people, products, services) which are operating internationally
- Freedom from service provider lock-in
- Operating a circular economy

GETTING STARTED

SIM SELECTION

eUICC and OTA SIM provisioning is compatible with multiple SIM form factors and deployed in automotive, industrial and consumer applications.

Plastic multi-cut SIM card form-factors include :

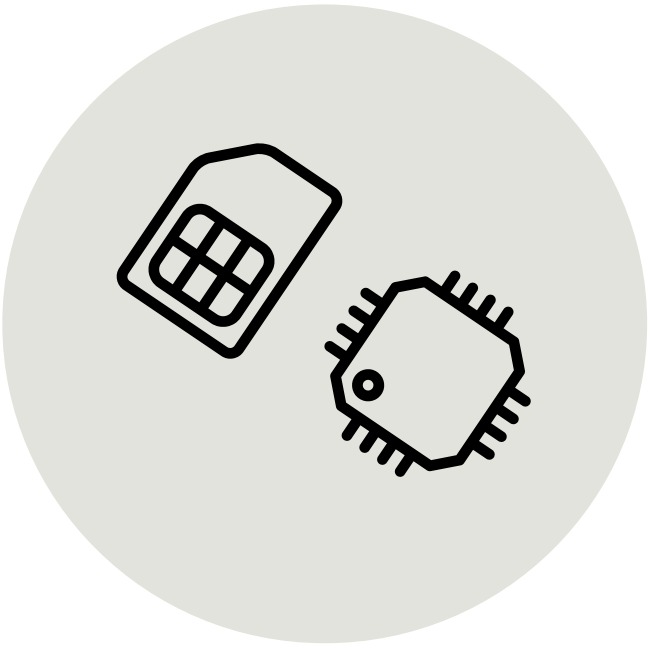
- 2FF(mini)
- 3FF(micro)
- 4FF(nano)

Embedded SIM (eSIM)

- MFF2

Embedded SIMs are fast becoming the most common choice for M2M applications. eSIMs are vacuum sealed and soldered down on an electronic circuit board which provides a number of compelling benefits :

- Miniaturisation : product design need not be constrained by the size and style of the traditional SIM card carrier.
- Ruggedised : being embedded within a device provides environmental shielding and reduces the chance of malfunction due to shock or vibration.
- Security : better protection from physical tampering and theft combined with OTA management.
- Operational life : ensures connectivity throughout the operation life of devices including those in circular economies with leasing (XaaS) models and when there are changes of ownership.

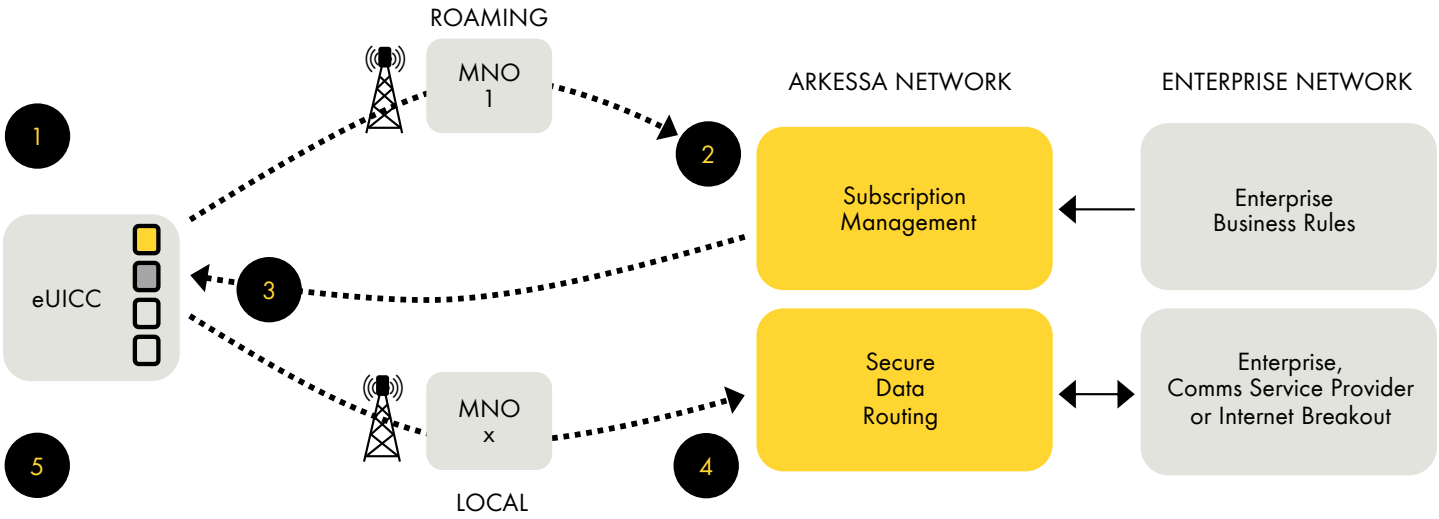


EUICC LIFECYCLE

The Arkessa managed service support for eUICC makes large scale international deployments possible using a single factory installed SIM (a single SKU).

SIM profiles or subscriptions can be updated once the device is in the field. Depending on the application scenario, this might be a one-off operation or more frequent for mobile devices or services.

The eUICC device and Subscription Management lifecycle is described below.



* Arkessa provides a single point of access and control for global Enterprise IoT. One contract, one integration and one technical support team for all Mobile Network Operators (MNOs).

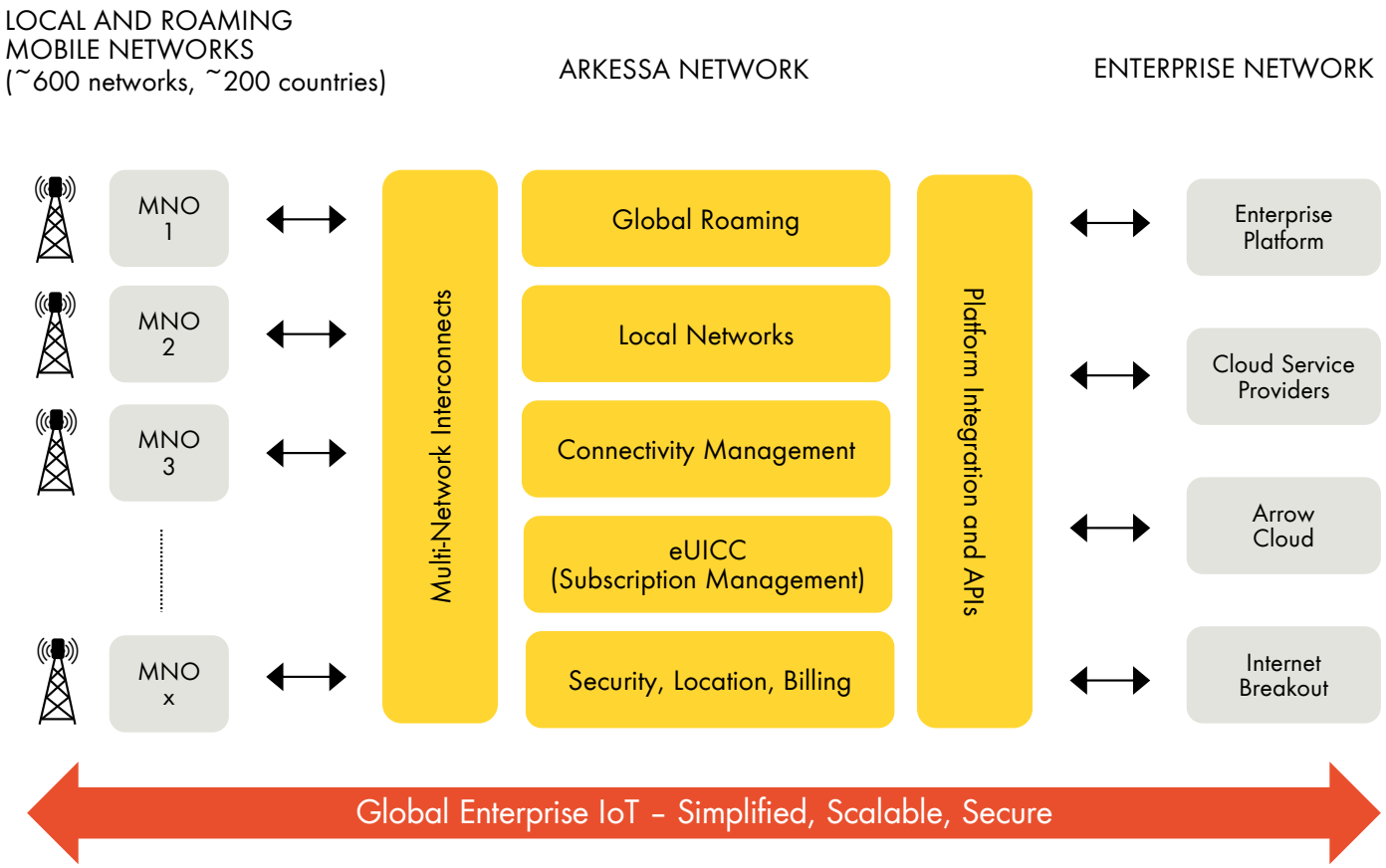
1. eUICC can host multiple SIM profiles. There must be a default or bootstrap profile present initially.
2. At power up eUICC bootstrap profile enables a connection to the Subscription Management service.
3. If required, the device receives a new profile depending on location, user credentials & other business rules.
4. The device is now connected to the Enterprise on a "local" network which is commercially suitable for high & low data use cases.
5. The device can re-initiate a profile update sequence if conditions change. It would default back to the eUICC bootstrap profile for this or use a "fall-back" profile if it existed.

ARKESSA MVNO SERVICES

Automotive
Asset Tracking
Drones
Energy
Industrial
mPOS
Security
Telematics
Vending
Vehicle Tracking
Wearables

Arkessa MVNO services put the control and management of eUICC into the hands of the Enterprise enabling scalability, security and a simplification of production, logistics and operations. Managed services include:

- GLOBAL ROAMING solutions providing access to ~600 networks in ~200 countries.
- Direct integrations with multi-national MNOs which enable LOCALISED solutions across the globe.
- eUICC (Reprogrammable SIM) solutions give customers the best of both (1) and (2) and the ability to manage it remotely, dynamically and over-the-air.
- CONNECTIVITY MANAGEMENT platform with data-usage monitors, alerts, capping and more.
- Value added Services including SECURITY, LOCATION, BILLING and Platform-as-a-Service.



BENEFITS OF EUICC AND SUBSCRIPTION MANAGEMENT SERVICES

Read more at arkessa.com/euicc

Deploying IoT devices into the global market can be made easier by working with the right partners and using made-to-measure technologies. For eUICC, Arkessa have combined with best-of-breed technology partners to wrap the necessary elements together in a single managed service, allowing OEMs to focus on their core activities.

SIMPLIFIED OPERATIONS AND LOGISTICS

A single SKU for all markets. Local MNO profile can be downloaded OTA (over-the-air) when product reaches its end destination.

FLEXIBILITY AND FUTURE PROOFING

Services can be developed to address new market needs or security issues & sent to the SIM after product launch or shipment. No need to recall devices or swap out SIMs.

SECURITY

OTA updates of connectivity profiles mean that embedded or soft SIMs can be deployed in more devices. Embedded SIMs cannot easily be inserted in unauthorised devices.

TIME TO MARKET

Products can be shipped with embedded SIMs before services & applications have been developed. Applets and tariffs can be downloaded OTA.

INSURANCE

If a device goes out of coverage, moves country or MNO stops providing services, bootstrap profile can be used to provide back-up connectivity.

SIMPLIFIED TESTING

Single SKU reduces complexity and cost of regulatory approvals.

Contact us for more information and quotation on eUICC, eSIM and IoT Connectivity services

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arkessa.com/euicc