

An aerial night view of a city, likely London, showing a dense grid of buildings and streets illuminated by warm yellow lights. The city is viewed from a high angle, looking down a central thoroughfare.

# Connected Living

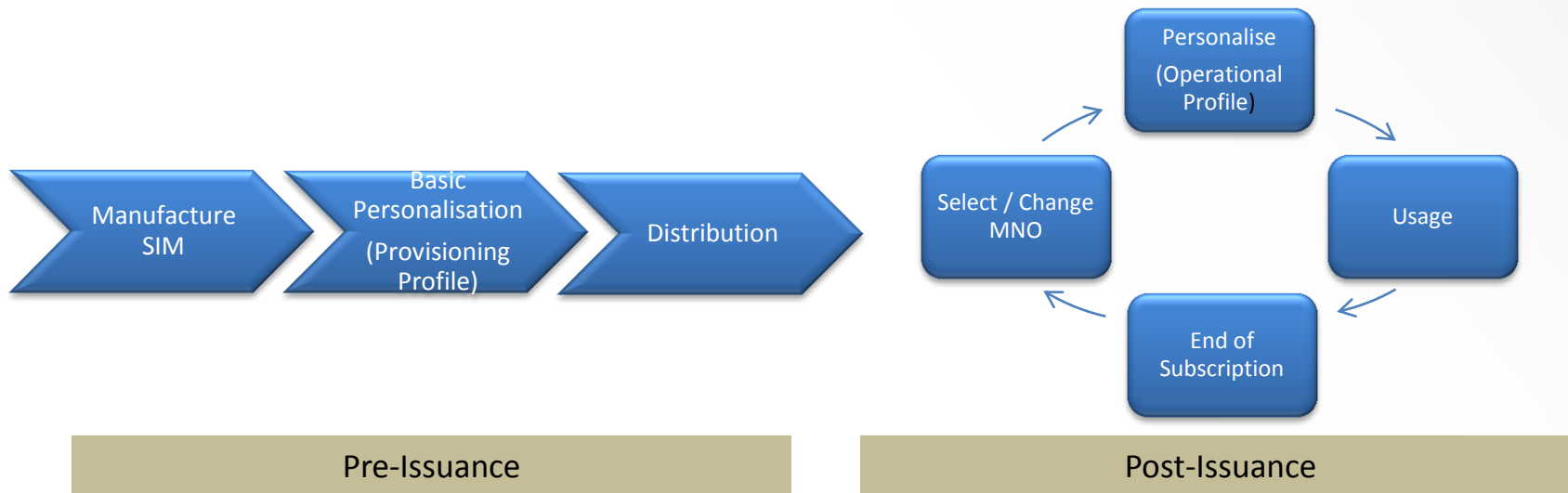
Embedded SIM & M2M

*Telefonica*

# Why Embedded SIM?



- Embedded SIM will permit **remote management of operator credentials** on a card such that:
  - **Initial MNO profiles can be loaded later in the supply-chain**, including post-sale;
  - **MNO profiles can be revised during the lifetime of a device** to allow simple swapping of MNO to support events such as – change of subscription, change of device ownership, long term relocation, change of Telco provider at the end of the contract;
  - In **M2M SIMs may be embedded in devices** at manufacture even in advance of choice of country of use and network operator. At the same time network operator may be changed during life time of the device



# Why a standard?

- A **standardized Embedded SIM ecosystem:**

- **Fulfil market requirements**

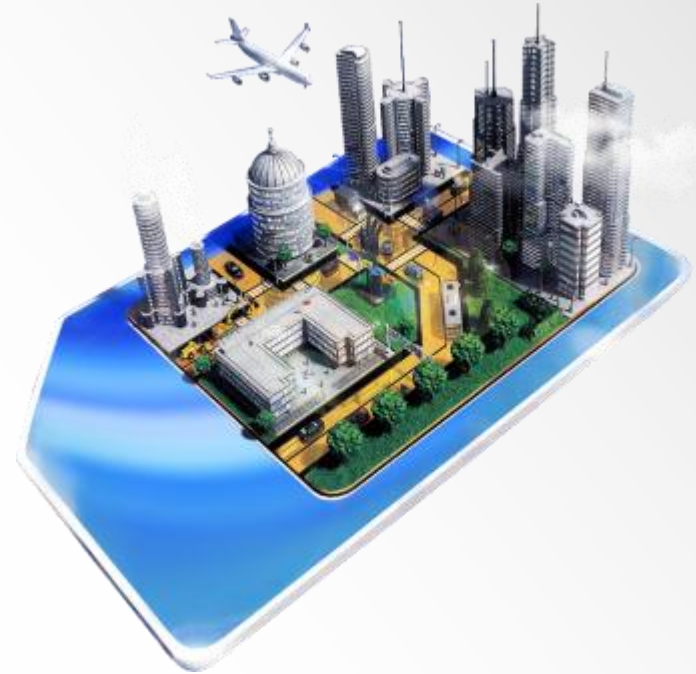
- Logistics,
- Limit fragmentation
- Interoperability

- **Reduce Cost**

- Provide scale that enables cost minimization
- Reduce certification processes

- **Protect MNOs security and customer privacy**

- Operator must have complete control over its credentials and a strong oversight and control over SM operations
- Certification
- Subscription Managers hold no details of the subscriber.



# Telefonica & Embedded SIM Standardization



Telefonica had actively promoted the standardization & deployment of the Embedded SIM

- Chairman in the ETSI Embedded SIM group
- Partnership with G&D to demonstrate a working solution for remote subscription management:
  - eSIM trial began on 11/2011, using G&D SIM Cards, Samsung Tablets and Telit modules
  - Involving Telefonica Operators (Movistar SP, O2 UK, O2 DE) and Telco partners (China Unicom, Telstra...)
- Telefonica participated in the definition of the GSMA Embedded SIM standard and the Automotive Fast Track
- Telefonica is committed to implement remote provisioning based on GSMA Embedded SIM solution



# Global Managed Connectivity Proposal



**Global solution:** The agreements enable joint commercial efforts to look for a global solution based proposition. This is particularly important for M2M opportunities that require multiple services over large geographical areas: It's about Communication but also about Operations

## Requirements

- one portal
- a unique SIM
- a common APN
- a single VPN
- a joint customer service
- Unique/several invoicing
- Local /lowest prices



# Barriers to Permanent Roaming



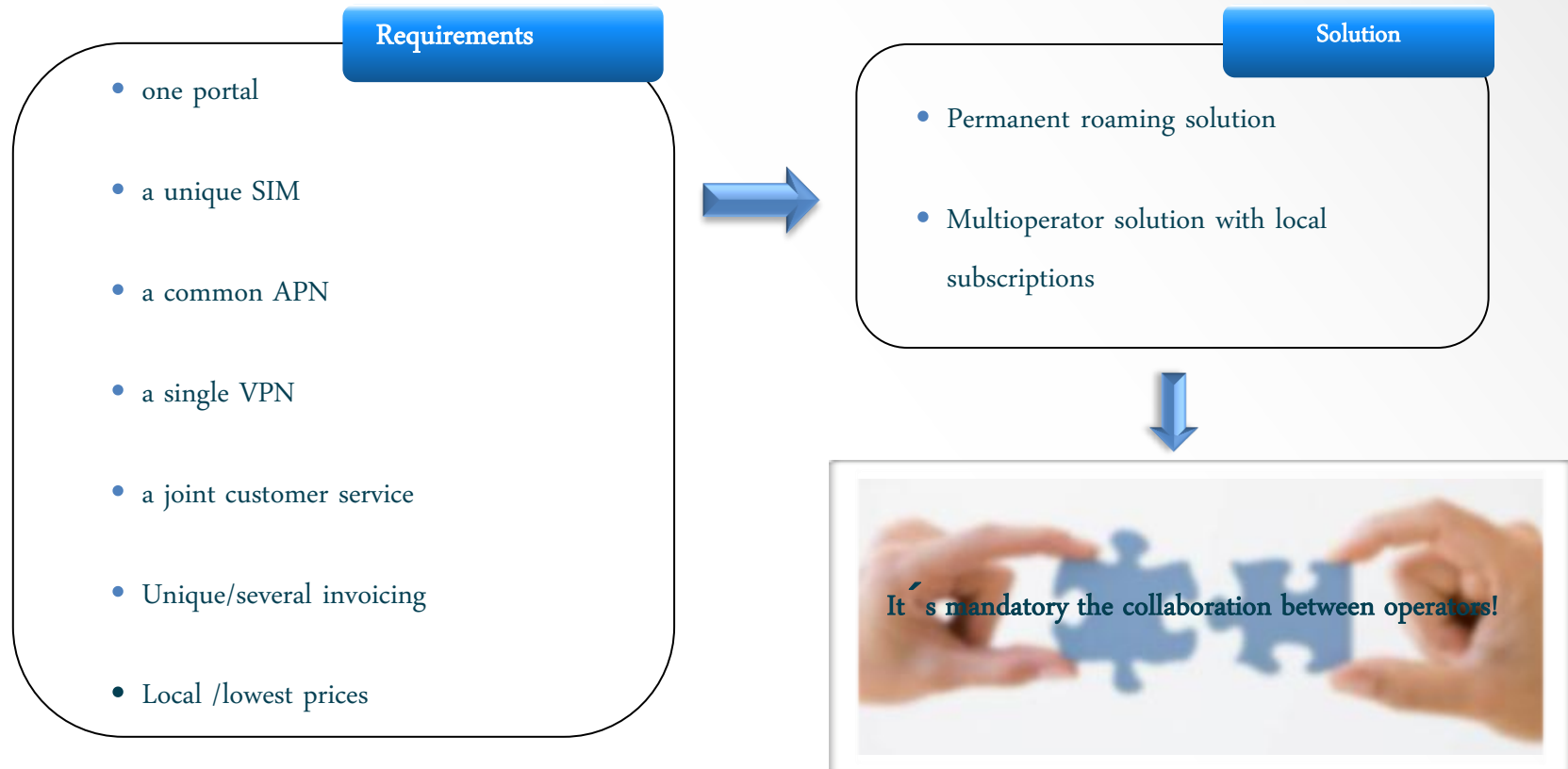
- There are several barriers to provide global transparent M2M services based in permanent roaming:
  - Some operators/countries are trying to **avoid permanent roaming**
  - **Local regulations** are increasing and difficult global services (eg. internet access control)
  - Local laws concerning **data privacy** and the security in international projects
  - Business model: **High IOT or high volume data** applications
  - Different **contract regulation** restricts being able to operate depending on the country (reselling, MVNO, roaming)
  - Multiple **languages, taxes, regulations**
  - Customers buy and launch when they feel the solution has no or low risk in each country



# M2M Global Services via Telco Collaboration



**Global solution:** The agreements enable joint commercial efforts to look for a global solution based proposition. This is particularly important for M2M opportunities that require multiple services over large geographical areas: It's about Communication but also about Operations



# Embedded SIM to provide Global Services



Embedded SIM as a **collaborative way to provide multinational M2M services based on a Global SIM.**  
Enable global, unique, seamless solutions enabling reliable communications for multinational customers requiring M2M device connectivity.



“Over The Air” Subscription Management



**Global SIM**  
with subscription update capability

Today is a Commercial Solution!



# Market Opportunity - Automotive



- Automotive Requirements:
  - Same worldwide solution. **Single SIM card** for all geographies
  - **SIMs embedded** in cars at the factory
  - SIMs will be **installed before knowing where the car will be sold**
  - **High volume data** applications
  - **Local regulations** compliance
  - Possibility of **change Telco provider** at the end of the contract
  - Other sectors: Consumer electronics, e-Health,...

Embedded SIM



# Summary



## What is it?

A new operator functionality that allows you to change the credentials in a SIM card via OTA

## Who is it made for?

- Customer offering their global services in countries where regulators don't allow permanent roaming,
- Customers with the requirement of managing a unique global SIM in their logistic /operational processes and/or
- Customers with special needs: Domestic SLAs, high traffic consumption
- Customer that want to change Telco provider at the end of the contract

## Advantages

### ✓ Cost efficiency

- Reduces inventory and simplifies logistic processes
- OTA changes avoid physical substitution, are much cheaper, more scalable and fast

### ✓ Simplicity

- Unique SIM for multiple countries, than can be easily swapped into a local SIM
- Swap is made via OTA.
- Single web access for all the SIM, even when they swap.
- Ready when/wherever you decide

### ✓ Control

- Highly reliable over secure communications
- Real time changes
- Manual / automatic triggers
- Real time information (swaps performed, technical performance, traffic issues)

## Why Telefonica & M2M World Alliance?

We are already using the Subscription to enable global, unique, seamless solutions enabling reliable communications for multinational customers requiring M2M device connectivity



*Telefonica*

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Angel David García Barrio  
Head of Alliances & MarCom. Global M2M. Telefonica Digital  
Chairman of the M2M World Alliance  
[angeldavid.garciabarro@telefonica.com](mailto:angeldavid.garciabarro@telefonica.com)