



# GSMA M2M Masterclass 3 days training

## Overview

The Internet of Things (IoT) is currently taking shape and embarking on a huge growth path towards the future. It truly promises to become the next revolution after the Internet and the mobile internet. It is estimated that for every person on the planet there will be at least five connected devices by 2020. One of the enablers is ubiquitous connectivity. Mobile network operators view the Machine-to-Machine (M2M) segment of IoT as a huge growth area for them.

To enable this growth they are realizing that they must also facilitate the large-scale remote management of these devices. This is where the embedded SIM (eUICC) plays an important role. At its core, eUICC enables remote provisioning of SIM profiles, which means that the Service Provider (SP) can switch mobile network subscription without a SIM swap. How does this technology actually work? How to leverage the opportunities? What are the impact to legacy systems, and security threats when implementing a M2M solution? In order to make an educated decision, you need knowledge.

## Key Topics

- Standards and Associations Overview
- Trends and future developments Compliance Testing for Interoperability and Security
- Embedded SIM, how does it work?
- eUICC high level architecture
- Profile Policy Management
- Embedded SIM (ES) Interfaces
- Security Architecture and Risk Assessment
- Secure Channel Protocols
- SIMalliance Interoperable Profile format



## What will you learn?

- Understand the new IoT landscape from a product and technical perspective
- Identify the need for eUICCs and where they fit in your plans
- Understand the various routes available for eUICC and what security aspects are involved
- Assess the impact of eUICC on your business and understand the underlying technical architectures
- Understand the core technical specifications; GSMA SGP.01 and SGP.02

## Who should attend?

- Employees of companies operating in the telecoms GSMA Consumer or M2M domain; for example MNOs, MVNOs, UICC vendors, handset manufacturers & modem chipset manufacturers
- Business consultants, business analysts
- Product owners, project and process managers
- Security officers
- Innovation managers
- Solution architects



## Day 1: Agenda

### 01 - Introduction – M2M Day 1

### 02 - Standards & Associations Overview

- What are GSMA and ETSI doing with eUICC, what are the specifications and how are they structured?

### 03 - Trends and future developments

- What is currently happening in the industry and what is coming next?

### 04 - Compliance Testing for Interoperability & Security

- How is each entity tested and what is the certification process including GSMA SAS

### 05 - Embedded SIM How does it work

- Simple overview of the system in general showing how 'Downloading and Installing a Profile' and 'Enabling a profile' works in the M2M architecture

### 06 - Embedded SIM Remote Provisioning Architecture

- In depth overview of eUICC Profiles
- In depth overview of eUICC
- Brief overview of the impact on the device
- In depth overview of SM-DP and SM-SR



We provide in-depth training courses on other topics discussed in this Masterclass. As well as open, in-class training courses, we also provide in-company courses that are specifically designed for your needs. These courses can be hosted at your premises or at one of UL's offices:

- GSMA Consumer
- EMV
- Tokenization
- MDES, VEPTS/VTS
- Remote & e-commerce
- HCE & cloud-based payments
- Security of a mobile payment application



## Day 2: Agenda

### 01 - Introduction & Recap of Day 1

### 02 - Embedded SIM Interfaces

- In depth overview of functions of all the M2M ES interfaces related to the eUICC, device, SM-DP, SM-SR and the MNO

### 03 - Embedded SIM Procedures

- In depth overview of all procedures and how they use all of the functions including detailed profile package lifecycle.
  - Includes the details and use of SCP03, SCP03t, SCP80 and SCP81 in the procedures
  - Use of UL SGP.11 SM-DP and SM-SR Test Suites against UL SM-DP and SM-SR simulators to collect and analyse logs





## Tool and material access before, during and after training:

- The training slides will be delivered via power point and sent in advance via email as pdf
- Students can use copies of SGP.02 to follow the training slides
- The UL SGP.11 SM-DP and SM-SR Test Suite, will be used during the training to show what is actually happening during the procedures, interfaces, binding etc.
- UL will provide a license free log viewer tool to review SM-DP and SM-SR logs captured during training
- UL will provide another license free log viewer tool to review modem to eUICC reference logs and also logs captured during training



## Day 3: Agenda

### 01 - Introduction & Recap of Day 2

### 02 - Security Architecture and Risk Assessment

- In-depth explanation of packaging: UPP, PPP, BPP, SBPP
- Complete PKI infrastructure for SM-DP, SM-SR and eUICC

### 03 - Secure Channel Protocols

- Overview of GlobalPlatform Security Domains, Management of SD and SCP02 etc
- Protocols associated to each interface as applicable
  - > SMS SCP80 including ETSI 102 225 and 102 226
  - > RAM over HTTPs SCP81
  - > Bearer Independent Protocol (BIP)
  - > Overview and details of GSMA SCP03t for M2M

### 04 - SIMalliance Interoperable Profile format

- Overview of the different versions
- Profile package creation
- In depth analysis of the format
  - > ASN.1: show and talk through example profiles with files, perso data, application loading, PIN definitions etc
  - > Overview of encoding (DER) of the profile in SM-DP+
  - > Detail on the PE types to show different ones in use; e.g. App File System using Templates and Generic File Management

To know more please visit [IMS.UL.COM](https://www.ims.ul.com)

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