



Telecommunications
Standards Advisory
Committee (TSAC)

Technical Specification

eUICC Subscription
Management Technology
-
M2M Device

**Draft IMDA TS eUICC SMT - M2M Device
Issue 1, xxx 2026**

Info-communications Media Development Authority
10 Pasir Panjang Road
#03-01 Mapletree Business City
Singapore 117438

© 2026 Info-communications Media Development Authority. All rights reserved.

This document may be downloaded from the IMDA website at <https://www.imda.gov.sg> and shall not be distributed without written permission from IMDA

Acknowledgement

The Info-communications Media Development Authority (IMDA) and the Telecommunications Standards Advisory Committee (TSAC) would like to acknowledge the following members of the TSAC Focus Area (FA) 6 and 7 Task Force (TF) for eUICC Subscription Management Technology (TSAC eUICC SMT TF) for their invaluable contributions to the preparation of this Technical Specification:

IMDA TS eUICC SMT - M2M Device Issue 1, xxx 2026	Technical Specification for eUICC Subscription Management Technology (SMT) – M2M Device
Focus Area 6 Chairperson	Dr Oh Ser Wah, CEO, Whizpace Pte. Ltd.
Focus Area 7 Chairperson	Mr Lin Yih, Director, Digital Applied Research & Technology
eUICC SMT Task Force Chairman(s)	Mr Manoj Kumar Rai; Marketing Director, Gemalto Pte. Ltd.
	Mr Ringo Fok; Solution Architect, Giesecke+Devrient Mobile Security Asia Pte. Ltd.
Editor	Mr Muhamad Pramana Baharsyah, Technical Leader, Gemalto Pte. Ltd.
Secretary	Mr Eddie Ng, Manager, Singapore Telecommunications Limited

List of TSAC FA 6 and 7 eUICC SMT TF Members (2018-2021)

S/N	Organisation	Name
1	Apple	Mr Song Qiaojian, Regulatory Manager
2	ATIS	Mr Yip Yew Seng, Honorary Secretary and Member of Executive Council
3	Digital Applied Research & Technology	Mr Lin Yih, Director
4	Gemalto Pte Ltd	Mr Lee Kean Tee, Technical Leader
5	Giesecke+Devrient Mobile Security Asia Pte. Ltd.	Mr Chris Yeo, Head of Product Management
6	Government Technology Agency of Singapore	Mr Jack Toh, Executive Manager
7	IDEMIA Singapore Pte. Ltd.	Mr Dhiraj Pai, Digital Solution Sales Director
8	Info-communications Media Development Authority	Mr Ng How Yeu Philip, Assistant Director, Cyber Security Management
9	Info-communications Media Development Authority	Mr Joseph Tye, Executive Manager, Cyber Security Management
10	Info-communications Media Development Authority	Mr Lim Wei Li, Manager, Infocomm Resource and Technology
11	Land Transport Authority	Mr Ong Beng Kee, Senior Manager
12	M1 Limited	Mr Tan Tiong Heng, Deputy Director
13	M1 Limited	Mr Derrick Gan, Assistant General Manager
14	NCS Communications Engineering Pte. Ltd.	Mr Chang Siew Kuen, Associate Director, Solution Management
15	NCS Communications Engineering Pte. Ltd.	Mr Lim Sing Loong Eddie
16	NCS Communications Engineering Pte. Ltd.	Mr Hsu Hsueh Cheng Sagin

17	NCS Communications Engineering Pte. Ltd.	Mr Lim Joo Cheng
18	Republic Polytechnic	Mr Tony Tan, Senior Lecturer
19	Republic Polytechnic	Mr Rajendran, Lecturer
20	Republic Polytechnic	Mr Vincent Tey, Senior Lecturer
21	Samsung Asia Pte. Ltd.	Mr Andrew Khaw
22	Samsung Asia Pte. Ltd.	Mr Jeremy Lim, Product Manager
23	Singapore Telecommunications Limited	Mr Chia Kok Yeong, Senior Manager
24	Singapore Telecommunications Limited	Mr Lee Kok Ming, Manager
25	Singapore Telecommunications Limited	Mr Eddie Ng, Manager
26	Singapore Telecommunications Limited	Mr Javier Tan, Engineer
27	StarHub Ltd.	Mr Sudhir Menon, Senior Business Developing Director
28	StarHub Ltd.	Mr Jason Koh, Product Manager
29	StarHub Ltd.	Ms Khor Lay Khim, Senior Manager
30	StarHub Ltd.	Ms Julie Choi, IOT Product Manager
31	Simba Telecom Pte. Ltd.	Mr Sudhir K Tripathi, Chief Technology Officer

Telecommunications Standards Advisory Committee (TSAC)

The TSAC advises IMDA on the setting of ICT standards as well as on the development and recommendation of specifications, standards, information notes, guidelines and other forms of documentation for adoption and advancement of the standardisation effort of the Singapore ICT industry (hereafter termed “IMDA Standards”).

Telecommunications standards-setting in Singapore is achieved with the assistance of TSAC, where professional, trade and consumer interest in telecommunications standards is represented on the TSAC with representatives from network and service operators, equipment suppliers and manufacturers, academia and researchers, professional bodies and other government agencies.

List of TSAC Members (2024-2027)

TSAC Chairman:

Dr Chin Woon Hau

Director (Technology & Standards)
Info-communications Media Development Authority

TSAC Members:

Mr George Choo	President Association of Telecommunications Industry of Singapore
Mr Andy Phang	Assistant Director, Technology and Standards Info-communications Media Development Authority
Mr Marcus Tan Cheng Lin	Head of Cybersecurity Department Institute for Infocomm Research
Mr Denis Seek	CTO M1 Limited
Mr Ng Thian Khoon	Head, Broadcast Engineering/ Broadcast Engineering (Technology) Mediacorp Pte. Ltd.
Associate Professor Chau Yuen	Associate Professor, School of Electrical & Electronic Engineering Provost's Chair in Wireless Communications Nanyang Technological University
Professor Biplab Sikdar	Head of Department, Electrical and Computer Engineering, & Area Director (Communications & Networks) National University of Singapore
Mr Gao Peng	Head of Radio Planning Simba Telecom Pte. Ltd.
Professor Susanto Rahardja	Professor, Engineering Cluster Singapore Institute of Technology
Mr Lim Yu Leong	Vice President, Group Strategy, Engineering & Innovation Singapore Telecommunications Limited
Professor Tony Quek	Head of Information Systems and Technology Design Pillar; Cheng Tsang Man Chair Professor Singapore University of Technology and Design
Mr Heng Hwee Tong	Head of Engineering and Corporate IT SPTel Pte. Ltd.
Mr Eddie Teo Soo Kwok	Assistant Vice President, Radio Technology StarHub Ltd.

Contents

Section	Title	Page
1	Scope	2
2	References	3
3	Definition and Abbreviations	4
4	General Requirements	5
5	M2M Device Requirements	5

NOTICE

THE INFO-COMMUNICATIONS MEDIA DEVELOPMENT AUTHORITY (“IMDA”) MAKES NO REPRESENTATION OR WARRANTY OF ANY KIND WITH REGARD TO THE MATERIAL PROVIDED HEREIN AND EXCLUDES ANY EXPRESS OR IMPLIED WARRANTIES OR CONDITIONS OF NON-INFRINGEMENT, MERCHANTABILITY, SATISFACTORY QUALITY AND FITNESS FOR A PARTICULAR PURPOSE. SUBJECT TO THE MAXIMUM EXTENT PERMITTED UNDER LAW, IMDA SHALL NOT BE RESPONSIBLE OR LIABLE TO YOU OR ANY THIRD PARTY FOR ANY ERRORS AND /OR OMISSIONS CONTAINED HEREIN OR FOR ANY LOSSES OR DAMAGES (INCLUDING ANY LOSS OF PROFITS, BUSINESS, GOODWILL OR REPUTATION, AND/OR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES) IN CONNECTION WITH THE USE OF THIS MATERIAL.

IMDA RESERVES THE RIGHT TO CHANGE, MODIFY OR ADD TO ANY PART OF THIS DOCUMENT. NOTHING HEREIN IS INTENDED TO CREATE OR IMPOSE ANY BINDING LEGAL OBLIGATIONS OR LIABILITY WHATSOEVER ON IMDA, WHETHER EXPRESSED OR IMPLIED, AND WHETHER CONTRACTUAL OR OTHERWISE. WITHOUT PREJUDICE TO THE FOREGOING, NOTHING IN THIS DOCUMENT SHALL BIND IMDA TO ADOPT ANY PARTICULAR COURSE OF ACTION. CONSEQUENTLY, NOTHING HEREIN SHALL BE CONSTRUED AS GRANTING ANY EXPECTATION, WHETHER PROCEDURAL OR SUBSTANTIVE IN NATURE, THAT IMDA WILL TAKE OR NOT TAKE ANY PARTICULAR COURSE OF ACTION IN THE FUTURE, ARISING FROM OR DUE TO ANYTHING IN THIS DOCUMENT OR IN THE EXERCISE OF ITS DISCRETION AS A PUBLIC AUTHORITY.

IMDA DRAWS ATTENTION TO THE POSSIBILITY THAT ANY PRACTICE OR IMPLEMENTATION OF THIS STANDARD/SPECIFICATION MAY INVOLVE THE USE OF INTELLECTUAL PROPERTY RIGHTS AND TAKES NO POSITION CONCERNING THE EXISTENCE, VALIDITY AND/OR APPLICABILITY OF ANY SUCH INTELLECTUAL PROPERTY RIGHTS, WHETHER ASSERTED BY TSAC MEMBERS OR ANY THIRD PARTY.

AS OF THE DATE OF ISSUANCE OF THIS STANDARD/SPECIFICATION, IMDA HAS NOT RECEIVED WRITTEN NOTICE OF ANY PATENT RIGHTS WHICH MAY BE RELEVANT IN RELATION TO THE IMPLEMENTATION OF THIS STANDARD/SPECIFICATION. HOWEVER, IMPLEMENTERS ARE CAUTIONED THAT THIS MAY NOT REPRESENT THE LATEST INFORMATION AND ARE THEREFORE STRONGLY URGED TO CHECK WITH THE RELEVANT DATABASE IN ITU, ISO, IEC OR THE RELEVANT STANDARDS DEVELOPMENT ORGANISATION FOR INFORMATION OF INTELLECTUAL PROPERTY RIGHTS. IMPLEMENTERS ARE ADVISED TO OBTAIN THEIR OWN PROFESSIONAL, TECHNICAL AND/OR LEGAL ADVICE AND CONDUCT ALL NECESSARY DUE DILIGENCE, INCLUDING BUT NOT LIMITED TO MAKING SUCH INVESTIGATIONS OR SEEKING CLARIFICATIONS AS MAY BE APPROPRIATE, IN REGARD TO ANY DECISION OR ACTION THAT THEY INTEND TO TAKE, OR PRIOR TO THE IMPLEMENTATION OF ANY STANDARD/SPECIFICATION AS MAY BE REQUIRED.

eUICC Subscription Management Technology (SMT) – M2M Device

1 Scope

- 1.1 This Technical Specification (TS) sets out the configuration requirements which include hardware and software for implementing remote subscription management of the M2M (or IoT) Devices that deploy cellular eUICC technology, according to the Embedded SIM Remote Provisioning Architecture (GSMA SGP.01 [1]).
- 1.2 The scope of this TS focuses on the GSMA compliant eUICC of the M2M Devices used in Remote Provisioning System as shown in Figure 1. Figure 1 is extracted from the Remote Provisioning Architecture for Embedded UICC Technical Specification (GSMA SGP.02 [2]). Separate configuration requirements for the M2M Server are set out in section 4 of the IMDA Provisioning of eUICC Subscription Management (IMDA Provisioning of eUICC SM).
- 1.3 Subscription management for the M2M Device is pushed from the M2M Server, where eUICC profile loading and management are pushed by an off-device component (i.e. SM-SR) into eUICC.

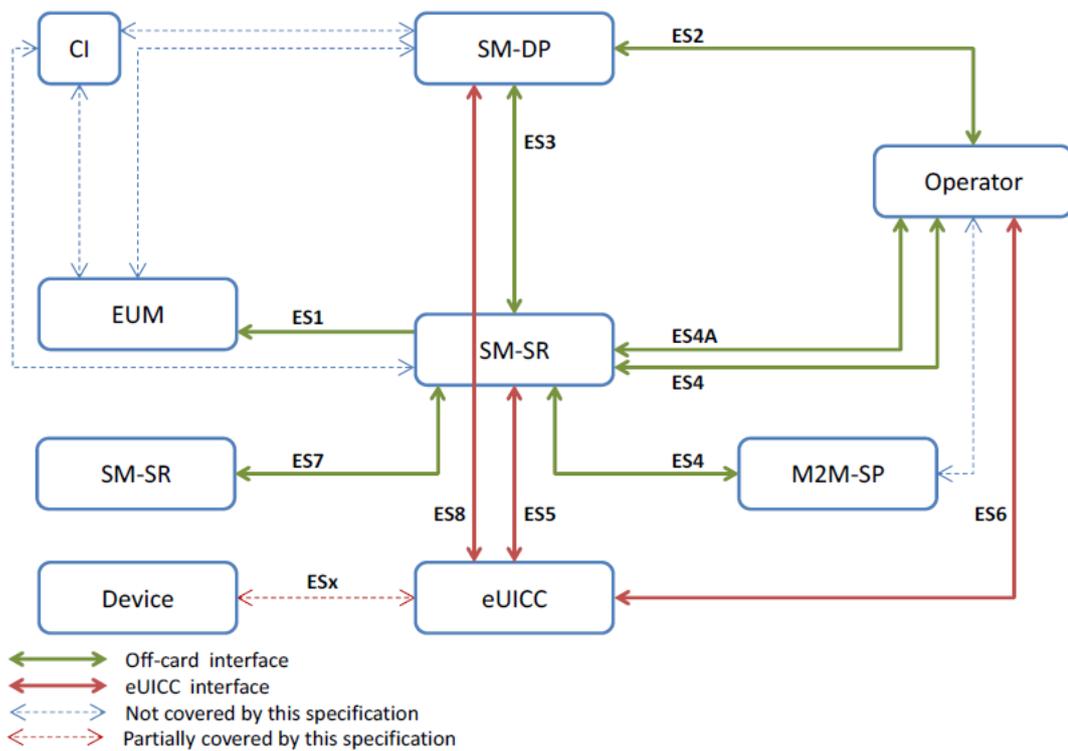


Figure 1: eUICC Remote Provisioning System (Figure 1 of GSMA SGP.02 [2])

2 References

2.1 For the requirements captured in this TS, reference has been made to the following documents. Where versions are not indicated, implementation of this specification shall be based on current and approved versions of these standards published by the respective Standards Development Organisations.

- [1] GSMA SGP.01: Embedded SIM Remote Provisioning Architecture
- [2] GSMA SGP.02: Remote Provisioning Architecture for Embedded UICC Technical Specification
- [3] GSMA SGP.05: Embedded UICC Protection Profile
- [4] GSMA SGP.11: Remote Provisioning Architecture for Embedded UICC Test Specification
- [5] GSMA SGP.16: M2M Compliance Process
- [6] GSMA FS.04 SAS-UP: Security Accreditation Scheme for UICC Production – Standard
- [7] GSMA FS.05 SAS-UP: Security Accreditation Scheme for UICC Production – Methodology
- [8] IMDA TS CMT: IMDA Technical Specification for Cellular Mobile Terminal
- [9] ISO 27001: Information technology – Security techniques – Information security management systems – Requirements
- [10] RFC 2119 - Key words for use in RFCs to Indicate Requirement Levels, S. Bradner <https://www.ietf.org/rfc/rfc2119.txt>

2.2 Conventions

The use of "SHALL", "SHALL NOT", and "MAY" in this TS infers the following (RFC 2119 [10]):

- SHALL means "REQUIRED", a Mandatory requirement.
- SHALL NOT means "MUST NOT".
- MAY means an Optional requirement.

3 Definitions and Abbreviations

For the purpose of this TS, the following terms and definitions apply (taken mainly from GSM SGP.02 [2]).

3.1 Definitions

Embedded UICC: A UICC is not easily accessible or replaceable, not intended to be removed or replaced in the Device, and enables the secure changing of Subscriptions.

It is a UICC that supports “over the air” provisioning of an initial operator subscription and the subsequent change of subscription from one operator to another in accordance with GSMA specifications.

M2M Device: Equipment into which an Embedded UICC and a communication module are inserted during assembly that supports Remote SIM Provisioning as defined by GSMA SGP.01 and SGP.02. Examples include Utility meter, car and camera.

Subscription Manager Data Preparation (SM-DP): Role that prepares the Profiles to be securely provisioned on the eUICC and manages the secure download and installation of these Profiles on the eUICC.

Subscription Manager Secure Routing (SM-SR): Role that securely performs functions of Platform Management commands and the transport of Profile Management commands.

UICC: It is the hardware used in mobile devices that contains SIM and/or USIM applications enabling access to GSM, UMTS/3G and LTE networks.

3.2 Abbreviations

CI	Certificate Issuer
eUICC	Embedded UICC
EUM	eUICC Manufacturer
E-UTRAN	Evolved UMTS Terrestrial Radio Access Network
GSM	Global System for Mobile communications
GSMA	GSM Association
IoT	Internet of Things
LTE	Long Term Evolution (also known as E-UTRA)
M2M	Machine to Machine
M2M-SP	Machine to Machine Service Provider
PLMN	Public Land Mobile Network
SAS	Security Accreditation Scheme
SAS-UP	Security Accreditation Scheme for UICC Production
SIM/USIM	Subscriber Identification Module or Universal SIM
SM-DP	Subscription Manager Data Preparation
SM-SR	Subscription Manager Secure Routing
UICC	Universal Integrated Circuit Card
UMTS/3G	Universal Mobile Telecommunications System - 3rd Generation mobile cellular system

4 General Requirements

- 4.1 For access to Public Land Mobile Network (PLMN) services, the M2M Device SHALL comply with the IMDA Technical Specification for Cellular Mobile Terminal (IMDA TS CMT [7]), and SHALL support E-UTRAN (Annex G of SGP.02 [2]).
- 4.2 In addition, the accompanying eUICC subscription management technology defined in this TS SHALL require the eUICC used in the M2M Device to be certified according to the Protection Profile specified by GSMA (section 2.2.2 of the GSMA SGP.01 [1]).

5 M2M Device Requirements

- 5.1 To ensure interoperability between potentially different MNO deployment scenarios, different makes of network equipment (for example SM-DP, SM-SR) and different makes of eUICC platforms, the M2M Device SHALL comply with the mandatory requirements defined in Annex G of GSMA SGP.02 [2].
- 5.2 Vendors of M2M Devices SHALL ensure that compliance declarations have been submitted to and verified by GSMA for the eUICCs used in the M2M Devices, according to the M2M Compliance Process (GSMA SGP.16 [5]), which include:
- eUICC functional testing performed according to the M2M Test Specification (SGP.11 [4]);
 - eUICC security evaluations performed according to the eUICC Protection Profile (GSMA SGP.05 [3]);
 - eUICC hardware platform certified to Security IC Platform Protection Profile with Augmentation Package Certification (PP-0084) or Security IC Platform Protection Profile (PP-0035); and
 - Production sites for eUICCs used in the M2M Devices accredited according to the SAS-UP (GSMA FS.04 SAS-UP [6] and GSMA FS.05 SAS-UP [7]).