M2M Remote SIM Provisioning Report

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1. Process Overview

The M2M Remote SIM Provisioning (RSP) process allows for the remote provisioning and management of embedded SIMs (eUICC) in M2M devices. The implementation follows the GSMA SGP.02 specification and consists of the following key steps:

1. Root CA initialization - Certificate authority setup for secure communication

2. SM-DP and SM-SR setup - Subscription Manager entities initialization

3. eUICC registration - Device registers with SM-SR using PSK-TLS

4. ISD-P creation - Creation of security domain for profile installation

5. Key establishment - Secure ECDH key exchange for end-to-end encryption

6. Profile preparation - SM-DP prepares the profile data package

7. Profile installation - SM-SR delivers and installs profile on eUICC

8. Profile enabling - Newly installed profile is enabled on the eUICC

2. Performance Measurements

The following table shows the accurate time taken for each step of the process from detailed measurements:

Process Step	Time (seconds)	Bottleneck
eUICC Registration Process	0.043	No
ISD-P Creation Process	2.059	No
ECDH Key Establishment Process	0.094	No
Profile Download and Installation Process	0.058	No
Profile Enabling Process	12.143	Yes
Status Check Process	6.152	Yes
ECDH Key Generation	0.000	No
ECDH Shared Secret Computation	0.000	No
SM-DP Shared Secret Computation	0.000	No
Profile Preparation and Sending Process (with SM-SR communication)	12.125	Yes
Profile Data Preparation (Data Preparation)	0.000	No
PSK-TLS Encryption	0.018	No
PSK Key Derivation (AES-128)	0.016	No
AES-128 Encryption	0.000	No
HMAC Generation	0.000	No
PSK-TLS Decryption	0.012	No
PSK Key Derivation for MAC (AES-128)	0.006	No

HMAC Verification	0.000	No
PSK Key Derivation for Decryption (AES-128)	0.005	No
AES-128 Decryption	0.000	No
Total Process Operations	32.733	
Total Protocol Time (including network delays)	**44.726**	

3. Connectivity and System Diagnostics

3.1 Component Status

Component	Status	Response Time
SM-DP	Online	N/A
SM-SR	Online	N/A
eUICC	Online	2.056 seconds

3.2 Detailed Process Timeline

Process	Entity	Duration (s)	Status
eUICC Registration	eUICC	0.000	success
ISD-P Creation	SM-SR	0.000	success
ECDH Key Establishment	eUICC	0.000	success
Profile Preparation	SM-DP	0.000	success
Profile Download and Installation	eUICC	0.000	success
Profile Enabling	SM-SR	0.000	success
Status Check	SYSTEM	0.000	success