Anritsu envision:ensure

OTA Evaluation Solution for eSIM Provisioning

Signalling Tester MD8475A/B
COMPRION eUICC Profile Manager

eSIM Trends in Automotive Market

eSIM has attracted increasing attention from the automotive industry. SIM cards used by conventional communications services require saving of a profile to a SIM card using a reader/writer followed by insertion of the SIM card into the mobile terminal. However, this suffers from disadvantages, such as card wear when inserting cards, problems with changing cards, and the need for a special reader/writer when starting service. To solve these issues, development has been progressing on an embedded SIM (eSIM) function for rewriting data stored on a SIM via a wireless network. Apart from the previous card-type SIM, the developed eSIM takes the form of a built-in chip supporting user updating of communications profiles via a wireless network without needing to change cards.

Figure 1: eSIM

With eSIM technology, users can easily update the SIM profile to switch between MNOs (Mobile Network Operators). eSIM technology is the focus of attention in the automotive market for the following reasons.

- Automatic reporting at accident, and impact resistance
- Change of mobile operator required at shipment when resold to another country by producer

About Russian Standard GOST 33470 Chapter 9

eSIM provisioning requires high-level technology and could cause serious problems such as the inability to use communication services unless it operates correctly. Consequently, eSIM-related regulations have been established and there is a trend favoring eSIM pre-release testing. One example is Chapter 9 of the Russian GOST 33470 standard. At export of some products to the Russian Federation, approval must be obtained from GOST standards. The GOST 33470 standard determines the wireless module test method for the Russian automobile emergency assistance equipment and systems. The recently added Chapter 9 standardizes eSIM OTA tests and is expected to become mandatory from January, 2019. This testing must be conducted by Svyaz-sertificat, a Russian-government-authorized testing organization.

Anritsu + COMPRION Evaluation Method

As shown in the following figure, in the actual usage environment, the eSIM is updated over the air (OTA). The automobile connects to a GSM/W-CDMA/LTE wireless network base station to access the server with the operator profile. The new profile is downloaded and validated by secure communication with the server. The lower half of the following figure shows the test environment proposed by Anritsu and the UICC test vendor COMPRION using the MD8475A/B to test in compliance with GOST 33470 Chapter 9 requirements; this test system has been examined by Svyaz-sertificat, which has successfully validated the system effectiveness.

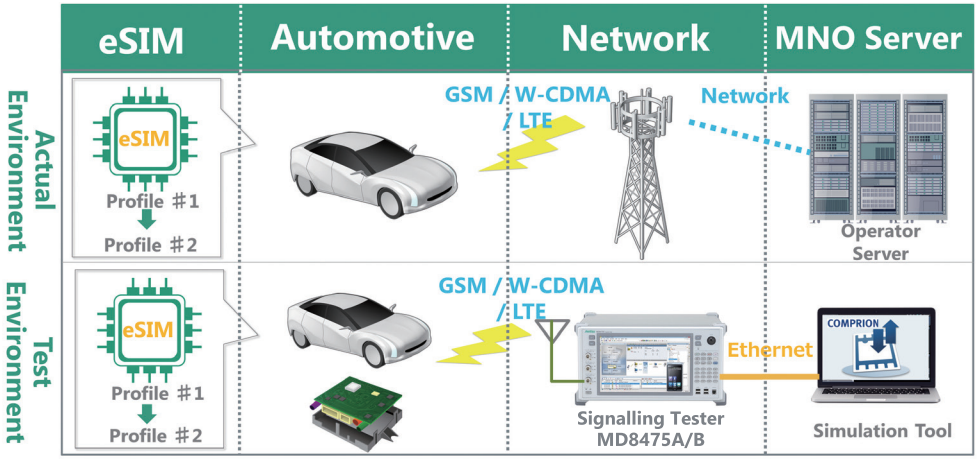

Figure 2: Actual and Test Environments

Required Configuration

Recommended MD8475A/B Firmware Versions

Either firmware version **8.00** or later

MD8475A/B Software Required Options

(for GSM&W-CDMA evaluations; LTE requires additional options)

Model/Code	Name
MD8475A/B	Signalling Tester
MX847570A/B	SmartStudio
MX847570A/B-010	W-CDMA Option
MX847570A/B-020	GSM Option
MD8475A/B-070	Multi-signalling Unit
MX847510A/B	W-CDMA Simulation Software
MX847510A/B-SS110	MX847510A/B 1Year Support Service
MD8475A/B-020	GSM Signalling Unit
MX847520A/B	GSM/GPRS Simulation Software
MX847520A/B-SS110	MX847520A/B 1Year Support Service

Figure 3: Evaluation Configuration at Svyaz

eUICC Profile Manager Licence Requirements (COMPRION Software)

Model/Code	Name
31000449	eUICC Profile Manager Package for Anritsu Z2002A