COMPRION

The Most Popular Conformance Test Platform for the UICC Interface of Mobile Devices

COMPRION SIMfony Family

COMPRION SIMfony Family at a Glance

Most Popular Conformance Test Platform for the UICC Interface of Mobile Devices

- Based on COMPRION UICC simulators
  - UT³ Platform
  - IT³ Prove!
  - Prove 2
- Integrated network simulators for all 2G, 3G, LTE and mobile IoT (CAT M1, NB-IoT) networks
- Validated at GCF and PTCRB
- Test case packages for every relevant GCF work item
- All test procedures controlled by one GUI
  - Convenient test case management
  - Easy-to-use log file handling
- Automated test procedures

SIMfony Family – COMPRION's fast, reliable, and easy-to-use Pre-Conformance and Conformance Test System for Mobile Devices

In mobile communication the UICC plays a central role because it offers a secure way to authenticate mobile devices to the network. As the complexity of new mobile devices in combination with the UICC and new network technologies is growing, testing the UICC interface is essential prior to market introduction. To secure interoperability, GCF/PTCRB have defined rules for conformance tests for manufacturers to ensure that the latest smartphones, handsets and mobile devices work correctly with the UICC. Besides, large mobile network operators like Verizon have issued their own testing standards for device compliance within their network. The purpose of all these tests is to prove conformance and to guarantee the proper functioning of devices in the field. This consequently improves user experience and avoids high follow-up costs.

How does COMPRION address the growing diversity in mobile device testing?

COMPRION SIMfony – our solution for combined mobile device testing – enables you to test the UICC interface of the device under real-life conditions in a lab environment. Our out-of-the-box-solution covers all requirements of GCF/PTCRB. Our customer-specific solutions – as the one for Verizon Wireless covers additional requirements. As most of these tests involve a network simulator, COMPRION ensures that the most popular network simulators are integrated smoothly in the SIMfony setup. The complete SIMfony solution consists of a network simulator and a COMPRION UICC simulator.

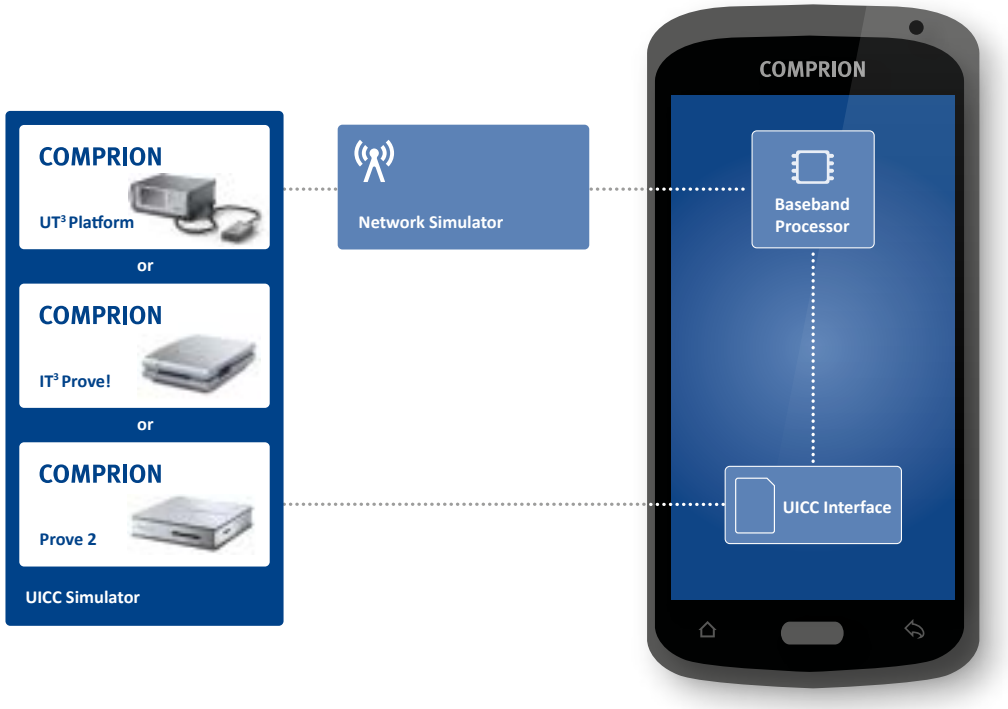

Figure1: Overview of the COMPRION SIMfony setup

COMPRION's UICC simulator (UT³ Platform or alternatively IT³ Prove! or Prove 2) is the central element of the combined mobile device test ensemble. The network simulator is controlled by the COMPRION test tool.

Which One to Use?

Depending on the purpose, you can use UT³ Platform for GCF and PTCRB conformance testing, whereas Prove 2 are the best choice for development and pre-conformance testing. IT³ Prove! is a cost-efficient alternative to UT³ Platform for running Verizon Wireless specific test benches.

UT³ Platform

- Validated conformance test platform
- Registered at GCF and PTCRB for (U)SIM and (U)SAT testing according to ETSI/3GPP standards for certification and many more
- Performs Verizon relevant certification

Prove 2

- Cover the same complete range of (U)SIM and (U)SAT tests as the UT³ Platform
- Cost-effective pre-conformance testing

IT³ Prove!

- Verizon Wireless validated test platform
- Performs Verizon relevant certification

COMPRION SIMfony can be used for two types of tests: Tests without a network simulator, so-called stand-alone tests and those that need a network simulator, known as combined tests. For choosing the appropriate test solution, the network requirements will need to be taken into account. The table below shows the covered networks of the respective network simulator for each COMPRION SIMfony version.

Our COMPRION SIMfony Family Portrait – Combined Mobile Device Testing for All Network Technologies

COMPRION SIMfony Product Name	Covered Networks	Test Platform Conformance	Test Platform Pre-Conformance	Network Simulator
COMPRION SIMfony MD8475A	▪ GSM (2G) ▪ W-CDMA (3G) ▪ LTE (4G)	▪ UT³ Platform	▪ Prove 2	▪ Anritsu MD8475A
COMPRION SIMfony CMW500	▪ W-CDMA (3G) ▪ LTE/CAT M1 (4G) ▪ NB-IoT	▪ UT³ Platform	▪ Prove 2	▪ R&S CMW500
COMPRION SIMfony CMW500 Verizon	▪ LTE (4G)	▪ UT³ Platform ▪ IT³ Prove!		▪ R&S CMW500

SIMfony – Test Case Packages for Every Requirement

SIMfony covers the following GCF Work Items/PTCRB RFTs

	GCF-WI	PTCRB-RFT	Test Specification
NB-IoT	266, 301-NB	147	3GPP TS 31.121 USIM
			3GPP TS 31.124 USAT
LTE /CAT M1	125(M), 301-M	85, 104	3GPP TS 31.121 USIM
	137(M), 230(M)	92, 102	3GPP TS 31.124 USAT
W-CDMA	10, 13, 158, 160	29	3GPP TS 31.121 USIM
	35, 104, 230	58, 83, 92	3GPP TS 31.124 USAT
	10, 160	29	ETSI TS 102 230 UICC
GSM	5, 10	000	3GPP TS 51.010-1 SIM
	8	8	3GPP TS 51.010-4
GSMA TS.27 NFC Handset Test Book	176, 197, 214, 249	123	GSMA TS.27 BIP TB

SIMfony also offers test cases in accordance with network operator requirements

Network Operator	Network Technology	Compliance Test Plans
Verizon Wireless	LTE	VZW LTE Device-UICC (USIM/ISIM) Interaction (incl. IMS tests)
		VZW LTE Device-SIM Application Interaction (OTA)
		VZW LTE Multi-Mode Smartphone-UICC Interaction (OTA)

What Else Does SIMfony Offer?

Easy Testing with a Convenient User Interface (UI)

The whole test setup is synchronized and controlled by the respective COMPRION UICC simulation tool. If you work with UT³ Platform or Prove 2, you are able to handle test plan management, monitoring, and test result analysis with the convenient UI of the all-in-one testing software Device Test Center.

User-Friendly Test Case Management

All test platforms offer a convenient user interface to configure the PICS/PIXIT parameters of the device under test. It is even possible to configure the parameters on the network side and identify tests which are relevant for the device under test. Hence, a test plan is created that includes only those test cases that are actually applicable to your testing requirements.

Convenient Log File Handling

The verdicts produced by the network simulator are merged with the UICC simulator verdicts which results in an overall test verdict. The network simulator log files can be viewed right on the COMPRION test system.

Efficient Working in Batch Mode

COMPRION SIMfony offers the possibility to run all stand-alone and combined tests in batch mode. The operator only has to select the desired test cases and start the batch run.

Automate Your Mobile Device Testing

How to Save Time & Money

In today's fast moving world reducing the time-to- market for mobile devices is a crucial competitive factor. However, comprehensive mobile device testing is labor-and cost-intensive. COMPRION terminal automation helps you to get rid of manual interaction like power on/off or messages that have to be read from the display. This frees your testing team to focus on what they do best: analyzing the results.

Without COMPRION SIMfony

Smart card simulator, network simulator and the device under test have to be operated manually.

With COMPRION SIMfony

The operator only needs to interact with the smart card simulator, and the device under test.

With COMPRION SIMfony and Additional Device Automation

The operator only needs to start the test(s).

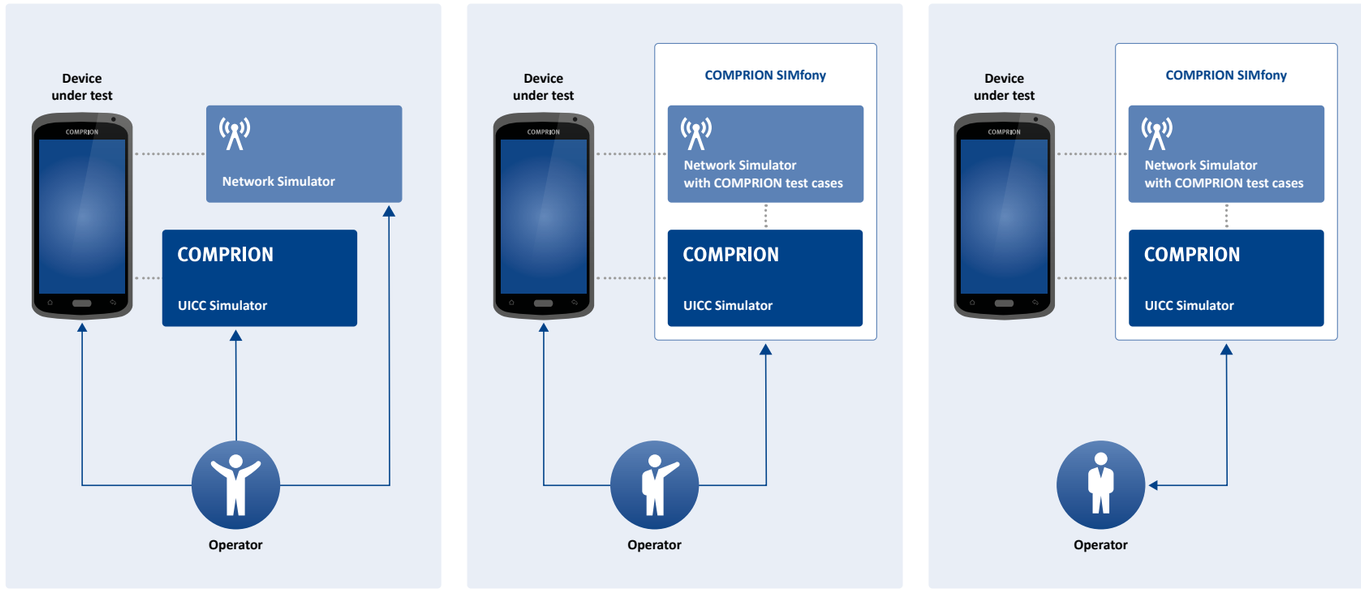

Figure 2: Efficient test case execution: manual vs. combined vs. combined and automated mobile device testing.

The core of the automation system is COMPRION Terminal Automation Provider (TAP). This software can be installed either on the test platform itself or on any host PC dedicated to run the control software of the device under test. With COMPRION TAP, you need to adapt your equipment only once. Then, you can easily execute COMPRION SIMfony tests whether combined or stand-alone in full automation mode over and over again. This is especially useful for regression testing. The additional benefit of this concept is that the complete test case maintenance is handled just by COMPRION's terminal automation solution.

Work with the Remote Interface

To ease the control of the test setup, you can use the Remote Interface. Combined with the COMPRION Terminal Automation, you can run regression tests of all GCF/CCF/PTCRB-relevant tests fully automated overnight.

Integration into an Existing Test Case Management System

If you use your own test management system, COMPRION SIMfony can be integrated via the Remote Interface. In that event, your test case management system only has to start the tests and manage the results. Combing the Remote Interface and TAP gives you a fully automated testing experience.

Error Debugging

COMPRION SIMfony offers the same tried and tested debugging information featured in our other products also in terminal automation mode.

COMPRION Terminal Automation – Typical Use Cases

- Regression tests
- Overnight tests
- GCF/PTCRB-relevant use cases

COMPRION Terminal Automation – Key Benefits at a Glance

- Saves time by speeding up testing – especially useful for frequent regression tests
- Efficient batch mode processing
- No handling errors
- Highly reliable and repeatable results

COMPRION GmbH
Lise-Meitner-Str. 3
33104 Paderborn
Germany

Phone: +49 5251 6859 0
E-mail: info@comprion.com
www.comprion.com

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