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| ToR TTF T018 (Ref. Body TC SCP) |
| Version: 0.7  |
| Author: Andreas Bertling – Date: 2021-08-26 |
| Last updated by: ETSI Secretariat – Date: 2022-01-06 |
| page 1 of 11 |

Terms of Reference –Testing Task Force Proposal

TTF T018 (Ref. Body TC SCP)

 Requirements & Protocols for a
Test Tool Interface for the SSP

Summary information

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| --- | --- | --- |
| Approval status | Subject to approval by TC SCPSCP#101, ETSI (Sophia Antipolis) – hybrid SCP(21)00012429 September – 01 October 2021  | **YES** |
| Reference Body | Ref. Body ETSI TC SCP  |
| ETSI Funding | **Maximum budget: 87 600 EUR**(+ 3000 travel budget) |
| Minimum of 4 ETSI Members Support | **YES** |
| Time scale 2022 | **From** | January 2022 |
| **To** | September 2022 |
| Work Items  | *SSP Test Tool Interface – Technical Specification* |
| TTF Roadmap reference | TTF 2022 Roadmap |

Part I –TTF Technical Proposal

# Rationale & Objectives

## Rationale

ETSI Technical Committee Smart Card Platform Working Group Test (ETSI TC SCP WG TEST) responsibility is to specify test methods to be able to verify technologies specified under ETSI TC SCP’s responsibility.

In 2019 TC SCP approved three technical specifications for the realisation of the Smart Secure Platform (SSP), TS 103 666-1, TS 103 666-2, and TS 103 713. Those specifications have been developed by SCP TEC under the following work items: DTS/SCP-RSSPve00, DTS/SCP-TSSPve00 and DTS/SCP-T103713vf00. Some of this work was supported by the STF546.

The SSP as well as the UICC will serve as platform for many different applications and use cases within different marketplaces. The use cases include, in particular, those of 3GPP and the Internet of Things. Having this in mind testing the UICC and SSP is essential to provide interoperable solutions to enable these use cases (“every SSP in every device”).

The SSP intends to provide security services and to store data securely. It will come in different form factors. One of them is intended to be integrated into the terminal’s SoC architecture, which results in the situation that a physical interface to access the SSP might not be available.

Most of the existing ETSI TC SCP test specifications make use of a physical interface to access and test the UICC and its functionality. To be able to verify the SSP functionality, new test methods need to be specified that cope with the situation that a physical interface is not accessible.

Test Specification are available but to execute the specified test cases proprietary test tool connection needs to be provided by the SSP manufacturer. Such proprietary test tool connection might lead to different test case results. Therefore, a standardised test tool interface must be available for devices incorporating the SSP and prepared for testing. Additionally, the test tool interface must comply with the requirements expressed in TS 103 999-1.

The main purpose of the test tool interface specification is to enable interoperability between any test tool that supports the SSP test cases and any device incorporating an SSP.

## Objectives of the work to be executed

The TTF shall deliver the SSP test tool interface specification according to the requirements expressed in TS 103 999-1. The initial task will be the analyses of legacy test tools exposing open interfaces (standard or not). The result of this investigation might lead to extending an existing test tool interface rather than creating a new test tool interface from scratch.

Additional work to be undertaken shall include the following objectives:

* Capture additional requirements needed for the iSSP or not expressed in the TS103 999-1 (e.g., security).
* Definition of the test tool interface protocol upper layers (i.e., above an agnostic transport layer):
* The application layer as the set of commands, events and responses required to support the requirements.
* The presentation layer (e.g., ASN.1, JSON…)
* The session layer (e.g., secure, or not secure)
* Selection of the main transport layers (e.g., TCP…). The TCP/IP transport layer is included by default.
* Definition of the main transport layers (e.g., TCP/IP) including their binding with SSP test tool interface upper layers.
* Test descriptions for the testing of the test tool interface.

The work of a TTF will be split in the following work packages.

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| --- | --- | --- | --- |
|  | **Working days** | **Comment** | **Budget year** |
| Analysis of legacy test tool interfaces | 12 | Existing test tools (e.g., Wireshark) may be used as a template for creating the SSP test tools interface | 2021 |
| Capturing additional requirements for iSSP | 12 | Including the specification structure | 2022 |
| Definition of the SSP Test Tool Interface protocol layers | 40 | This interface specification is independent of the transport layer  | 2021/2022 |
| Definition of transport layer binding  | 12 | The specification includes binding with TCP/IP | 2022 |
| Test descriptions for the SSP Test Tool Interface | 65 | Creation of the test descriptions for the SSP test tool interface  | 2022 |

## Previous funded activities in the same domain

STF 361 on UICC Contactless interface testing for Smart Cards
(ETSI TS 102 695-1, -2, -3, ETSI TS 102 694-1, -2)

## STF 391 on UICC USB interface testing (ETSI TS 102 922-1, -2)STF 431 on Smart Cards Secure Channel testing (ETSI TS 103 484-1, -2)

STF 546 on Smart Secure Platform (ETSI TS 103 666-1, ETSI TS 103 666-2)

TTF 001 on Smart Secure Platform (SSP) Test Specification (ETSI TS 103 813, ETSI TS 103 999-1, ETSI TS 103 999-2)

## Consequences if not agreed

Currently, TC SCP TEST has limited knowledge of embedded systems and the way System on Chips (SoCs) can be verified, as experts in embedded systems do not attend SCP TEST. To be able to set-up a team of experts with the required knowledge a funded TTF is needed.

The main purpose of the test tool interface specification is to enable interoperability between any test tool that supports the SSP test description and any device incorporating an SSP.

If such test tool connection will be proprietary the results granted by different test tools executing the same test case might be different. This will lead to interoperability issues in the field.

# ETSI Members Support

|  |  |  |
| --- | --- | --- |
| **#** | **ETSI Member** | **Supporting delegate** |
| 1 | AT&T | David K. Smith |
| 2 | Bouygues Telecom | Sophie Diallo |
| 3 | COMPRION GmbH  | Andreas Bertling  |
| 4 | Deutsche Telekom | Stefan Kaliner |
| 5 | Huawei Technologies France | Davide Pratone |
| 6 | Idemia | Heiko Kruse |
| 7 | Nokia Corporation | Bo Bjerrum |
| 8 | Orange  | [Stephane](https://portal.etsi.org/webapp/TelDir/ListPersDetails.asp?PersId=43493) Bandin |
| 9 | Samsung R&D Institute UK  | Duckey Lee |
| 10 | STMicroelectronics | Sofia Massascusa |
| 11 | Truphone | Vladimir Nagin |

# Deliverables

## Base documents

|  |  |  |
| --- | --- | --- |
| **Document** | **Title** | **Status** |
| ETSI TS 103 666-1 | Smart Secure Platform (SSP); General characteristics | Published |
| ETSI TS 103 666-2 | Smart Secure Platform (SSP); Integrated SSP (iSSP) characteristics | Published |
| ETSI TS 103 713 | Smart Secure Platform (SSP); SPI interface | Published |
| ETSI TS 102 221 | Smart Cards; UICC-Terminal interface; Physical and logical characteristics | Published |
| ETSI TS 103 465 | Smart Cards; Smart Secure Platform (SSP); Requirements Specification | Published |
| ISO/IEC 7816-4 | Identification cards - Integrated circuit cards - Part 4: Organization, security, and commands for interchange | Published |
| ETSI TS 103 831 | SSP Test Specification, SPI interface  | Published |
| ETSI TS 103 999-1 | SSP Test Specification, Part 1: General Characteristics | Published  |
| ETSI TS 103 999-2 | SSP Test Specification, Part 2: Integrated SSP (iSSP) characteristics | Published |

The version of document that will be used as a base document will be the one published at the time of the contract start.

## New deliverables

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| --- | --- | --- | --- |
| **Deliv.** | **Work Item code****Standard number** | **Working title** | **Expected date for publication** |
| D1 | DTR/SCP-0090365                | Working title: Report of legacy test tool interfaces | 03/22 |
| D2 | DTS/SCP-0090363 | Working title: Technical specification, SSP Test Tool Interface Specification | 10/22 |

# Maximum budget

## Task summary/Manpower Budget

The tables below provide budget per task and per budget year that should be allocated for this TTF.

It is expected the experts will work within their companies’ premises and will meet regularly (online or F2F). Face to Face working sessions will be done in ETSI premises.

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| **Task short description** | Overall Budget (EUR) |
| Project management  | 3 000 |
| Analysis of legacy test tool interfaces  | 7 200 |
| Capturing additional requirements for iSSP  | 7 200 |
| Definition of the SSP Test Tool Interface protocol layers  | 24 000 |
| Definition of transport layer binding  | 7 200 |
| Test descriptions for the SSP Test Tool Interface  | 39 000 |
| **TOTAL** | **87600** |

## Travel budget

3000 EUR to present contributions at ETSI TC SCP plenary meetings.

Part II – Details on TTF Technical Proposal

# Tasks, Technical Bodies, and other stakeholders

## Organization of the work

The work will be supervised by ETSI SCP WG TEST and validated during ETSI SCP Plenary meetings.

TC SCP WG TEST will act as the steering committee. ETSI SCP WG TEST will review the work of the TTF on a regular basis (every few weeks) and will provide feedback as well as recommendations to the TTF. The TTF leader will report to both ETSI SCP WG TEST and the Steering Group on the resolutions of the recommendations in a timely manner for further deliberation.

The TTF leader shall report on a regular basis to TC SCP.

A Steering Group (SG) will be formed comprising of TC SCP officials and the rapporteurs of TS 103 999-1, TS 103 999-2, and TS 103 831, under the mandate of TC SCP to direct and advise the TTF in between TC SCP plenary meetings.

The TTF will provide regular progress reports to the Steering Group. Conference calls will be held when appropriate. Face-to-face meetings will occur in connection with the relevant TC meetings and Working Group meetings.

The TTF members will have a dedicated mailing list but will also be able to use the existing mailing list of TC SCP WG TEST. As a consequence, TC SCP WG TEST delegates will be able to contribute easily to the discussions.

In a similar fashion, the use of the TC SCP WG TEC mailing list will be open for use by the TTF members, should clarifications be requested in relation to the SSP technical realisation.

The Technical Officer in charge of TC SCP offers to set-up and help maintain TTF-dedicated Web/Portal pages.

## Other interested ETSI Technical Bodies

* TC CYBER

## Other stakeholders

Centre for Testing and Interoperability (CTI): consultation, in particular, on interoperability and organisation of timely Plugtests after the respective publication (in 2022).

The following organisations being potential customers of the SSP specifications will be kept up to date of the development of the test interface specifications:

* 3GPP SA3
* 3GPP CT6
* oneM2M
* GSMA
* EMVCo
* Trusted Connectivity Alliance (TCA)

Part III: Execution of Work

# Work plan, time scale and resources

## Task description

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| --- | --- |
| **Task #01** | **Project Management**  |
| **Objectives** | Project Management (carried out by the TTF Leader). Coordination, communication, reporting and leading of the TTF team activities, in collaboration with the ETSI secretariat and TC SCP WG TEST |
| **Input** | Work schedule of the TTF |
| **Output** | Progress reports  |
| **Interactions** | Regular reporting to TC SCP and TC SCP WG TEST |
| **Resources required** | Meeting room in ETSI premises when relevant / GoToMeeting  |

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| **Task #02** | **Analysis of legacy test tool interfaces** |
| **Objectives** | Analysis the landscape of existing test tool interface that are used within the industry. Existing test tools (e.g., Wireshark) may be used as a template for creating the SSP test tools interface. |
| **Input** | ETSI TS 103 666-1, ETSI TS 103 666-2, ETSI TS 103 713, Industry specifications |
| **Output** | List of test tool interfaces and the usability within the specified SSP test environment.  |
| **Interactions** | TC SCP TEST and TC SCP TEC will be the main contacts for the TTF during the work |
| **Resources required** | Meeting room in ETSI premises when relevant / GoToMeeting  |

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| **Task #03** | **Collection of additional requirements for the SSP**  |
| **Objectives** | Capturing of additional requirements for the iSSP.  |
| **Input** | ETSI TS 103 666-1, ETSI TS 103 666-2, |
| **Output** | List of requirements to be considered for the test tool interface  |
| **Interactions** | TC SCP TEST will be the main contact for the TTF during the work. |
| **Resources required** | Meeting space in ETSI premises when relevant / GoToMeeting |

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| **Task #04** | **Definition of the SSP Test Tool Interface protocol layers** |
| **Objectives** | Definition of the SSP Test Tool Interface protocol layer. This interface specification is independent of the transport layer  |
| **Input** | ETSI TS 103 666-1, ETSI TS 103 666-2, |
| **Output** | Test interface protocol specification.  |
| **Interactions** | TC SCP TEST and TC SCP TEC will be the main contacts for the TTF during the work |
| **Resources required** | Meeting space in ETSI premises when relevant / GoToMeeting |

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| **Task #05** | **Definition of transport layer binding**  |
| **Objectives** | Definition of transport layer binding. The specification includes binding with TCP/IP |
| **Input** | ETSI TS 103 666-1, ETSI TS 103 666-2, ETSI TS 103 713 |
| **Output** | Definition of the transport layer(s) to be used  |
| **Interactions** | TC SCP TEST and TC SCP TEC will be the main contacts for the TTF during the work. |
| **Resources required** | Meeting space in ETSI premises when relevant / GoToMeeting |

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| **Task #06** | **Test descriptions for the SSP test tool interface**  |
| **Objectives** | Creation of the test descriptions for the SSP test tool interface. These test descriptions will be used to verify that the test tool interface works as defined on different SSP implementations.  |
| **Input** | ETSI TS 103 666-1, ETSI TS 103 666-2, ETSI TS 103 713 |
| **Output** | Test description specification  |
| **Interactions** | SCP TEST and TC SCP TEC will be the main contacts for the TTF during the work. |
| **Resources required** | Meeting space in ETSI premises when relevant / GoToMeeting. |

## Milestones

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| --- | --- | --- |
| **Milestone** | **Description** | **Cut-Off Date** |
| **A** | **Report on legacy test tool interfaces**  | **2022-03-25** |
| SCP TEST  | Collection of existing legacy test toll interfaces that could be used as test tool interface for verification of SSP implementations  |
| ETSI Deliverable | Progress report to ETSI TC SCP Technical Report of existing legacy test tool interfaces  |

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| **B** | **Draft of test tool interface specification**  | **2022-07-08** |
| SCP TEST | Specification of test tool interface requirements to be fulfilled by the test tool interface Specification of additional requirements for the iSSPDefinition of the SSP Test Tool Interface protocol layers |
| ETSI Deliverable | Progress report to ETSI TC SCP Draft of the test tool interface technical specification including requirements to be covered by the test tool interface  |

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| **C** | **Final test tool interface specification**  | **2022-09-23** |
| SCP TEST | Definition of transport layer binding Specification of test description for the test tool interface  |
| ETSI Deliverable | Progress report to ETSI TC SCP Final technical specification of the test tool interface including test descriptions  |

## Task summary

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| --- | --- | --- | --- |
| **Code** | **Task / Milestone**  | Target Date | Estimated Cost (EUR) |
| From | To |
|  | Start of work | 01/22 |  |  |
| T01 | Project Management  | 01/22 | 09/22 | 3000 |
| T02 | Analysis of legacy test tool interfaces | 01/22 | 02/22 | 7200 |
| Milestone A | Progress report#1 to ETSI TC SCP Stable draft of Technical report of legacy test tool interfaces |  | 2022-03-25 SCP#104 |  |
| T03 | Capturing additional requirements for iSSP | 03/22 | 05/22 | 7200 |
| T04 | Definition of the SSP Test Tool Interface protocol layers | 04/22 | 06/22 | 24000 |
| Milestone B | Progress report#2 to ETSI TC SCP Draft of test tool interface specification including requirements to be covered by the test tool interface |  | 2022-0708 SCP#105 |  |
| T05 | Definition of transport layer binding | 06/22 | 07/22 | 7200 |
| T06 | Test descriptions for the SSP test tool interface | 06/22 | 09/22 | 39000 |
| Milestone C | Final report to ETSI TC SCP Final test tool interface specification including test descriptions  |  | 2022 – 09-23 SCP#106 |  |
| Milestone D | Publication all deliverables TTF closed  |  | 10/22 |  |

# Expertise required

## Team structure

Up to 3 participants to ensure the following mix of competences:

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| --- | --- |
| **Priority** | **Qualifications and competences** |
| High | Skills in writing technical specifications especial test specifications  |
| High | Detailed knowledge of the core specifications TS 103 666-1, TS 103 666-2, and TS 103 713.  |
| High  | Detailed knowledge of the core specifications TS 103 831, TS 103 999-1, and TS 103 999-2.  |
| High | Detailed knowledge of SoC hardware and SW architecture  |
| High | Knowledge of TC SCP test specifications (TS 102 230-1/-2, TS 103 694-1/-2) |
| High | Knowledge of UICC run-time environment.  |
| High | Knowledge of chip architecture. |
| High | Knowledge of operating system design |
| Medium | Awareness of 3GPP work. |
| Medium | Awareness of GSMA work. |

Part IV: TTF performance evaluation criteria

# Performance Indicators

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| **Select relevant Performance indicators applicable for these ToR (X)** |
| Contribution from ETSI Members to TTF work |
| Steering Group meetings (number of meetings) | 3 SG meeting, 3 TC SCP Plenary 3 TC SCP WG TEST  |
| Number of delegates directly involved in the review of the deliverables | 5 |
|  |  |
| **Contribution from the TTF to ETSI work** |
| Contributions to Reference Body meetings during 2022 (number of documents) | 1 report 1 early draft specification 1 final draft specification 3 progress reports to TC SCP Plenary  |
|  |  |
| **Quality of deliverables** |
| Approval of deliverables according to schedule | 1 specification3 progress reports  |
| Respect of time scale, with reference to start/end dates in the approved ToR | See cover page  |
| Comments from Quality review by Reference Body |  |
| Comments from Quality review by ETSI Secretariat |  |

Time recording

For reporting purposes, the TTF experts shall fill in the time sheet provided by ETSI with the days spent for the performance of the services.

In the course of the activity, the TTF Leader will collect the relevant information, as necessary to measure the performance indicators. The result will be presented in a final report.

# Document history

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| --- | --- | --- | --- | --- |
|  | **Date** | **Author** | **Status** | **Comments** |
| 0.1 | 2021-06-28 | AB | DRAFT  | Early draft for ETSI TC SCP officials  |
| 0.2 | 2021-07-07 | AB | DRAFT  | Draft for ETSI TC SCP discussion during SCP#100 |
| 0.3 | 2021-07-08 | AB | DRAFT | Version after SCP #100 |
| 0.4 | 2021-08-24 | AB | DRAFT | Time schedule and Milestones added  |
| 0.5 | 2021-08-26 | SCP Officials | DRAFT | Comments SCP Officials Meeting |
| 0.6 | 2021-10-26 | ETSI Secretariat | Board#134 approved | Updates before CL publication |
| 0.7 | 2022-01-06 | ETSI Secretariat | Final | Updates after Preparatory Meeting – Parts 3.1 (sentence added for base documents) & 6.1 (objectives of Task 6 slightly updated) |