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| ETSI_logo_Office_Colour_Small | ToR STF CJ (TC ITS / WG 5) |
| Version: 0.4 |
| Author: A.Berge/S.Müller – Date:23 Feb 2018 |
| Last updated by: Youssouf Sakho – Date:25 Apr 2018 |
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Terms of Reference - Specialist Task Force

STF CJ (TC ITS / WG 5)

ITS Security – Interoperability Tests

Summary information

|  |  |
| --- | --- |
| Approval status | Approved by Board#117 (20 April 2018) |
| Funding | **Maximum budget: 20 000 € ETSI FWP** |
| Time scale | June 2018 to May 2019 |
| Work Items | DTS/ITS-00548 (TS 103 600) |
| Board priority | Standards enablers/facilitators (e.g. conformance test/interoperability/methodology)  Recommendations: CTI supervision |

Part I – Reason for proposing the STF

# Rationale

Early 2018 the C-ITS Security Policy was published, defining the basis for secure and interoperable C-ITS deployment in the common single European trust domain. All C-ITS deployment initiatives in Europe must adhere to this policy. In response to this policy ETSI produces a set of Base Specifications, namely ETSI TS 103 097 (Security header and certificate formats), ETSI TS 102 940 (Security architecture and Management) and ETSI TS 102 941 (Trust and Privacy Management).

# Objective

Maintaining support of ITS test activities, the objective of this project is the production of interoperability test descriptions to cover ETSI TS 103 097, ETSI TS 102 941 and ETSI TS 102 940. Thus, complementing the ongoing work of conformance test development (see ETSI STF538 project ‘Conformance Validation Framework – Security’ and ETSI STF545 project ‘Security PKI management’).

The interoperability test descriptions must be available in due time for the upcoming ITS Security PlugtestsTM event scheduled for February 2019.

# Relation with ETSI strategy and priorities

This action supports the ETSI Long Term Strategy item(s) to:

* create high quality standards for global use and with low time-to-market.
* establish leadership in key areas impacting members’ future activities

This action has a priority category of:

* Standards enablers/facilitators (conformance testing, interoperability, methodology)

# Context of the proposal

## ETSI Members support

|  |  |  |
| --- | --- | --- |
| **ETSI Member** | **Supporting delegate** | **Motivation** |
| Cadzow Communications | Scott Cadzow | Cadzow Communications supports this work as a major element in ensuring the market viability of ETSI’s C-ITS security model and therefore its wider application to the market. |
| Renault SAS | Brigitte Lonc | Renault is supporting this STF on security interoperability test specifications as the new security standards have been developed to support the C-ITS Platform requirements and we need to validate them and show the best quality level for standards which will be used as a basis for deployment of C-ITS in Europe. |
| Gemalto | Francois Ennesser | Gemalto is supporting the STF on security interoperability test specifications as we see a real need for its expected deliverables in the context of regulatory support for C-ITS deployments in Europe. |
| IRT SystemX | Arnaud Kaiser | IRT SystemX also supports the STF on security interoperability test specifications as the validation of these standards is a necessary step in the deployment of C-ITS in Europe. |

## Market impact

Interoperability is a key factor that enables the use of new technologies and provides all benefits attached to them, such as competitiveness, innovation and reliability.

ITS technologies are becoming more and more complex, collaborative and interdependent. Furthermore, ITS systems are often specified by multiple standards from different standardization development organisations (SDOs). These factors potentially lead to non-interoperable implementations. The development of products that rely on non-interoperable solutions, can eventually result in fragmented markets, all of which can impact trustworthiness.

Various measures can significantly improve the reliability and interoperability of complex systems such as ITS. The development of test specifications for conformance and interoperability can be coupled with validation activities, such as building prototype test systems. Likewise, the prototype test systems can be used at interoperability events. Consequently, the project contributes to the effort of testing and validation of ITS systems with the goal to bring the ITS systems to a stage where end users trust the services provided.

## Tasks for which the STF support is necessary

Experience with the development of other standards has shown that involvement of expertise on conformance and interoperability testing of protocols requires highly specialised knowledge in testing methodology. The generation of this kind of specification requires significant, concentrated effort that can be done in this case by expertise provided on a funded basis. Hence the involvement of testing expertise is needed in order to assure the timely completion and high quality of the Test Specifications. The providers will use dedicated software tools available at ETSI. Test adapter development and test suite validation are tasks which cannot be provided by a TB on a voluntary basis.

## Related voluntary activities in the TB

Delegates within TC ITS and certain WGs will review the deliverables and deal with the Change Requests to the base specifications that that this action will produce.

## Previous funded activities in the same domain

* TC ITS: STF538 (2017/2018)
* TC ITS: STF545 (2018)

## Consequences if not agreed

The production of test specifications as described in the present document is key to the testing and potential certification activities that should assure the interoperability of ITS equipment. Such devices are required to have high levels of interoperability if safety on road is to be kept at the highest level. The non-availability of such standards may cause problems of interoperability.

Part II - Execution of the work

# Technical Bodies and other stakeholders

## Reference TB

The leading TB is TC ITS.

ITS WG5 will be the lead working group for the Work Items and will approve the work before submission to TC ITS.

ITS WG1 and WG3 are interested by the Work Items as the security protocols mostly cover messages defined by deliverables of those working groups.

## Other interested ETSI Technical Bodies

N/A

## Other stakeholders

N/A

# Base documents and deliverables

## Base documents

|  |  |  |  |
| --- | --- | --- | --- |
| **Document** | **Title** | **Current Status** | **Expected date for stable document** |
| ETSI TS 103 097 v1.3.1  RTS/ITS-00540 | Intelligent Transport Systems (ITS);  Security;  Security header and certificate formats | Published | N/A |
| ETSI TS 102 940 V1.3.1  RTS/ITS-00541 | Intelligent Transport Systems (ITS); Security;  Security Architecture and Management | Final draft for approval | March 2018 |
| ETSI TS 102 941 V1.2.1  RTS/ITS-00524 | Intelligent Transport Systems (ITS); Security;  Trust and Privacy Management | Final draft for approval | April 2018 |

## Deliverables

|  |  |  |
| --- | --- | --- |
| **Deliv.** | **Work Item code**  **Standard number** | **Working title**  **Scope** |
| D1 | DTS/ITS-00548  TS 103 600 | Working title: Intelligent Transport Systems (ITS); Testing; Interoperability test specifications; Test descriptions for security  Scope: To develop interoperability test descriptions to cover TS 103 097 v1.3.1, TS 102 941 v1.2.1, TS 102 940 v1.3.1 |

## Deliverables schedule:

DTS/ITS-00548 Test descriptions for security

* Start of work 18-Jun-2018
* Early draft 30-Aug-2018
* Stable draft 12-Oct-2018 ITS#32
* WG+TB approval Apr-2019 ITS#33
* Publication May-2019

# Work plan, time scale and resources

## Organization of the work

As defined in the following sub clauses.

## Task description

Task 1 – Test Skeletons

Objectives

* Definition of ~ 20 Test Skeletons
* Each Test Skeleton containing
  + Identifier (a unique test description ID)
  + Objective (a concise summary of the test which should reflect the purpose of the test and enable readers to easily distinguish this test from any other test in the document)
  + References (a list of references to the base specification section(s) which are either used in the test or define the functionality being tested)
  + Applicability (a list of features and capabilities which are required to be supported by the SUT in order to execute this test)

Input

* ETSI TS 103 097 v1.3.1 RTS/ITS-00540
* ETSI TS 102 940 V1.3.1 RTS/ITS-00541
* ETSI TS 102 941 V1.2.1 RTS/ITS-00524

Output

* Early draft TS 103 600 DTS/ITS-00548 containing ToC and Test Skeletons

Interactions

* Peer-review

Resources required

* 3000 EUR

Task 2 – Test Descriptions

Objectives

* Completion of the Test Skeletons by adding
  + Configuration (a list of all required equipment for testing and possibly also including a (reference to) an illustration of a test architecture or test configuration)
  + Pre-Test Conditions (a list of test specific pre-conditions that need to be met by the SUT including information about equipment configuration, i.e. precise description of the initial state of the SUT required to start executing the test sequence)
  + Test Sequence (an ordered list of equipment operation and observations. In case of a conformance test description the test sequence contains also the conformance checks as part of the observations)
* An example version of ITS Security Test Descriptions can be found at <https://portal.etsi.org/Services/CentreforTestingInteroperability/Downloads/TestSpecifications.aspx> (see file called ‘IOP\_Test\_Security\_Final.pdf’).

Input

* ETSI TS 103 097 v1.3.1 RTS/ITS-00540
* ETSI TS 102 940 V1.3.1 RTS/ITS-00541
* ETSI TS 102 941 V1.2.1 RTS/ITS-00524

Output

* Stable draft TS 103 600 DTS/ITS-00548 containing test descriptions

Interactions

* Peer-review

Resources required

* 16 000 EUR

Task 3 – Validation

Objectives

* Implement comments received during the ITS Security Plugtests™ event

Input

* Document containing comments raised during the ITS Security Plugtests™ event
* Note: CTI will provide this document to the STF

Output

* Stable draft TS 103 600 DTS/ITS-00548

Interactions

* Bug fixing of stable draft according to the input document. Optionally discussions with Plugtests™ event participants.

Resources required

* 1000 EUR

## Milestones

Milestone 1 – Early draft available

Early draft including the result of Task 1 (Test Objectives) available for review.

Milestone 2 – Stable draft and Progress Report approved by TC ITS

Stable draft including the result of Task 2 (Test Descriptions) available for review. Document must be uploaded on the TC docbox at least two weeks before the start of the ITS WG5 meeting.

Progress Report to be approved by ITS#32 in October 2018.

Milestone 3 – Deliverable and STF Final Report approved by TC ITS

Final draft including the result of Task 3 (Validation) available for review. Document must be uploaded on the TC docbox at least two weeks before the start of the ITS meeting.

Final draft to be approved by ITS WG5#47 and ITS#34 in April 2019.

Final Report to be approved by ITS#34 in April 2019.

Milestone 4 – Deliverables published, STF closed

## Task summary

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| --- | --- | --- | --- | --- |
| **N** | **Task / Milestone / Deliverable** | Target date | Estimated cost | |
| EUR | Days (optional) |
| M0 | Start of work | 18 Jun 2018 |  |  |
| T1 | Test Skeletons | from Jun – Aug 2018 | 3 000 |  |
| M1 | Early draft with tests skeleton available and Progress report to be approved by Remote Consensus (RC) | 31 Aug 2018 |  |  |
| T2 | Test Description | from Jul – Oct 2018 | 16 000 |  |
| M2 | Stable draft and Progress Report approved by TC ITS#32 | 12 Oct 2018 |  |  |
| T3 | Validation | during Plugtests™ event Feb 2019 | 1 000 |  |
| M3 | Deliverable and STF Final Report approved by TC ITS#34 | Apr 2019 |  |  |
| M4 | Deliverables published, STF closed | May 2019 |  |  |
| **Total** | | | **20 000** |  |

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| **Task Milest.** | **Description** | **M** | **J** | **J** | **A** | **S** | **O** | **N** | **D** | **J** | **F** | **M** | **A** | **M** |
| T1 | Test Skeletons |  |  |  |  |  |  |  |  |  |  |  |  |  |
| M1 | Early draft available |  |  |  | M1 |  |  |  |  |  |  |  |  |  |
| T2 | Test Descriptions |  |  |  |  |  |  |  |  |  |  |  |  |  |
| M2 | Stable draft available |  |  |  |  |  | M2 |  |  |  |  |  |  |  |
| T3 | Validation |  |  |  |  |  |  |  |  |  |  |  |  |  |
| M3 | Deliverable and STF Final Report approved by TC ITS |  |  |  |  |  |  |  |  |  |  |  | M3 |  |
| M4 | Deliverables published, STF closed |  |  |  |  |  |  |  |  |  |  |  |  | M4 |

## Working methods and travel cost

No travel of the experts is required as work can be executed remotely.

ETSI CTI will present the results to ITS WG5 and ITS.

# Expertise required

## Team structure

Up to 2 participants to ensure the following mix of competences:

* expert knowledge of TS 102 940, TS 102 941, ETSI EN 103 097;
* expert knowledge in interoperability testing;
* expert knowledge of ITS Security technologies and implementations.

Part III: Financial conditions

# Maximum budget

## Manpower cost

20 000 EUR

## Travel cost

N/A

## Other Costs

N/A

Part IV: STF performance evaluation criteria

# Key Performance Indicators

Contribution from ETSI Members to STF work

* Contributions/comments received from the reference TBs

Contribution from the STF to ETSI work

* Contributions to TC/WG meetings (number of documents / meetings / participants)
* Usage of deliverable in the Plugtests™ events

Quality of deliverables

* Approval of deliverables according to schedule
* Respect of time scale, with reference to start/end dates in the approved ToR
* Comments from Quality review by TB
* Comments from Quality review by ETSI Secretariat

Time recording

For reporting purposes, the STF 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 STF Leader will collect the relevant information, as necessary to measure the performance indicators. The result will be presented in the Final Report.

# Document history

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| --- | --- | --- | --- | --- |
|  | **Date** | **Author** | **Status** | **Comments** |
| 0.1 | 23-Feb-2018 | ETSI CTI |  |  |
| 0.2 | 26-Feb-2018 | ETSI CTI |  | peer review |
| 0.3 | 12-Mar-2018 | Corinne Elena |  | Consistency check |
| 0.4 | 25-Apr-2018 | Youssouf Sakho | Board Approved | Revisions before CL publication |