

TTF T014 - Progress Report for ETSI			
Presented to ETSI meeting		Author:	Prof. Jens Grabowski
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Doc ref		Version	

TTF	T014
TBWG	MTS

TTF leader	Prof. Jens Grabowski
TB responsible	
Administrator	Ms. Elodie Rouveroux

TTF title:	TTCN-3 maintenance & evolution of language and conformance test suites 2021
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Milestone	A		Status Template	Covers the period until (cut-off date)	30/09/2021
Objective	First progress report to be approved by TC MTS during MTS#84 Early Drafts for T2 Deliverables				
Achieved	Yes/No	<i>Indicate whether the objective has been achieved If the objective is not achieved, give a short explanation in the "remarks"</i>			
Remarks					

Achieved dates

Template	Draft report	TB approval	ETSI approval		
01/09/2021					

1 Executive summary

The TTCN-3 testing language has intensively been developed by ETSI during the last 15 years, by today, it consists of 24 ETSI standards, altogether comprising almost 1800 pages and more than 3300 test cases in TTCN-3 code. The language is also endorsed by ITU-T as the Z.16x and Z.17x Recommendation series. By now TTCN-3 is used exceptionally as the formal specification language of standardized test suites and has also become an important testing technology at various ETSI member companies and in several industrial domains (<http://www.ttcn-3.org/index.php/about/references/applicatio-domains>) and standards organizations (<http://www.ttcn-3.org/index.php/about/references>).

Significant number of TTCN-3 test toolsets are available on the market. At least five commercial tools, five free or open source tools and one internal test tool of an industrial ETSI member are known to exist (<http://www.ttcn-3.org/index.php/tools>). This also indicates the high interest and use of the language. TTCN-3 is one of the most important standardized test languages. TTCN-3 can be used in many domains and areas of application and is specified in great detail. For example, the TTCN-3 core language alone is estimated to contain about 5,000 requirements. It is of utmost importance for users of standard test suites as well as for industrial users that the TTCN-3 tools conform to the TTCN-3 language standards. This can be secured by TTCN-3 tool conformance test suites, in a similar way as implementations of other ETSI standards (e.g. protocol specifications) are checked by means of ETSI-developed conformance test suites. In the past, the TTCN-3 tool conformance test suite development process itself has led to several language standard clarifications.

TTF T014 “TTCN-3 maintenance & evolution of language and conformance test suites 2021” has two objectives. The first objective is to maintain the high quality of the language and at the same time keep it harmonized with the new requirements of the users, new application areas and new ways of working like Agile SW development. The second objective is to maintain and further develop the TTCN-3 tool conformance test suites in order to reach full test coverage of the TTCN-3 series of standards.

The STF team consists of 9 experts. During the first working session for Task 1 “TTCN-3 maintenance and further development” TTF T014 progressed **46** CRs. The work on Task 2 “Conformance test suites for TTCN-3 tools and sub-tasks” is in the starting phase and concentrated on the organization and distribution of the work among the experts.

2 Introduction

The work on Task 1 “TTCN-3 maintenance and further development” comprises the following tasks:

- Review and resolve change requests reporting technical defects or requesting clarifications and new language features for all existing TTCN-3 language standards.
- Develop proposals for language extensions requested by ETSI TBs, 3GPP, oneM2M, ETSI members and the TTCN-3 community and consent the solution with the contributor(s).
- Implement agreed solutions.
- Manage the change request (CR) process.
- Manage the interim versions of the standard according to 3GPP needs (when requested), and the versions for approval.
- Present the TTCN-3 standards' status and the work of the TTF (previously STF) at the conference(s) associated with ETSI TB MTS and at ETSI TC MTS meetings.
- Providing input for the updates of the TTCN-3 leaflet and the TTCN-3 web pages.

The work on Task 2 “Conformance test suites for TTCN-3 tools and sub-tasks” comprises the following tasks:

- Analysis of the latest published versions of the relevant TTCN-3 standards and identifying new and changed requirements.
- Identifying affected existing test cases and define new test cases for the new requirements.
- Implement changes and additions in the textual part of the deliverables (PICS, TSS&TP, textual part of the ATS).
- Implement changes and additions in the code of the ATS.
- Verification of the test cases with test tools.

TTF T014 consists of the following nine experts:

- Jens Grabowski, University of Göttingen (TTF management)
- Andras Kovacs, Broadbit (TTF management)
- Gusztáv Adamis, Ericsson
- Ramon Barakat, Fraunhofer FOKUS

- Zoltán Jakó, Broadbit
- Lénárd Nagy, Ericsson
- Axel Rennoch, Fraunhofer FOKUS
- Tomáš Urban, Elvior
- Jacob Wieland, Spirent Communications

3 Contractual milestone

The contractual milestone A is related to this progress report.

Milestone A is achieved by TB MTS approving this progress report.

4 Progress of the work

Progress of the work on Task 1 – TTCN-3 maintenance and further development

The current TTF session plan for the work on Task 1 contains three online working sessions where all experts work in parallel, as well as individual homework of the experts and one week of voluntary work spent for final CR cleaning and editorial work on the draft deliverables.

Online working sessions for the work on Task 1 are planned for:

- Week 36: 06. - 10. Sept. 2021 (**done**)
- Week 45: 08. - 12. Nov. 2021 (planned)

Further working sessions may be organized on demand.

During the first online working session the **46** CRs listed below have been progressed:

Part 01: TTCN-3 Core Language

(35 CRs)

- 7910 Allow parallel control parts/components
- 7994 Allow coordinated shared access to component variables.
- 7998 lengthof for maps
- 7999 Evaluation of function calls in templates
- 8000 ES 201 873-1, clause 5.4.1.1, EXAMPLE 5 - v_int
- 8003 Typo in Section 6.2.16
- 8004 Unassigned variables in return statements
- 8005 It should be possible to reactivate a default
- 8006 Unnecessary Restriction 15.6.1 should be removed.
- 8007 Nested maps should be allowed
- 8009 Missing rule for no optional attribute (or default value of the optional attribute)
- 8017 Useless restriction for ""
- 8031 TTCN-3 syntax BNF productions – corrections
- 8032 BNF links and formatting
- 8035 Wrong clause reference
- 8036 Definition of "existing TTCN-3 types" missing
- 8037 Wrong assignment in an example
- 8038 Explanation in an example
- 8039 Declarations too far
- 8040 => operator is missing from List of TTCN-3 operators and Precedence of Operators tables
- 8041 Typos in 15.12
- 8042 Wrong reference in 16.1.3
- 8043 typo in 20.2
- 8044 Component creation
- 8045 Start component operation can also be applied on control components

8046	master control component
8047	Clarification in Kill component operation
8048	Keywords shall be bold
8049	Value part in receiving operators
8050	Typo in 23.1
8051	Typo in 26.2
8052	Typo in 27.1.2.0
8053	Start a previously expired timer
8054	What happens if same verdict but with different text is set by setverdict
8055	Arguments of External actions shall be same as log

Part 06: TTCN-3 Control Interface (1 CR)

8010 When does tliModulePar trigger?

Part 07: Using ASN.1 with TTCN-3 (1 CR)

8056 BNF updates and formatting

Ext Pack: Config & Deployment Support (ES 202 781) (1 CR)

8057 BNF updates and formatting

Ext Pack: Perf & Real Time Testing (ES 202 782) (1 CR)

8058 BNF updates and formatting

Ext Pack: Advanced Parametrization (ES 202 784) (1 CR)

8059 BNF updates and formatting

Ext Pack: Ext Pack: Behaviour Types (ES 202 785) (1 CR)

8060 BNF updates and formatting

Ext Pack: Advanced Matching (ES 203 022) (1 CR)

8062 BNF updates and formatting - V1.4.1 (2020-05)

Ext Pack: Continuous signal support (ES 203 786) (1 CR)

8061 BNF updates and formatting

Ext Pack: Object-Oriented Features (ES 203 790) (3 CRs)

8001 Syntax Error in Constructor invocation

8002 Operatiobn "Select class" is missing in Overview of program statements and operations

8063 BNF updates and formatting - clause A.2

Progress of the work on Task 2 – Conformance test suites for TTCN-3 tools and sub-tasks

The work on Task 2 “Conformance test suites for TTCN-3 tools and sub-tasks” is in the starting phase and concentrated on the organization and distribution of the work among the experts.

5 Assessment of technical risk, difficulties encountered/expected, unresolved issues

· **Task 1 – TTCN-3 maintenance and further development**

Currently, the number of unresolved CRs is manageable and should not cause major problems. However, new CRs tend to be submitted before work sessions and the number of new CRs submitted in 2021 cannot be predicted. If the number of new CRs becomes big, the TTF may not be able to

resolve all open CRs. The resolution of some CRs may be left for succeeding TTFs. The TTF will then prioritize the open CRs and resolve them in order of priority as long as possible (some high priority CRs may need long discussions, while low priority, e.g. trivial CRs may be handled quickly and thus may overtake the resolution of higher priority CRs).

· **Task 2 – Conformance test suites for TTCN-3 tools and sub-tasks**

The preceding TTCN-3 conformance testing STFs have provided a sound methodological basis for the work of this TTF. The TTF work has started late in August 2021 and currently no technical risk or other difficulties are expected.

At this point in time no action is seen to be required from TC MTS.

6 Proposed changes in the TTF work plan

No proposed change.

7 Resources requirements

There is no change foreseen in the TTF resource requirements related to the TTF's ToR.

8 Changes in the TTF Team

There was no change in the TTF's composition and no change is foreseen or required.

9 Meetings/events attended on behalf of the TTF

None

10 Meetings/events planned to be attended

Date	Place	TB/Orga	Event description	Reason to attend	Expert(s)
08.09. – 09.09.20	Online	TC MTS	MTS#84 regular meeting	Presentation of progress report (milestone A)	Jens Grabowski, Andras Kovacs
Jan/Feb 2022	tba	TC MTS	MTS#85 regular meeting	Presentation of progress report (milestone B)	Jens Grabowski, Andras Kovacs
May/June 2022	tba	TC MTS	MTS#86 regular meeting	Presentation of TTF finalization (milestone C and D)	Jens Grabowski, Andras Kovacs
tba	tba	TC MTS	User Conference on Advanced Automated Testing (UCAAT)	Participation at ETSI booth	tba

11 STF communications, presentations, promotion, inside and outside ETSI, WEB pages etc

- The TTF T014 webpage can be found on: <https://portal.etsi.org/STF/STFs/STF-HomePages/T014>.
- TTF T014 continuously updates the TTCN-3 leaflet and contributes to the TTCN-3 webpage <http://www.tcn-3.org/>.
- Further external communication is done via Mantis (http://forge.etsi.org/mantis/main_page.php) and emails.

12 Technical advice required from the reference Technical Body

There is no issue requiring TB decision.

13 Status of the deliverables

· Task 1 – TTCN-3 maintenance and further development

TTCN-3 standards are stable documents. The way of working of TTCN-3 evolution STFs is approved by ETSI TC MTS, is based on change requests submitted to ETSI's Mantis CR handling system. Technical resolution and proposed changes in the texts of deliverables are publically available in Mantis during the year. Agreed text of resolved CRs is implemented in drafts of deliverables at, and after the last working session of the STF. Therefore, the output drafts of the deliverables are available at the end of the project.

The actual status of the CRs can be found at http://forge.etsi.org/mantis/main_page.php.

· Task 2 – Conformance test suites for TTCN-3 tools and sub-tasks

Drafts for Task 2 deliverables will be made available as part of Milestone B (cut-off date 31/01/2022)

14 Next report

The next report is scheduled for Milestone B (cut-off date 31/01/2022)

15 Any other business

None