

<b>STF550 - Progress Report for ETSI</b>			
<b>Presented to ETSI meeting</b>		<b>Author:</b>	Prof. Jens Grabowski
		<b>Date:</b>	27/07/2018
<b>Doc ref</b>		<b>Version</b>	

<b>STF</b>	<b>550</b>
<b>TB/WG</b>	<b>MTS</b>

<b>STF leader</b>	Prof. Jens Grabowski
<b>TB responsible</b>	Mr. Dirk Tepelmann
<b>STF Assistant</b>	Ms. Elodie Rouveroux / Ms Léa Belloulou

<b>STF title:</b>	TTCN-3 Evolution 2018
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<b>Milestone</b>	<b>A</b>		<b>Status Template</b>	<b>Covers the period until (cut-off date)</b>	27/09/2018
<b>Objective</b>	First progress report (list of resolved CRs) to be approved by TC MTS#75				
<b>Achieved</b>	<b>Yes</b>				
<b>Remarks</b>					

**Achieved dates**

<b>Template</b>	<b>Draft report</b>	<b>TB approval</b>	<b>ETSI approval</b>		
19/07/2018	27/07/2018				

## 1 Executive summary

The TTCN-3 testing language has intensively been developed by ETSI during the last decade and, by today, it consists of 16 ETSI standards, altogether more than 1600 pages. 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>).

TTCN-3 has an important role in standardization; it is an enabler technology in many areas. Several conformance and end-to-end/interoperability test standards have been developed and being developed by 3GPP, ETSI TBs INT, ERM, ITS and oneM2M/smartM2M. 3GPP is using TTCN-3 for UE conformance tests from Rel. 8 and onward to LTE and VoLTE, with NB-IoT on horizon. In the C-ITS area also several TTCN-3 test suites have been developed and they start playing important roles in ITS Plugtest events, with automated C-ITS interoperability testing being in progress. In 2016 oneM2M has started using TTCN-3 for IoT/M2M conformance test development that has been continued in ETSI smartM2M in 2017. oneM2M is also developing an open source test tool to the execute the conformance tests.

The purpose of STF550 – “TTCN-3 evolution 2018” is to maintain the high quality of the language – that currently consists of 18 ETSI standards - 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 STF team consists of 5 experts. During its first working session, STF550 progressed **29** CRs.

## 2 Introduction

The TTCN-3 language evolution work will comprise 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 3GPP, OMA, 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, and the versions for approval.
- Present the TTCN-3 standards' status and the work of the STF at the conference(s) associated with ETSI TB MTS and at ETSI TB MTS meetings.

The STF consists of five experts:

- Jens Grabowski, University of Göttingen (STF Leader)
- Kristóf Szabados, Ericsson
- György Réthy, Ericsson
- Tomáš Urban, Elvior
- Jacob Wieland, Spirent Communications

György Rethy does not physically participate in the STF sessions, but contributes by following the ongoing work in Mantis and providing useful feedback via email and telephone.

## 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

The current STF session plan contains 4 one-week working sessions with all experts present and one week of voluntary work spent for final CR cleaning and editorial work on the draft deliverables. Working sessions of the STF are:

- W29, 16 – 20 July 2018, Göttingen (**done**)
- W41, 08 - 12 October 2018, Budapest (planned)
- Week TBA, November/December, Berlin (planned)

Further working sessions will be organized on demand.

During the first working session in Göttingen the 29 CRs listed below have been progressed (resolved CRs are printed in italic):

### Part 01: TTCN-3 Core Language

(12 CRs)

- 7495 *out, inout and return value should be assignable via the done/killed statement redirect*
- 7619 *No named interleave construct available.*
- 7729 *There seems to be a mistake in Example 4 on Page 108 (v4.9.1)*
- 7737 *Padding bits in encvalue\_o result and decvalue\_o input*
- 7754 *Clarify initialization of constants and module parameters*
- 7761 *Template name in the example on overwriting rules*
- 7764 *Syntax error in example on attributes with AllRef*
- 7769 *Errors in example on variant attributes*
- 7772 *Typos in section 27.9*
- 7774 *Is replace function applicable to variables/templates of string/record of types with values containing matching mechanisms*
- 7780 *Template module parameters*
- 7783 *Qualified notation for enumerated values*

### Part 06: TTCN-3 Control Interface

(3 CRs)

- 7738 *TriMessage should be enhanced with a stream-like API*
- 7785 *Add Mutation annotations to the Value data type*
- 7786 *TciCallparameterListType needed to implement component call operation*

### Part 09: Using XML with TTCN-3

(2 CRs)

- 7757 *the mapping of Is in pattern facets uses wrong ASCII code for SPACE*
- 7776 *Invalid conversion of type derived by union with enumeration facets*

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

(4 CRs)

- 7765 *add discard state to the states of ports with translation capability*
- 7768 *add support for stateful translation ports*
- 7779 *Functions with 'port' clause should not be startable*
- 7784 *setstate is incorrect in the example*

### Ext Pack: Advanced Matching (ES 203 022)

(7 CRs)

- 7733 *Dynamic match and default parameter values*
- 7734 *Runs on in dynamic matching*
- 7739 *Error in the example on dynamic matching*
- 7742 *Allow passing instances of templates with out parameters/value redirects as specially marked actual template in parameters*
- 7763 *add support for sending erroneous messages*
- 7775 *matching mechanism for concatenation of strings needed*
- 7782 *Additional parameter values for istemplatekind function*

### Ext Pack: Object-Oriented Features (Draft ES 203 790)

(1 CR)

- 7731 *Draft document for Object-oriented Extension*

The status of the CRs can be followed in detail in ETSI's Mantis system at [http://forge.etsi.org/mantis/view\\_all\\_bug\\_page.php](http://forge.etsi.org/mantis/view_all_bug_page.php).

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

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 2018 cannot be predicted. If the number of new CRs becomes big, STF550 may not be able to resolve all open CRs. The resolution of some CRs may be left for succeeding STFs. The STF 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).

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

## 6 Proposed changes in the STF work plan

No proposed change.

## 7 Resources requirements

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

## 8 Changes in the STF Team

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

## 9 Meetings/events attended on behalf of the STF

None

## 10 Meetings/events planned to be attended

Date	Place	TB/Orga	Event description	Reason to attend	Expert(s)
26.09 – 27.09.18	Budapest	TC MTS	MTS#75 regular meeting	Presentation of progress report (milestone A)	Jens Grabowski
16.10. – 18.10.18	Paris	TC MTS	User Conference on Advanced Automated Testing (UCAAT)	Poster presentation of STF work	Jens Grabowski
Jan/Feb 2019	tba	TC MTS	MTS#76 regular meeting	Presentation of progress report (milestone B)	Jens Grabowski

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

- The STF550 webpage can be found on: <https://portal.etsi.org/STF/STFs/STFHomePages/STF550>
- The work of STF550 will be presented and discussed on the ETSI UCAAT conference (<https://ucaat.etsi.org/>) in October 2018.
- Further external communication is done via Mantis and emails.

## **12 Technical advice required from the reference Technical Body**

There is no issue requiring TB decision.

## **13 Status of the deliverables**

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](http://forge.etsi.org/mantis/main_page.php).

## **14 Next report**

The next report is scheduled for: TB MTS#76 (Jan-Feb 2019)

## **15 Any other business**

None