



TTF 013: TD-LTE and TDD-LTE Enhancement

Status Update

Document History

- 2021-05-10: Document submitted for MTS#83
- 2021-03-09: Document submitted for TTF 013 Kick-Off Meeting

From the Terms of Reference...

TTF 013: Objectives (enhancement)

- Support for testing RESTful API services specified with OpenAPI
 - data definition refinements
 - workflow, TD generator, test execution engine
- Textual syntax standardisation
 - clean-up and refinement of Annex B (also of Part 4)
 - integration of Part 1 and Part 4 syntax? (by extension also Part 7?)
- Methodology for deriving TDs from TOs/TPs
- Initial work on testing of AI systems (requirements)

TTF 013: Objectives (maintenance)

- Adaptation and extension of TDL addressing CRs
 - new features (parametrisable TOs, reusable events, OpenAPI-related)
 - updates to relevant parts, mapping new features to TTCN-3
- Update of TOP tools
 - resolve CRs, catch up with Eclipse updates, adaptations to TDL
- Update of technical report
 - validation, user guidelines

TTF 013: Deliverables

Deliv.	Work Item code Standard number	Working title Scope
D1*	RES/ES 203 119-1 V1.6.1	Methods for Testing and Specification (MTS); The Test Description Language (TDL); Part 1: Abstract Syntax and Associated Semantics
D2*	RES/ES 203 119-2 V1.5.1	Methods for Testing and Specification (MTS); The Test Description Language (TDL); Part 2: Graphical Syntax
D3*	RES/ES 203 119-3 V1.5.1	Methods for Testing and Specification (MTS); The Test Description Language (TDL); Part 3: Exchange Format
D4*	RES/ES 203 119-4 V1.5.1	Methods for Testing and Specification (MTS); The Test Description Language (TDL); Part 4: Structured Test Objective Specification (Extension)
D5*	RES/ES 203 119-6 V1.3.1	Methods for Testing and Specification (MTS); The Test Description Language (TDL); Part 6: Mapping to TTCN-3
D6*	RES/ES 203 119-7 V1.3.1	Methods for Testing and Specification (MTS); The Test Description Language (TDL); Part 7: Extended Test Configurations
D7	DES/ES 203 119-8 V1.1.1	Methods for Testing and Specification (MTS); The Test Description Language (TDL); Part 8: Textual Syntax
D8	RTS/TR 103 119 V1.3.1	Methods for Testing and Specification (MTS); The Test Description Language (TDL); Reference Implementation and User Guidelines

* Work items of the TDL standard series which are not affected by CRs will not be updated.

Today

- Work plan
- Tasks and status
- Open questions

Planing Summary

Work Plan

- Timescale: Mar, 2021 — Apr, 2022
 - work remotely, weekly online meetings, meet in person only if necessary
 - given current circumstances no in-person meetings before summer/autumn 2021
 - coordinated remote sessions scheduled as needed, based on availability
- Working sessions
 - WK15: Apr 12–16 Focus Week @ Home (5 days)
 - June: Focus Week (exact dates TBD)
 - September, November: Working session / Focus Week (exact dates TBD)

Milestone Definitions

Task / Mil.	Destination	Description	Cut-off Date
MA	ETSI	Early drafts of D1, D2, D4, D6 available First progress report to be approved by TC MTS	15/05/2021
MB	ETSI	Stable drafts of D1 – D7 and early draft of D8 available Second progress report be approved by TC MTS	15/09/2021
MC	ETSI	Final drafts of D1 – D8 submitted to TC MTS	21/12/2021
MD	ETSI	Deliverables D1-D8 approved by TC MTS Final report to be approved by TC MTS	31/01/2022
ME	ETSI	Deliverables published, TTF closed	30/04/2022

Milestones (Current Planning)

N	Task / Milestone / Deliverable	ToR Targets	PM / Current Targets
	Start of work	01-Mar-2021	08-Mar-2021
T0	Project Management	01-Mar-2021–30-Apr-2022	08-Mar-2021–30-Apr-2022
T1	TDL Evolution	01-Mar-2021–31-Dec-2021	08-Mar-2021–31-Dec-2021
T2	TOP for RESTful API Services	15-May-2021–31-Dec-2021	15-May-2021–31-Dec-2021
T3	TDL Methodology	15-May-2021–31-Dec-2021	15-May-2021–31-Dec-2021
MA	Early drafts/report (MTS#83)	15-May-2021	15-May-2021
MB	Stable drafts/report (MTS#84)	15-Sep-2021	15-Sep-2021
MC	Final drafts (before MTS#85)	20-Dec-2021	20-Dec-2021
MD	Final report (MTS#85)	31-Jan-2022	31-Jan-2022
ME	Deliverables published	30-Apr-2022	30-Apr-2022

* Preliminary work on T2 and T3 started informally before MA as it informs work on T1 as well.

Overall Timeline (Current)

Task / Mil.	Description	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J
T0	Project Management	█	█	█	█	█	█	█	█	█	█	█	█	█	█		
T1	TDL Evolution	█	█	█	█	█	█	█	█	█	█						
T2	TOP for RESTful API Services			█	█	█	█	█	█	█	█						
T3	TDL Methodology			█	█	█	█	█	█	█	█						
MA	Early drafts/report (MTS#83)			█													
MB	Stable drafts/report (MTS#84)			█				█									
MC	Final drafts (before MTS#85)			█							█						
MD	Final report (MTS#85)			█								█					
ME	Deliverables published			█												█	

Tasks

Task 0: Project Management

- One TTF working session: 12-Apr-2021 to 16-Apr-2021
 - Additional working sessions to be scheduled as needed.
- Progress reports for Milestones A (submitted for MTS#83)
- Communications
 - Open meeting: 10-Mar-2021
 - Next open meeting: 19-May-2021, board SOOS: 20-May-2021
 - Proposal for a presentation at the UCAAT 2021 submitted
 - TTF Website: <https://portal.etsi.org/STF/STFs/STF-HomePages/T013>

Task 1: TDL Evolution

- Standardised textual syntax for TO and TD, indentation-based
- Parameterizable test objectives
- Re-usable events in TDL-TO
- New language features for supporting RESTful API services testing through their OpenAPI interface specification
- Resolving open CRs
- Design of new features according to the submitted CRs

Status: TDL Evolution

- Data-related refinements, including data constraints
 - based on the needs for the testing of RESTful API services
- Structured test objective variants
 - allowing overriding of data content and meta-data
- Ongoing discussion with regard to other open CRs
 - initial proposals for potential resolution.
- New CRs submitted based on user feedback and other sources

Task 2: TOP Maintenance

- Implement the elaborated workflow for RESTful API services testing from Task 3
- Provision of a TDL-TD code generator and execution engine to support the execution of RESTful API services tests
- TOP maintenance in accordance to updates of its base software (Eclipse)
- Resolving open CRs and alignment of TOP according to TDL changes performed in Task 1

Status: TOP Maintenance

- Allocated primarily for Milestones B and C -> limited progress
- Preliminary studies for potential directions and scope
 - workflow, code generation, execution engine, platforms
- A broader discussion regarding the scope of the task
 - started on the MTS-TDL WG mailing list, proposals to be evaluated
- A prototypical implementation for the generation of TDL data types
 - from OpenAPI specifications (also related to TDL-TO)
 - created during teaching at the UG, will be contributed to the TOP project

Task 3: Methodology

- Elaborate a defined way to derive TDs from TOs and provide guidelines for a semi-automatic workflow
- Elaborate a workflow to specify TOs/TDs for RESTful API services starting from an OpenAPI specification in accordance with EG 203 647
- Demonstrate and describe the application of TOP for RESTful API Services testing
- Update online documentation, wiki, examples
- Solicitation of requirements for describing tests of AI systems and ML models

Status: Methodology

- Allocated primarily for Milestones B and C -> limited progress
- Preliminary studies for potential directions and scope
- Different approaches for the derivation of TDs from TOs
 - discussed and technical solutions proposed, not yet agreed
 - investigated potential of use of test descriptions for TPs
- Discussed mapping of data specifications
 - OpenAPI/ASN.1 to TDL
 - new features for TDL proposed (data constraints)

Open Questions

Informative vs Normative Work

- Some topics raise questions, may need a new home
 - OpenAPI / ASN.1 use and guidelines
 - TO to TD derivation
 - Use of TDs as containers for TPs
 - scope and limitations (constructs, semantics, etc.)
- Informative as a start?
 - Otherwise new WIs?
- New contact point at CTI (due to Michele's departure)

Concrete Syntax

- Unified syntax and file types vs separate file types
 - currently separate file types -> separate editors, compatible references
 - Part 8 can unify the syntax -> implies support for Part 4
- Braces vs indentation
 - need to better understand tradeoffs
 - supporting both possible
 - can be considerable overhead both for specification and for implementation
 - also confusing for users?

Board SOOS Report on TOP

- Report to Board SOOS: 20-May-2021
 - Report on any success of the TOP project, see slides from previous report
- Most interested in
 - how it is managed
 - how participation works
 - how the relationship with the rest of TC MTS' work is handled
 - especially the relationship with the specification work on TDL
- Any other points you wish to cover

Future

- New TTF ToR?
 - Deadline: 24-Aug-2021
- From the roadmap
 - Besides functional tests, test specification support of further testing kinds such as stochastic tests (endurance and performance), adaptive tests (of intelligent systems), security tests (attack patterns) etc.
 - Provide an approach, based on model transformation and meta-modelling, to map TDL specifications to any arbitrary general-purpose language
 - Elaborate on an execution semantics for TDL specifications to provide direct execution of TDL specifications, e.g. within a containerised architecture

Any other business?
