

## Meeting Minutes of:

# TTCN-3 Evolution Workshop 23.01.2024

### Attending (hybrid)

- Gusztav Adamis (GA), Daniel Ardelean (DA), Carlos Arroyo Narvaez (CA), Virginie Bardaux (VB), Olivier Genoud (OG), Jens Grabowski (JG), Martin Hauch (MH), Janek Jankowiak (JJ), Thilo Lauer (TL), Andrus Lehtmetts (AL), Reinhard Lorenz (RL), Philip Makedonski (PM), Sebastian Müller (SM), Axel Rennoch (AR), Hellen Saunders (HS), Wolfgang Seka (WS), Matthias Simon (MS), Tudor Tomuta (TT), Tomas Urban (TU)

See also meeting registrations

5 in person, rest online, some joined later, some joined together

Timeframe: 13:00-17:30->~16:00

Moderation: JG

Minutes: PM, AR

## Annotated Agenda

### Opening

- Introduction of participants

### Why is a major revision of the TTCN-3 standards suite needed?

- see slides

### Discussion: What do you expect from a new major revision?

- WS: Wish to simplify Part 1 - complexity shall not be increased by new features, extensions separation shall be clear, mixing extension packages makes things complicated and causes lots of discussions
- MS: Simplification needed - 1000 pages of core language and interfaces, needs to be condensed, benefit for tool vendors and users as well
- AL: Source of changes important - business case critical for tool vendors, need strong justification as updating tools is an expensive endeavour, also standard update is expensive, does this lead to more users so that it makes sense economically
  - MS: Possible to clean up without major revision, but major revision opens possibilities to address larger issues, need to keep up with trends and expectations from other tools (currently expensive to implement tooling, having simpler specification leads to easier implementation of tools and reuse, easier maintenance, better tooling)
    - furthermore, parts of the standard hard to understand, potential conflicts hard to detect and resolve, impacts users as well
    - overall, beneficial to harmonise and simplify, both for tool vendors and for users, minor revision not sufficient to resolve long-standing issues, potential benefit in the long term, recognising cost impact but expected payoff

- JG: Discussion still open on whether major revision is needed
- TL: Generally better to simplify, but details needed for implementation are/were often lacking or underspecified, concern that details gained over the years will be lost with the simplification, need to retain important details
  - furthermore if backwards compatibility is broken, how will the update of existing test suites be supported and who will be responsible for performing it
  - JG: Backwards compatibility issues need to be determined first
  - WS: Backwards compatibility important, but need to check in detail what would be the impact and do more detailed analysis
  - MS: Need to review and revise constraints and restrictions which cause a lot of confusion, both for tool vendors and for users
- No concrete wishes beyond the overall simplification and concerns expressed

### TTCN-3 documents – Which documents will survive?

- Handling of extension packages
- MS: Why are certain language features not part of the core specification? Why extension packages in the first place
  - JG: Decision to handle adaptation to different domains and needs
  - GA: Legal considerations for compliance with standards
  - MS: Decision what is an extension and core feature seems a bit random, e.g., exception handling (extension but should be core) vs procedure-based communication (core but should be extension), causes difficulties with sharing tests, tool support, etc.; alternatives for implementing the extensions?
    - GA: tool support differentiation makes sense for specific needs, for example realtime, not needed for everyone, and if needed, then corresponding tooling is needed
      - MS: good example, keyword “now” likely needed for core language, in practice problematic for switching between tools, also advanced parameterisation (at the time not possible to switch to TITAN), need to discuss which features may be good candidates for pulling into the standard, perhaps shifting to library-based extensions rather than language based extensions

### Which documents are (partially) supported by TTCN-3 tools and/or used by TTCN-3 users?

- JG: In the end users will likely use what is supported by tools, but also which features are implemented that are rarely or never used in practice
- WS: Using only core language, RT handled by test model, differently from RT extension, not keen on having extensions integrated into core, using many tools for different purposes, thus using the lowest common denominator of features that has been continuously supported by tools for over 10 years
- JG: Is Devoteam supporting extensions at all
  - MH: Support OO-features, no users yet, AM, AP, BT?
    - JG: To be discussed in more detail after the workshop
  - GA: Better to prepare a survey and distribute among tool vendors and users, similar challenges at Ericsson, not clear what is used by whom, survey would help to gain more insight

- JG: Workshop discussion needed to get first impression to guide the preparation of the survey
- GA: Titan supports Core (not all features), no TRI and TCI (custom), ASN.1 (partial), JSON, XML, Doc, OO (no users), AP (partial, not needing everything), RT (some users need it)
- MH?/TL: Some features currently not needed, if needed and users demand them, they can / will be added
- WS: Need to identify which features are not used at all, candidates for deprecation or moving to an extension (e.g. procedure-based communication, @lazy and @fuzzy seems to be poorly understood and differently implemented)
  - GA: Continue discussion afterward, based on findings from survey and discussion, move features out of the core as far as possible
  - MS: Consider C# as an example, features marked as required or optional in one and the same document, tag features as needed, e.g. for which extension or simply optional or required, relieves conformance requirements, potentially easier to maintain
    - AL: What is wrong with existing extension documents, not convinced if one document will help to simplify
      - MS: Maintenance is expensive to continue, also for vendors, users, cross-referencing difficult to keep track of, users and tool vendors need to follow everything very closely and still may lead to omissions, difficult to tell if something is incompletely supported is due to omission or by indent
    - JG: Also consider the statements that extensions are only partially supported at the moment
    - JJ: Need to make compliance more clearly expressed, tooling needs to keep up with hardware developments, complexities seem to cause performance issues

### New structure of TTCN-3 standards suite? (see slides)

- TL: Usage examples in the current version are very useful and should be part of the new version, additional examples in the explanatory part, do not move examples to explanatory document!
- WS: Style guidelines - using t3q important for TF 160, style guideline is project specific and established in the long term, official style guideline may be useful, but difficult to adopt, tooling like t3q to be added to the explanatory group?
  - JG: Generally agreed, should not be mandatory
  - GA: There are different guidelines, it may make sense to collect and share on the website or in a separate document
  - GA: Regarding automata descriptions, restrictions - it may be useful to explain justification for decisions, issues with timer and port specifications in the past which were not clear enough, automata descriptions may be helpful to understand things not specified in the text
  - GA: Not updating all documents, leads to inconsistencies overtime that cannot be guaranteed or checked, some duplication and keyword clashes in extensions over time, needs to be checked and need to have a way of limiting their presence and impact
    - MS: Having them in one document can help

- MS: E.g. issues with timers due to missing clarification, often times tool vendors helpful as they have worked on the implementation and clarified issues already
- MS: Need updated guidelines (informative), helps for reference and unified look of test specifications, existing guides are outdated, helps with onboarding and transfer
  - JG: Handling of style guide to be determined, identified as an important aspect
    - MS: Would be interesting to see how different styles compare to each other
- MS: Regarding examples, compare to C#, examples are extracted and used as (conformance) test suite, e.g. to help with validation, would be helpful to have executable examples in the standards
- WS: Need tools to check and enforce style guides (naming conventions etc.), if the guide itself is not enforced it is of limited value, so flexible tooling is most important

### Core language features revisited

- Which features that should be moved out of the core or moved into the core?
  - JG: Need to identify usage of features (existing tools and tool vendors, survey, analysis of test suites, common tool for collecting statistics)
  - GA: Backward compatibility and optionality - optional features (moved out?) would not cause compatibility issues
  - MS: How do we deal with features that are specified by means of other features? e.g. short-hand notations? specification in different ways?
    - JG: Details to be discussed in more detail in subsequent meetings, based on initial findings, e.g. features not used, or features that are heavily used, proposals for new features that are similar to features in extension packages, needs for simplification
- Which (core) features should be simplified? (see slides)
- Harmonisation issues? (see slides)
  - Handling of annexes?
  - MS: Are TRI/TCL also included in the scope?
    - JG: No, will focus first on the language itself, implementation implications are a separate concern

### Miscellaneous and Working Methods

- SM: Share some updates on GitLab switch (see screenshots)
  - general shift to GitLab, retire Mantis
  - discussion and workflow considerations (need to keep existing workflows with states, etc.)
  - any specific needs beyond basics listed already?
  - GA: Is account requirement resolved
    - SM: Discussed on next slide, local accounts, EOL, OmniAuth, Service Desk, Individual User Account (preferred, setup for SDG already)
      - PM: Difference between local accounts and individual accounts?

- SM: Internal management with group management makes things easier for handling permissions and such on ETSI level (also for other services)
- MS: Replicating workflow needs to be clarified, defined and streamlined
  - SM: Materials and support to be provided, process to be simplified, but training should help
  - GA: Key point is that it should be simple for users outside the TTF to participate effectively
- PM: Will the old data be ported to the new system?
  - SM: Likely not, to be avoided, is it worth, is it important?
    - JG: Yes! It should be retained, for historical record and decisions
    - SM: Likely maintain access, but not porting the information
      - GA, JG: As long as it is maintained somehow it should be fine, need to ensure availability
    - MS: Linking should help as well
    - PM: Use export / import functionalities?
      - SM: Difficult, different structures

### Participation of tool vendors and users in TTF work

- Subsequent workshops: Continue along MTS meetings? More if needed?
  - OG: Will participate to an extent, useful, but not part of budget, thus not too frequent, 2-3h every 2-3 months fine, as long as it does not crash with other appointments
  - TL: Will provide comments, may not always participate, generally fine
  - AL: Fine for Elvior
- Participation
  - TL: Not clear impact on users and expanding user base at the moment
    - e.g. merging OO implications not clear, for users, for tool-vendors? efforts for adoption?
      - TODO: EFFORT FOR ADOPTION - emphasise in proposal and also in report
    - GA: intend to maintain compatibility as far as possible, focus on simplification and clarification mostly, clean-up (moving to extension or marking as optional), will make learning easier with fewer features to be concerned with
      - TL?: Will it still be TTCN-3? I.e. in a different shape with the benefits proposed.
  - WS: From a project view, existing suites need to continue to work, some adaptations possible, but biggest problem is onboarding new people due to complexity, feeling that things are too complicated too rooted on computer science / compilation background, need to adapt for easier understanding, not requiring advanced CS degrees
    - MS: Similar observations, large overhead to get started (also from tooling use and setup), terminology sometimes confusing, at times established terms e.g. for type-systems not used
    - MS: Who is the target audience and what kind of background do they have? Testers, Developers, DevOps specialists, etc.? Different points of view may need to be addressed by different means, difficult to decide..

- JG: Finding middle way may be difficult, explaining documents may help to address different audiences

AOB

Closing

- OG: When should the survey be expected?
  - JG: Timeline TBD, questionnaire draft will be circulated for feedback before publishing it