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| **Title\*:** | TDL Roadmap Brainstorming Call Report | | |
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| from **Source**\*: | Institut für Informatik | | |
| Contact: | Philip Makedonski | | |
|  |  | | |
| input for **Committee**\***:** | MTS | | |
|  |  | | |
| Contribution **For\*:** | Decision |  |  |
|  | Discussion |  |  |
|  | Information | **X** |  |
|  |  | | |
| Submission date**\***: | 2020-04-24 | | |
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| Meeting & Allocation: | **MTS-MTS#80-Online** - | | |
| Relevant WI(s), or deliverable(s): |  | | |
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**ABSTRACT:***Summary from the TDL Roadmap Brainstorming Call*

* Attending
  + Emmanuelle (ECT), Andreas (AU), Finn (FK), Martti (MK), Philip (PM), Jens (JG), Gusztav (GA), Daniel Ilie Georghe-Pop (DIGP), Michele (MC)
* Agenda
  + Background
    - STF 577 status update
    - Roadmap available at MTS(20)080001
      * AU: Focus on external factors:
        + RESTful API testing
        + AI testing
        + User requests
      * MC: Parameterised TPs and TDs
        + Recommendation for REST context in particular for TPs
        + See also resolution for TDs
        + To be agreed offline before MTS#80
      * AU: Test coverage in particular for API specifications
        + Methodology and guidelines for capturing and managing requirements, tool support
        + STF 576 can provide initial input for future work on TDL
      * MK: Support from TTCN-3 WG for standardised mapping to HTTP
        + JG: Submitting a CR via mantis is required, discuss internally to prepare contribution
    - Latest TDL WG meeting minutes are available in MTS(20)079035
  + Potential directions:
    - Indentation-based syntax (see also BZ issue) with high priority
    - **REST API specification and testing needs (see separate note, included below)**
    - **Capturing and managing requirements**
    - Generalise behaviour specification (see separate note, included below)
    - **AI Testing initiative**
      * AU: Wide scope, focus on autonomic / self-adaptive systems
        + Methodology (see related WIs)
        + Test specifications, execution
        + Testing needs to be adaptive, beyond predefined test sequences

Tester adapts based on input from SUT and decides what to do next

Design in TDL

* + - * + Ericsson experiences in adaptive testing

GA: Early stages at the moment, potential input in the future

* + - * AU: Start with requirements solicitation
      * PM: Early stage, to be kept in the pipeline for subsequent activities
    - NWM integration
    - Guidelines on integration of repositories and cross references of machine-readable assets, considering ownership, responsibilities, procedural frameworks
  + Brainstorming details (see separate notes)
  + Next steps
    - Reach out to (IoT) TST WG
      * DIGP: at the moment TDL is serving the work sufficiently well
    - Direction(s)
      * Short term focus / mid / long term outlook
      * Review uploaded roadmap offline
    - Initiatives
      * STF / TTF proposal to facilitate continuity of evolution
      * Parallel tracking of related activities
    - MTS / WG meeting contributions
      * Roadmap website (see also MTS / MTS-TDL notes)
      * ToR drafting
    - Deadlines
      * **PM: Share notes after the meeting (including related notes)**
      * **PM, AU: Update roadmap by next week**
      * **PM, AU: Start drafting ToR before MTS#80**
        + Determine scope, resource estimates first
        + To be approved by RC in June
      * **PM, AU: ToR needs to be finalized by August**

The following are related working notes which continue to evolve over time, copied her for reference:

* Mapping to (from?) OpenAPI for restful specification and testing
  + In particular expressing flows for which OpenAPI is not well suited
  + Investigate how resources and URIs can be mapped to data (types) and components for example
    - Pilot effort needed to collect input for potential funded initiative
    - Can potentially be integrated with output from STF 576 and NWM group
  + Define a guideline / standardised mapping if necessary
  + Add CR once this is more matured
* TDL for OpenAPI in broader terms
  + Mapping / importing data and datatypes from OpenAPI
  + Deriving TDL TDs and TPs from OpenAPI
    - Is that even possible?
    - What is the extent of the information that needs to be extracted?
      * Data types, values, instances
      * Requests, responses can be turned into when/then statements in TPs, interactions in TDs, with manual annotation / refinement embedded in them or defined externally so that an automated syncronisation does not impact the manual additions
  + Derivation of executable TTCN-3 in a standardised manner
    - **Would also be a good idea to define standardised mapping to HTTP for TTCN-3**
    - Contribution from MEC STF
      * Headers
      * Payloads (JSON-schema-based)
      * Clear definition and recommendation for mapping
      * Tool support
  + Data handling and mapping
    - Hiding members in derived types might be needed for PATCH operations
    - Data types describing alternative data types or combinations of data types
    - Need to investigate whether and how this needs to be supported within TDL
* Generalised behaviour specification
  + Currently test descriptions are the main behavioural unit
  + We may need a generic unit that captures a more open notion that can be used in broader context and then embedded in a test description
    - A test description would then become one possible container
    - This way it can be more convincing during specification (unless TDD is used)
  + Does this stretch TDL too far beyond its scope?
    - Focus was initially on testing
    - Can still be a useful for broader purposes and audiences, however it needs a different argumentation and in particular how it compares to MSCs and UML sequence diagrams
    - Need to have better understanding of what is stopping users from adopting it - if it is just the naming, it shouldn't be too much of a concern