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Tutorial Title:	How to implement TTCN-3 codecs and adapters efficiently
Intended Audience:	Any test developer interested in methods and tools for implementing codecs and adapters using the TRI & TCI interfaces

Tutorial Overview

TTCN-3 provides a well suited environment for any kind of black-box testing activity. Implementing an executable test suite consists of two main tasks: the specification of the abstract test suite (in the TTCN-3 language) and the development of adequate codecs and adapters to handle the interactions with the System Under Test (SUT). Depending on the SUT and the testing architecture, this later step can be complex. Thus, it is important for test developers to find a way (methods and tools) that eases this step.

The developer is free to implement the codecs and adapters in C/C++ or in Java. To ensure the portability across different TTCN-3 tools, the interactions between the runtime system and these modules are based on two standard interfaces: the TRI (TTCN-3 Runtime Interface) and the TCI (TTCN-3 Control Interface).

Through a series of simple examples (HelloWorld, Quiz, DNS) this tutorial will explain step-by step, the process of developing an executable test suite, focussing in particular on the development of the adapters and the codecs. These examples will make use of T3DevKit. It is a free open-source toolkit developed by IRISA Laboratory in Rennes (France) that eases the implementation of codecs and adapters by providing a framework and reusable software components to handle the usual tasks (memory allocation, multiplexing of TRI/TCI calls, synchronisation of TTCN-3 & C++ types, build scripts, ...).

Tutorial Structure and Timing

Total duration: 2h00

1. The TTCN-3 development process: from *Abstract Test Suite* to *Executable Test Suite (20 mn)*
2. The TTCN-3 standard interfaces TRI & TCI *(15 mn)*
3. Overview of T3DevKit features *(10 mn)*
4. Examples showing how to implement codecs and adapters with T3DevKit *(75 mn)*
    1. HelloWorld: a basic test-case that outputs "Hello World!'
    2. Quiz: a simple questions/answers game implemented in TTCN-3
    3. DNS: a real-life application: testing a DNS server

Tutorial Materials

Slides and demos

Further Details (optional)

A similar tutorial was presented at the last T3UC in June 2009 at Sophia Antipolis and the presentation got good reception from the attendees. This new proposal is intended to transfer these practices to the Asian audience.

It may be possible also for attendees that have a TTCN-3 environment on their laptops to download T3DevKit and to try the examples above by themselves.