TTCN-3, the global testing language

The Testing and Test Control Notation version 3 (TTCN-3) is THE standard testing language. First published in 2000, it has become a well established mature testing technology. The flexibility and adaptability of this internationally standardized language has led to its rapid deployment in several traditional domains, including telecommunications, automotive, transportation, Internet, medical, web-based services, finance, industrial automation, and distributed systems. In addition, its use has expanded from conformance and functional testing to include load, performance, interoperability and security testing.

TTCN-3 fits perfectly into a chain of standardized languages, supporting the stepwise development of tests from specification, via test descriptions and abstract test cases to executable test cases.

The language has been specifically designed for testers’ efficiency, automated regression testing and continuous integration in both agile and more conventional SW development models. It expresses tests (test scripts) independent of the actual test environment and execution platform used, hence allowing users to concentrate on what and how they want to test rather than having to focus on low-level implementation details such as data encoding or the transport means used. TTCN-3 has powerful programming constructs specific to testing such as the creation of dynamic test configurations, synchronous and asynchronous communication mechanisms, very powerful data matching mechanisms, built-in verdict assignment, timer handling and logging features etc. The well-defined syntax and operational semantics allow a universal and common understanding of the meaning of the tests. It also allows using specifications developed in XSD, ASN.1 and IDL directly in TTCN-3 test suites, define JSON schema in TTCN 3 and serialize/deserialize TTCN 3 data in JSON that significantly increases test and test tool development efficiency.

As the result of the above, its use has expanded from conformance and functional testing to include load, performance, interoperability and security testing. TTCN 3 is one of the main functional and load testing solutions for at least one major telecom network equipment manufacturer.

All TTCN-3 standards are owned and continuously maintained and developed by ETSI Technical Committee Methods for Testing and Specification (TC MTS).

The Annual International User Conference on Advanced Automated Testing (UCAAT)

Since 2004 ETSI has organized a very successful series of yearly user conferences on TTCN-3 (T3UC) that brought together testing experts and engineers from industry, research and academia. An archive of all past TTCN-3 user conference presentations can be found at: http://www.ttcn-3.org/index.php/community/events

In 2013 T3UC was integrated into the new ETSI User Conference on Advanced Automated Testing (UCAAT), details of which can be found at http://ucaat.etsi.org

UCAAT very much follows the T3UC model, but with a wider scope to cover many aspects of automated testing, including TTCN-3 and Model-Based Testing techniques.
**List of ETSI TTCN-3 standards and their ITU-T Rec. numbers**

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The Language is continually maintained by ETSI, change requests can be proposed: [www.ttcn-3.org/index.php/community/change-requests](http://www.ttcn-3.org/index.php/community/change-requests)

Users can track the change history of these standards via the links provided at: [www.ttcn-3.org/index.php/downloads/standards](http://www.ttcn-3.org/index.php/downloads/standards)

For further details on TTCN3 please visit: [www.ttcn3.org](http://www.ttcn3.org)

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[www.etsi.org](http://www.etsi.org)

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