

## Methods for Testing and Specification

Did you know that **YOUR PHONE**...



As standards and interoperability have become crucial factors in market success, the way that standards are written is of critical importance. ETSI's aim has always been to produce documents that are easy to understand and easy to use. ETSI's Methods for Testing and Specification Technical Committee (TC MTS) creates standards related to testing and specification languages, and provides frameworks and methodologies to enable the other ETSI committees to achieve this goal.

TC MTS works very closely with ETSI's Centre for Testing and Interoperability (CTI) to develop the background material which they then use in their support of other ETSI committees as well as other relevant standardization bodies such as ITU Study Group 17. Much of work done by TC MTS has also been adapted and used beyond ETSI by other organizations, fora, and industry globally.

TC MTS is attended by a mixture of experts from major network operators, test service providers, telecommunication equipment vendors, test tool vendors and acclaimed research institutes. They come to MTS meetings to further develop, profile and adapt state-of-the-art test and specification technologies, to enable a competitive tool market for these technologies, and to be part of the development of guidelines on how use them in the standardization context.

## TC MTS achievements to date

TC MTS has made significant achievements in the development and use of specification languages. Many of the well-known ETSI base standards such as LTE™, UMTS™, GSM™, DECT™, and IMS™ have accompanying test suites to ensure that devices can be tested for conformance to the appropriate standards as well as their interoperability. In the area of IP-based technologies TC MTS has responded to our members' needs by developing established test suites for the IPv6 protocol and SIP-based Voice over IP (VoIP). These test specifications are normally developed in TPLAN (Test Purpose Language) and in TTCN-3 (Testing and Test Control Notation), the standardized test specification languages. TTCN-3 has been developed by MTS and endorsed internationally by ITU-T as Recommendation series Z.16x and Z.17x.

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

Since 2013 ETSI's TC MTS has organised the ETSI User Conference on Advanced Automated Testing (UCAAT). The conference is dedicated to addressing the engineering and application aspects of testing methodologies and advanced test automation. This conference offers an ideal opportunity for test designers, engineers working in test specification and automation, novices as well as testing experts, quality and/or project managers, and for test tool and service providers from around the world to come together to see, hear, share experiences and learn about the latest advances in the industrial use of test automation.

Full details of past and upcoming UCAAT conferences can be found at <http://ucaat.etsi.org>

## Frameworks and guidelines

TC MTS has developed numerous methodologies and testing frameworks and provides guidelines for standards engineering. The committee's work on interoperability testing has already been put to practice in numerous ETSI Plugtests™ test events.

Model-based testing is another testing technique that has gained increasing attention. Model based testing has already proven itself in industry as a mature testing technology that leads to significant increase of productivity. It can also provide implementers of standards access to much wider test sets.

In addition, TC MTS has developed several standards for cyber security.

## A very busy future for TC MTS

The evolution of the TTCN 3 language and the development of guidelines for its use will continue to be major activities as new requirements from growing areas like Internet of Things (IoT) are identified and global industrial uptake continues. To accelerate the adoption of TDL, TC MTS has commissioned an open-source reference implementation of TDL in order to lower the barrier to entry for both users and tool vendors in getting started with using TDL. The reference implementation comprises graphical and textual editors, validation facilities, as well as a UML profile for TDL to enable the application of TDL in UML-based working environments. Since October 2017, TDL Open Source Project (TOP) is available as an ETSI open source software project accessible from the TDL website and open to contributions from the community.

TC MTS has just launched a new Testing Working Group (TST) which will develop studies, guidelines, test catalogues and test specifications for specific ICT technologies that are not already covered by existing ETSI Technical Bodies.

The types of testing can include, but are not limited to, conformance, interoperability, security and performance testing.

The initial technical focus of the TST Working Group will be:

- IoT network layer (communication protocols, node connectivity, edge computing etc.)
- IoT layer (data accumulation and aggregation)
- Application layer (interfaces, business processes etc.)

For further details on MTS please visit:

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



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**ETSI** provides members with an open and inclusive environment to support the timely development, ratification and testing of globally applicable standards for ICT-enabled systems, applications and services across all sectors of industry and society. We are at the forefront of emerging technologies. We address the technical issues which will drive the economy of the future and improve life for the next generation. We are a not-for-profit body with more than 850 member organizations worldwide, drawn from 68 countries and five continents. Members comprise a diversified pool of large and small private companies, research entities, academia, government and public organizations. ETSI is one of only three bodies officially recognized by the EU as a European Standards Organization (ESO).

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