Testing Technologies

# TTCN-3

## The Only Standardized Test Technology Enabling Test Automation

The Testing and Test Control Notation TTCN-3 is a modern, powerful test language that supports all kinds of black-box testing. TTCN-3 was developed at the European Telecommunications Standards Institute (ETSI) and is the only standardized test specification language (also adopted at ITU-T).

### Typical Areas of Application

- Protocol and service testing
- Component, integration and system testing
- Testing of embedded, communication-based, and distributed systems

### Application Domains

- Mobile communications (LTE, WiMAX, 3G, TETRA, GSM)
- Broadband technologies (ATM, DSL)
- Middleware platforms (WebServices, CORBA, CCM, EJB)
- Internet protocols (SIP, IMS, SIGTRAN and IPv6)
- Smart Cards
- Automotive (AUTOSAR, MOST, CAN)

### Unique Feature Set

- Dynamic concurrent testing configurations
- Synchronous and asynchronous communication mechanisms
- Encoding information and other attributes (including user extensibility)
- Data and signature templates with powerful matching mechanisms
- Test verdict mechanisms
- Test suite parameterization and test case selection mechanisms
- Harmonized with ASN.1, IDL, XML, and other languages
- Well-defined syntax, interchange format and static semantics
- Optional presentation formats (textual, graphical, tabular)
- Precise execution algorithm (operational semantics)
- Test suite and test system control

As recent developments show, industry and research start focusing more and more on testing with TTCN-3. This universal and adaptable testing language provides all necessary concepts and tools to cover the ever increasing test service requirements.

 • More information at www.testingtech.com

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# Benefits of TTCN-3

## Less Time and Costs

- Reduction of development time for new testing platforms by 20 to 30 percent
- 30 to 50 percent savings in implementation efforts (adaptation and maintenance of test suites)

## Quality

- Testing in early design stages
- Systematic, automated test methods

## Well Established on the Market

- Manufacturers - Motorola, Siemens, Nokia, ...
- Carriers - Vodafone, France Telecom, O2, ...
- Test Devices - Tektronix, Agilent, Aeroflex, Rohde & Schwarz, ...

## Secure Investments

- Repeatability and continuous development
- Wide area of application test support and common methodology on a standardized level

## Multi-Purpose Testing Language

- All kinds of black-box testing (conformance, performance, interoperability etc.)
- Development of technology-independent test suites
- Suited for a wide range of application areas and domains

## User-Friendly Handling

- Easy graphical specification of test cases
- Full test execution control on test case and test suite level
- Clear visualization of complex test scenarios and clearly structured test documentation

## Highest Flexibility in Designing and Maintaining Test Software

- Specification in various presentation formats (textual, graphical, tabular)
- Support of automated and distributed testing
- Same set of test functionalities usable in different contexts

## Simple Test Adaptation

- Easy adaptation of existing test suites
- Easy implementation into existing systems via standardized interfaces (TRI/TCI)

## Global Standard

- The only internationally standardized test technology specifically designed for testing
- Maintenance and continuous enhancements guaranteed