Testing Cooperative Intelligent Transport Systems

Intelligent Transport Systems (ITS) embrace a wide variety of communications-related applications intended to increase travel safety, minimize environmental impact, improve traffic management and maximize the benefits of transportation to both commercial users and the general public.
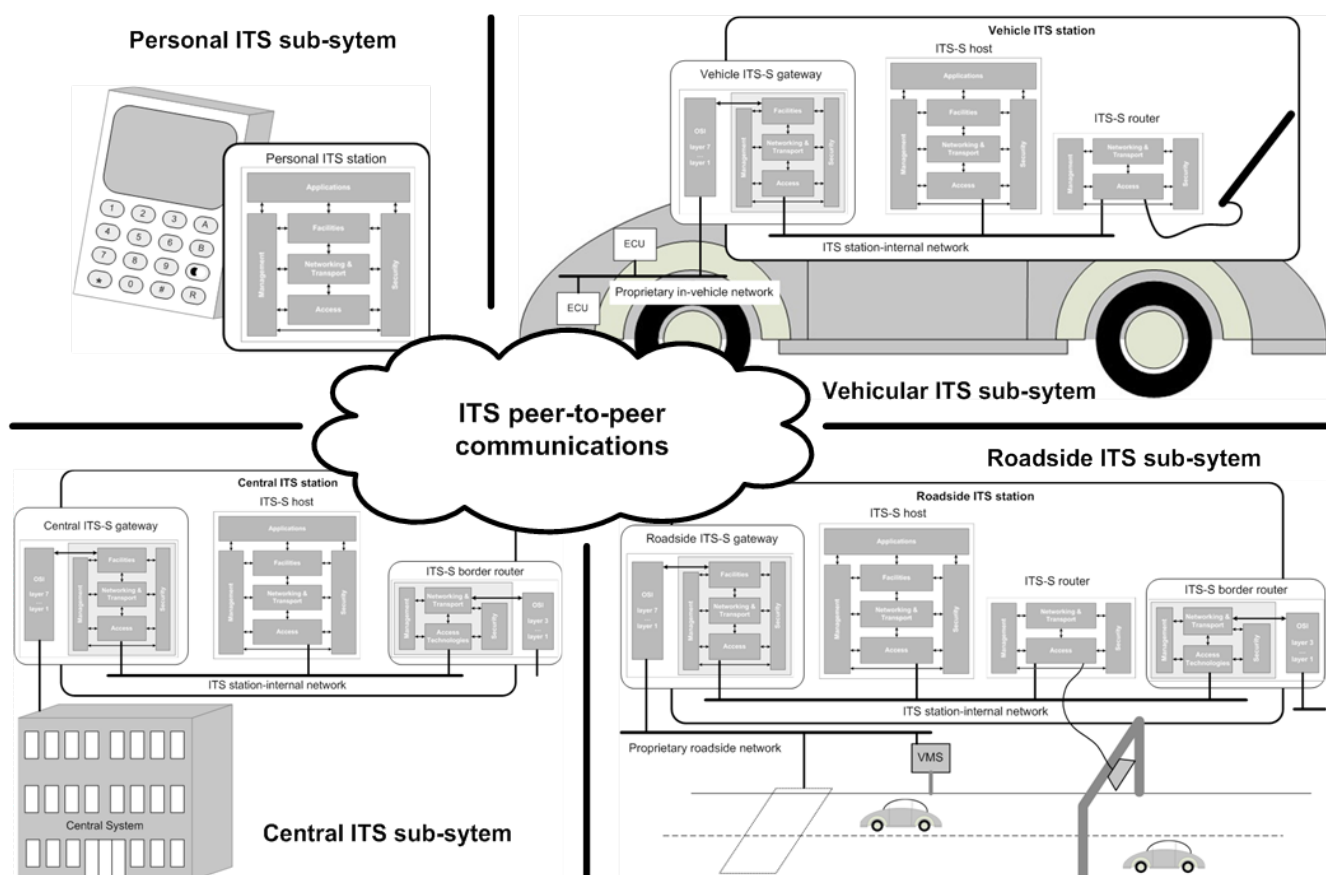
In Cooperative ITS (C-ITS), vehicles communicate with each other and/or with roadside infrastructure, greatly increasing the quality and reliability of information available about the vehicles, their location and the road environment. This will bring major social and economic benefits and lead to greater transport efficiency and increased safety.

ETSI has a particular focus on developing test specifications for Cooperative ITS.

The essential characteristic of C-ITS is the sharing of data between different applications both inside the same ITS station and across several ITS stations, where ITS stations are operated as bounded, secured and managed domains.

The overall work of the standards committees results in a "standards tool-box" used for designing products for the various domains of C-ITS.

ETSI has taken a global role in conformance and interoperability testing, by developing test specifications for standards published by all the standards bodies involved in C-ITS. This work is done using the support of ETSI Specialist Task Forces (STFs) and has been co-funded by the European Commission.

Test specifications for C-ITS

ETSI has developed an overall approach for testing ITS with a Conformance and Interoperability Testing Framework. Specific test specifications were developed in a number of ETSI Specialist Task Forces funded by the European Commission:

ETSI EG 202 798	Framework for conformance and interoperability testing
ETSI TS 102 859	Conformance test specifications for Transmission of IP packets over GeoNetworking
ETSI TS 102 868	Conformance test specification for Co-operative Awareness Messages (CAM)
ETSI TS 102 869	Conformance test specification for Decentralized Environmental Notification Messages (DENM)
ETSI TS 102 870	Conformance test specifications for GeoNetworking Basic Transport Protocol (BTP)
ETSI TS 102 871	Conformance test specifications for GeoNetworking ITS-G5
ETSI TS 102 916	Test specifications for the methods to ensure coexistence of Cooperative ITS G5 with RTTT DSRC
ETSI TS 102 917	Test specifications for the channel congestion control algorithms operating in the 5,9 GHz range
ETSI TS 103 096	Conformance test specifications for ITS Security
ETSI TS 103 191	Conformance test specifications for infrastructure services
ETSI TS 103 525	Conformance test specifications for ITS PKI management
ETSI TR 103 099	Architecture of conformance validation framework

Globally applicable test platform for C-ITS

ETSI has developed a C-ITS conformance test platform, offering abstract test suites for the whole set of C-ITS standards.

This test platform can run conformance tests against C-ITS equipment. It allows ETSI to validate test specifications and corresponding base standards, and thus is efficiently supporting the standardization process in various SDOs.

The conformance test platform is publicly available to interested parties, and developers of C-ITS equipment and protocol software are invited to use it.

For further information on ETSI's ITS testing activity, please contact:

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