



Welcome to the World of Standards

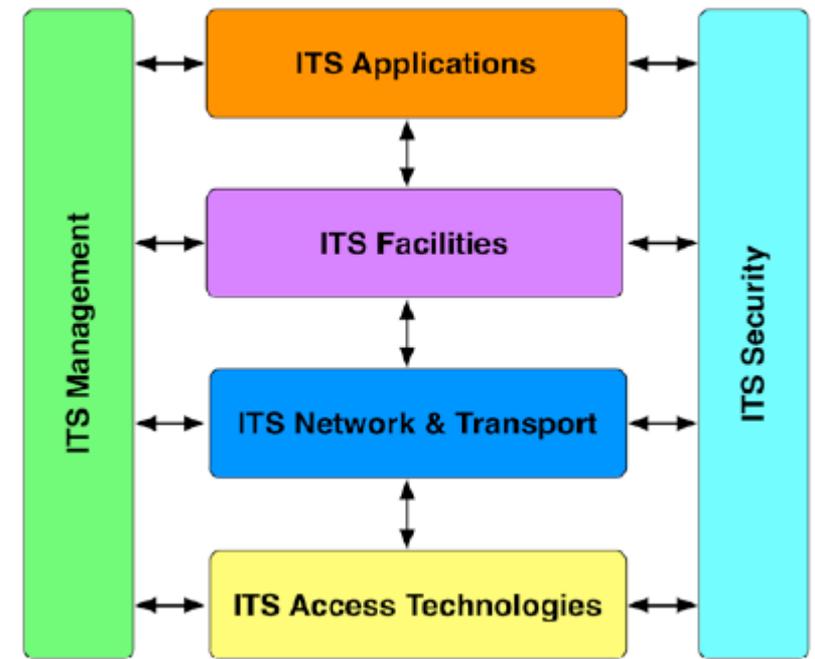
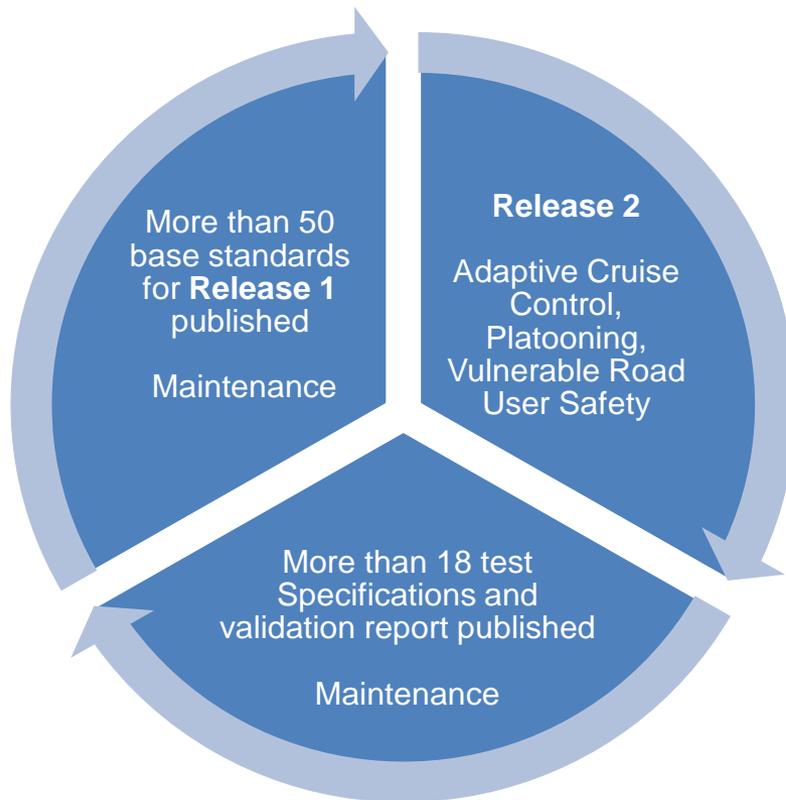


A TTCN-3-BASED COMPLIANCE ASSESSMENT FRAMEWORK FOR INTELLIGENT TRANSPORT SYSTEMS (ITS)

UCAAT, 17 September 2014, Munich

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ETSI TC ITS – Minimum set of standards for interoperability



Application

- V2V/V2I standards

Facility

- EN 302 637-2 CAM
- EN 302 637-3 DENM

Transport/Network

- EN 302 634-4-1 GeoNetworking

Access

- IEEE 802.11p profile
- Congestion Control

Security

- TS 103 097 Security Header and Certificate Formats
- Public Key Infrastructure (PKI)

Release 1

- TR 101 607 published

Source



C2C-CC Organisation

Development and deployment of ITS

Partners with strong strategic interest



700 members from 60 countries driving ICT Standardization
Member and consensus driven
European Commission acceptance - regulatory role
ETSI TC ITS standardization activities for ITS



Standards organisations
27 member states

Deployment preparation towards a competitive environment

- Profiling of standards
- Minimum performance Requirements
- Position and Time
- Forwarding capabilities

- Message formats
- Triggering conditions
- System requirements

Systems specification

Sender application specification

Security PKI

Compliance assessment

- Public Key infrastructure
- Security/privacy policies

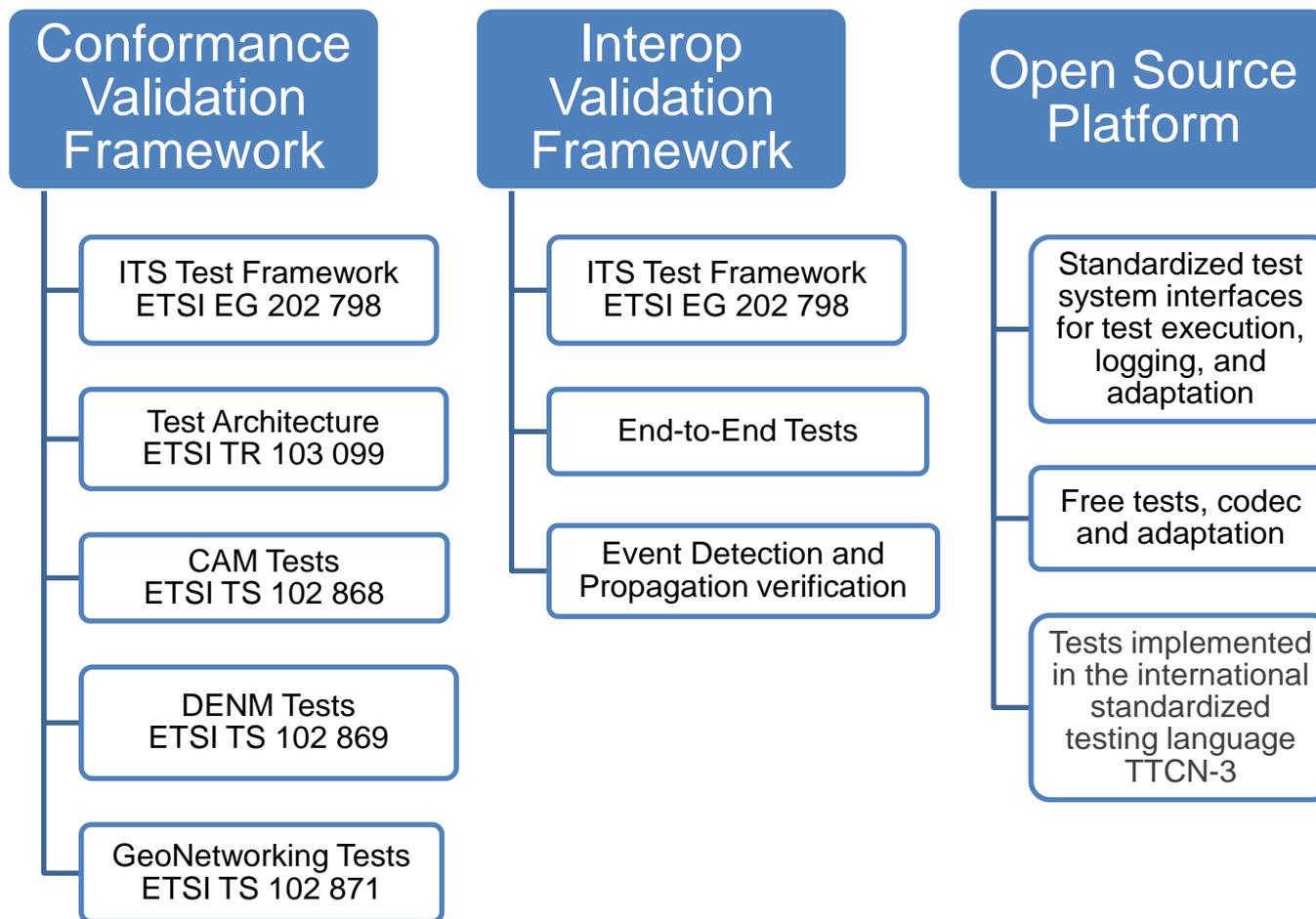
- Compliance assessment/ certification and test procedures

compass 4D

Certification framework for cooperative ITS for COMPASS4D smart cities applications

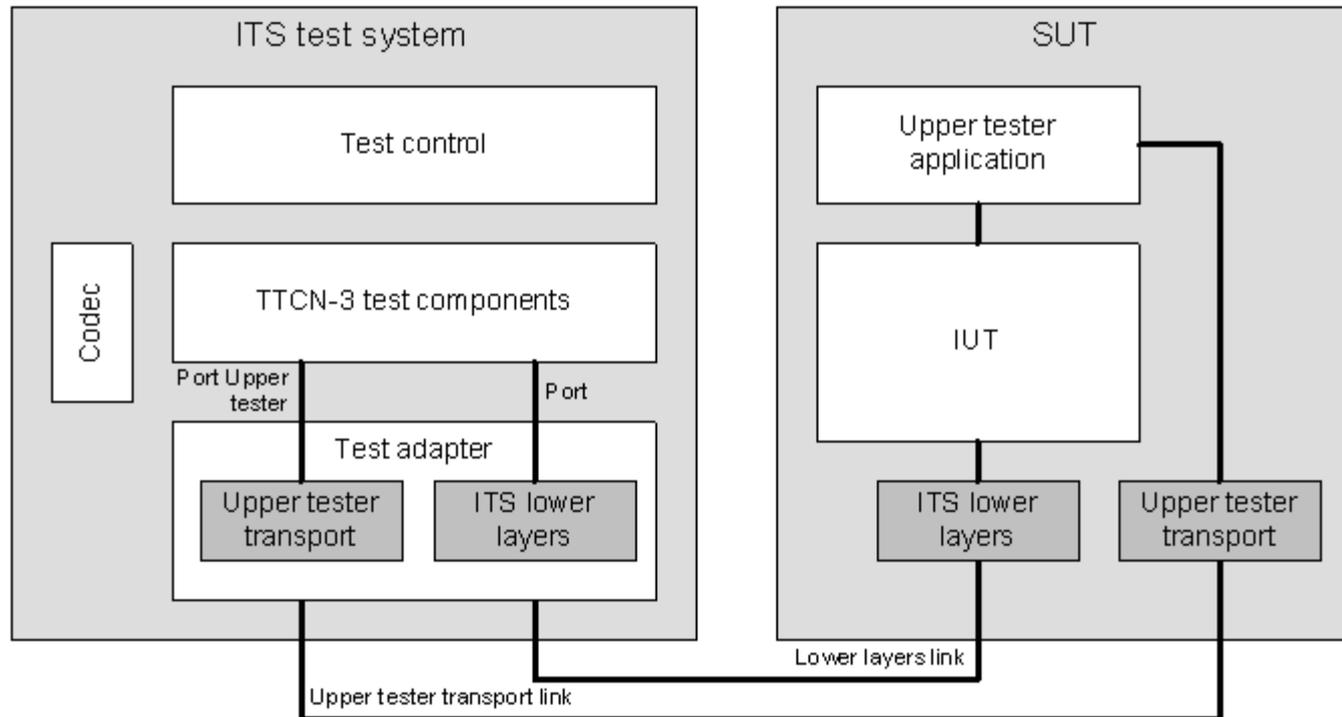
Road Hazard Warning (RHW)
Red Light Violation Warning (RLVW)
Energy Efficient Intersection (EEI)



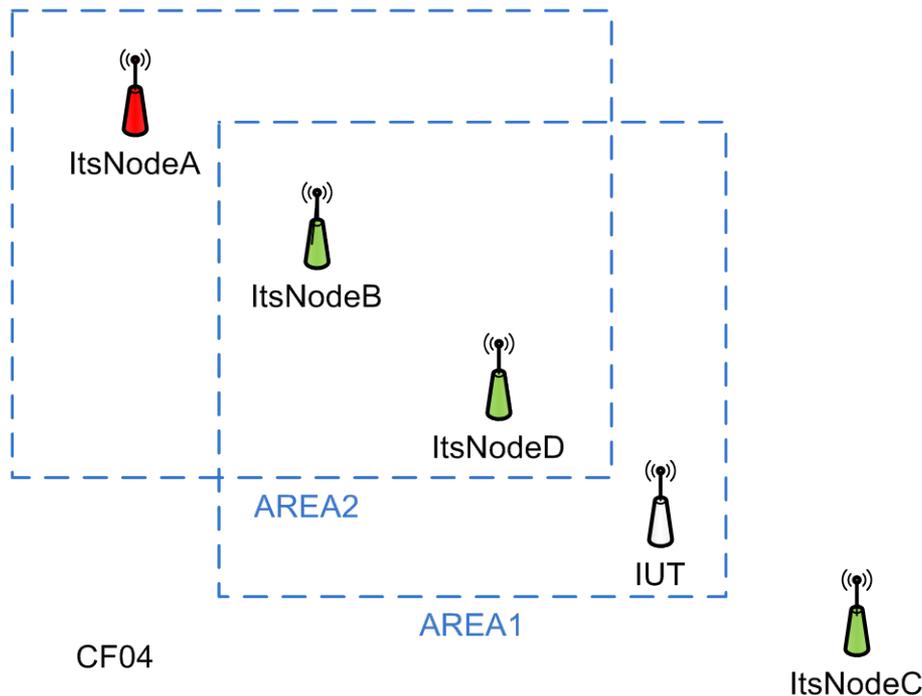


65 person month of effort invested since 2010

Conformance Test Architecture

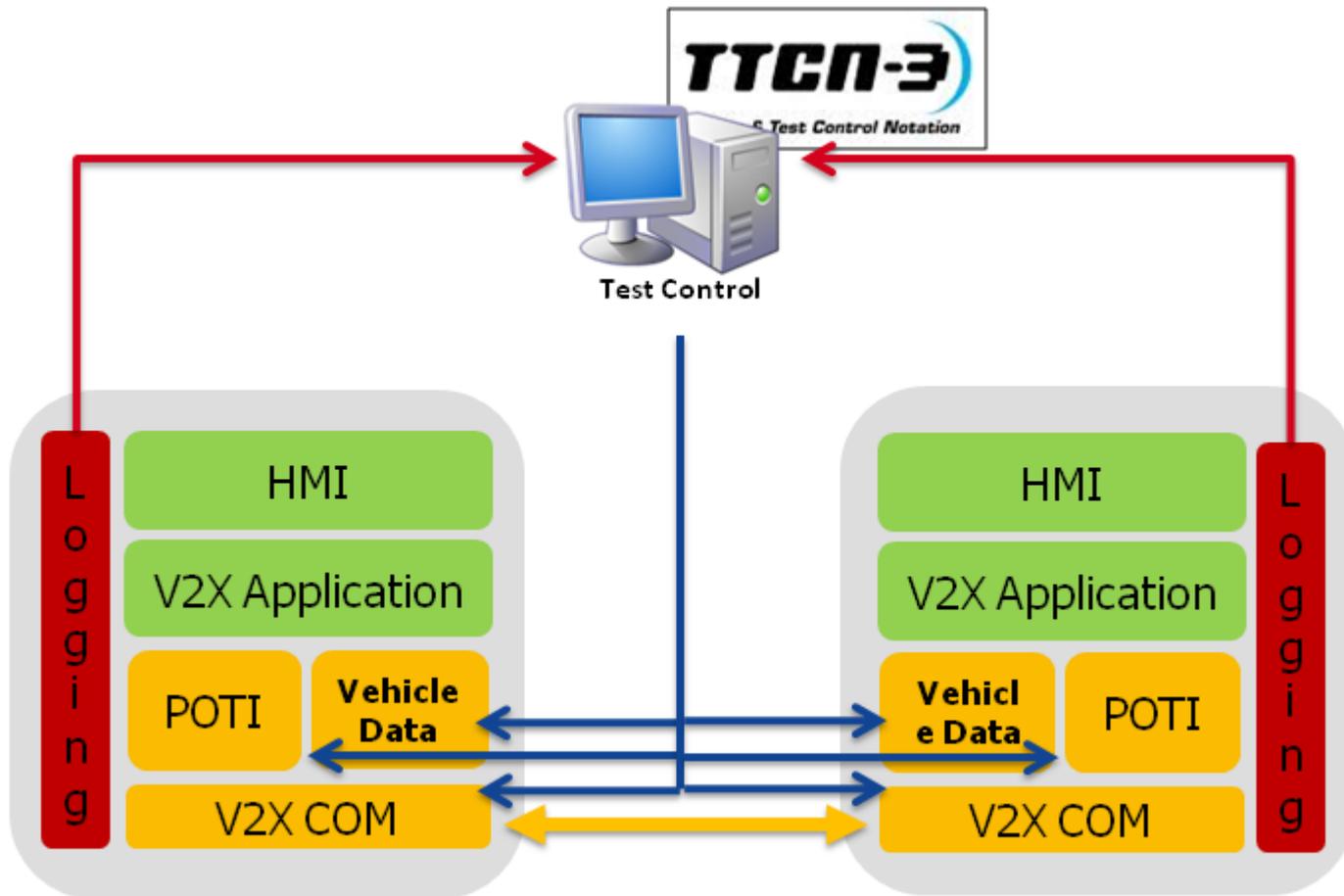


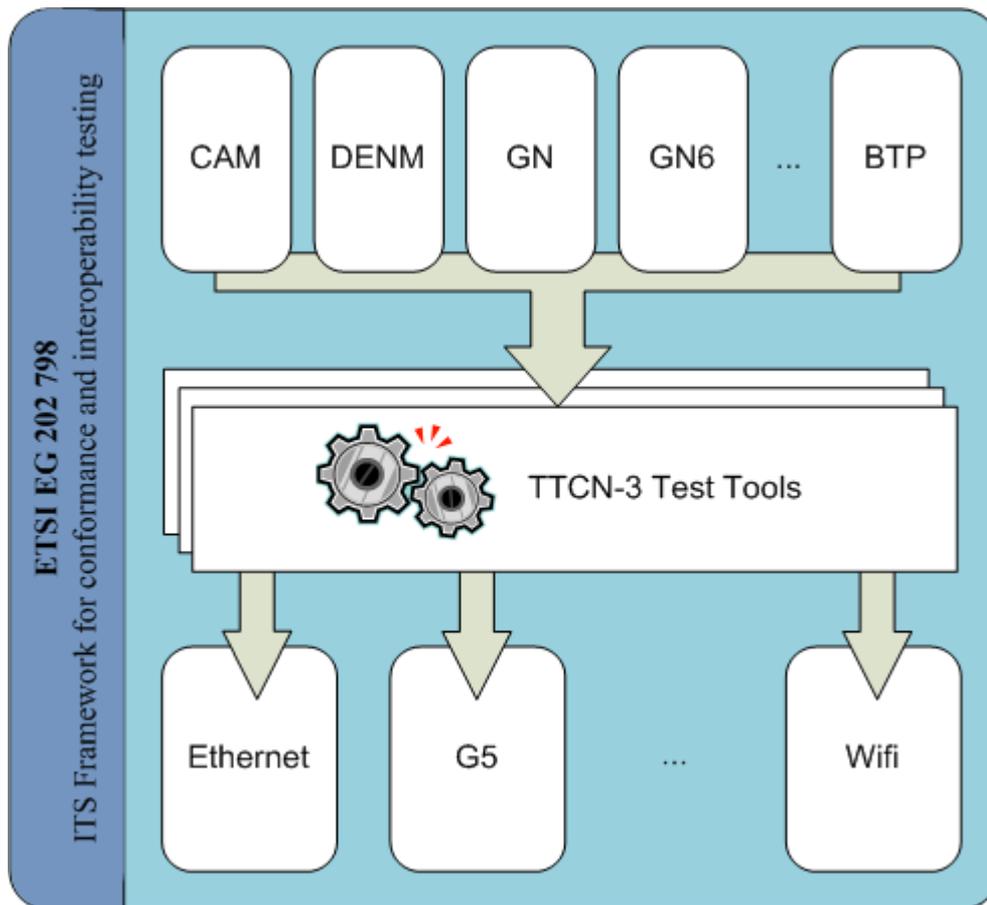
Conformance Test Configuration



- ItsNodeA is not in IUT's communication range
- ItsNodeA is in Area 2
- ItsNodeB is in IUT's communication range
- ItsNodeB is in direction of ItsNodeA
- ItsNodeB is closer to ItsNodeA than ItsNodeD
- ItsNodeB is in Area 1
- ItsNodeB is in Area 2.
- ItsNodeB is close to the center of Area2
- ItsNodeC is in IUT's communication range
- ItsNodeC is not in direction of ItsNodeA
- ItsNodeD is in IUT's communication range
- ItsNodeD is in direction of ItsNodeA
- ItsNodeD is in Area 1
- ItsNodeD is in Area 2
- IUT is in Area 1

Interoperability Test System





- Extensible with future ITS protocol tests
- Platform-independent in using Java
- Usage of ANSI C as adaptation possible as well
- Compatible with TTCN-3 tools
- Multi link layer support

Software is distributed via ETSI source forge under CeCILL-C license
<https://forge.etsi.org/svn/ITS/>

- Major ITS deployment preparations towards a competitive environment and region wide interoperability
- Testing (and TTCN-3) is integral part of deployment roadmaps
- ETSI Release 1 covers for initial deployment with Basic Warning Services
- Work on ETSI Release 2 has started with focus on fusion of ITS and Smart Cities, automation and advanced services
- In future more testing services are required
- Join the ITS Testing Community!

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Thank you!