



World Class Standards

Interoperability and Testing

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Testing Expert

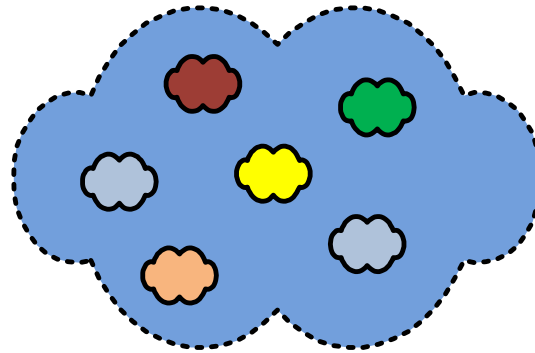
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ITS Workshop, 11 February 2010, ETSI

Standards and Interoperability (IOP)

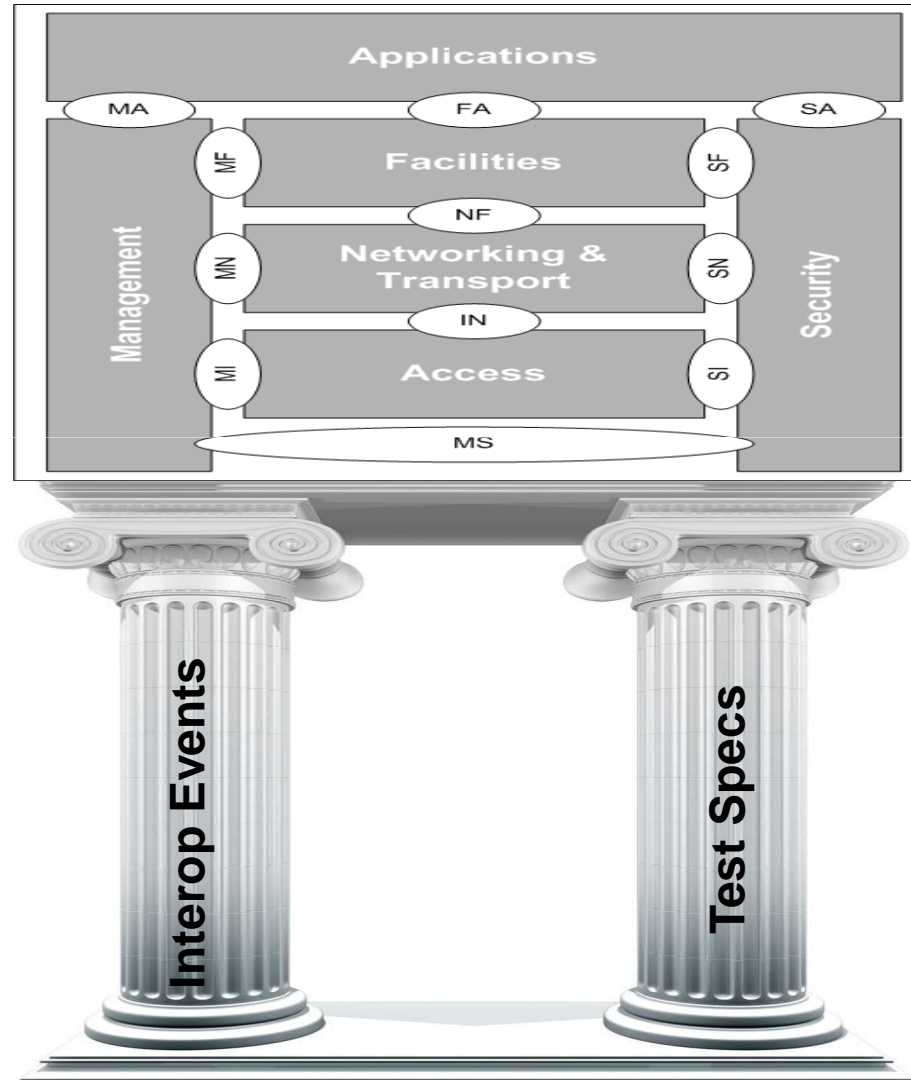
- ❑ **Standardisation enables interoperability**
 - One main aim of standardisation is to enable interoperability in a multi-vendor, multi-network, multi-service environment
- ❑ **IOP is the red thread running through the entire ETSI standards development process**
 - Interoperability is specified from the beginning
 - Not something 'bolted on' at the end
- ❑ **Standardized testing solutions for standardized development environments**

From Complex Standards ...



- ❑ **Complex ICT standards are increasingly specified by ‘islands of standards’**
 - From different standardization bodies
 - Or developed for a different (original) use
 - Complete system not specified in detail
- ❑ **Results in potentially non-interoperable standards and/or products**

... to Robust Standards





Overview of ITS Testing Activities

Protocol	Type	Status
CALM 21218	Conformance	published as ETSI TS 102 760
DSRC LLC and AL	Conformance	approved, to be published as TS 102 708
ITS Testing Framework	Conformance and Interoperability	Active (EG 102 798)
ITS GeoNetworking	Conformance	starting in 2010
CALM 24102	Conformance	WI created
CALM 29281	Conformance	WI created
CALM 21210	Conformance	WI created
CALM 21214	Conformance	WI created
CALM 21215	Conformance	WI created
CALM 21217	Conformance	WI created

Plugtests™ can look like this...



Des experts en télécommunications venus de toute la planète testent entre eux aux Ursulines les produits qui seront demain sur le marché.



World Class Standards

... or this (Car2Car Interop)



Thank you for your attention!

Useful links:

- ❑ **Interoperability events:**

 - <http://www.etsi.org/Website/OurServices/Plugtests/home.aspx>

- ❑ **Presentation on Achieving Interoperable Standards**

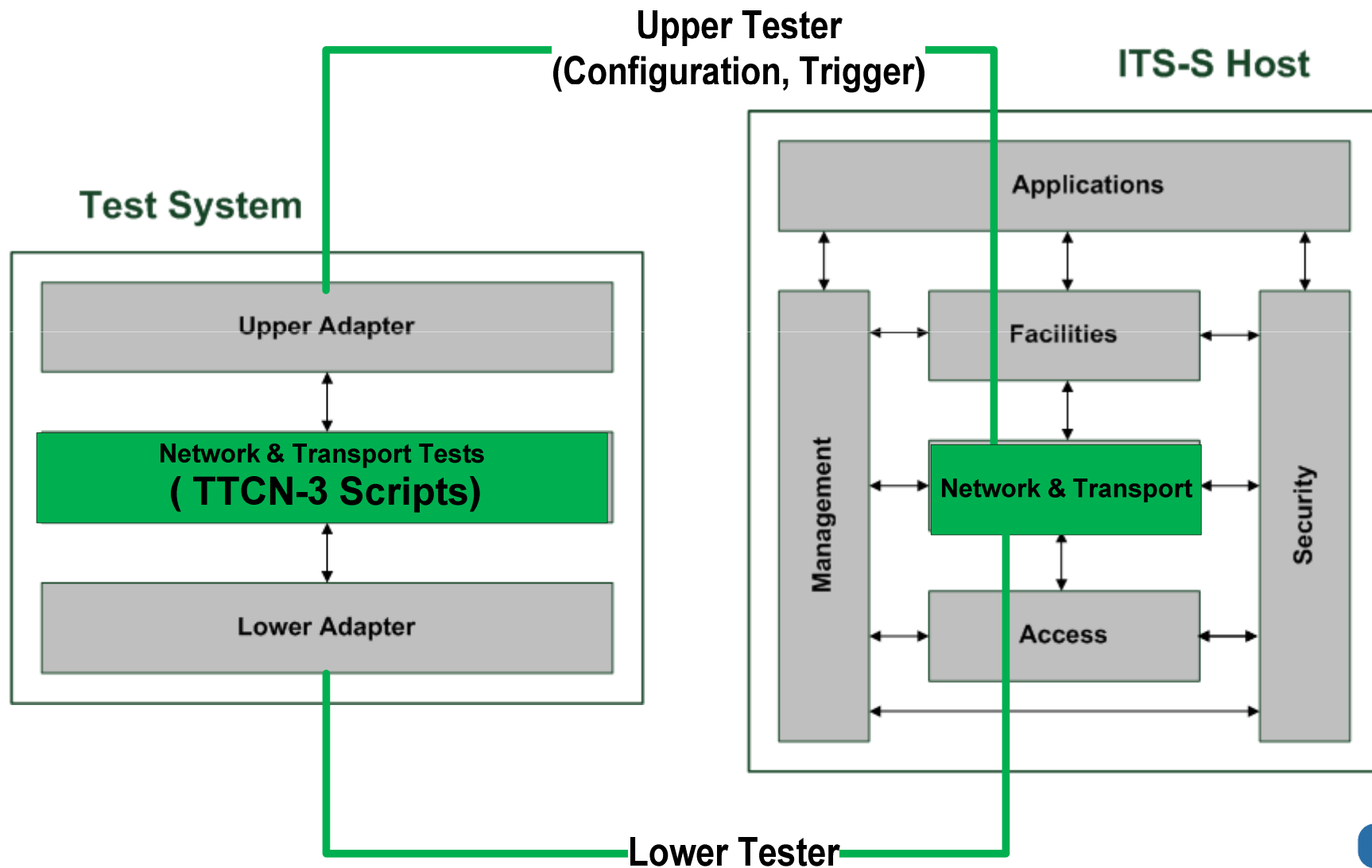
 - <http://www.etsi.org/WebSite/document/aboutETSI/CTI/Achieving%20Interoperable%20Standards%20-%20The%20ETSI%20Approach%20v1.pdf>

- ❑ **Whitepaper on Achieving Technical Interoperability**

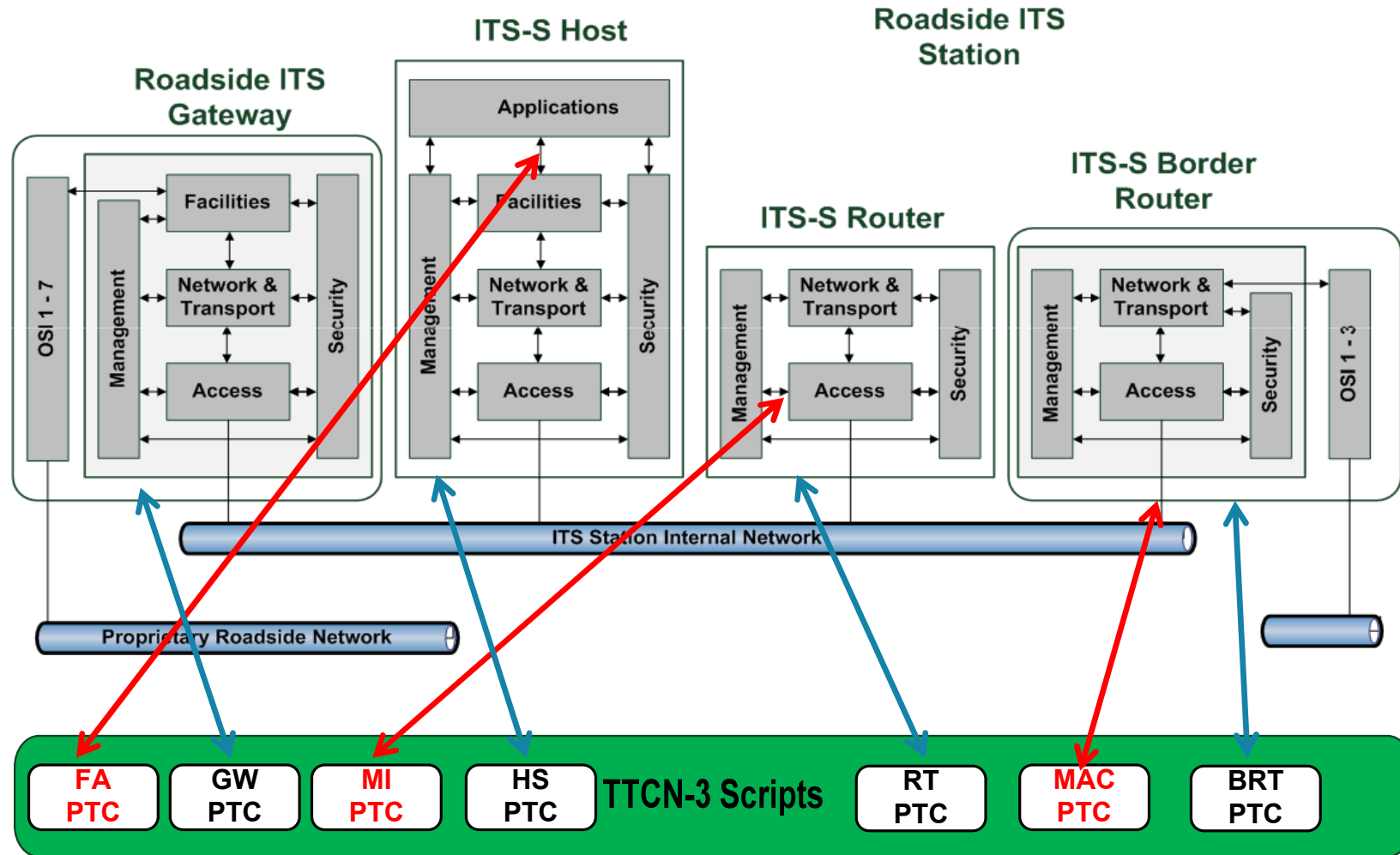
 - http://www.etsi.org/WebSite/document/whitepapers/WP3_IOP_final.pdf



Conformance Testing



Interoperability (IOP) Testing





Some ETSI TTCN-3 Test Suites

- IPv6 (TC MTS)**
 - Core, Security, Mobility, Transitioning
- IMS (TC INT & TC TISPAN)**
 - Interoperability, Network Integration, ISDN Interworking, Supplementary Services
- WiMAX (TC BRAN & WiMAX Forum)**
 - Conformance (PCT, NCT), Interoperability
- Intelligent transport (TC ITS)**
 - Direct Short Range Communication (DSRC)
- LTE (3GPP)**
 - UE conformance)
- DMR/DPMR (TC ERM)**
 - Terminal conformance
- SIP (TC MTS)**
 - RFC 3261 UA and Proxy conformance