ETSI and Interoperability

Standardisation enables interoperability

- Enabling interoperability in a multi-vendor, multi-network, multi-service environment

Interoperability is the **red thread** running through the entire ETSI standardization process

- Interoperability is addressed from the beginning
- Not something ‘bolted on’ at the end, it must be built-in
Typical Causes of Non-interoperable Standards

- Requirements not well identified or missing
- Ambiguous requirements
- Varying technical quality and use of language
- Inadequate handling of options
- Lack of clear system overview
- Loose definition of interfaces (reference points)
- Poor maintenance
- Using standards beyond their original purpose
- ...
How to develop interoperable and robust standards

There is no Silver Bullet, but ...

ETSI takes a pragmatic approach

- Write high-quality standards
- Ensure that the standards specify the right thing
- Encourage & support correct implementation of standards
Standards Development - Three Best Practices

- **SPECIFICATION**: Application of good standards engineering principles, guidelines and techniques
- **VALIDATION**: Validation of standards as an active part of the development process. Mainly through peer review and interoperability events
- **TESTING**: Development of standardised test specifications for key technologies
Standards Development - Three Best Practices

**SPECIFICATION**
- Write High Quality Standards

**VALIDATION**
- Ensure that the standards specify the right thing

**TESTING**
- Encourage & support correct implementation of standards
ETSI Support for Interoperability

Technical Committee Methods for Testing and Specification (MTS)

- Standardised frameworks, methodologies, languages
  - For protocol specification
  - For testing

Centre for Testing and Interoperability (CTI)

- Direct support to ETSI Technical Bodies
- CTI experts can be attached to a standardization group and provide hands-on assistance
CTI Support to TBs for the Development of Interoperable Standards

Support ETSI Technical Committees on the application of best practice protocol specification methods, techniques and tools. e.g., ASN.1, UML, MBT (Model Based Testing)

Support ETSI Technical Committees on the validation of standards. Mainly Plugtests events (organisation and provision of testing expertise)

Support ETSI Technical Committees on ALL testing aspects including the development of test frameworks, methodologies, test specifications. Mostly through Testing Task Forces (TTFs)
CTI support to TBs

CTI
Standards Engineering based on methodology and best working practices

Protocol Design and Specification
- Application of best practices
- 3-Stage approach
- Techniques such as: UML, MSC, SDL, ASN.1, XML, JSON etc.

Training
- Best Practices
- Methodology
- Languages
- Implementation issues

Validation Activities
- Validation of Standards
- Peer-review
- Simulation by modelling
- Interoperability events
- Proofs of Concept
- Open Source development

Test Specification
- Test Specification Development
- Annual Testing Roadmap
- Annual Testing Task Force budget
- Managing individual Testing Task Forces
- Tool support

Interoperability Events
- Organizational & Technical
- Logistics, website, press
- Registration, NDA, promo
- Test platform and IT
- Monitoring, test results
- Feedback to TC
Useful Links

- ETSI Approach to Interoperability and Testing
- An Introduction to Achieving Technical Excellence
- Guide to Writing World Class Standards
- Interoperability Best Practices
- CTI & Plugtests: www.etsi.org/about/our-expertise
- TTCN-3: www.ttcn-3.org
- Contact CTI: CTI_support@etsi.org
Thank you for your attention
Any questions?

Contact me:

ultan.mulligan@etsi.org