



World Class Standards

Interoperability and co-existence

Wireless Factory Starter Group

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Interoperability

- Lack of interoperability harms innovation and competition, burns investment and drains the growth potential
- Standards are the first step towards multivendor mass market of interoperable products
- Is having a standard enough?
- As a rule - not enough!
- Standards need to have certain qualities to foster interoperability
- Even with quite good standard, experience has shown that various forms of testing are required to achieve interoperable products

ETSI Means Interoperability!

- ❑ Interoperability is the ultimate aim of ICT standardisation
 - Complex technologies covered by multiple standards
 - The market demands interoperability
- ❑ For ETSI, interoperability is the red thread running through the entire standardisation process
 - Not something to be added at the end
- ❑ ETSI philosophy
 - Interoperability
 - Good project management
 - Use of best practice
 - Standardised processes
- ❑ ETSI Experience
 - Test specification development + Interoperability Events

Proven by experience:
 GSM
 UMTS
 DECT
 SIP
 DMR
 IPv6
 etc.



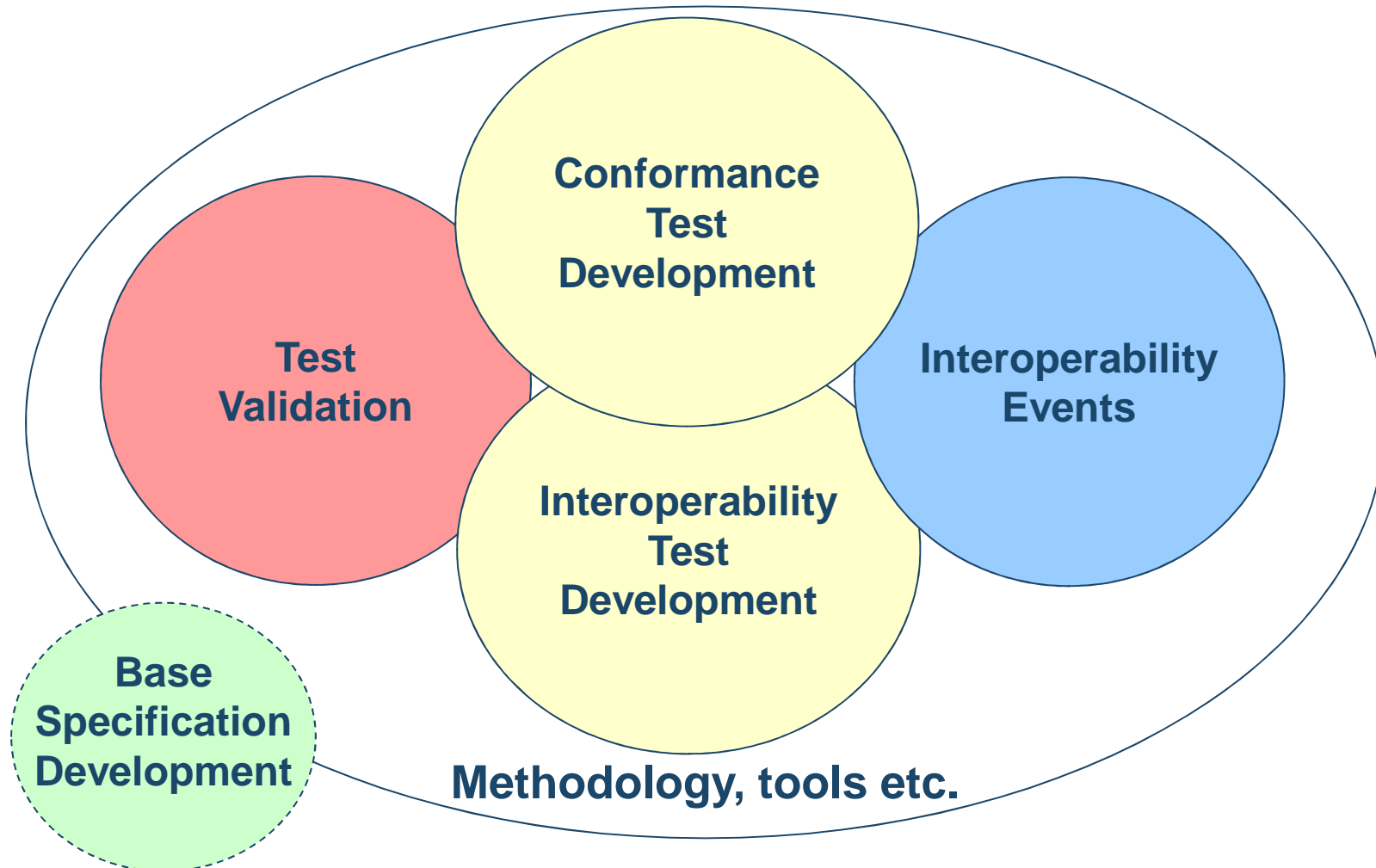
ETSI initiatives and support for interoperability

- ❑ **ETSI Board Champion for Interoperability**
 - Co-ordination for interoperability issues
 - Chair of OCG-IOP ad hoc interest group

- ❑ **ETSI Technical Committee MTS**
 - Methods for Testing and Specification
 - Standardised frameworks and methodologies
 - Making Better Standards: <http://portal.etsi.org/mbs>

- ❑ **ETSI Centre for Testing and Interoperability (CTI)**
 - Direct support to ETSI Technical Bodies [72%]
 - Commercial activities with Fora and other external bodies [9%]
 - Organisation and coordination of interoperability events [19%]

ETSI CTI Main Working Areas



Services for standards development

- ❑ General protocol engineering support
- ❑ Specific support in application of 3 stage approach
- ❑ Support for modelling techniques and languages
 - UML/SDL
 - ASN.1 and XML
 - MSCs (Message Sequence Charts)
- ❑ Simulation and validation techniques

Services related to Test Specifications

- Conformance and Interoperability tests**
- Advice on testing strategy, planning, processes, certification**
- Assistance with application of methodology, techniques, tools**
- Development of test architectures and test design**
- Development of test complete test suites, which may include**
 - **Requirements Catalogues**
 - **Implementation conformance statement (ICS)**
 - **Test Purposes**
 - **Test Descriptions**
 - **Detailed coding of Test Cases (mainly TTCN-3)**
- Synergy with interoperability events (Plugtests)**
- Participation in validation of the tests (feedback)**
- Advice on test implementation and links to test tool providers**

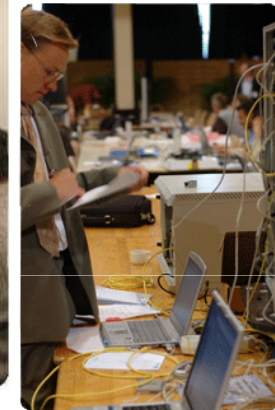
Interoperability Events

□ Event Management

- Dedicated event coordinator
- Event website
- Logistical arrangements
- Online registration & payment
- Legal aspects (NDA)
- Promotional material
- Press releases

□ Technical Support

- Test session scheduling & supervision
- Test infrastructure design, installation & teardown
- IT support
- Final test report



<http://www.etsi.org/plugtests>

Plugtest Events in 2008

- 5th SQTE – January/June (Herzogenrath, Germany)
- 1st GSM/UMTS - VoIP – January/June (Herzogenrath, Germany)
- HDMI – February (ETSI)
- XAdES – March (Remote)
- GPON – March (Turin, Italy)
- EUROCAE – VoIP April (ETSI)
- 3Play & AUTOCONFIG – May (Lannion, France)
- RFID – June (Düsseldorf, Germany)
- FMCA – June (ETSI)
- B2B – July (ETSI)
- SIPIT – October (Lannion, France)
- ITS – October (Dudenhofen, Germany)
- GRID – October (Sophia-Antipolis, France)
- IMS - November (Bled, Slovenia)

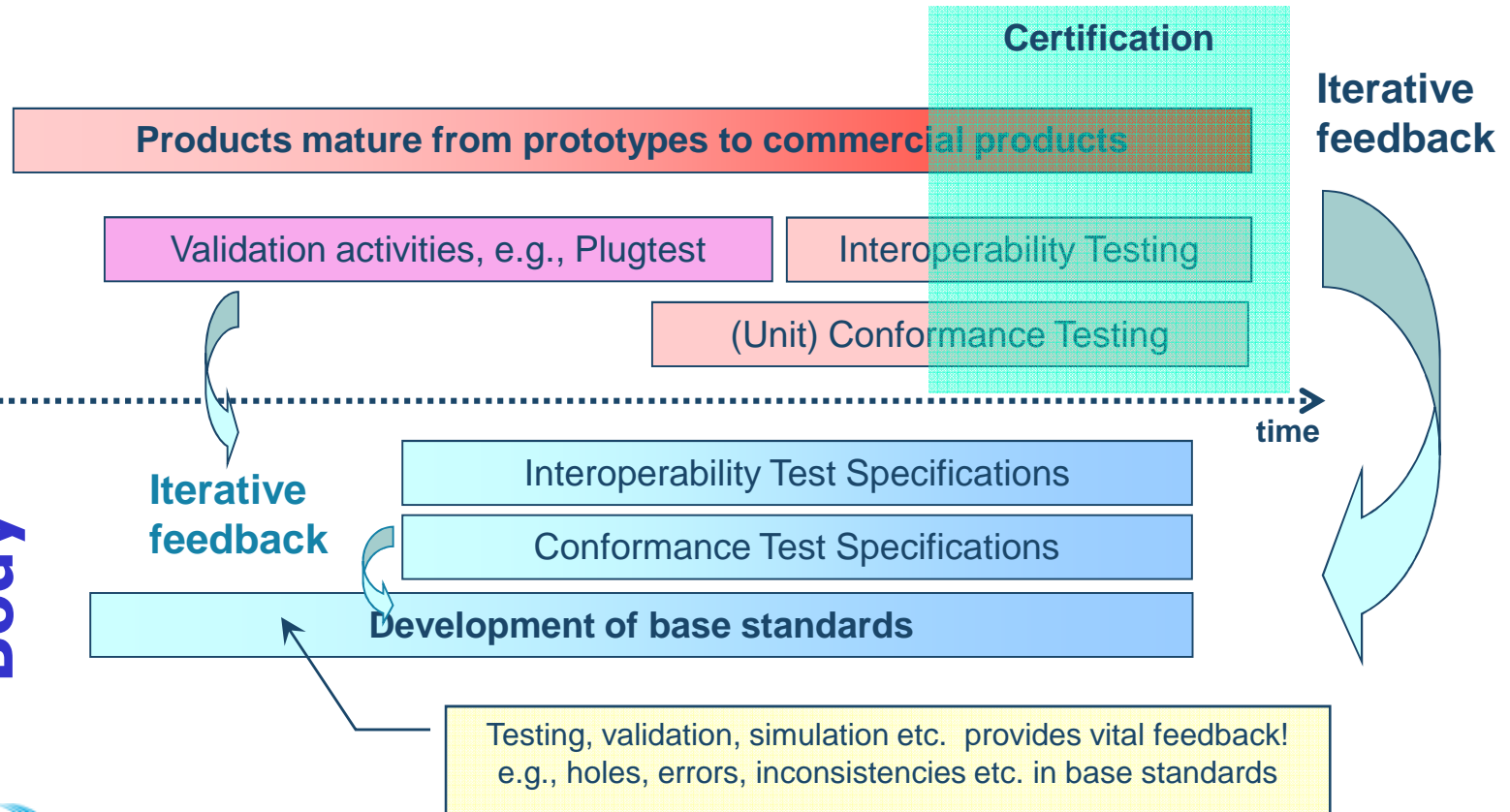
Conformance and Interoperability Testing are Complementary

- ❑ **ETSI experience**
 - **Lower layer protocols, infrastructure**
 - Emphasis on conformance
 - **Middleware, enablers**
 - Combination of Conformance + Interoperability testing
 - **Services, applications, systems**
 - Emphasis on interoperability testing
- ❑ **Conformance testing should be as a pre-requisite to interoperability testing**
 - **Ensure interoperability through standardised interfaces**
- ❑ **Interoperability testing with conformance checking**
 - **Monitor and check key standardized interfaces during interoperability testing**
 - **Is cheaper but does not replace need for conformance testing**

Interdependencies between specification and testing

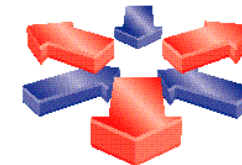


Industry Standards Body



Typical Test Specification Projects

- Cellular: **GSM, 3G UMTS**
- WiFi: **HiperMAN/WiMAX**
- VoIP: **H.323, IETF SIP, SIGTRAN**
- Service Creation: **OSA/Parlay (API, IDL, Java)**
- IPv6: **Core, Security, Mobility, v4-v6**
- Radio communications: **TETRA, DECT, DMR**
- Access terminals: **FSK, SMS**
- Broadband: **ISDN, DSL**
- Smartcards: **Readers, cards, security modules**
- Intelligent Transport Systems (ITS): **DSRC**
- NGN: **IMS, GRID**
- Security: **LI, Electronic Signature**
- Broadcast: **BCAST**



BROADBAND RADIO
ACCESS NETWORKS
AN ETSI PROJECT



WiMAX
FORUM



SiPit
SIP interoperability test event





Standards for **Business**

ETSI White Paper No. 3 Achieving Technical Interoperability - the ETSI Approach

Download from:

<http://www.etsi.org/WebSite/technologies/WhitePapers.aspx>

Who Writes Test Specifications ?

- ❑ **CTI experts plus ...**
- ❑ **Specialist Task Forces (STFs)**
 - **Experts seconded from the ETSI membership**
 - **Typical total yearly resource = 20-25 person-years**
 - Approval of STF budget done by ETSI Board
 - Contributions from EC
 - **Various complexity**
 - e.g., 2 person-months maintenance of VoIP tests
 - e.g., UMTS testing 58 person-months per year over 4-5 years
- ❑ **EC funded projects**
 - **Experts selected from open call**

Co-existence

- Key elements of co-existence need to be built into the standard early on
- If co-existence relies on some protocol mechanisms, solid testing is required to ensure that all products behave as required

Conclusions

- Standards can be designed for interoperability
- Standards should be engineered not hacked
- Plan for validation and testing (early)
- Do the right kind of testing and test in parallel
- Interoperability events: Plugtests™
- CTI can help you achieve the above!



World Class Standards

Thank you!

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Slide heading

- **First level text**
 - **Second level text**
 - **Third level text:**