Principles of ETSI specifications creation using STFs

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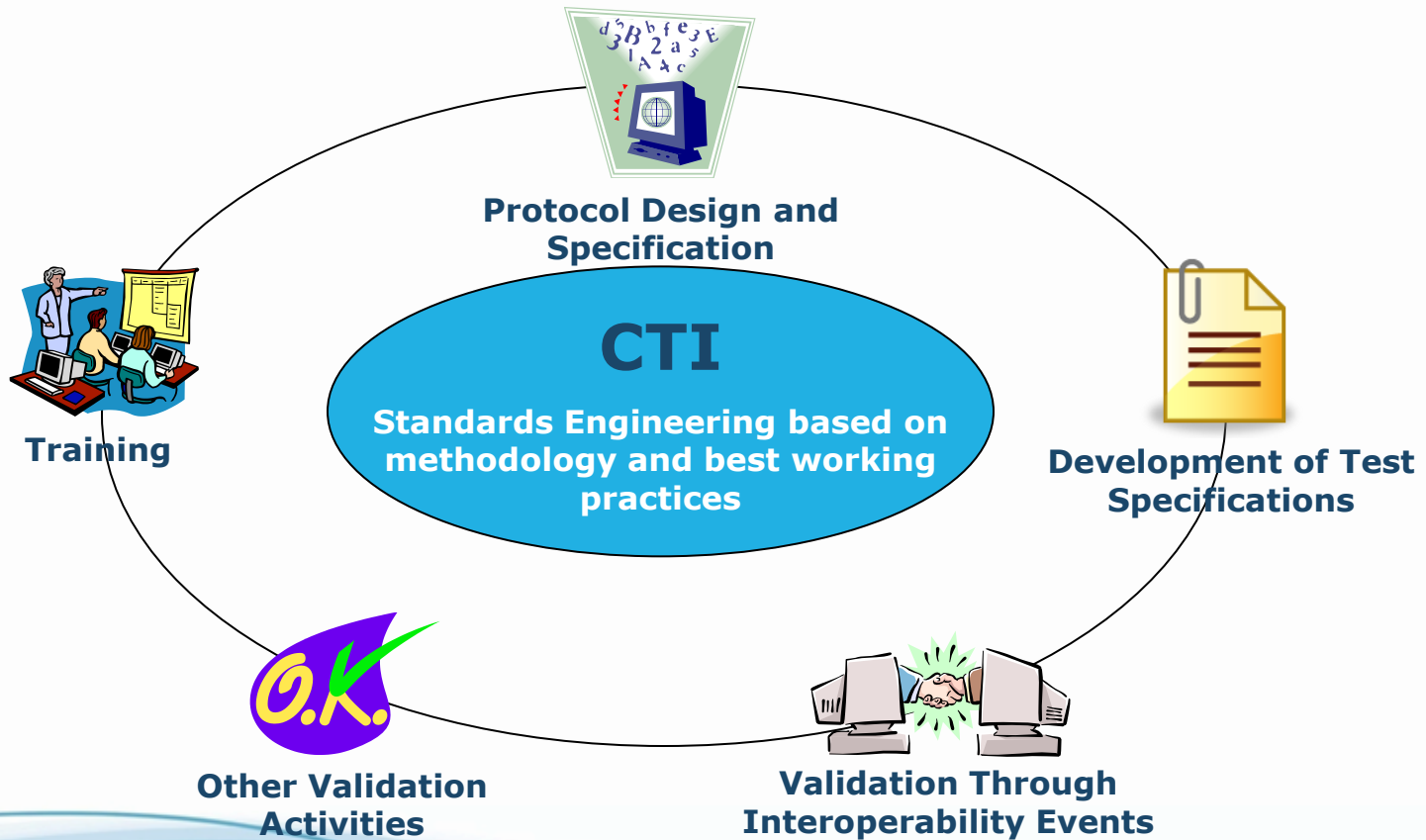# Presentation Outline

- About ETSI
- TTCN-3
- CTI and the Test Specifications
- STF Procedure

ETSI – Shaping the Future

- European standards organisation setting globally-applicable standards in ICT (Information Communication Technology)
  - Including fixed, mobile, radio, converged, broadcast and Internet technologies
- Independent, not-for-profit, created in 1988
  - Based in the South of France
- More than 760 Member companies and organisations from 63 countries and 5 continents
- Founder member of 3GPP A GLOBAL INITIATIVE
- Over 23,000 publications – available for free!
  - **http://www.etsi.org/WebSite/homepage.aspx**

Creator of the TTCN-3 Standard

ETSI

http://www.ttcn-3.org

- **TC MTS (Methods for Testing and Specification)**
  - **Developed TTCN-3**
  - **ETSI Standard (ES)**
- **Key TTCN-3 Standards**
  - **ES 201 873-1: TTCN-3 Core Language**
  - **ES 201 873-5: TTCN-3 Runtime Interface (TRI)**
  - **ES 201 873-6: TTCN-3 Control Interfaces (TCI)**
  - **ES 201 873-7 and upwards: ASN.1, XML, IDL, Code Documentation**
  - **also all endorsed by ITU-T SG17 (Z.140 Series)**
- **New Extension Packages (drafts)**
  - **Configuration and Deployment Support**
  - **Performance Testing**
  - **Real-time testing**
  - **And others ...**

Centre for Testing & Interoperability

CTI

Standards Engineering based on methodology and best working practices

Protocol Design and Specification

Development of Test Specifications

Validation Through Interoperability Events

Other Validation Activities

Training

Use of TTCN-3 at ETSI

- All test suite development done in TTCN-3
  - Some maintenance of legacy TTCN-2 test suites

- Test Suites developed by Specialist Task Forces (STF)
  - At the request of the ETSI Technical Committees
  - Experts recruited from the ETSI Membership
  - Mostly under the technical management of CTI
  - 15 to 20 testing STFs per year

Validation of Tests

- Where possible ETSI Test Specifications are validated prior to publication
- Minimum requirement is that they compile on at least one tool
  - E.g., UMTS compiles on at least 4 platforms
- In many cases we execute the tests against live implementations
  - In co-operation with partners (Test Labs and Vendors)
  - E.g., UMTS tests executed against at least 2 different implementations

Some ETSI TTCN-3 Test Suites

- IPv6 (TC MTS)
  - Core, Security, Mobility, Transitioning
- IMS (TC INT & TC TISPAN)
  - Interoperability, Network Integration, ISDN and ISUP Interworking, Conformance for Basic Call and 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

TTCN-3 Tools Used at ETSI

- 6 different TTCN-3 Development Environments and Compilers

- ETSI TTCN-3 Documentation Tool (T3D)
- ETSI TTCN-3 Code Quality Tool (T3Q)

- ETSI tools will be made available as Open source
  - More information on TTCN-3 tools available at
  - http://www.ttcn-3.org/

More on STFs …

Test Suites Developed by …

- Specialist Task Forces (STF)
  - At the request of the ETSI Technical Committees
    - ETSI Funded Work program budget
  - Mostly under the technical leadership of CTI and involving CTI experts and experts recruited from the ETSI Membership
  - Around 15 testing STFs per year
    - E.g., UMTS 18 experts (approx. 90mm/year)
- May be funded by the EC if part of an interop event
- Commercial activity under ETSI's Interopolis brand

What is a Specialist Task Force (STF)?

- Team of highly-skilled experts working together over a pre-defined period to draft an ETSI standard under the technical guidance of an ETSI Technical Body and with the support of the ETSI Secretariat

- The task of the STFs is to accelerate the standardization process in areas of strategic importance and in response to urgent market needs

- STF work is normally done by the experts in common sessions in the ETSI premises at Sophia Antipolis in France

Who can join, who pays the STF experts?

- Experts for STFs can be proposed by ETSI Members or supported by ETSI Members

- ETSI may provide a financial compensation to the Companies for the work of their experts in the STF

- STF funding is provided either by ETSI, EC/EFTA or by a group of interested Members

- STFs must be approved by the ETSI Board

- STF-like solutions can also be provided by ETSI for Special Projects, Partnership Projects, for study and investigation and/or laboratory activities

How to propose and set-up an STF?

- STF are proposed by the ETSI Technical Bodies, the Board or the Special Committees
- The reference Technical Body provides the Terms of Reference (ToR) with the necessary justification
  - for the objectives of the STF
  - the resources required
  - the time scale
  - the organization of tasks
  - the deliverables that will be produced
- The STF ToR and the Work Items for which the STF is requested must be approved by the reference TB and subsequently by the ETSI board

About the Terms of Reference (ToR)

- The ETSI Secretariat will perform a consistency check, to ensure that the ToR are complete and coherent:
  - scope and objectives are clearly defined
  - there is a business case, in terms of market impact, urgency, consequence if not agreed, etc.
  - there is a strong support from the ETSI Members
  - the base standards are identified and stable
  - the Work Items for the deliverables to be produced are approved (or provide the time scale for approval)
  - the estimate of resources and time scale is coherent and reasonable
    - Large STF requests (e.g. exceeding 100k€ funding and/or one year duration) shall be structured in phases, with identified intermediate deliverables, allow flexibility for a phased funding approach.
  - the objectives for the Performance Indicators are identified

How and when to prepare the STF proposals?

- The ETSI budget allocation is done in two steps
  - 1st allocation is decided in October/November of the previous year
  - the 2nd allocation in June
- The strategy is to allocate about two-thirds of the available STF budget in the 1st allocation and the remaining third in the 2nd allocation
  - If some resources remain available, then a 3rd allocation may be performed in September
  - In the interim periods, only proposals for small, short-term STFs that could not do fit the normal budget allocation schedule can be considered

- The 2nd allocation of the ETSI budget 2011 has been agreed according to the following calendar:
  - **Until 15 May:** Collect draft TB proposals for first review
  - **15-31 May:** Consistency check of draft ToR between ETSI Secretariat and TB Chairmen
  - **31 May:** Final version of the ToR, approved by the reference TB
  - **2 June:** Full set of proposed ToR sent for comments to the OCG and Board mailing lists

ETSI

- **9 June:** Open "GoToMeeting" with TB Chairmen, Board STF Review Panel and other interested Board members to review the requests and prepare a proposal for the 2nd allocation of the ETSI STF budget

- **14 June:** GoToMeeting for decision restricted to Board members, if an agreement cannot be achieved in the open meeting

- **15 June:** Proposal for the 2nd allocation of the ETSI STF budget formally submitted

- **21 June:** Last review in OCG#44

- **22-23 June:** Board#83 decision

Recruitment of STF experts

- Experts for an STF are recruited under the responsibility of the Director-General, in consultation with the relevant TB Chairman

- Candidatures must be proposed by ETSI Members
  - If the candidate is selected, the contract will be made with the Member Organization that has proposed the candidature

- ETSI Members may propose candidates on behalf of a non-ETSI Member Organization

Recruitment of STF experts continued

- Non-ETSI Member Organization experts may be recruited if no suitable candidates proposed directly by ETSI Members are available, with the necessary qualification to cover specific positions needed to fulfil the requirements in the STF ToR

  - If the candidate is selected, the contract will be made directly with the non-Member Company on behalf of which the candidature is presented.

- To avoid a conflict of interest, the TB Officials (e.g. the TB Chairman and the Chairman of the Working Group directly concerned by the STF activity) shall not be recruited as experts

ETSI specifications creation using STFs

Call for STF experts

- Vacancies to be filled are notified to the ETSI Members by Collective Letter
  - The deadline for the applications shall allow for a minimum notice period of **6 weeks**, which may be reduced to **4 weeks**, in case recruitment is urgently needed

- The Collective Letter includes
  - the deadline for the presentation of candidatures
  - the STF ToR
  - a form to provide summary information on the candidate, his/her Company and the possible support from an ETSI Member
  - the provisional date for the Preparatory Meeting

Time scale to set-up of an STF

- The schedule for the recruitment of the STF experts is agreed between the STF Manager and the TB Chairman
  - 6 weeks applications period (4 for urgent procedure)
  - 1 week to agree upon the short list of candidates to invite
  - 1 week notice for the invitation to the Preparatory Meeting
- Minimum time lag between the dispatch of the Call for Experts and the date of the Preparatory Meeting is **8 weeks** (6 weeks for an urgent procedure)

Candidatures proposal and pre-selection

- Candidatures must be sent to the STF Support Unit Director before the deadline indicated by e-mail
  - Motivation letter
  - CV in English
  - All Annexes duly completed
- The candidates in the short list established by the STF Manager and the TB Chairman are invited to attend the Preparatory Meeting

Preparatory Meeting – Final Selection

- The objective of the Preparatory Meeting is to set up the STF, and in particular
    - reach a common understanding of the ToR
    - make the final selection of the experts and appoint the STF Leader
    - establish the initial work plan
    - allocate tasks and resource to the experts
    - agree on the initial travel plan
    - define the deliverables schedule and intermediate milestones
    - organize the activity of the Steering Group

STF Leader role and responsibilities

- The STF Leader is appointed by the Director-General in consultation with the relevant TB Chairman, from amongst the selected experts.
    - acts as the interface
        - with the ETSI Secretariat for administrative control
        - with the reference TB Chairman for technical control
    - not only manager but also contribute to the technical activity of the STF together with the other experts
    - selected not only for his/her technical competence but also for her/his skills in project management, bookkeeping, reporting, external relations and ability to guide and motivate the team

STF Work Plan

- The STF Work Plan consists of the following elements:
  - Allocation of tasks and resources to the experts
  - Availability of base documents and deliverables schedule
  - Contractual Milestones and reporting schedule
  - STF sessions schedule and location
  - Travel plan

Allocation of tasks and resources to experts

- The allocation of tasks and resources to the experts is agreed during the Preparatory Meeting.
  - Accepting the conclusions of the Preparatory Meeting, the experts have evaluated the feasibility and timeline of the tasks they have been assigned with the resources allocated
  - ETSI will establish Letters of Engagement (LoEs) with the experts' Companies, based upon the effort and working period estimated, as it results from the minutes of the Preparatory Meeting.
- STF work will normally be performed in common sessions in the ETSI premises
  - Working in the experts' Company premises may be authorized as part of the STF work plan

Milestones and reporting

- Intermediate milestones and reporting must be defined in the STF Work Plan
  - Milestones and reports are scheduled in correspondence of significant and measurable achievements of the STF
- These reports shall be approved by the relevant TB Chairman and the ETSI Director-General
  - to improve the co-ordination with the reference TB, whenever possible, the reports should be submitted for review and endorsement to the ordinary TB or WG meetings or to the Steering Group, prior to formal approval
- All payments are based on achievement of milestones!

Outcome of STF

- All Work Items as defined in ToR completed, contributed to and approved by reference TB
  - The Work Items are ready for publication as ETSI standards at this point in time
- Final Report approved by the reference TB
  - tasks performed
  - Work items produced
  - Resource spent per expert
  - Travels made
  - Remaining resources, if any

THANK YOU!