What is ETSI??

Presented by Mr. Dinesh Chand Sharma
Acknowledgment: Mr. Gavin Craik, Mr. Xavier Piednoir

Agenda

- About Project SESEI
- ETSI - Organisation in brief
- ETSI - Standards developing Process
- ETSI - Governance and Decision Making
- ETSI - in the world

About Project SESEI

Project is a permanent presence in India

SESEI (**S**econded **E**uropean **S**tandardization **E**xpert in **I**ndia) *is a local face for the European standardization community in India: Dinesh Chand Sharma*

Why SESEI: India is a major trade partners for Europe, Increasing role of standards to gain market access and Evolving & complex nature of regulatory and standardization landscapes, Sharing best practices, work together

Sector: 1. ICT: M2M/IoT, Security, 5G, NFV/SDN, e-Accesibility, eHealth, eCALL... **2. Electrical equipment including Consumer Electronics**: Smart Grid, Smart Meter, LVDC, Micro- Grid, Lift Escalator... 3. **Automotive**: Connected Cars, ITS, e-Mobility... 4. **Smart Cities**: Mobility, Waste, Energy, ICT and other topics of mutual interests such as Machinery Safety, Cableways, Circular Economy, Railways etc.

www.sesei.eu , www.sesei.in , www.eustandards.in

ETSI- Organisation in brief

European roots, global outreach

- ETSI is a world-leading standards developing organization for Information and Communication Technologies (ICT).

- ETSI is recognized by the European Union as one of 3 European Standardization Organizations (ESO).

- ETSI has become highly-respected as a producer of technical standards and specifications for worldwide use.

Products & services

- Standards and technical specifications with global application
  - More than 48 000, all available for free download
- Support to industry and European régulation through creation of harmonized European Standards (ENs)
- Specification & testing methodologies
- Interoperability testing

Membership

- Over 900 organizations, large & small, from 65 countries on 5 continents.

- Membership includes 26% from the microenterprise and SME community and provide a good number of contributors, rapporteurs and TB officials.

- Direct participation in our work.

- Manufacturers, network operators, service and content providers, national administrations, ministries, universities, research bodies, consultancies, user organizations

A powerful and dynamic mix of **skills, resources and ambitions**

Independence

- We are independent of all other organizations and structures, and a not for profit association.

- Respected for neutrality and trustworthiness.

- Esteemed for our world-leading Intellectual Property Rights (IPR) Policy.

ETSI's Vision & Mission

Vision

"ETSI is a leading standardization organization for Information and Communication Technology (ICT) standards fulfilling European and global market needs"

Mission

"To provide platforms for interested parties to work together to produce standards for ICT systems and services that are used globally"

ETSI Cluster

A Connected World

Security · Home & Office · Better Living with ICT · Public Safety · Content Delivery · Interoperability · Fixed Networks · Connecting Things · Transportation · Wireless Systems

Emerging Technologies

- **List of Emerging Technologies standardized by ETSI or touched by our standardization:**

  - **3GPP Telecom Management**
  - **5G**
  - **Internet of Things (IoT)**
  - **Mobile Communications**
  - **Multi-access Edge Computing (MEC)**
  - **Securing Artificial Intelligence (SAI)**
  - **Smart Body Area Networks**
  - **Smart appliances**
  - **Smart cities**
  - **Smart Grids**
  - **Smart Metering**
  - **Zero touch network & Service Management (ZSM)**
  - **Human Factors (HF) and accessibility**

  - **Augmented Reality**
  - **automotive Intelligent Transport Systems (ITS)**
  - **Broadband Satellite Multimedia**
  - **Broadband Cable Access**
  - **Broadband Wireless Access**
  - **Certification Authorities and other Trust Service Providers**
  - **Cybersecurity**
  - **Broadcast**
  - **Digital Enhanced Cordless Telecommunications (DECT)**
  - **Energy efficiency (EE)**
  - **Experiential Networked Intelligence (ENI)**
  - **Environmental Aspects**

Complete list can be access here
https://www.etsi.org/technologies

ETSI's work includes among others ...

- Telecoms network technologies
- DSL, Broadband, Next Generation Networks
- Cable distribution systems
- Power line telecommunications
- Edge Computing
- Network Functions Virtualization
- Next Generation Protocols
- Safety
- QoS, Speech quality and speech recognition
- Testing
- Intelligent Transport Systems (ITS)
- Security algorithms, Quantum Key Distribution
- Electronic signatures, lawful interception, smart cards
- Emergency Telecommunications
- IoT & M2M Communications
- Artificial Intelligence
- Open Source
- Environmental Engineering

And ETSI's work includes...

- Radio technologies
- Mobile technologies
- GSM, UMTS, LTE, 5G, Railway communications...
- private/professional land mobile radio systems
- Cordless (DECT)
- TETRA & other public safety systems
- Spectrum matters & electromagnetic compatibility
- Wireless Local Area Networks
- Broadcast systems
- Satellite communications
- Short range devices
- SDR and CR (Reconfigurable radios)
- Aeronautical and marine radio
- eHealth and Wireless medical devices
- Body Area Networks
- Millimetre wave
- Zero touch network and Service Management

ETSI's "Special" Committees

- **Technical**
  - Emergency Communications (EMTEL)
  - Security Algorithms (SAGE)
  - User Group

- **Administrative**
  - Finance Committee
  - Intellectual Property Rights (IPR)
  - Operational Co-ordination Group (OCG)

ETSI in 3GPP

- We are the home of the GSM™ family of standards…
- And a founding partner in

ETSI in oneM2M

- A founding partner in…

- The home of service-layer standards for Machine to Machine communications and the Internet of Things.

ETSI is not …

- a REGULATORY body, but…
  - we provide technical specifications to support regulation
- a CERTIFICATION body, but…
  - we provide specifications and other tools to assist certification
- a FREQUENCY ALLOCATION body, but…
  - we collect, co-ordinate and contribute frequency requirements for the ICT community
- part of the European Commission, nor part of CEPT, but…
  - we work closely with these and many other organisations

ETSI- a European Standards Organization

- ETSI was conceived in the late 1980s to respond to particular needs in Europe
  - in support of the single European market
- ETSI continues to produce standards for European industry…
- …and we produce standards and other material to support European Union and European Free Trade Association (EFTA) regulation and legislation…
  - …for which we are officially recognised at EU/EFTA and governmental levels…
- …as well as contributing ICT radio frequency requirements to the European co-ordination process

- ETSI works in close cooperation with CEN and CENELEC, the other two ESOs
- Work closely with National Standards Organizations (NSOs) in the EU countries

ETSI – a global standards producer

- ETSI was established as a European body and retains European responsibilities. But…

- …many of ETSI's Members are global players…

- …so ETSI seeks to have its standards adopted worldwide.

- About 20% of ETSI's Members have no established operations in Europe.

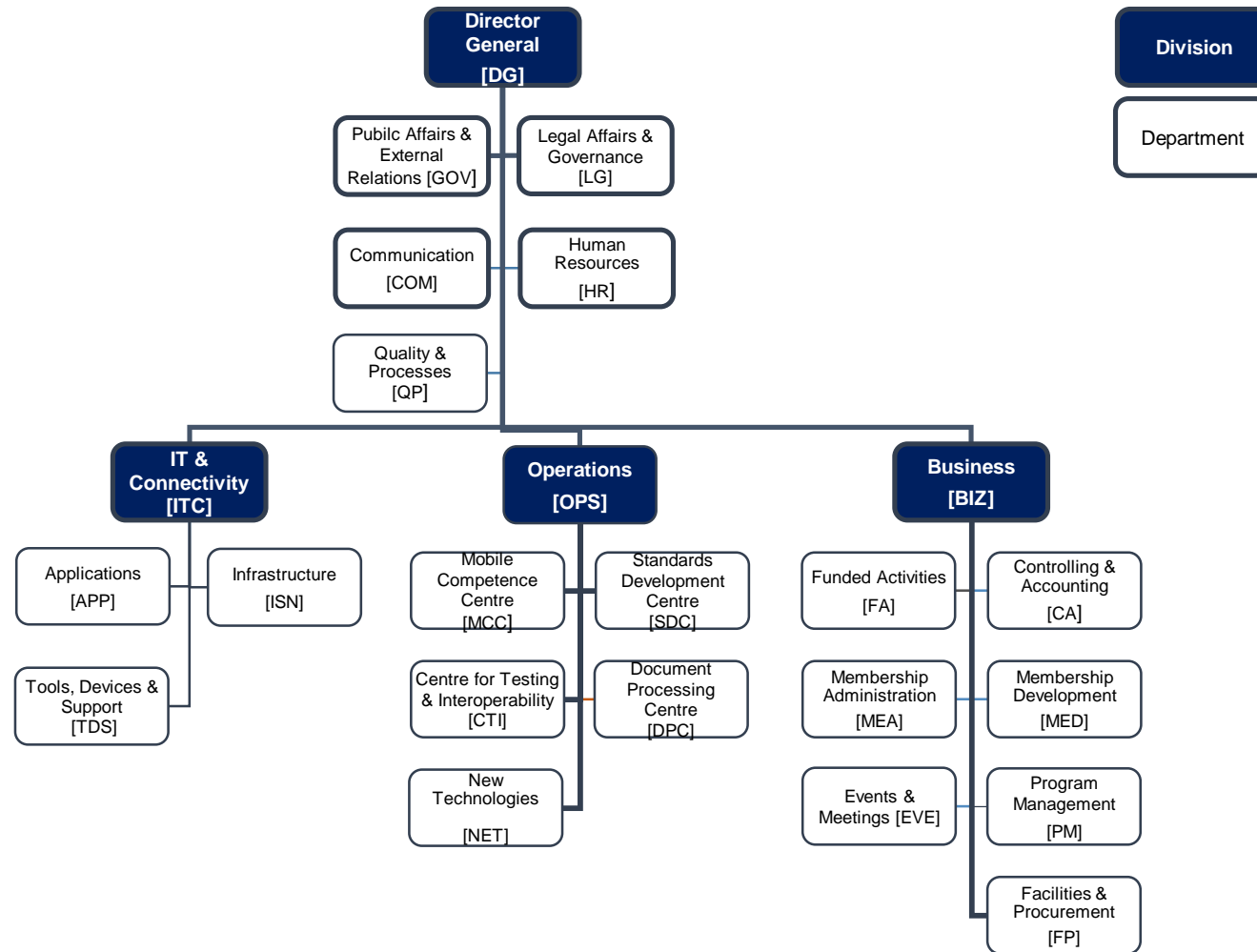- Many of the other 80% are headquartered outside Europe.

ETSI Secretariat

- **Mission:**
  - To serve ETSI Members and help them maximize the return on their standardization investments, by anticipating their needs and responding rapidly and efficiently to their requests.

- **Around 125 staff from 19 nationalities, based in Sophia Antipolis**
  - Providing technical, project, administrative and logistical support to the ETSI community.

- **Additional technical experts on a full time basis in Specialist Task Forces (STF)**
  - based at ETSI headquarters
  - at any time, about 30 STFs,
    100 experts

- Secretariat supports all areas of ETSI – GA, Board, TBs/ISGs, IT, innovation, editing and publication, communication and events.

- we have more staff than others that's why our membership continues to support the model.

Secretariat Structure

Director General [DG]

- Pubilc Affairs & External Relations [GOV]
- Legal Affairs & Governance [LG]
- Communication [COM]
- Human Resources [HR]
- Quality & Processes [QP]

Division

Department

IT & Connectivity [ITC]
- Applications [APP]
- Infrastructure [ISN]
- Tools, Devices & Support [TDS]

Operations [OPS]
- Mobile Competence Centre [MCC]
- Standards Development Centre [SDC]
- Centre for Testing & Interoperability [CTI]
- Document Processing Centre [DPC]
- New Technologies [NET]

Business [BIZ]
- Funded Activities [FA]
- Controlling & Accounting [CA]
- Membership Administration [MEA]
- Membership Development [MED]
- Events & Meetings [EVE]
- Program Management [PM]
- Facilities & Procurement [FP]

ETSI Deliverables

- European Standards (EN, telecommunications series)
- Harmonized Standards (HS)
- Approved by National Delegations, through the
  National Standards Organizations (NSO)
- Web-based voting tool

- ETSI Standards (ES)
- ETSI Guides (EG)
- Approved by the full ETSI Membership
- Web-based voting tool

- ETSI Technical Specifications (TS)
- ETSI Technical Reports (TR)
- ETSI Group Specifications (GS)
- ETSI Group Reports (GR)
  - Approved by the TC, Project or Group concerned
- Traditional or web-based voting

- https://www.etsi.org/standards/types-of-standards

Wide, formal acceptance

Fast + approved by all members

Fast to publish

Accumulated publication (publications from the creation of ETSI to 2020)

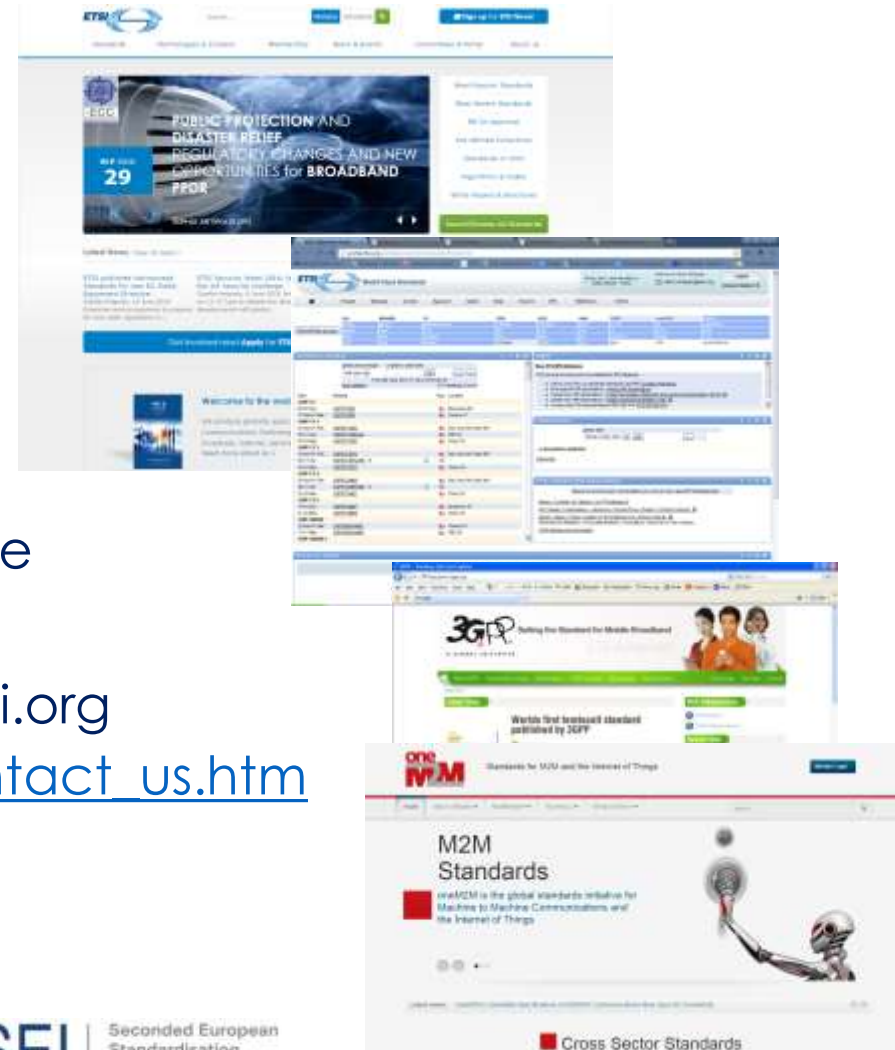| Document type	48 000+ Published
EN	5 151 [1]
ES	849
EG	256
TS	37 674 [2]
TR	3 952 [3]
SR	108
GS	348
GR	100
(1) including amendments, ETS, I-ETS and TBR. (2) including GTS. (3) including TCR-TR, TC-TR and ETR.	

How to get ETSI standards

- Download for free: http://www.etsi.org/standards-search

- Purchase on DVD
  - Details on website
  - Being discontinued

- ETSI specifications are available in PDF format only. 19 million downloads in 2019.

Getting Help – ETSI Guides

- Chairman's guide
- Meeting Delegate's guide
- Host guide
- TB Secretary's guide
- Rapporteur's guide
- Special Task Force Expert's guide
- ETSI Member Official Contact's guide
- Writing World Class Standards

- All available from ETSI Portal: Resources/User Guides menu

Getting information

- ETSI website
- ETSI portal
- 3GPP website
- oneM2M website

- E-mail exploder lists
  - For all of ETSI's activities

- Official Contact for each ETSI Member
  - Receives all formal correspondence

- Helpdesk
  - +33 (0)4 92 94 49 00 : helpdesk@etsi.org
  - http://portal.etsi.org/Helpdesk/contact_us.htm

ETSI- Standards developing Process

ETSI Standard creating process

- **A proposal to start an item of work, such as to create a new standard or to update an existing one, must come from at least four members of ETSI and be agreed by the relevant standards group.**

- **Who writes the standards?**

  - **TCs or other types of WGs,** made up of representatives of our members and led by a 'Rapporteur', draft most of our standards. Our members may participate in any group and work activity (other than certain security-related work where participation is controlled by the ETSI Board).

  - STFs set up to **accelerate** the work where there is an urgent need. STFs are groups of technical experts who come together for a defined period to work intensively on specific items.

  - ISGs offering an effective **alternative to industry fora.** They can be set up quickly to address specific technology areas.

- **Who approves the standards?**

  - Depending on the document type, it will be approved by either:

  - the participants in the relevant committee or

  - the entire ETSI membership

  - In the case of European Standards, ETSI's National Standards Organizations give the final approval

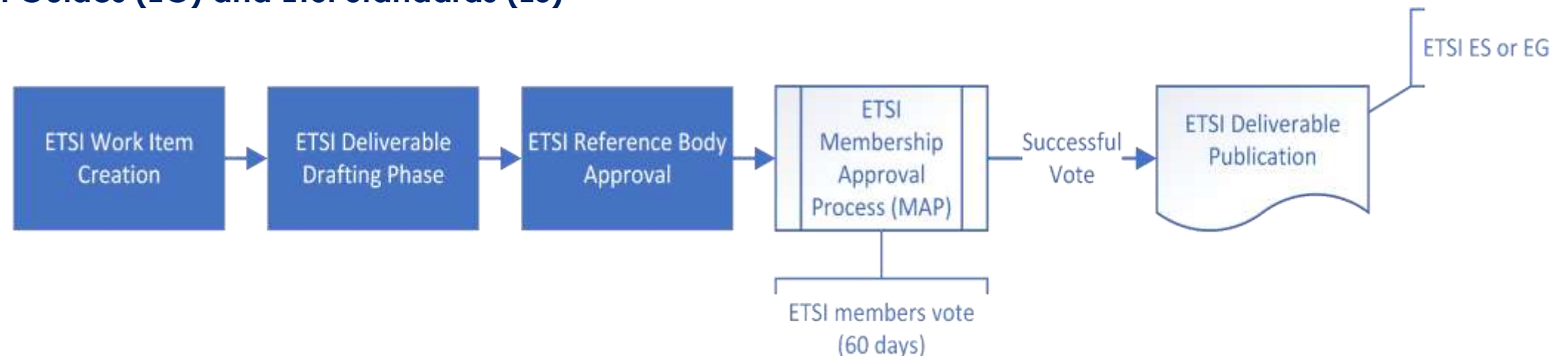 - ETSI provides range of web-based approval mechanisms, to make approval a highly pragmatic and visible process.

ETSI Standards approval process

Different approval procedures are used depending upon the type of standard being created.

- **Technical Specifications (TS), Technical Reports (TR), Group Specifications (GS), Group Reports (GR) and Special Reports (SR)**
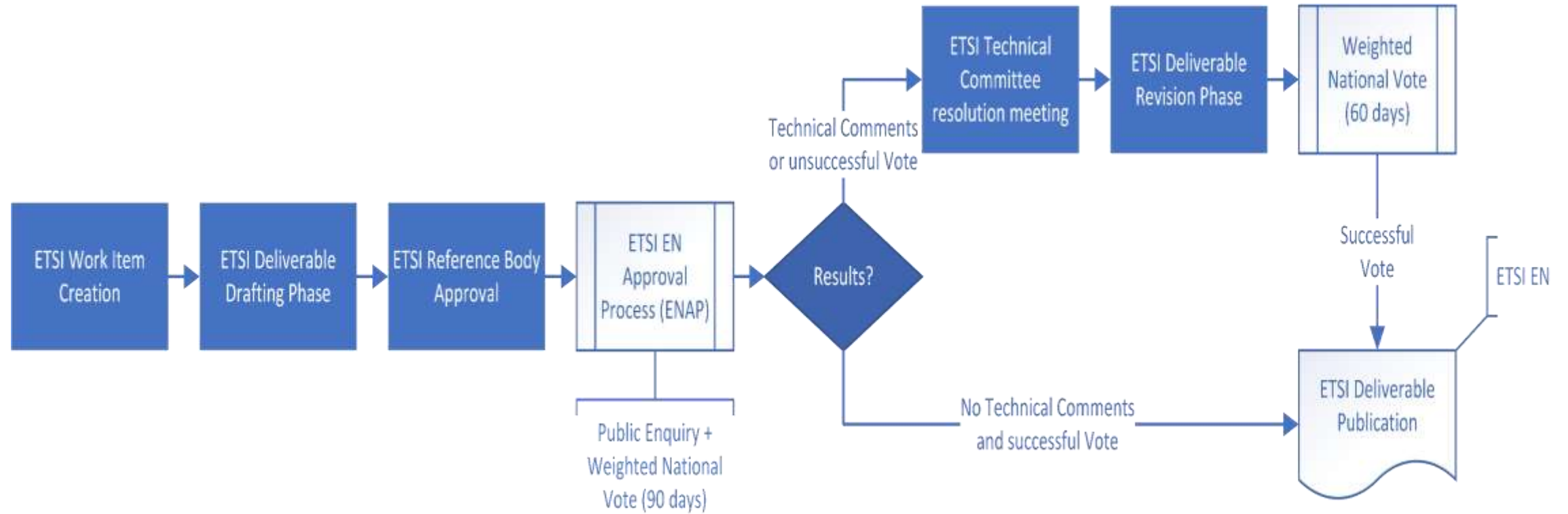

- **ETSI Guides (EG) and ETSI Standards (ES)**

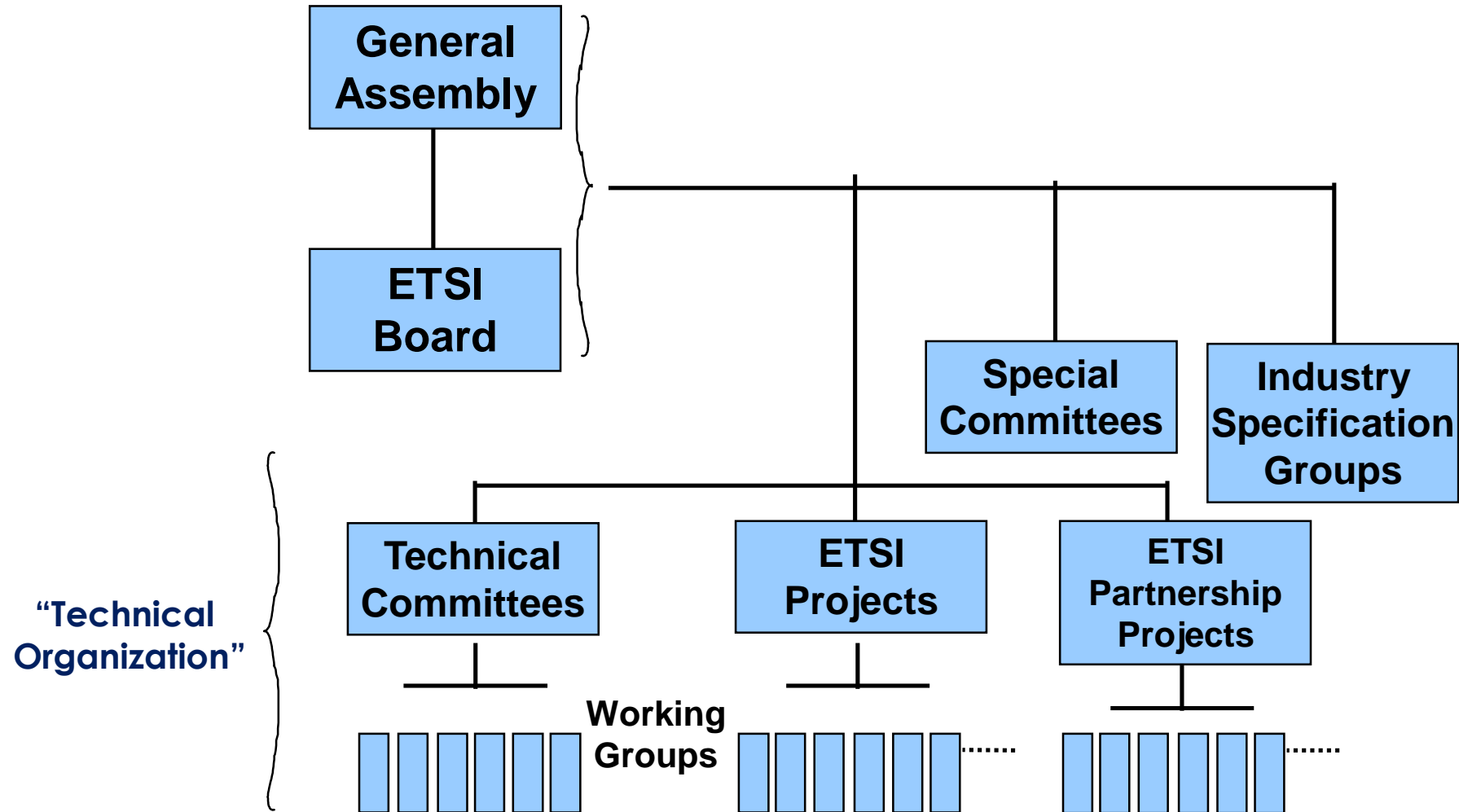# ETSI Standards approval process

- **European Standards (EN)**

Votes are successful if at least **71%** of the weighted votes cast are in favour of the draft.

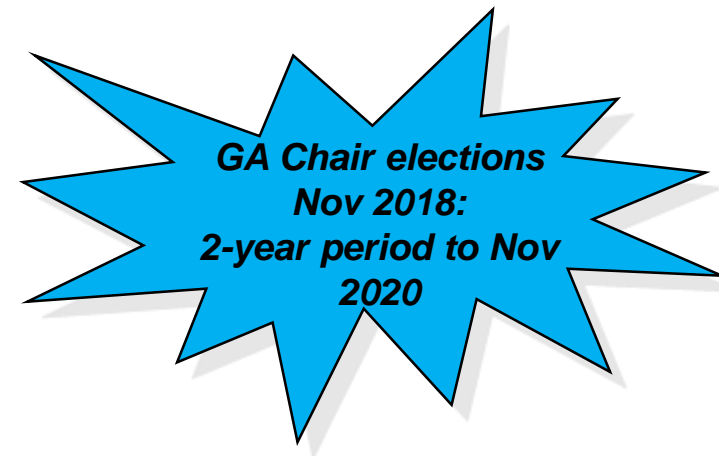# *ETSI Governance and Decision Making*

The ETSI structure

The ETSI Secretariat gives support to all the different entities in the Organization

General Assembly Tasks

- Appointments
- Rules & Regulations
- Membership
- Budget & financial matters
- Annual Report
- Final point of approval
- Appeals

GA Chair elections Nov 2018:
2-year period to Nov 2020

ETSI Board
Powers and functions (1)

- Work Programme
- Application of financial resources
  - including for STFs within agreed financial framework
- Advice to GA on finance/resource issues
- Creating/closing TCs , EPs and SCs
- Appointing TC and EP Chairmen
- Standstill
- Resolving drafting problems
- Standardization policy & performance
- Communication
- …

ETSI Board
Powers and functions (2)

- Resource framework for Technical Organization

- Overseeing Technical Organization

- External relations

- Technical Working Procedures (TWP)

- Disputes/appeals/complaints
  - on procedural matters
  - in Technical Organization
  - from non-members

Board elections last held in Nov 2017 for a 3-year period to Nov 2020

Currently 30 members including 1 SME & 1 User representative*

* RoP Annex 7: Number of Board members between 15 and 30

04-08-2020

Who's who in ETSI Governance

Dirk Weiler, Board chairman

Neviana Nikoloski, GA chairman

Luis Jorge Romero, ETSI DG

ETSI Directives

- ETSI Statutes
- ETSI Rules of Procedure (RoP)
- Guidelines on Annex 2 of RoP (financial contributions)
- ETSI Guide on Intellectual Property Rights
- ETSI Guidelines for Antitrust Compliance
- ETSI Board Working Procedures
- Powers and Functions of the Board
- ETSI Financial Regulations
- Terms of Reference of the Operational Co-ordination Group (OCG)
- Guidelines about former elected officials & former ETSI staff
- ETSI Technical Working Procedures (TWP)
- ETSI Drafting Rules

http://portal.etsi.org/Directives/home.asp

Decision making processes

- **Consensus**
  - Preferred
- **Weighted Individual Voting**
  - Voting by individual member organizations
- **Weighted National Voting**
  - Voting by Head of National Delegation or National Standards Authority

Weighted Individual Voting

- Voting by individual member organizations
- Vote weighted in accordance to member's Units of Contribution
- Used for:
  - Voting in a TB
  - Approval of ETSI Standards and ETSI Guides
  - Election of officials to General Assembly
  - Election of Board members and Board Chairman
  - Selection of Director-General
  - Matters relating to the European Union (Full Members only)

Weighted Individual Voting

- Success = 71% of votes cast are in favour

- In General Assembly:
  - proxy voting permitted
  - quorum of 50% of weighted votes

- Otherwise:
  - no quorum specified

- Vote splitting
  - in general, vote splitting is not permitted
    - because each Member has only <u>one</u> vote, which is <u>weighted</u>
  - the <u>only</u> exception is for the election of Board members
    - Each ETSI Member (Full, Associate) may use as many votes as its individual weight
    - And may split those votes on as many candidates as it has votes (see Annex 7 of the Rules of Procedure)

Membership contributions (not Administrations)

ECRT in 10^6 euro	Number of Units	Fees
SME, User, "Additional membership"	1	2k/3k/6k
up to 135	2	9 380
136 to 200	3	12 760
201 to 450	6	22 900
451 to 700	9	33 040
701 to 1350	13	46 560
1351 to 2000	18	63 460
2001 to 3500	24	83 740
3501 to 5000	30	104 020
5001 to 8000	37	127 680
above 8000	45	154 720

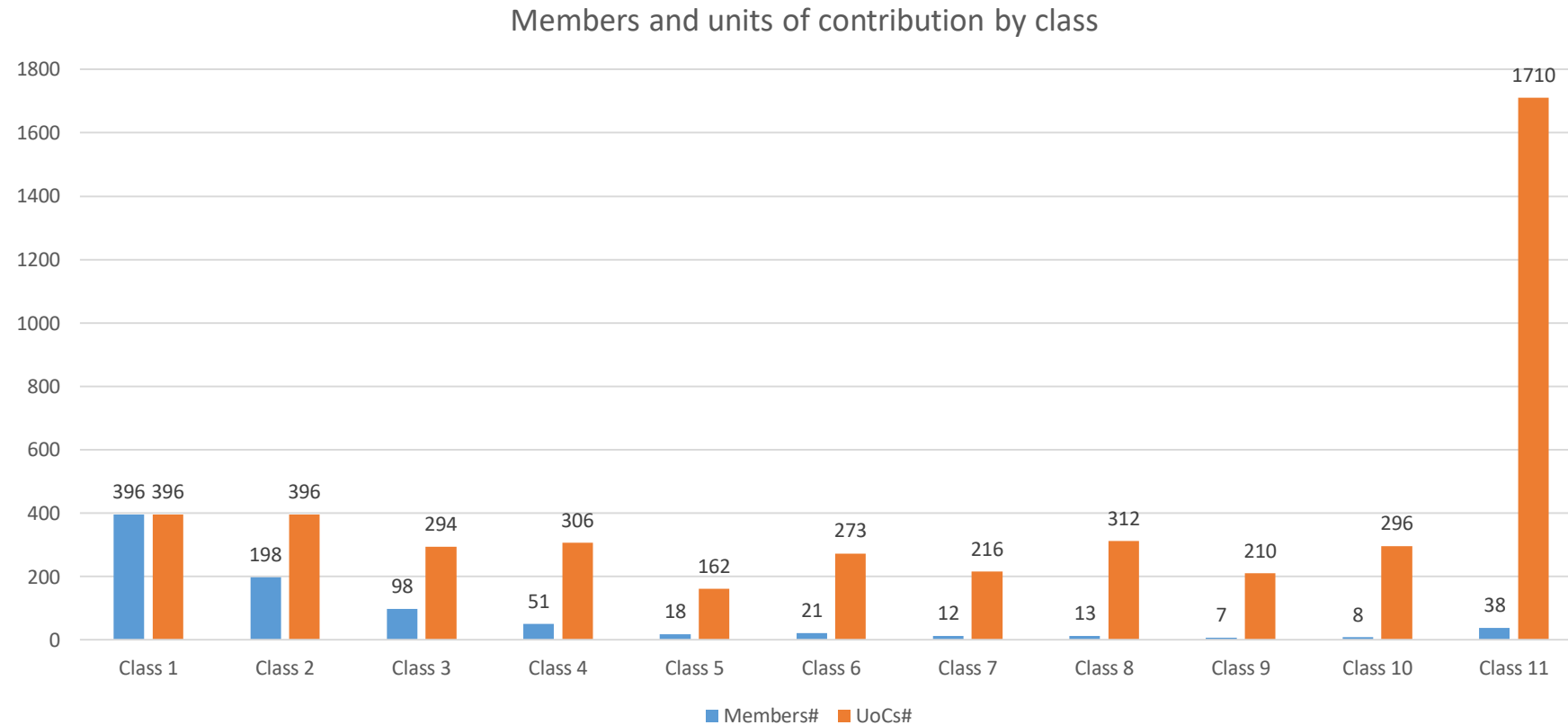ECRT: Global electronics communications-related turnover

Membership voting weights (UoC) by membership class

(Class 1 to 11 – see http://www.etsi.org/membership/fees)

Members and units of contribution by class

(Figures end December 2018)

National Weighted Voting

- Voting cast by Head of National Delegation
  - taking account of views of national members

- Used for
  - NSO Approval of ENs
  - GA voting on changes to Statutes and Rules of Procedure
  - GA voting on establishment of national weightings

- Not available to countries of Associate Members

- Only available to countries having a Member in the Administration, Other Governmental Bodies, or National Standards Organizations category which contributes to ETSI according to the country's Gross Domestic Product (GDP)

- Weighting determined when nation joins ETSI

- Quorum of 50% of weighted votes

- Proxy voting permitted when in GA

- Success = 71% of weighted votes in favour

National weightings

GERMANY	29		SLOVAK REPUBLIC	7
UNITED KINGDOM	29		DENMARK	7
FRANCE	29		FINLAND	7
ITALY	29		NORWAY	7
SPAIN	27		IRELAND	7
POLAND	27		SERBIA	7
ROMANIA	14		CROATIA	7
NETHERLANDS	13		LITHUANIA	7
RUSSIA	12		ALBANIA	4
TURKEY	12		LATVIA	4
GREECE	12		SLOVENIA	4
PORTUGAL	12		GEORGIA	4
BELGIUM	12		ESTONIA	4
CZECH REPUBLIC	12		CYPRUS	4
HUNGARY	12		LUXEMBOURG	4
UKRAINE	10		MALTA	3
SWEDEN	10		ICELAND	3
AUSTRIA	10		BOSNIA & HERZEGOVINA	3
BULGARIA	10		FYR OF MACEDONIA	3
SWITZERLAND	10		MOLDOVA	3
			MONTENEGRO	3

ETSI DIRECTIVES Version 41 (Feb, 2020)
https://portal.etsi.org/directives/41_directives_feb_2020.pdf

ETSI in the world

ETSI Partnership Agreements

- Working with others is the best way to ensure coherence between the standards produced by ETSI and those of others.

- ETSI's investment in new partnerships is an important approach to adapt our activities to new standardization trends.

- Partnership Agreements are crucial in those new areas where ETSI is just starting to establish its footprint.

The European Standards Organizations (ESOs)

Vienna Agreement

~ 30 % of CEN standards are developed under the Vienna Agreement (**depending on sectors**)

Frankfurt Agreement

~ 80 % of CENELEC standards are identical to or based on IEC standards

MoU signed in 2012

Three European Standards Organizations (ESOs: CEN, CENELEC and ETSI) have appointed a Seconded European Standardization Expert in **India (SESEI)**

ETSI partners

International SDOs/Organizations

e.g. UPU, ICAO, UNECE…

Regional Partners

also IEEE…

European Partners

Interregional Co-operation

FORA & CONSORTIA

- BBF
- CAB Forum
- CONTINUA Alliance
- DECT Forum
- DLMS
- DMR Association
- DVB
- ESMIG
- Global Platform
- IMTC
- IPV6 Forum
- NFC Forum
- NGMN Alliance
- OGF
- OMA
- TCCA
- Etc…

Global Standards Collaboration
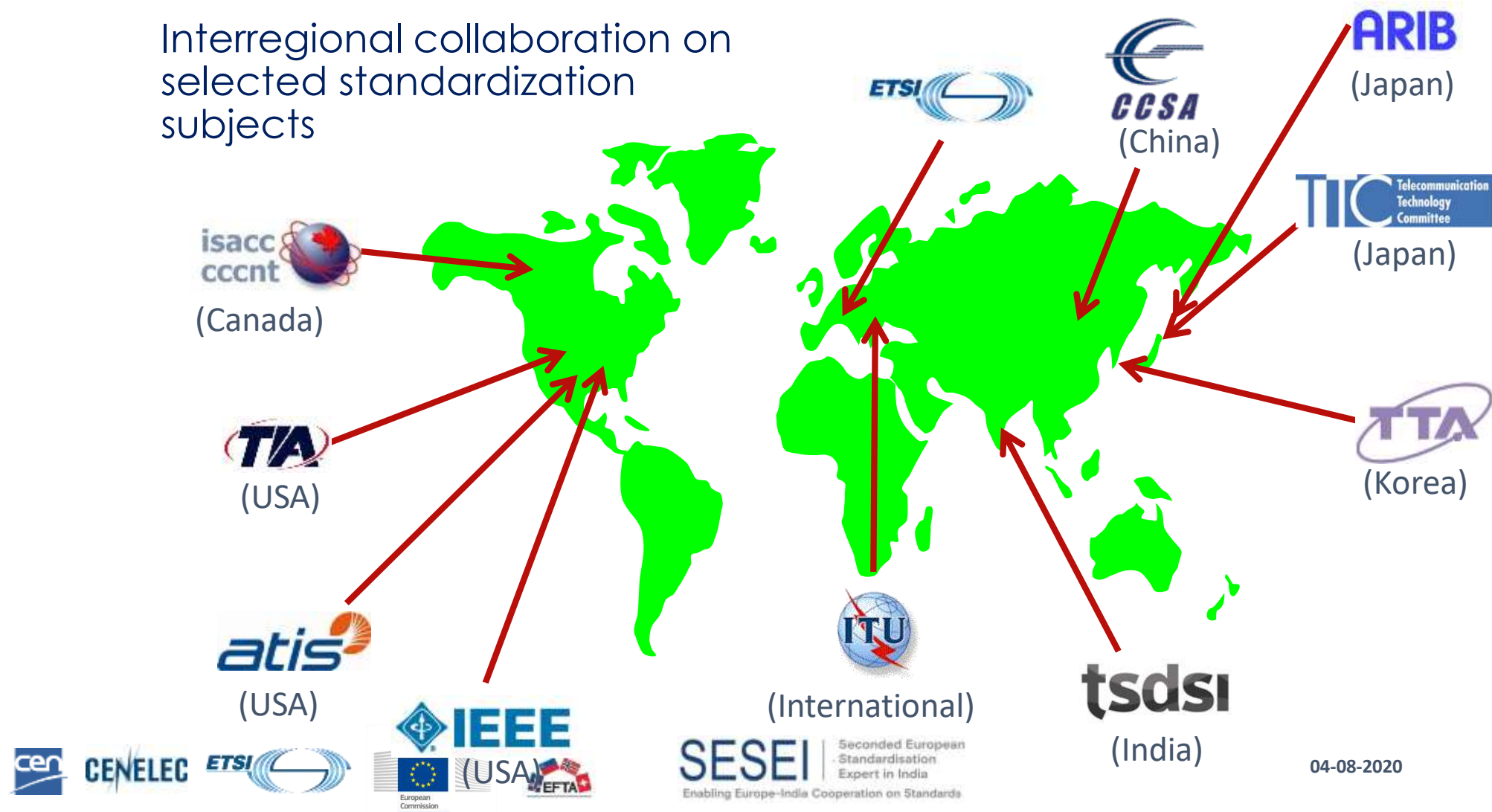

Interregional collaboration on selected standardization subjects

isacc cccnt (Canada)

ETSI

CCSA (China)

ARIB (Japan)

TTC Telecommunication Technology Committee (Japan)

TTA (Korea)

TA (USA)

atis (USA)

IEEE (USA)

ITU (International)

tsdsi (India)

cen CENELEC ETSI European Commission EFTA

SESEI | Seconded European Standardisation Expert in India
Enabling Europe-India Cooperation on Standards

04-08-2020

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ETSI's Partnership Framework

Liaisons
(ISO, ISO/IEC
JTC1)

Co-operation Agreement

Joint ESO
MoUs

Letter of Intent
(LoI)

PARTNERSHIPS

Memorandum
of Understanding
(MoU)

Informal
Collaboration
(IETF, ICANN)

Partnership
Projects

The 4 types of Partnership
From loose to comprehensive...

- Letter of Intent (LoI)
- Initial contact, get to know each other

- Memorandum of Understanding (MoU)
- Nomination of observers in each others TBs
- Circulation of working documents and drafts on a royalty-free basis
- Mapping of areas of mutual interests identified in Annex

- Co-operation Agreement
- Incorporation of text and graphics from the other party into a document
- Joint production of documents
- Only possible when IPR policy of potential partner is compatible with ETSI's

- Partnership Projects
- Consortium of SDOs from around the globe working on and for a specific topic
- A partnership with a Project Co-ordination function and a Technical Specification function
- Task oriented, ensuring that on completion of the tasks the future of the project is re-evaluated

[Click here for details about the Partnership Establishment Process](#)

Facts & Figures

- Today we have **partnership agreements with 110+ organizations**

- Who are our Partners?
- International Standards Developers: ITU, ISO, IEC.
- Regional standard bodies in Partnership Projects: CCSA (China), TSDSI (India), ARIB, TTC (Japan), TTA (Korea), ATIS, TIA (USA)
- Fora/Consortia: OMA, GlobalPlatform, NFC Forum, Broadband Forum…
- EU Agencies /Int. Organisations : EDA, ERA, EMSA, EASA, UPU, ICAO…
- Regional Organisations: APT (Asia), Communications Alliance (Australia), SAC (China), ISACC (Canada), IEEE-SA   (USA)…
- Trade/Industry Associations: GSMA, DIGITALEUROPE, EBU…
- Research: ERTICO, SESAR JU, ERCIM…

- Partnerships have different flavours: **political** and/or **technical** and/or **marketing**

- Where to find the latest list of partnerships and their details: http://webapp.etsi.org/AgreementView/AgreementSearch.asp

Co-operation with EC and EFTA

- EC and EFTA are Counsellors of ETSI since 1988
- Full participation rights, full access, no voting rights
- Participate at all levels: General Assembly, Board, TBs, etc.
- Multiple DGs participate

- ETSI official recognition as ESO in summer 1992
  - Under 83/189/EEC (replaced by 98/34/EC)

- Regulation 1025/2012 (replaced 98/34)
  - ETSI recognised as ESO
  - ETSI can be mandated by EC to produce standards and specifications to meet policy needs, esp. legislative needs (e.g. Harmonised Standards) – Standardisation Requests
  - ICT standardization distinctly recognised
  - ETSI direct participation model recognised
  - Recognition of role of societal stakeholders

EC Support to ETSI Standardization

- Commission Standardization Policy:
  - https://ec.europa.eu/growth/single-market/european-standards/policy_en

- Joint Initiative on Standardization
- Open public-private cooperation/dialogue

- Annual Union Work Programme for European Standardization
- Strategic priorities for standardization
- Commission's intentions to use standardization in support of new or existing legislation and policies

- More detailed Rolling Plan on ICT Standardization - https://ec.europa.eu/digital-single-market/en/news/2019-rolling-plan-ict-standardisation

- Standardization Requests to ESOs

- Financial support:
- Annual Operating Grant to ETSI
- Specific Action Grants (STFs, other)

ETSI and societal stakeholders

- 4 organizations recognized by EC in Reg. 1025/2012, representing interests of societal stakeholders and SMEs in European Standardization
- ANEC, representing consumers
- ECOS, representing environmental interests,
- ETUC, representing social interests
- SBS, representing SMEs

- Reserved vice-chair of GA and reserved seat at Board for User representative

- Reserved seat at Board for SME representative

- Each new Work Item required to consider impact on
- Users/Consumers, incl. safety and privacy
- Environment
- Security

ETSI 3SI Programme

- The 3SI programme:
  - a 3SI Advocate for societal and SME interests,
  - a regular high-level exchange on issues related to societal stakeholders, SMEs and inclusiveness.

- 3SI Advocate
  - A volunteer, nominated by the ETSI Board, who is the point of contact for all matters related to societal and SME interests in ETSI standardization.
  - Appointed end January 2018

- 3SI Meeting
  - At least once a year, ETSI organizes a high-level exchange on societal stakeholders, SMEs and inclusiveness.
  - Involves representatives of the organizations representing societal stakeholders - ANEC, ECOS and ETUC - and SMEs, represented by SBS, the 3SI Advocate, ETSI management, the EC and the EFTA Secretariat. Other ETSI members or experts may be invited as needed.

- Details: http://www.etsi.org/about/how-we-work/3si-programme

About ANEC

- ANEC is the European consumer voice in standardization, defending the collective consumer interests in the processes of technical standardization, conformity assessment, accreditation and market surveillance as well as related legislation and public policies.

- ANEC was established in 1995 as an international non-profit association under Belgian law and is open to the representation of national consumer organizations in 34 countries.

- ANEC is funded by the European Union and EFTA, with national consumer organizations contributing in kind. Its Secretariat is based in Brussels.

- www.anec.eu

About ECOS

- Established in 2001, ECOS is the only organization worldwide working to defend environmental interests in standardization.

- Supported by over 40 environmental NGOs across Europe and beyond, and with a strong pool of independent experts, ECOS contributes to the development process of standards at European and international level, and to related laws and policies. ECOS also advocates for the principles of transparency and inclusiveness to be ensured in standardization.

- ECOS' goal is to contribute to the development of ambitious strategies to reduce environmental impacts, promote resource and energy efficiency,
and ensure a healthy environment.

- www.ecostandard.org

About ETUC

- ETUC is the voice of European workers in standardization. With 45 million members from 89 trade union organizations in 39 European countries, plus 10 European Trade Union Federations, ETUC promotes high quality working conditions for workers in the standardization process.

- www.etuc.org/issue/standardisation

About SBS

- Small Business Standards (SBS) is a European non-profit association (aisbl) co-financed by the European Commission and EFTA Member States. Its goal is to represent and defend small and medium-sized enterprises' (SMEs) interests in the standardization process at European and international levels. Moreover, it aims at raising the awareness of SMEs about the benefits of standards and at encouraging them to get involved in the standardization process.

- SBS was established to meet the European Union's aspiration to make the standardization system as inclusive, transparent and open as possible in line with Regulation 1025/2012 on the European Standardization System.

- http://www.sbs-sme.eu

Useful links

- European Telecommunications Standards Institute (ETSI)
  - https://www.etsi.org/
- ETSI Portal
  - https://portal.etsi.org/home.aspx
- 3GPP
  - https://www.3gpp.org/
- oneM2M
  - https://www.onem2m.org/
- EU Project SESEI (Seconded European Standardization Expert in India)
  - http://sesei.eu/

Dinesh Chand Sharma

(Seconded European Standardization Expert in India)

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