



# European Telecommunications Standards Institute (ETSI)



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

# Project is a local presence in India

**SESEI (Seconded European Standardization Expert in India) is a local face for the European standardization community in India: Dinesh Chand Sharma**



**Why SESEI:** India is a major trade partners for EU/EFTA, Increasing role of standards to gain market access, evolving & complex nature of regulatory and standardization landscapes, sharing best practices, and work together as partners

## Priority Sectors/topics: Aligned with EU-INDIA TTC, Connectivity Partnership

### **Digitization: Strategic technologies, digital governance, and digital connectivity**

Smart Cities/Urban Development, ITS, Quantum Technologies, Smart Grid/Meter, **Artificial Intelligence**, 5G/6G, Open RAN, M2M/IoT (Cyber-Physical Systems), DECT, Data Privacy, Satellite Communication, Blockchain, Digital Signature, Smart Manufacturing, e-Accessibility, cybersecurity, digital skills, digital platforms including Research and Innovation etc.

**Green & Clean technologies :** Clean Energy, Energy Efficiency (Green ICT), Environment, Circular Economy including Resource Efficiency, Waste Management, Energy storage technologies, Electric mobility, Green Hydrogen, Advanced biofuels including R&I etc.

**Other topics** of mutual interests such as Rail, Ropeways, Machinery Safety etc.

[www.sesei.eu](http://www.sesei.eu) , [www.sesei.in](http://www.sesei.in)



# Standard & Its importance



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# What is a Standard?

- Many people think that Standards Complicate or are impediment to innovation
- Standards are often confused with Rules or with Quality Regulations.
- Standards are simply a way of sharing good practice. It is a document that defines technical or quality requirements with which current or future products, production processes, services or methods may comply
  - ✓ Standards present the consensus view on products/services, managing processes or even improving behaviours.
  - ✓ They can be agreed specifications, recommendations, guidelines or principles.
  - ✓ They demonstrate that products/services meet agreed criteria, processes and principles.
  - ✓ Standards are written & maintained by business/industry, consumers, govt., innovators, etc.



# Benefits of Standards

- We use standards every day, in all aspects of our daily lives – in communications, media, healthcare, food, transport, construction, furniture, energy.....
- Standards provide:
  - ✓ **Safety and reliability**– raising user confidence, increasing sales and the take-up of new technologies
  - ✓ **Support of government policies and legislation**– Standards are frequently referenced by regulators and legislators for protecting user and business interests, and to support government policies, for example the European Union's policy for a Single Market
  - ✓ **Interoperability** – the ability of devices working together
  - ✓ **Business benefits** to: Open **market access**; Provide **economies of scale**; Encourage **innovation**; Increase **awareness** of technical developments and initiatives
  - ✓ **Consumer choice** - standards provide the **foundation for new features** and options, contributing to the enhancement of our daily lives. Mass production based on standards provides a greater variety of accessible products to consumers.



# Benefits of Standards

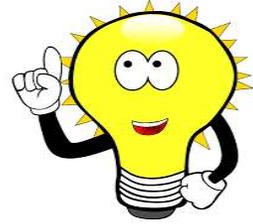
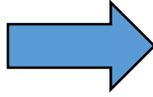
- A good example on the power of standardization is the **GSM™** mobile communication technology and its successors (**3G, 4G, 5G...**), truly global phenomena, in which ETSI has and is still playing a leading role.
- ETSI can boast many other similar success stories including, for example, **Smart Cards, DECT™, TETRA, Short Range Radio, medical implants, electronic signatures....**
- In a world without standards:
  - products might not work as expected or be of inferior quality
  - products might be incompatible with other equipment or may not even connect with them
  - non-standardized products may be dangerous
  - customers would be restricted to one manufacturer or supplier
  - manufacturers would be obliged to invent their own individual solutions with limited opportunity to compete with others



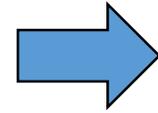
# How Standards are Made?



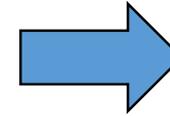
Anyone can suggest an idea for a new Standard



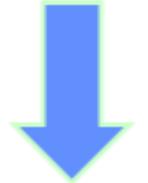
All ideas for new standards are assessed & stakeholders are consulted on the potential scope



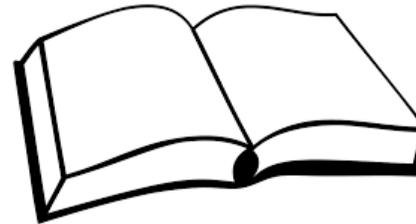
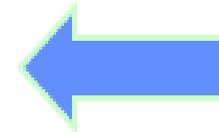
The Proposal is assessed and if approved a stakeholder group is formed



The Stakeholder group forms a committee to draft the standards



The draft is then issued for public consultation



Once the document passes final approval it is published



Standards are reviewed every five years some as early as two years from publication. The committee or drafting panel considers any comments they have received about standard and decides whether it needs to be withdrawn, confirmed or reconfirmed amended or revised. A decision to amend or revise the standard will lead to a new proposal for work



# How a new regulation is framed in EU => Act & its implementation



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# Standards vs Législation

## Standards :

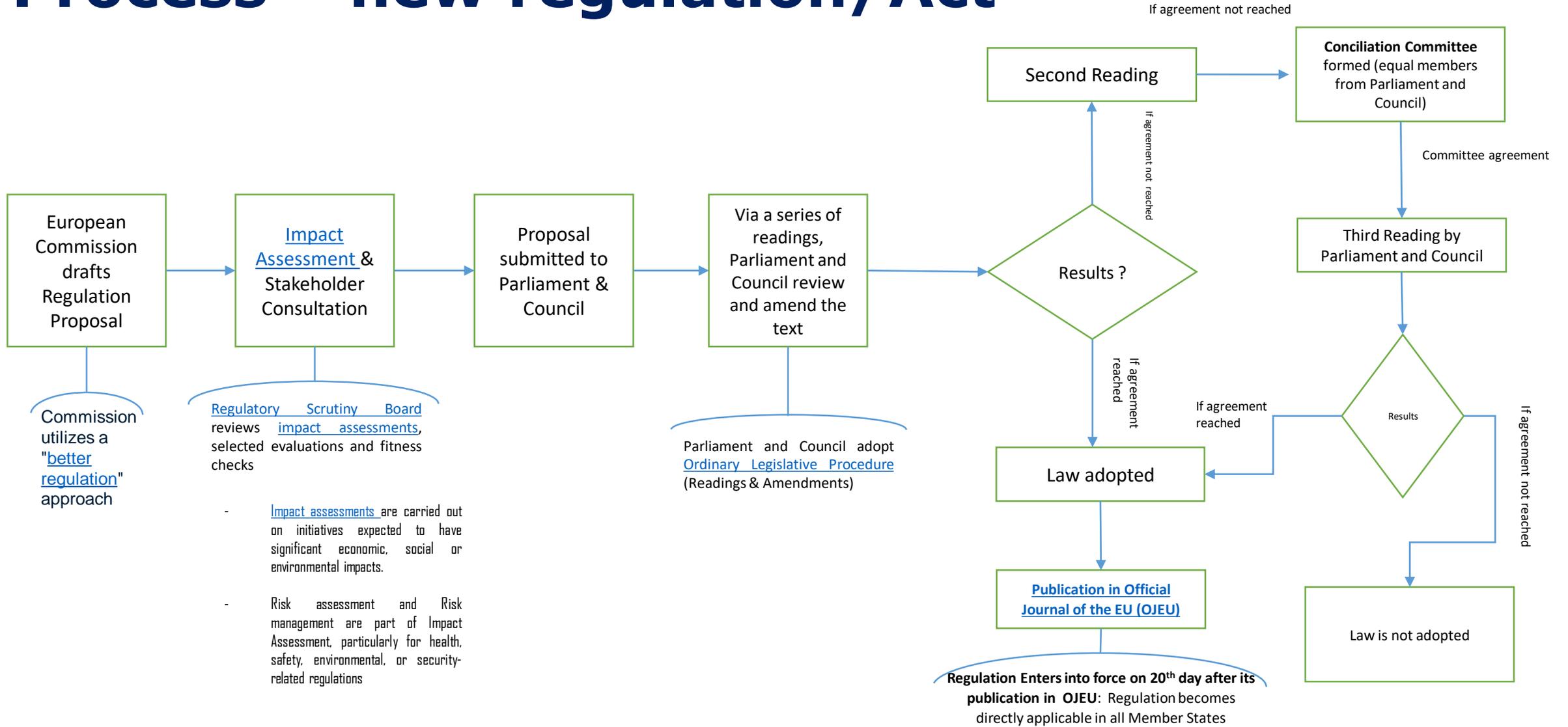
1. Voluntary
2. Consensual
3. Developed by independent organisations
4. Revised every 5 years
5. Provide specifications and test methods (interoperability, safety, quality, etc.)



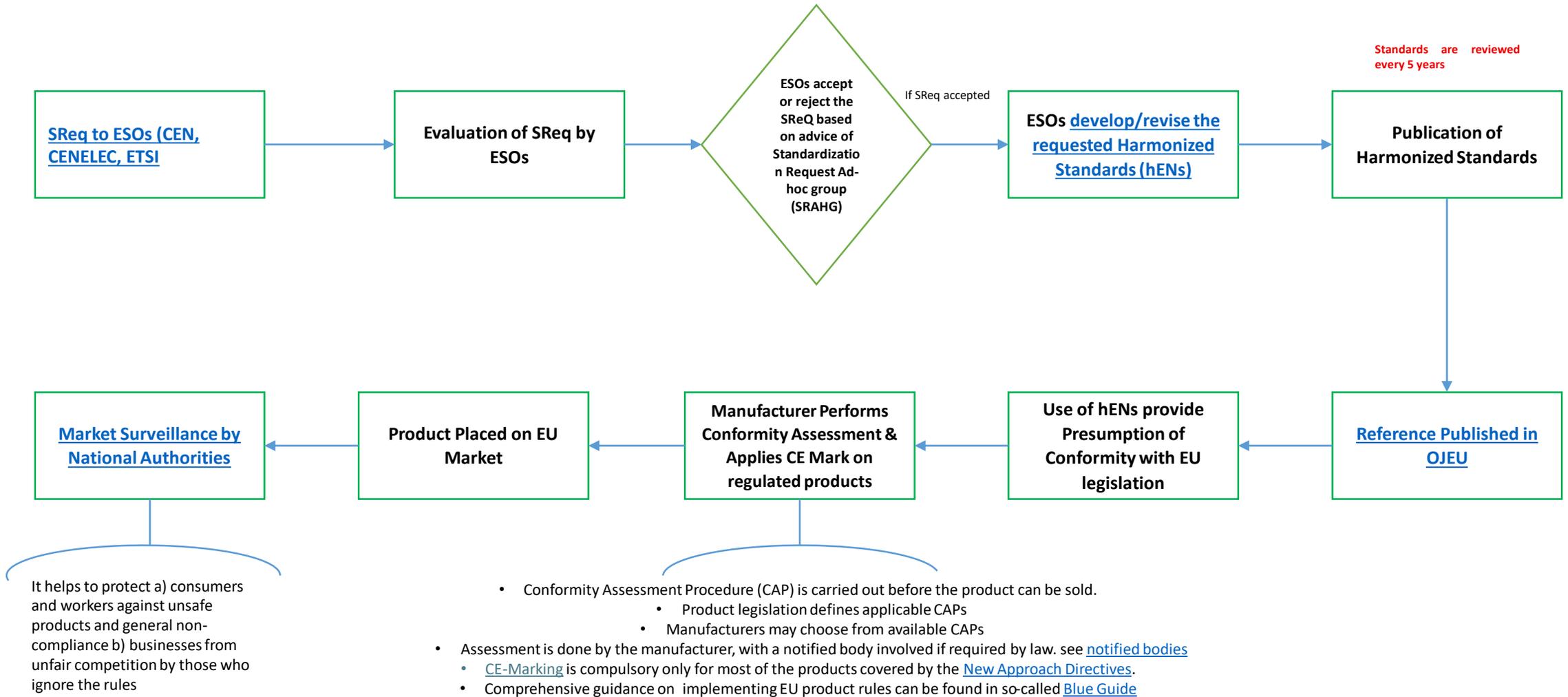
## Legislation :

1. Mandatory
2. Imposed by Law
3. Established by public authorities
4. Revised when legislators decide
5. Gives requirements to protect public interests

# Process – new regulation/Act



# Process – Standards & Implementation



# Smart and Better Regulation 1(3)

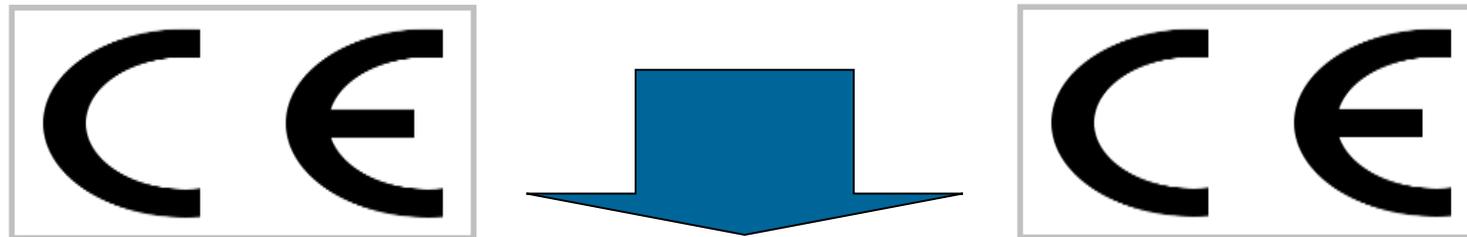
## Smart Regulation – Better Regulation

- EU follow-s the principal of Better/Smart regulation:
  - Design EU policies and laws to achieve their objectives at **minimum cost** and ensure that policy is prepared, implemented and reviewed in an **open, transparent manner, well informed** by the best available evidence and backed up by **involving stakeholders, supported by Impact Assessment**
- Before EU takes action the Commission publishes roadmaps and inception impact assessments which
  - Describe the planned new initiatives and evaluations of existing legislation.
  - examine the potential economic, social and environmental consequences of proposed action through Impact assessments
- Regulatory Scrutiny Board (RSB): review the impact assessments reports/results
- REFIT (Regulatory Fitness and Performance Programme) to
  - make EU law simpler and to reduce regulatory costs, thus contributing to a clear, stable and predictable regulatory framework supporting growth and jobs
- Ensure Sufficient transition period
  - for standards 3 years and for any new/amended legislation it is 2 years: Concurrent application of both old and new standards are allowed during this transition period of three years post legislation.



# CE MARKING

Facilitate **free movement of goods**  
in the Internal Market whilst ensuring a  
**high level of protection for consumers**



**Elimination of barriers to trade through technical harmonisation**

[https://single-market-economy.ec.europa.eu/single-market/ce-marking\\_en](https://single-market-economy.ec.europa.eu/single-market/ce-marking_en)

# CE MARK Concept

- The **CE Mark** with a **Declaration of Conformity** is analogous to a passport for products exported to the EU. Its intent is to IDENTIFY Compliant Products so they are not delayed or held in Customs.
- The **CE MARK** protocol is essentially an honor system accepted by EU member countries. Manufacturers can **Self-Declare Compliance** by adding CE MARKS and signing a Declaration of Conformity. It is also required that a Technical File be created.
- The **Technical File** is the backup document for the CE MARK and Declaration of Conformity. The Technical File is NOT typically included with the product shipment. The Technical File is intended to:
  - Identify the Importer or Purchaser who is resident within the EU
  - Describe the Product
  - List Safety and Compliance Critical Parts
  - Cite the applicable EU Directives
  - List all Safety, EMC and Other Tests performed to Validate Compliance
  - List Tests related to I.D. Number of each Test Standard used



# CE MARK Deliverables

Detailed Findings Report is the first document generated. It is generated after the 1<sup>st</sup> safety review of the product. It is specific to the Clients Product. It includes viable suggestions for Corrections

## The Declaration of Conformity provided as a draft



## CE Marking

As defined by the Official Journal of The European Communities, Number L 169/43, Annex XII. The CE Conformity Marking shall consist of the initials "CE" taking the following form:



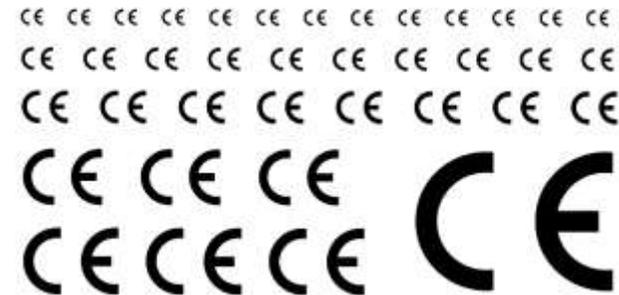
NOTE: These symbols are the circles of 20 square diameter

If the marking is reduced or enlarged the proportions given in the above graduated drawing must be respected. The symbol may not be less than 5mm.

The minimum dimension may be waived for small-scale devices.

The following is provided to assist our clients with ready made artwork for use with labels, manuals, shipping containers and other copy needs.

REMEMBER... the smallest permissible vertical size is 5mm (.2 inches).



The Findings Report notes any discrepancy in the product's construction and offers suggestions for making corrections. When appropriate we even suggest sources for key components and alternatives.



# CE Compliant Products Technical Report

## EMC Test Report : EMC = Electro-Magnetic Compatibility

### The "Technical File" or CE Mark Test Report

1. Includes a [Declaration of Conformity \(D.o.C\)](#). A separate D.o.C is also provided as a Certificate to accompany the shipping documents to an EU Port-of-Entry. Only one D.o.C. is required per shipment. This is regardless of the number of units in a single shipment.
2. The CE Mark Report is provided in pdf format and is known as a Technical File (TF). It is a detailed Report describing the product in detail and all of its testing. It bears the written opinion of a Competent and Independent 3<sup>rd</sup> Test Lab that the CE Marked Product has been evaluated and tested. It cites all of the Directives and Test Standards used in making the decision. The TF is used to set aside any challenges that a manufacturer may get as to the validity of the CE Mark.
4. If a customs official or a customer questions the validity of the CE Mark, a review of the TF should quickly set aside any concerns. Typically, one hard copy is kept at the main office and one sent to each Importer/Agent.



# All About CE Marking, NANDO, MRA & Market Surveillance

- All About CE Marking



- NANDO

- [Nando \(New Approach Notified and Designated Organisations\)](#)

- MRA

- [Mutual recognition agreements](#)

- MS

- [Market surveillance](#)

# All about ETSI



# ETSI in a nutshell

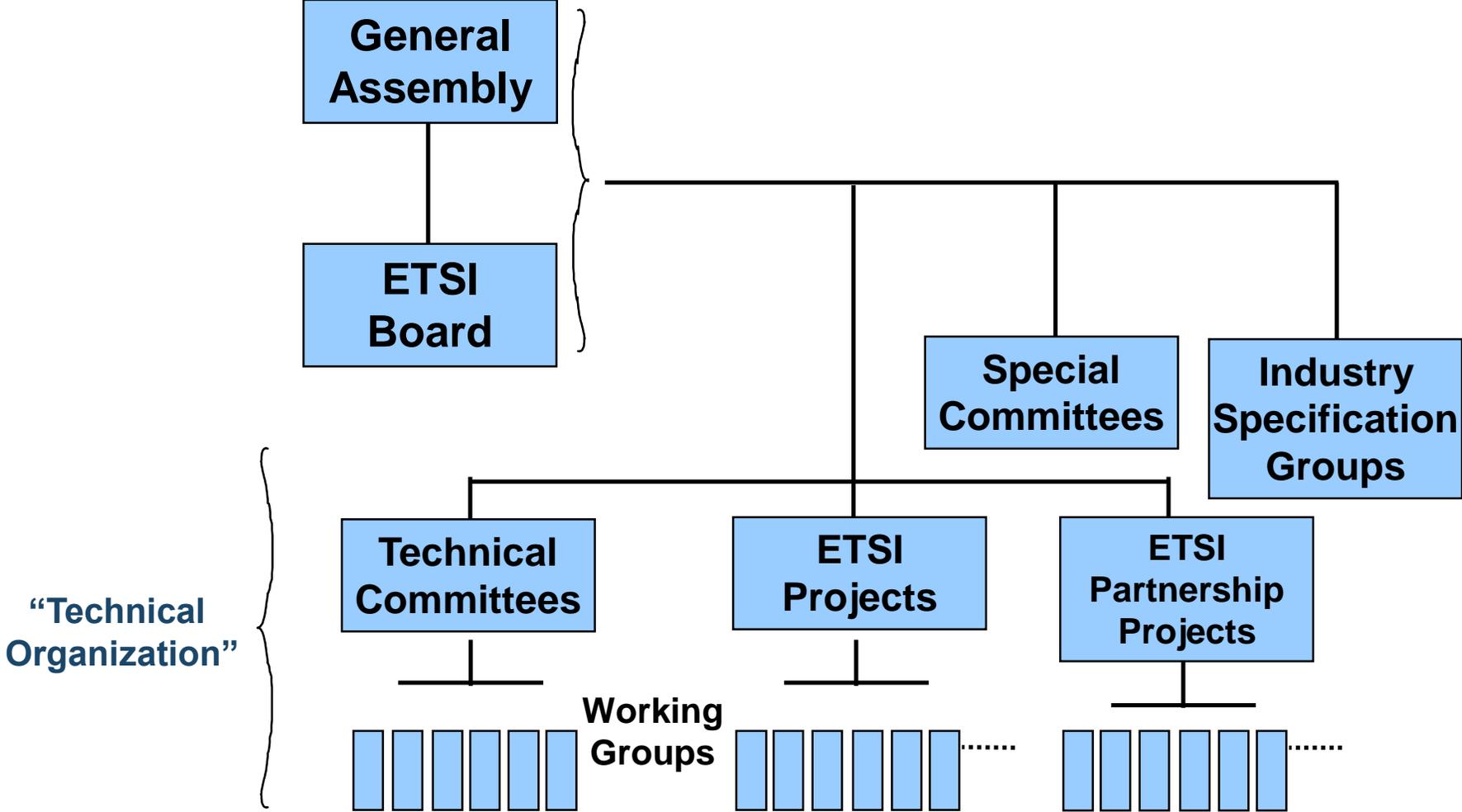
- Standards setting organization
- ICT and « ICT inside » e.g. IoT, M2M, intelligent transport, security, e-ID, etc
- Formally recognized by the EU
- Global membership with direct participation.
- All you can eat
- Free availability of deliverables
- Focus on Interoperability (CTI)
- Collaborative working and partnerships

# A European Standards Organization

- ETSI is a brainchild of European industrial policy
- It produces standards in support of European Union policies and legislation, e.g.
  - Radio
  - e-ID, e signatures
  - Security
  - Accessibility
- It contributes to 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 European countries.
- EC and EFTA are Counsellors of ETSI



# The ETSI Structure



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



# ETSI Cluster

## A Connected World



# ETSI's three primary roles



- ESO:** **European Standards Organization:** standardization for European needs
- GSP:** **Global Standards Producer:** standardization for the global level
- SPO:** **Service Providing Organization:** services such as interoperability testing, forum management etc.

# 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- a Service Provider

In addition to standards-making, ETSI provides a range of supporting services, notably...

- Creation of test specifications and methodologies
- Test methodology & development, Interoperability testing

- Forum hosting



# ETSI Expertise

## Technical Expertise

- **Standards Making**
  - Produce high-quality standards for ICT across all sectors of industry and society
- **Testing and Interoperability**
  - Validation of our standards
  - Test specifications
  - Specialized tools and languages
- **Supporting R&D and Innovation**
- **Education about Standardization**
  - With the support of EC and EFTA Secretariat, we have developed a comprehensive textbook, "[Understanding ICT Standardization: Principles and Practice](#)"

[Click here](#) to read more.....



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# ETSI's five strategic directions



## Being at the Heart of Digital

ETSI is at the forefront of the standardization of new and existing digital technologies and the preferred point of call for ICT related standardization. ETSI enables comprehensive end-to-end ICT architectures and technologies, including device, network and cloud.



## Being an Enabler of Standards

ETSI provides support and a range of tools to enable the identification of the needs and requirements for standards and their production and adoption, in response to regulatory, legislative, policy and market needs.



## Being Global

ETSI creates standards intended for global use, with a membership from across the world and partnerships covering all regions and relevant sectors for ICT. ETSI builds on its ESO status to contribute to the European economy.



## Being Versatile

ETSI innovates in its working methods, creating room for wide participation, innovation, timely deployment, and the global acceptance of its standards. ETSI works with developer communities to support the creation and maintenance of test suites and tools and additional standard-related software material.

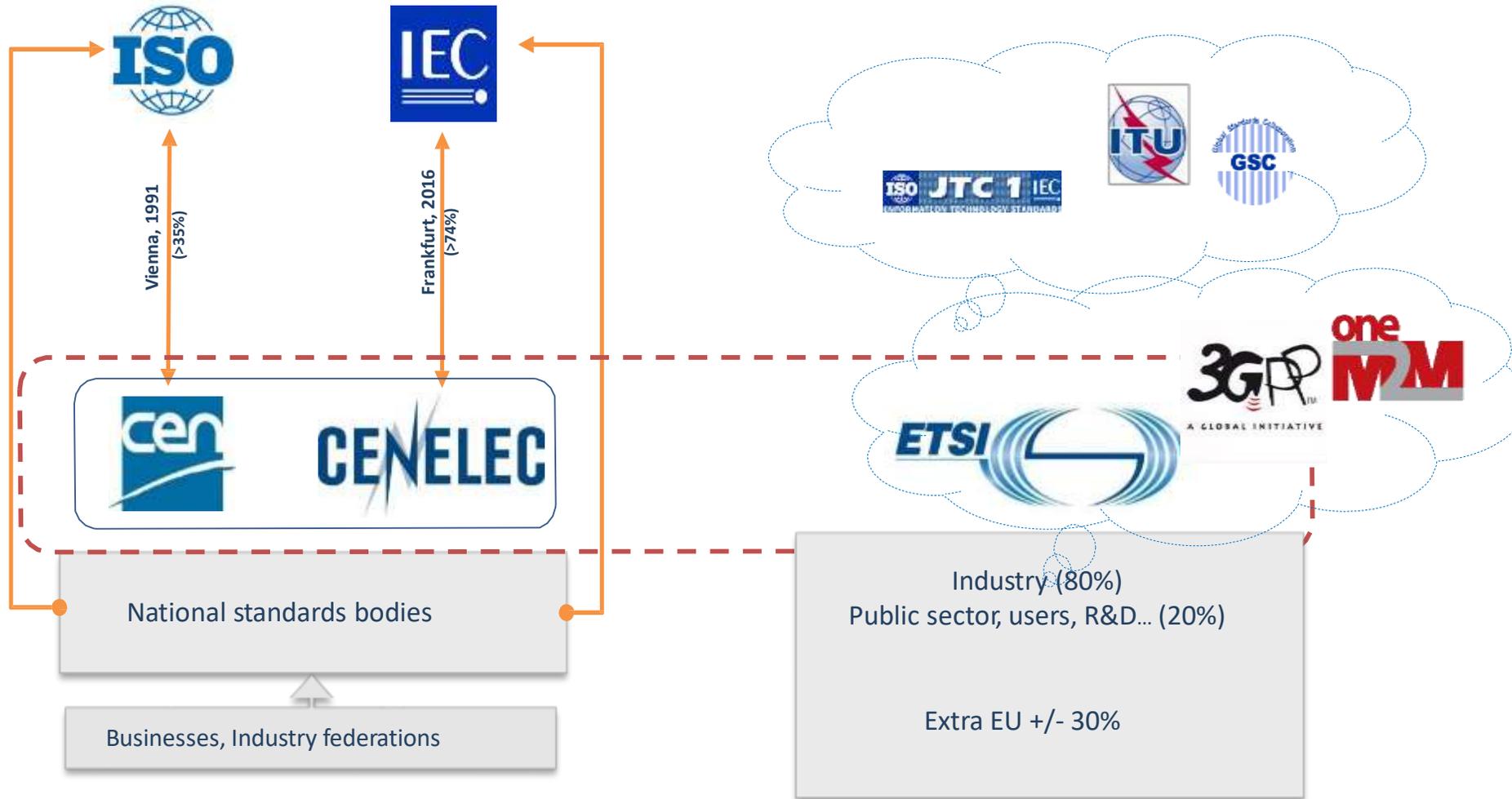


## Being Inclusive

ETSI's membership represents real market and societal needs, from local to global, leveraging the digitization of business and industry, circular economy and the sustainable development of modern society. ETSI comprises large and small companies and research organizations, as well as other business, consumer, societal and environmental stakeholders.

Learn more about ETSI's Strategy at:  
<https://www.etsi.org/about/our-strategy>

# ESOs- Similarities and differences



# A Global Standards Organization

- Global footprint of standards implementation (incl. HENs)
- Global membership
- Operates in partnership with peers worldwide (US, **India**, China, Japan, Korea)



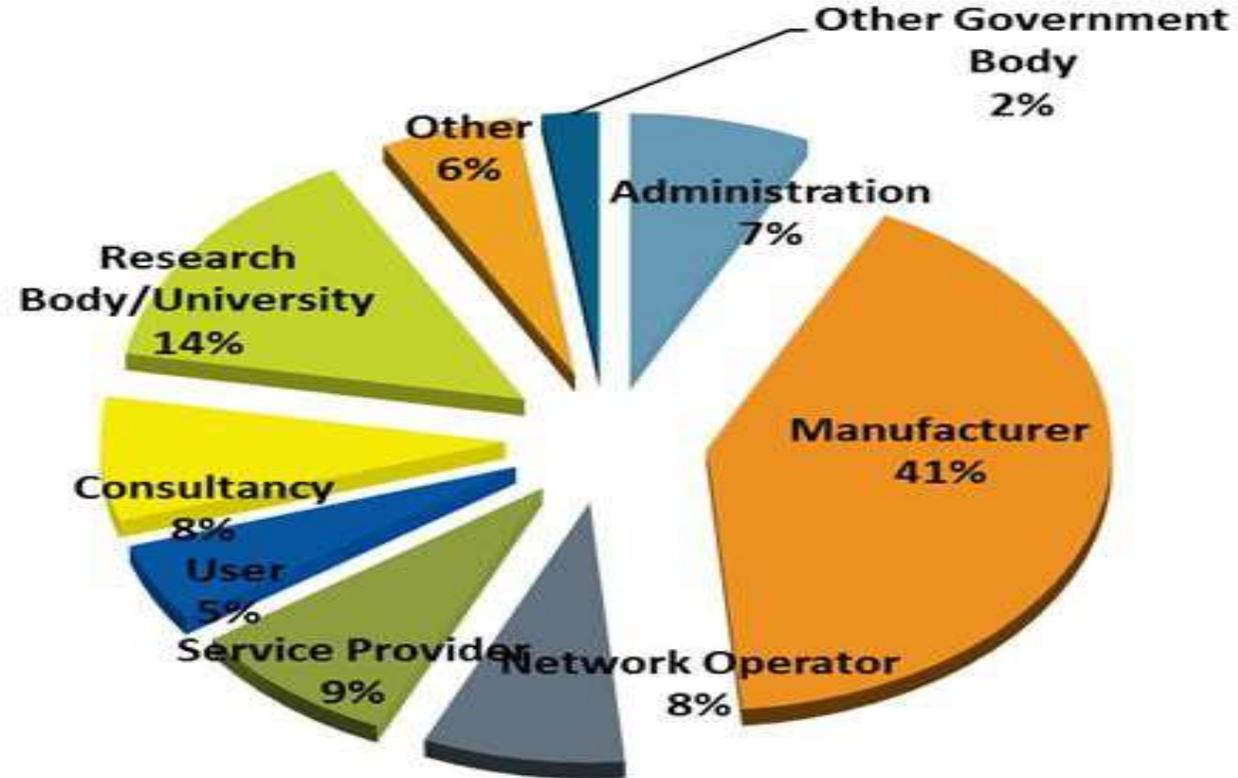
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# 900+ Members from all over the world



**900+**  
Members

**60**  
Countries

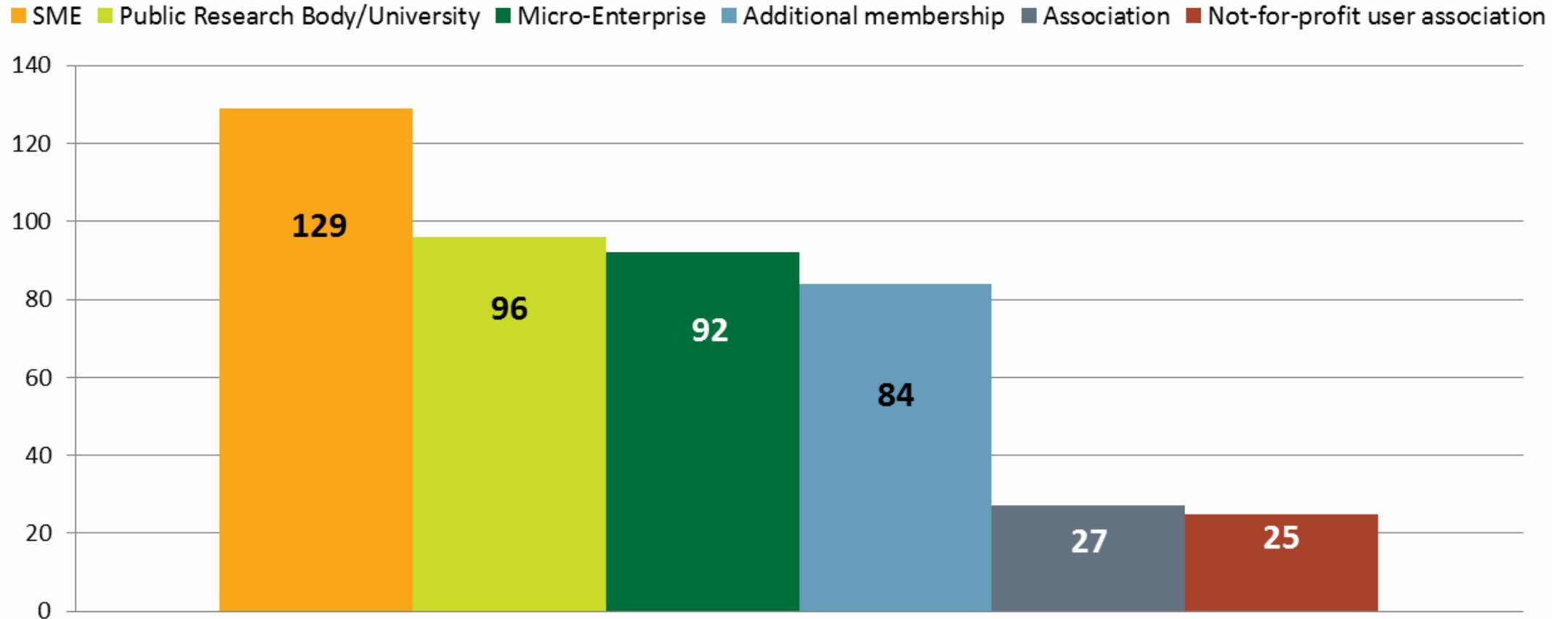
**5**  
Continents

**52**  
Standardization  
Groups

**58000+**  
Standards Published



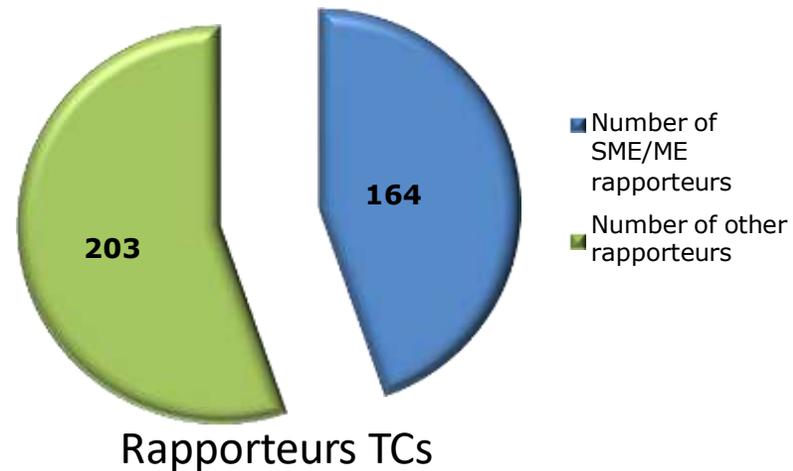
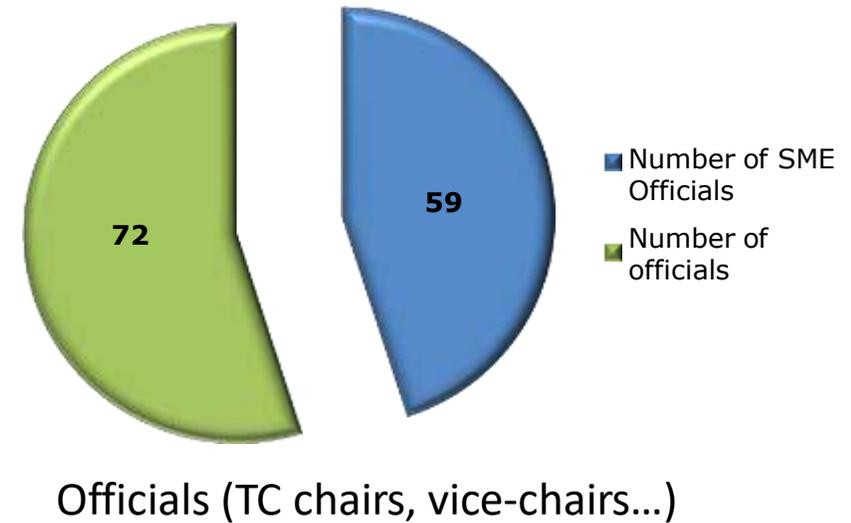
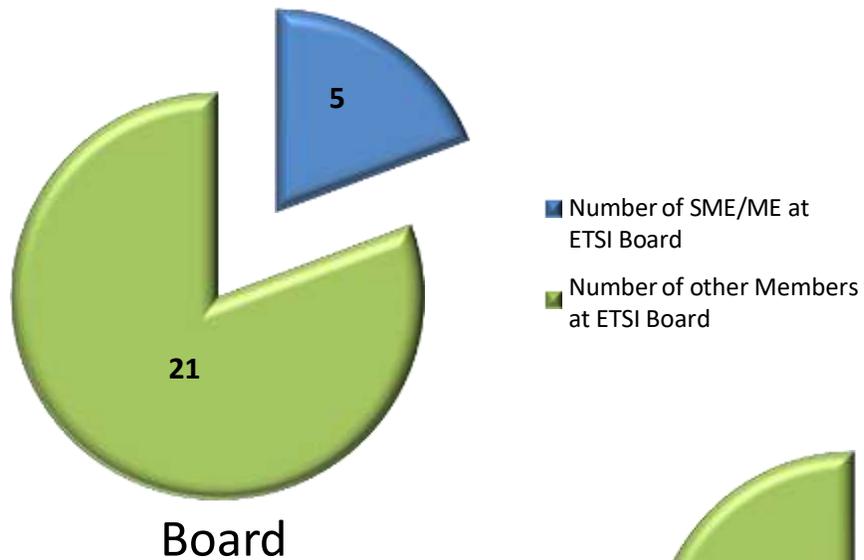
# Not only for the big guys



54 % of ETSI members are SME, ME, research & academia, Associations, NFP user association or additional membership



# The Influence of SMEs/MEs



# ETSI Technical Groups



## Committees, Projects & other groups

- [ATTM: Access, Terminals, Transmission and Multiplexing](#)
- [BRAN: Broadband Radio Access Networks](#)
- [BROADCAST: EBU/CENELEC/ETSI on Broadcasting](#)
- [CABLE: Integrated broadband cable telecommunication networks](#)
- [CYBER: Cyber Security](#)
- [DATA: Data Solutions](#)
- [DECT: Digital Enhanced Cordless Telecommunications \(DECT\)](#)
- [EE: Environmental Engineering](#)
- [eHEALTH: eHEALTH](#)
- [EMTEL: Emergency Communications](#)
- [ERM: EMC and Radio Spectrum Matters](#)
- [ESI: Electronic Signatures and Trust Infrastructures](#)
- [HF: Human Factors](#)
- [INT: Core Network and Interoperability Testing](#)
- [ITS: Intelligent Transport Systems](#)
- [LI: Lawful Interception](#)
- [MSG: Mobile Standards Group](#)
- [MTS: Methods for Testing & Specification](#)
- [QT: Quantum Technologies](#)
- [RRS: Reconfigurable Radio Systems](#)
- [RT: Railway telecommunications](#)
- [SAFETY: Safety](#)
- [SAI: Securing Artificial Intelligence](#)
- [SES: Satellite Earth Stations & Systems](#)
- [SET: Secure Element Technologies](#)
- [SmartBAN: Smart Body Area Network](#)
- [STQ: Speech and multimedia Transmission Quality](#)
- [TCCE: TETRA and Critical Communications Evolution](#)
- [USER: User Group](#)

## ETSI PARTNERSHIP PROJECTS



## Industry Specification Groups

- [ARF: Augmented Reality Framework](#)
- [CIM: cross-cutting Context Information Management](#)
- [ENI: Experiential Networked Intelligence](#)
- [F5G: Fifth Generation Fixed Network](#)
- [ISAC: Integrated Sensing And Communications](#)
- [MAT: Multiple Access Techniques](#)
- [MEC: Multi-access Edge Computing](#)
- [NFV: Network Functions Virtualisation](#)
- [DEU: Operational energy Efficiency for Users](#)
- [QKD: Quantum Key Distribution](#)
- [RIS: Reconfigurable Intelligent Surfaces](#)
- [THz: TeraHertz technology](#)

## Software Development Groups

- [DCF: OpenCAPIF](#)
- [ODP: OpenOP](#)
- [OSL: OpenSlice](#)
- [OSM: Open Source MAND](#)
- [TFS: TeraFlowSDN](#)



# Several kinds of deliverables

*(all free of charge online)*

- European Standard (EN) and Harmonized Standard (HS)
  - Developed by Technical Body, approved by NSOs
- ETSI Standard (ES) and ETSI Guide (EG)
  - Developed by Technical Body, approved by ETSI members
- Technical Specification (TS) and Technical Report (TR)
  - Developed and approved by Technical Body
- Group Specification (GS) and Group Report (GR)
  - Developed and approved by ISG

# ETSI Standard developing 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?**
  - **Technical committees or other types of working groups**, 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).
  - Specialist Task Forces (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.
  - Industry Specification Groups 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.
  - We provide a range of web-based approval mechanisms, to make this a highly pragmatic and visible process.



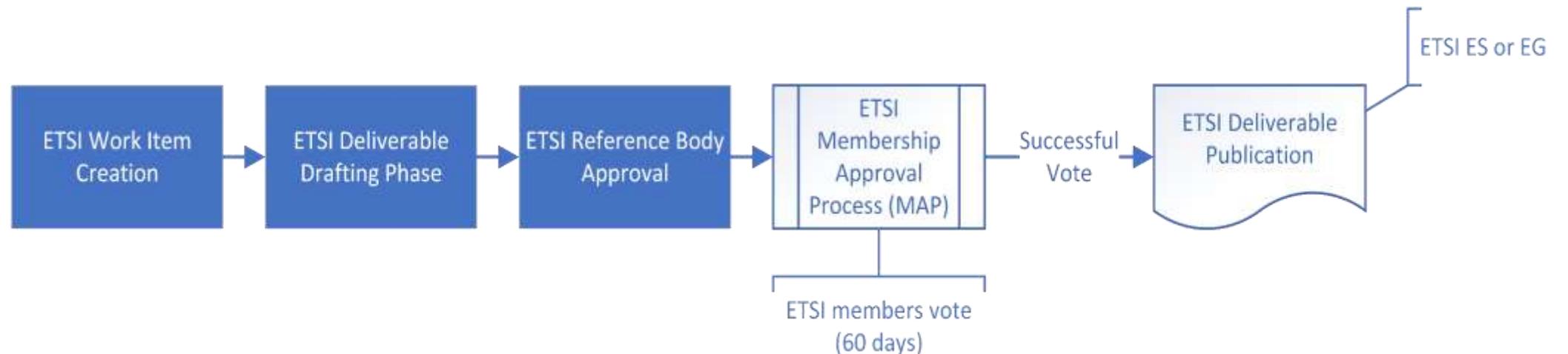
# ETSI Standards approval Process

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)

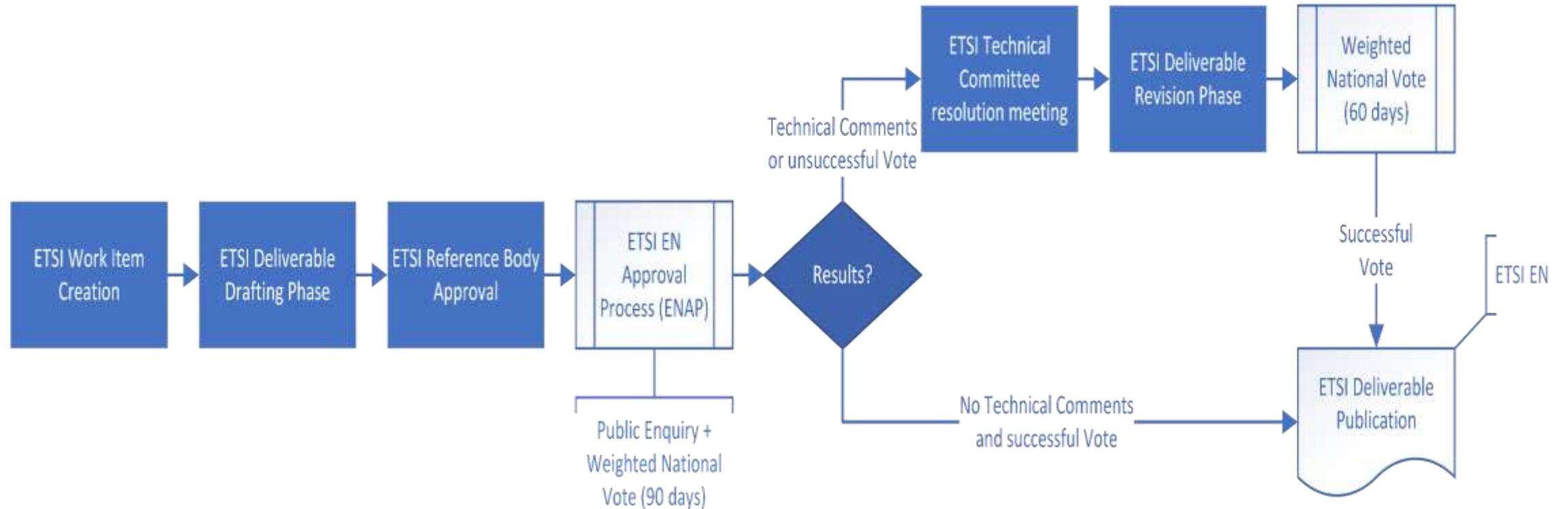


- ETSI Guides (EG) and ETSI Standards (ES)



# 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.

# Emerging Technologies

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

- 5G
- Artificial Intelligence
- Consumer IoT security
- Cybersecurity
- Digital Enhanced Cordless Telecommunications (DECT)
- Digital Signature
- Energy efficiency and environmental aspects
- ETSI TECHNOLOGY RADAR - present & future work
- Integrated Sensing and Communications
- Internet of Things (IoT)
- Permissioned Distributed Ledgers (PDL)
- Quantum Key Distribution (QKD)
- Augmented Reality
- Automotive Intelligent Transport Systems (ITS)
- Certification Authorities and other Trust Service Providers
- Reconfigurable Intelligent Surfaces
- Rail Communications (RT)
- Securing Artificial Intelligence (SAI)
- Smart appliances and SAREF
- Smart Body Area Networks
- Smart Grids and Meters
- Satellite Communications
- Terahertz (THz)

Complete list can be access here

<https://www.etsi.org/technologies>



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# ETSI cooperation with INDIAN SDOs

- **MoU signed with Bureau of Indian Standards (BIS)**
  - to perform & promote international standardization, which will benefit both by adopting a complimentary approach to the standardization, fostering closer cooperation, and further strengthening their relationship.
- **TEC, an associate member of ETSI as other government body**
  - Participates in the ETSI meetings, submit contributions for the meetings, work with technical bodies work programme etc.
  - National Standards by TEC based on OneM2M Release 2 Specifications
  - WTO-TBT for Telecom/ICT Products
- **Telecommunications Standards Development Society, India (TSDSI) signed a cooperation agreement with ETSI**
  - TSDSI has also signed agreements with 3GPP and oneM2M partnership projects, of which ETSI is a founding member.

*ETSI is supported in India by the Seconded European Standardization Expert for India (SESEI) project, established by ESOs i.e. CEN, CENELEC and ETSI and the European Commission and the European Free Trade Association (EFTA). A seconded standardization expert, Mr. Dinesh Chand Sharma, has been appointed in India to increase the visibility of European standardization and to promote EU/EFTA-India cooperation on standards and related policies and legislations.*



# The ETSI Portal



- the interface for accessing information on the technical activities for each ETSI TB
- the Portal can either be accessed:
  - anonymously: all public information can be consulted; or
  - with username & password
    - you can then create your own workspace
- <https://portal.etsi.org/home.aspx>

# ETSI Applications - Access



Account Request

On-line account request for a username & password



Change Password

On-Line password change



Access Rights Maintenance

Access Rights Maintenance for Technical Organization

# ETSI Applications - Work programme



[ETSI Work Programme](#)

Query the ETSI Work Programme



[Standstill Consultation](#)

Check Standstill status



[Publications Download](#)

Catalogue search & download

# ETSI Applications - Work programme



Transposition & Withdrawal

Find the national equivalent of EN...



E-Approval

National Votes, Public Enquiries, etc

Vote on ETSI Standards & ETSI Guides



Decision Support

TB voting application

# ETSI Applications – Contacts & meetings



[ETSI Membership Information](#)



[Contact Information](#)



[Calendar of Meetings](#)



[Meeting Management](#)

**ETSI Full Members, Associate Members, Observers & Counsellors**

**View and modify personal and company details**

**Search**

**Register**

**View participants**

**Reserve document number**

**View room allocation**

**(TB Officials) Create & modify meetings, request rooms**

# ETSI Applications – Contacts & meetings



[TB Membership/  
exploder lists](#)

**Subscribe and unsubscribe to  
one or more exploder lists**



[3GPP meeting  
registration](#)

**On-line registration for 3GPP  
meetings**

# ETSI Applications - Miscellaneous



[IPR](#)

Intellectual Property Rights declarations



[LISTSERV](#)

LISTSERV Interface



[Webstore](#)

Purchase ETSI's documentation

# 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/>

Thank you!

**Dinesh Chand Sharma**

(Seconded European Standardization Expert in India)

Director – Standardization & Public Policy

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