

# What are Standards

Elaina Finger  
Assistant Secretary of IEC TC 86

### What are Standards

- Definitions, Categories of Standards
- Benefits of applying Standards
- Standards versus Regulations , International Standards versus National Standards
- Role of ICT Standards and key ICT Standards Organizations
- How are Standards created: Principles of Standard development
- World Standard Cooperation

### How ITU-T develops Standards

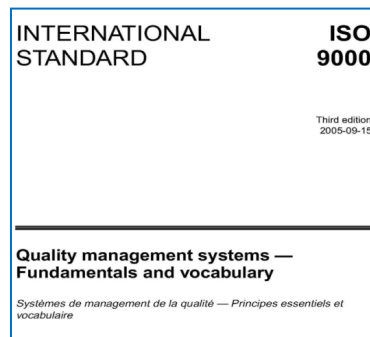
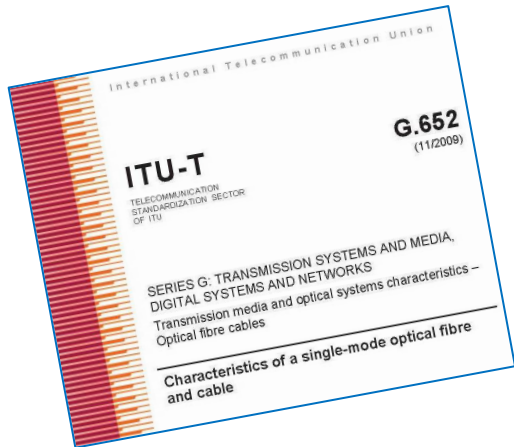
- ITU - Who we are - Our Membership
- ITU-T Objectives , Open Standards
- ITU-T Standards in the Network, Study Groups and ITU-T Structure
- Work Item Life-cycle, Consensus based decision-making in ITU-T
- TAP, AAP, non normative texts
- Key Leadership roles

### Standardization in ITU-T SG15

- Study Group 15 (SG15) mandate
- Lead Study Group
- SG15 Structure
- Working Parties and Questions highlights
- Key Recommendations and future work
- Cooperation with other SDOs

## Standards are

- Published agreements that describe technical requirements, specifications, and characteristics to be fulfilled by
  - Materials, Products
  - Systems, Processes
  - Services
- Widely adopted by
  - Manufacturers
  - Trade organizations
  - Purchasers
  - Consumers
  - Testing laboratories
  - Governments & regulators

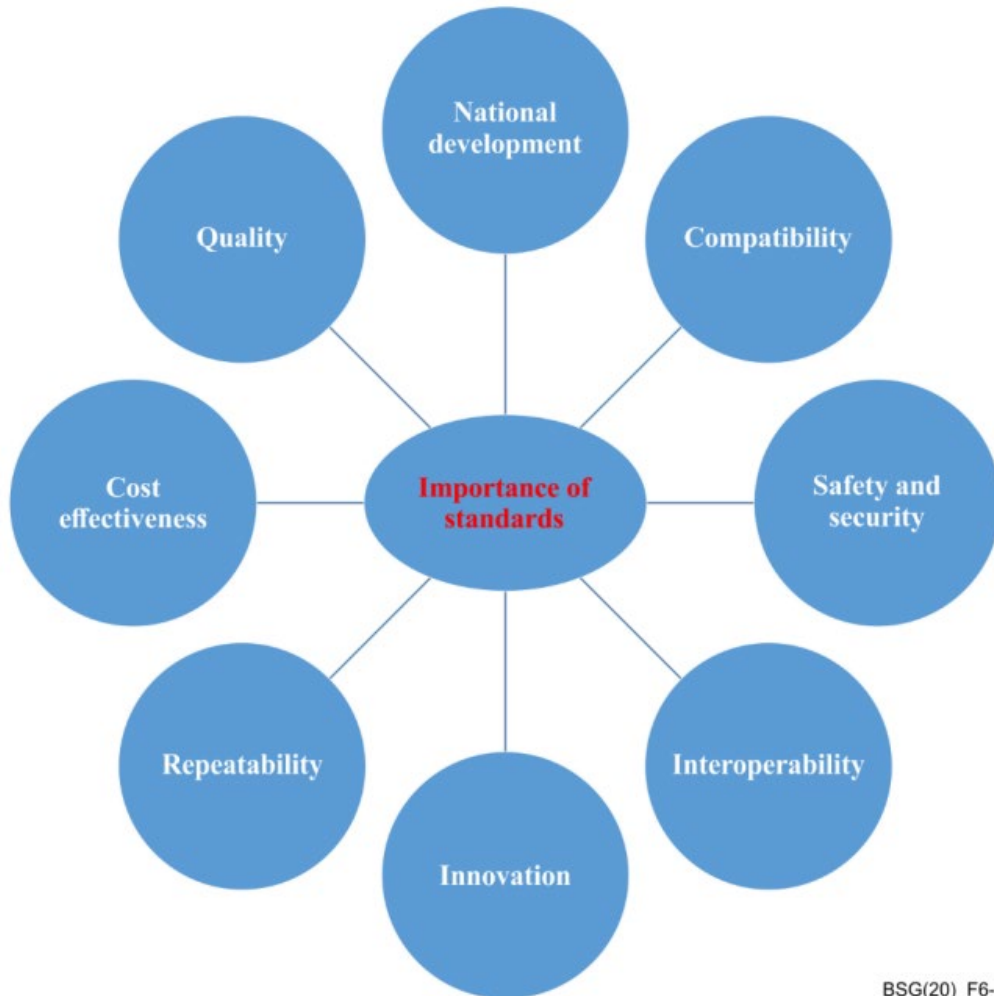


## As defined by ISO/IEC and IEC

- According to ISO/IEC Guide 2:2004, a standard is:  
*“A document, established by consensus and approved by a recognized body, that provides, for common and repeated use, rules, guidelines or characteristics for activities or their results, aimed at the achievement of the optimum degree of order in a given context” [2]*  
*“Note: Standards should be based on the consolidated results of science, technology and experience, and aimed at the promotion of optimum community benefits” [2]*
- *“When things don't work as they should, it often means that standards are absent” [1]*  
<https://www.iso.org/standards.html>
- *“A standard is an agreed way of doing something in a consistent and repeatable way” [3]*  
*“Standards set minimum requirements in terms of safety, reliability, efficiency and trust” [3]*  
<https://iec.ch/understanding-standards>

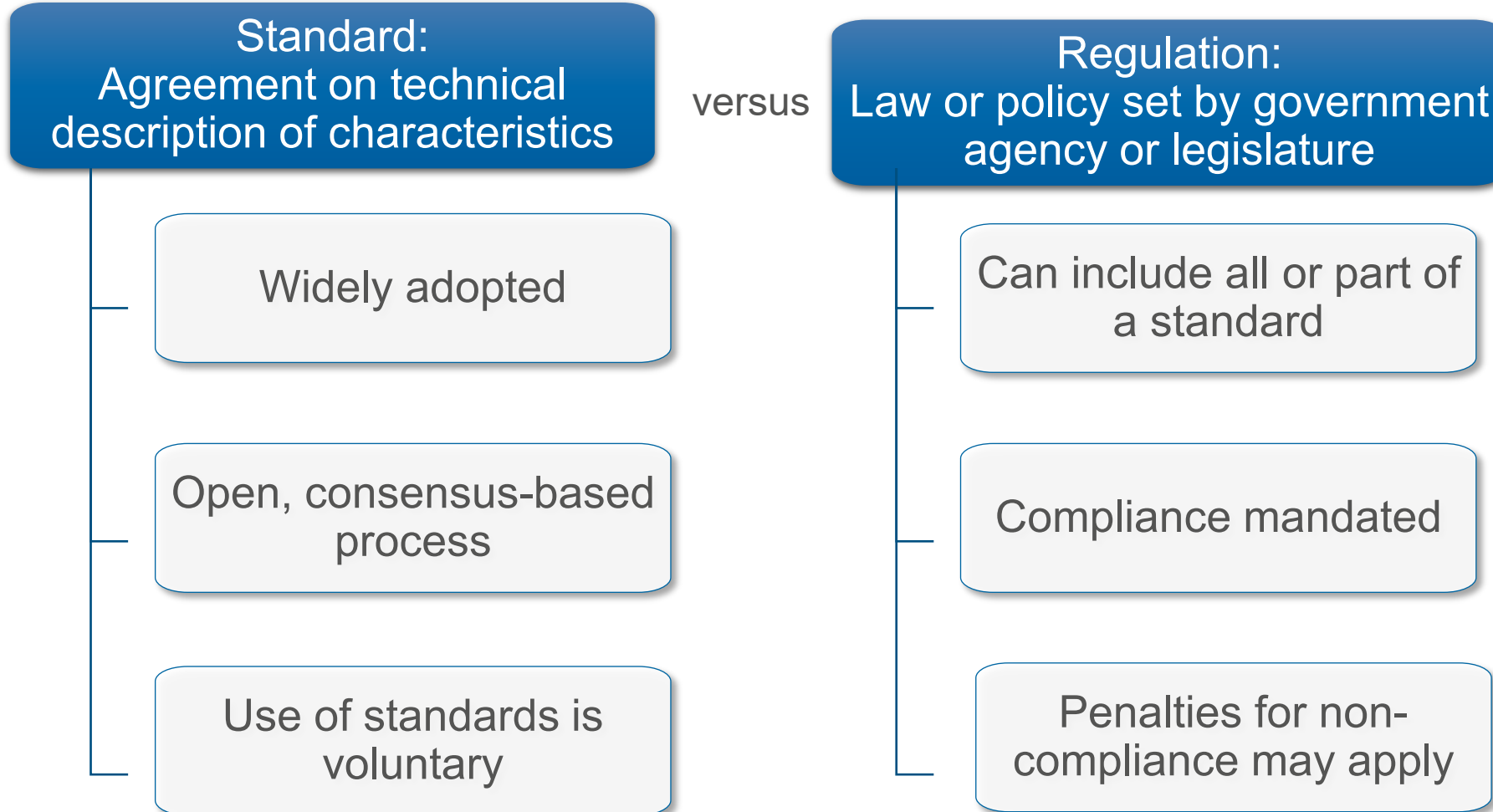
## ***Common types of Standards are [4]***

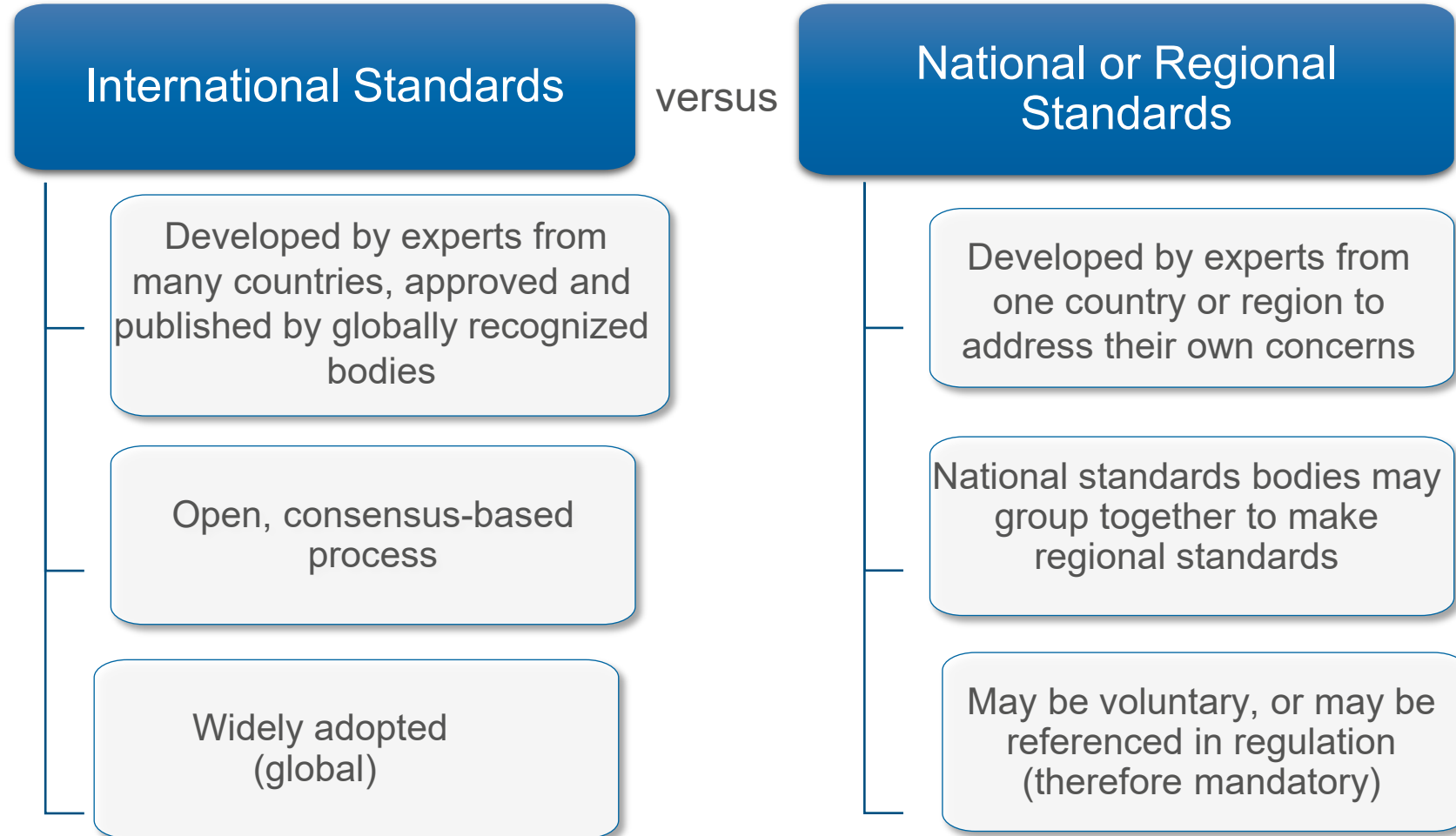
- Vocabulary standards
  - ✓ Contain glossaries and definitions of terms
- Measurement standards
  - ✓ Address definitions of measure, including basic standards on the International System of Units
- Safety standards
  - ✓ Ensure the safety of products, activities or processes
- Management standards
  - ✓ Describe the best way of managing for example. a production, a quality process, an inventory, a service
- Product standards
  - ✓ Specify the requirements for a material or product, including performance and test methods
- **Technical standards**
  - ✓ Specify the requirements of technical systems, how technologies interact with one another and work together. They ensure compatibility and interoperability
  - ✓ **Are the most common standards in the ICT sector**



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- Improve market access
- Facilitate compliance to technical regulations
- Improve the suitability of products, processes, and services for their intended purpose
- Serve to enhance quality
- Promote understanding of technology by providing information
- Prevent technical barriers to trade
- Facilitate technological cooperation







## ***ICT Standards***

- Describe network functional architecture and systems, including operation and maintenance features
- Support the interconnection between national networks in different regions
- Provide deployment options, improve product availability, and support interoperability between vendors
- Are necessary for smooth operations, trade, quick roll out of products to a wider market, predictability of services and products [5]
- Encourage competition and innovation [4]
- Are an essential aid to developing countries in building their infrastructure and encouraging economic development [6]

*The world has become a connected place where standards are no longer an option but a necessity [5]*



Standards Organization		Areas of Coverage
<b>ITU-T</b> International Telecommunication Union (UN agency for ICT)		<ul style="list-style-type: none"> <li>• Products, testing and network applications</li> <li>• Membership of 193 Member States, 800+ private sector, 150+ academia</li> </ul>
<b>IEC</b> International Electrotechnical Commission		<ul style="list-style-type: none"> <li>• Products and testing</li> <li>• 20,000 experts from industry, commerce, government, test and research labs, academia and consumer groups</li> </ul>
<b>ISO</b> International Organization for Standardization		<ul style="list-style-type: none"> <li>• Products and testing</li> <li>• International organization with a membership of 164 national standards bodies</li> </ul>
<b>IEEE</b> Institute of Electrical and Electronics Engineers		<ul style="list-style-type: none"> <li>• Network applications, opto-electronics</li> <li>• Global community to innovate for a better tomorrow with 423,000 members in over 160 countries</li> </ul>
Several other standards organizations, forums and consortia develop ICT standards, e.g.	IETF (Internet Engineering Task Force), OIF (Optical Internetworking Forum), MEF (Metro Ethernet Forum) Broadband Forum, 3GPP, O-RAN	

## Consensus

Inclusive process, views of all stakeholders are considered

## Transparency

Information available to all group at each step

## Balance

Stakeholders' interests have equal weight

## Due process

Mechanisms to ensure an equitable process

## Openness

Easily accessible at all stages to all stakeholders

## Impartiality

Ensure that standards do not favour any particular companies, markets, or regions

## Effectiveness & relevance

Respond to demands for technical standards driven by technological advances, regulatory and market needs

## Coherence

Cooperation and coordination among international SDOs to avoid conflict, duplication, or overlap

## Development dimension

Reflect the needs of all regions and encourage developing countries to participate in the process



High-level collaboration between the IEC, ISO and ITU to strengthen and advance the voluntary consensus-based international standards systems of ITU, ISO, and IEC

- **Standardization Programme Coordination Group (SPCG)**
- SPCG objectives - Making standards work together

*Coordination of new fields of technical activity:*

- Review all new proposals for new fields of technical activity under consideration in IEC, ISO and ITU's Telecommunication Standardization Sector (ITU-T)
- Identify early areas of common interest (and future challenges) in new standardization activities proposed in the three organizations
- Provide recommendations and mechanisms for coordination, collaboration and joint work to the respective technical boards (SMB, TMB, TSAG)

*Coordination of existing areas of technical activity:*

- Review existing standardization activities in IEC, ISO and ITU-T and identify areas where coordination is required and/ or could be enhanced
- Develop recommendations for coordination in existing and new technical structures



## Sources of information and references

- [1] ISO/IEC website  
<https://www.iso.org/standards.html>
- [2] ISO/IEC Guide 2:2004 Standardization and related activities — General vocabulary  
<https://www.iso.org/standard/39976.html>
- [3] IEC website  
<https://iec.ch/understanding-standards>
- [4] ITU- TSB: Understanding patents, competition & standardization in an interconnected world (June 2014)  
<https://www.itu.int/en/ITU-T/ipr/Pages/Understanding-patents,-competition-and-standardization-in-an-interconnected-world.aspx>
- [5] ITU-T TR-BSG: Use of ITU-T Recommendations by developing countries (08/2020)  
<https://www.itu.int/pub/T-TUT-BSG-2020>
- [6] ITU-T Webpage “ITU-T in Brief”  
<https://www.itu.int/en/ITU-T/about/Pages/default.aspx>
- [7] World Standards Cooperation Home page  
<https://www.worldstandardscooperation.org/>