

STANDARDS

**“STANDARDS FOR INFORMATION
COMMUNICATION TECHNOLOGIES”**

National Standardization Organizations

34 full members



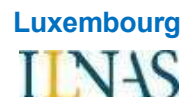
FYROM



Latvia



Lithuania



Sweden



Switzerland



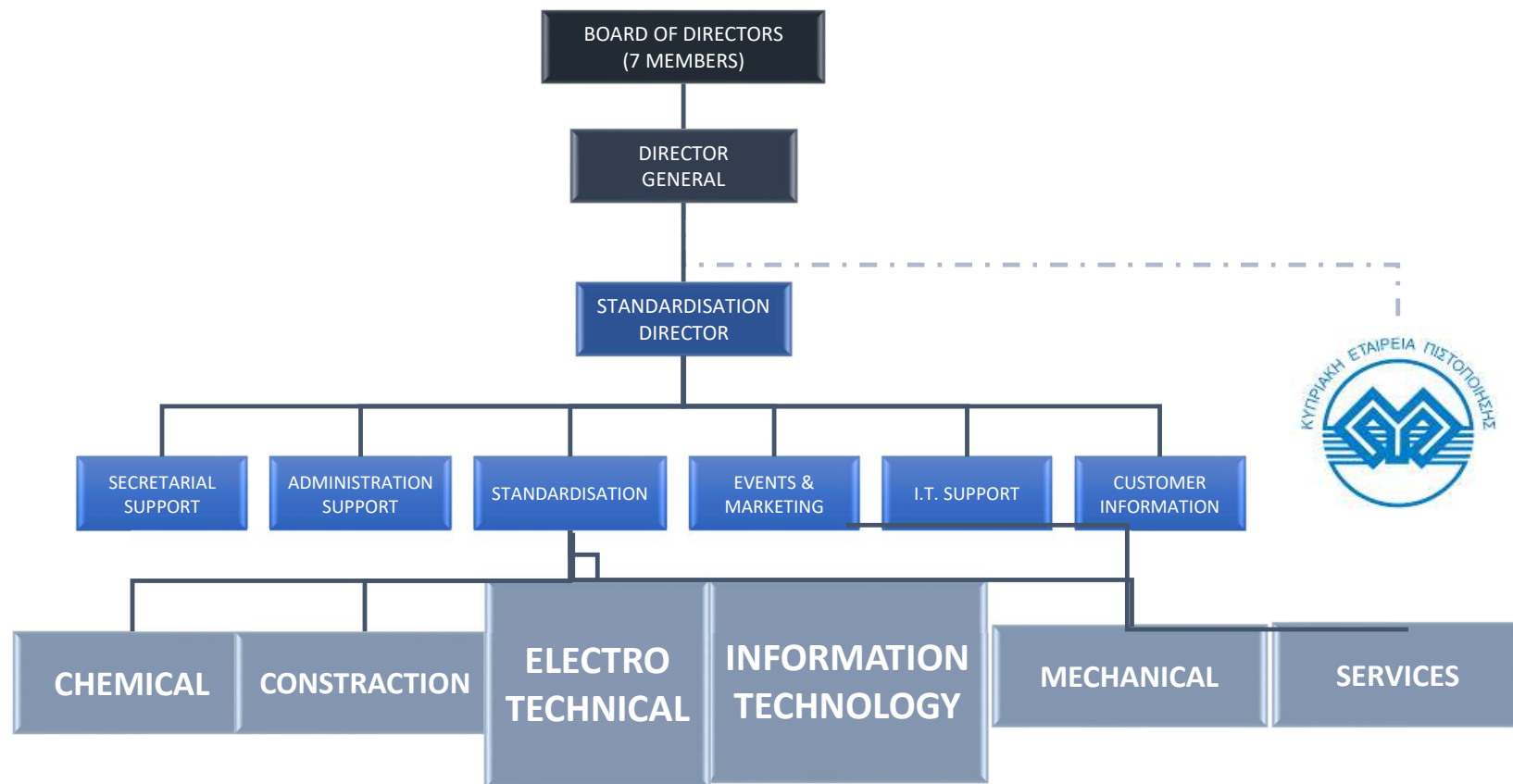
Turkey



United Kingdom



ORGANIZATIONAL CHART



CYS MEMBERSHIP STATUS



**European Committee for
Standardization**



**European Committee for Electrotechnical
Standardization**



European Telecommunication Standards Institute



International Standards Organization



International Electrotechnical Committee



International Telecommunications Union

Main Activities of CYS



Managing the Standardisation System in Cyprus

Informative lectures & seminars

Training seminars/courses

Visits/meetings with the industry

Publications

Articles (Mass Media)

Managing the Standardization System



Standards for Information Communication Technologies



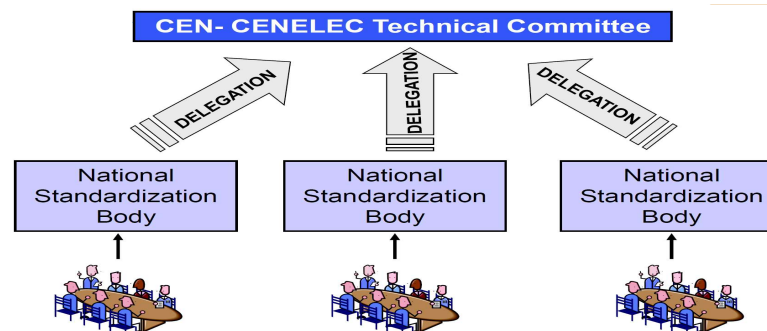
ICT Standards Consist Series of Requirements :

- Equipment Behavior: Can be observed at a defined, accessible interface, such as protocol or service.
- Architectures: Communication and network architectures specifying the functional or logical environment.
- Physical Characteristics: Dimensions, voltage, colour.
- Policy Requirements on operations and Management Practices : Related to the Process of Issuing on qualified Certificates
- Test Specifications: test demonstrating implementation conforms to a standard or interoperability tests.

National Mirror Committees



- National Standardization Bodies set up Mirror Committees that monitor the work of European and International Technical Committees.
- The National experts inside 'mirror committees' in CYS represent and develop the National position on European and International DRAFT Standards. (Professional associations, Telecom Companies, Departments of Electronic Communications, Ministries, Individual Experts).



Examples of National Mirror Committees



14.3	Sustainable and Resilience Cities
6.03	Waste Management
8.01	Telecommunication Equipment
8.02	Telecommunication Technologies
8.03	Blockchain and Distribute Ledger Technology (DLT)
8.04	Artificial Intelligence
8.05	On-line Gambling
8.06	Cybersecurity and Data Protection
8.08	Space
13.09	Financial Services
15.04	Intelligent Transport Systems

MIRROR COMMITTEES



National Mirror Committees in ICT observe the International and European Draft Standards for:

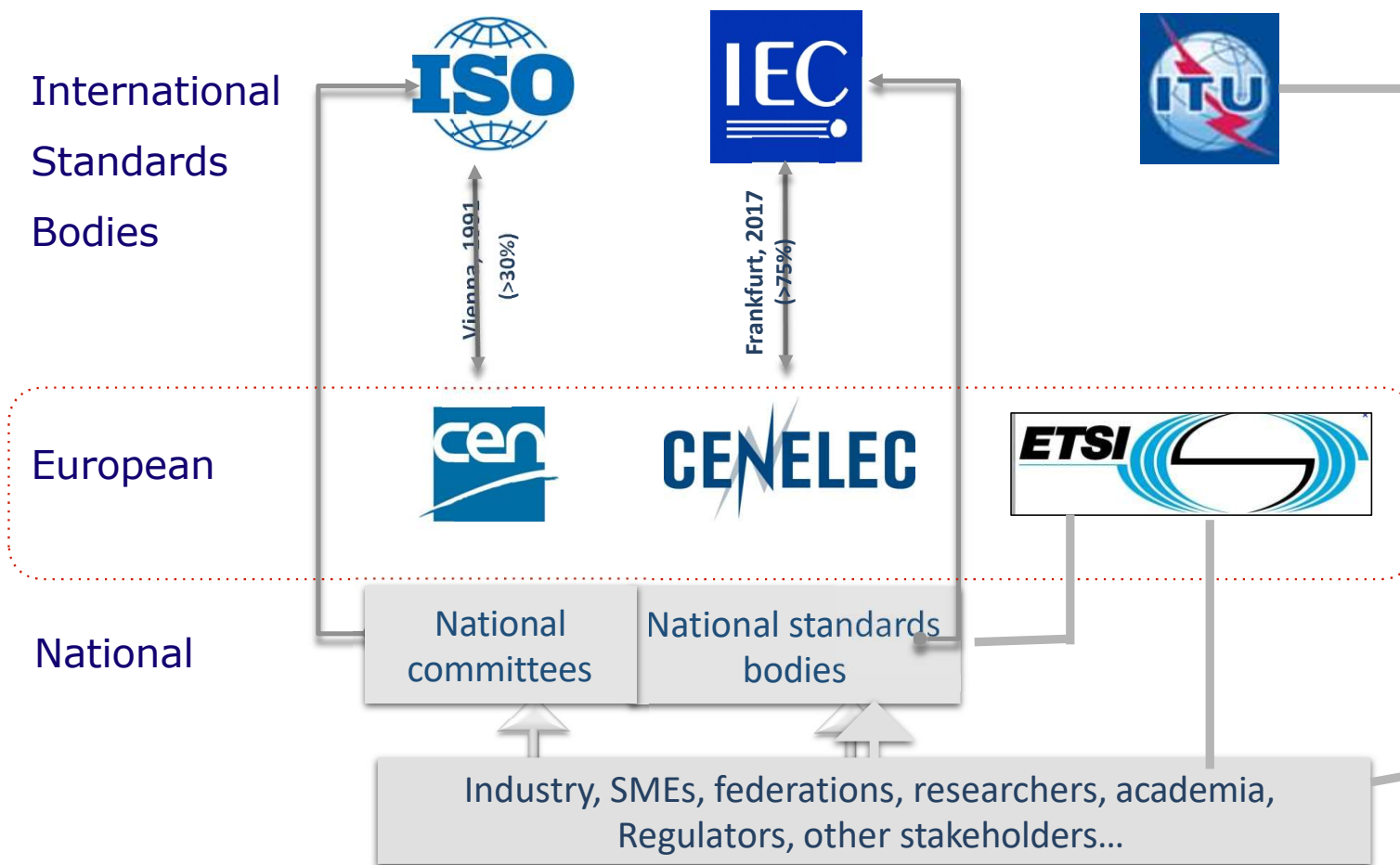
- Telecommunications Technologies
- Blockchain and Distributed Ledger Technologies
- Intelligent Transport Systems
- Artificial Intelligence
- Cybersecurity and Data Protection





CEN-CENELEC ICT Standardization activities

Who we are & Where do we fit in



➤ More than **200 000** experts are connected

- ❖ **800** European industry federations and societal stakeholder organizations
- ❖ **30 000** experts in CEN and CENELEC
- ❖ **55 000** experts in ISO and IEC
- ❖ **160 000** participants in national mirror committees

CEN & CENELEC Standardization : Sectors and Topics

CEN

Bio-based products
Chemicals
Construction
Food
Heating, Ventilation and Air
Conditioning (HVAC)
Materials
Nanotechnologies
Pressure equipment
Services

CEN & CENELEC

Air and Space
Consumer products
Electric Vehicles
Energy and utilities
Health and safety
Healthcare
ICT
Machinery safety
Measurement
Medical equipment
Railways
Security and Defence
Smart Grids / Smart Meters
Transport and Packaging

CENELEC

Electrical engineering
Electromagnetic Compatibility
(EMC)
Fibre-optic communications
Fuel Cells
Household Electrical Appliances
Solar (photovoltaic) electricity
systems

Cross-sectoral issues

Accessibility | Environmental Protection | Energy-efficiency (Eco-Design)

ICT- CEN related standardization Committees

Cyber Security (CEN-CLC/JTC 13)	Quantum Technologies CEN/CLC JTC 22	Smart Meters (CLC/TC 11, CLC/TC 205, CEN/TC 294)	E-Signatures (CEN/TC 224)
ICT competences (CEN/TC 428)	Blockchain (CEN/CLC JTC 19)	Broadband infrastructure (CEN/TC 209, CLC/TC 215)	Advanced Manufacturing (CEN/TC 310, CEN/TC 438)
Construction BIM (CEN/TC 442)	eHealth (CEN/TC 251)	RFID (CEN/TC 225)	eProcurement (CEN/TC 440)
Intelligent Transport Systems (CEN/TC 278)	ICT environmental impact (CLC/TC 215, CLC/TC 205)	eAccessibility (CEN-CLC-ETSI JWG)	Smart Grids (CLC/TC 57, 85X, 59X...)
eInvoicing (CEN/TC 434)	Digitalization of Insurance Industry CEN TC 445	Smart Cities (CEN-CLC-ETSI Sector Forum)	Artificial Intelligence (CEN/CLC JTC 21)



The Standards People

European Telecommunications
Standards Institute

ETSI at a Glance:

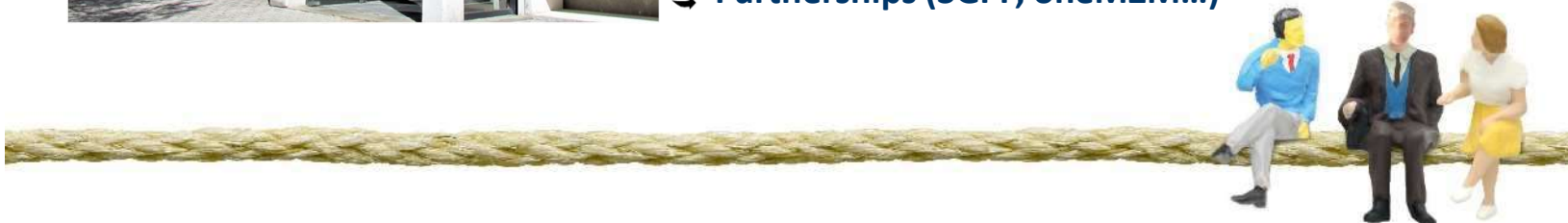
ICT Standards
Organization



ETSI IN A NUTSHELL



- **ICT standards organization since 1988**
- **Formally recognized by the EU**
- **Global membership of more than 850 members from 66 countries**
- **Direct participation / consensus based**
- **“Made in Europe for global use”**
- **Partnerships (3GPP, oneM2M...)**



We are a Community of Dynamic ICT Innovators & Forerunners

- Independent, non-profit organization
- More than 900 member organizations worldwide, drawn from over 60 countries and on five continents
- 30+ years track record of technical excellence in the ICT sector
- Strong community of experts and innovators
- Diverse members: SMEs, micro-enterprises, large companies, research entities, academia, government and public bodies, societal stakeholders

Networking par excellence:

- Attend any of our 50+ conferences & interop events per year
- Exchange with industry leaders and raise your company's profile
- Meet and connect with your customers and competitors in a neutral, professional environment

We are at the Heart of Digital & Driving Innovation



• At ETSI, Members:

- Are at the forefront of emerging technologies
- Benefit from close relationships with research bodies
- Gain a competitive advantage through early adoption of the latest standards in the R&D road map
- Collaborate with open source projects
- Advance and promote new concepts within the community
- Bring fresh innovation and industry insights to ETSI's working methods

ETSI Members shape:

- ✓ 5G
- ✓ Internet of Things
- ✓ Cybersecurity
- ✓ Network Virtualization
- ✓ Artificial Intelligence
- ✓ Multi-access Edge Computing
- ✓ Blockchain
- ✓ Quantum Safe Cryptography
- ✓ Radio
- ✓ ...and many others





We are Global

- Direct member participation and contribution from all over the world in an open & inclusive environment, facilitating that ETSI standards are accepted globally
- More than 100 strategic partnership agreements, driving global standardization
 - With numerous fora and consortia
 - With international and regional Standards Development Organizations (SDOs)
- 3GPP
 - Over 780 members from worldwide telecommunications SDOs
 - Provides system specifications for cellular telecommunications network technologies up to 5G
- oneM2M
 - More than 200 players from worldwide telecommunications SDOs
 - Provides a horizontal layer of functions to support applications and services for the Internet of Things



ETSI Technical Committees and Projects on ICT

ATTM Access, Terminals, Transmission and Multiplexing	BRAN Broadband Radio Access Networks	ESI Electronic Signatures and Infrastructures	HF Human Factors	RT Railway telecommunications	SAFETY Safety
BROADCAST EBU/CENELEC/ETSI on Broadcasting	CABLE Integrated broadband cable telecommunication networks	INT Core Network and Interoperability Testing	ITS Intelligent Transport Systems	SCP Smart Card Platform	SES Satellite Earth Stations & Systems
CYBER Cyber Security	DECT Digital Enhanced Cordless Telecommunications (DECT)	LI Lawful Interception	MSG Mobile Standards Group	SmartBAN Smart Body Area Network	SmartM2M Smart M2M
EE Environmental Engineering	eHEALTH eHEALTH	MTS Methods for Testing & Specification	NTECH Network Technologies	STQ Speech and multimedia Transmission Quality	TCCE TETRA and Critical Communications Evolution
EMTEL Emergency Communications	ERM EMC and Radio Spectrum Matters	OSM OpenSource MANO	RRS Reconfigurable Radio Systems	USER User Group	



Standards for Information Communication Technologies

ISO/IEC JTC 1



ISO IEC/ JTC 1 Standards for Information Communication Technologies



JTC 1 is committed to developing, maintaining, promoting and facilitating information technology (IT) standards required by global markets meeting business and user requirements. The standards apply to the following areas:

- Design and development of IT systems and tools
- Performance and quality of IT products and systems
 - Security of IT systems and information
 - Portability of application programs
- Interoperability of IT products and systems
 - Unified tools and environments
 - Harmonized IT vocabulary
- User friendly and ergonomically designed user interfaces

ISO/IEC Technical Committees on ICT



SCs	Title
JTC 1/WG 6	Corporate Governance of IT
JTC 1/WG 7	Sensor networks
JTC 1/SC 2	Coded character sets
JTC 1/SC 6	Telecommunications and information exchange between systems
JTC 1/SC 7	Software and systems engineering
JTC 1/SC 17	Cards and personal identification
JTC 1/SC 22	Programming languages, their environments and system software interfaces
JTC 1/SC 23	Digitally Recorded Media for Information Interchange and Storage
JTC 1/SC 24	Computer graphics, image processing and environmental data representation
JTC 1/SC 25	Interconnection of information technology equipment
JTC 1/SC 27	IT Security techniques
JTC 1/SC 28	Office equipment
JTC 1/SC 29	Coding of audio, picture, multimedia and hypermedia information
JTC 1/SC 31	Automatic identification and data capture techniques
JTC 1/SC 32	Data management and interchange
JTC 1/SC 34	Document description and processing languages
JTC 1/SC 35	User interfaces
JTC 1/SC 36	Information technology for learning, education and training
JTC 1/SC 37	Biometrics
JTC 1/SC 38	Cloud Computing Distributed application platforms and services (DAPS)

ISO/IEC Technical Committees/SCs/WGs on ICT



SCs	Title
ISO/IEC JTC 1 SC 39	Sustainability of IT and Data Centres
ISO/IEC JTC 1 SC 40	IT Service Management and IT Governance
ISO/IEC JTC 1 SC 41	Internet of things and Digital Twins
ISO /IEC JTC SC 42	Artificial Intelligence
ISO /IEC JTC SC 41	Brain Computer Interfaces
ISO TC 307	Blockchain and Distributed Ledger Technologies
ISO/IEC JTC 1/WG 11	Smart Cities
ISO/IEC JTC 1/WG 12	3D Printing and scanning
ISO/IEC JTC 1/WG 13	Trustworthiness
ISO/IEC JTC 1/WG 14	Quantum information technology



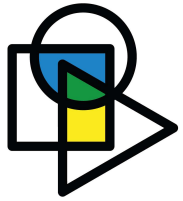


INTERNATIONAL
TELECOMMUNICATIONS UNION

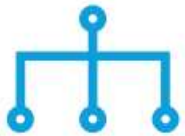
Setting the standard

Building trust by consensus





TECHNICAL FOUNDATIONS



Transport,
access and
home networks



Multimedia



Service
quality



Numbering
& emergency
comms



Artificial
intelligence



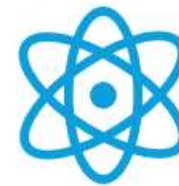
Cybersecurity



Internet
of Things



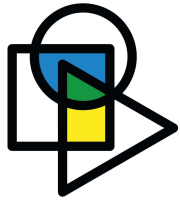
Environmental
efficiency



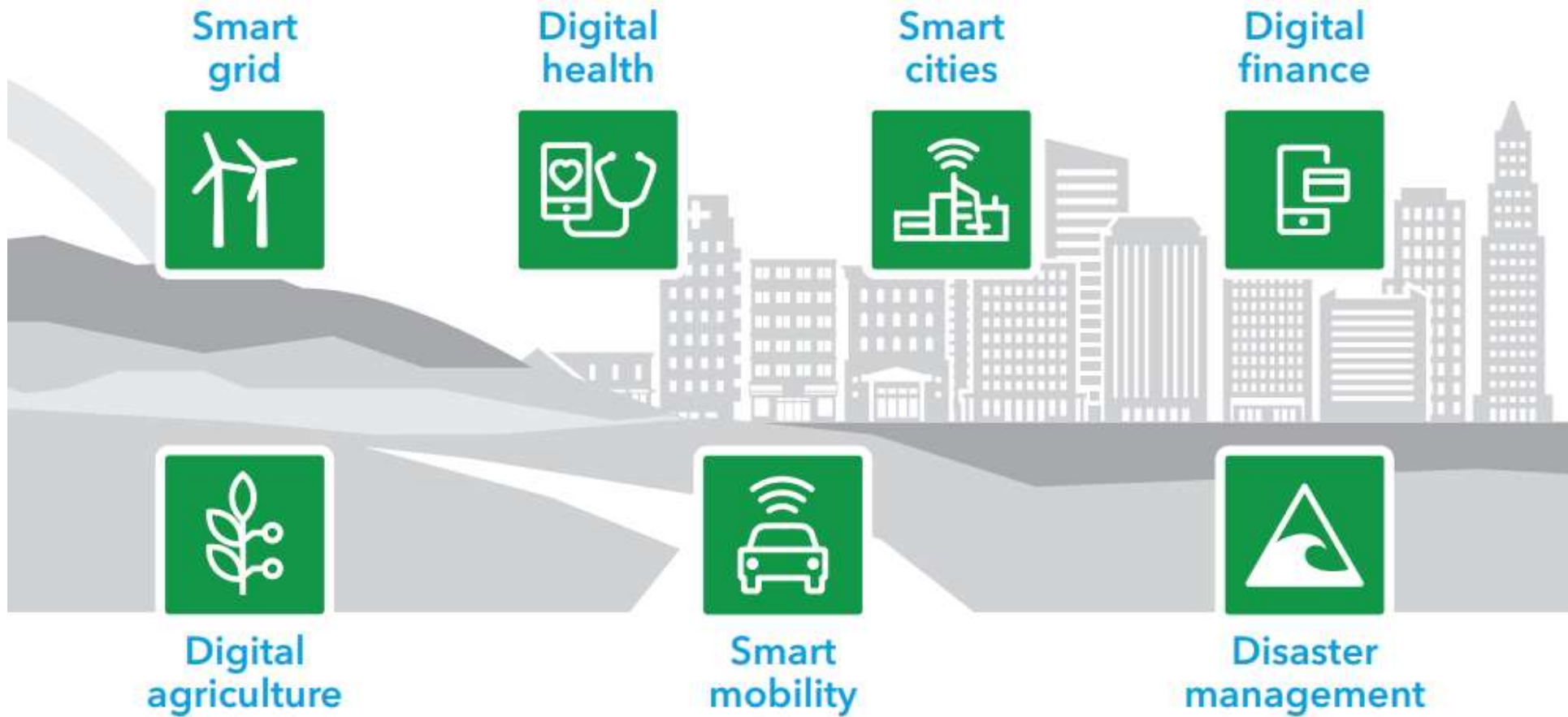
Quantum
information
tech

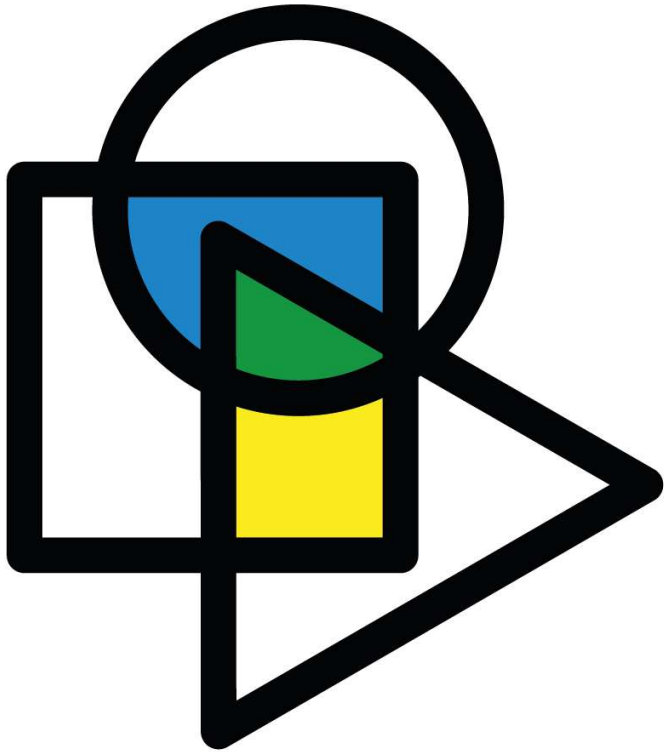


Accessibility



DIGITAL TRANSFORMATION





ITU Study Groups (SG)



SG2 ACHIEVEMENTS

- Enhanced **responses to misuse** reports
- Updated **guidance for international calling party number** delivery across national boundaries
- International identification plan updates for private networks, trials and ROIOs
- **Smart/REST-based** network management
- Supplements on **number portability**, criteria for E.164/E.212 assignments for **M2M/IoT**, and **disaster relief systems**



SG3 ACHIEVEMENTS

- **Collaborative framework** for OTTs
- Enabling environment for **voluntary commercial arrangements** between telecom network operators and OTT providers
- **Customer redress** and **consumer protection** mechanisms for OTTs



SG5 ACHIEVEMENTS

- Protection and reliability, EMF and EMC
- Power feeding and energy storage
- **Sustainable** data centres and **smart** energy solutions
- Sustainable cities and buildings
- **Circular economy**, **supply chain** and **e-waste**
- Assessment and climate actions towards **net zero**



SG9 ACHIEVEMENTS

- Transmission systems for interactive cable TV services – **IP cable modems** (4th generation and 5th generation DOCSIS)
- Embedded **common interface** for exchangeable CA/DRM solutions
- Framework for **AI-assisted premium** cable network platforms
- Cable TV **hybrid set-top** box compatible with terrestrial and satellite TV transport
- Open access and signal quality for TV content distribution platforms
- Supplement on installing a digital TV service for cable networks





SG11 ACHIEVEMENTS

- **Signalling** for VoLTE/ViLTE, 5G, SDN, P2P
- SS7 and protocols **security**
- Protocol test specs and monitoring
- **Open APIs** for **interoperable testbed federations**
- Combatting **counterfeit ICTs** and use of **stolen ICTs**
- Addressing duplication of unique identifiers



SG12 ACHIEVEMENTS

- Guiding service **quality regulation**
- **Digital financial services** quality
- **Internet performance** measurement
- **Video quality** of 4K/UHD and HTTP adaptive streaming, video gaming and cloud gaming, and immersive tech
- **Speech and listening quality**, leveraging machine learning and crowdsourcing



SG13 ACHIEVEMENTS

- **Machine learning for 5G** and beyond
- **Quantum Key Distribution** Networks
- **Trust** in ICT
- Cloud computing and big data
- **Fixed-mobile convergence**
- **Digital twin network**



SG15 ACHIEVEMENTS

- **5G transport** with OTN, metro transport network, transport SDN, timing and synch, higher speed PON
- **50G PON** and 10G symmetric PON
- **G.fast** up to 2 Gbit/s and **MGfast** up to 10 Gbit/s
- **G.hn2** up to 10 Gbit/s and indoor **visible light comms**
- Transverse compatible DWDM for **submarine cables**
- Optical fibre installation with **minimal existing infrastructure**





SG16 ACHIEVEMENTS



H.265



H.264



JPEG

- **H.266** Versatile Video Coding
- Personal **connected health** devices
- Safe listening of portable audio devices
- Application of **distributed ledger technology**
- **Multimedia accessibility**
- Growing work on **digital services** and **video-centric services** and components for **vertical markets**



SG17 ACHIEVEMENTS

- **Quantum-based** security and **distributed ID**
- **Identity** management
- Cybersecurity
- Cloud computing security
- Security aspects of **distributed ledger technology**
- New **incubation mechanism** (emerging technologies)



SG20 ACHIEVEMENTS

- **Requirements** and use cases
- Infrastructure and architecture
- **Interoperability**
- **Data processing** and **management**
- **Evaluation** and **assessment**
- Identification and security

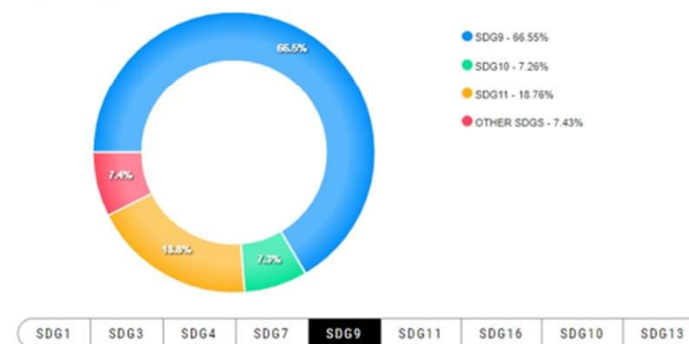


MAPPING TO SDGs

Activity title
ITU-T IMT 2020 (2017): ITU-T Focus Group IMT-2020 Deliverables

Source document

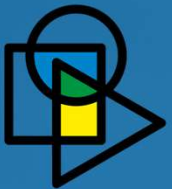
Mapped SDGs: (by AI)

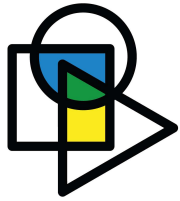




Setting the standard

Focus groups & initiatives



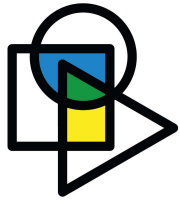


CONCLUDED FOCUS GROUPS

- **Quantum** information tech for networks
- **Machine learning** for future networks including 5G
- Technologies for **network 2030**
- Application of **distributed ledger technology**
- **Digital currency** including digital fiat currency
- **Data processing and management** to support IoT and smart cities and communities



**Concluded
focus groups**



ACTIVE FOCUS GROUPS

- **Testbeds federations** for IMT-2020 and beyond
- AI and IoT for **digital agriculture**
- AI for **natural disaster management**
- **Autonomous networks**
- AI for **assisted and autonomous driving**
- **Environmental efficiency** for AI and other emerging tech
- **AI for health**
- **Vehicular multimedia**





Ways of Engagement in Standardization !!!!



- 1) Through the Cyprus Organization for Standardization (CYS), we automatically register you on the electronic platforms of the related committees and you can monitor the standardization work online.**
- 2) Face to Face participation or Virtually at the Plenary meetings or Working Groups of the International and European Technical Committees with responsibilities that vary according to which Organization you will decide to participate.**