

Cyprus Organisation for Standardisation (CYS)

Blockchain and Standardization

University of Nicosia 15th March 2019



→ ABOUT CYS

EVOLVEMENT



1975 – 2005

- Public Body (MCIT)
- Under government control

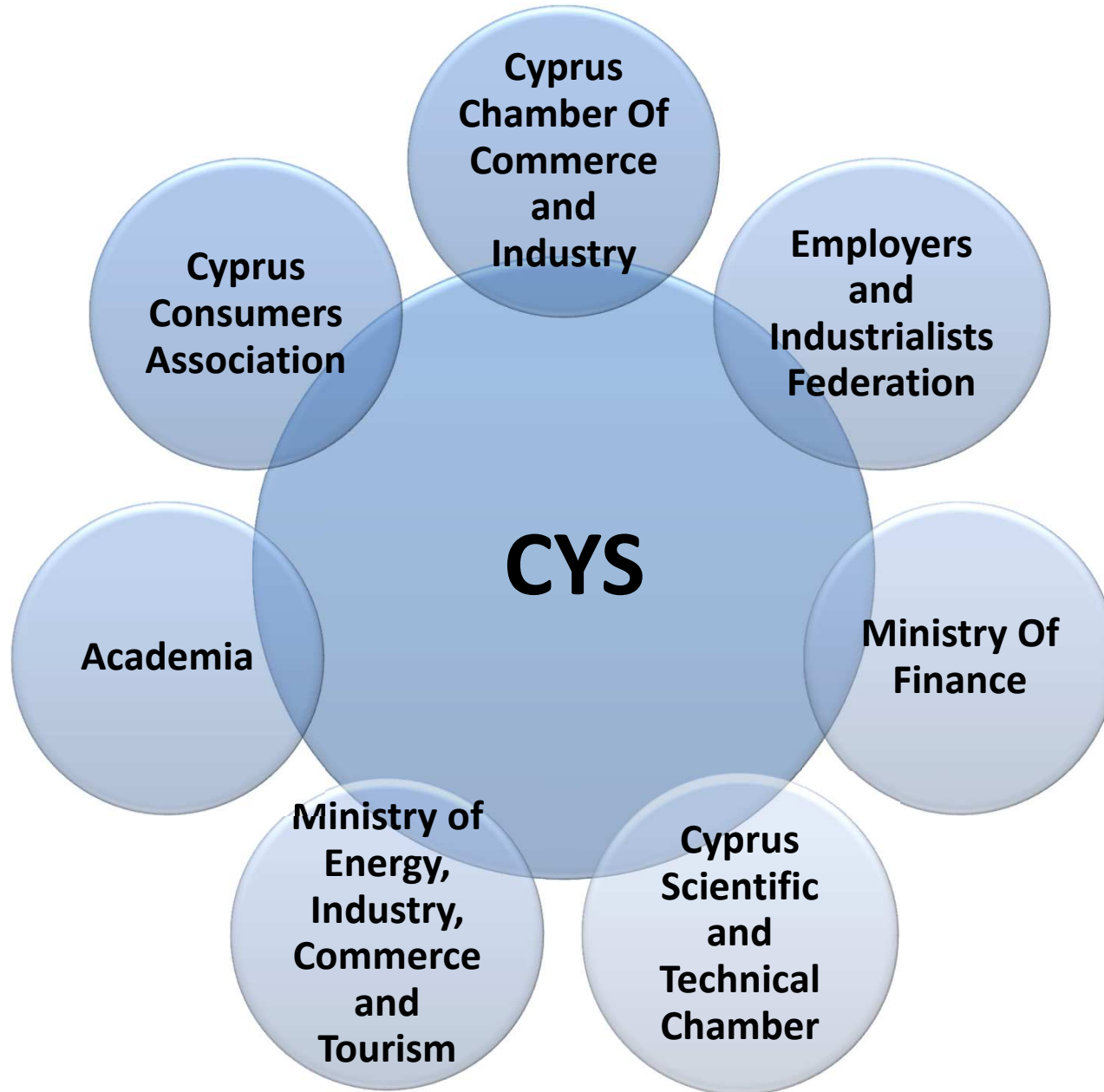
2005 – Today

- Independent Body
- Under Private Law
- Ministry of Finance 100% shareholder
- Cyprus National Standards Body

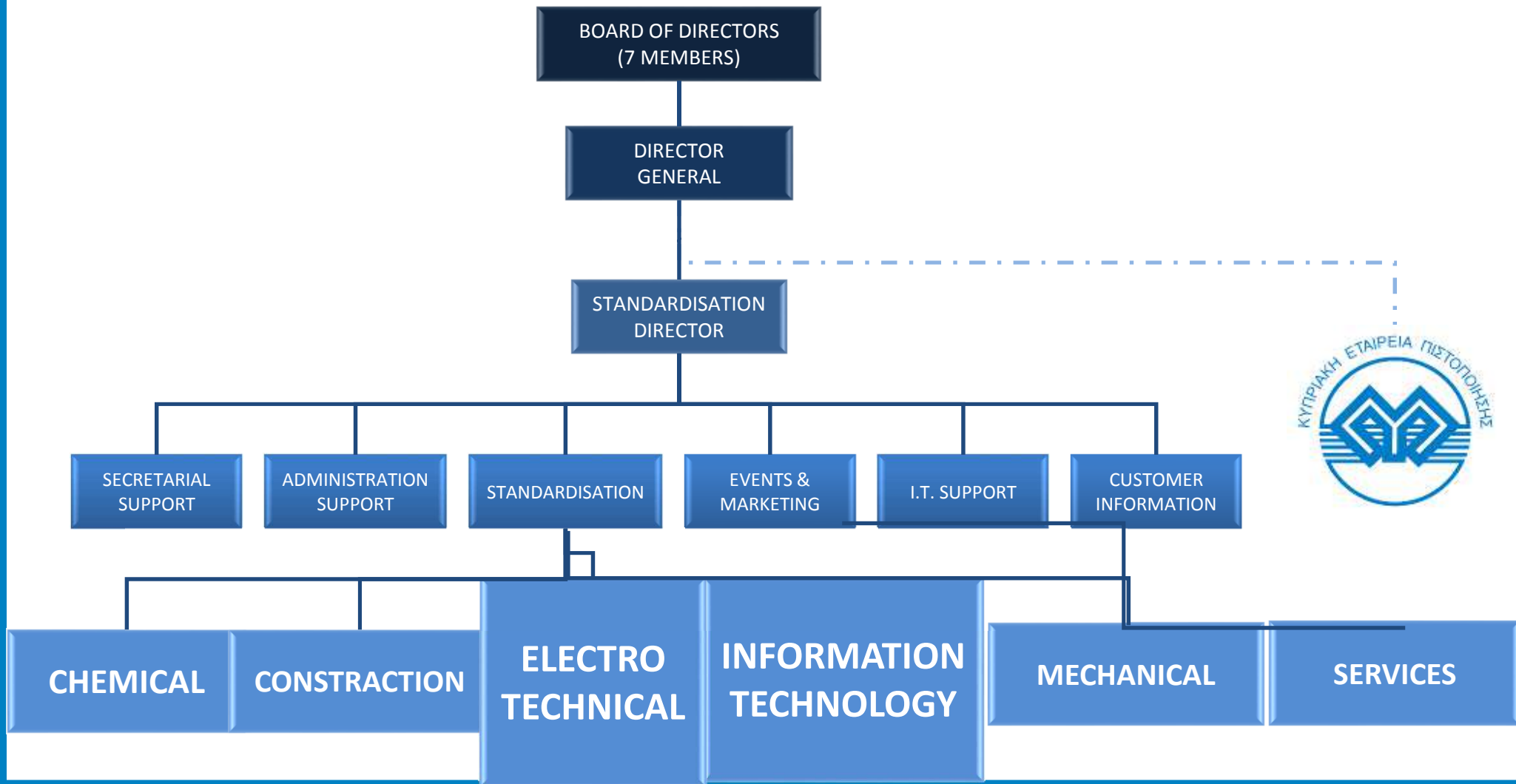
- More flexible
- Better response
- Less expensive to operate



BOARD OF DIRECTORS



ORGANIZATIONAL CHART – CONNECTION WITH CCC



European and International Standards Organizations



European Committee for Standardization



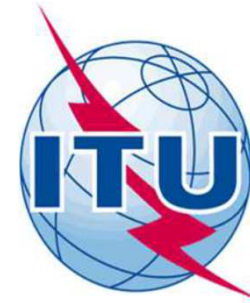
European Committee for Electrotechnical Standardization



European Telecommunication Standards Institute



International Standards Organization



International Telecommunications Union



Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

International Electrotechnical Committee

What are standards?



- Standards are documents with widespread and repeatable use that include rules, principles, guidelines or characteristics which assure that the products, materials, services or procedures conform to the proposed objectives
- Standards should be based on the consolidated results of science and technology and are developed by groups of experts, within technical committees (TCs).

Characteristics of Standards

Voluntary and Market Driven – The decision to develop new standards is driven by Markets or Mandates issued by the European Commission and other official Bodies of EU.

Consensus Based – All standards are subject to dialogue from all Concerned Parties.

Approved by a recognized Body – a recognized European or International standards body such as CEN, CENELEC ETSI , ISO e.t.c..

MAIN ACTIVITIES

- Promotion of the National, European and International Standards
- Management and Development of the National Standardisation System
- Participation in the European and International Standardisation System



PROMOTION OF THE NATIONAL, EUROPEAN AND INTERNATIONAL STANDARDS

- Informative and Training Seminars
- Standard Day Events
- Lectures
- MoUs
- Sales of standards through our Customer Service and Information Centre
- Articles
- Use of social media

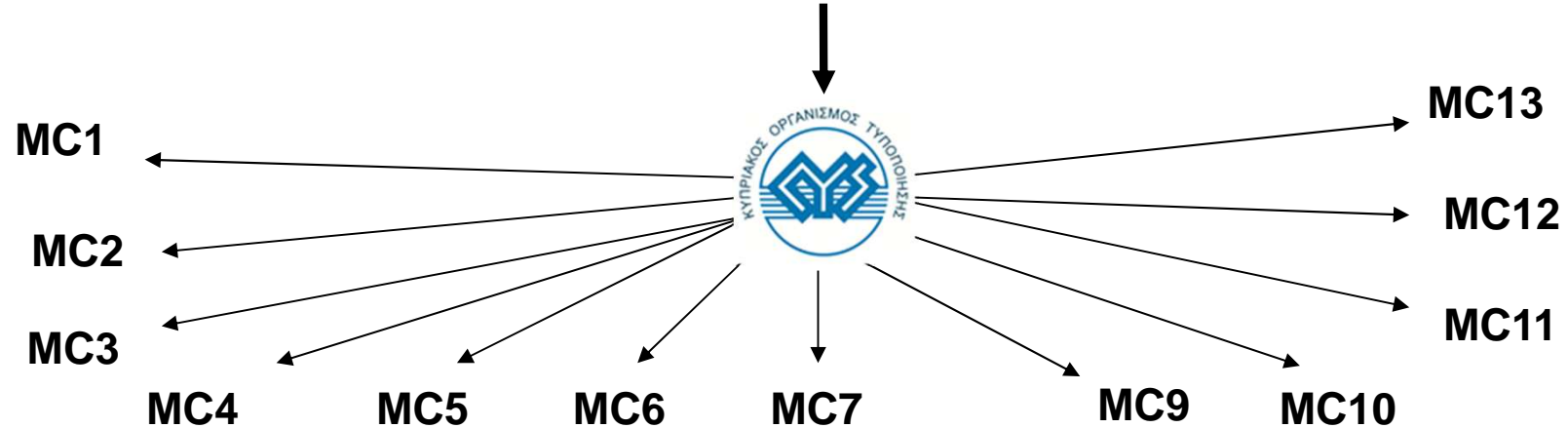


European Standards Organizations



750 European Technical Committees

National Mirror Committees



MC 07 – Πληροφορική και Τηλεπικοινωνίες

MIRROR COMMITTEES



MC 1	Construction Products & Civil Engineering
MC 2	Mechanical Engineering
MC 3	Healthcare
MC 4	Health & Safety
MC 5	Heating, Cooling & Ventilation
MC 6	Transport & Packaging
MC 7	Information Technology & Telecommunication
MC 9	Chemicals & Environment
MC 10	Gas
MC 11	Food & Biotechnology
MC 12	Services
MC 13	Electrical/Electronic Equipment & Medical Devices



MIRROR COMMITTEES



- ❑ NSBs set up Mirror Committees that monitor the work of European and International Technical Committees.
- ❑ The National experts inside 'mirror committees' in CYS develop the National position on European and International DRAFT Standards



MIRROR COMMITTEES



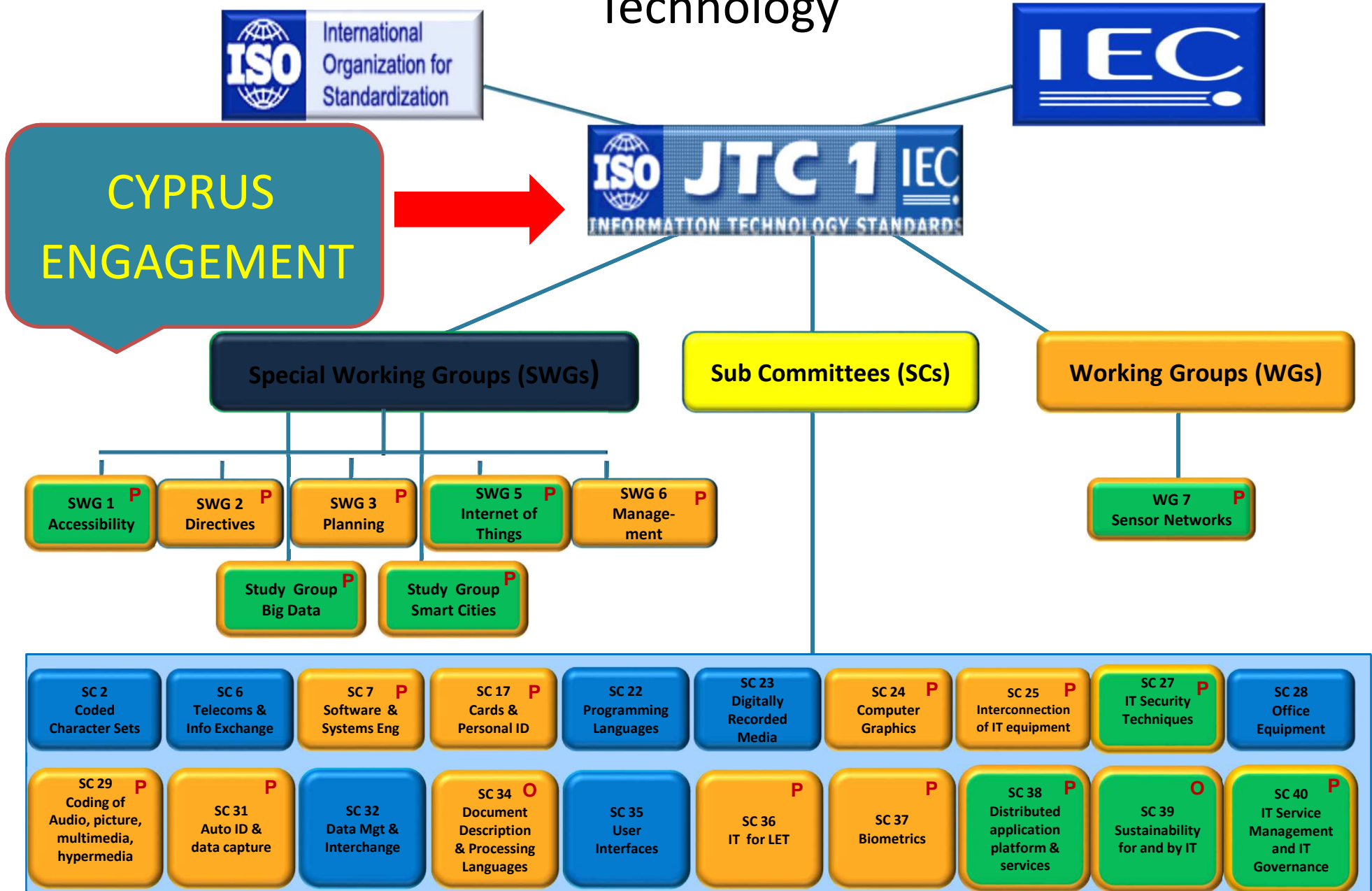
MC 7 Information Technology & Telecommunication

Cyprus National Committees observe the International and European Standards for:

- Telecommunications
- Electronic Invoice
- Online Reporting for Gambling Operators
- ❑ Future Planning for a National Mirror Committee for Blockchain Technology!!!!!!



ISO and IEC Joint Technical Committee (JTC 1) for Information Technology



ISO and IEC Joint Technical Committee (JTC 1) for information technology

JTC 1 includes several Sub Committees for developing standards in 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
- Interoperability of IT products and systems
- Unified tools and environments
- User designed interfaces

**ISO and IEC Joint Technical Committee (JTC 1) for
information technology**

**Cyprus Engagement through local Technical Experts in
the following Sub Committees JTC 1:**

- Blockchain and Distribute Ledger Technologies – ISO TC 307
- IT Security techniques - ISO/IEC JTC 1/SC 27
- Intelligent Transport Systems – ISO TC 204 , CEN TC 278
- IT Service Management and Governance – ISO/IEC JTC 1 SC 40
- Financial Services – ISO TC 68
- "Cybersecurity and Data Protection" CEN/CLC/JTC 013 .
- Artificial Intelligence - ISO JTC 1 SC 42

**ISO and IEC Joint Technical Committee (JTC 1) for
information technology**

Some more Sub Committees JTC 1.....

- Cloud Computing and Distributed Platforms – ISO/IEC JTC 1/SC 38
- Internet of Things and related technologies ISO/IEC JTC 1/SC 41
- Software and systems engineering ISO/IEC JTC 1/SC 7

ISO and IEC Joint Technical Committee (JTC 1) for information technology

Benefits to participation in the standards process

- Gives the participant a competitive edge
 - How
 - Awareness of latest innovations
 - Awareness of latest draft regulations
 - Networking within industry specific forum
 - Participation in Standardization increases the knowledge base of participants own, i.e. participants may learn a great deal about the area in which they are engaged



BLOCKCHAIN & STANDARDIZATION

Blockchain and Distributed Ledger Technologies



**European Committee for
Standardization**



**European Committee for
Electrotechnical Standardization**



**European Telecommunication Standards
Institute**



International Standards Organization



International Telecommunications Union

Blockchain and Distributed Ledger Technologies

Why we need Standards ??????

- A number of currently different blockchains protocols are in use.
- Standards could play an important role in ensuring interoperability between multiple DLT/Blockchain implementations.
- Standards address the security , privacy and data governance concerns related to DLT/Blockchain.
- Through Standards we Have Interoperability and Compatibility with Existing Financial Standards
- Standards help towards a regulatory framework that will provide technical and legal Rules especially in compliance to money laundering and KYC (know your customer) requirements

Blockchain and Distributed Ledger Technologies



ISO Technical Committee 307

Scope of ISO TC 307

- ISO/TC 307 is responsible for standardization in relation to blockchain and distributed ledger technologies (DLT). This may include standards relating to :
 - terminology, reference architecture,
 - security and privacy, identity,
 - smart contracts, governance and interoperability for blockchain and DLT,
 - standards specific to industry sectors and generic government requirements

Blockchain and Distributed Ledger Technologies

ISO Technical Committee 307



Structure / Working Groups of ISO TC 307

- ISO/TC 307/WG 1 – Foundations
- ISO/TC 307/WG 2 - Security, privacy and identity
- ISO/TC 307/WG 3 - Smart contracts and their applications
- ISO/TC 307/JWG 4 – Blockchain and IT security Techniques
- ISO/TC 307/WG 5 - Governance
- ISO/TC 307/SG 7 – Interoperability of blockchain and distributed ledger technology systems

Blockchain and Distributed Ledger Technologies
ISO Technical Committee 307

Working Group 1 Foundations

ISO CD 22739 - Blockchain and distributed ledger technologies -
- **Terminology**

ISO/AWI TS 23258 - Blockchain and distributed ledger
technologies -- **Taxonomy and Ontology**

ISO/CD 23257 - Blockchain and distributed ledger technologies -
- **Reference architecture**

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ISO Technical Committee 307

Working Group 2 Security Privacy and Foundation

ISO/NP TR 23244 - Overview of privacy and personally identifiable information (PII) protection

ISO/NP TR 23245 “Security risks and vulnerabilities

ISO/NP TR 23246 “Overview of identity management using blockchain and distributed ledger technologies”

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ISO Technical Committee 307

Working Group 3 “Smart contracts and their applications”

ISO/AWI TS 23259 - Blockchain and distributed ledger technologies -- **Legally binding smart contracts**

ISO/AWI TS 23259 - **Overview and interactions between smart contracts** in blockchain and distributed ledger technology systems.

Study on “Supply chain management and trade facilitation

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Working Group 4 - Blockchain and IT security Techniques

ISO/NP TR 23576 - Blockchain and distributed ledger technologies -- **Security management of digital asset custodians**

Study on Security Issues on Smart Contracts

Study on Security Evaluation of Consensus Models

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ISO Technical Committee 307

Working Group 5 - Governance

ISO/NP TS 23635 - Blockchain and distributed ledger technologies -- **Guidelines for governance**

Study Group 7 - Interoperability of blockchain and distributed ledger technology systems

Focuses on “interoperability issues related to cryptocurrencies’, platforms, utility and transaction tokens, and cryptographically supported digital assets or proxies for physical and intangible assets”

Financial Services ISO TC 68



Scope:

ISO Technical Committee 68 (TC 68) is the ISO committee primarily designated to develop standards and technical reports for the financial services businesses and their transactions as well as the information security to ensure the integrity and confidentiality of the financial infrastructure as a whole.

Financial Services ISO TC 68

SC2 – Financial Services, Security

WG8 – Public Key Infrastructure for Financial Services

WG11 – Cryptographic Algorithms for Financial Services

WG13 - Security in Retail Banking

AGH4 – Security aspects of digital currencies SG1 – Third party providers

SC8 – Reference Data for Financial Services

CAG – Chairman’s Advisory Group SG1 –

Identification of Financial Instruments

SG2 – Use of the CFI as part of the UPI

WG1 – Classification of Financial Instruments

WG2 – Specification for Description of Banking Products or Services WG3 – Second Tier Registry for Digital Currency Codes

SC9 – Information Exchange for Financial Services

TG1 – Cards Standards

WG1 – ISO 20022 Semantic Models

WG2 – Web Service Based Application Programming Interface in Financial Services

Blockchain and Distributed Ledger Technologies



The impact of Blockchain in ISO existing activities and other ISO Technical Committees.

- ISO/IEC JTC 1/SC 38 Cloud Computing and Distributed Platforms
- · ISO/IEC JTC 1/SC 40 IT Service Management and IT Governance
- · ISO TC 184/SC 4 Industry Automation systems
- ISO/TC 251 Asset management
- · ISO/ TC 279 Innovation management
- · ISO /IEC JTC 1 SC 40 Artificial Intelligence



Focus Group on Application of Distributed Ledger Technology

The ITU-T Focus Group on Application of Distributed Ledger Technology (FG DLT) was established

- to identify and analyse DLT-based applications and services;
- to draw up best practices and guidance which support the implementation of those applications and services on a global scale



Focus Group on Application of Distributed Ledger Technology

Working Group 1 – Ecosystem, Terms, Definitions,

Mission

Identify and introduce key elements of the DLT ecosystem (e.g., terminologies, definition, taxonomy, standardization), general concepts for DLT and related technologies

Working Group 2 - Applications & Services

Mission

Identify and describe DLT-based use cases and specify which DLT features are required.



Focus Group on Application of Distributed Ledger Technology

Working Group 3 – Technology Reference Framework

Study architectural aspects of DLT including interoperability and abstract a high level technology reference framework and Provide a mapping of existing DLT platforms on the framework

Working Group 4 – Policy Reference Framework

Identify and describe relevant policy and regulatory dimensions (e.g., auditability, traceability, privacy, legal compliance) and highlight associated constraints (e.g., GDPR, lawful intercept)

Focus Group on Digital Currency including digital fiat currency



The main objectives of the Focus Group is to Study the economic benefit and impact of introducing DFC over mobile money;

- Investigate the ecosystem of digital fiat currency implementation for financial inclusion;
- Map the functional network architecture required to implement digital fiat currency and integration with existing payment systems for interoperability;
- Identify use cases, requirements and applications of digital fiat currency;
- Develop better understanding of the security, regulatory implications, consumer protection, fraud prevention and how can digital fiat currency can address these concerns;

Focus Group on Digital Currency including digital fiat currency



Working Group 1 - Regulatory Requirements and Economic Impact (RREI)

Working Group 2 - Reference Architecture

Working Group 3 - Security



Blockchain and Distributed Ledger Technologies

The impact of Blockchain in other ITU existing activities

- Blockchain Standardization Activities in :
 - Future networks, with focus on IMT-2020
 - Internet of Things (Blockchain of Things)
 - Smart Cities &
 - Multimedia
 - E- Delivery Services



European Telecommunication Standards Institute (ETSI)

Industry Specific Group (ISG) 'Permissioned Distributed Ledger' (PDL)

The ETSI ISG PDL will analyze and provide the foundations for the operation of permissioned distributed ledgers, with the ultimate purpose of creating an open ecosystem of industrial solutions to be deployed by different sectors.

Two New Work Items for Standards

- Landscape of standards and technologies (PDL-001)
- Applicability and compliance to data processing requirements (PDL-002)



CEN-CENELEC/ Focus Group Blockchain and DLT



Objectives :

1. To prepare an overview for the stakeholder community on standards already available, to meet specific European needs
2. Where no standards exist, to define best ways to provide them in preference internationally to ISO TC 307.
3. To identify any relevant specific issues on Standards linked to European legislation or policy

White Paper on :

“Recommendations for Successful Adoption in Europe of Emerging Technical Standards on Distributed Ledger/Blockchain Technologies”

Blockchain and Distributed Ledger Technologies

Way forward...

The Cyprus Organization for Standardization is planning to set up a National Mirror Committee with Technical Experts from the Public and the Private Sector with the following objectives:

- a) to observe and evaluate the standardization work of International and European Standardization on Blockchain and DLT's.
- b) to actively participate in International and European Committees so as to promote national interests and to widen their knowledge and gain experience in the implementation of Standards.



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