ACCRÉDITATION

CONFIANCE NUMÉRIQUE

SURVEILLANCE DU MARCHÉ

MÉTROLOGIE

NORMALISATION

Welcome
Bienvenue
Willkommen

ILNAS

Presentation of the Standards Analysis Smart Secure ICT Luxembourg

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13.11.2018

CONTENT

LUXEMBOURG STANDARDIZATION STRATEGY

2014-2020

"Technical standardization as a service"
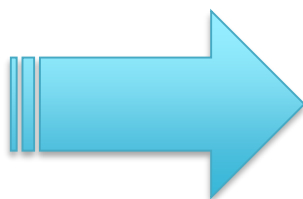
Pillar 1: Information and communication technologies (ICT)

Policy on ICT technical standardization (2015-2020)

1 Developing the interest and the involvement of the market

2 Promoting and reinforcing market participation

3 Supporting and strengthening the EaS and related research activities

- https://portail-qualite.public.lu/fr/publications/normes-normalisation/avis-officiels/strategie-normative-2014-2020.html
- https://portail-qualite.public.lu/fr/publications/normes-normalisation/avis-officiels/politique-luxembourgeoise-pour-la-normalisation-technique-des-TIC-2015-2020.html

A. Context

→ Relies on previous ILNAS Smart ICT publications

→ Focuses on **four Smart ICT areas**, considering **related Digital Trust** considerations and developments from a standardization perspective

→ Introduces **two new topics** currently receiving particular interest from the market and highly interrelated with Smart ICT

DIGITAL TRUST

- Internet of Things
- Cloud Computing
- Artificial Intelligence & Big Data
- Blockchain

+

- 5G
- Intelligent Transport Systems

INFORM	IDENTIFY	ENCOURAGE	DEVELOP
about Smart ICT standardization developments	standardization opportunities for the national market	the involvement in the standardization process	"standards-related" skills and collaborations

For the benefit of all national stakeholders

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- **Introduction of Smart ICT technologies main characteristics**

- **Identification and presentation of relevant standardization technical committees**

- **Introduction of basic components of Digital Trust for Smart ICT**

- **Identification and presentation of standards published or in development in the selected Smart ICT areas as well as Digital Trust standards developments related to these areas**

- **Identification and presentation of standardization opportunities offered to the national stakeholders in Luxembourg**

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- **Smart ICT definition**

> *Smart ICT corresponds to a holistic approach of ICT development, integration and implementation, where a range of emerging or innovative tools and techniques are used to maintain, improve or develop products, services or processes with the global objective to strengthen different societal, social, environmental and economic needs. It includes, through related interconnected ecosystems, advanced ICT such as Cloud Computing, Big Data and Analytics, Internet of Things, Artificial Intelligence, Robotics, and new ways of gathering data, such as social media and crowdsourcing.*

- **Introduction of fundamental concepts of Smart ICT and related Digital Trust**

  o Internet of Things: ISO/IEC 20924 Information technology - Internet of Things (IoT) - Definitions and vocabulary

  o Cloud Computing: ISO/IEC 17788:2014, Information technology -- Cloud computing -- Overview and vocabulary

  o Artificial Intelligence and Big Data:

    ▪ ISO/IEC 20546 (under development), Information Technology -- Big Data -- Definition and Vocabulary

    ▪ ISO/IEC 22989 (under development), Artificial Intelligence Concepts and Terminology

  o Blockchain: ISO 22739 (under development), Blockchain and distributed ledger technologies -- Terminology and concepts

B. Internet of Things

- **TECHNICAL COMMITTEES (6)**
  - ISO/IEC JTC 1/SC 41 "Internet of Things and related technologies"
  - ISO/IEC JTC 1/SC 31 "Automatic identification and data capture techniques"
  - ISO/IEC JTC 1/SC 25 "Interconnection of information technology equipment"
  - CEN/TC 225 "AIDC Technologies"
  - ETSI/TC SmartM2M "Smart Machine-to-Machine Communication"
  - ITU-T/SG 20 "Internet of Things, smart cities and communities"

- **PUBLISHED STANDARDS (43)**
  - ISO/IEC 30141:2018 "Information technology -- Internet of Things -- Internet of Things Reference Architecture (IoT RA)"
  - ISO/IEC TR 22417:2017 "Information technology - Internet of things (IoT) - IoT use cases"
  - …

- **STANDARDS UNDER DEVELOPMENT (79)**
  - ISO/IEC CD 21823-1 "Internet of things (IoT) -- Interoperability for Internet of things systems -- Part 1: Framework"
  - ISO/IEC NP 30161 "Internet of Things (IoT) -- Requirements of IoT data exchange platform for various IoT services"
  - …

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C. Cloud Computing

- **TECHNICAL COMMITTEES (2)**
  o ISO/IEC JTC 1/SC 38 "Cloud Computing and Distributed Platforms"
  o ITU-T/SG 13 "Future networks, with focus on IMT-2020, cloud computing and trusted network infrastructures"

- **PUBLISHED STANDARDS (40)**
  o ISO/IEC 19941:2017 "Information technology -- Cloud computing – Interoperability and portability"
  o ISO/IEC 19944:2017 "Information technology -- Cloud computing -- Cloud services and devices: Data flow, data categories and data use"
  o …

- **STANDARDS UNDER DEVELOPMENT (28)**
  o ISO/IEC CD 22123 "Information technology -- Cloud computing -- Concepts and terminology"
  o ISO/IEC PRF TR 22678 "Information Technologies -- Cloud Computing -- Guidance for Policy Development"
  o …

D. Artificial Intelligence and Big Data

- **TECHNICAL COMMITTEES (2)**
  - ISO/IEC JTC 1/SC 42 "Artificial Intelligence"
  - ISO/IEC JTC 1/SC 32 "Data management and interchange"

- **PUBLISHED STANDARDS (26)**
  - ISO/IEC TR 20547-2:2018 "Information technology – Big Data Reference Architecture -- Part 2: Use Cases and Derived Requirements"
  - ISO/IEC TR 20547-5:2018 "Information technology -- Big data reference architecture -- Part 5: Standards roadmap"
  - …

- **STANDARDS UNDER DEVELOPMENT (28)**
  - ISO/IEC WD 22989 "Artificial Intelligence -- Concepts and Terminology"
  - ISO/IEC WD 23053 "Framework for Artificial Intelligence (AI) Systems Using Machine Learning (ML)"
  - ISO/IEC FDIS 20546 "Information technology -- Big Data -- Overview and Vocabulary"
  - …

E. Blockchain and Distributed Ledger Technologies

- **TECHNICAL COMMITTEES (2)**
  - o ISO/TC 307 "Blockchain and distributed ledger technologies"
  - o ITU-T/FG-DLT "Focus Group on Application of Distributed Ledger Technology"

- **PUBLISHED STANDARDS (0)**

- **STANDARDS UNDER DEVELOPMENT (11)**
  - o ISO/CD 22739, Blockchain and distributed ledger technologies – Terminology
  - o ISO/AWI TS 23259 "Blockchain and distributed ledger technologies -- Legally binding smart contracts"
  - o ISO/NP 23246 "Blockchain and distributed ledger technologies -- Overview of identity management using blockchain and distributed ledger technologies"
  - o …

F. Digital Trust in Smart ICT

- **TECHNICAL COMMITTEES (8)**
  - ISO/IEC JTC 1/SC 17 "Cards and personal identification"
  - ISO/IEC JTC 1/SC 27 "IT Security techniques"
  - CEN/CLC/JTC 13 "Cybersecurity and Data Protection"
  - ETSI/TC CYBER "Cyber Security"
  - …

- **PUBLISHED STANDARDS (20) → Digital Trust aspects of Smart ICT**
  - IoT - ETSI TS 118 103 V2.4.1 (09/2016) " oneM2M; Security solutions (oneM2M TS-0003 version 2.4.1 Release 2)"
  - Cloud Computing - ISO/IEC 27017:2015 "Information technology -- Security techniques -- Code of practice for information security controls based on ISO/IEC 27002 for cloud services"
  - …

- **STANDARDS UNDER DEVELOPMENT (28)**
  - IoT – ISO/IEC 30149 "Internet of Things (IoT) -- Trustworthiness framework"
  - Cloud Computing – ISO/IEC FDIS 19086-4 "Information technology -- Cloud computing -- Service level agreement (SLA) framework -- Part 4: Security and privacy"
  - Big Data – ISO/IEC AWI 20547-4 "Information technology -- Big data reference architecture -- Part 4: Security and privacy"
  - …

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G. Introduction on 5G and ITS

→ **Introduction on 2 topics that could significantly transform the economy and society in relation with Smart ICT development**

- **5G Technical standardization**
  o 1 Technical Committee
    - ITU-T/FG NET-2030 "Focus Group Technologies for Network 2030 (FG NET-2030)"

- **Intelligent Transport Systems Technical Standardization**
  o 3 Technical Committees
    - ISO/TC 204 "Intelligent transport systems"
    - CEN/TC 278 "Intelligent transport systems"
    - ETSI/TC ITS "Automotive Intelligent Transport"

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H. Presentation of the results

- **Presentation of the technical committees using ID-Cards**

General information			
Committee	**ISO/IEC JTC 1/SC 38**	**Title**	**Cloud Computing and Distributed Platforms**
Creation date	2009		**Participating Countries (31):** United States, Australia, Austria, Belgium, Brazil, Canada, China, Denmark, Finland, France, Germany, India, Ireland, Israel, Italy, Japan, Kazakhstan, Republic of Korea, **Luxembourg**, Netherlands, Pakistan, Panama, Poland, Russian Federation, Singapore, Slovakia, South Africa, Spain, Sweden, Switzerland, United Kingdom
Secretariat	ANSI (USA)		
Secretary	Mrs. Lisa Rajchel	**MEMBERS**	
Chairperson	Dr. Donald Deutsch		
Organizations in liaison	Cloud Security Alliance, CSCC, Ecma International, IEEE, INLAC, ITU, OASIS, OGF, SNIA, The Open Group, EC, EuroCloud, TM Forum		**Observing Countries (13):** Argentina, Bosnia and Herzegovina, Czech Republic, Hong Kong, Hungary, Kenya, Mexico, Norway, Portugal, Serbia, Turkey, Uruguay, Zambia
Web site	https://www.iso.org/committee/601355.html		
Scope	Standardization in the area of Cloud Computing and Distributed Platforms including: - Foundational concepts and technologies; - Operational issues; - Interactions among Cloud Computing systems and with other distributed systems. SC 38 serves as the focus, proponent, and systems integration entity on Cloud Computing, Distributed Platforms, and the application of these technologies. SC 38 provides guidance to JTC 1, IEC, ISO and other entities developing standards in these areas.		
Structure	JTC 1/SC 38/AG 1 Communications committee JTC 1/SC 38/WG 3 Cloud Computing Fundamentals (CCF) JTC 1/SC 38/WG 5 Data in cloud computing and related technologies		
Standardization work			
Published standards	13		
Standards under development	9		

Involvement of Luxembourg

16 delegates

- Mr. Johnatan Pecero (Chairman)	ANEC G.I.E.
- Mr. Raphaël Bleuse	University of Luxembourg
- Mr. Matthias Brust	University of Luxembourg
- Mr. Cyril Cassagnes	Proximus Luxembourg
- Mrs. Myriam Djerouni	LUXITH G.I.E.
- Mr. Laurent Fisch	Laurent Fisch Luxlegal S.à r.l.
- Mrs. Shenglan Hu	POST Telecom PSF S.A.
- Mr. Abdallah Ibrahim	University of Luxembourg
- Mr. Andreas Kremer	ITTM
- Mr. Chao Liu	University of Luxembourg
- Mrs. Digambal Nayagum	AS AVOCATS
- Mr. Joost Pisters	LuxCloud S.A.
- Mr. Jean Rapp	Actimage S.A.
- Mr. Jean-Michel Remiche	POST Telecom S.A.
- Mr. Qiang Tang	Luxembourg Institute of Science and Technology
- Mr. Shyam Wagle	ANEC G.I.E.

Comments

ISO/IEC JTC 1/SC 38, Cloud Computing and Distributed Platforms, provides guidance to JTC 1, IEC, ISO and other entities developing standards in the Cloud Computing area. With the progression of service oriented architecture specification and the publication of ISO/IEC 17788 and 17789, standards presenting a taxonomy, terminology and vocabulary, from the Cloud Computing collaboration with ITU-T/SG 13, SC 38 is turning its focus to identifying other standardization initiatives in these rapidly developing areas.

Based on an understanding of the market/business/user requirements for Cloud Computing standards and a survey of related standardization activities within ISO/IEC JTC 1 and other standards setting organizations, new Cloud Computing standardization initiatives will be proposed and initiated. By initiating standardization activities only after first identifying Cloud Computing standardization requirements, ISO/IEC JTC 1/SC 38 will address the public and private sector needs for standards that answer end-user requirements and facilitate the rapid deployment of Cloud Computing.

The current SC 38 work program includes:
- ISO/IEC FDIS 19086-2, Information technology – Cloud computing -- Service level agreement (SLA) framework -- Part 2: Metric model;
- ISO/IEC CD 22123, Information Technology -- Cloud Computing -- Concepts and terminology;
- ISO/IEC CD 22624, Information technology – Cloud Computing -- Taxonomy based data handling for cloud services;
- ISO/IEC PRF TR 22678, Information Technologies -- Cloud Computing -- Guidance for Policy Development;
- ISO/IEC AWI TS 23167, Information Technology -- Cloud Computing -- Common Technologies and Techniques;
- ISO/IEC PDTR 23186, Information technology -- Cloud computing -- Framework of trust for processing of multi-sourced data;
- ISO/IEC NP TR 23187, Information technology -- Cloud computing – Interacting with cloud service partners (CSNs);
- ISO/IEC NP TR 23188, Information technology -- Cloud computing -- Edge computing landscape.
- ISO/IEC NP TR 23613, Information technology -- Cloud service metering and billing elements.

Moreover, projects related to Cloud Computing security are under the direct responsibility of ISO/IEC JTC 1/SC 27. In this frame, several International Standards have already been published, like ISO/IEC 27017:2015 or ISO/IEC 27018:2014 (under review), which respectively define code of practice for information security controls based on ISO/IEC 27002 for cloud services and for protection of personally identifiable information (PII) in public clouds acting as PII processors. Currently, ISO/IEC JTC 1/SC 27 is developing the fourth part of ISO/IEC 19086, concerning the security and privacy aspects of the SLA framework and technology.

e.g.: Cloud Computing

- **Published standards and standards projects listed in the Appendix**

  o Areas concerned: IoT, Cloud Computing, Artificial Intelligence and Big Data

  o Information provided:
    - Standards published
    - Standards under development
    - Digital Trust related published standards
    - Digital Trust related standards under development

SDO	Reference	Title
ISO/IEC JTC 1 / ITU-T	ISO/IEC 17788:2014 / ITU-T Y.3500 (08/2014)	Information technology -- Cloud computing -- Overview and vocabulary
ISO/IEC JTC 1 / ITU-T	ISO/IEC 17789:2014 / ITU-T Y.3502 (08/2014)	Information technology -- Cloud computing -- Reference architecture
ISO/IEC JTC 1	ISO/IEC 17826:2016	Information technology -- Cloud Data Management Interface (CDMI)
ISO/IEC JTC 1	ISO/IEC 19086-1:2016	Information technology -- Cloud computing -- Service level agreement (SLA) framework -- Part 1: Overview and concepts
ISO/IEC JTC 1	ISO/IEC 19086-3:2017	Information technology -- Cloud computing -- Service level agreement (SLA) framework -- Part 3: Core conformance requirements
ISO/IEC JTC 1	ISO/IEC 19831:2015	Cloud Infrastructure Management Interface (CIMI) Model and RESTful HTTP-based Protocol -- An Interface for Managing Cloud Infrastructure
ISO/IEC JTC 1	ISO/IEC 19941:2017	Information technology -- Cloud computing -- Interoperability and portability
ISO/IEC JTC 1	ISO/IEC 19944:2017	Information technology -- Cloud computing -- Cloud services and devices: Data flow, data categories and data use
ISO/IEC JTC 1	ISO/IEC TR 20000-9:2015	Information technology -- Service management -- Part 9: Guidance on the application of ISO/IEC 20000-1 to cloud services
ETSI	ETSI TR 102 997 V1.1.1 (04/2010)	CLOUD; Initial analysis of standardization requirements for Cloud services
ETSI	ETSI TS 103 125 V1.1.1 (11/2012)	CLOUD; SLAs for Cloud services
ETSI	ETSI TR 103 126 V1.1.1 (11/2012)	CLOUD; Cloud private-sector user recommendations
ETSI	ETSI TS 103 142 V1.1.1 (04/2013)	CLOUD; Test Descriptions for Cloud Interoperability
ETSI	ETSI SR 003 381 V2.1.1 (02/2016)	Cloud Standards Coordination Phase 2; Identification of Cloud user needs

A. Overview

INFORMATION ABOUT STANDARDIZATION

- Smart ICT workshops
- Awareness sessions
- Smart ICT standards watch
- Publications and disseminations
- Free consultation of the standards
- Smart ICT standardization research results

TRAININGS IN STANDARDIZATION

- Trainings on Smart ICT Standardization
- University certificate Smart ICT for Business Innovation

INVOLVEMENT IN STANDARDIZATION

- Become national delegate in standardization
- Comment standards under public enquiry
- Propose new standards projects
- Monitor the standardization work performed by the European Multi-Stakeholder Platform on ICT Standardization (MSP)

B.   Standardization catalogue

- 61 national standards

- +65.000 European Standards from CEN, CENELEC and ETSI

- +62.000 International Standards from ISO and IEC

- +46.000 DIN standards

➔ **More than 173.000 normative documents at your disposal**

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III. Opportunities for the national market

B. Standardization catalogue

- Format: electronic

- Language: French, German and English

- Competitive prices

- Free access to documents in public enquiry

C.   Free access on lecture stations

Availability of all EN (CEN,CENELEC et ETSI), ISO, IEC and ILNAS standards (despite DIN)

Location of the lecture stations:

1) ILNAS
Esch-Belval

2) Chamber of Commerce
House of Entrepreneurship
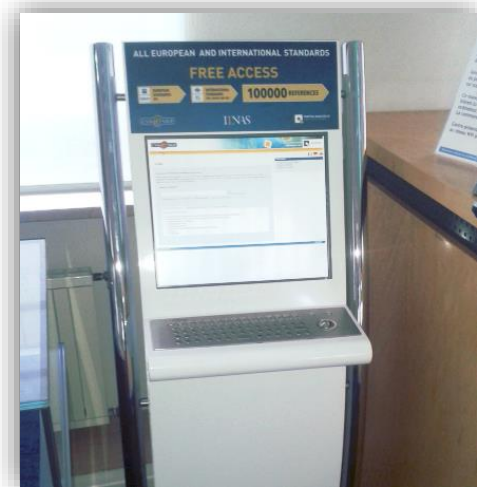
3) LIST
Belvaux

4) National Library of Luxembourg (temporarily unavailable)

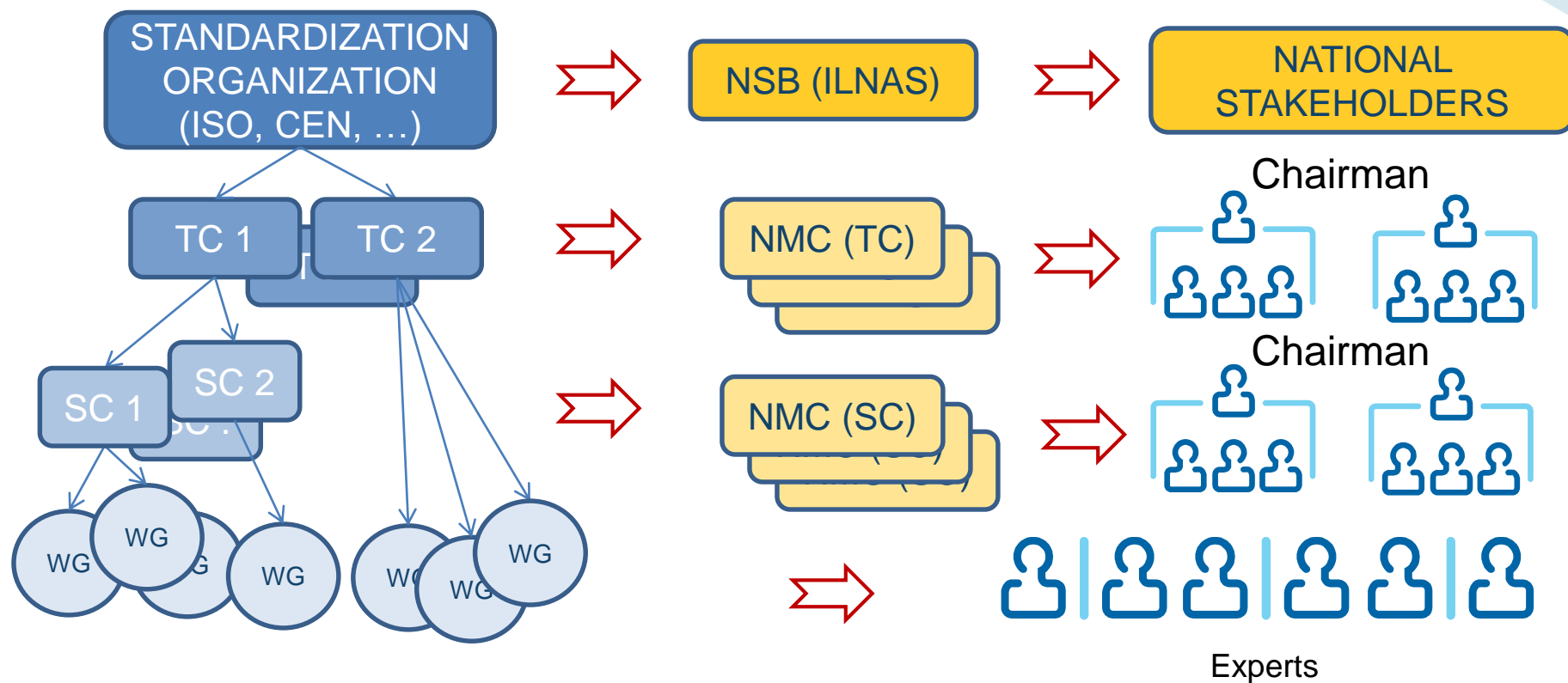**5) University of Luxembourg**

Library – Campus Kirchberg
Luxembourg Learning Centre (soon available)

6) Echternach (soon available)

D.   Participation in technical standardization

| STANDARDIZATION ORGANIZATION (ISO, CEN, …) | ⟹ | NSB (ILNAS) | ⟹ | NATIONAL STAKEHOLDERS |

- **TC:** *Technical committee*
- **SC:** *Sub-committee*
- **WG:** *Working group*

- **NSB:** *National Standards Body*
- **NMC:** *National mirror committee*

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D.   Participation in technical standardization

- **Why participate ?**
    - o   Privileged access to the drafts of future standards
    - o   Opportunity for commenting and voting
    - o   Be part of a network of experts

- **Who can participate ?**
    - o   Every socio-economic actor with a certain expertise

- **Cost of participation ?**
    - o   Free participation in Luxembourg

- **Register of National experts (October 2018)**
    - o   321 persons registered
    - o   836 registrations in technical committees

Registre national des délégués en normalisation - Octobre 2018

Nombre d'inscriptions aux comités techniques :

ILNAS/OLN	111
CEN	198
CENELEC	17
CEN/CLC	5
CEN/CLC/ETSI	1
ECISS	30
ISO/IEC	220
ISO	245
IEC	9
Total	836

Nombre de personnes inscrites :   321

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D. Participation in technical standardization

Source: https://pxhere.com

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Source: https://pixabay.com

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