ILNAS Breakfast "Standards Analysis ICT Sector – Luxembourg" - April 2022

A word of welcome

21st April 2022

Jean-Philippe HUMBERT - Deputy Director, ILNAS
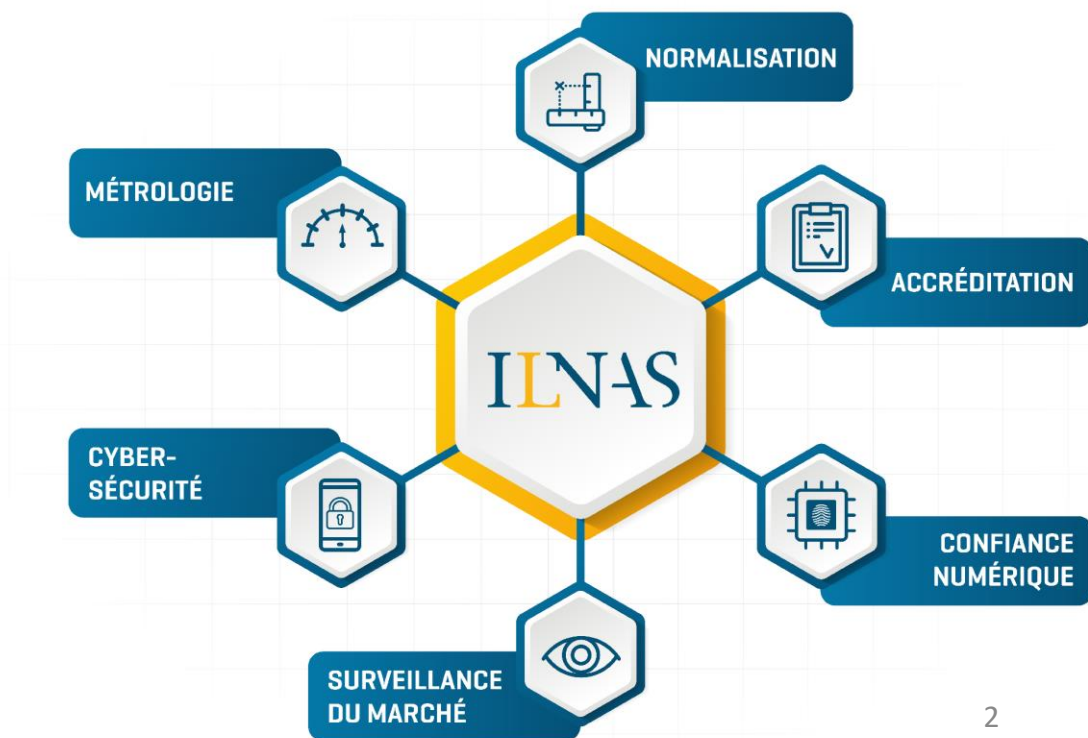
- **ILNAS**
    - o Public administration under the authority of the Minister of the Economy
    - o Created by the amended Law of July 4, 2014
    - o Total staff: 53 (April 2022)
    - o ISO 9001:2015 certification (Budget and administration department, OLN, Digital Trust department, Market surveillance department, BLM, OEC)

- **National Standards Body**
    - o Composed of 6 persons
    - o Close collaboration with the E.I.G. ANEC-N

NORMALISATION

MÉTROLOGIE

ACCRÉDITATION

CYBER-SÉCURITÉ

ILNAS

CONFIANCE NUMÉRIQUE

SURVEILLANCE DU MARCHÉ

- **Creation**: October 4, 2010

- **Status**: Economic Interest Group (EIG)

- **Objectives:** Promotion, awareness raising and training, applied research in the field of standardization and metrology in order to support companies' competitiveness in Luxembourg

- **Human resources**: 13 persons, including 6 employees in the standardization department (April 2022)

- **Partners** :

➔ Support for the implementation of the Luxembourg standardization strategy

Technical standardization
"Inclusive tool for performance and excellence to serve the economy"

STRATÉGIE
NORMATIVE
LUXEMBOURGEOISE
2020-2030

NORMALISATION TECHNIQUE
« Outil inclusif de performance et
d'excellence au service de l'économie »

ILNAS

→ Strategy signed by the Minister of the Economy of Luxembourg

PERFORMANCE

❑ **Pillar 1 – Use of relevant technical standards**

❑ **Pillar 2 – Involvement in the standardization process**

EXCELLENCE

❑ **Pillar 3 – Active participation of the NSB in the European and international standardization organizations**

❑ **Pillar 4 – Development of research and education about standardization**

Technical standardization
"Inclusive tool for performance and excellence to serve the economy"

3 growth sectors identified

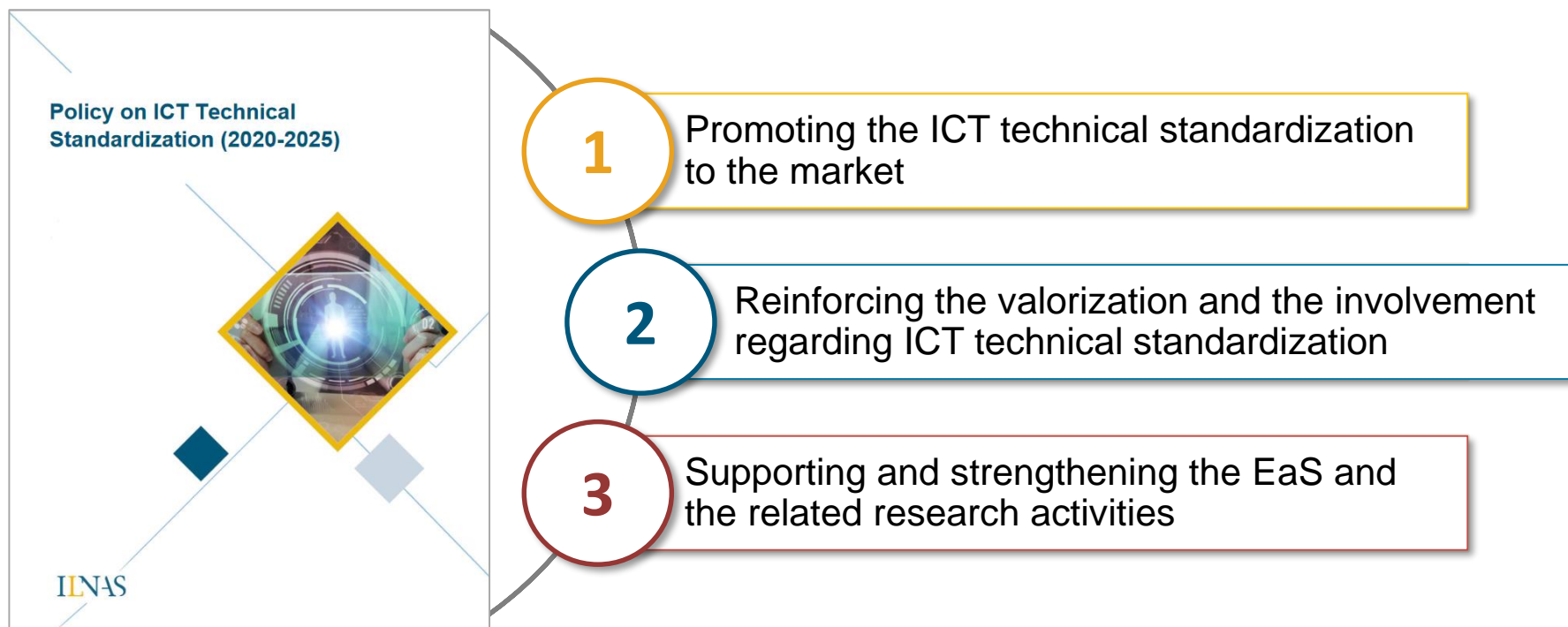**CONSTRUCTION**

INFORMATION AND COMMUNICATION TECHNOLOGIES

AEROSPACE

Identification of trans-sectoral standardization interactions

- ➢ **Computer Aided Design (CAD)**
- ➢ **Building Information Modelling (BIM)**
- ➢ **3D printing**
- ➢ **…**

- ➢ **Space data processing**
- ➢ **Space traffic management**
- ➢ **Smart Mobility**
- ➢ **…**

"Foster and strengthen the national ICT sector involvement in standardization work"

→ **Three lead projects**

Policy on ICT Technical Standardization (2020-2025)

ILNAS

1 Promoting the ICT technical standardization to the market

2 Reinforcing the valorization and the involvement regarding ICT technical standardization

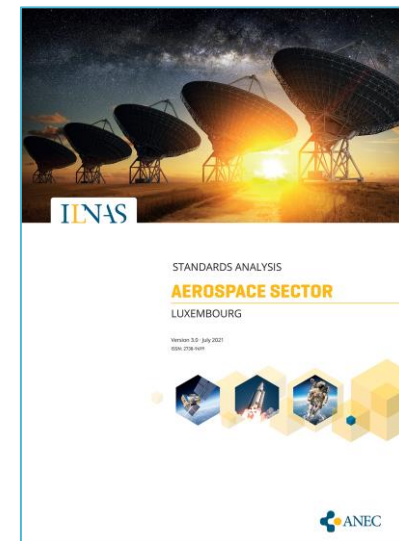**3** Supporting and strengthening the EaS and the related research activities
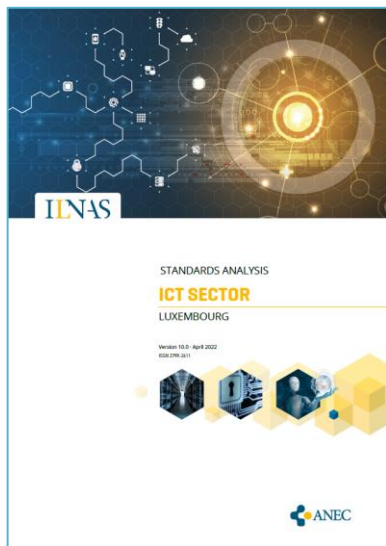
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2021-2022 - Standards Analysis

- **Content**

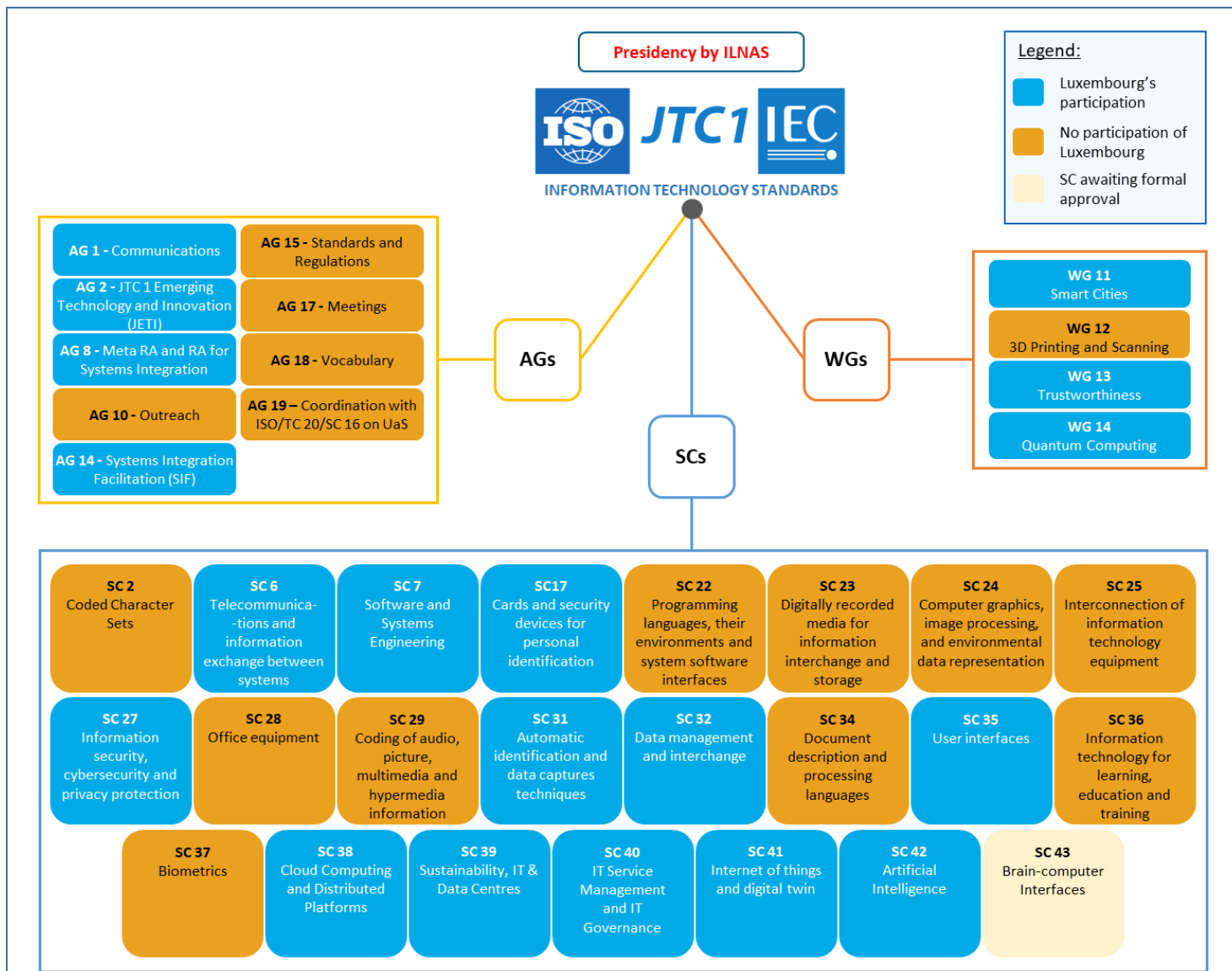 o Standardization context of the related sectors

  o Presentation of European (CEN,CLC, ETSI) and international (ISO, IEC) technical committees active in the related sectors (distributed among subsectors relevant for the national economy)

  o Offer guidance to national stakeholders for a potential future involvement in the standardization development process
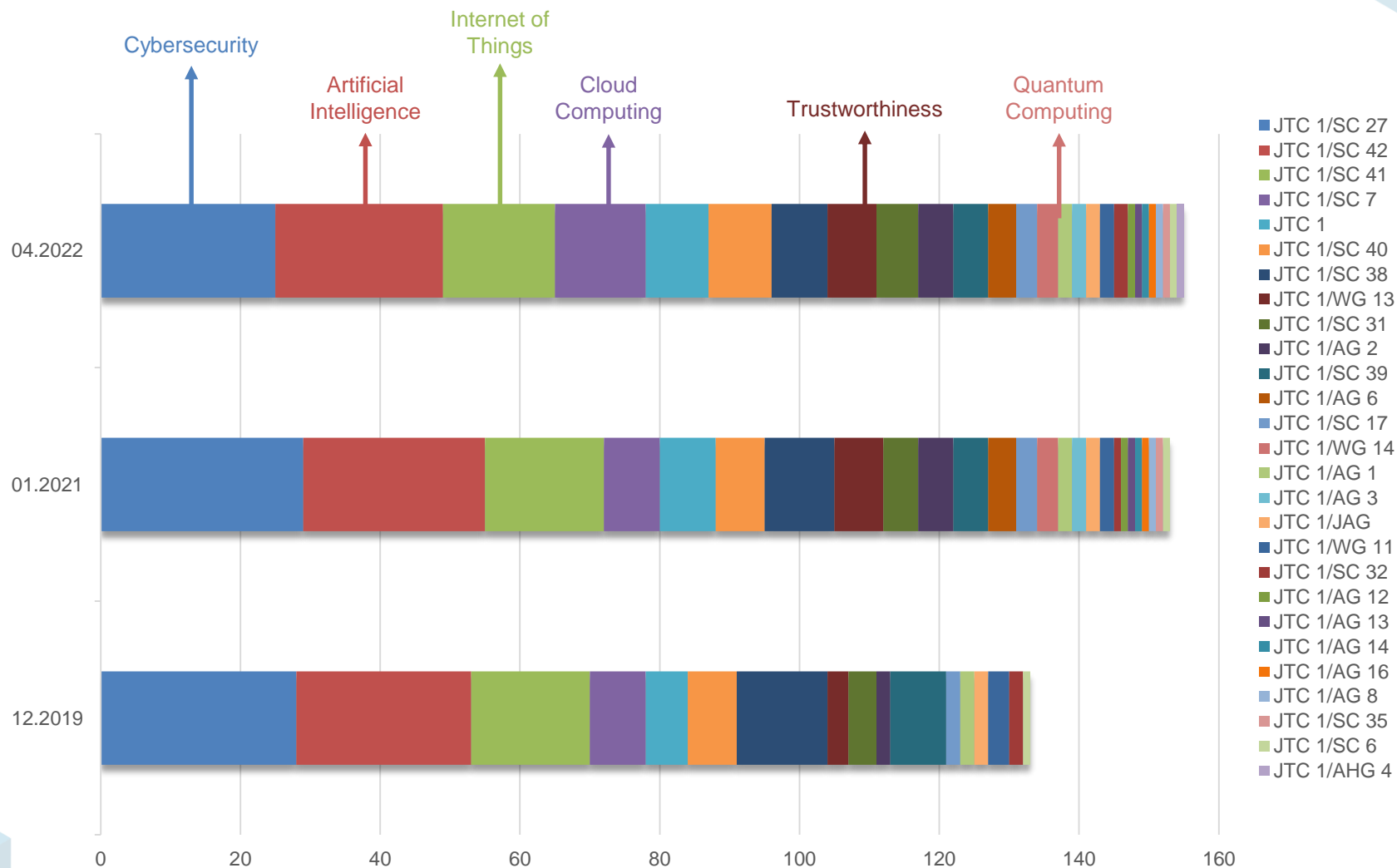
- **Updated annually**

ISO/IEC JTC 1

Presidency by ILNAS

ISO **JTC1** **IEC**
INFORMATION TECHNOLOGY STANDARDS

Legend:
- Luxembourg's participation
- No participation of Luxembourg
- SC awaiting formal approval

AGs

- **AG 1 -** Communications
- **AG 2 -** JTC 1 Emerging Technology and Innovation (JETI)
- **AG 8 -** Meta RA and RA for Systems Integration
- **AG 10 -** Outreach
- **AG 14 -** Systems Integration Facilitation (SIF)
- **AG 15 -** Standards and Regulations
- **AG 17 -** Meetings
- **AG 18 -** Vocabulary
- **AG 19 –** Coordination with ISO/TC 20/SC 16 on UaS

WGs

- **WG 11** Smart Cities
- **WG 12** 3D Printing and Scanning
- **WG 13** Trustworthiness
- **WG 14** Quantum Computing

SCs

|							
SC 2 Coded Character Sets	**SC 6** Telecommunica--tions and information exchange between systems	**SC 7** Software and Systems Engineering	**SC17** Cards and security devices for personal identification	**SC 22** Programming languages, their environments and system software interfaces	**SC 23** Digitally recorded media for information interchange and storage	**SC 24** Computer graphics, image processing, and environmental data representation	**SC 25** Interconnection of information technology equipment
SC 27 Information security, cybersecurity and privacy protection	**SC 28** Office equipment	**SC 29** Coding of audio, picture, multimedia and hypermedia information	**SC 31** Automatic identification and data captures techniques	**SC 32** Data management and interchange	**SC 34** Document description and processing languages	**SC 35** User interfaces	**SC 36** Information technology for learning, education and training
SC 37 Biometrics	**SC 38** Cloud Computing and Distributed Platforms	**SC 39** Sustainability, IT & Data Centres	**SC 40** IT Service Management and IT Governance	**SC 41** Internet of things and digital twin	**SC 42** Artificial Intelligence	**SC 43** Brain-computer Interfaces	

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ISO/IEC JTC 1

→ 69 national delegates registered in ISO/IEC JTC 1

- **15 ETSI members** in Luxembourg
  - Rank 15 of the countries with the most members worldwide
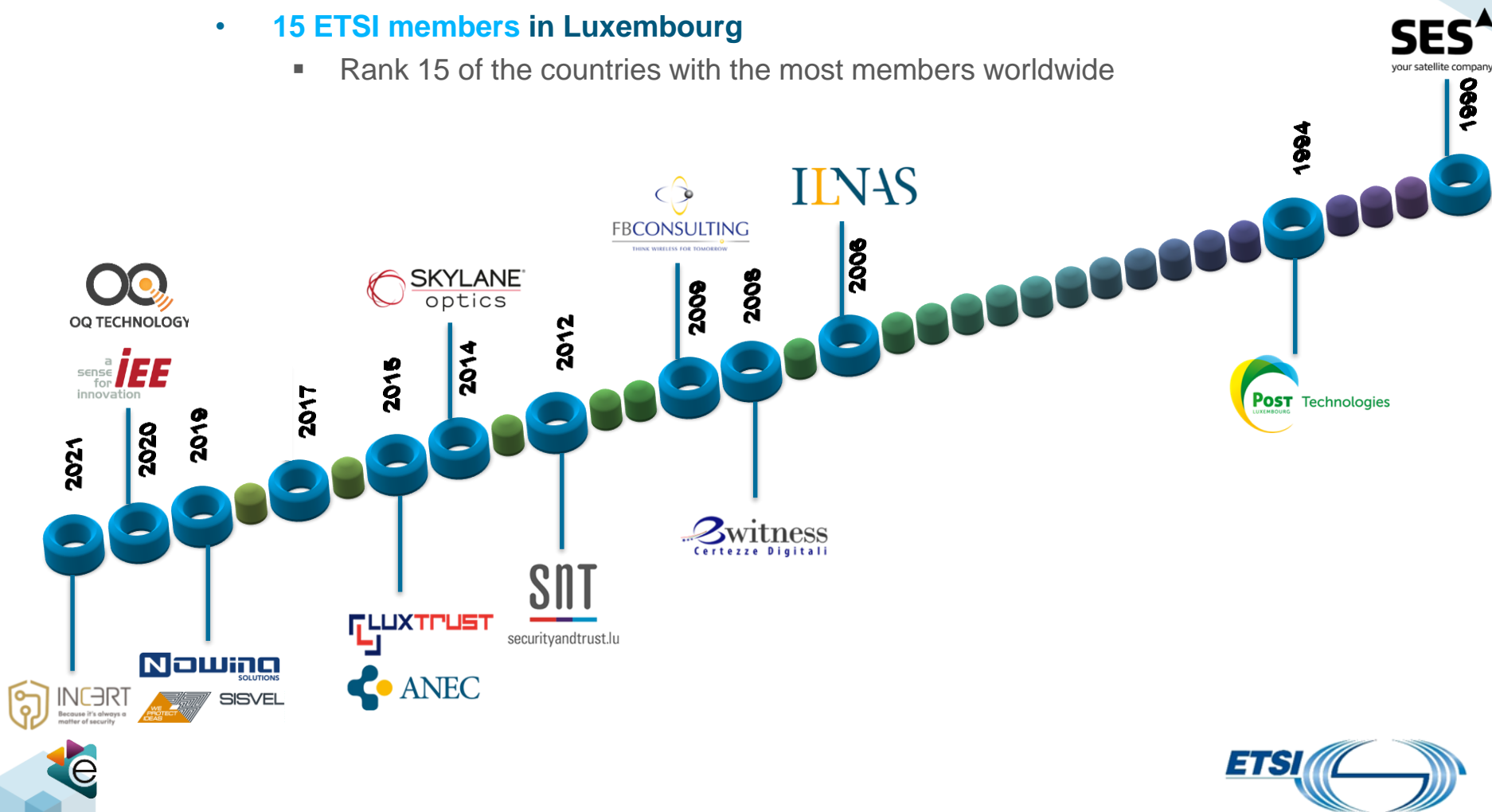
Research program "Technical Standardisation for Trusted Use in the Field of Smart ICT" (2017-2020) in collaboration with the University of Luxembourg

The University of Luxembourg and ILNAS are strengthening their collaboration in the field of Smart ICT and standardization. A ceremony was held on May 17, 2017 at the Ministry of Economy to formally conclude the partnership.

In the rear row, from left to right: Jean-Philippe Humbert, Pascal Bouvry, Paul Heuschling, Yves Elsen, Björn Ottersten;
In the front row, from left to right: Ludwig Neyses, Francine Closener, Jean-Marie Reiff

The Smart-ICT Team

Nader Samir
- PhD Candidate
- Since 1.10.2017
- Industrial experience in UAVs

Prof. Pascal Bouvry
- Principal Investigator
- Project coordination
- PhD supervision
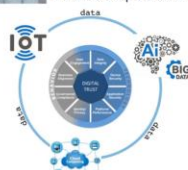
Saharnaz Dilmaghani
- PhD Candidate
- Since 01.03.2018
- Standardization experience

Matthias Brust
- Postdoc
- Project support

Chao Liu
- PhD Candidate
- Since 15.10.2017
- Cloud Computing

10/2018 - White Paper "DATA PROTECTION AND PRIVACY IN SMART ICT - SCIENTIFIC RESEARCH AND TECHNICAL STANDARDIZATION"

IS Day 2019 - Information Security Awards Security Project of the Year: SnT – ILNAS

10/2019 - Technical Reports "SMART ICT: GAP ANALYSIS BETWEEN SCIENTIFIC RESEARCH AND TECHNICAL STANDARDIZATION"

Journal Papers	4
Conference papers	21
Short Papers	4
White Paper	1
Technical Report	1
Awards	2
News Coverage	5
Talks to wider audience	15

Research program "Technical Standardisation for Trusted Use in the Field of Smart ICT" (2017-2020)

Recent updates

- **Dr. Saharnaz Dilmaghani**
  - Winner of the 'Young Researcher' category of the CEN and CENELEC Standards+Innovation Awards (October 2021)
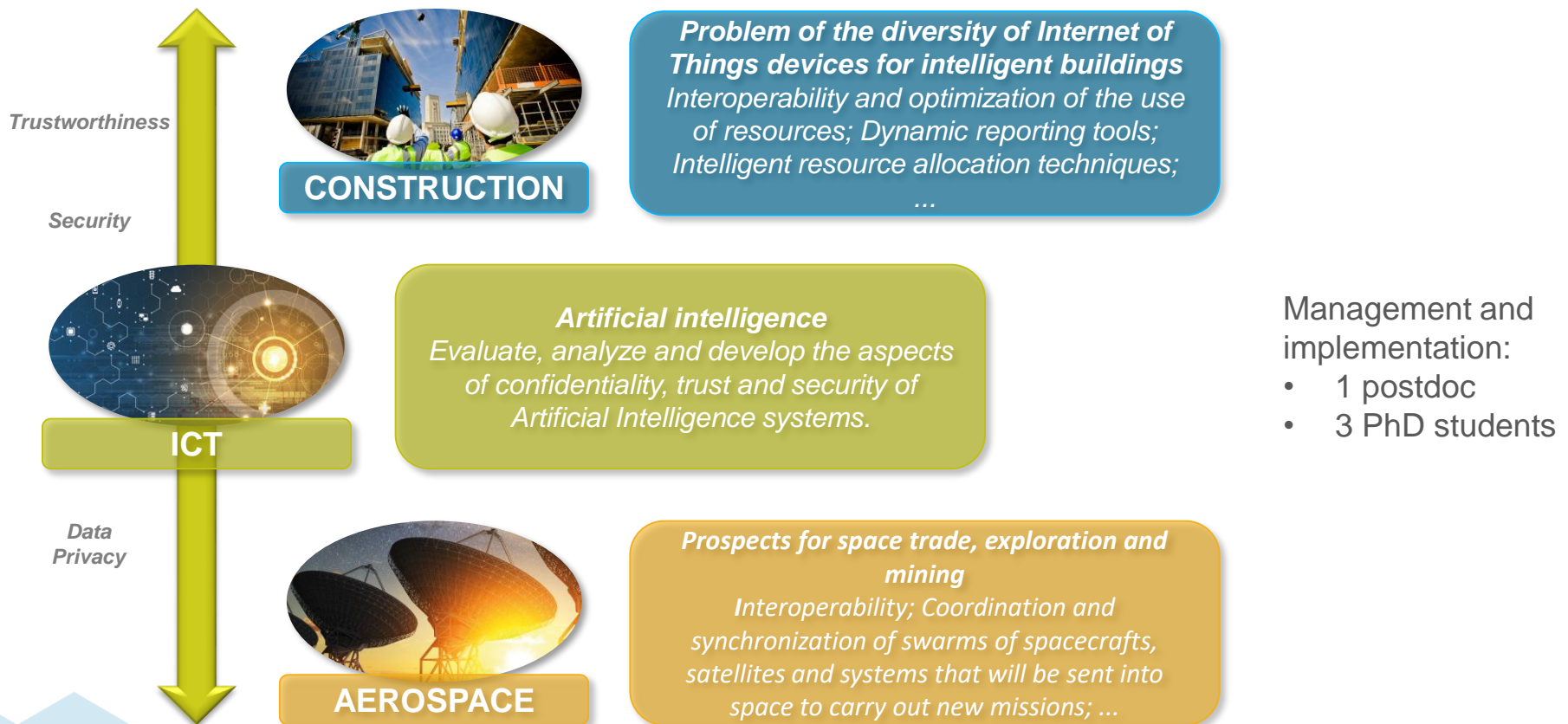 - PhD thesis defended in Q1 2022 ("*On Trustworthy AI and Localized Complex Network Analytics*")

- **Dr. Nader Samir Labib**
  - PhD thesis defended in Q4 2021 ("*A Distributed Unmanned Aerial Vehicles Traffic - Management System*")

Standards+Innovation Awards 2021

Saharnaz DILMAGHANI
Winner of Young Researcher category

Follow the conversation
#standardsplusinnovation

Research program "Technical Standardisation for Trustworthy ICT, Aerospace, and Construction" (2021-2024) in collaboration with the University of Luxembourg

Trustworthiness

Security

Data Privacy

CONSTRUCTION

Problem of the diversity of Internet of Things devices for intelligent buildings
Interoperability and optimization of the use of resources; Dynamic reporting tools; Intelligent resource allocation techniques; ...

ICT

Artificial intelligence
Evaluate, analyze and develop the aspects of confidentiality, trust and security of Artificial Intelligence systems.

AEROSPACE

Prospects for space trade, exploration and mining
Interoperability; Coordination and synchronization of swarms of spacecrafts, satellites and systems that will be sent into space to carry out new missions; ...

Management and implementation:
- 1 postdoc
- 3 PhD students

2010-2021 - ILNAS Research activities

DIGITAL TRUST
ARTIFICIAL INTELLIGENCE
BLOCKCHAIN

INTERNET OF THINGS

BIG DATA

2 *National Technical Standardization Reports* published

8 *White Papers* published

Technology review

Economic overview

Challenges

Technical Standardization

…

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Master MTECH – ILNAS in collaboration with the University of Luxembourg and the Chamber of Employees

STANDARDISATION	ECTS
Smart Secure ICT and Innovation	1
Technical Standardisation	3
TOTAL	4

SMART ICT	ECTS
Smart ICT Technologies I	5
Smart ICT Technologies II	5
TOTAL	10

DIGITAL TRUST FOR SMART ICT	ECTS
Security for Smart ICT I	2
Security for Smart ICT II	3
Trust Architectures for Smart ICT	4
TOTAL	9

TECHNOPRENEURSHIP	ECTS
Management of Business and Technical Innovation	3
Digital Intelligence	2
Legal Aspects	2
TOTAL	7

MASTER THESIS	ECTS
Master Thesis	30
TOTAL	30

- **60 ECTS**
- **327 hours** of teaching
- **Internship** (750 hours)
- **Started in February 2021**
- **2 years lifelong-learning**
- **20 students (max.)**
- **11 Modules**
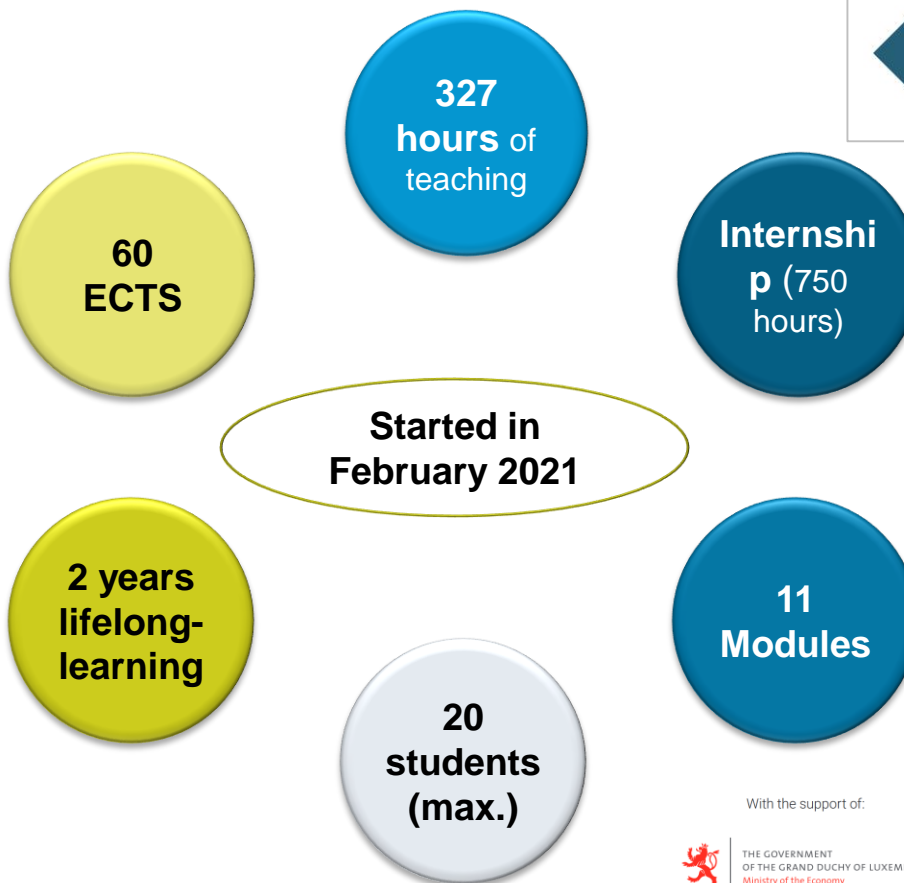
With the support of:

THE GOVERNMENT
OF THE GRAND DUCHY OF LUXEMBOURG
Ministry of the Economy

cen CENELEC. ETSI The Standards People

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Master MTECH – Profile of the students enrolled in the Master MTECH

WOMEN : MEN

44% 56%

4 : 5

AGE

28 → 45

Average: 38

NATIONALITIES

6

ECONOMIC SECTORS

- 34% Banking
- 33% IT & Telecom
- 11% Public sector
- 22% Self-employed

Master MTECH – Next steps

17
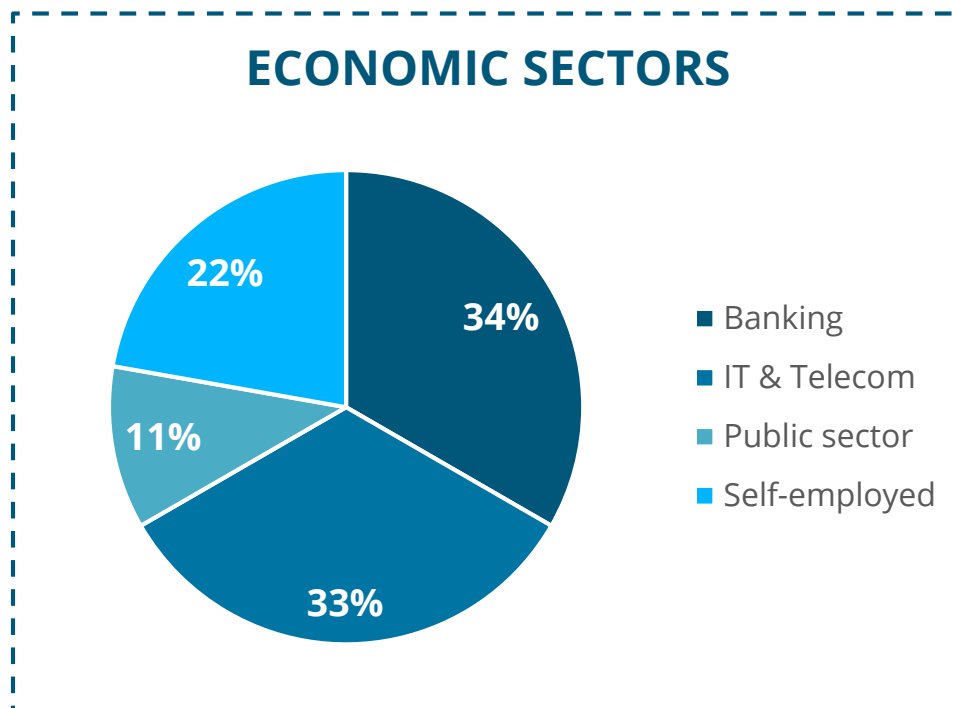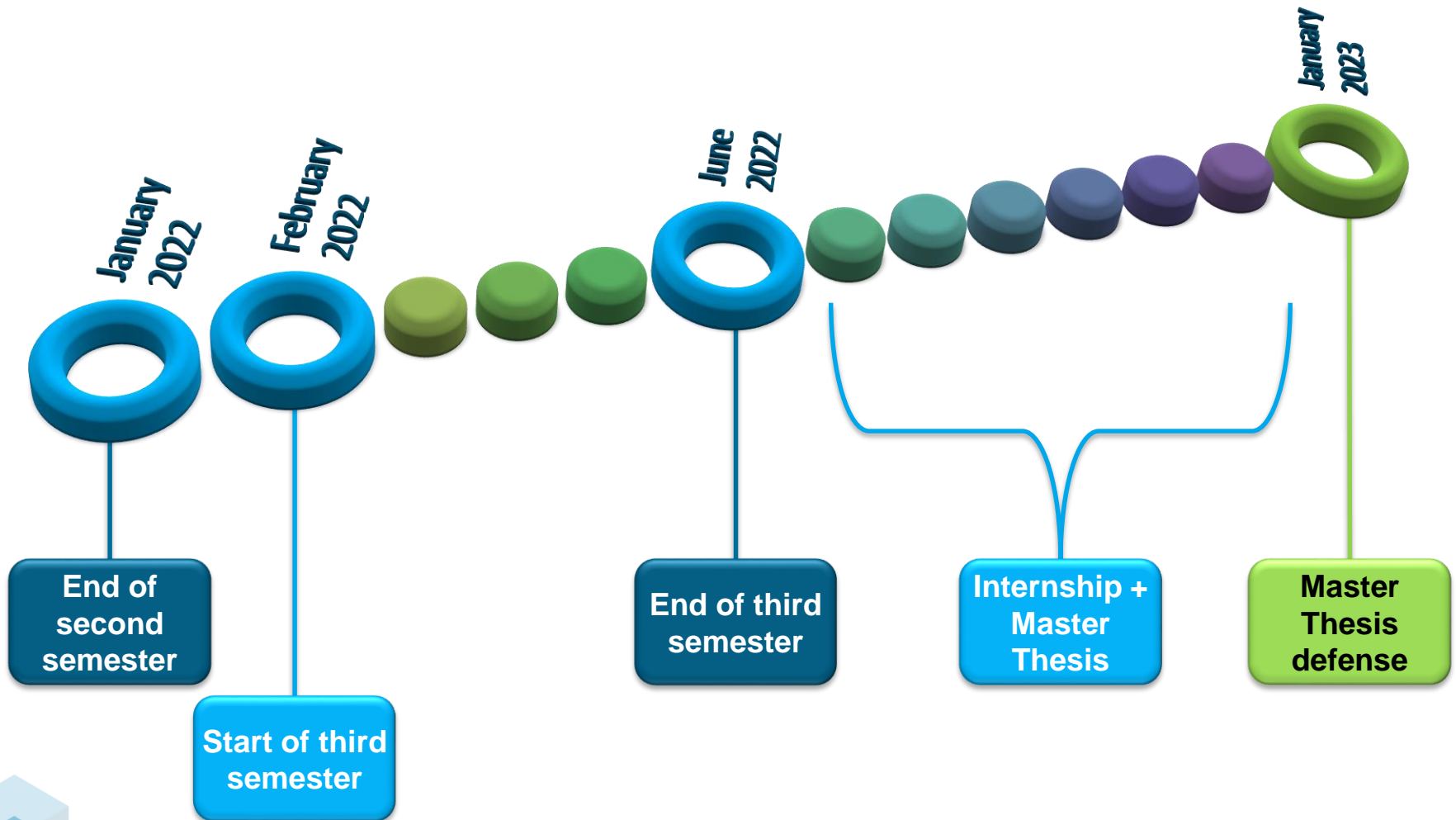
→ **Portail qualité:**
www.portail-qualite.lu

→ **ILNAS e-shop:**
https://ilnas.services-publics.lu/
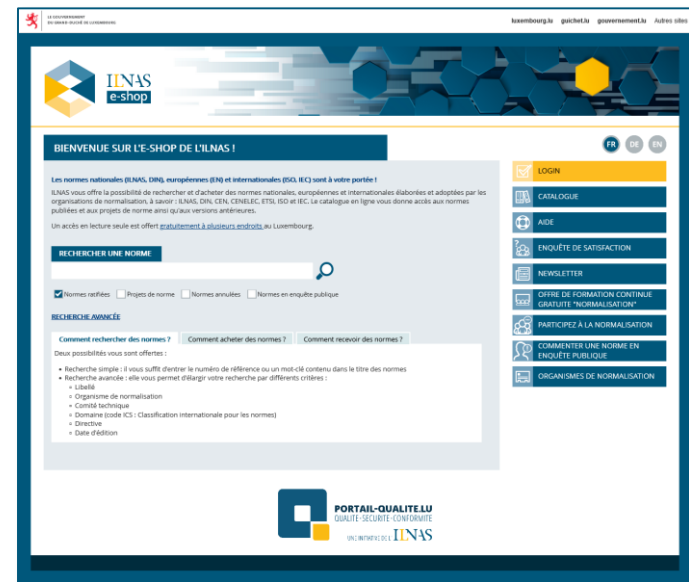
→ **Newsletters:** https://portail-qualite.public.lu/fr/support/newsletter.html

→ **Social Networks:**

- **Coordinate and supervise the creation of national standards**
  - **Construction sector**
    - Creation of a national standards office (in collaboration with CRTI-B)
    - National standard about the living surface (published - ILNAS 101:2016)
    - National annexes of the Eurocodes (published in 2011 and revised in 2019)
    - National annexes on concrete (ongoing work)
    - National standard on building acoustics (published - ILNAS 103-1:2022)
    - National standard related to the technical controls of buildings (published - ILNAS 105-1:2021)

  - **Information and Communication Technologies (ICT) sector**
    - National standard on e-archiving (ongoing work)
    - National standard on information security in the context of the accreditation of laboratories (published - ILNAS 107:2020)

  - **Other domains**
    - National annex concerning the Winter Diesel (published - EN 590:2013+A1:2017/AN-LU:2019)
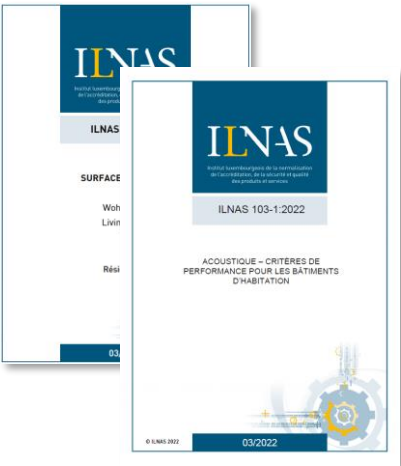
- 85 national standards (ILNAS)

- +81.000* European standards (CEN, CENELEC and ETSI)

- +74.000* International standards (ISO and IEC)

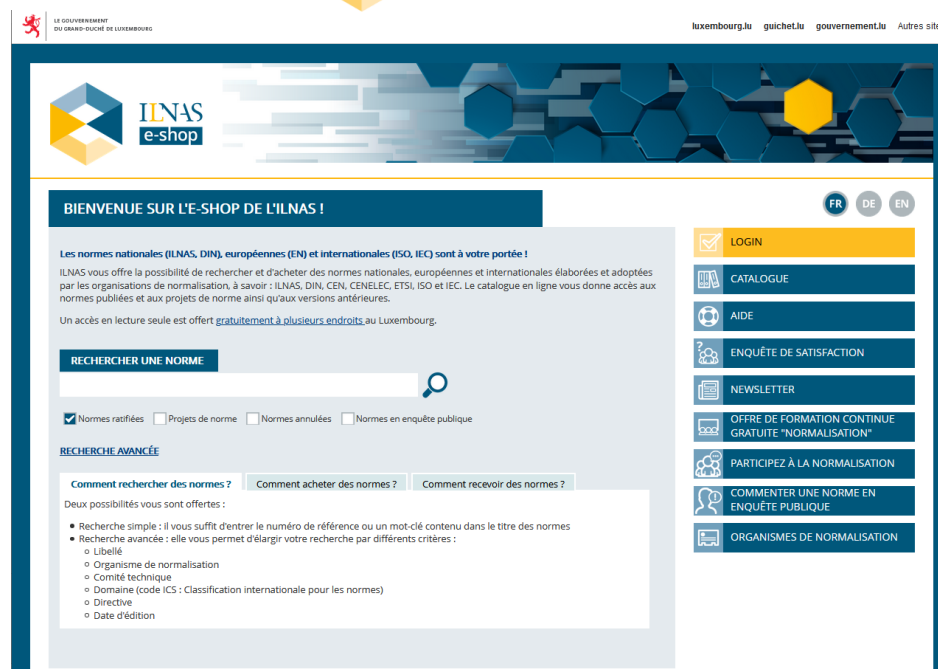- +49.000* German standards (DIN)

→ More than **200.000 normative documents available**

(*) = active and inactive

- Electronic format

- Languages : French, German & English

- Attractive prices

- Free access to draft standards in public enquiry (ILNAS, CEN, CENELEC, ETSI and IEC)

- Free consultation of European (CEN,CENELEC & ETSI), international (ISO & IEC) and national (ILNAS) standards

- Locations:

    1. **Esch-sur-Alzette & Sanem**
        - ILNAS premises in Esch-Belval (<u>on appointment</u>)
        - Luxembourg Learning Centre in Esch-Belval
        - LIST premises in Belvaux

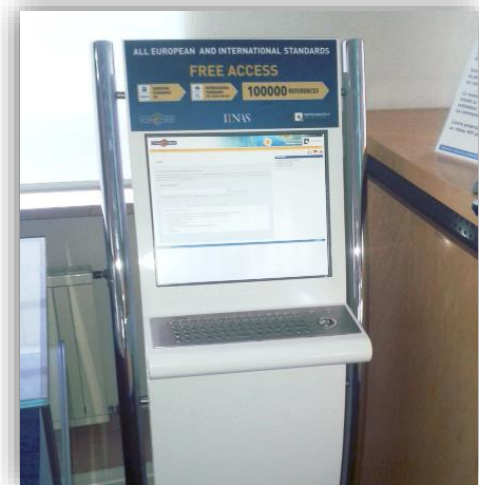   2. **Luxembourg city**
        - University of Luxembourg - Kirchberg
        - Securitymade.lu (SMILE) (<u>on appointment</u>)
        - Chambre des Métiers - Kirchberg
        - Lycée des Arts et Métiers - Limpertsberg

    3. **Echternach**
        - Town administration of Echternach

    4. **Redange-sur-Attert**
        - Atert Lycée Redange

- **Participation in standardization activities**
  - o Management of the participation of national experts who represent Luxembourg in the European and international technical committees
    - ▪ Open to everybody
    - ▪ Free of charge

- **National register of delegates**
  - o 279 experts registered (March 2022)
  - o 1012 registrations in technical committees
  - o Link: https://gd.lu/cCN7qg

Registre national des délégués en normalisation - Mars 2022

Nombre d'inscriptions aux comités techniques :

ILNAS/OLN	70
CEN	230
CENELEC	12
CEN/CLC	35
CEN/CLC/ETSI	1
ECISS	0
ISO/IEC	364
ISO	288
IEC	12
Total	1012

Nombre de personnes inscrites : 279

ILNAS

1, av du Swing - L-4367 Belvaux - Tél. : (+352) 24 77 43 40 - Fax : (+352) 24 79 43 40 - Email : normalisation@ilnas.etat.lu - www.portail-qualite.lu

mardi 29 mars 2022   Approuvé par Jérôme HOEROLD   Page 1 sur 103

→ More information available on: https://portail-qualite.public.lu/fr/normes-normalisation/participer-normalisation.html

- **Representing Luxembourg in the "EU Multi Stakeholder platform on ICT Standardisation"**
  - Publish the "Rolling Plan on ICT Standardisation" each year - "*a unique bridge between EU policies and standardisation activities in the field of ICT*"

- **Representing Luxembourg in the INT and EU standardization organizations**
  - Member of CEN, CENELEC, ISO and IEC
  - NSO and Administration in ETSI (Head of National delegation in ETSI GA)
  - ADMIN in ITU-T (representing Luxembourg in standardization activities of ITU)

- **Following closely ICT-related standardization activities in all the SDOs**
  - 87 national delegates registered in technical committees (CEN/CLC, ISO/IEC JTC 1)
  - Presidency of the National Mirror Committee ISO/IEC JTC 1

- **Development of National Standardization Commission (NSC) to strengthen the national standardization communities in specific ICT topics**
  - NSC 01 – Cybersecurity created in 2021
  - Development of new NSC planned in 2022 (e.g.: Artificial Intelligence)

- **Foster and promote voluntary, consensus-based standards**
  - Website (portail-qualite.lu) regularly updated
  - Monthly Newsletter (https://gd.lu/4lTr96)
  - Events (e.g.: World Standards Day)
  - Brochures & White Papers
  - Social Media (LinkedIn, YouTube)

- **Organize education and training courses about standardization**
  - Training catalogue (updated annually)

- **Partnerships with University of Luxembourg**
  - Research program (2017-2020) on "Digital Trust for Smart ICT"
  - Master MTECH "Technopreneurship: mastering smart ICT, standardisation and digital trust for enabling next generation of ICT solutions"
  - Research program (2021-2024) "Technical Standardisation for Trustworthy ICT, Aerospace, and Construction (2021-2024)"

Development of ILNAS Online Video Trainings

Standards Analysis ICT – Luxembourg, v10.0

21/04/2022, Jean Lancrenon, ANEC GIE

Policy on ICT Technical Standardization (2020-2025)

ILNAS

1 — Promoting the ICT technical standardization to the market

2 — Reinforcing the valorization and the involvement regarding ICT technical standardization

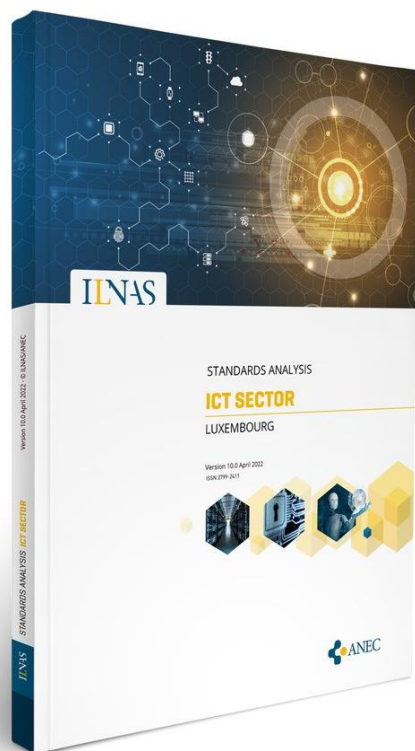**3** — Supporting and strengthening the EaS and the related research activities
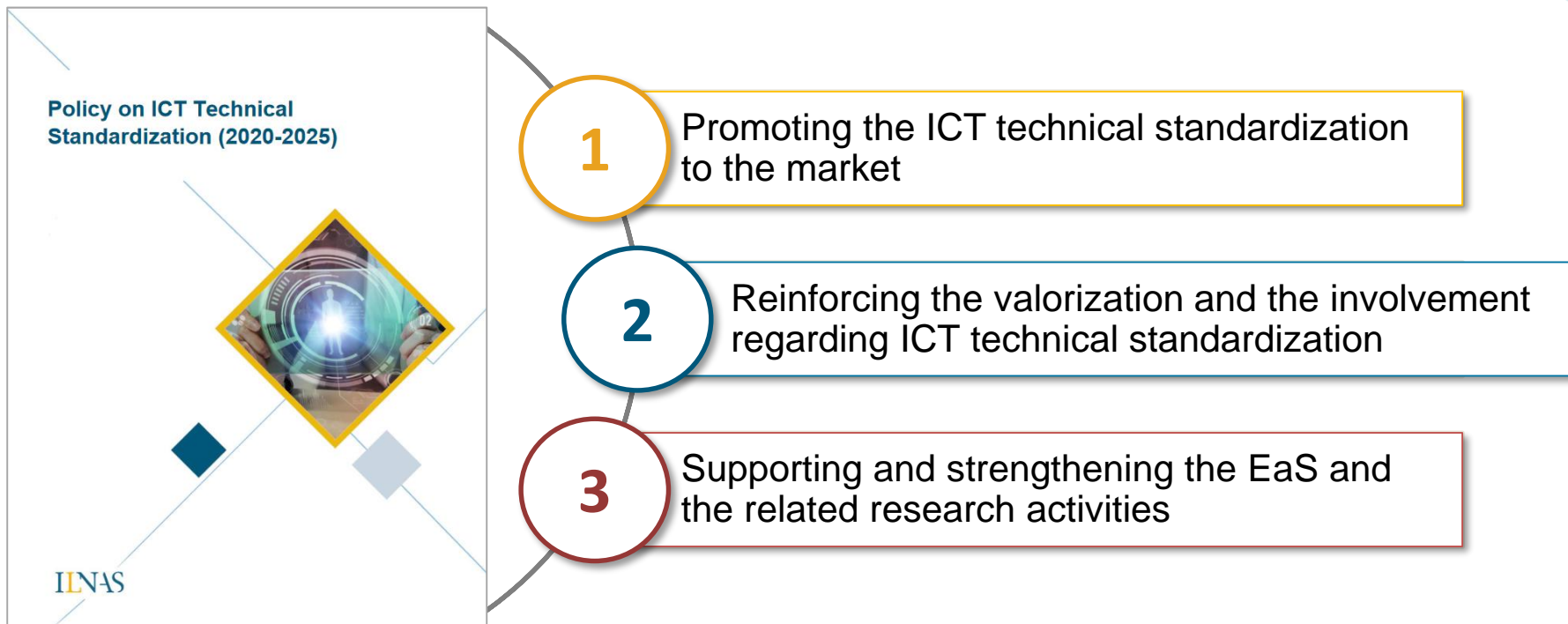
A main outcome of Project 1

"Drawing up a yearly national standards analysis for the Smart Secure ICT sector"

- **Baseline resource**
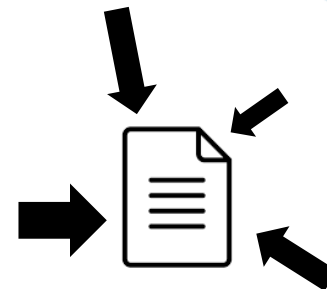- **Actionable, practical information**
- **Freely available online**

Twice a year, actually Spring and Autumn

Main information
A single-document resource of technical standardization committees covering the overall ICT sector

Purpose
To help you identify quickly and efficiently those SDOs and committees relevant to your business

What aims?
- Sources of technical standards that might impact you
- Identify committees connected to your business within which participating might by of interest

2018, 2019, 2020 Standards Analyses: Smart ICT

Artificial Intelligence

Internet of Things

+ Digital Trust

Blockchain

Cloud Computing

<u>**Fostering interest in**</u> **Standardization of new technologies**

- *Budding technologies (and their security)* → *Budding committees in standardization*

- *A chance to join the efforts <u>early</u>*

2021, going forward (for now at least): A return to the promotion of ICT overall

Artificial Intelligence

Digital archiving

Internet of Things

Programming languages

Digital Trust

Smart cities

Blockchain

Robotics

Green ICT

Cloud Computing

Software engineering

Financial technology

…and so much more…!

A return to the development of a broader view for the market

- *Budding technologies (and their security) → Budding committees in standardization… BUT ALSO*

- *Maintenance of standards, and contributions to standards projects, in "classic" topics*

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Economic context

- ICT economy in (some) numbers in Luxembourg, the EU, the world
- Examples of national initiatives

Luxembourg: 2,935 ICT companies as of 2020

Worldwide ICT spending to be ~$5.8 trillion by 2023

...
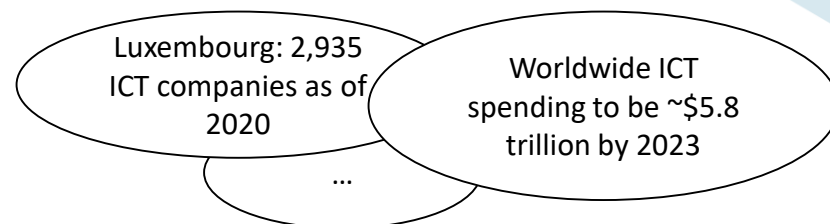
Generalities on standardization

- Quick overviews of ISO, IEC, ITU-T, CEN, CENELEC, ETSI
- Definitions and purpose of standardization (World Trade Organization, European legislation)

A presentation of the main national actors

- ILNAS, your national standards body
- ANEC GIE, in support of ILNAS' legal standardization mission

…and their services!

Your standardization partners in Luxembourg

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➡️ **Technical committees of interest broken down by sub-sector**

➡️ **Sub-sectors inspired by the European Commission's Rolling Plan in ICT technical standardization**

➡️ **20 sub-sectors identified (themselves regrouped into 5 broad categories, also according to the RP)**

FOUNDATIONAL DRIVERS

- Data Economy
- Governance of IT
- Digital Trust: Cybersecurity, Network and Information security, Trustworthiness, and Privacy protection

KEY ENABLERS

- Telecommunications and Networking, and Emergency Telecommunications
- Robotics and Autonomous Systems
- Electronic Identification and Trust Services Including e-Signatures
- Accessibility of ICT Products and Services
- Artificial Intelligence and (Big) Data
- Cloud and Edge Computing
- Software and Programming Languages
- Internet of Things

SOCIETAL CHALLENGES

- E-Health, Healthy Living and Aging
- Education, Digital Skills and Digital Learning

INNOVATION AND DIGITAL SINGLE MARKET

- Fintech
- Blockchain and Distributed Ledger Technologies

SUSTAINABLE GROWTH

- Smart Cities and Communities
- Smart Grids and Smart Metering, Efficient Energy Use
- ICT Environmental Impact: Green ICT
- Intelligent Transport Systems
- Digitisation of European Industry: Smart Manufacturing

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ISO/IEC JTC 1/SC 38
CLOUD COMPUTING AND DISTRIBUTED PLATFORMS

GENERAL INFORMATION

Creation date	2009	**Secretariat**	ANSI (United States)
Chairperson	Dr. Anish Karmarkar	**Committee Manager**	Mr. Bill Ash

Scope	Standardization in the areas 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	AG 1 Communications committee AG 2 JTC 1/SC 38 Officers group AG 5 Long-term strategy CAG Chair's Advisory group CG 1 Liaison coordination group for JTC 1/SC 27 CG 2 Liaison coordination group for JTC 1/SC 41 CG 3 Liaison coordination group for JTC 1/SC 42 CG 4 Liaison coordination group for JTC 1/SC 7 CG 5 Liaison coordination group for JTC 1/WG 13 WG 3 Cloud Computing Fundamentals (CCF) WG 5 Data in cloud computing and related technologies
Webpage	https://www.iso.org/committee/601355.html

STANDARDIZATION WORK

Published standards	32	**Projects**	5

INTERNATIONAL MEMBERS AND NATIONAL INVOLVEMENT

P-Members	28 participating members (including **Luxembourg**)
O-Members	22 observing members
Luxembourg's involvement	**8 national delegates**

Also, some information on:

- ○ **ITU-T study groups**
- ○ **ETSI Industry Specification Groups**
- ○ **CEN/CENELEC workshop agreements**

ISO/IEC JTC 1/SC 38 — CLOUD COMPUTING AND DISTRIBUTED PLATFORMS

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Structure

AG 1	Communications committee
AG 2	JTC 1/SC 38 Officers group
AG 5	Long-term strategy
CAG	Chair's Advisory group
CG 1	Liaison coordination group for JTC 1/SC 27
CG 2	Liaison coordination group for JTC 1/SC 41
CG 3	Liaison coordination group for JTC 1/SC 42
CG 4	Liaison coordination group for JTC 1/SC 7
CG 5	Liaison coordination group for JTC 1/WG 13
WG 3	Cloud Computing Fundamentals (CCF)
WG 5	Data in cloud computing and related technologies

Webpage https://www.iso.org/committee/601355.html

STANDARDIZATION WORK

Published standards	32	**Projects**	5

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Details on ILNAS and ANEC GIE products and services, related especially to ICT

- **Information dissemination**
  - Market meetings
  - News items in standardization
  - Standards watch service
- **Consulting and purchasing standards**
  - Reading stations
  - e-Shop
- **Getting involved in standards development**
  - Public enquiry commenting
  - Becoming a delegate in standardization
- **Research and education**
  - White papers and technical reports
  - General and technical training sessions

Main takeaways of the <u>Standards Analysis</u>

- **Know what committees are relevant to your work to**
  - Know who is developing standards that might impact you
  - Follow their work, their evolution
  - Join them as delegate to
    - Shape new standards that are in project form
    - Rework published standards that are under revision
    - Propose new standards and lead projects
- **Know what services ILNAS and ANEC can offer to support you**
  - Coach you as a delegate
  - Serve as an interface to submit comments
  - Consult standards

DON'T HESITATE TO:
- **DIVE INTO THE DOCUMENT!**
- **CONTACT THE ANEC GIE ICT PROJECT OFFICERS!**

Thank you for your attention!

- Satisfaction survey of the breakfast
- Declaration of interest

ILNAS ANEC

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ACCRÉDITATION

CONFIANCE NUMÉRIQUE

SURVEILLANCE DU MARCHÉ

MÉTROLOGIE

NORMALISATION