



# ILNAS Breakfast

## “Management System Standards: Overview”

### Introduction

14<sup>th</sup> September 2022

*Jean-Philippe HUMBERT - Deputy Director, ILNAS*



## - ILNAS

- Public administration under the authority of the Minister of the Economy
- Created by the amended Law of July 4, 2014
- Total staff: 57 (September 2022)
- ISO 9001:2015 certification (Budget and administration department, OLN, Digital Trust department, Market surveillance department, BLM, OEC)

## - National Standards Body

- Composed of 6 persons
- Close collaboration with the E.I.G. ANEC-N



- **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:** 12 persons, including 5 employees in the standardization department (September 2022)
- **Partners :**



LE GOUVERNEMENT  
DU GRAND-DUCHÉ DE LUXEMBOURG  
Ministère de l'Économie

ILNAS



CHAMBRE  
DES METIERS  
Luxembourg



➔ Support for the implementation of the Luxembourg standardization strategy

## Technical standardization

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



→ 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



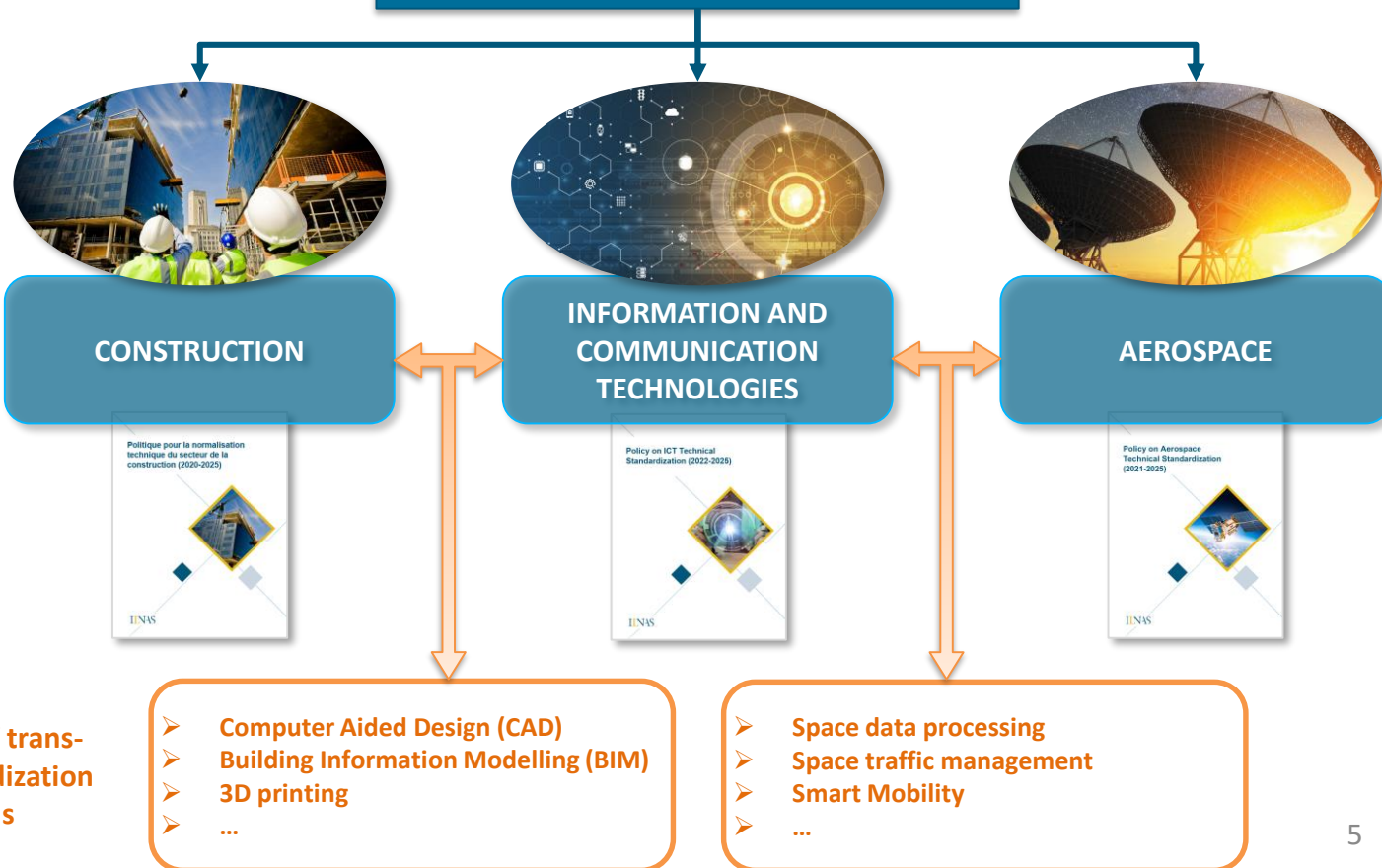
Pillar 4 – Development of research and education about standardization



## Technical standardization

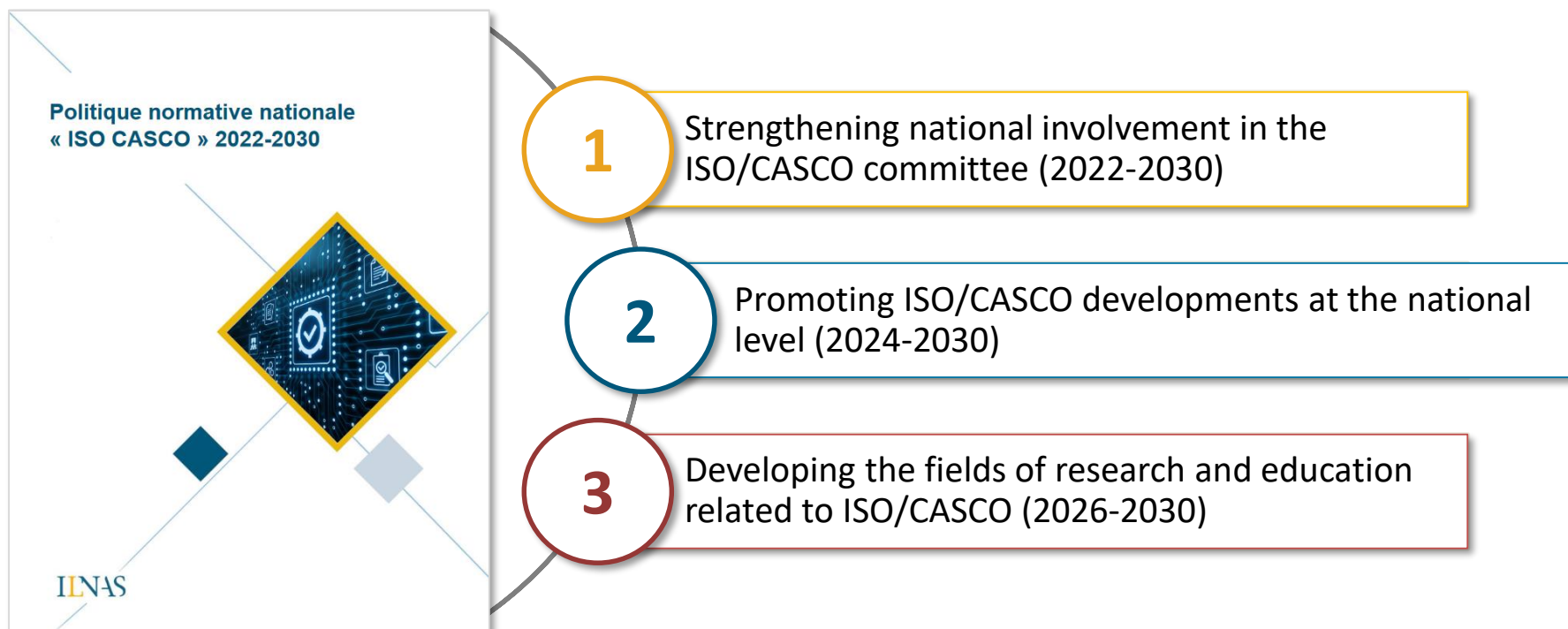
"Inclusive tool for performance and excellence to serve the economy"

3 growth sectors identified



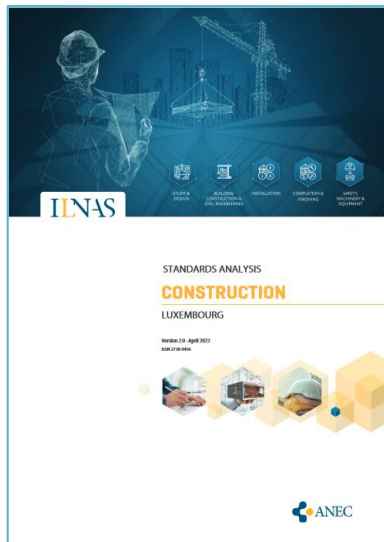
**"Guarantee national involvement in standardization activities relating to conformity assessment in line with market needs"**

→ Progressive execution of three lead projects





<https://qd.lu/cQFNkt>

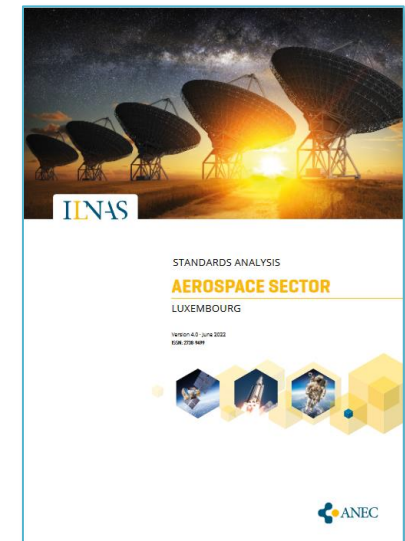


<https://qd.lu/6wBmmn>

## 2022 - Standards Analysis

### - Content

- Standardization context of the related sectors
- 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)
- Offer guidance to national stakeholders for a potential future involvement in the standardization development process



<https://qd.lu/dPk3b>

### - Updated annually (twice a year for the ICT Standards Analysis)



### 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 Eisen, 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



**Chao Liu**  
- PhD Candidate  
- Since 15.10.2017  
- Cloud Computing



**Matthias Brust**  
- Postdoc  
- Project support



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



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”



## 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”*)

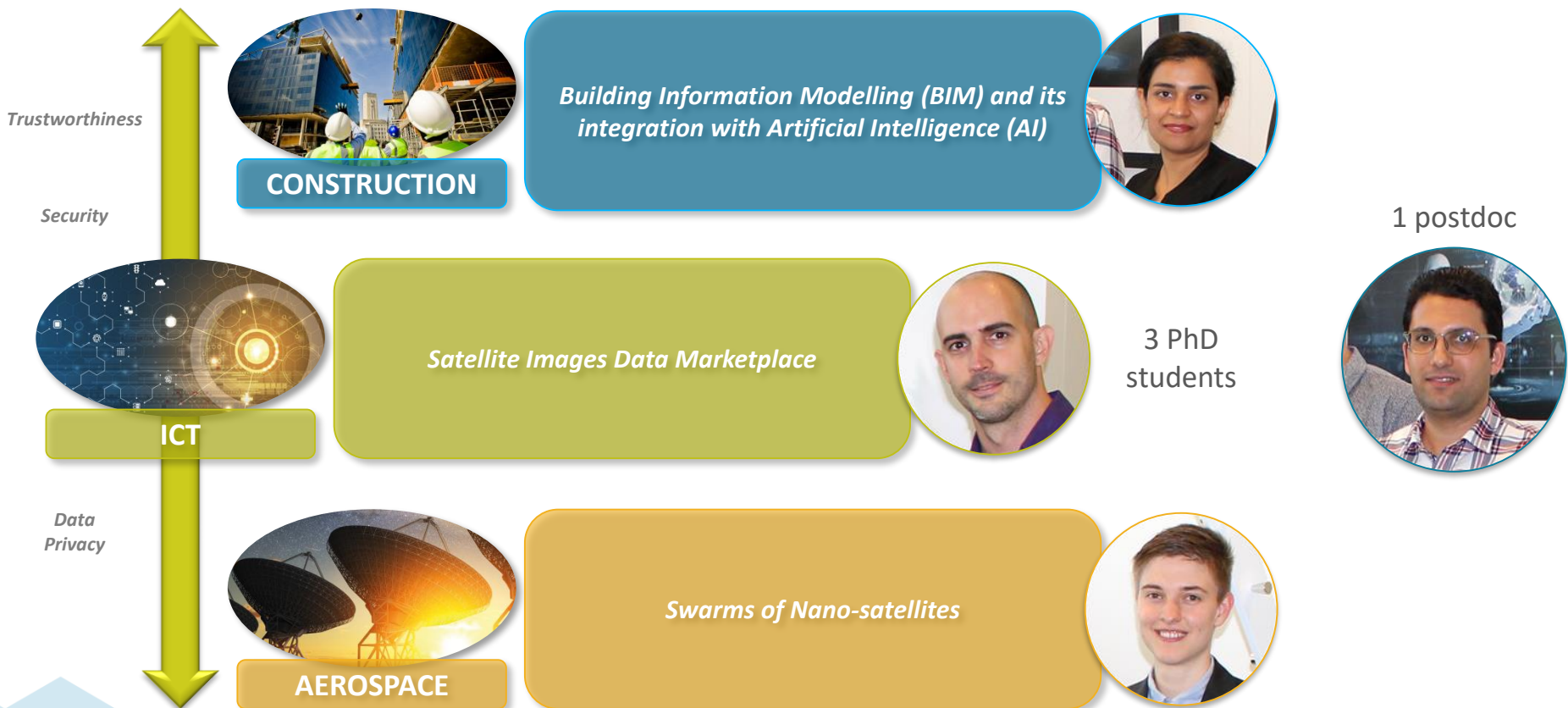


### - Dr. Nader Samir Labib

- PhD thesis defended in Q4 2021 (*“A Distributed Unmanned Aerial Vehicles Traffic - Management System”*)



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



### 2010-2022 - ILNAS Research activities

#### DIGITAL TRUST

#### ARTIFICIAL INTELLIGENCE

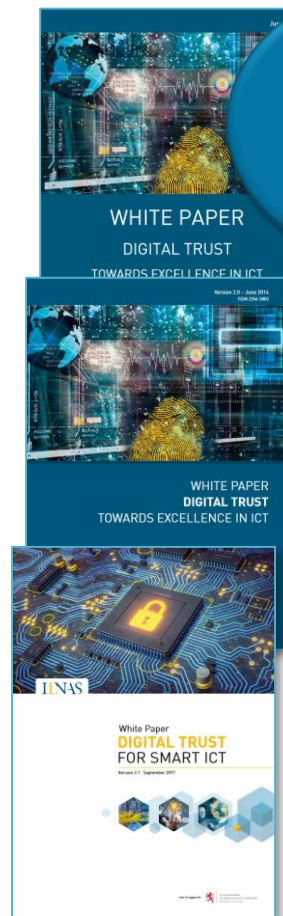
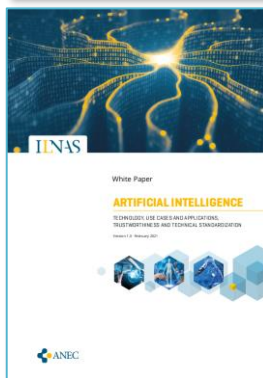
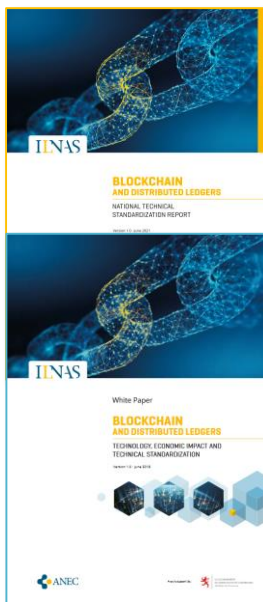
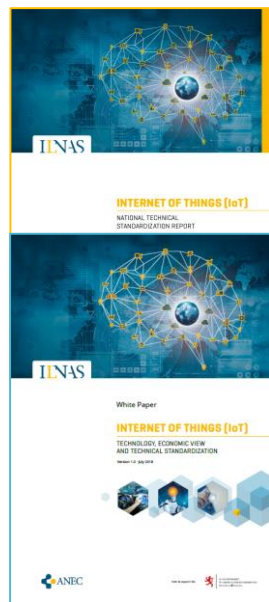
#### BLOCKCHAIN

#### INTERNET OF THINGS

#### BIG DATA

#### CLOUD COMPUTING

**8 White Papers**  
published



**3 National  
Technical  
Standardization  
Reports** published

*Technology  
review*

*Economic  
overview*

*Challenges*

*Technical  
Standardization*

...

## 2022 - Report “Technical Standardization - Management System Standards: Overview”



### 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
<b>TOTAL</b>	<b>4</b>

SMART ICT	ECTS
Smart ICT Technologies I	5
Smart ICT Technologies II	5
<b>TOTAL</b>	<b>10</b>

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

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

MASTER THESIS	ECTS
Master Thesis	30
<b>TOTAL</b>	<b>30</b>

**60 ECTS**

**327 hours  
of teaching**

**Internship  
(750 hours)**

**Started in  
February 2021**

**2 years  
lifelong-  
learning**

**20  
students  
(max.)**

**11  
Modules**

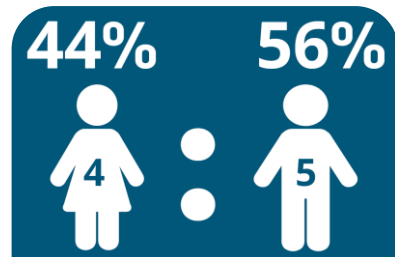
With the support of:



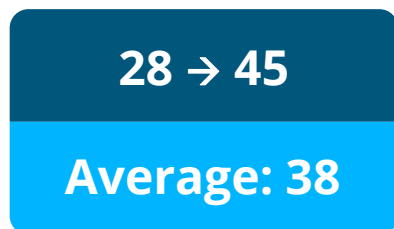
THE GOVERNMENT  
OF THE GRAND DUCHY OF LUXEMBOURG  
Ministry of the Economy



## WOMEN : MEN



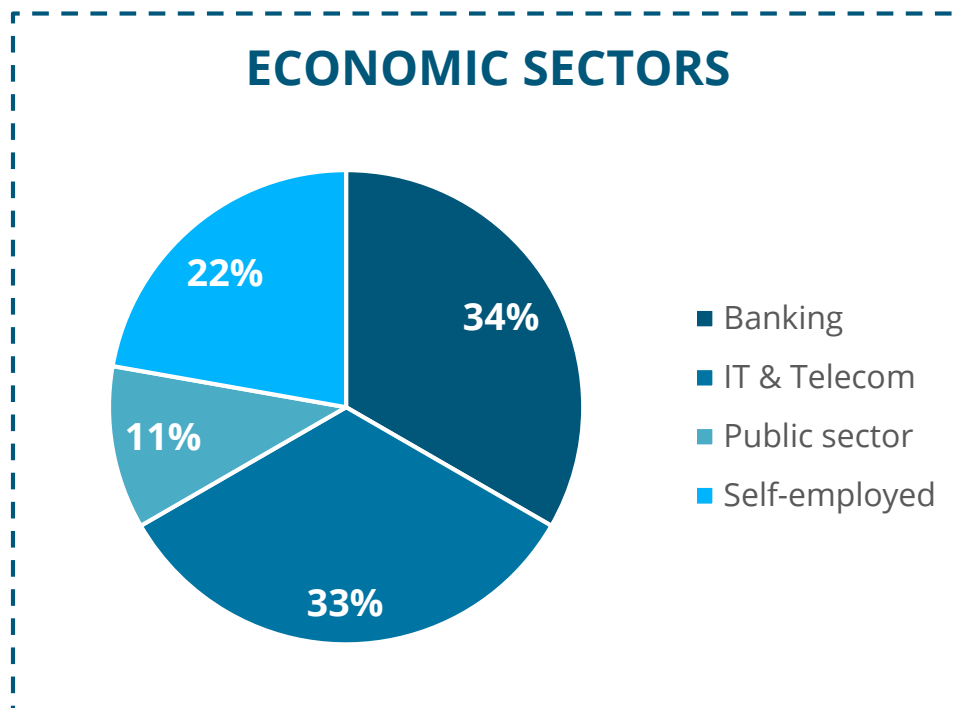
## AGE



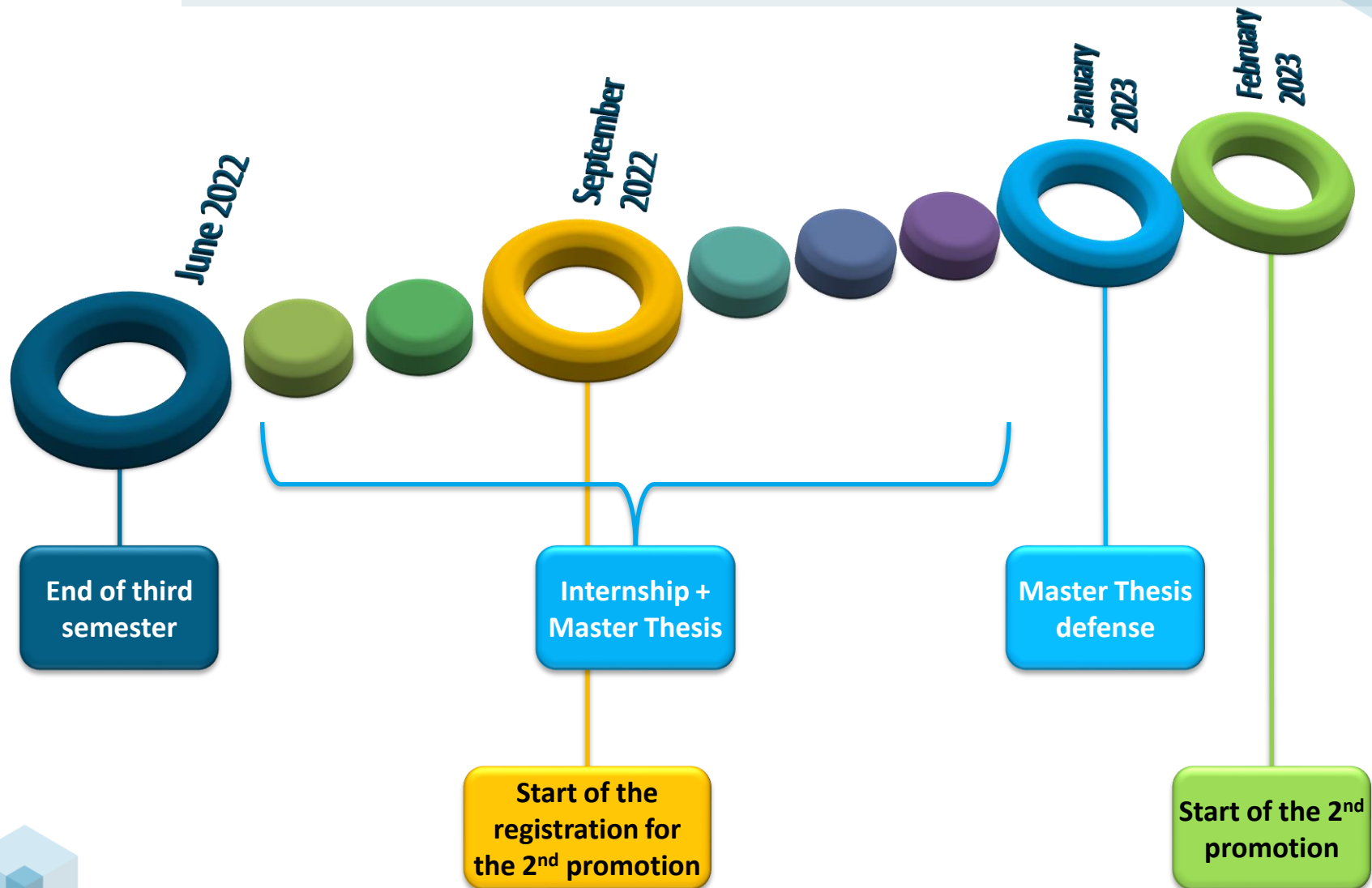
## NATIONALITIES



## ECONOMIC SECTORS



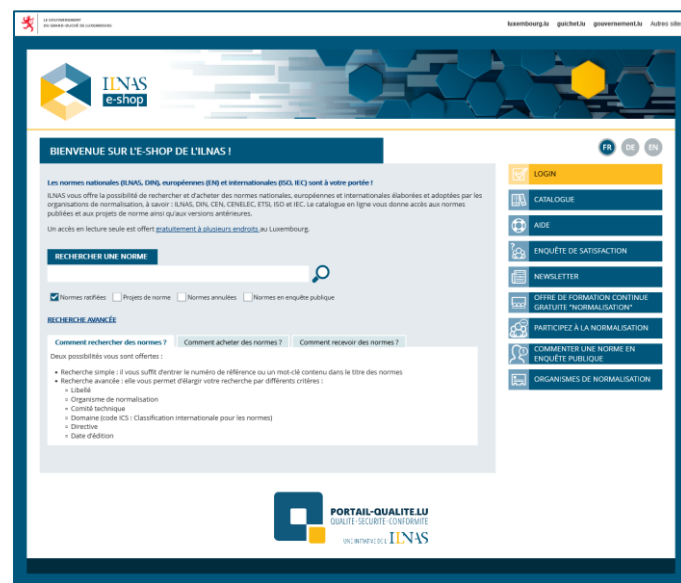




➔ **Portail qualité:**  
[www.portail-qualite.lu](http://www.portail-qualite.lu)



➔ **ILNAS e-shop:**  
<https://ilnas.services-publics.lu/>



➔ **Newsletters:** <https://portail-qualite.public.lu/fr/support/newsletter.html>

➔ **Social Networks:**



# ILNAS Breakfast

## “Management System Standards: Overview”

Presentation of the *organisme luxembourgeois de normalisation (OLN)*

14<sup>th</sup> September 2022

Nicolas DOMENJOURD - Responsible ICT & Technical Standardization, ILNAS



- **Coordinate and supervise the creation of national standards**

- **Construction sector**

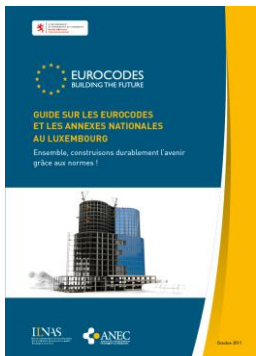
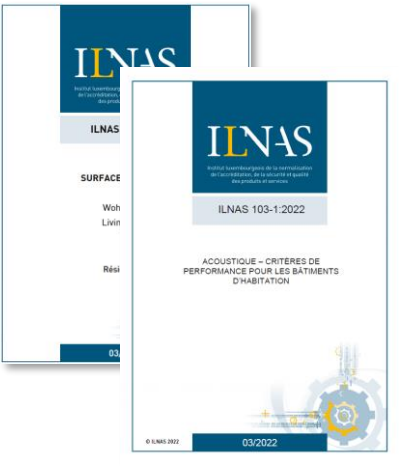
- Creation of a national standards office (in collaboration with CRTI-B)
    - National standard about the living surface (published - ILNAS 101:2016)
    - National annexes of the Eurocodes (published in 2011 and revised in 2019)
    - National annexes on concrete (ongoing work)
    - National standard 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 (published – ILNAS 106:2022)
    - 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)
- +82.000\* European standards (CEN, CENELEC and ETSI)
- +73.000\* International standards (ISO and IEC)
- +49.000\* German standards (DIN)

ILNAS

Institut luxembourgeois de la normalisation,  
de l'accréditation, de la sécurité et qualité  
des produits et services



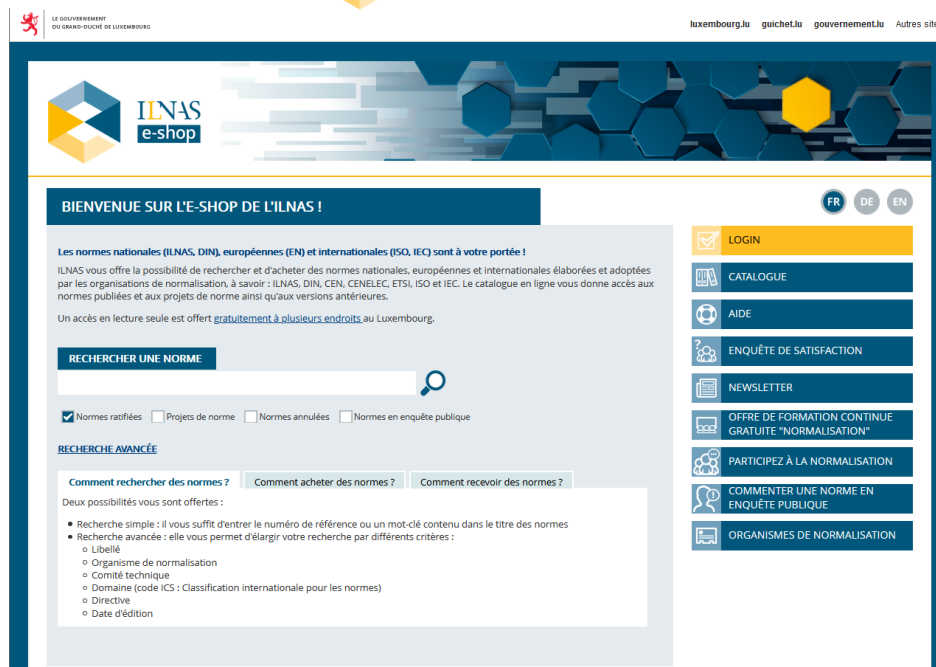
→ More than **205.000** normative documents available

(\*) = 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)



ILNAS  
e-shop





- 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 (on appointment)
- Luxembourg Learning Centre in Esch-Belval
- LIST premises in Belvaux

### 2. Luxembourg city

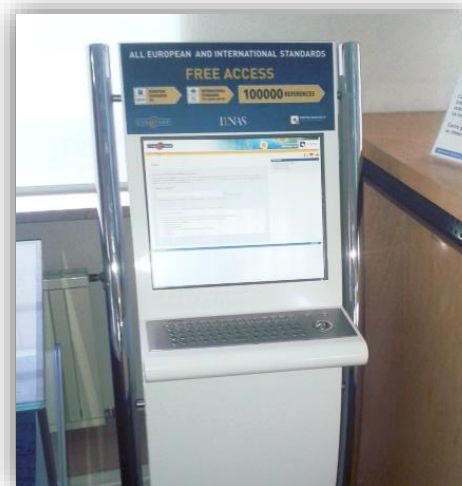
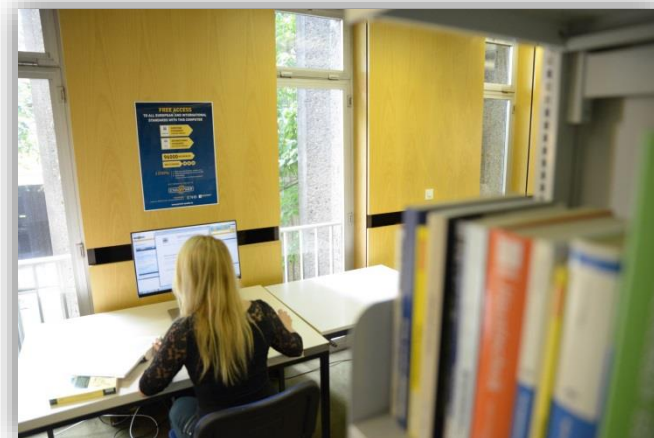
- University of Luxembourg - Kirchberg
- Securitymade.lu (SMILE) (on appointment)
- Chambre des Métiers - Kirchberg
- Lycée des Arts et Métiers - Limpertsberg

### 3. Echternach

- Town administration of Echternach

### 4. Redange-sur-Attert

- Attert Lycée Redange



### - Participation in standardization activities

- 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

- 292 experts registered (August 2022)
- 1043 registrations in technical committees
- Link: <https://gd.lu/cCN7qg>

#### Registre national des délégués en normalisation - Août 2022

##### Nombre d'inscriptions aux comités techniques :

ILNAS/OLN	75
CEN	236
CENELEC	12
CEN/CLC	46
CEN/CLC/ETSI	2
ECISS	0
ISO/IEC	355
ISO	304
IEC	13
Total	1043

Nombre de personnes inscrites : 292



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

vendredi 19 août 2022

Approuvé par Mireille HENRIOL

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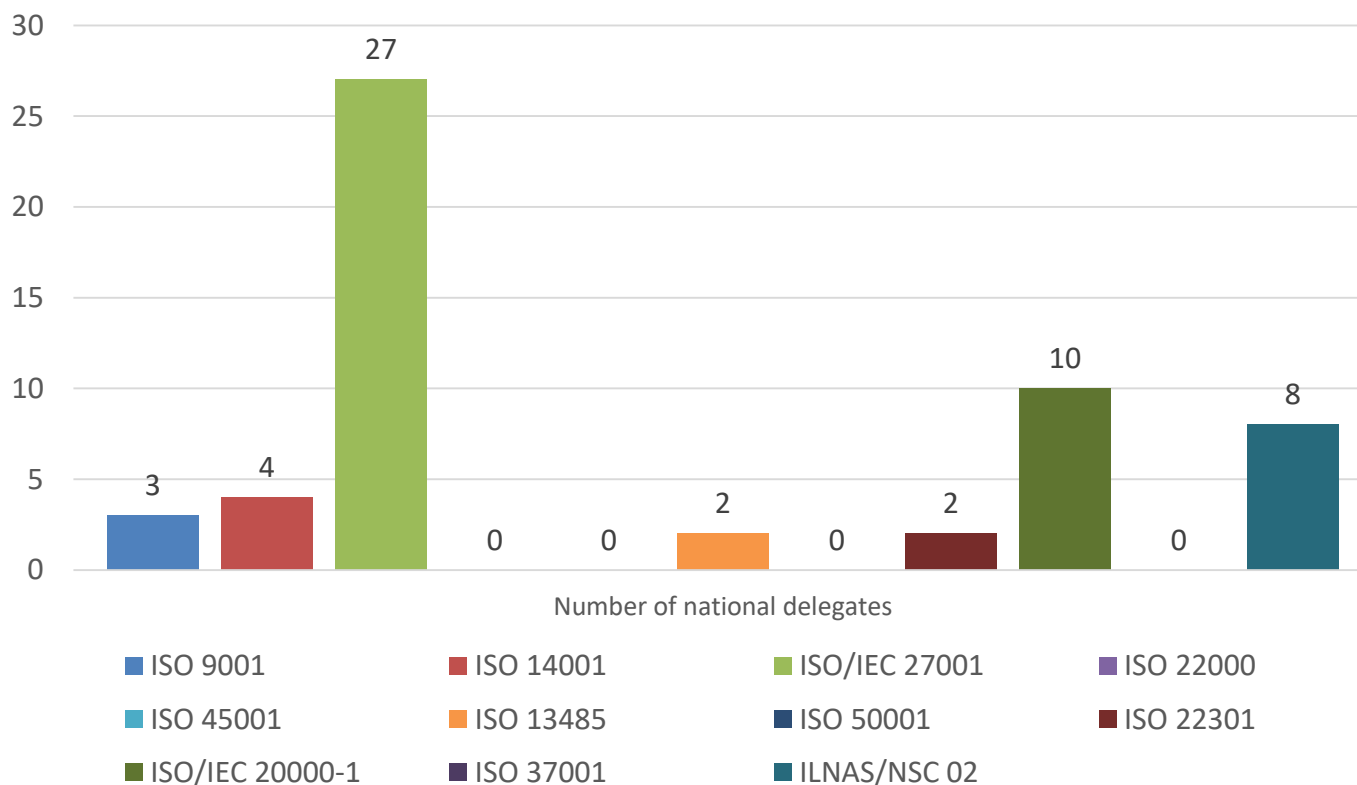
➔ More information available on: <https://portail-qualite.public.lu/fr/normes-normalisation/participer-normalisation.html>

- **Representing Luxembourg in the committees related to conformity assessment**
  - ISO/CASCO “Committee on conformity assessment”: the ISO committee that develops policy and publishes standards related to conformity assessment
  - CEN/CLC JTC 1 “Criteria for conformity assessment bodies”: responsible for the preparation of standards on criteria for bodies involved in testing calibration, certification, inspection, accreditation, their operation and assessment, and other related standards
- **Creation of the National Standardization Commission ILNAS/NSC 02 “Conformity”**
  - Responsible, at the national level, for the follow-up of technical standardization activities of ISO/CASCO and CEN/CLC JTC 1 (e.g.: participation in EU and INT meetings, identification of relevant information for national stakeholders, definition of the national position for the votes on draft standards, etc.)
  - Presidency: ILNAS
  - Participation: 8 national delegates from ILNAS and ANEC EIG (open to any interested national stakeholders)



### - Participation of national delegates in conformity-related standardization activities

Participation of national delegates in Technical Committees responsible for the development of MSS



Politique normative nationale  
« ISO CASCO » 2022-2030

ILNAS

- **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)”





### ILNAS AFTERWORK “Cybersecurity standardization: meet the international experts”

- ☐ 28/09/2022 | 18h00 – 20h30
- ☐ Chambre des Métiers
- ☐ <https://www.eventbrite.com/e/afterwork-cybersecurity-standardization-meet-the-international-experts-tickets-399514046267>



### ILNAS TRAINING “Standards for Interoperability and Portability in Cloud Computing”

- ☐ 29/09/2022 | 09h00 – 12h00
- ☐ ILNAS
- ☐ <https://portail-qualite.public.lu/fr/actualites/normes-normalisation/2022/ilnas-formation-standards-for-interoperability-and-portability-in-cloud-computing.html>



### World Standards Day 2022

- ☐ 14/10/2022 | 13h30 – 18h00
- ☐ University of Luxembourg (Belval Campus) - Biotech II
- ☐ <https://www.eventbrite.com/e/billets-journee-mondiale-de-la-normalisation-2022-world-standards-day-2022-415824290647>



# ILNAS Breakfast

## “Management System Standards: Overview”

Presentation of the report “Management System Standards: Overview”

14<sup>th</sup> September 2022

*Natalia Vinogradova-Cassagnes,  
Head of Standardization Department, ANEC GIE*



## Technical standardization

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



### 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

→ Strategy signed by the Minister of the Economy of Luxembourg

Via “performance” and “excellence” in technical standardization  
towards strengthening of national economic confidence

Politique normative nationale  
« ISO CASCO » 2022-2030



ILNAS

1

Strengthen national involvement  
in the ISO/CASCO committee (2022-2030)

2

Promoting ISO/CASCO developments  
at the national level (2024-2030)

3

Develop fields of research and education  
related to ISO/CASCO (2026-2030)

Where do Management System Standards fit  
in the conformity assessment process and in the chain  
of building confidence

# What is this document?



## Main information

This report is an introduction to the world of MSS. It explains the concept of MSS along with the presentation of its building blocks, objectives and benefits of using it.



## Purpose

- Explain the benefits of the MSS
- Identify the topics covered by MSS, as well as technical committees involved in their development.
- Explore the confidence-building chain through conformity assessment and accreditation mechanisms

## What aims?

- Identify standards against which you can get certified
- Get to know the process and the stakeholders involved in the certification process
- See for yourself if certification is of interest to you and check others' experience



## Part 1

- Introduce the concept of a Management System Standard (MSS)
- Types and structure of MSS
- Overall benefits of using MSS

## Part 2

- Overview of topics covered by MSS
- Examples of most popular MSS

## Part 3

- Adoption of MSS in the world: on the example of ISO 9001, ISO 14001 and ISO/IEC 27001
- Adoption of MSS in Luxembourg

## Part 4

- Presenting the process of Conformity Assessment
- Difference between the certification and accreditation and the role of ISO/CASCO
- OLAS: Accreditation Body in Luxembourg

## Part 5

- They talk from experience: Testimonials from organizations in Luxembourg

## Part 6

- Consult MSS
- Contribute to MSS or ISO/CASCO standards writing/revision

## Part 1:

## What is a Management System Standard?

- Introduce the concept of a Management System Standard (MSS)
- Types and structure of MSS
- Overall benefits of using MSS

A *management system standard* (MSS) is an overarching document, setting out requirements or guidance, which supports the governance and leadership functions in the implementation and maintenance of the management system

Type A – Requirements

Type B – Recommendations and guidance

**Structure**

- Context of the organization
- Leadership
- Planning
- Support
- Operation
- Performance evaluation
- Improvement

**Benefits**

- Organizational practices
- Reduce efforts and costs
- Risk management
- Increase performance
- Internal and external communication
- Access to market
- Sustainable development



## Part 2:

## Examples of Management System Standards?

- Overview of topics covered by MSS
- Examples of most popular MSS

Standards covered in details:

- ISO 9001:2015
- ISO 14001:2015
- ISO/IEC 27001:2013
- ISO 22000:2018
- ISO 45001:2018
- ISO 13485:2016
- ISO 50001:2011&2018
- ISO 22301:2012
- ISO/IEC 20000-1:2018
- ISO 37001:2015

**BUSINESS MANAGEMENT AND INNOVATION**

Examples: ISO 9001, ISO 10012, ISO 30401, ISO 37001, ISO 37301, ISO 44001, ISO 54001, ISO 55001

**BUILDING AND CONSTRUCTION**

Example: ISO 41001

**SECURITY, SAFETY AND RISK**

Examples: ISO 18788, ISO 22301, ISO 28000, ISO 28001, ISO 28002, ISO 45001, ISO/IEC 80079-34

**FOOD AND AGRICULTURE**

Examples: ISO 22000, ISO 34101-1, ISO/TS 34700

**ENERGY**

Examples: ISO 19443, ISO 50001

**INFORMATION TECHNOLOGY, GRAPHICS AND PHOTOGRAPHY**

Examples: ISO 14298, ISO/IEC 19770-1, ISO/IEC 20000-1, ISO/IEC 27001, ISO/IEC 27701, ISO 30301

**HEALTH, MEDICINE AND LABORATORY EQUIPMENT**

Examples: ISO 13485, ISO 15378, ISO 25424, ISO 35001

**SUSTAINABILITY AND ENVIRONMENT**

Examples: ISO 14001, ISO 16000-40, ISO 37101

**MECHANICAL ENGINEERING**

Example: ISO 29001

**SERVICES**

Examples: ISO 20121, ISO 21001, ISO 21101, ISO 21401, ISO 46001

**TRANSPORT**

Examples: ISO/TS 22163, ISO 28007-1, ISO 30000, ISO 39001

### Part 3: Management System Standards in numbers

- Adoption of MSS in the world: on the example of ISO 9001, ISO 14001 and ISO/IEC 27001
- Adoption of MSS in Luxembourg

#### In the world

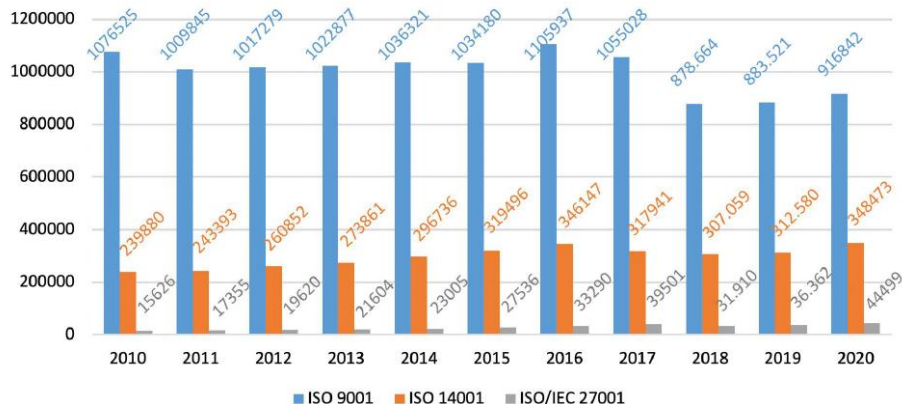


Figure 1: Evolution of the number of certificates for ISO 9001, ISO 14001 and ISO/IEC 27001 over 2010-2020 worldwide [11]

#### In Luxembourg



Figure 2: Evolution of the number of certificates for ISO 9001, ISO 14001 and ISO/IEC 27001 over 2010-2020 in Luxembourg [10]

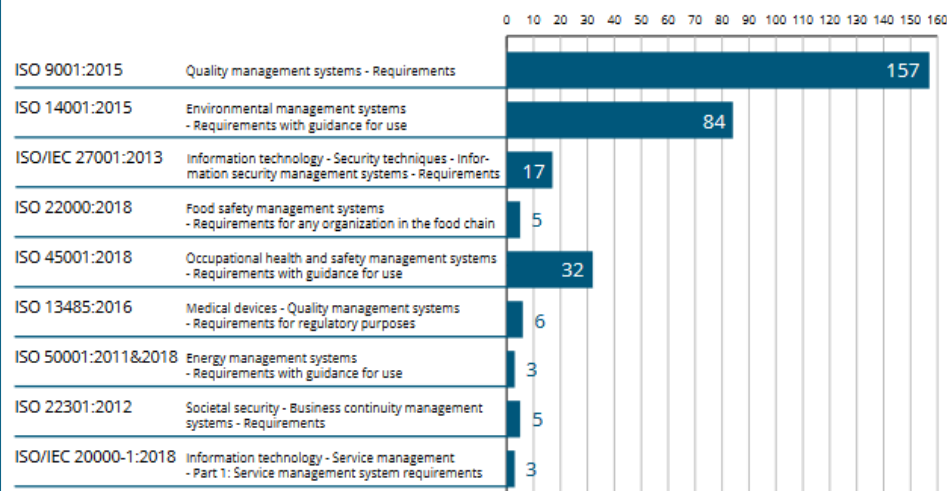


Figure 3: Number of certificates held by organizations in Luxembourg in 2020 for different MSS

## Part 4:

Conformity assessment:  
Chain of confidence-  
building

- Presenting the process of Conformity Assessment
- Difference between the certification and accreditation and the role of ISO/CASCO
- OLAS: Accreditation Body in Luxembourg

**Certification** is the provision by an independent body of written assurance (a certificate) that the product, service or system in question meets specific requirements”

**Accreditation** is a “third-party attestation related to a conformity assessment body, conveying formal demonstration of its competence, impartiality and consistent operation in performing specific conformity assessment activities”

**ISO/CASCO** Committee on conformity assessment

ISO/IEC 17021-1 *Conformity assessment — Requirements for bodies providing audit and certification of management systems — Part 1: Requirements*

**OLAS**, *Office Luxembourgeois d'Accréditation et de Surveillance*

## CHAIN OF CONFIDENCE-BUILDING

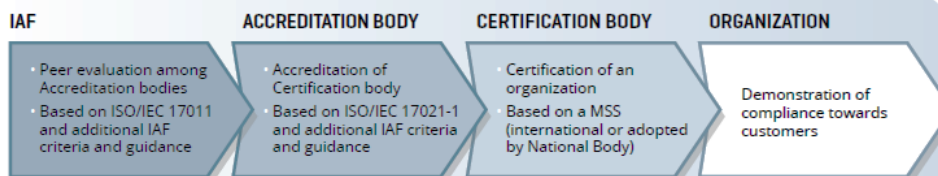


Figure 4: Chain of confidence-building through certification and accreditation

## Part 5:

Why should any organization  
use a MSS: Testimonials from  
Luxembourg

- They talk from experience: Testimonials from organizations in Luxembourg

## They talk from experience

Across the document:  
6 Organizations explain the benefits  
of using MSS

In Part 5:  
3 long testimonials covering benefits  
and challenges

## Part 6:

Standardization  
opportunities in  
Luxembourg

- Consult MSS
- Contribute to MSS or ISO/CASCO standards writing/revision



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**PORTAIL-QUALITE.LU**  
QUALITE · SECURITE · CONFORMITE

UNE INITIATIVE DE L'ILNAS

 <small>Approved by: Jérôme Hoerold</small>	Standardization process	
	ILNAS/OLN/F001a - Application for registration in a technical standards committee (or modification of personal data of an existing registration)	
	Version 07.3 - 25.05.2021	Page 1 de 7

**ILNAS/OLN/F001a Form**  
**Application for registration in a technical  
standards committee (or modification of  
personal data of an existing registration)**

Modifications: The latest modifications appear underlined or crossed out.

Southlane Tower I (Esch-Belval)  
1, avenue du Swing  
L-4367 Belvaux  
Tel.: (+352) 247 743 40  
Fax: (+352) 247 943 40  
normalisation@ilnas.etat.lu · www.portail-qualite.lu

The updated version of this document is available on [www.portail-qualite.lu](http://www.portail-qualite.lu).  
The printed versions are not managed.

## Details on ILNAS and ANEC GIE products and services

### — Information dissemination

- Market meetings
- News items in standardization
- Standards watch service

### — Consulting and purchasing standards

- Reading stations
- ILNAS eShop

### — 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
- Master program MTECH on Technopreneurship, Smart ICT, digital trust and standardization



### Main takeaways of the Management System Standards report

- Know the importance of Management System Standards
  - Know some existing standards and how they shape the market
  - 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 FOR FURTHER GUIDANCE!**





# ILNAS

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