

SURVEILLANCE
DU MARCHÉ

ACCREDITATION

CONFIANCE
NUMÉRIQUE

MÉTROLOGIE

NORMALISATION

ILNAS

Welcome

Bienvenue

Willkommen

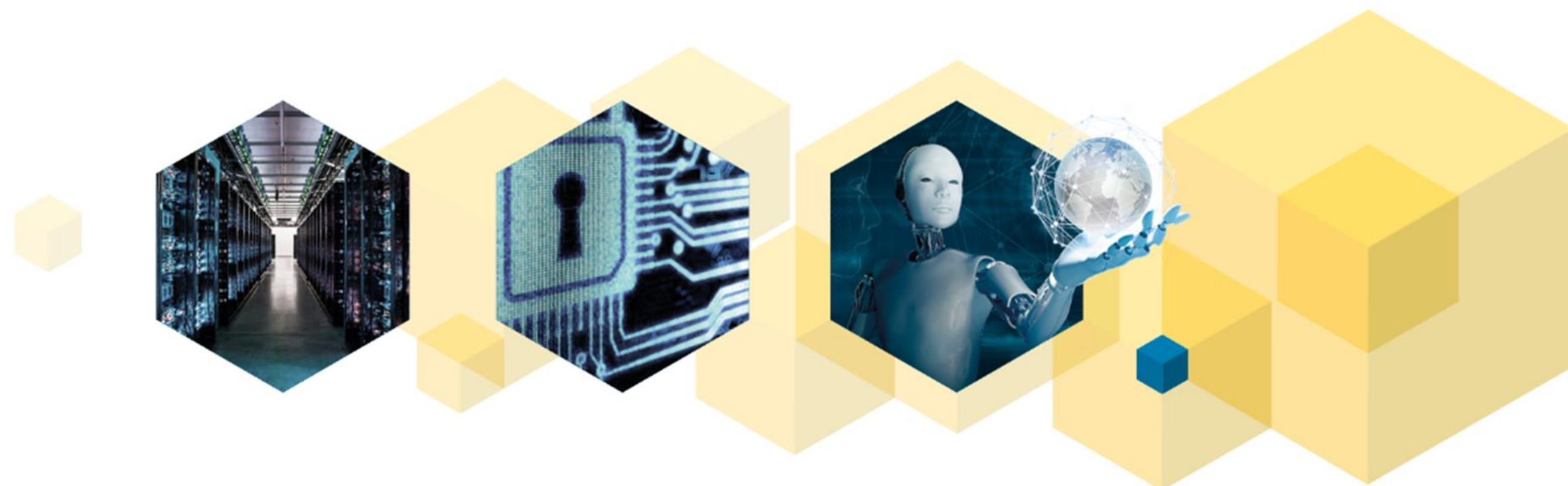
National standardization strategy: Perspectives 2020-2030 - Focus on ICT technical standardization

Dr. Jean-Philippe Humbert
Adjoint à la Direction - ILNAS

21 October 2019



- I – INTRODUCTION OF ILNAS
- II – NATIONAL STANDARDS BODY
- III – NATIONAL STANDARDIZATION STRATEGY (2010-2020) & POLICY ON ICT TECHNICAL STANDARDIZATION (2015-2020)
- IV – NATIONAL STANDARDIZATION STRATEGY 2020-2030

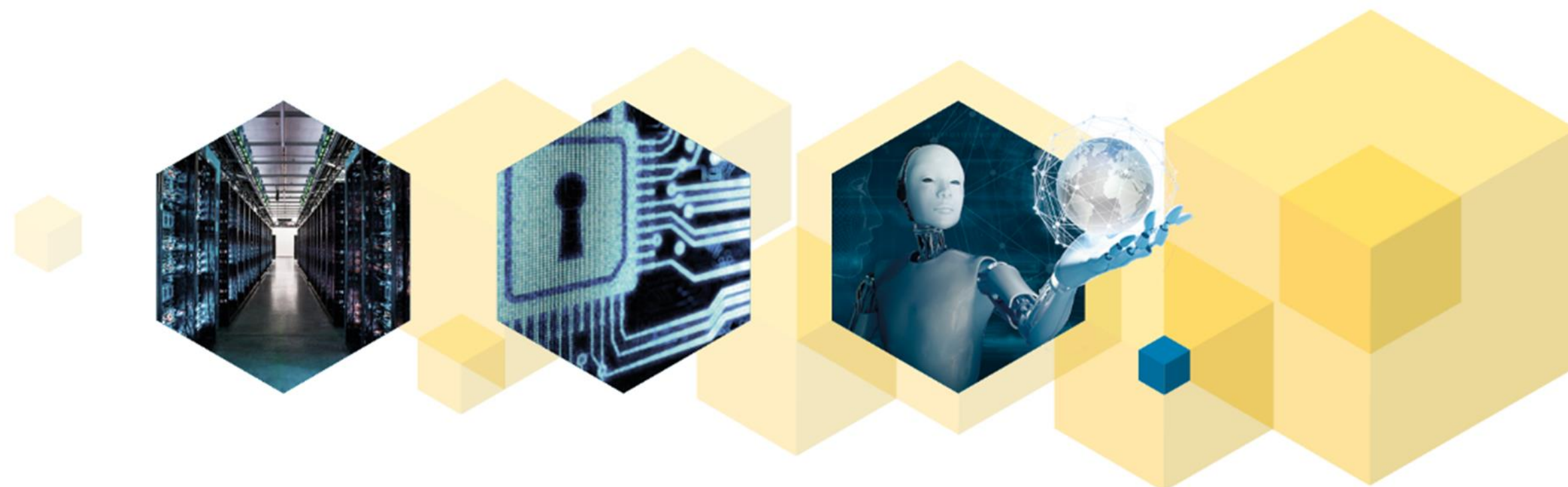


I – INTRODUCTION OF ILNAS

II – NATIONAL STANDARDS BODY

III – NATIONAL STANDARDIZATION STRATEGY (2010-2020) & POLICY ON ICT TECHNICAL STANDARDIZATION (2015-2020)

IV – NATIONAL STANDARDIZATION STRATEGY 2020-2030



A. Key figures

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

- **Creation:** law dated July 14, 2014 (repealing the amended Law of May 20, 2008) and law dated February 17, 2017
- **Legal form:** Public administration under the authority of the Minister of the Economy
- **Total staff:** 48 (October 2019)
- **Website:** www.portail-qualite.lu





Agency for standardization and knowledge-based economy

→ Supports ILNAS in the execution of the national standardization strategy

- **Creation:** October 4, 2010
- **Legal form:** Economic Interest Grouping (EIG)
- **Objectives:** Promotion, awareness raising and training, applied research in the field of standardization and metrology in order to support companies' competitiveness in Luxembourg
- **Total staff:** 9 employees (October 2019)

– **Partners:**



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

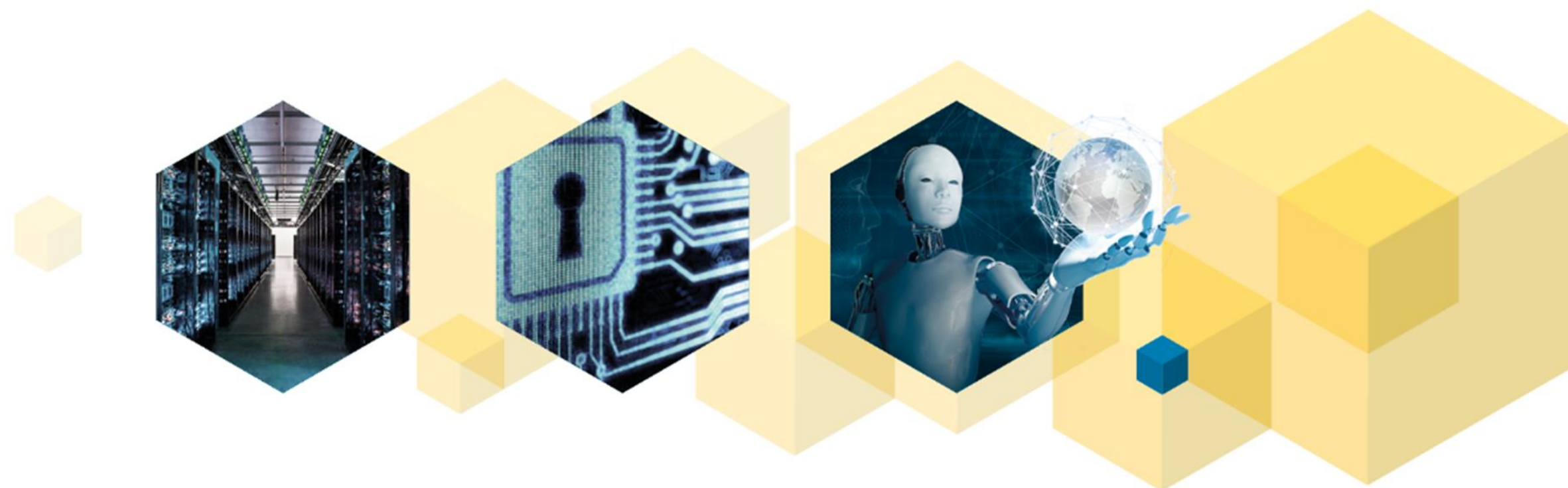
- **Quality system certified against ISO 9001:2015 since July 2018**

I – INTRODUCTION OF ILNAS

II – NATIONAL STANDARDS BODY

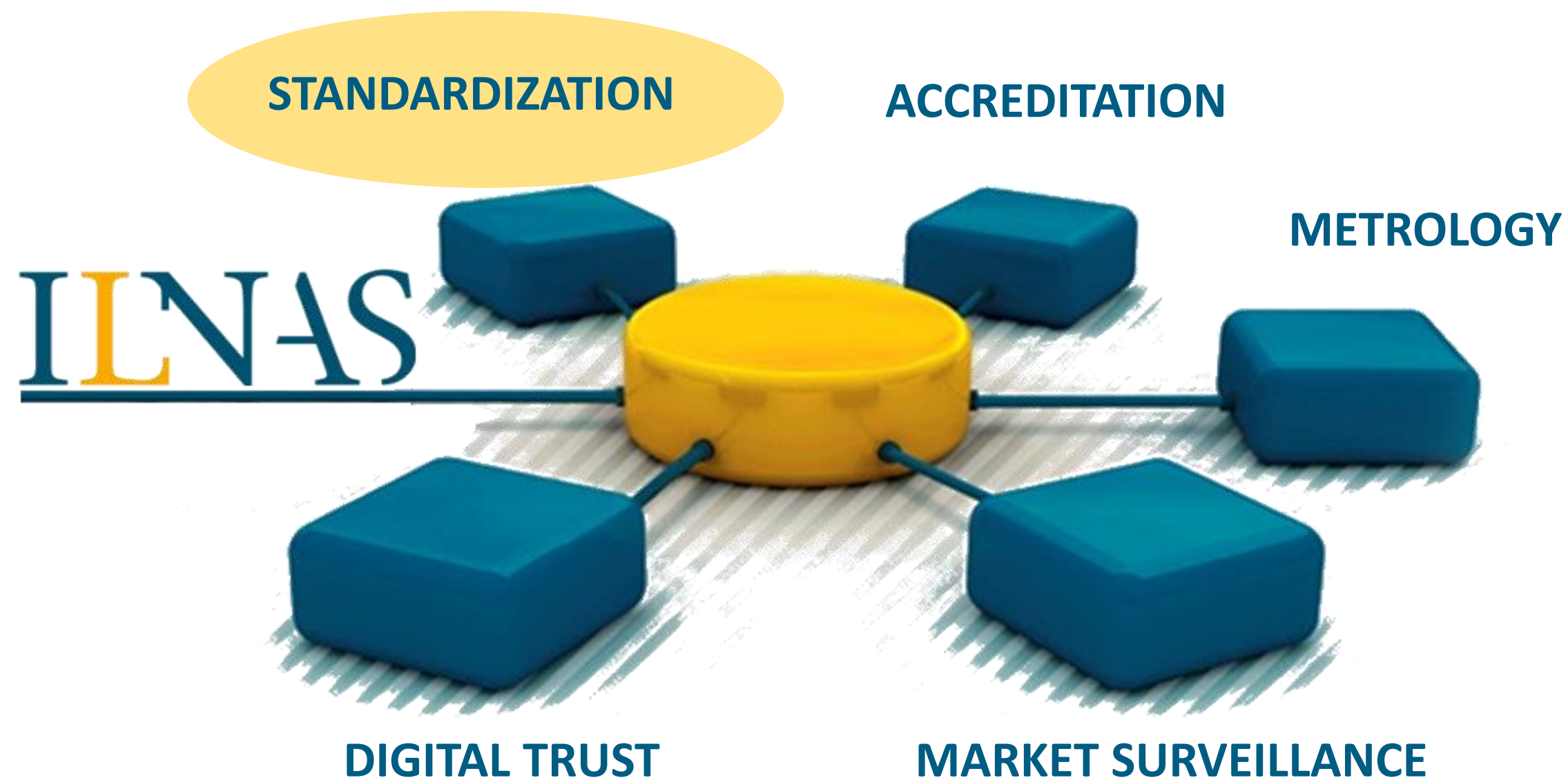
III – NATIONAL STANDARDIZATION STRATEGY (2010-2020) & POLICY ON ICT TECHNICAL STANDARDIZATION (2015-2020)

IV – NATIONAL STANDARDIZATION STRATEGY 2020-2030



A. Overview

- **OLN - Organisme luxembourgeois de normalisation**
 - Composed of 6 persons
 - Close collaboration with the G.I.E. ANEC-N (6 persons)

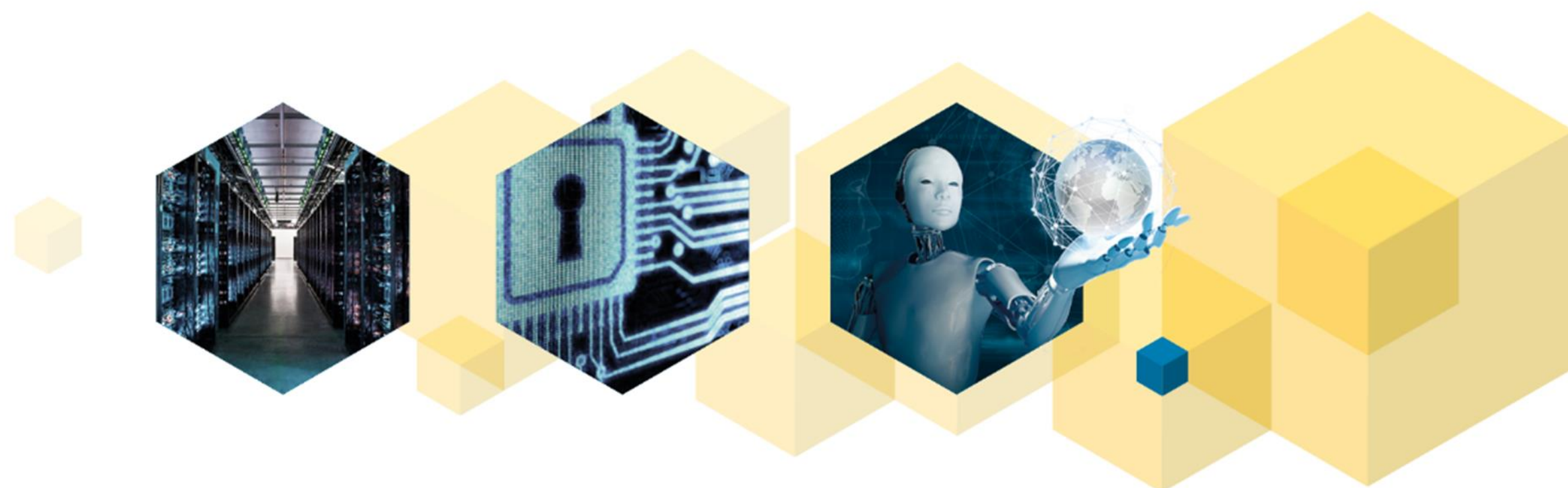


I – INTRODUCTION OF ILNAS

II – NATIONAL STANDARDS BODY

III – NATIONAL STANDARDIZATION STRATEGY (2010-2020) & POLICY ON ICT TECHNICAL STANDARDIZATION (2015-2020)

IV – NATIONAL STANDARDIZATION STRATEGY 2020-2030



A. Overview



– THREE PILLARS:

PILLAR 1

Information and communication technologies (ICT)

PILLAR 2

National influence and compliance with legal attributions

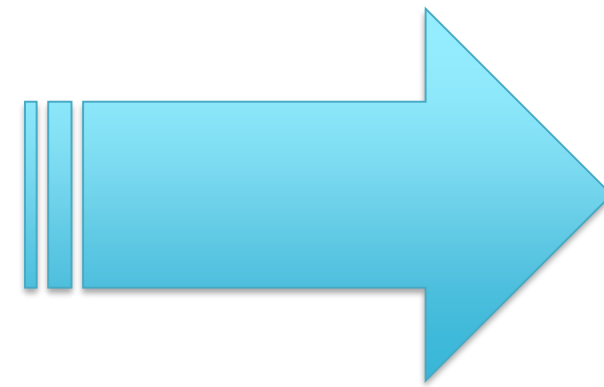
PILLAR 3

Products and services

III. NATIONAL STANDARDIZATION STRATEGY 2010-2020 & POLICY ON ICT TECHNICAL STANDARDIZATION (2015-2020)

B. Pillar 1: Information and communication technologies (ICT)

LUXEMBOURG
STANDARDIZATION STRATEGY
2014-2020



Pillar 1: Information and communication technologies (ICT)

"Technical standar



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

B. Pillar 1: Information and communication technologies (ICT)

- Standards Analysis of the (Smart) (Secure) ICT Sector



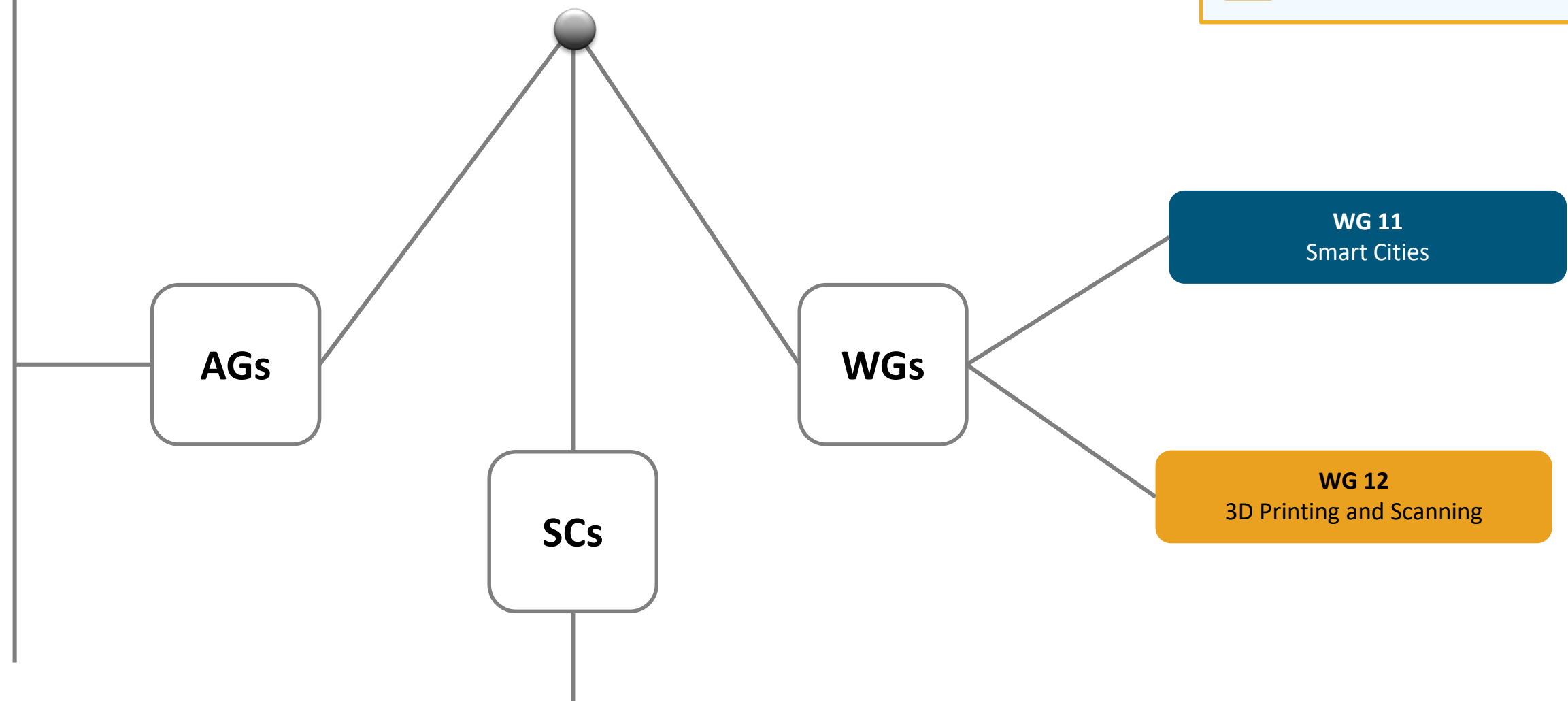
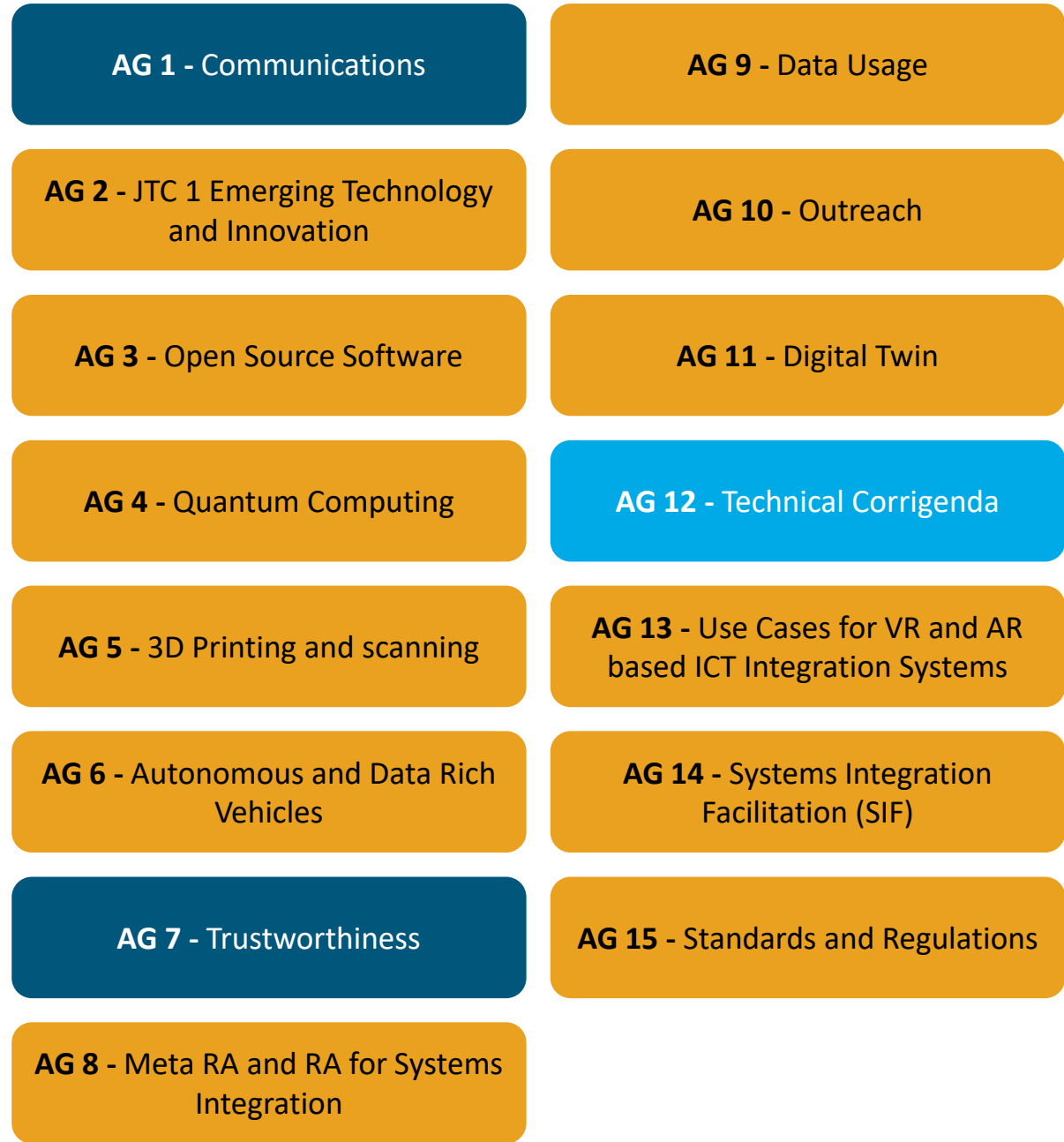
8 editions of the Standards Analysis of the **ICT Sector**

2 editions of the Standards Analysis **Smart ICT**

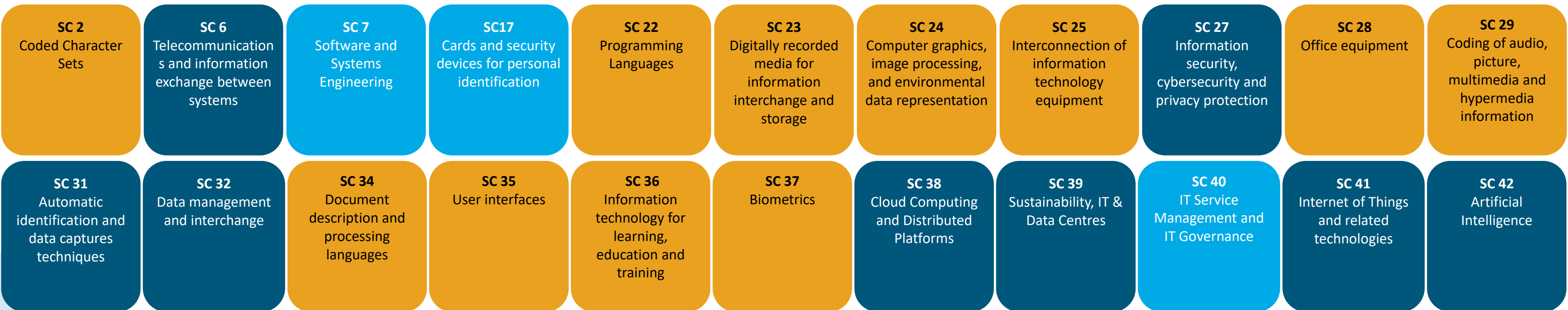
2 editions of the Standards Analysis **Smart Secure ICT**

III. NATIONAL STANDARDIZATION STRATEGY 2010-2020 & POLICY ON ICT TECHNICAL STANDARDIZATION (2015-2020)

B. Pillar 1: Information and communication technologies (ICT)



- ILNAS & ANEC Direct involvement
- Luxembourg's current involvement
- Not involved

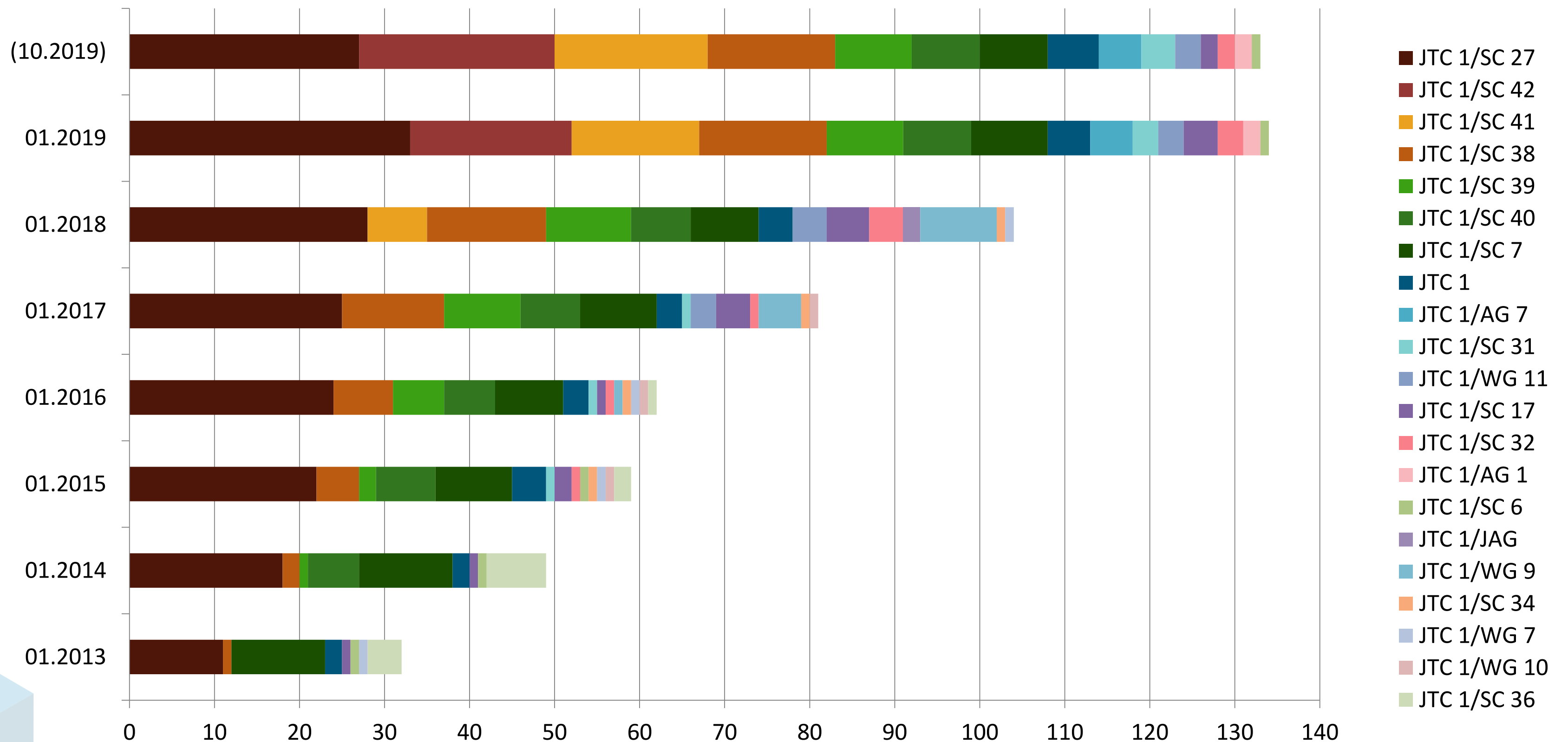


B. Pillar 1: Information and communication technologies (ICT)

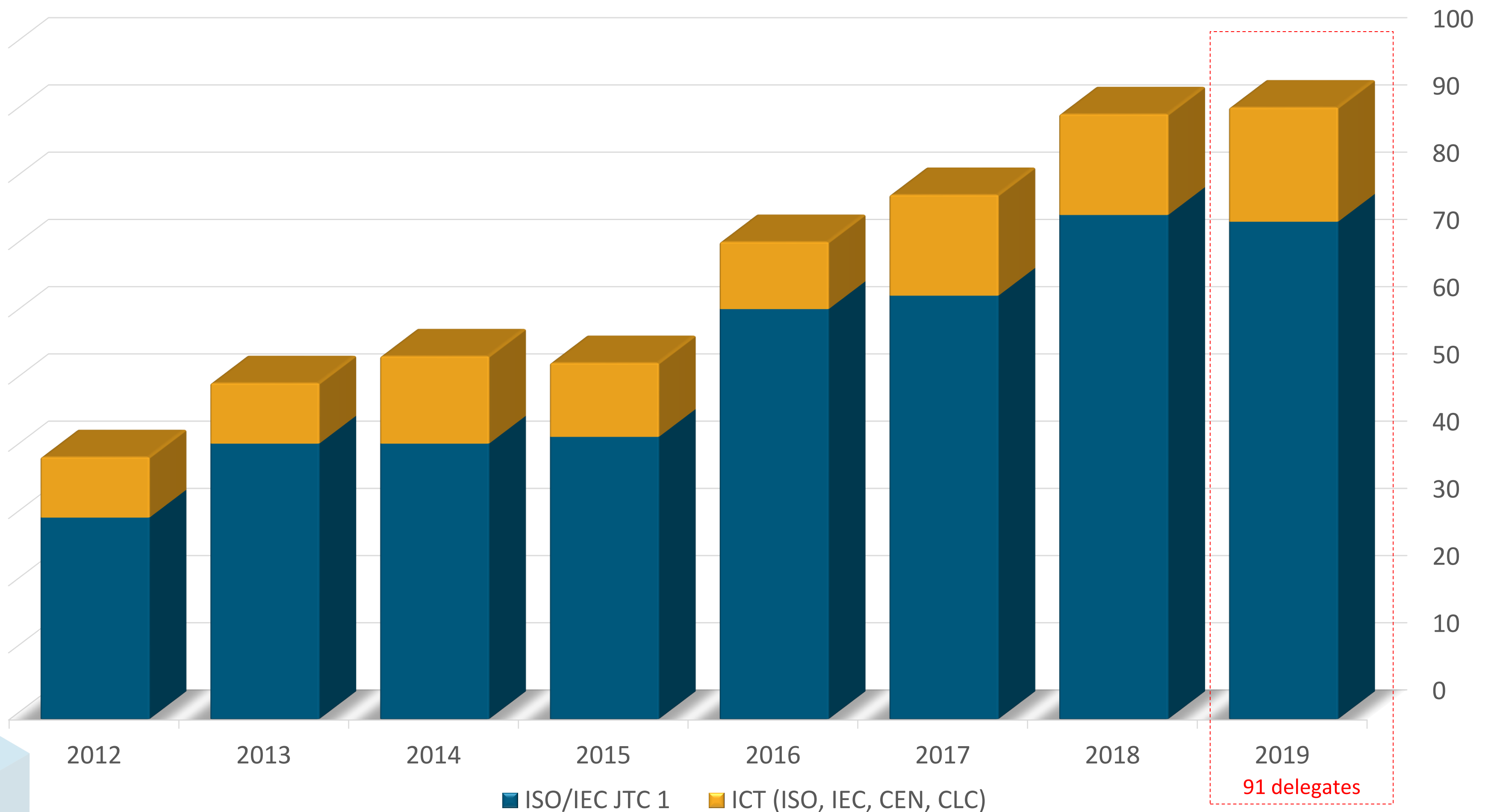
- Evolution of the number of national standardization delegates in ISO/IEC JTC 1

➤ Top representation in JTC 1:

- 27 delegates in the IT security domain
- 18 delegates in the IoT domain
- 15 delegates in the Cloud Computing domain
- 23 delegates in the Artificial Intelligence / Big Data domains

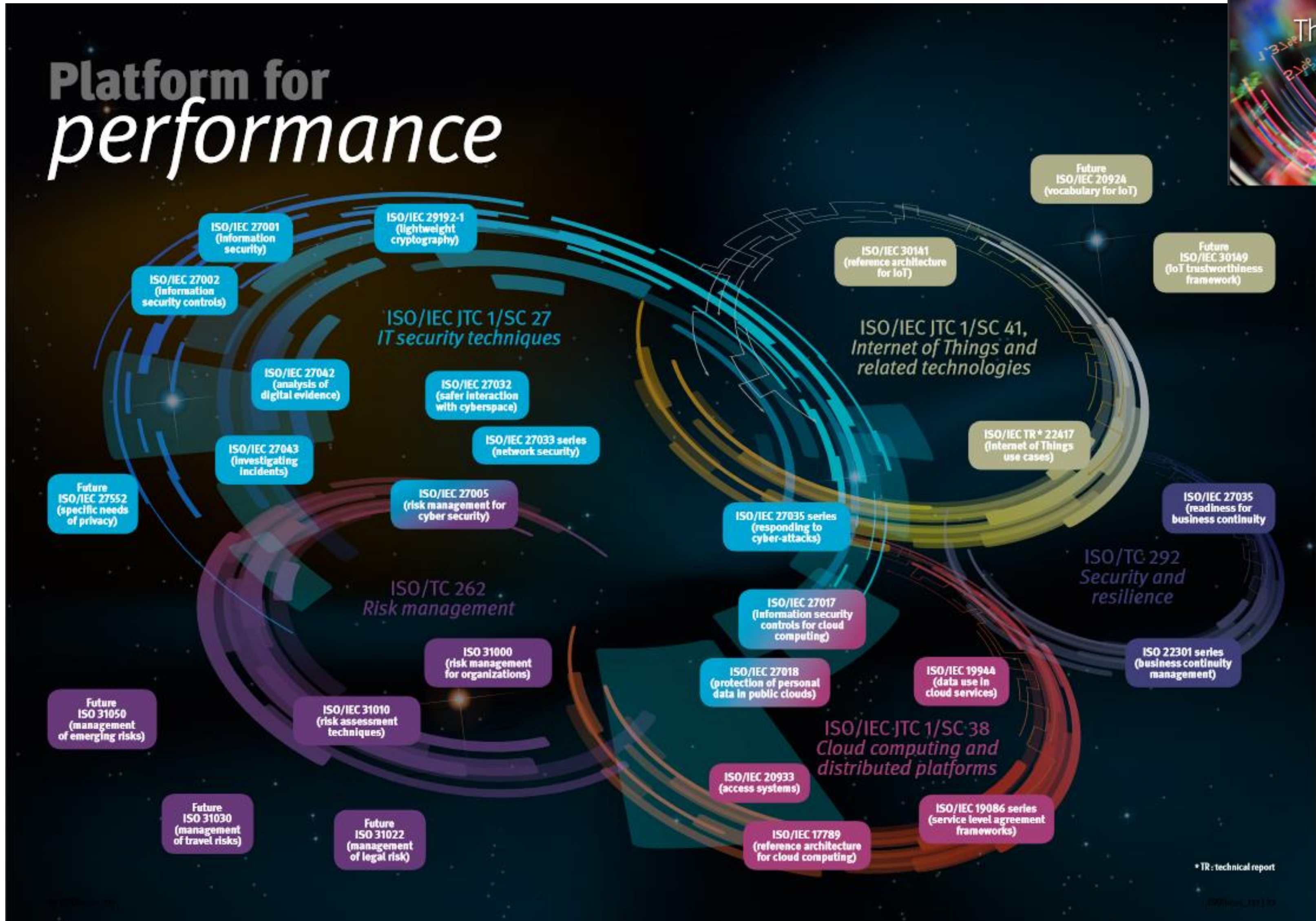


- Evolution of the number of national standardization delegates in the ICT sector



III. NATIONAL STANDARDIZATION STRATEGY 2010-2020 & POLICY ON ICT TECHNICAL STANDARDIZATION (2015-2020)

B. Pillar 1: Information and communication technologies (ICT)



III. NATIONAL STANDARDIZATION STRATEGY 2010-2020 & POLICY ON ICT TECHNICAL STANDARDIZATION (2015-2020)

B. Pillar 1: Information and communication technologies (ICT)

- 12 ETSI members in Luxembourg:




B. Pillar 1: Information and communication technologies (ICT)




- Example of a technical committee followed by ILNAS: **ETSI/TC CYBER - Cyber Security**

Acts as the ETSI center of expertise in the area of Cyber Security



The Standards People




TC CYBER Roadmap





Mission





ETSI TC CYBER is recognized in Europe and worldwide as a major trusted centre of expertise offering market-driven cybersecurity standardization solutions and guidance to users, manufacturers, network, infrastructure and service operators, and regulators.

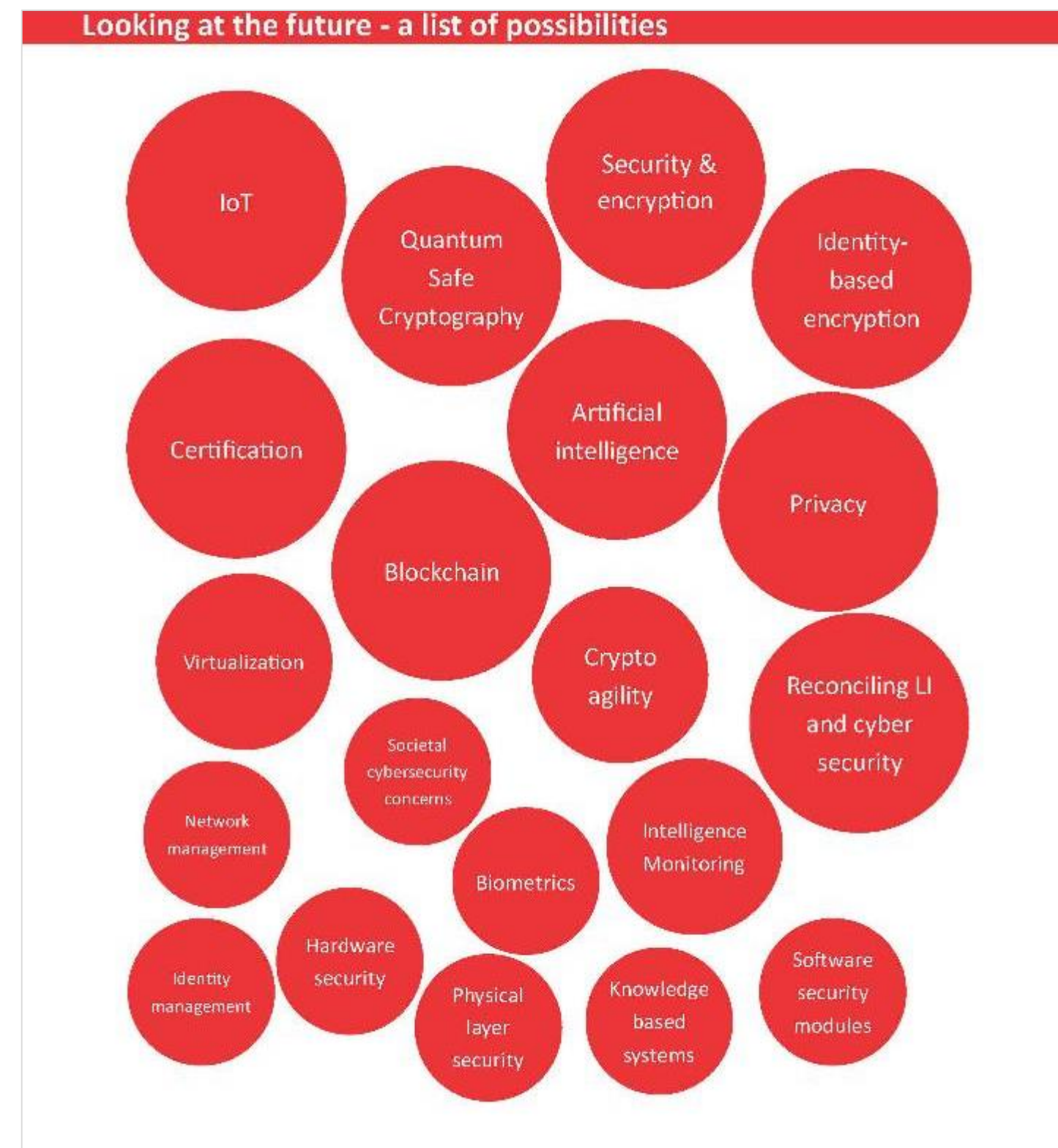
Ongoing Work



Cybersecurity ecosystem

-  Protection of personal data and communication
-  Cybersecurity for Critical Infrastructures
-  Forensic activities
-  Direct support to EU legislation

-  IoT Security and Privacy
-  Enterprise/organization and individual cybersecurity
-  Cybersecurity tools
-  Quantum-Safe Cryptography



B. Pillar 1: Information and communication technologies (ICT)

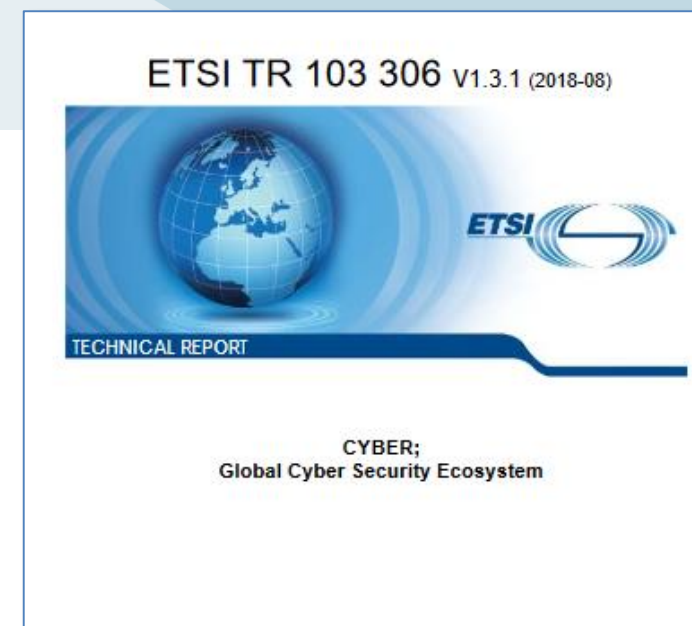
- Examples of ETSI Standards in the Cybersecurity Area

ETSI TR 103 306 V1.3.1 (2018-08) "CYBER; Global Cyber Security Ecosystem"

○ Scope: Provides a structured overview of cyber security work occurring in multiple other technical forums worldwide

- Includes global identification of Cyber Security Centres of Excellence, heritage sites, historical collections, and reference libraries
- It is intended to be continuously updated to account for the dynamics of the sector

➤ https://www.etsi.org/deliver/etsi_tr/103300_103399/103306/01.03.01_60/tr_103306v010301p.pdf



Luxembourg

Luxembourg's Cyber Security Strategy and additional material are available through the [NATO Cooperative Cyber Defence Center of Excellence](#).

- **ANSSI** - Agence nationale de la sécurité des systèmes d'information. ANSSI is the national authority with respect to security of classified and unclassified information systems established and operated by the government and the operators of critical infrastructures for their own purposes. Its mission is to define policies and guidelines for the security of classified and unclassified information, and to ensure that the necessary measures regarding the security of information systems are implemented and that their application is guaranteed. ANSSI operates the national and governmental CERT.
- **CERT.LU** - Grouping of all Luxembourg CERTs.
- **CIRCL** - The Computer Incident Response Center Luxembourg (CIRCL) is a government-driven initiative designed to provide a systematic response facility to computer security threats and incidents. CIRCL is the CERT for the private sector, communes and non-governmental entities in Luxembourg. CIRCL provides a reliable and trusted point of contact for any users, companies and organizations of its constituency, for the handling of attacks and incidents.
- **GovCERT** - CERT gouvernemental du Grand-Duché de Luxembourg (GOVCERT.LU). GOVCERT is the single point of contact dedicated to the treatment of all significant computer related incidents jeopardizing the information systems of the government and defined critical infrastructure operators operating in Luxembourg, whether they are public or private. As national CERT it acts as the official national point of contact for natural and legal persons, entities and bodies, both national and international.
- **Healthnet CSIRT** - HealthNet is a telematics platform dedicated to the health sector, which aims to provide health professionals and institutions in the sector: infrastructure allowing them to communicate securely, electronic basic services like email exchanges and internet access, specialized applications for the exchange of results of medical tests, the double reading and program coordination mammography and the future of telemedicine applications such as teleradiology, telepathology and telemonitoring.
- **ILNAS** - The Luxembourg institute for standardisation, accreditation, safety, and quality of goods and services (ILNAS, "Institut Luxembourgeois de la Normalisation, de l'Accréditation, de la Sécurité et qualité des produits et services") is the national standards body, representing the Luxembourg interests in European and international standards organizations. In the frame of the national ICT Technical Standardization Policy (<https://portail-qualite.public.lu/content/dam/qualite/fr/publications/normes-normalisation/orientations-strategiques/politique-luxembourgeoise-pour-la-normalisation-technique-des-tic-2015-2020/policy-ict-technical-standardization-2015-2020.pdf>), ILNAS is developing and supporting the promotion of digital trust domain and related technical standardization (<https://portail-qualite.public.lu/content/dam/qualite/publications/confiance-numerique/white-paper-digital-trust-september-2017.pdf>).
- **ILNAS**, via the "Digital trust department", is also charged with the supervision of QTSPs (Qualified Trust Service Providers) that are established in the Grand Duchy of Luxembourg and offer qualified trust services, and of PSDCs ("Prestataires de services de dématérialisation ou de conservation") that are established in the Grand Duchy of Luxembourg and offer services related to digitization or e-archiving of documents.
- **Restena CSIRT** - RESTENA CSIRT represents the research and educational community of Luxembourg. The RESTENA Foundation brings together all types of research and teaching bodies, as well as the ministries for education, research and of finance. The primary objective is to provide network services for all public and private institutions involved in the field of education, research and administration, providing them with cutting-edge solutions for their communication needs. The Foundation also co-ordinates Internet resources nationally, by managing the registry for .LU domain names and by actively participating in the operation of the neutral platform for the exchange of Internet traffic LU-CIX.

B. Pillar 1: Information and communication technologies (ICT)

- Examples of ETSI Standards in the Cybersecurity Area

ETSI TS 103 645 V1.1.1 (2019-02) "CYBER; Cyber Security for Consumer Internet of Things"

- Scope: specifies high-level provisions for the security of consumer devices that are connected to network infrastructure, such as the Internet or home network, and their associated services
- Include for example:
 - Connected children's toys and baby monitors
 - Smart cameras, TVs and speakers
 - Wearable health trackers
 - Connected appliances

➤ https://www.etsi.org/deliver/etsi_ts/103600_103699/103645/01.01.01_60/ts_103645v010101p.pdf

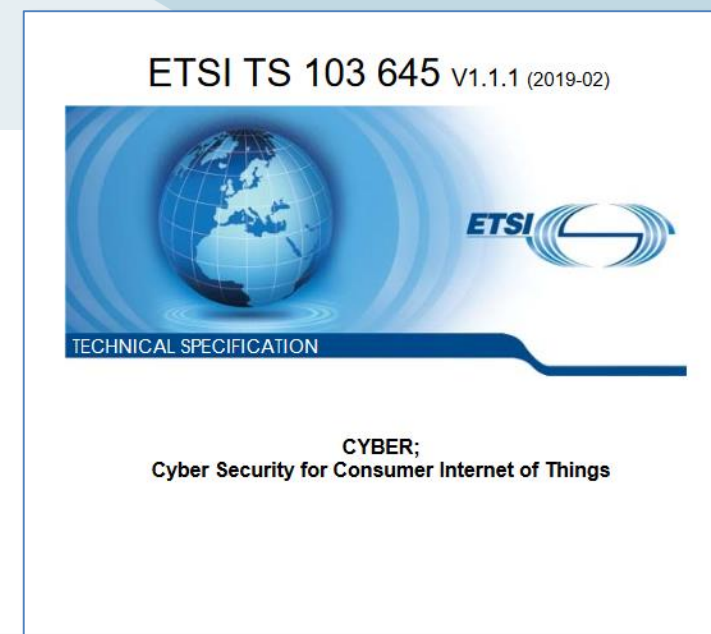


Table A.1: Implementation of provisions for consumer IoT security

Reference	Status	Clause number and title	
		Support	Detail
4.1 No universal default passwords			
Provision 4.1-1	M		
4.2 Implement a means to manage reports of vulnerabilities			
Provision 4.2-1	M		
Provision 4.2-2	R		
Provision 4.2-3	R		
4.3 Keep software updated			
Provision 4.3-1	R		
Provision 4.3-2	R		
Provision 4.3-3	M C (see note 1)		
Provision 4.3-4	M C (see note 1)		
Provision 4.3-5	R C (see note 1)		
Provision 4.3-6	R C (see note 1)		
Provision 4.3-7	R C (see note 1)		
Provision 4.3-8	R C (see note 2)		
Provision 4.3-9	R C (see note 2)		
4.4 Securely store credentials and security-sensitive data			
Provision 4.4-1	M		
4.5 Communicate securely			
Provision 4.5-1	R		
Provision 4.5-2	R		
4.6 Minimize exposed attack surfaces			
Provision 4.6-1	R		
Provision 4.6-2	R		
Provision 4.6-3	R		
Provision 4.6-4	R		
Provision 4.6-5	R		
4.7 Ensure software integrity			
Provision 4.7-1	R		
Provision 4.7-2	R		
4.8 Ensure that personal data is protected			
Provision 4.8-1	M		
Provision 4.8-2	M		
Provision 4.8-3	M		
4.9 Make systems resilient to outages			
Provision 4.9-1	R		
Provision 4.9-2	R		
Provision 4.9-3	R		
4.10 Examine system telemetry data			
Provision 4.10-1	R C (see note 3)		
Provision 4.10-2	R C (see note 3)		
Provision 4.10-3	M C (see note 3)		
4.11 Make it easy for consumers to delete personal data			
Provision 4.11-1	R		
Provision 4.11-2	R		
Provision 4.11-3	R		
4.12 Make installation and maintenance of devices easy			
Provision 4.12-1	R		
4.13 Validate input data			
Provision 4.13-1	M		

NOTE 1: Provisions 4.3-3, 4.3-4, 4.3-5, 4.3-6 and 4.3-7 are conditional on software components being updateable.
 NOTE 2: Provisions 4.3-8 and 4.3-9 are conditional on the inability to update the software of constrained devices.
 NOTE 3: Provisions 4.10-1, 4.10-2 and 4.10-3 are conditional on telemetry data being collected.

B. Pillar 1: Information and communication technologies (ICT)



- Example of a technical committee followed by ILNAS: **CEN/CLC/JTC 13 - Cybersecurity and Data Protection**

○ Scope: Development of standards for cybersecurity and data protection covering all aspects of the evolving information society

○ Structure:

- WG 1 - Chairman advisory group
- WG 2 - Management systems and controls sets
- WG 3 - Security evaluation and assessment
- WG 4 - Cybersecurity services
- WG 5 - Data Protection, Privacy and Identity Management
- WG 6 - Product security

○ Standardization deliverables

- Adoption of ISO/IEC standards as EN standards (e.g.: EN ISO/IEC 27001:2017)
- Development of purely EN standards (e.g.: work item “Privacy protection by design and by default”)



III. NATIONAL STANDARDIZATION STRATEGY 2010-2020 & POLICY ON ICT TECHNICAL STANDARDIZATION (2015-2020)

B. Pillar 1: Information and communication technologies (ICT)

- Publication of White Papers



8 White Papers published

3 White Papers under development

B. Pillar 1: Information and communication technologies (ICT)

- Development of a Research Program (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 Cloeser, Jean-Marie Reiff

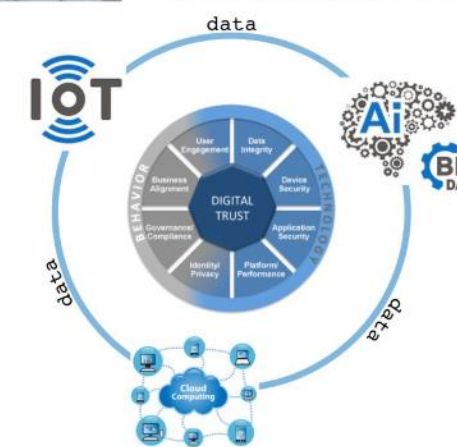
The Smart-ICT Team



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



Prof. Pascal Bouvry
- Principal Investigator
- Project coordination
- PhD supervision



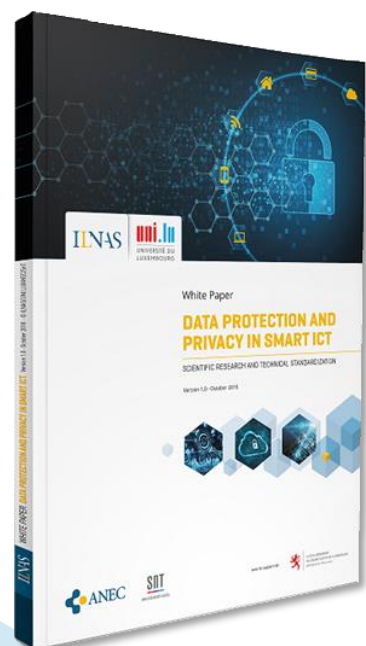
Saharnaz Dilmaghani
- PhD Candidate
- Since 01.03.2018
- Standardization experience



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"

III. NATIONAL STANDARDIZATION STRATEGY 2010-2020 & POLICY ON ICT TECHNICAL STANDARDIZATION (2015-2020)













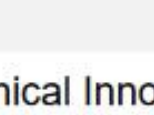





B. Pillar 1: Information and communication technologies (ICT)

- Development of a Master degree “Technopreneurship: mastering smart ICT, standardization and digital trust for enabling next generation of ICT solutions” in collaboration with the University of Luxembourg

60 ECTS

2 years
lifelong-
learning

20
students

Blocks and Modules	ECTS
STANDARDISATION	
1. Smart Secure ICT and Innovation    	1
2. Technical Standardisation	3
SMART ICT	
3. Smart ICT Technologies I  	5
4. Smart ICT Technologies II  	5
DIGITAL TRUST FOR SMART ICT	
5. Security for Smart ICT I 	2
6. Security for Smart ICT II 	3
7. Trust Architectures for Smart ICT 	4
TECHNOPRENEURSHIP	
8. Management of Business and Technical Innovation 	3
9. Digital Intelligence 	2
10. Legal Aspects  	2
MASTER THESIS	
12. Master Thesis   	30
Total	60

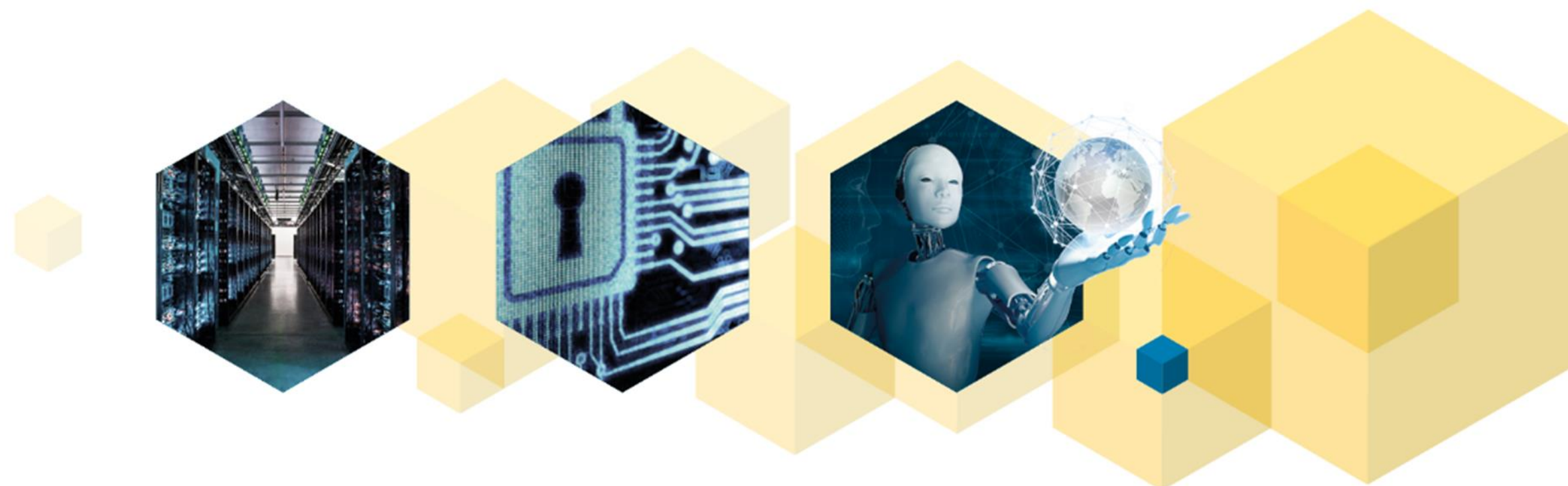
12
Modules

327 hours
of
teaching

Internship
(750 hours)

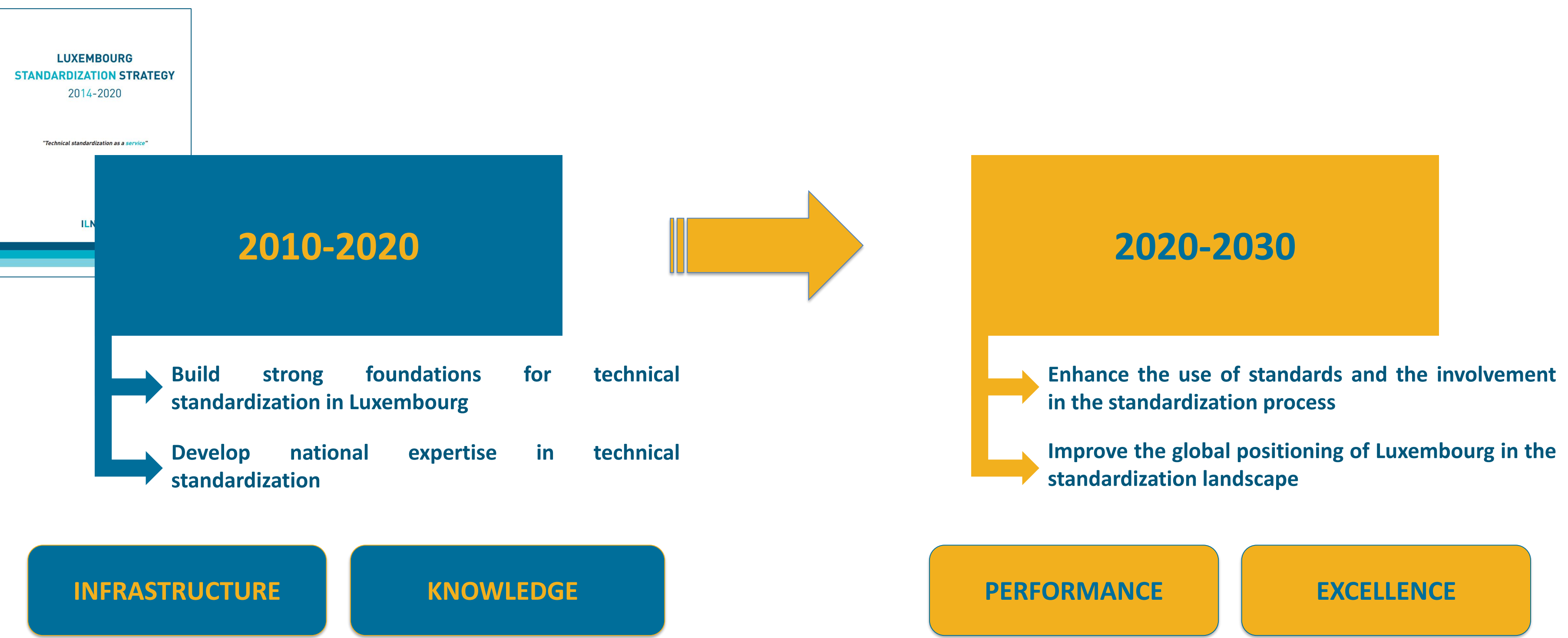
Objective: Start in
September 2020

- I – INTRODUCTION OF ILNAS
- II – NATIONAL STANDARDS BODY
- III – NATIONAL STANDARDIZATION STRATEGY (2010-2020) & POLICY ON ICT TECHNICAL STANDARDIZATION (2015-2020)
- IV – NATIONAL STANDARDIZATION STRATEGY 2020-2030**



Technical standardization

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



Technical standardization

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

3 growth sectors
identified



**INFORMATION AND COMMUNICATION
TECHNOLOGIES**



CONSTRUCTION



AEROSPACE

Technical standardization

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



- Pillar 1 – Use of relevant technical standards
- Pillar 2 – Involvement in the standardization process



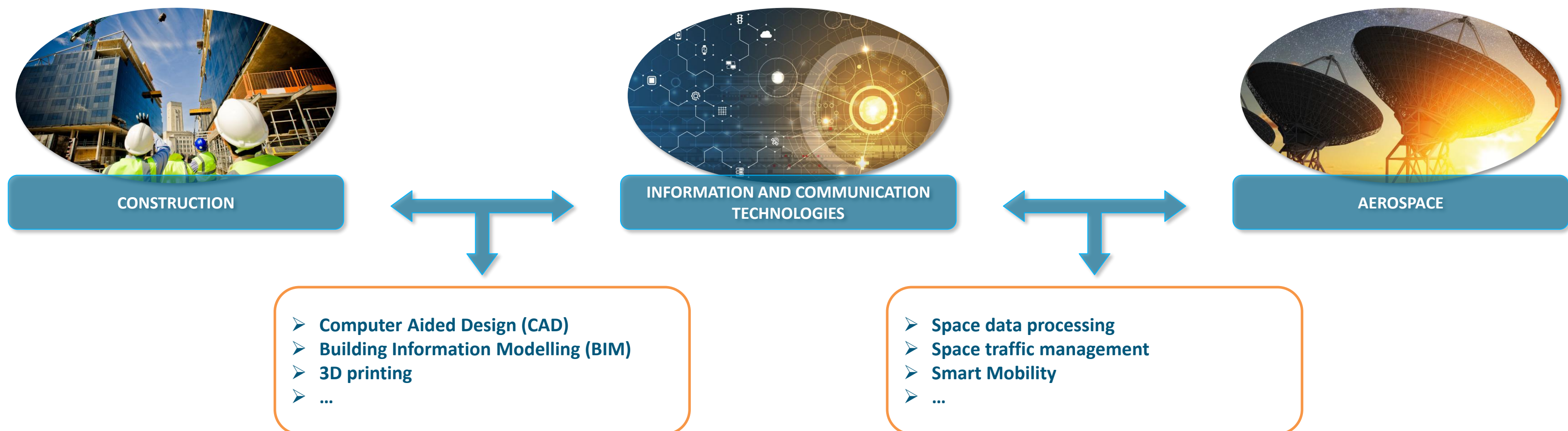
- Pillar 3 – Active participation of the NSB in the European and international standardization organizations
- Pillar 4 – Development of research and education about standardization

C. Implementation

Technical standardization

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

- Identification of trans-sectoral standardization interactions



- Creation of products and services to support the normative development of the growth sectors

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

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

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



ILNAS

Southlane Tower I · 1, avenue du Swing · L-4367 Belvaux

Tel. : (+352) 24 77 43 - 00 · Fax : (+352) 24 79 43 - 10

E-mail: info@ilnas.etat.lu

www.portail-qualite.lu