

Welcome
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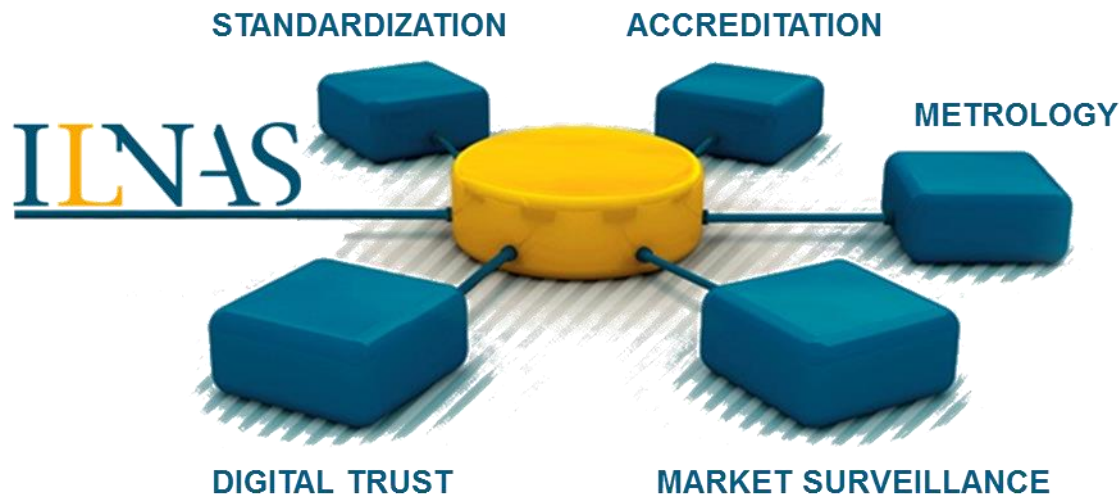
ICT Technical Standardization at the National Level

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

13.11.2018



- **Creation:** Law dated July 14, 2014 (repealing the amended Law of May 20, 2008) and law dated February 17, 2017
- **Status:** Public administration under the authority of the Minister of the Economy
- **Total staff:** 45 civil servants (November 2018)
- **Web site:**



- Ensure availability of standards

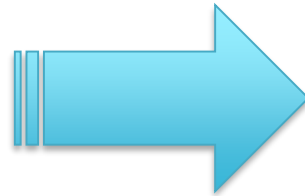
- Maintain the national database of more than 170.000 normative documents
- Selling standards (e-shop - <https://ilnas.services-publics.lu>)
- Free consultation of standards

- Participation in standardization

- Coordination and supervision of the creation of national normative documents
- Participation in standardization committees (European and international level)
- Manage the National Mirror Committees
- Publish and implement European, international and national standards
- Organize education and training courses about standardization
- Develop partnerships with academia and research
- Foster and promote voluntary, consensus-based standards



LUXEMBOURG
STANDARDIZATION STRATEGY
2014-2020



Pillar 1: Information and communication technologies (ICT)

"Technical standardization as a service"



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

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1

Developing the interest and the involvement of the market





- **Drawing up a yearly national standards analysis for the ICT sector**
 - Standards watch of the related sector
 - Identification of relevant technical committees and Fora/Consortia
 - Preparation of the final report of analysis and opportunities
 - **FOCUS ON SMART ICT AND DIGITAL TRUST**
 - Cloud Computing, Internet of Things, Big Data, Artificial Intelligence, Blockchain, Digital Trust related developments

- **Defining a national implementation plan for ICT technical standardization**
 - To involve targeted stakeholders of the Grand Duchy of Luxembourg in a global approach to standardization
 - Enhancing the international recognition of the Grand Duchy of Luxembourg

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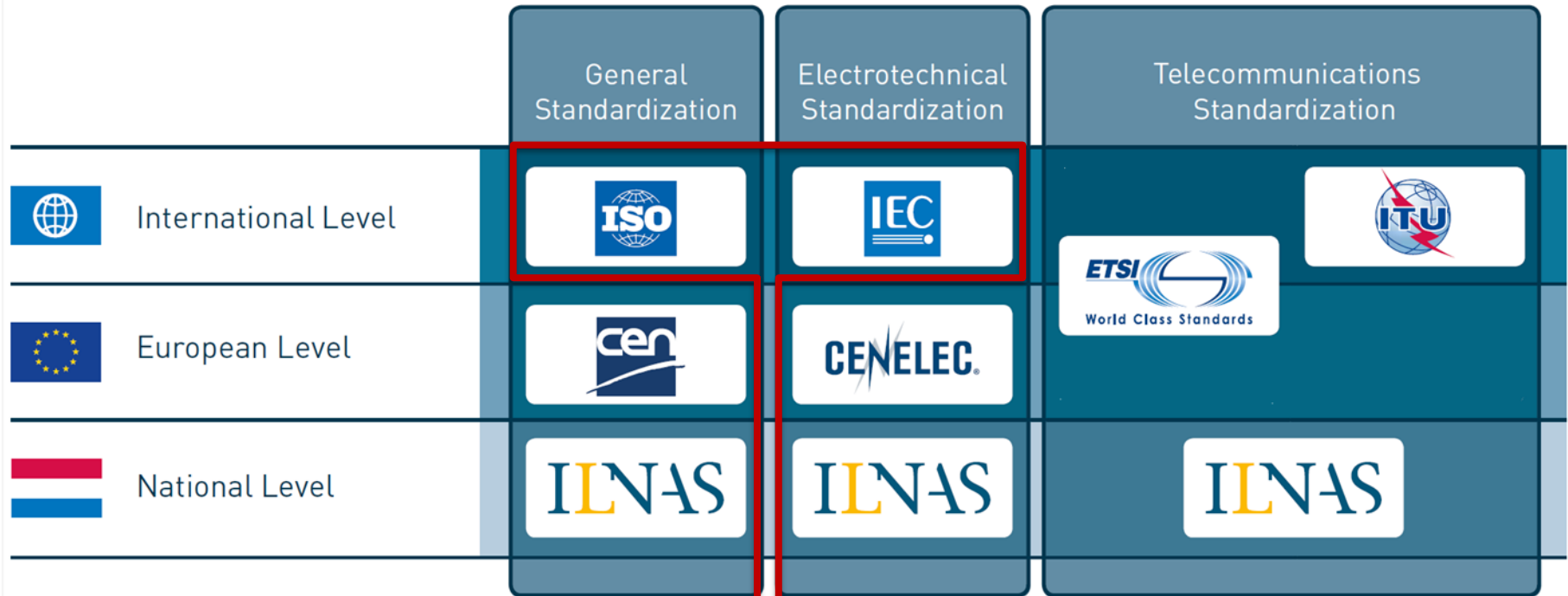
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2

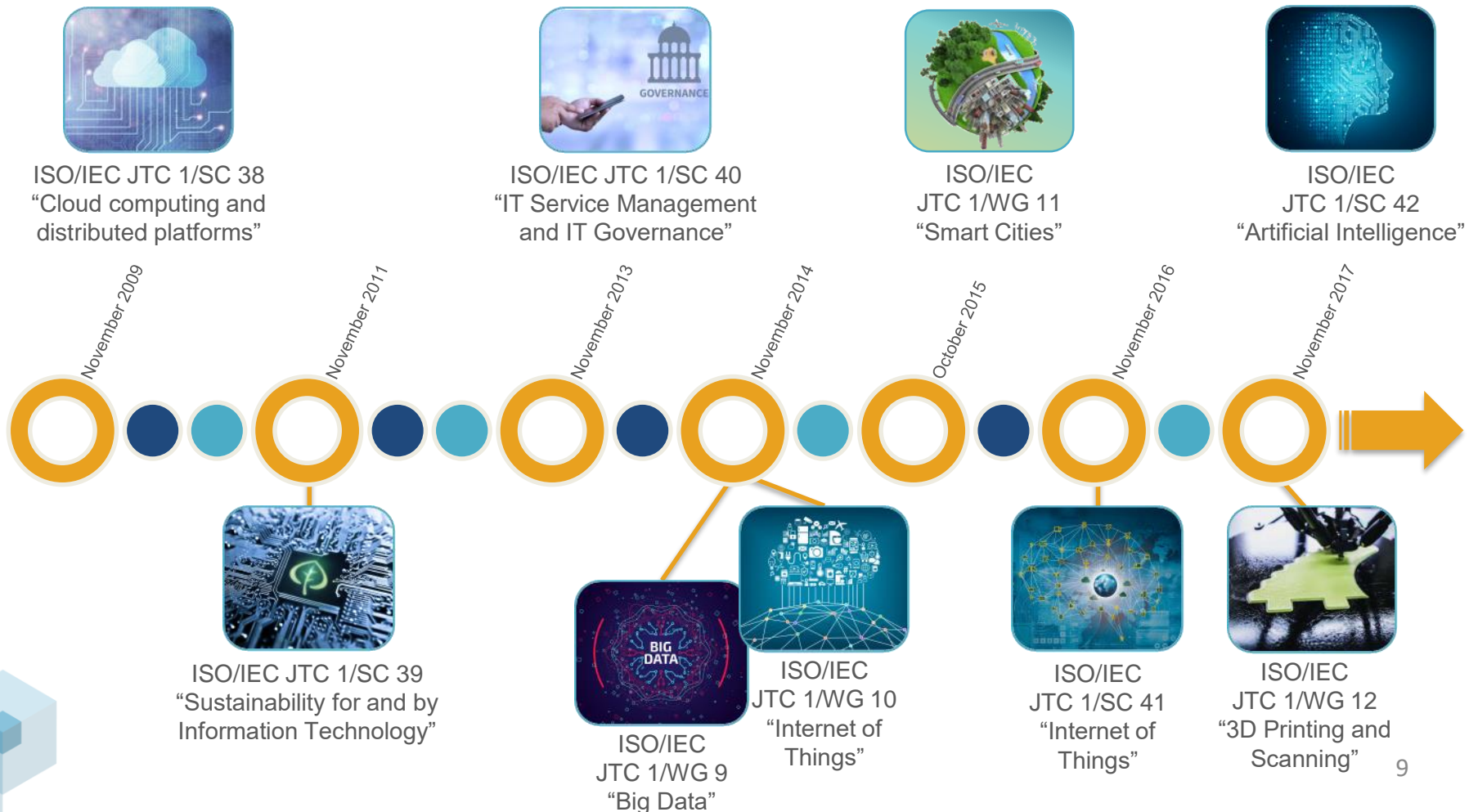
Promoting and reinforcing market participation



A. Standards Developing Organizations - Reminder

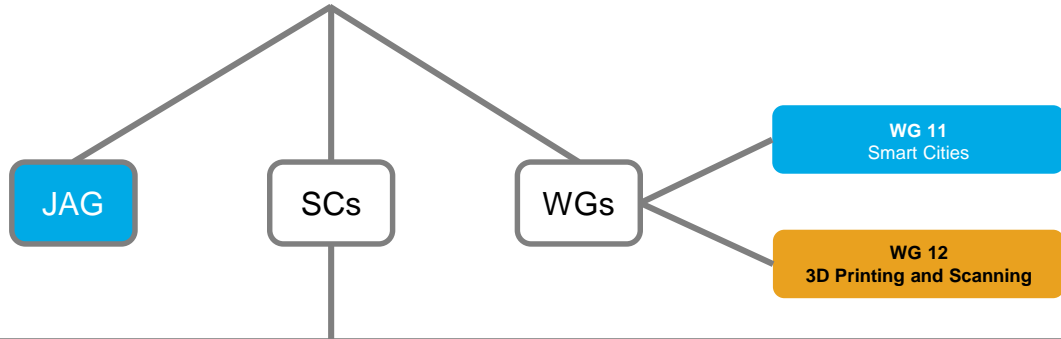


ISO/IEC JTC 1 - A technical committee in constant evolution to follow the technological progress and answer market needs



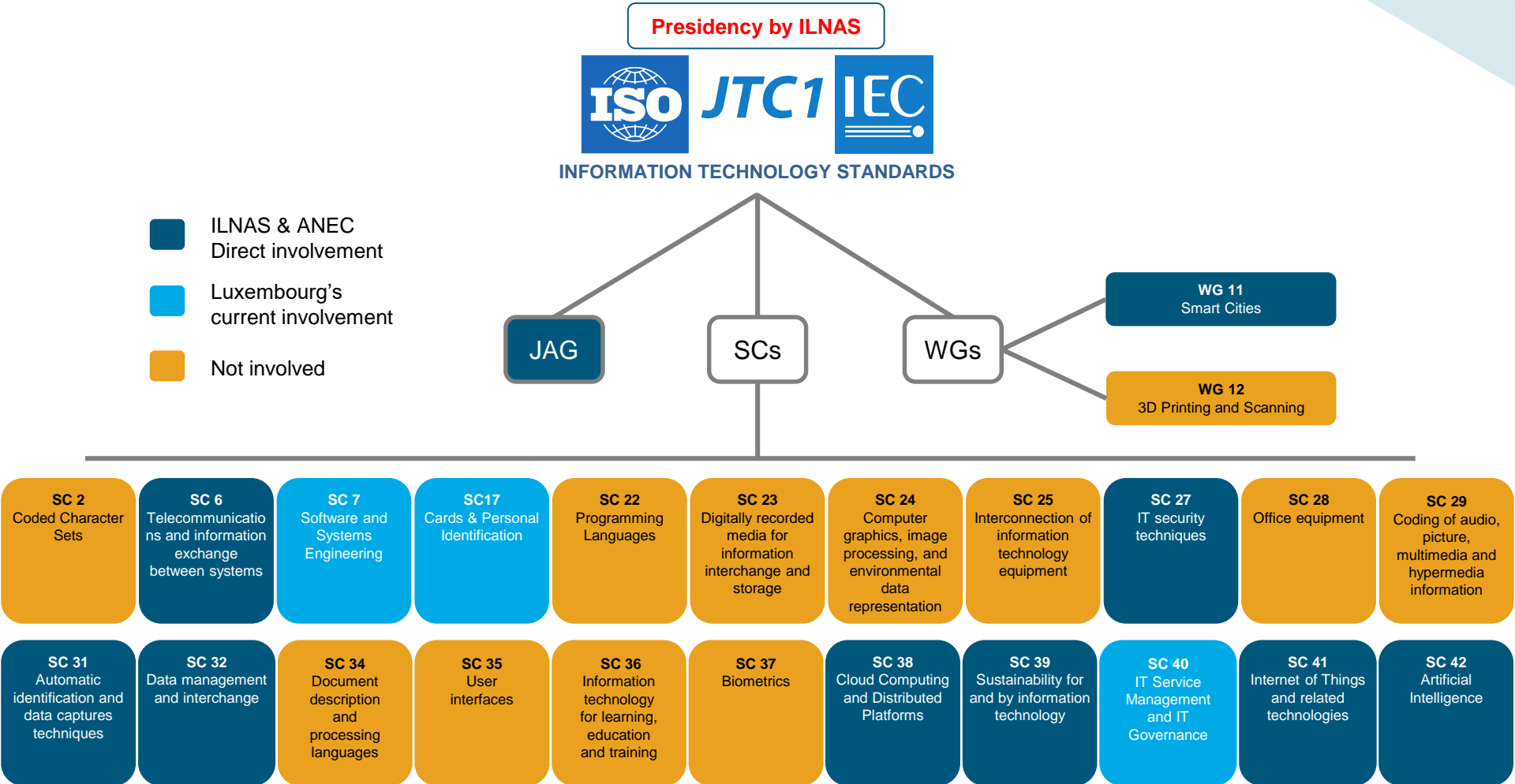


- Luxembourg's current involvement
- Not involved

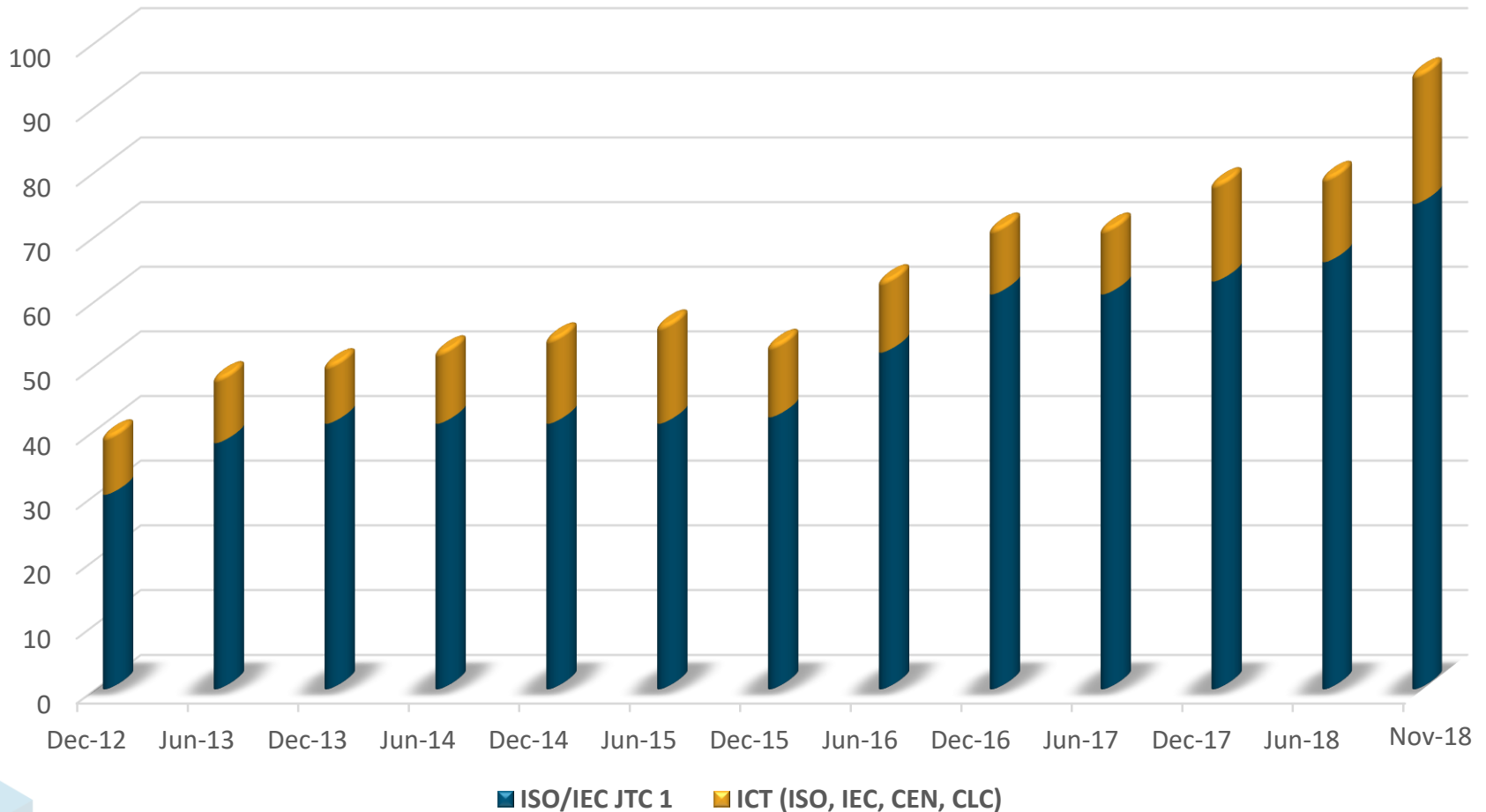


SC 2 Coded Character Sets	SC 6 Telecommunications and information exchange between systems	SC 7 Software and Systems Engineering	SC17 Cards & Personal Identification	SC 22 Programming Languages	SC 23 Digitally recorded media for information interchange and storage	SC 24 Computer graphics, image processing, and environmental data representation	SC 25 Interconnection of information technology equipment	SC 27 IT security techniques	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 for and by information technology	SC 40 IT Service Management and IT Governance	SC 41 Internet of Things and related technologies	SC 42 Artificial Intelligence

B. ISO/IEC JTC 1 national situation



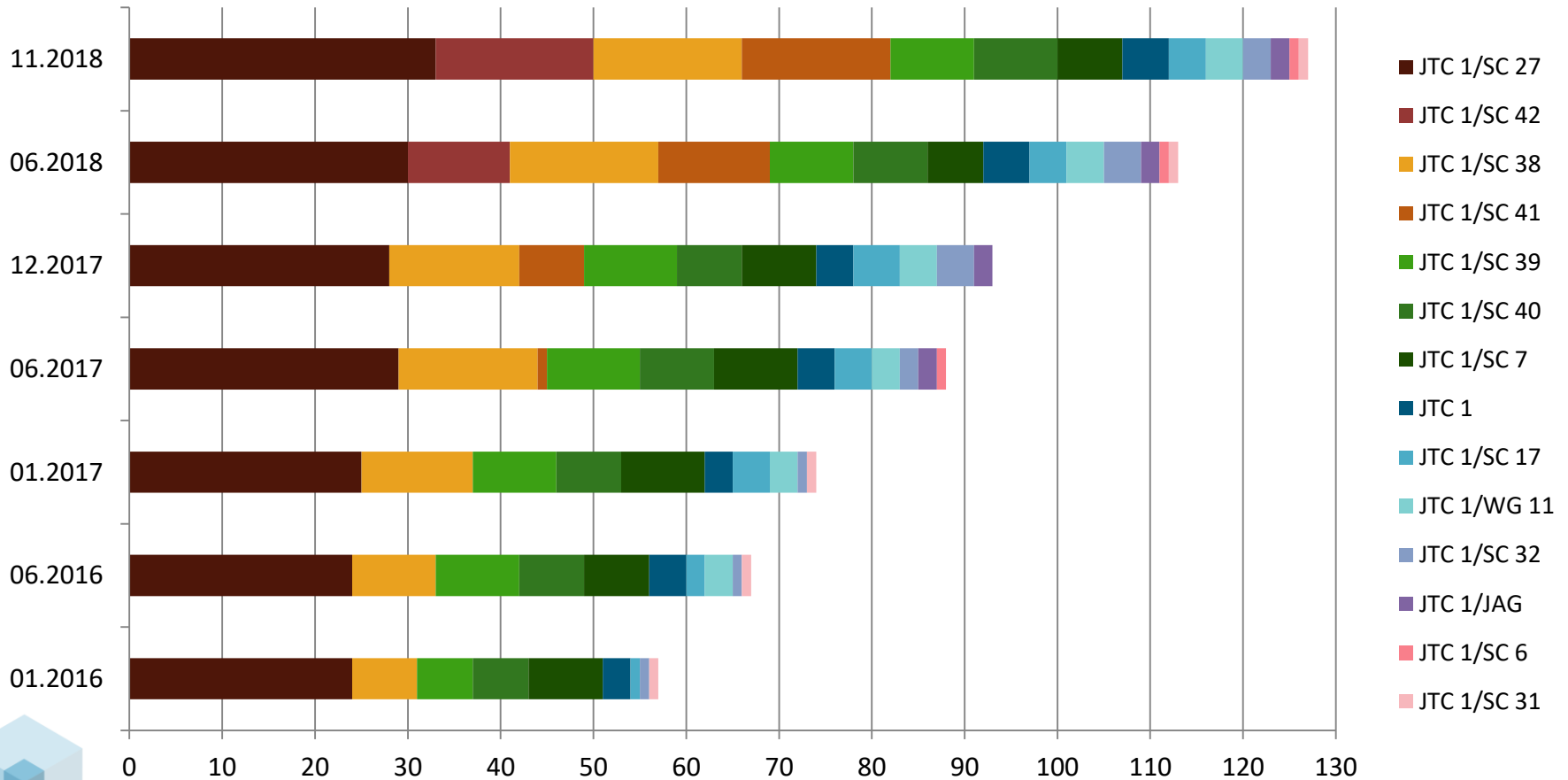
Evolution of the number of standardization delegates in the ICT sector



B. ISO/IEC JTC 1 national situation

– Top representation in JTC 1:

- 33 delegates in the Digital Trust domain
- 16 delegates in the Cloud Computing domain
- 16 delegates in the IoT domain
- 17 delegates in the Artificial Intelligence/Big Data domains



- **November 2018 – ISO/IEC JTC 1 Plenary Meeting in Stockholm (Sweden)**
 - o Luxembourg is Participating Member since April 2018
 - o ILNAS presidency to represent national interests

- **Recent developments (November 2018)**

- o New Study Group on **Open Source Software**
- o New Study Group on **Quantum Computing**
- o New Study Group on **Autonomous Data Rich Vehicle**
- o New Study Group on **Trustworthiness**
- o New Study Group on **Data Usage**



C. Cloud Computing standardization developments in Luxembourg



- **ISO/IEC JTC 1/SC 38 “Cloud Computing and Distributed Platforms”**
 - Creation: November 2009
 - National Chairman: Dr. Johnatan Pecero (ANEC GIE)
 - **16 national delegates registered**
 - Program of work:
 - 13 standards published
 - 9 standards under development



Plenary meeting ISO/IEC JTC 1/SC 38
(27.08.18 – 31.08.18)



NMC meeting ISO/IEC JTC 1/SC 38
(05.10.17)

D. Internet of Things standardization developments in Luxembourg



- ISO/IEC JTC 1/SC 41 “Internet of Things and related technologies”

- Creation: November 2016
- National Chairman: Dr. Shyam Wagle (ANEC GIE)
- **16 national delegates registered**
- Program of work:
 - 18 standards published
 - 16 standards under development



NMC Meeting ISO/IEC JTC 1/SC 41
(12/12/2017)



Plenary Meeting ISO/IEC JTC 1/SC 41
(28/05/17 – 02/06/17)



Plenary Meeting ISO/IEC JTC 1/SC 41
(13/11/17 – 17/11/17)

- ISO/IEC JTC 1/SC 42 “Artificial Intelligence”

- Creation: November 2017
- National Chairwoman: Mrs. Natalia Cassagnes (ANEC GIE)
- **17 national delegates registered**
- Program of work:
 - 2 standards published (Big Data)
 - 5 standards under development (including projects on Big Data)

NMC meeting ISO/IEC JTC 1/SC 42
(20.09.2018)



NMC meeting ISO/IEC JTC 1/SC 42
(29.05.2018)



Plenary meeting ISO/IEC JTC 1/WG 9
(15.08.17 – 18.08.17)

Plenary meeting ISO/IEC JTC 1/SC 42
(18.04.18 – 20.04.18)



F. Blockchain and DLT standardization developments in Luxembourg



- **ISO/TC 307 “Blockchain and distributed ledger technologies”**

- Creation: September 2016
- Acting National Chairman: Dr. Johnatan Pecero (ANEC GIE)
- **17 national delegates registered**
- Program of work:
 - 11 standards under development

NMC meeting ISO/TC 307
(15.12.2017)



Plenary meeting ISO/TC 307
(22.10.18 – 25.10.18)



Plenary meeting ISO/TC 307
(14.11.17 – 17.11.17)



World Class Standards



873 members

ILNAS

10 members



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3

Supporting and strengthening the EaS
and related research activities



IV. Supporting and strengthening the EaS and related research activities

A. Main developments



- **Managing the university certificate “Smart ICT for Business Innovation”**
 - New promotion started in February 2018
 - 12 students involved
- **Developing research activities**
 - White Papers on “ Digital Trust & Smart ICT ” (regularly updated)
 - White Paper “Blockchain and Distributed Ledgers”
 - White Paper “Internet of Things – IoT”
 - White Paper “Data Protection & Privacy in Smart ICT”
 - Research program dedicated to the domains of “Smart ICT” and Technical Standardization
 - 3 PhDs on “Smart ICT” topics
- **Prospective of new diplomas**
 - A dedicated ICT standardization Master’s Degree under development in collaboration with the University of Luxembourg

IV. Supporting and strengthening the EaS and related research activities



B. University certificate “Smart ICT for Business Innovation”

- **Place:** University of Luxembourg – Campus Belval
- **Duration:** 1 year program (Thursday and Friday evenings + some Saturday mornings) - 2 semesters: 18 ECTS
- **Language:** English
- **Prerequisite:** Bachelor degree with a minimum of 3 years professional experience in ICT or Master degree in ICT
- **Number of students:** 20 max.
- **Fees:** 3 600 €
- **Start of the courses:** February 2018
- **Supporting organizations:**

The image shows a certificate document for 'Smart ICT for business innovation'. It includes the following details:

- Degree:** Certificate Smart ICT for business innovation (Professional)
- Duration:** 1 year program (Thursday and Friday evenings + some Saturday mornings) - 2 semesters: 18 ECTS. Application opening date: September 20, 2017 / Start of the courses: February 2018
- Teaching language:** English
- Prerequisites:** Information and Communication Technologies (ICT) are becoming more interconnected and smart, in particular through convergence, and they play an increasingly important role in all economic and social sectors. Smart ICT (e.g. Cloud Computing, Internet of Things, Big Data and Analytics) innovation capabilities represent a key to economic growth and a primary management paradigm for innovation and business development. The Certificate aims to enhance skills of professionals in the field of Smart ICT and contribute to offering a broad view of Smart ICT concepts and tools in the European context. One of the objectives is:
- Objectives:** Students who successfully complete the Certificate will be able to:
 - Identify and describe the high potential of Smart ICT concepts for business and innovation
 - Lead for the current and future smart and sustainable trends in ICT areas such as:
 - Cloud Intelligence (Development of ICT capabilities for ICT management)
 - Smart Hardware (Smart Computing, Smart Cloud, Smart IoT)
 - Smart Infrastructure (Internet of Things, Big Data and Analytics, Digital Trust)
 - Address the challenges of Digital Trust and Information security
 - Identify and use published and de facto standards relevant to Smart ICT
 - Implement ICT in their organization in the business strategy
- Career opportunities:**
 - Digital Strategy Consultant
 - Smart ICT Consultant
 - Innovation Manager
 - Business Manager
 - Chief Digital Officer
 - Chief Digital Strategy
- Benefits:**
 - Individual coaching and career support on small groups
 - Hands-on learning and practical exercises
 - Multi-stakeholder approach (business, academic and practice)
 - Strong cross-sectorial cooperation (University of Luxembourg, Luxembourg Innovation ecosystem, ETSI, CENELEC and IEC, Fedil ICT, Digital Luxembourg, Luxembourg Chamber of Commerce and Technoport)

Logos of supporting organizations: CENELEC, ETSI, Fedil ICT, Digital Luxembourg, Luxembourg Chamber of Commerce, Technoport.

Quote: "This course offers in-depth knowledge of standardization efforts in the International Organization for Standardization (ISO) and the European Committee for Standardization (CEN). It provides a comprehensive overview of the standards landscape, its role in the economy, and the related innovative potential in the market." - Dr. Jean-Pierre Kuster, CENELEC Director

Contact: <http://smartict.uni.lu>

<http://smartict.uni.lu>

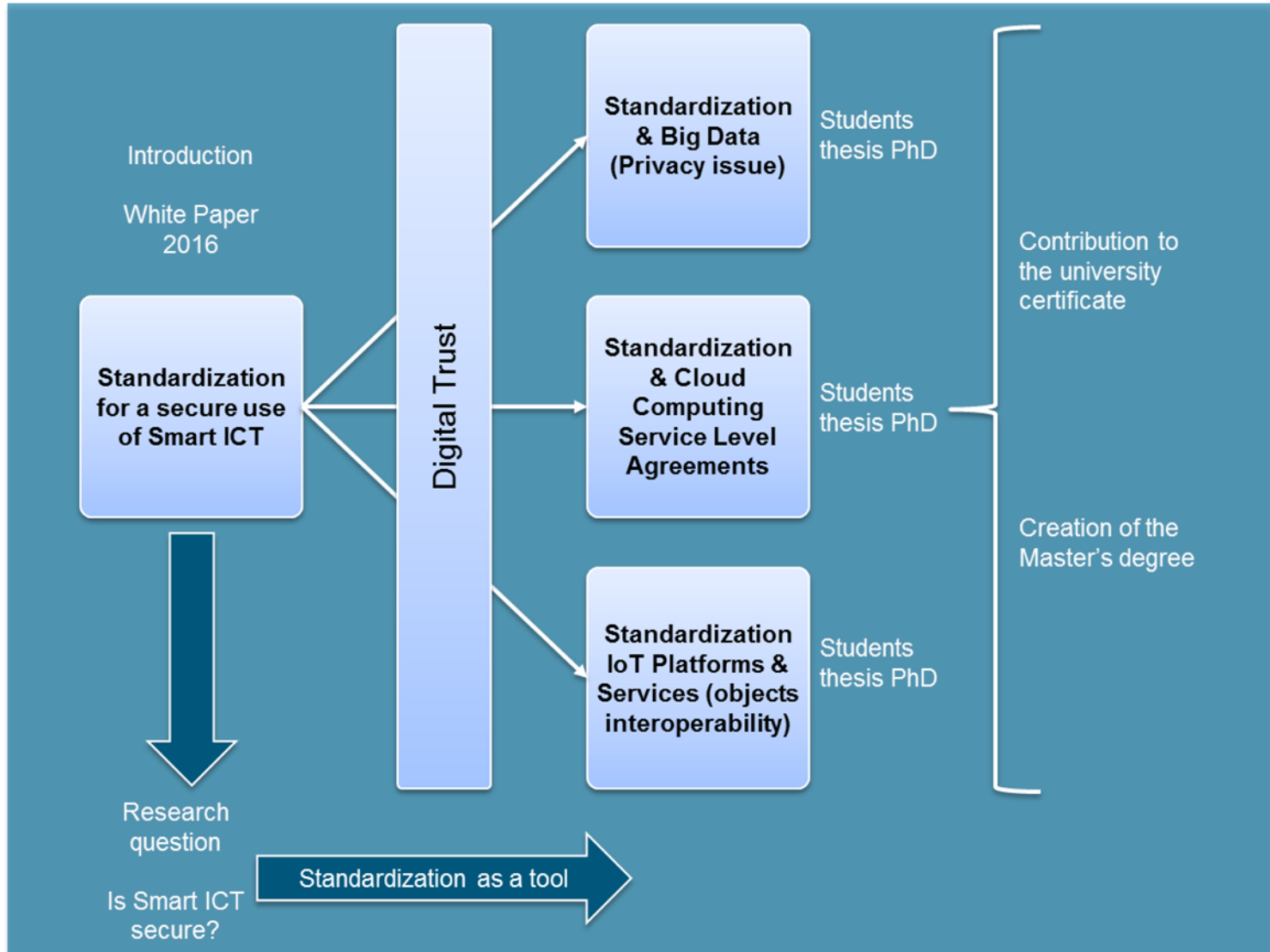


- **Industrial partners:**

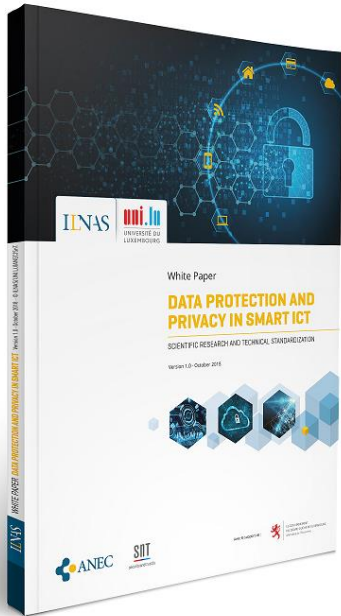


IV. Supporting and strengthening the EaS and related research activities

C. Research Program (2017-2020) on Digital Trust for Smart ICT



IV. Supporting and strengthening the EaS and related research activities



- **First result of the Research Program**
 - White Paper “Data Protection & Privacy in Smart ICT”
 - Common development between ILNAS and the University of Luxembourg with the support of the Ministry of the Economy
 - Published on 12th October 2018 (World Standards Day)
- **For better understanding of Data Protection and Privacy in Smart ICT Data**
 - Scientific and technological challenges
 - Economic potential
 - Understanding related standardization needs and efforts
- **Objective**
 - Analyze the state-of-the-art from research and technical standardization perspectives
 - One of the goals of performing this analysis is to understand the links between research and standardization

IV. Supporting and strengthening the EaS and related research activities

ILNAS

D. Master Project "Smart Secure ICT for Business Innovation"

Strengthening ILNAS's relations with academic partners with the aim of structuring education about standardization and ad-hoc research in the Grand Duchy of Luxembourg

– Origin:

- Pilot project conducted between September 2015 and September 2016: "Smart ICT for Business Innovation" university certificate in partnership with the University of Luxembourg
- Current promotion: February 2018 to January 2019

– Objective: **University Master in the field of technical standardization (horizon 2020)**

- Will answer national priorities related to "Smart ICT" topics, providing a smart way to link technology, standards and the business world, while creating an additional means of innovation at the national level





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