



ILNAS

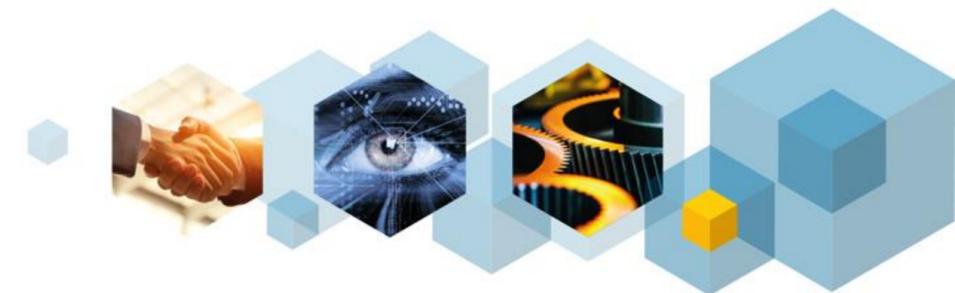


Standardization in the Aerospace sector

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Responsable secteur « TIC et Normalisation » - ILNAS/OLN

11th October 2019



AGENDA

- I. AEROSPACE SECTOR OVERVIEW**
- II. AEROSPACE TECHNICAL STANDARDIZATION LANDSCAPE**
- III. AEROSPACE SECTOR AND THE NATIONAL STANDARDIZATION STRATEGY**

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Context at national level

- **Aerospace sector: decades of development in the Grand-Duchy of Luxembourg**
 - 1985: Creation of the **Société Européenne des Satellites (SES)**
 - 2005: Luxembourg become the 17th **Member State of the ESA**
 - 2016: Launch of the **SpaceResources.lu** initiative
 - 2017: **Law on the Exploration and Use of Space Resources**
 - 2018: Creation of the **Luxembourg Space Agency (LSA)**
 - 2019: Launch of the **Interdisciplinary Space Master (ISM)** of the University of Luxembourg



- **A Luxembourg Space Agency study¹ predicts a market revenue of up to 170 billion EUR generated by the space resources utilization industry over the 2018-2045 period**

¹ <https://space-agency.public.lu/dam-assets/publications/2018/Study-Summary-of-the-Space-Resources-Value-Chain-Study.pdf>

A sector in mutation

CLASSICAL / OLD SPACE

- **Players:**
 - Governments / National Agencies
 - Large companies
- **Activities examples:**
 - Scientific missions
 - Exploration
 - Telecommunications
 - International space stations
 - ...
- **Characteristics examples:**
 - Single satellite missions
 - Unique optimized designs
 - High cost of components
 - ...

Since early 2000's

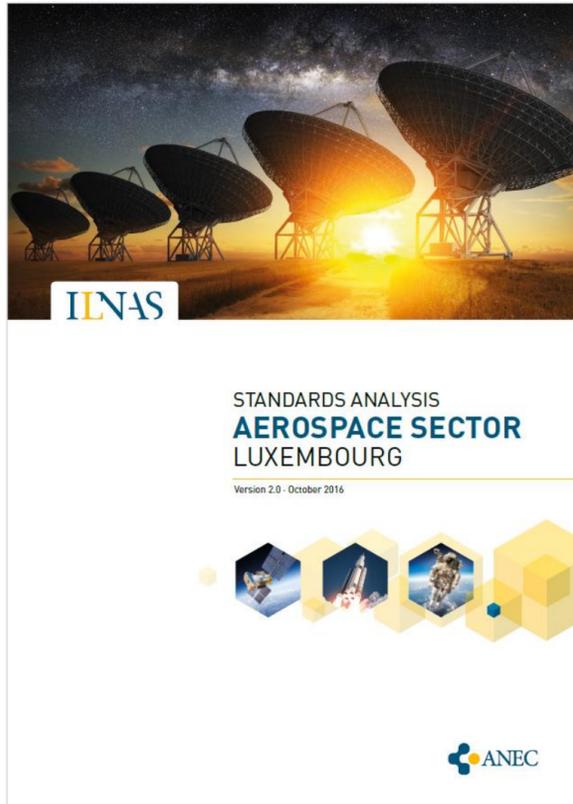
NEW SPACE

- **New players:**
 - Multiple private companies (including number of start-ups)
- **New activities examples:**
 - Asteroid Mining
 - Nano Satellites
 - Space Manufacturing
 - Space Tourism
 - ...
- **New characteristics examples:**
 - Satellite Constellations
 - Modular design and reusability
 - Serial production methods (lower costs)
 - ...

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ILNAS activities in the Aerospace sector (2010-2020)



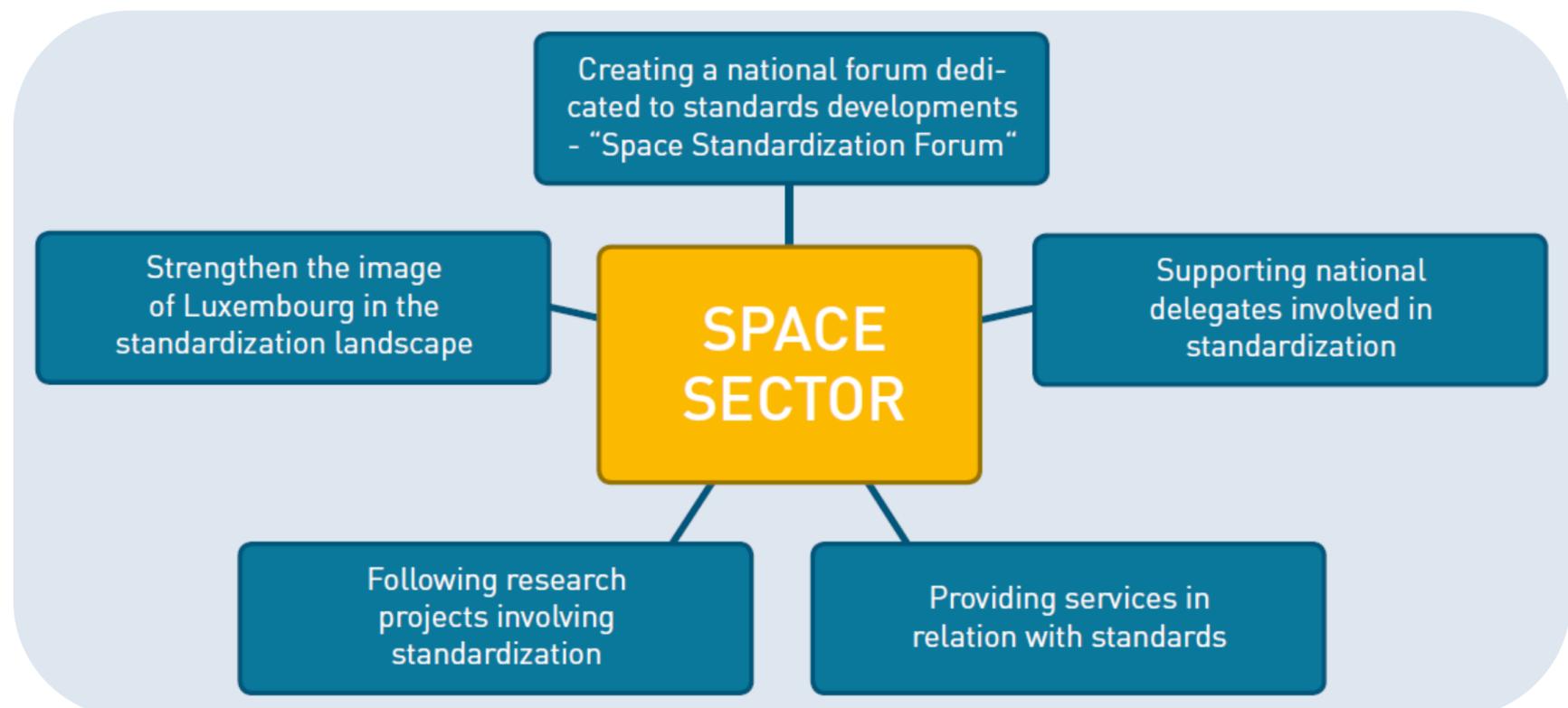
<https://gd.lu/drwT8P>

- Standards Analysis of the Aerospace Sector - Luxembourg

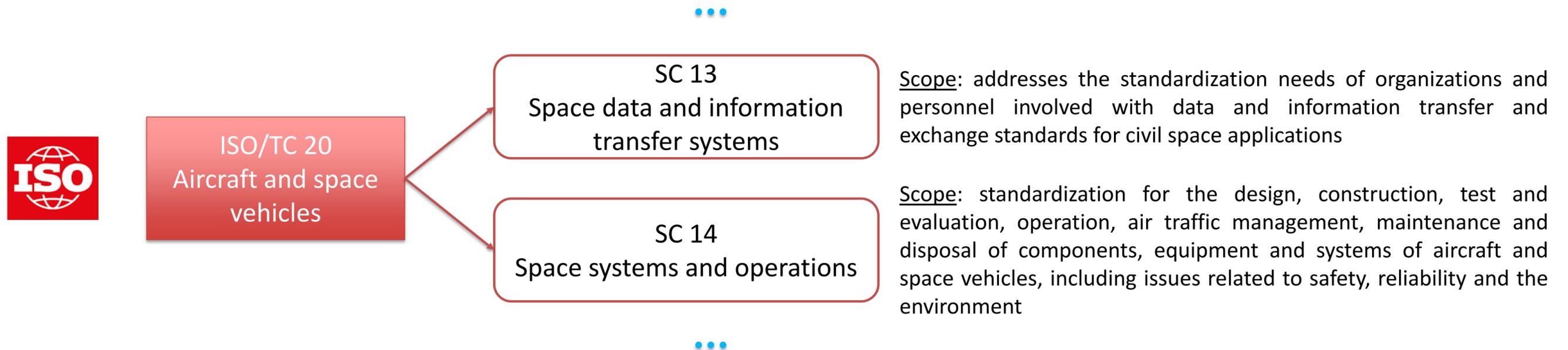
- 1st edition in November 2013
- 2nd edition in October 2016

- Purpose

- Identification of standardization technical committees related to the space sector at the European and international levels
- Overview of the national ecosystem
- Highlight of potential standardization opportunities for national stakeholders



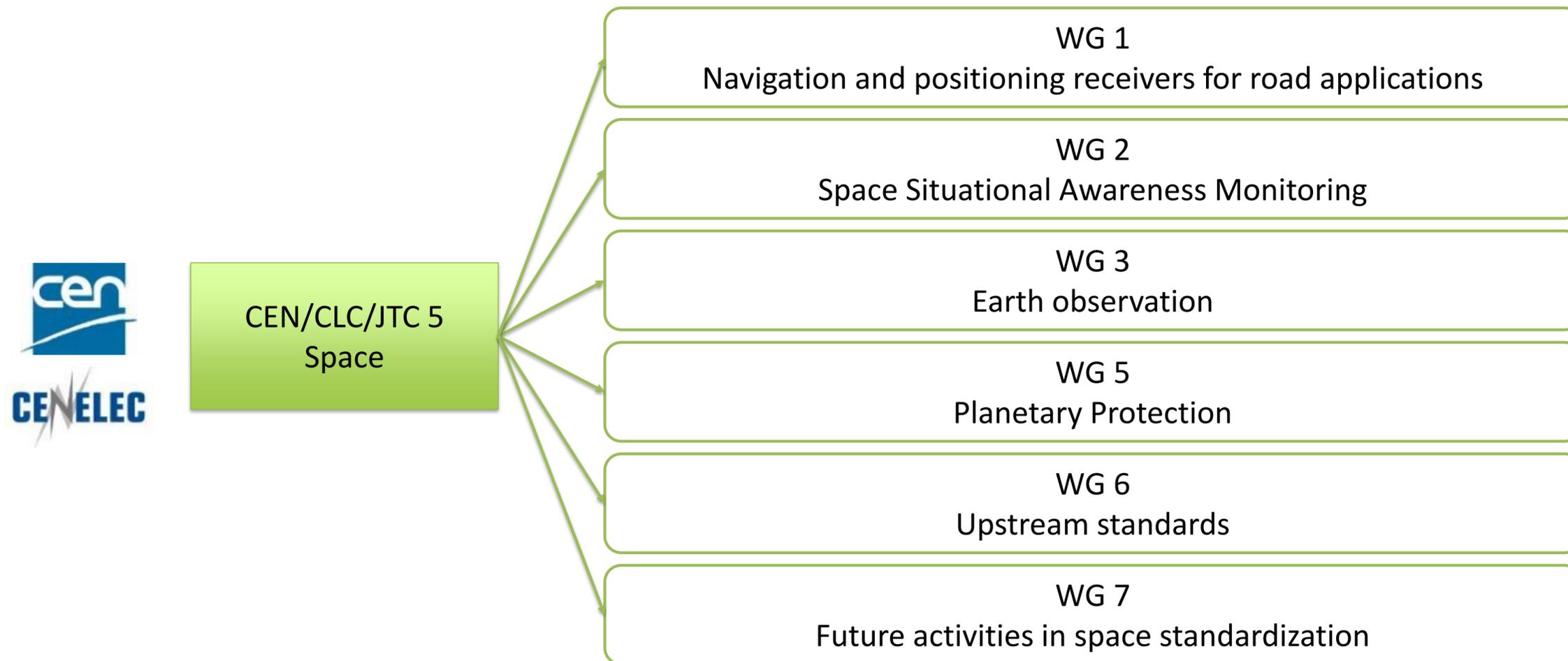
- International level



- Examples of current projects

- ISO/CD 24123, Space data and information transfer systems -- Mission operations monitor & control services (SC 13)
- ISO/CD 24124, Space data and information transfer systems -- Voice and audio communications (SC 13)
- ISO/FDIS 21980, Space systems -- Evaluation of radiation effects on Commercial-Off-The-Shelf (COTS) parts for use on low-orbit satellite (SC 14)
- ISO/AWI 23312, Space systems -- Detailed space debris mitigation requirements for spacecraft (SC 14)

- **European level**



- **Examples of current projects**

- prEN 16603-20-06, Space engineering - Spacecraft charging
- FprEN 16604-20, Space sustainability - Planetary protection

- **European level**



ETSI/TC SES
Satellite Earth
Stations and Systems

WG HARM
Harmonization under the R&TTE DIRECTIVE 99/5/EC and
Radio Equipment Directive 2014/53/EU

WG MAR ESV
Maritime and Railways Satellite Earth stations on Board
Vessels & Train

WG SatEC
Satellite Emergency Communication

WG SCN
Satellite Communications and Navigation

- **Examples of current projects**

- DTR/SES-00447, Satellite Earth Stations and Systems (SES); Edge delivery in 5G through satellite multicast (WG SCN)
- EN 302 186, Satellite Earth Stations and Systems (SES); Satellite mobile Aircraft Earth Stations (AESs) operating in the 11/12/14 GHz frequency bands; Harmonised Standard for access to radio spectrum

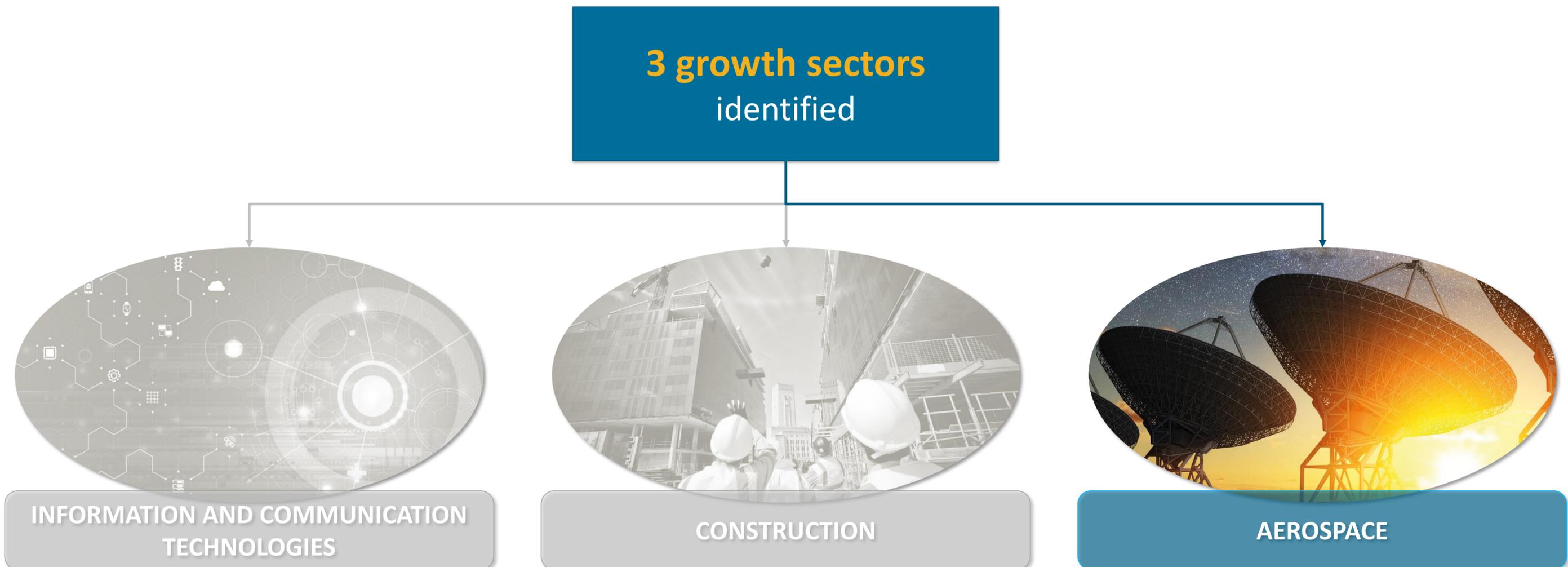
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A new growth sector in the National Standardization Strategy 2020-2030

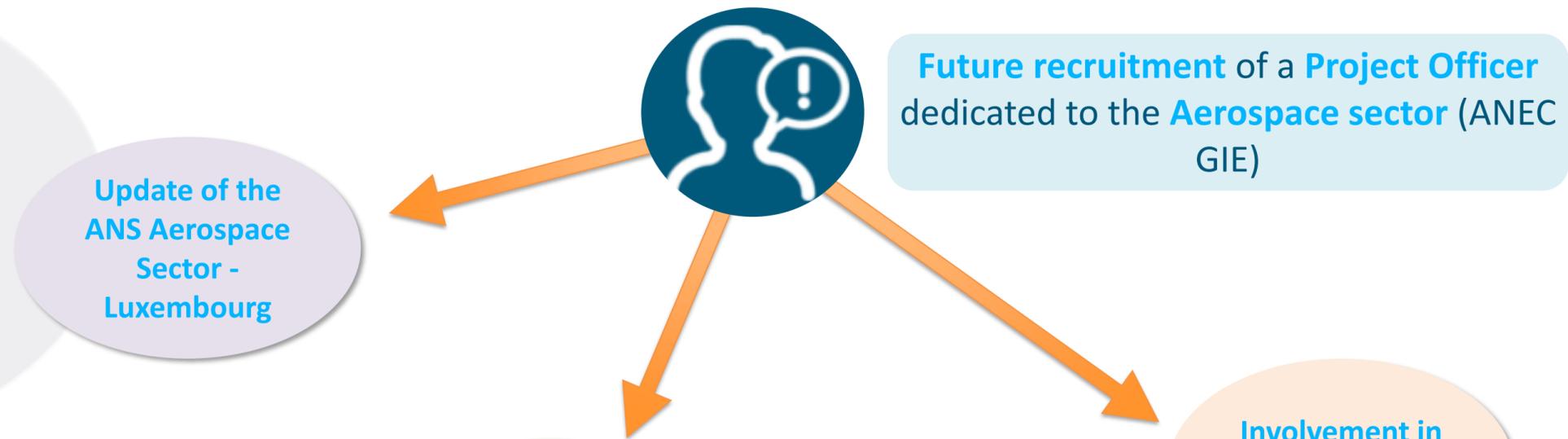
Technical standardization

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



III. AEROSPACE SECTOR AND THE NATIONAL STANDARDIZATION STRATEGY 2020-2030

Potential developments for the Aerospace sector (2020-2030)

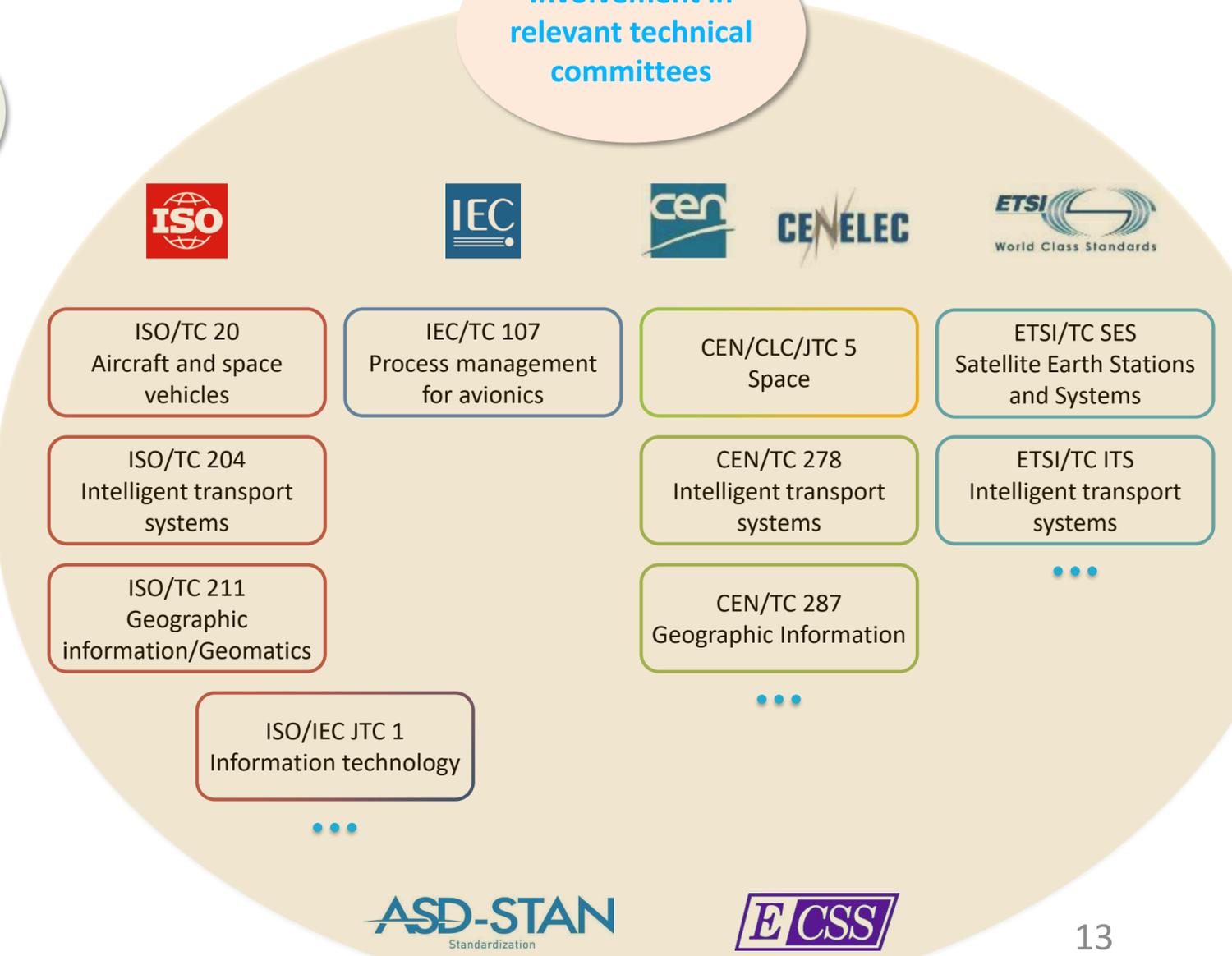


Future recruitment of a **Project Officer** dedicated to the **Aerospace sector** (ANEC GIE)

Update of the **ANS Aerospace Sector - Luxembourg**

Awareness-Raising among **National Stakeholders**

Involvement in **relevant technical committees**

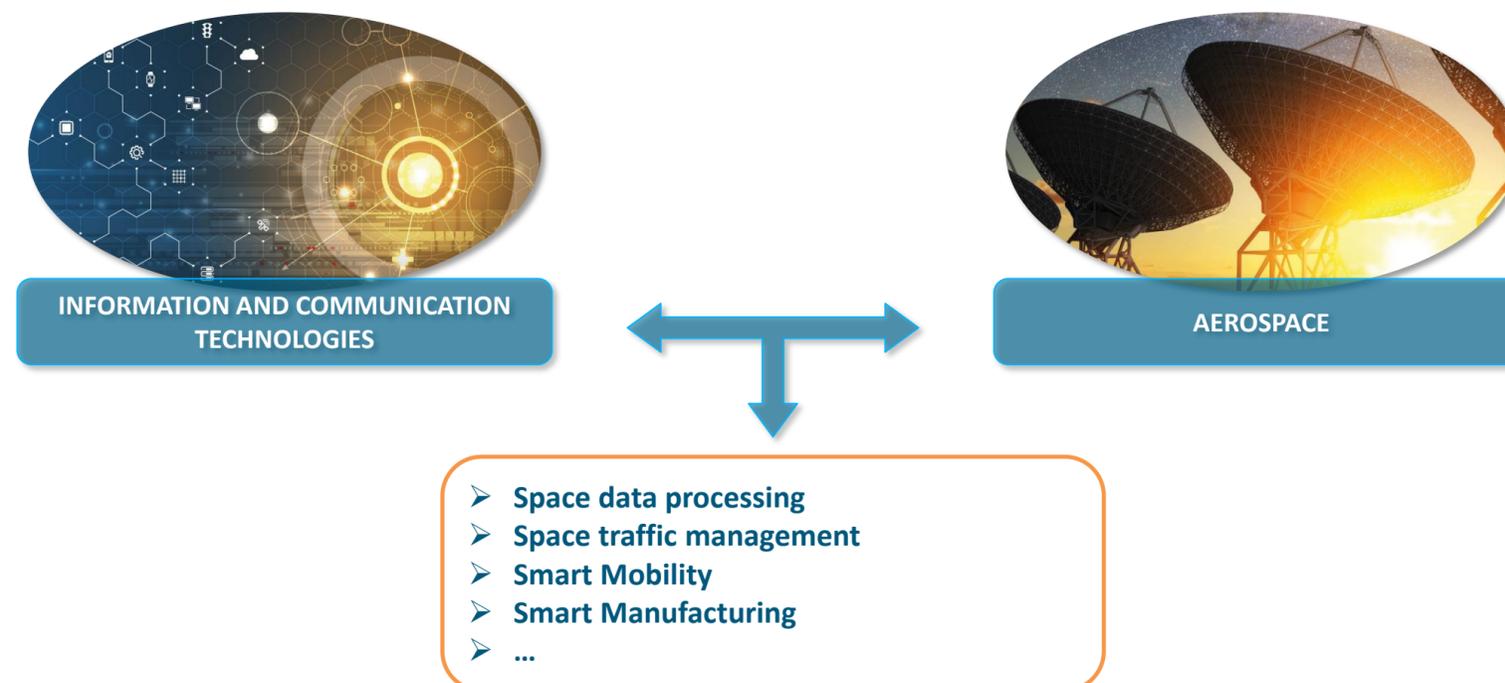


Source for the identification of organizations: LSA Space Directory 2019

Technical standardization

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

- Identification of trans-sectoral standardization interactions



DEEP DIVE

★ What are the main **CHALLENGES** you face in the SPACE SECTOR?

★ What are the 3 **PRIORITIES** for SATELLITE-DATA-DRIVEN-APPLICATIONS for the FUTURE in EUROPEAN SPACE LANDSCAPE?

★ What are the other **ISSUES** that need to be ADDRESSED to **BOOST** the EUROPEAN SPACE INDUSTRY'S **COMPETITIVENESS**?



PANEL DISCUSSION on SPACE DATA

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