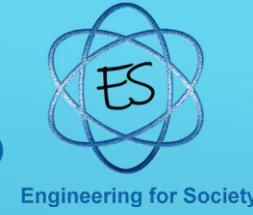




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EEIISO

Creative digital teaching and learning for green air transport and logistics

AVIONIC

**PROJECT LEADER:
“POLITEHNICA” BUCHAREST**

**Sorin Eugen ZAHARIA,
University Professor**

Chairholder of UNESCO Chair “Engineering for Society”
National University for Science and Technology
POLITEHNICA of Bucharest (ROMANIA)

Content of the presentation

PART 1 PROJECT OVERVIEW

PART 2. ANALYSE: OCCUPATIONS AND
QUALIFICATIONS GENERATED BY
DIGITALIZATION AND SUSTAINABLE
DEVELOPMENT IN THE AIR TRANSPORT



Part 1 Project overview

1. PROJECT RELEVANCE

2. NEEDS AND OBJECTIVES

3. IMPLEMENTATION OF THE PROJECT

4. PARTNERSHIP

5. RESULTS



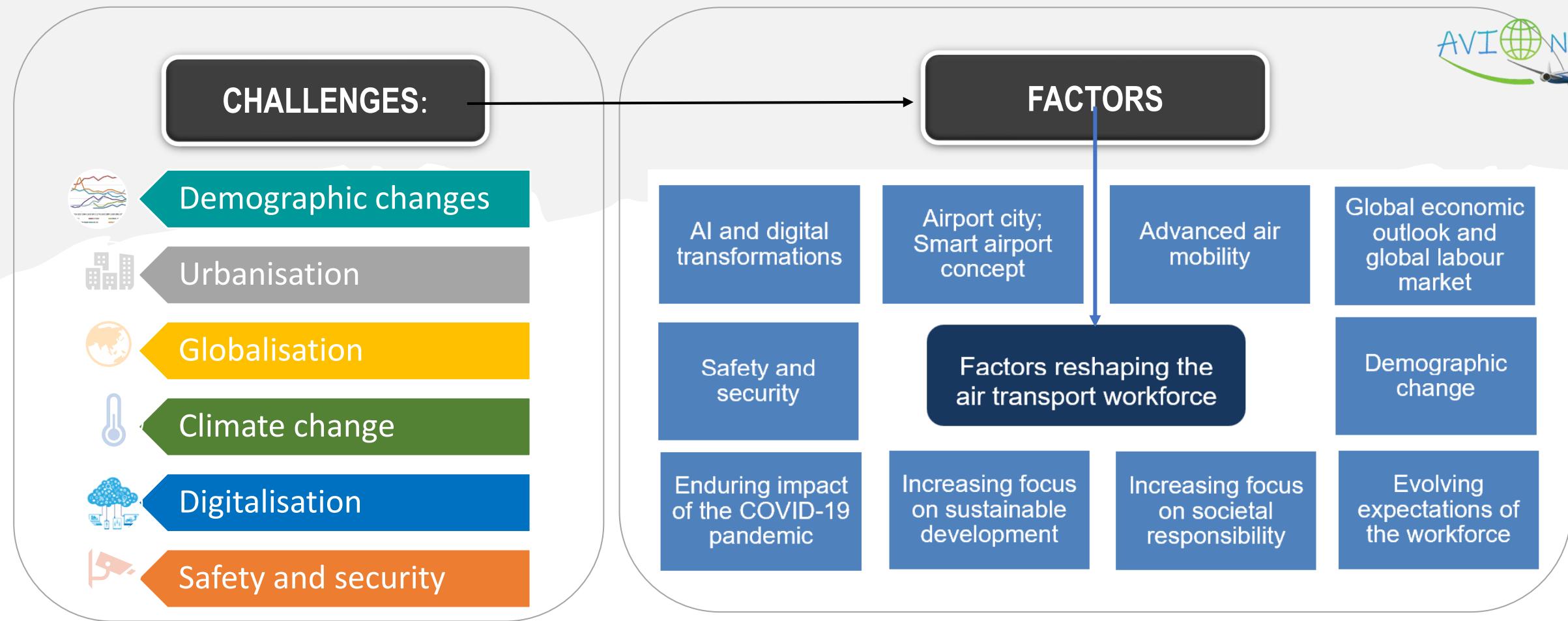
1. Project relevance



1.1 Long-term societal challenges



- The air transport industry is one of the **most “global” industries** because it includes a **network of airlines, commercial airports, air navigation service providers and manufacturers of aircraft and their components.**
- For these reason we need **“global” work force.**



Main trends:

- Digitalisation
- Sustainable development
- New materials and technologies

- New management
- New training and education – new knowledge and skills

Societal responsibility in air transport

2030 Agenda for Sustainable Development → 15 Sustainable Development Goals (SDGs) involve aviation



Organizations around the world and their stakeholders are becoming **increasingly aware** of the benefits and the need for a societal responsible behaviour.

The societal responsibility strategy can be centred around four pillars: **environment, customer experience, employees and local development.**



Today, airspace is occupied mainly by traditional manned aviation

- ▶ Traditional piloted fixed-wing and rotorcraft with limited connectivity
- ▶ Internet of things on airports
- ▶ Airport digitalisation – ACDM and TAM



Thousands of aircrafts in the sky

Tomorrow, Digital Aviation infrastructure to enable all air operations

- Connected airplanes and rotorcrafts, drones, urban air mobility(UAM), Advanced Air Mobility (AAM) and taxi services
- Smart airports, advanced airport digitalisation



Hundreds of thousands of connected flying vehicles in the sky

MULTI AIR OPERATIONS BASED ON DIGITAL AVIATION INFRASTRUCTURE & SUSTAINABLE DEVELOPMENT

Highly qualified workforce with aviation, IT and green skills

1.2 Documents and strategic programmes for sustainable development



UNESCO Documents

Agenda 2030 The Sustainable Development Goals



European Union actions and documents



THE TRANSPORT AND MOBILITY SECTOR

is the **second-largest area** of expenditure for European households

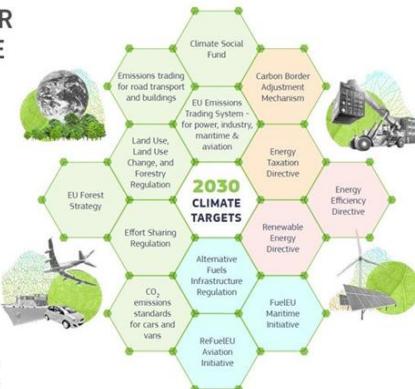
contributes 5%

employs directly around 10 million workers

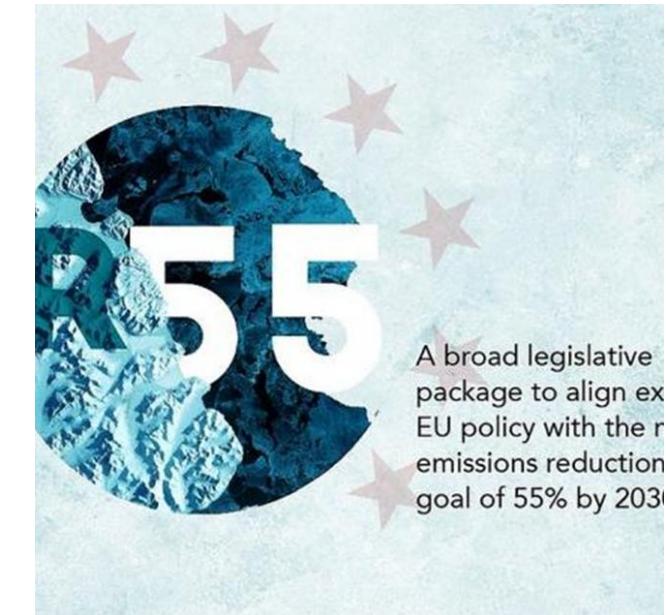
OBJECTIVES

EUROPEAN GREEN DEAL

REACHING OUR 2030 CLIMATE TARGETS



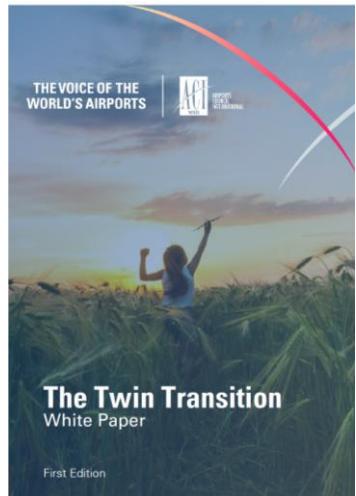
#EUGreenDeal



ACI actions: Carbon management



- The programme independently **assesses and recognizes the efforts of airports** to manage and reduce their carbon emissions with four levels of award.



ICAO Actions



- **CORSIA** is a global market-based measure designed to offset international aviation CO₂ emissions in order to stabilize them.

1.3 Avionic is a continuation of Erasmus+ Project “Knowledge Alliance in Air Transport” results



Knowledge Alliance in Air Transport



MASTER PROGRAMME
Information Technologies
Applied in Aviation


University of Bucharest
Educational, Scientific and Cultural Organization
UNIVERSITATEA DE INGINERIA SI TECNOLOGII
UNIVERSITY OF TECHNOLOGY AND SCIENCE OF BUCHAREST
Bucharest, Romania


UNIVERSITATEA DE INGINERIA SI TECNOLOGII
UNIVERSITY OF TECHNOLOGY AND SCIENCE OF BUCHAREST
Bucharest, Romania

WHY THIS MASTER?
The master will ensure knowledge and skills for challenging current and new jobs, such as: Chief Data Officer (CDO), Air Transport Data Architect, Big Data Architect, Cybersecurity Engineer, Virtualization Engineer, Data Protection Officer, Auditor, Responsible with Digital Data, Data Scientist, Airport UI & UX Designer, Growth Hacker, Mechatronic Engineer, Aviation Software Developer.

APPLICATIONS SUBMISSION
July 2020
Submission period: 29.06 - 07.07.2020
September 2020
Submission period: 26.08 - 08.09.2020

ENTRY REQUIREMENTS
Applicants must hold a Bachelor's degree.
The admission requirements for Romanian students are described at: <https://upb.ro/admitere/>
The admission requirements for foreign students are described at: <http://international.upb.ro/>

Language: English
Duration: 2 years (4 semesters)
ECTS: 120

Number of available spots
25 without tuition fee
20 with tuition fee

 **UNIVERSITATEA
POLITEHNICA
DIN BUCURESTI**



Knowledge Alliance in Air Transport

Methodology for a Sectoral Qualifications Framework in Air Transport



Knowledge Alliance in Air Transport

Recognition of Prior Learning and Work Experience in Aviation



“European network for aviation training and education - ENATE



The aim of the EUROPEAN NETWORK FOR AVIATION TRAINING AND EDUCATION (ENATE) is **to develop the European dimension of aviation education and training**, by facilitating the transfer of knowledge in the field of air transport and developing innovative and multidisciplinary approaches to teaching and learning.





2. Needs and objectives



Overarching goal of the project

Improving the **quality and relevance of knowledge and skills** of new generations of **professionals** by designing, improving and implementing **interdisciplinary study programs at European level** to meet the restructuring needs of air transport labour market with **focus on digitalization, sustainable development and societal responsibility**.

NEEDS

1. **A better qualified work force**, especially with multidisciplinary competences

2. **Re-skilling: the change of technology**, the digitalization and sustainable development ask for **new skills of employees**

3. **Up-skilling**: in aviation a vast number of people are retiring and new supervisors and managers need to be level up from the pool of employees having **digital and green skills**

4. **An improved dialog university – employers** for ensuring a new learning culture in aviation HE for sustainable development,

OBJECTIVES

SO 1 Improving **the skills of professionals on digital and sustainable development** for AT by **updating curricula** of study programmes and syllabus of courses based on **international and interdisciplinary co-creation** of knowledge between higher HEIs and industry at European level.

NEEDS

5. **Modernisation of curricula and fostering innovative and multidisciplinary approaches** for HE and trainings in aviation

6. **Implementation of teaching methods for improving the quality and relevance of digital and green skills** by an innovative teaching.

7. **Expand students' vision and perspective at an international level**, throughout working in international teams with students, teachers and employers from different countries

OBJECTIVES

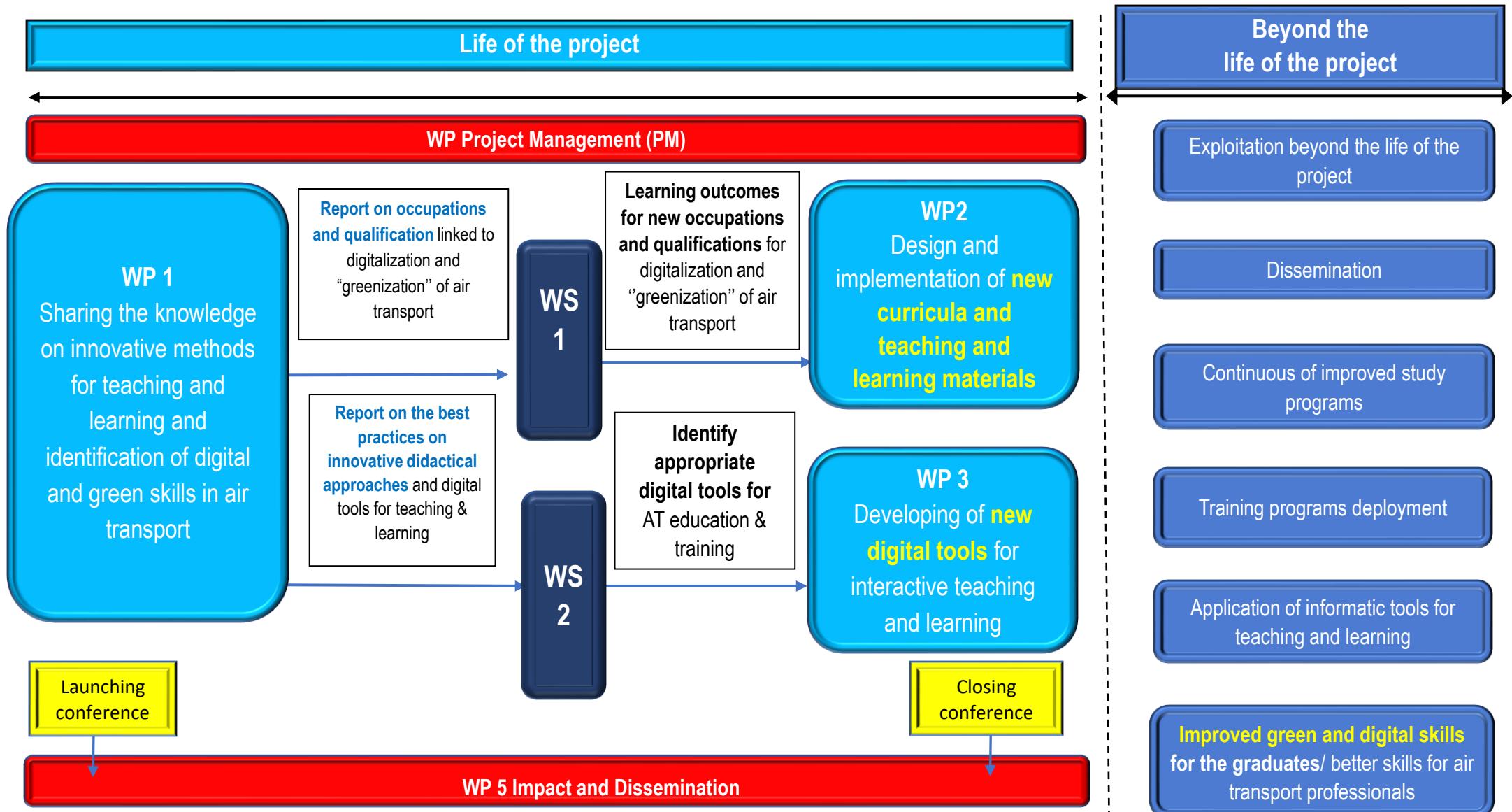
SO 2 Fostering new, **innovative and multidisciplinary approaches of teaching and learning** for existing and new study programmes by developing tools for an **international on-line teaching and learning** based on interactive methods for a dedicated virtual environment.

SO 3 **Developing new digital tools for supporting the international interactive teaching and learning** for increasing quality of education and training and to equip students with digital & green skills and international work team behavior.



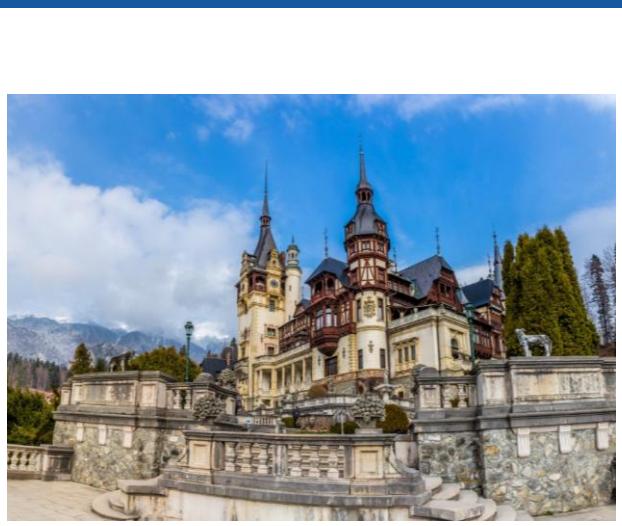
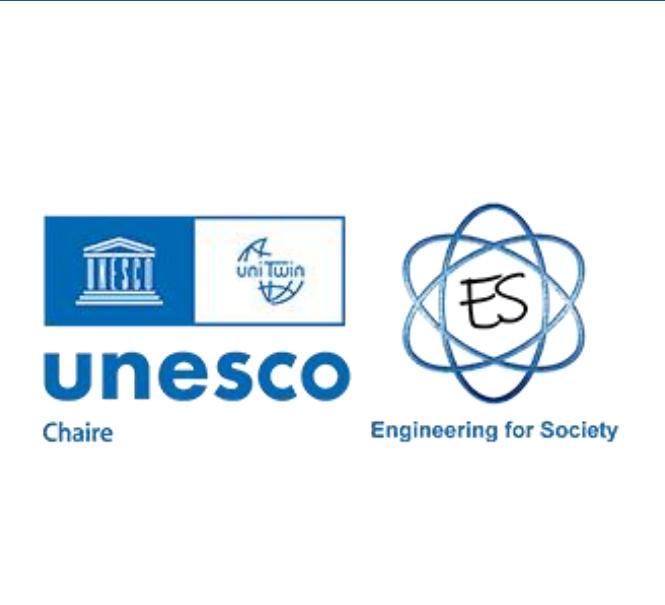
3. IMPLEMENTATION OF THE PROJECT

The overview of project structure and methodology



4. PARTNERSHIP





**Project
coordinator**

**UNIVERSITY
POLITECHNICA
OF BUCHAREST
Romania**



Universidad Politecnica de Madrid, Madrid, Spain



POLITÉCNICA

UNIVERSIDAD
POLITÉCNICA
DE MADRID

Université de Strasbourg, France



POLITÉCNICA



Menzies Aviation Romania SA, Bucharest, Romania



6 ASSOCIATED PARTNERS: FROM 3 COUNTRIES AND 3 INTERNATIONAL BODIES

- ▶ European and North Atlantic (EUR/NAT) Office of the International Civil Aviation Organization (ICAO)
- ▶ Ministry of Environment, Waters and Forests - Romania
- ▶ Airport Council International – Europe(ACI)
- ▶ European Network for Aviation Training and Education
- ▶ Romanian Airport Association (RAA)
- ▶ IATA – International Air Transport Association



Results

Report on occupations and qualifications generated by new technologies for digitalization & sustainable development of AT industry

Report on the best practices on innovative didactical approaches and digital tools for teaching and learning

10 study programs with new learning outcomes to better meet the learning needs and to reduce the skills mismatches with labour market demands for digitalization, sustainable development and intermodal transports.

Better skilled work force in digitalisation and sustainable development of air transport necessary for new interdisciplinary occupations.

New tools and methods for on-line teaching and learning: videos, serious/applied games, interactive presentations; digital content tools.

Dissemination: Project website and on-line networking tools, Media relation and public multiplier events organized within the project

Part 2

Occupations and qualifications generated by digitalization and sustainable development in the air transport



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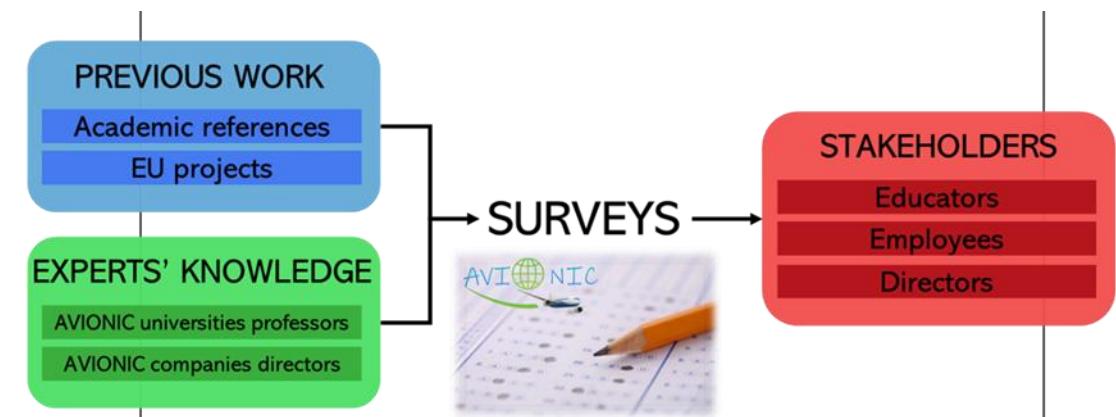
CONTENT Part 2

1. The methodology of research
2. Skill shortage and qualification development
3. New occupations link to digitalization and sustainable development and importance of skills required
4. Education and employee training
5. Conclusion – key findings

1. THE METHODOLOGY OF RESEARCH

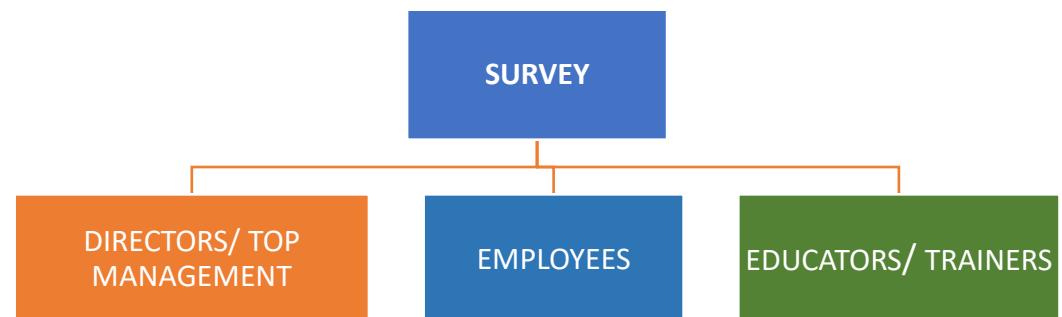
The qualitative component:

- An examination of information related to occupations and qualifications in air transport from documents elaborated by
- European Commission, CEDEFOP , Organisation for Economic Cooperation and Development (OECD), ICAO, ACI, ATAG, previous projects and others scientificat papers.



The quantitative component:

A survey was carried out using the 3 different questionnaires:





2. Skill shortage and qualification development



Green occupations and green skills

- concepts -



GREEN SKILLS → the ability to apply green knowledge and use know-how to complete tasks and solve problems for sustainable development.



GREEN COMPETENCES (*sustainability competences*) → the proven ability to use green knowledge, green skills and personal, social and/or methodological abilities, in work or study situations and in professional and personal development for developing and supporting a sustainable and resource-efficient society.



GREEN LEARNING OUTCOMES → statements regarding what a learner knows, understands and is able to do on completion of a learning process for develop and support a sustainable and resource-efficient society, which are defined in terms of green knowledge, green skills and responsibility and autonomy.

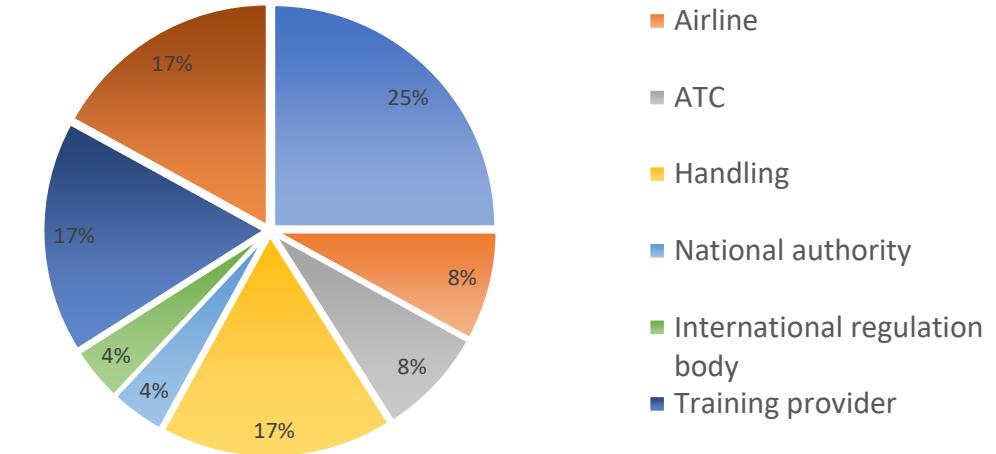
Survey for top management and employees in aviation

The questionnaire for top management is divided into the following sections:

- Respondent identification
- Present situation referring to jobs and training
- Future of occupations and jobs
- Key competences
- Education and training
- Contact information

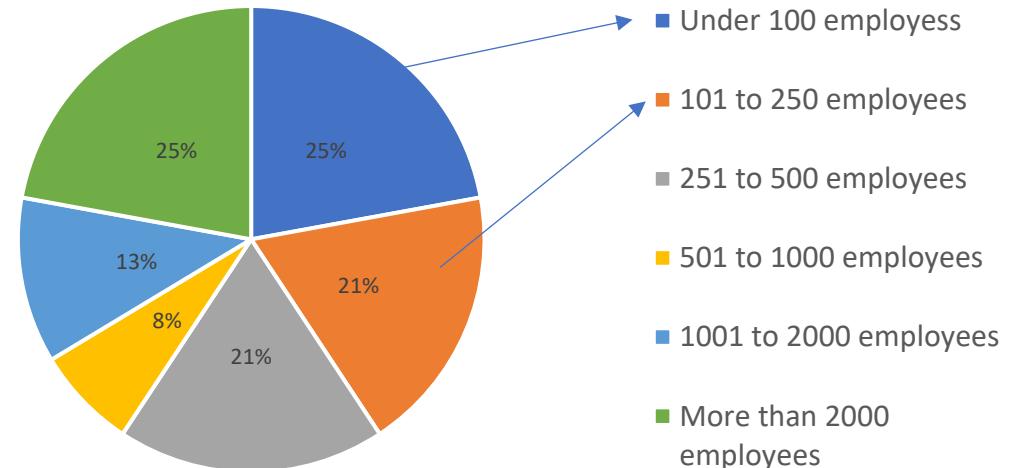
The employees who answered come from 15 countries : Romania, Spain, Italy, Germany, Greece, Finland, Canada, Belgium, Netherlands, Nigeria, Czech Republic, Austria, United Kingdom, Thailand, Luxembourg

D1 - Which air transport sector do you currently work?

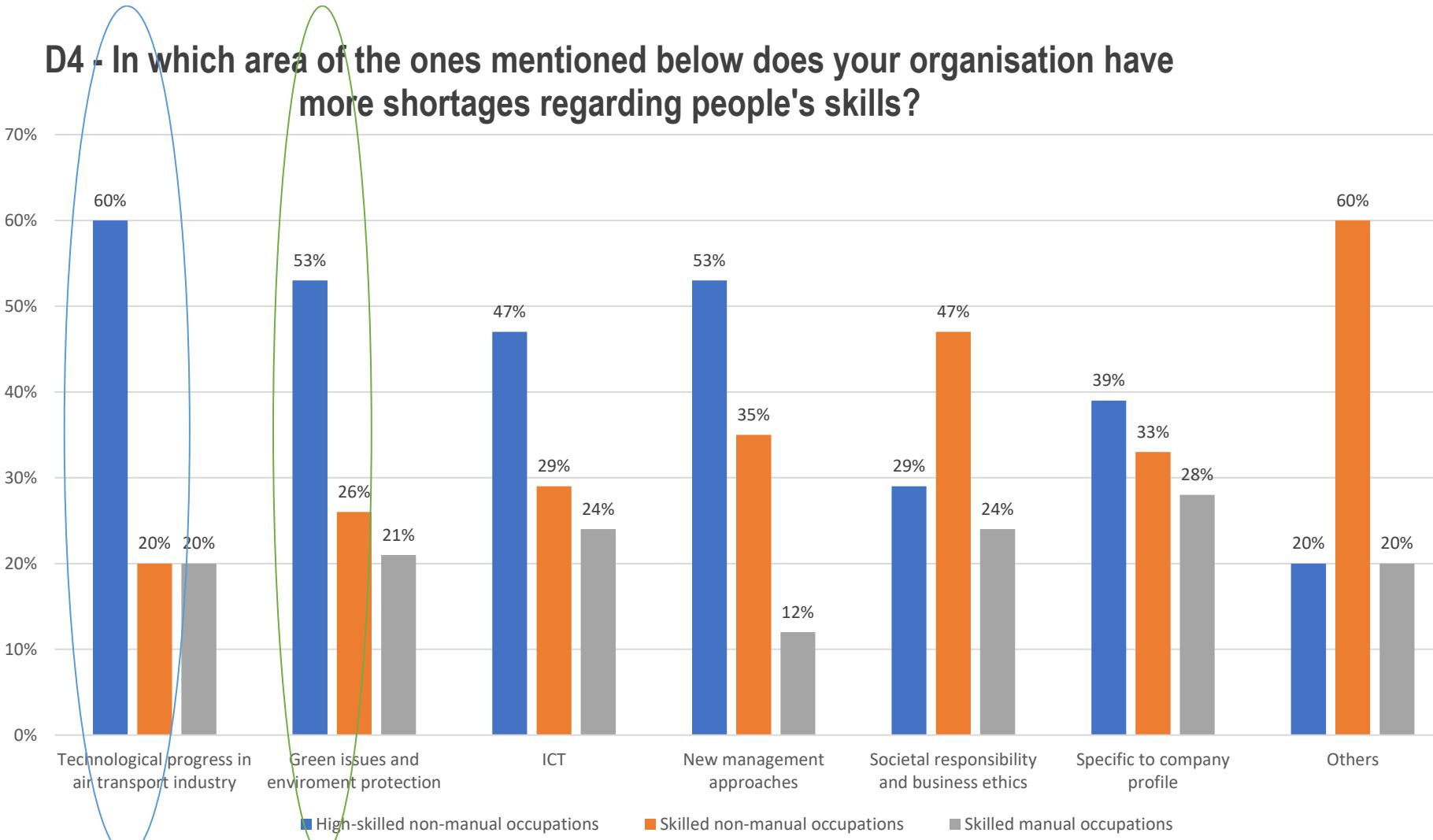


Respondents' profile

D2 - How many employees work at your organisation?



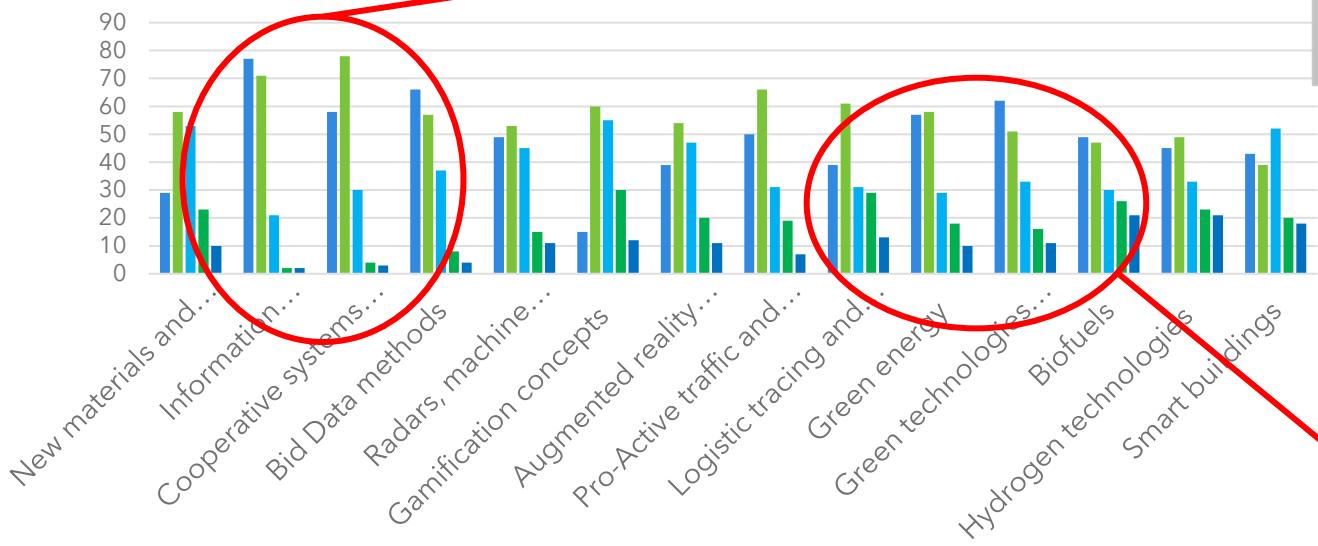
Skills shortages in air transport



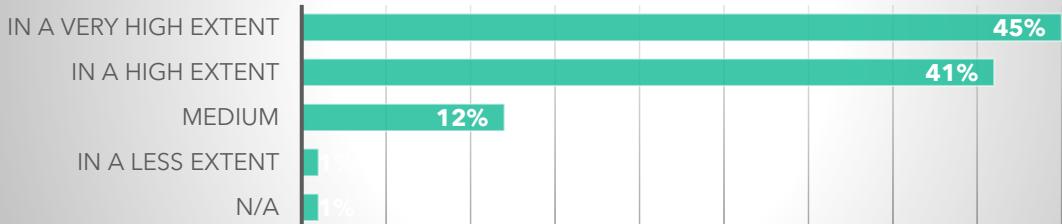
Survey requested by the European Commission, Directorate-General for Employment, Social Affairs and Inclusion and coordinated by the Directorate-General for Communication

A slim majority of SMEs (52%) say it is 'very difficult' to find workers with the right skills and about a quarter (26%) say this is 'moderately difficult'.

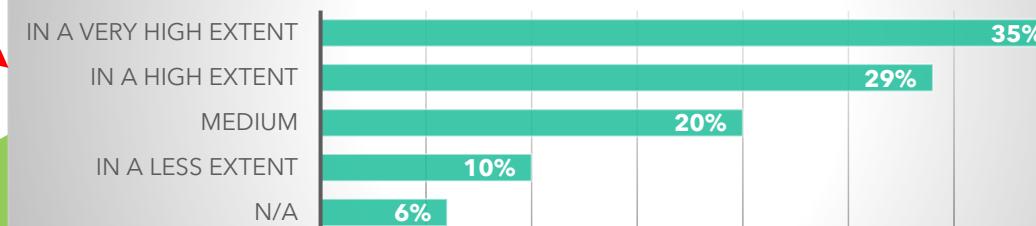
To what extent the following approaches and technologies **affect** your current occupation - Employee opinion



In your opinion, to what degree will **information technologies** and applications affect your current occupation in the aviation sector?



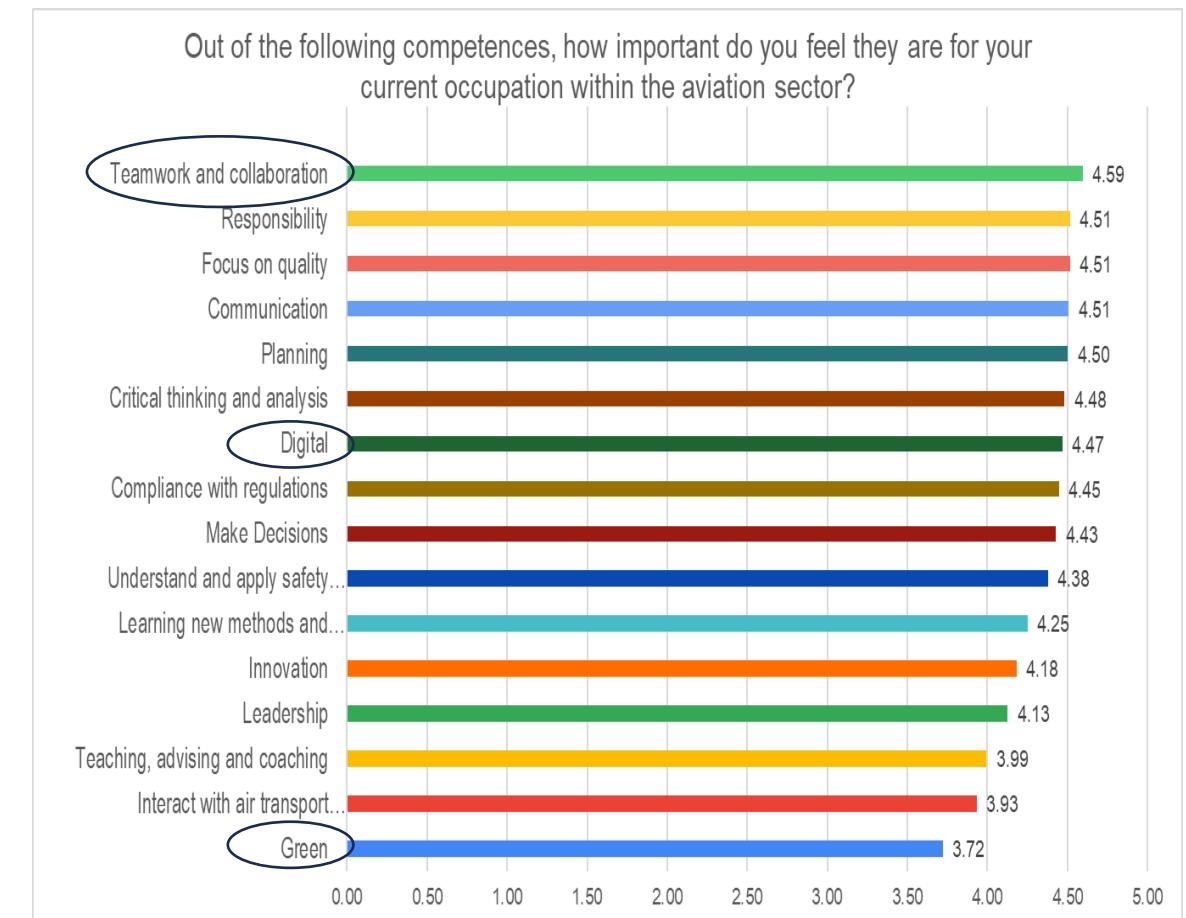
In your opinion, to what degree will **green technologies** for aviation affect your current occupation in the aviation sector?



■ In a very high extent ■ In a high extent ■ Medium ■ In a less extent ■ Not at all

The opinion of employees from air transport about the importance of competences in their current occupation

- **teamwork** and **collaboration**, **communication**, **digital skills**, **quality**, **responsibility**, **critical thinking and analysis**, and **compliance with regulations** as the most relevant skills for their current occupation
- **green competences** were deemed unimportant for their current jobs in air transport, receiving the lowest average score among the listed competences



3. New occupations link to digitalization and sustainable development and importance of skills required



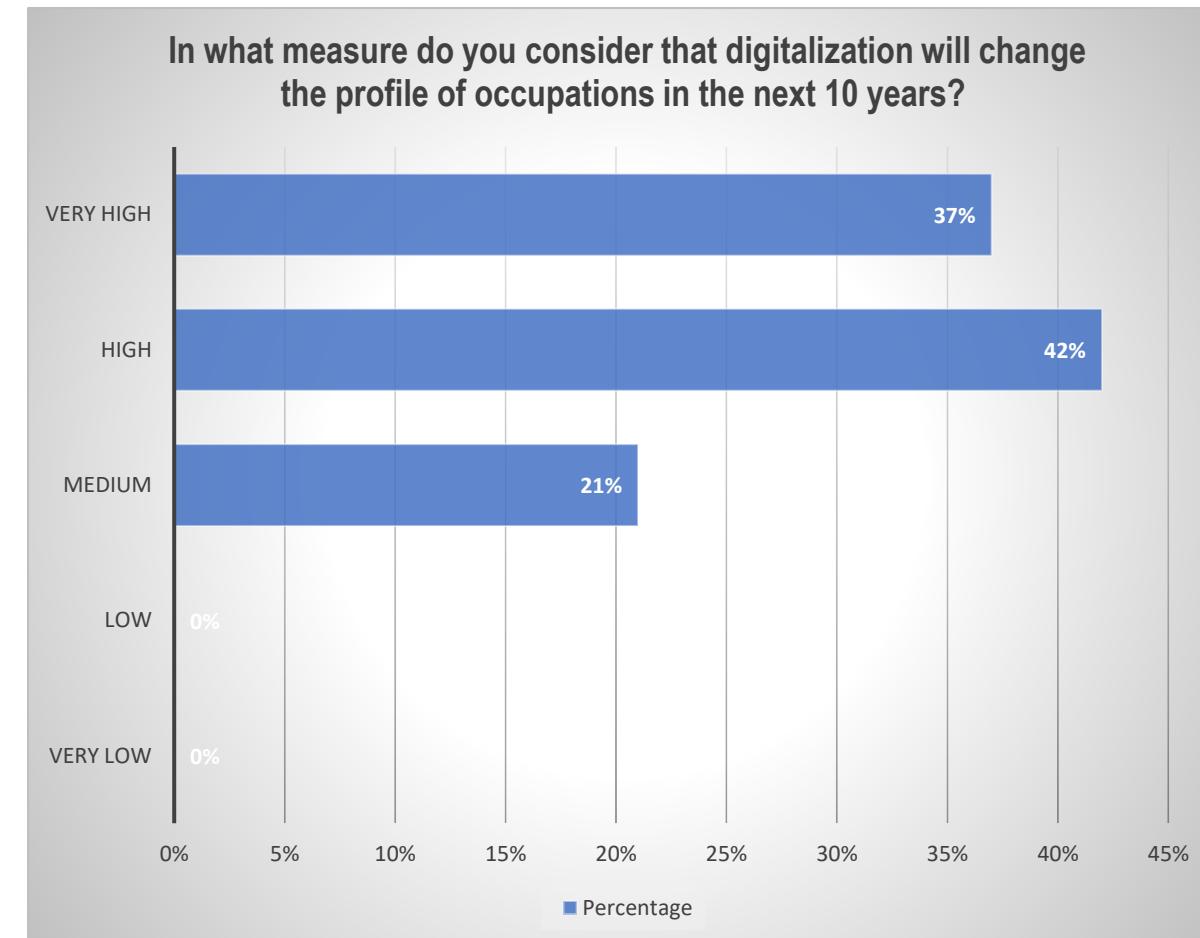
WHICH OCCUPATIONS DO YOU THINK ARE GOING TO DRASTICALLY CHANGE? WHICH OCCUPATIONS DO YOU THINK ARE GOING TO DISAPPEAR BY 2030? - directors' perspective

Changing

- Energy and **maintenance engineer**: thermal, solar;
- **Electric engineer**/ Alternative vehicle developers;
- **Aviation Data Analyst**;
- Electric Aircraft Technician
- ATC.
- **Pilot**.
- **SMS specialist**.
- Customer service desk.

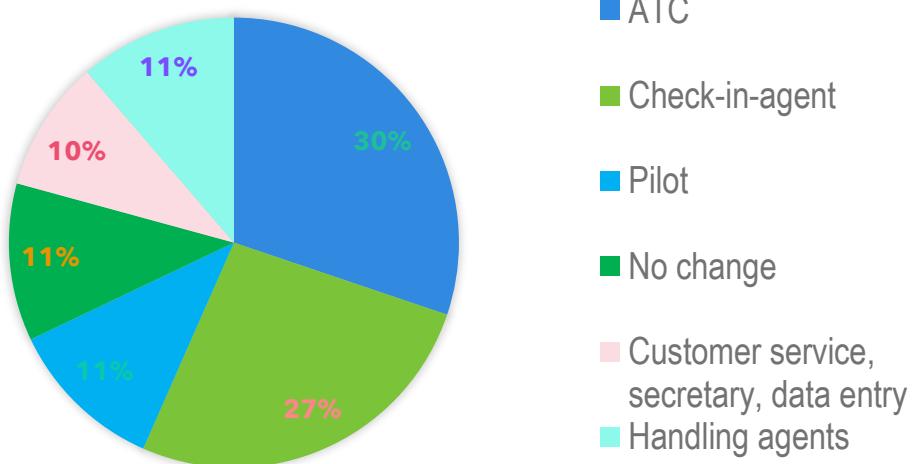
Disappear

- Cashier.
- On-board co-pilot.
- Security control.
- Ground handling drivers.
- Companies counter for checking.
- Manual data input occupations.

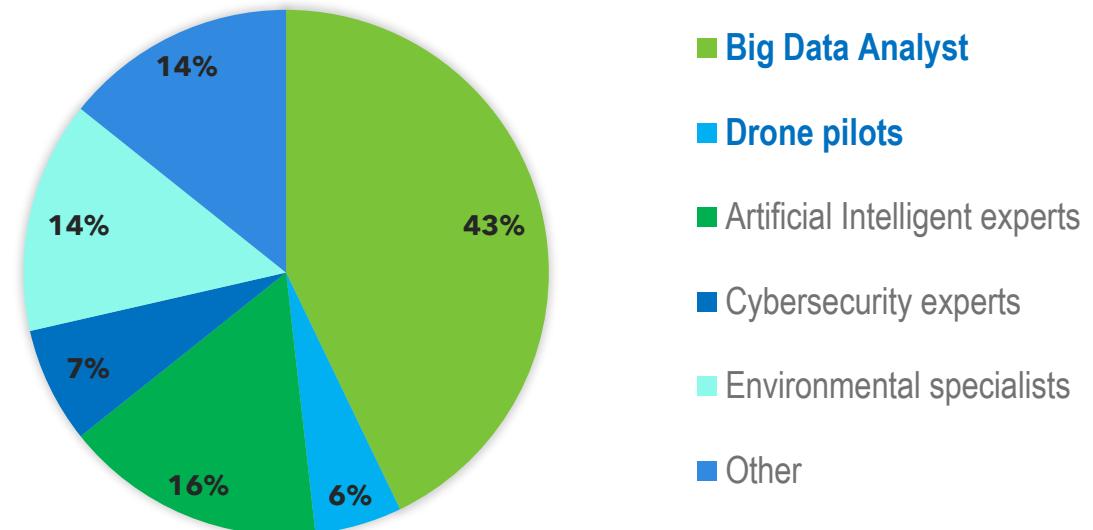


Which occupations do you think are going to drastically change or disappear by 2030 - Employee opinion

WHICH OCCUPATIONS DO YOU THINK ARE GOING TO DRASTICALLY CHANGE OR DISAPPEAR BY 2030?

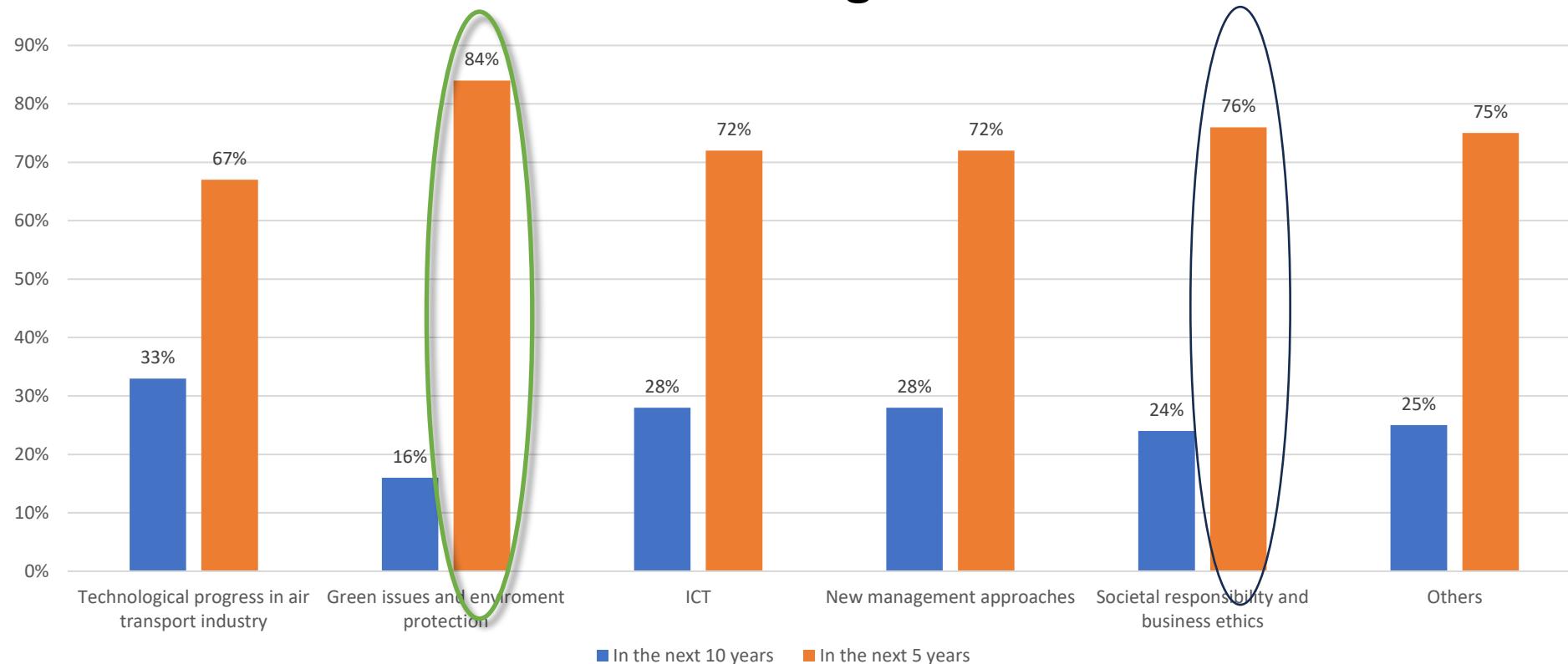


WHAT NEW OCCUPATIONS DO YOU EXPECT ARE GOING TO BE CREATED IN THE NEXT 10 YEARS IN THE ORGANISATION YOU WORK FOR?



OECD made a bold forecast, it predicted: Within 15 to 20 years, new automation technologies were likely to eliminate 14% of the world's jobs and radically transform another 32%.

Relevant new occupations identified by directors to be created in their organizations



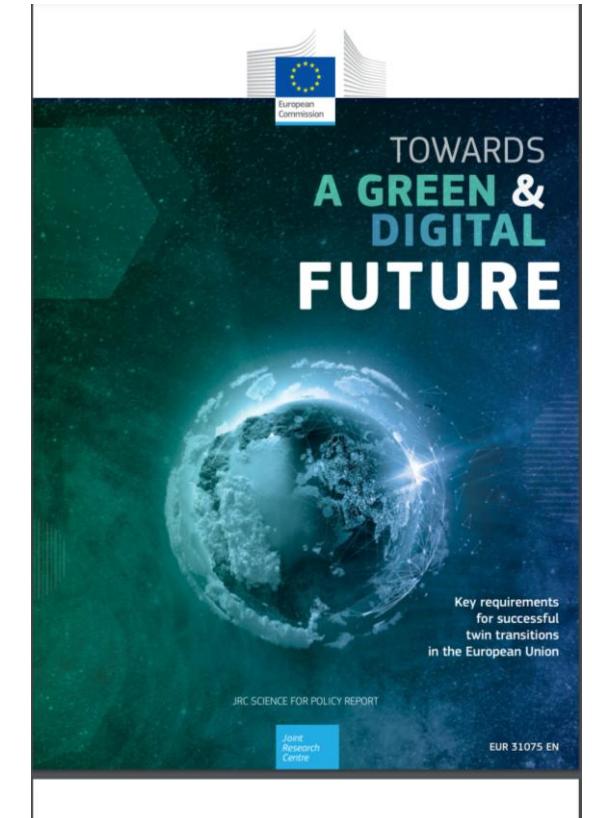
new energy sources for aviation, new fuels

What new occupations do you consider are relevant to be created in your organization due to the dynamic labor market, technological progress, environment protection, ICT, new management approaches and societal responsibility aspects?

Emerging occupations

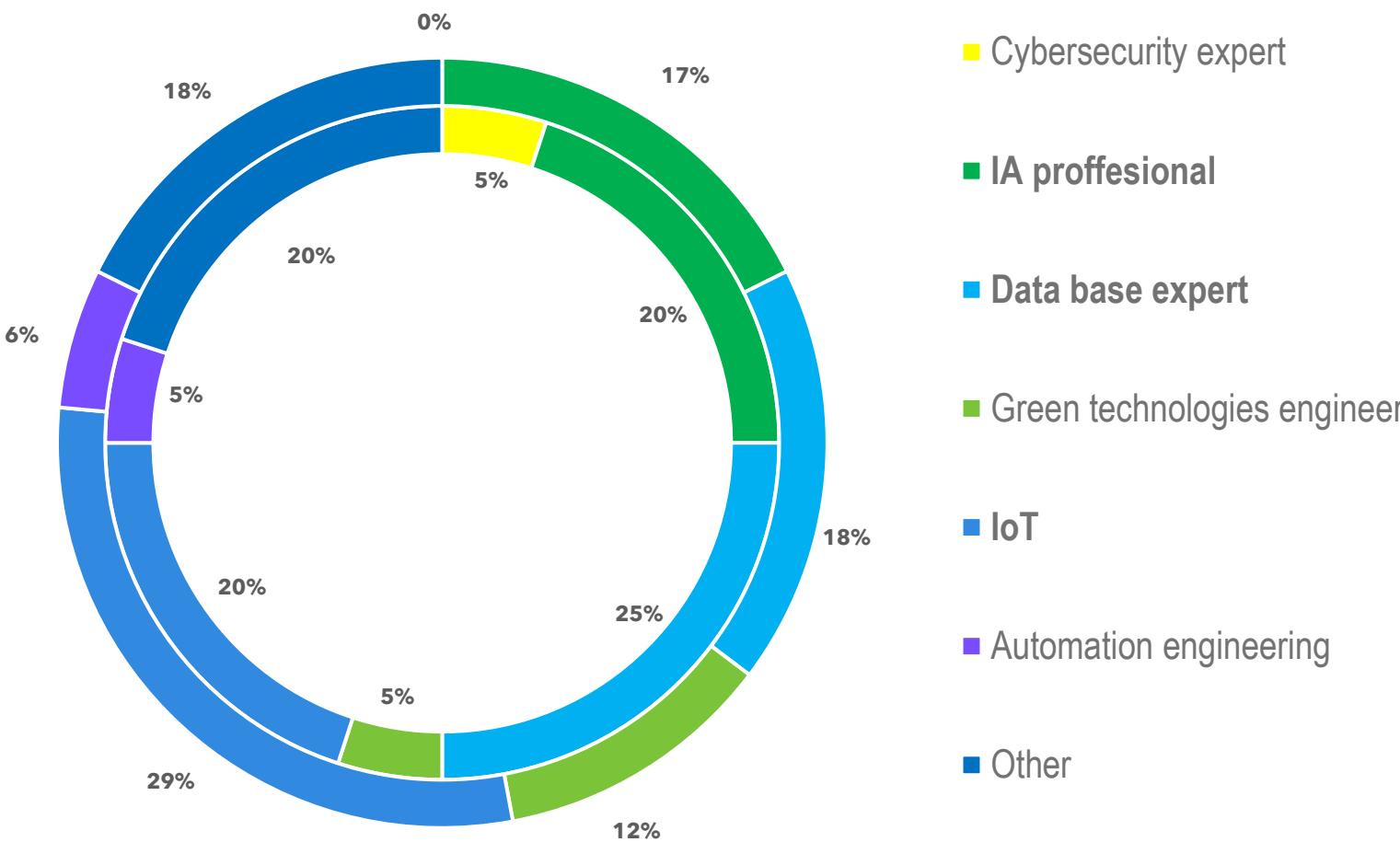
- Specialist in environment
- Sustainable Aviation Policy
- **Sustainable Aviation Engineer**
- Sustainable Airport Planner
- **Climate change specialist**
- Consumer energy analysts
- Air Quality Analyst
- Sustainable Aviation Educator
- **Green Fuels Researcher**
- Battery technicians
- Solar flight specialists
- Pilots for UAV
- **Drone Traffic Manager**
- Thermal

The digitalisation and the sustainability are a cross sectorial actions which suppose advanced skills and competences in aviation, ICT and sustainability simultaneously.



Educators' opinion on new occupations regarding technological progress

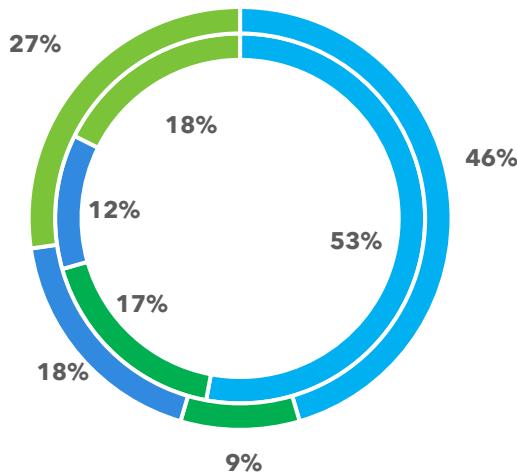
What **new occupations regarding technological progress** in air transport industry do you consider relevant to be created in the next 5 years? And in the next 10 years?



Future occupations – educators' opinion

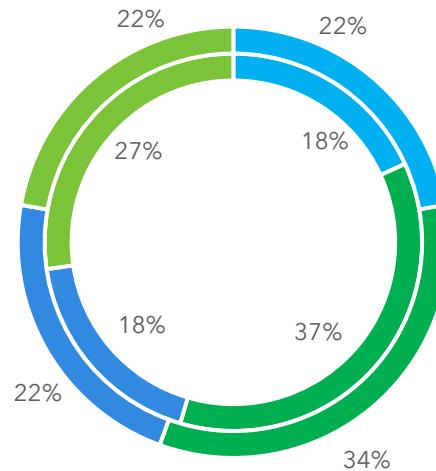
Future occupations that will lead the air transport in 5 and 10 years concerning ICT and sustainable development:

WHAT NEW OCCUPATIONS REGARDING **ICT** DO YOU CONSIDER RELEVANT TO BE CREATED IN THE NEXT 5 YEARS? AND IN THE NEXT 10 YEARS?



- Big data anlist and collector
- AI
- Cyber security supervisors
- Other

What new occupations regarding **Environment protection** do you consider relevant to be created in the next 5 years? And in the next 10 years?



- Ambiental science engineer
- Green airport manager
- Maintenance electrical engines
- Other

Interdisciplinary occupations

Categories of occupations	Groups	Occupations
Aviation and ICT	Big Data applied in aviation	Big Data Architect, Data Scientist, Data Analyst, Chief Data Officer, Data Protection Officer
	Cybersecurity	Auditor, Crisis Management Specialist, Expert intrusion tests, Head of the Information Systems Security, Secure communication supervisor
	Data Storytelling	Data Storyteller, Data Scientist, Business Analyst, Web Analyst
	Data Science	Chief Data Officer, Data Steward, Data Analyst, Data Scientist, Data-Miner, Developers and integrators of blockchain and virtual technology, AI engineer
	Piloting	Remote pilot
	New management approaches	Expert in flight procedure design, managers for ACDM and APOC implementation

Interdisciplinary occupations

Categories of occupations	Groups	Occupations
Aviation, ICT and Marketing	Search Engine Optimization (SEO)	SEO Manager, SEO Consultant, Content Manager, Traffic Manager
	E-CRM (Electronic Customer Relation Management)	CRM Responsible, Consultant, CRM Manager, Project Manager, Data Analyst
	E-reputation	E-reputation Manager, E-reputation Consultant, Advisor / Watchman in e-reputation, Community Manager, Content Manager
	User eXperience (UX) / User Interface (UI) design	Service Designer, UX Manager, UI Designer, UX Designer, Ergonomist Designer

Big categories of Occupations	Groups	Occupations
Aviation and sustainable development	Sustainable aviation research	Sustainable experts. Green energy researchers, Climate Change Reversal Specialist, Green Fuels Researcher
	Circular economy management	Alternative energy engineer, circular economy manager
	Electrical engineers	Battery technician, Energy and maintenance engineers, electrical GSE engineers, Energy and maintenance engineer: thermal, solar; electric aircraft technician, engineer for maintenance hydrogen systems
	Sustainable aviation experts	Sustainable airport engineer, Airport environmental system manager, Sustainability consultant, green lead airport operation manager, environmental risk manager, Sustainable Aviation Policy, Air Quality Analyst, Solar flight specialists, Director for sustainable aviation
	Biofuels	Chemistry engineer, Biology experts

Big categories of Occupations	Groups	Occupations
Aviation, ICT and sustainable development	Airport operations optimization	Air traffic manager, chief operations officer, Sustainable Airport Planner. Consumer energy analysts, Optimization researcher or expert
	Alternative vehicle developer	Project Manager, Data Analyst, Designers of autonomous vehicles Safety officers for unmanned systems, Pilots for UAV
	Management of vertiports	Vertiport operation officer, CEO vertiports, Advanced ATC officers
	Maintenance of new IT equipment based on green energy	Technicians/ engineers for green energy equipment



Skills for the green transitions

- **Technical:** required **to adapt or implement standards, processes, services, products and technologies to protect ecosystems and biodiversity, and to reduce energy, materials and water consumption.** Technical skills can be **occupation-specific or cross sectoral;**
- **Transversal:** linked to **sustainable thinking and acting**, relevant to work (in all economic sectors and occupations) and life.

The main skills demand by new occupations

Technological skills:

- Connectivity
- IoT
- Network
- Interoperability
- Security of data
- Virtual and augmented reality
- Solve problems
- Innovation
- Energy non conventional sources
- Green technologies

Non-technological skills:

- Knowledge management
- Sharing information
- Teamwork and collaboration
- Autonomy and responsibility
- Initiatives and decision making
- Creativity
- Communication

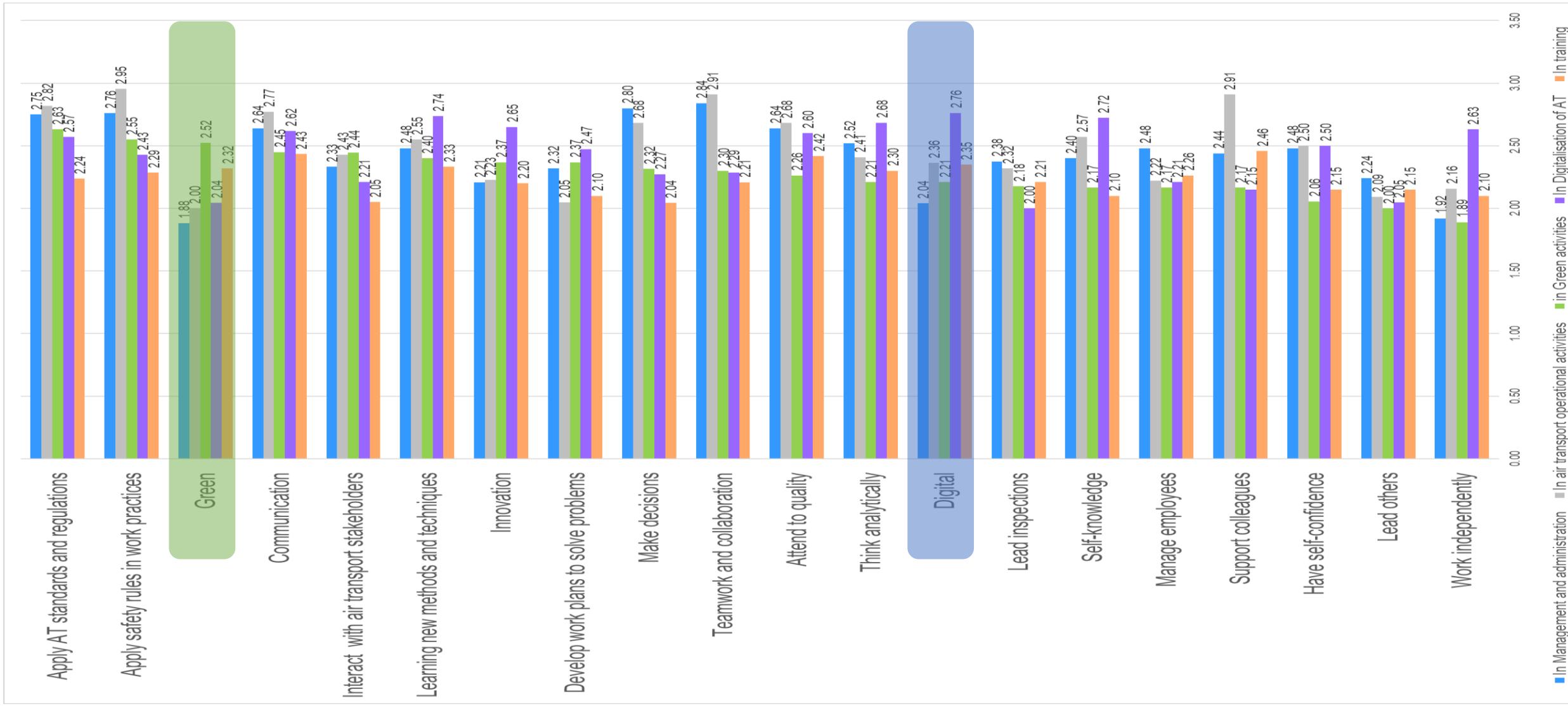
Cross sectorial skills:

- Project management
- System Engineering
- Quality of life at work (wellbeing)
- Social networks

WHAT SKILLS LEVEL DO THESE NEW OCCUPATIONS REQUIRE?

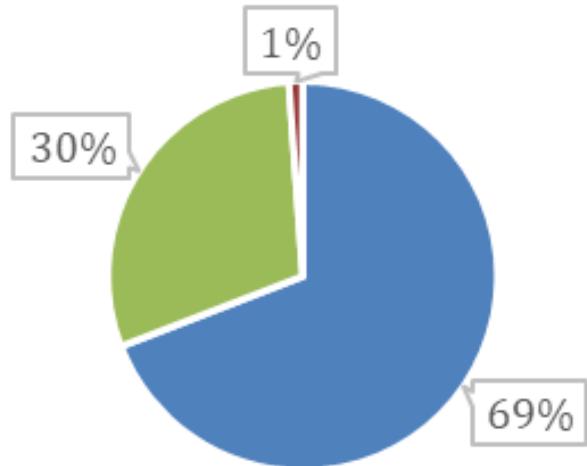
HIGH-SKILLED NON-MANUAL OCCUPATIONS	SKILLED NON-MANUAL OCCUPATIONS	SKILLED MANUAL OCCUPATIONS	ELEMENTARY OCCUPATIONS (LABORER)
<ul style="list-style-type: none"> Knowledge of space data and services for aviation applications (GNSS, Copernicus products); knowledge of AI, machine learning. Fundamentals of industrial IoT architectures and AI technologies Industrial problem-solving using problem taxonomy. Application of AI in Edge Computing environments. Knowledge transfer system for I4.0 problem solving. Drive timeliness and efficient operation to ensure success. Build and maintain external relationships with organizations to leverage and ensure the best service for the airport. Level 7. 	<ul style="list-style-type: none"> Carry out and manage the company's strategic framework and pricing model for commercialisation in the area of sustainable aviation fuel. Negotiate commercial deals in collaboration with internal capital projects and finance managers and external advisors. Conduct desktop research to build our pipeline of potential customers. Be a technical expert and promote innovation in a particular area of sustainability, such as waste, energy/carbon, water, responsible sourcing of materials, sustainable buildings, etc. Level 6. 	<ul style="list-style-type: none"> New management, new technologies, digitalization/IT/digitalization engineering. Level 5. 	<ul style="list-style-type: none"> Basic education and on the job training Professional degrees IT/digitalization Level 4 or 5

The ranking of competences, according to top managers from air transport industry



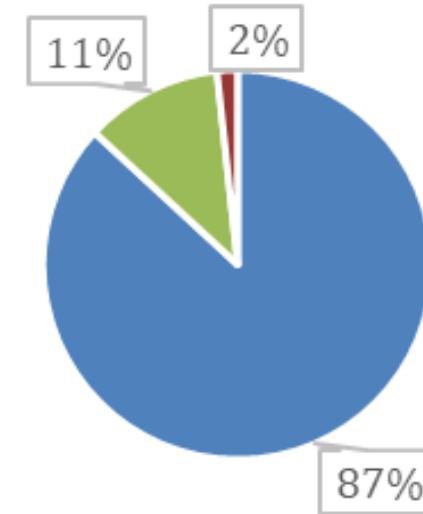
The importance of green competences

The importance of Green competences in the past 5 years



- Increased
- Remained the same
- Decreased

The importance of Green competences in the next 10 years



- Increased
- Remained the same
- Decreased

Green competences are highly valued in the current period and are expected to become even more important in the future (*employees' questionnaire*)

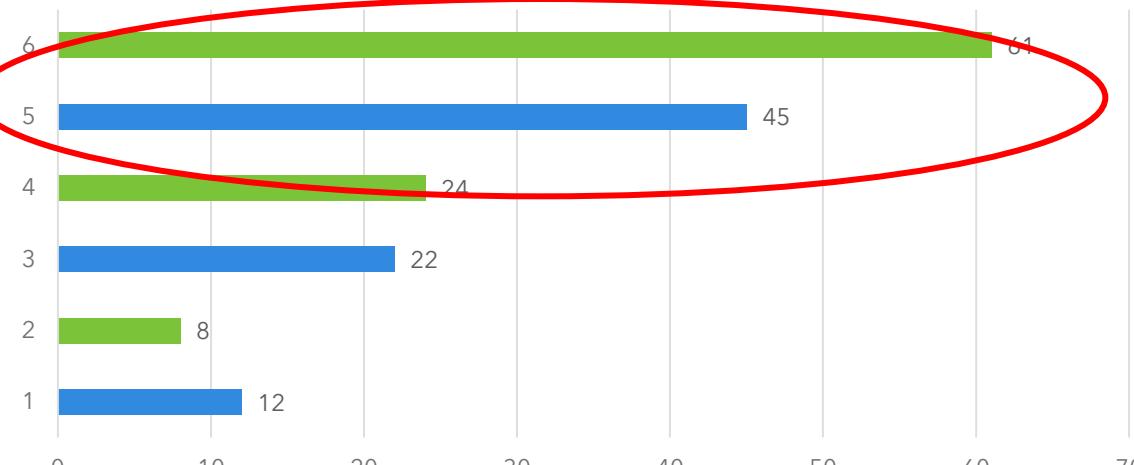
4. Education and employee training



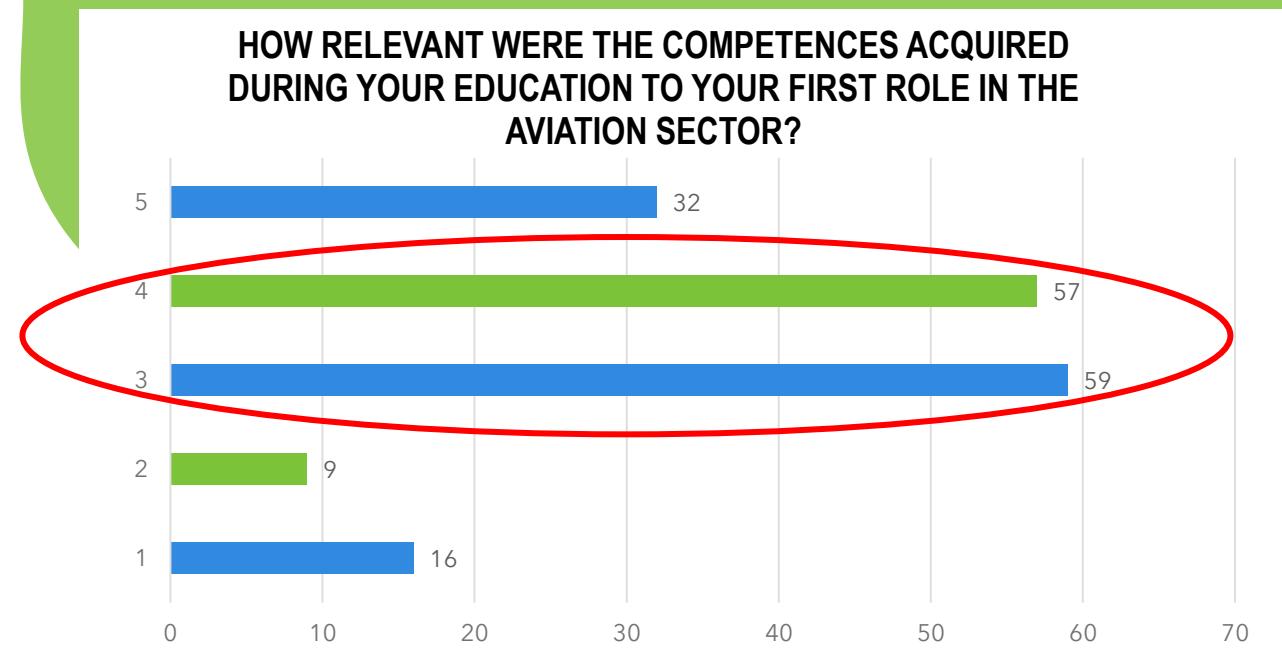
Education and employee training

Related with the occupations of the future, the surveys also ask the employees on the education. Something fundamental is that the training (education and on-the-job training) is useful for the employees.

HOW HELPFUL WAS THE INITIAL TRAINING YOU RECEIVED FROM THE ORGANISATION YOU WORK FOR WHEN YOU STARTED YOUR JOB?



HOW RELEVANT WERE THE COMPETENCES ACQUIRED DURING YOUR EDUCATION TO YOUR FIRST ROLE IN THE AVIATION SECTOR?

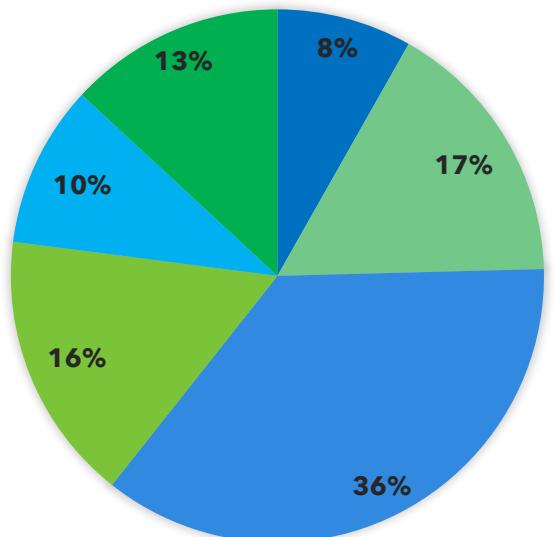


Preferences for training

Employee opinion

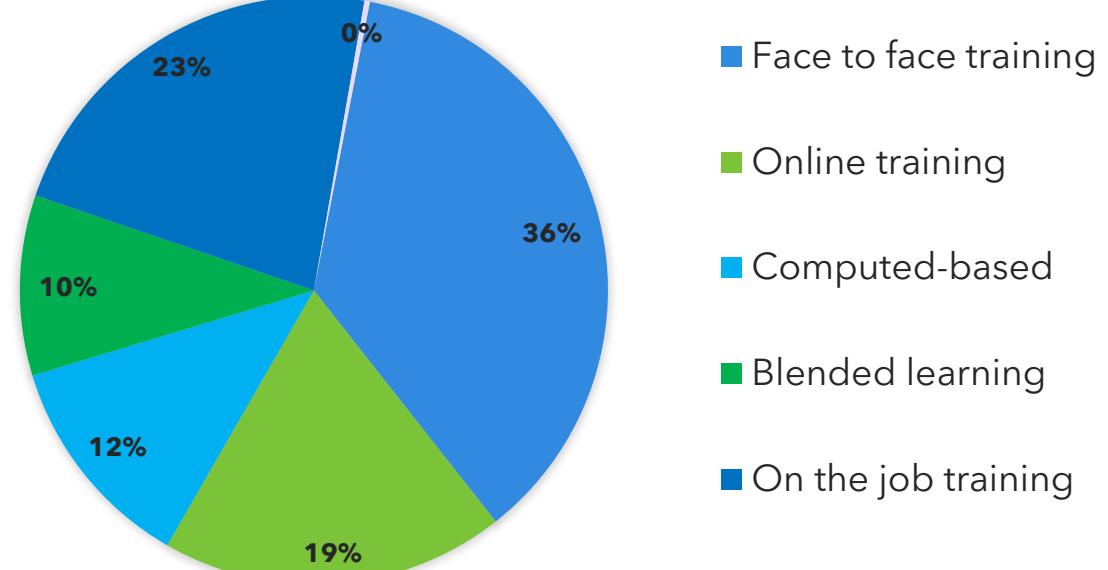
HEIs should provide the education that the employees really need. We questioned the employees about their education preferences in topic and in the way the education is given.

WHAT NEW TRAINING COURSES OR TOPICS WOULD YOU
CONSIDER VALUABLE / ESSENTIAL FOR YOUR CURRENT
OCCUPATION?



- Programming
- Management
- Digital competences
- Safety courses
- Leadership

DO YOU HAVE PREFERENCE FOR HOW THIS
TRAINING SHOULD BE DELIVERED?



- Face to face training
- Online training
- Computed-based
- Blended learning
- On the job training

SMART OCCUPATIONS → NEW AND IMPROVED QUALIFICATIONS

The **technological revolution** in aviation and the **environmental constraints** favour the emergence **of new occupations** which demand **new qualifications** (defined by new skills and knowledge), in many situations interdisciplinary and with a very high level.

The everchanging nature of the jobs and dynamic transformations in aviation have an important technological pillar → must be supported by **study programs that provide smart interdisciplinary qualifications**.



AVIONIC LEARN



Future-Proofing Aviation Education: Innovative Curriculum and Digital Tools



AVIONIC LEARN LANDING PAGE

Access to latest global, regional, national **NEWS** on topic always available for:

- Professionals
- Students
- Industry
- Academia

Open Educational Resources



TEACHING AND LEARNING Digital Learning for Green Air Transport and Logistics

The project addresses three European priorities in the national context with a highlight on the innovative and transferable results and practices

News

The latest news, analysis and opinion on Aviation industry



ACI
Traffic Analysis
Forecast 2023-2025

ACI World Airport Traffic Forecasts
2023-2025

AIR TRAFFIC FORECASTS AT GLOBAL,
REGIONAL, AND COUNTRY LEVELS



REPORT
60,000 jobs: New pilots needed to
fly 'air taxis'

Forecast on air taxi pilots compounded by
demand for more commercial pilots



PODCAST
Top Aviation Podcasts to Follow in
2024

Whether it's a light overview or a deeper discussion, aviation podcasts offer both professionals and enthusiasts the opportunity to be included in conversations on topics affecting the industry



ANALYSIS
Analysis: Old Tech Boeing 737 &
Airbus A320 Planes Make Up 70% Of
Narrowbody Fleet

Despite being in service for almost a decade,



CFM INTERNATIONAL
Future of Aviation
Mobility and its pillars of transport (air, inland and maritime) are at the very center of our socio-economic fabric.



CFM INTERNATIONAL
Non-Synchronous Vibration: EASA
Calls For New Checks On LEAP 1-A
Engine Used On A320neo Family
While EASA has issued its final airworthiness

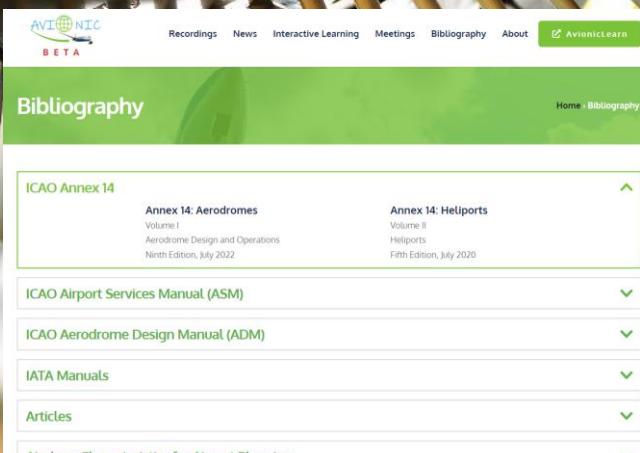
Recordings

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News

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Interactive Learning

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Bibliography

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- ICAO Annex 14**
 - Annex 14: Aerodromes
 - Annex 14: Heliports
- ICAO Airport Services Manual (ASM)**
- ICAO Aerodrome Design Manual (ADM)**
- IATA Manuals**
- Articles**
- Airplane Characteristics for Airport Planning**

About

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Hello, there!
We'll be glad to here from you.

Contact us and we will be happy to answer your questions.

[LinkedIn Avionic](#)

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Phone
(+4) 021 402 9096

Address
Splaiul Independentei 313, București, Sector 6, 060042, Clădirea Campus,

My courses

Course overview

<input checked="" type="checkbox"/> All	<input type="text" value="Search"/>	Sort by last accessed	Card
<input type="checkbox"/> In progress			
<input type="checkbox"/> Future			
<input type="checkbox"/> Past			
<input type="checkbox"/> Starred			
<input type="checkbox"/> Removed from view			



In progress

FACTORES HUMANOS Y AUTOMATIZACIÓN EN ATM

ATM



FACTORES HUMANOS Y AUTOMATIZACIÓN EN ATM

ATM



Desarrollo del concepto operacional en ATM

ATM



ATM Concepts Evolution

ATM



Aviation and Environment

UPB



Smart Airports

UPB

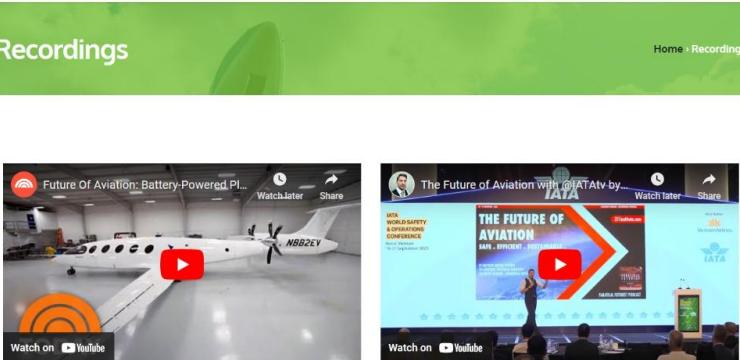


AVIONIC LEARN LANDING PAGE

RECORDINGS

B E T A

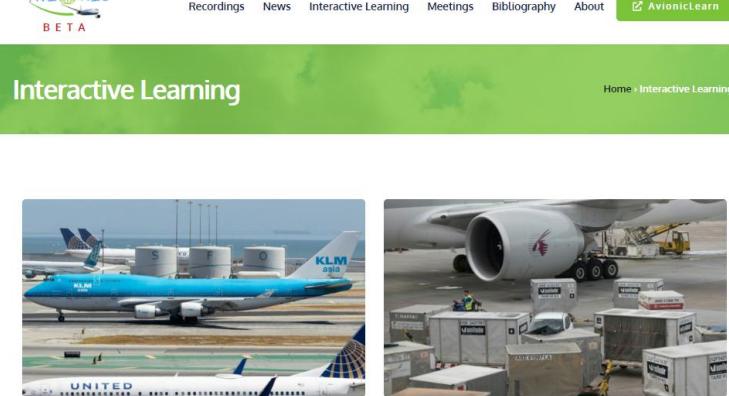
Recordings



Future Of Aviation: Battery-Powered Planes
Producing Zero Emissions

The Future of Aviation with @IATAtv
In this keynote presentation for IATA in Vietnam, Hanni Matthew Griffin the

INTERACTIVE LEARNING



AVIONIC
B E T A

Interactive Learning

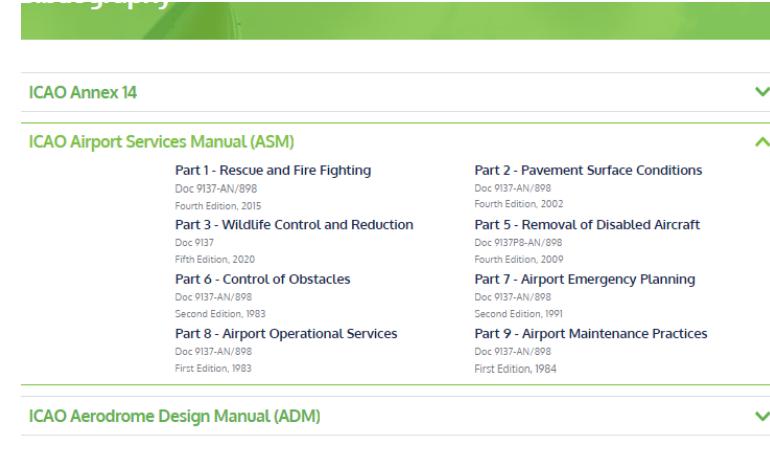
Recordings News Interactive Learning Meetings Bibliography About AvionicLearn

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Access to latest global, regional, national **recordings**, available for different levels of experience:

- Professionals
- Students
- Industry
- Academia

BIBLIOGRAPHY



ICAO Annex 14

ICAO Airport Services Manual (ASM)

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Doc 9137-AN/898
Fourth Edition, 2015

Part 3 - Wildlife Control and Reduction
Doc 9137
Fifth Edition, 2020

Part 6 - Control of Obstacles
Doc 9137-AN/898
Second Edition, 1983

Part 7 - Airport Emergency Planning
Doc 9137-AN/898
Second Edition, 1991

Part 9 - Airport Maintenance Practices
Doc 9137-AN/898
First Edition, 1984

Part 2 - Pavement Surface Conditions
Doc 9137-AN/898
Fourth Edition, 2002

Part 5 - Removal of Disabled Aircraft
Doc 9137P8-AN/898
Fourth Edition, 2009

Part 8 - Airport Operational Services
Doc 9137-AN/898
First Edition, 1983

ICAO Aerodrome Design Manual (ADM)

MY LEARNING JOURNEY

MY COURSES



My courses

Course overview

Course	Provider	Completion
Air Traffic Operations (ATO)	UPB	0% complete
Smart Airports	UPB	4% complete
Infrastructures des Aéroports	UPB	0% complete
Aviation 4.0	UPB	0% complete
Aviation and Environment	UPB	0% complete
Desarrollo del concepto operacional en	ATM	0% complete



AVIONIC Learn- My courses

- Courses overview from multiple stakeholders, multidisciplinary approach, one unified educational journey
 - Multiple display, search options, progress completion rate, save for later, forum with peers, discussion corner, badges upon completion

My courses

Course overview

All Search Sort by last accessed Card

Air Traffic Operations (ATO)
UPB 0% complete

Smart Airports
UPB 4% complete

Infrastructures des Aéroports
UPB 0% complete

Aviation 4.0
UPB

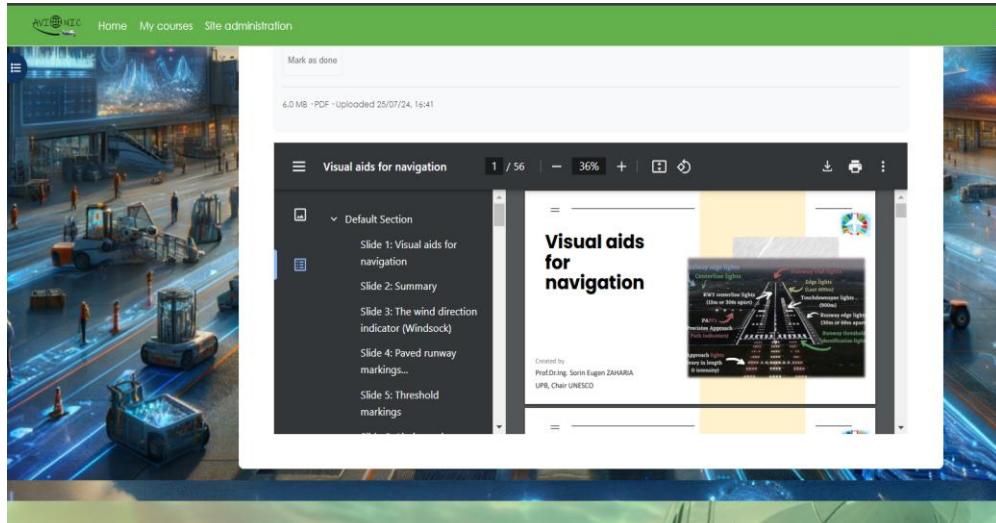
Aviation and Environment
UPB

Desarrollo del concepto operacional en ATM
UPM

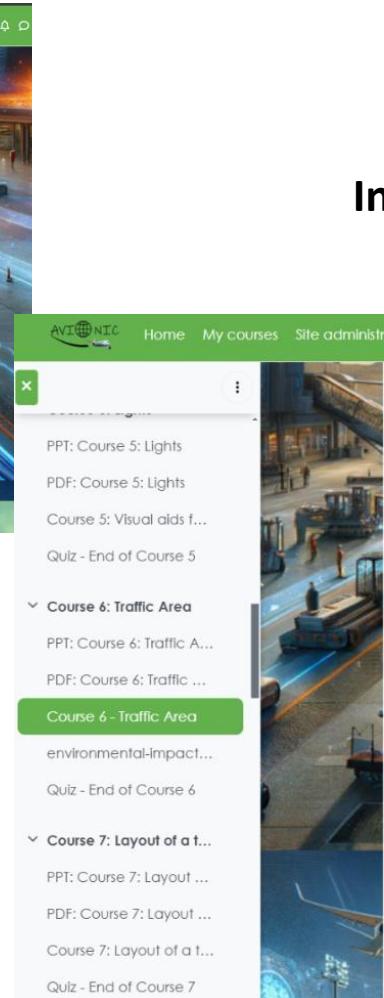


Curriculum design

Project branding



The screenshot shows a Moodle course page for 'Visual aids for navigation'. The page has a green header with the course name and navigation links. The main content area displays a presentation slide titled 'Visual aids for navigation' with a sub-slide showing a diagram of an aircraft with various navigation lights labeled. Below the slide, there is a list of course modules and their sub-components, such as 'Course 5: Lights', 'Course 6: Traffic Area', and 'Course 7: Layout of a t...'. Each module has a green 'View' button.



The screenshot shows a Moodle course page titled '14 Associating Issues'. The page has a green header with the course name and navigation links. The main content area displays a slide titled 'Associating Issues' with three sections: 'The Aircraft and its Pilot', 'The Ground Handler', and 'The Airport Operator'. Each section has a list of parameters. Below the slide, there is a list of course modules and their sub-components, such as 'Course 5: Visual aids f...', 'Course 6: Traffic Area', and 'Course 7: Layout of a t...'. Each module has a green 'View' button.

Intuitive navigation of the learning path



AVIONIC Learn- My courses, gamified learning

Question 3
Not yet answered
Marked out of 1.00
Flag question
Edit question
v1 (latest)

Match Distances Associated with the Aerodrome:

Sense of use

Unbalanced system

The diagram illustrates an unbalanced runway system. An airplane is shown on the left, facing a runway. The runway is divided into segments: a long section labeled 'Runway', a shorter section labeled 'Stopway' at the end, and a green section labeled 'Clearway' beyond it. Four horizontal arrows point from the start of the runway towards the stopway, labeled 'LDA', 'TORA', 'ASDA', and 'TODA' respectively. The 'Sense of use' label is positioned above the diagram, and the title 'Unbalanced system' is centered above the runway segments.

LDA TORA ASDA TODA

Previous page Next page

Question 5
Not yet answered
Marked out of 1.00
Flag question
Edit question
v1 (latest)

Associate each term with the corresponding image:

The matching game consists of five pairs of items. Each pair has a term on the left and a corresponding diagram on the right. The terms are: 'Runway Strip' (four white circles), 'Runway' (one red circle), 'Stopway' (two red circles), 'Clearway' (three red circles), and 'RESA' (four red circles). Each term is followed by a small input box for selection. Below the pairs are four buttons: 'Low', 'High', 'Too Low', and 'Too High', followed by a 'Correct Path' button.

Low High Too Low Too High Correct Path

AVIONIC Home My courses Site administration

Course 2: The Runway
PPT: C2 - Airport Runway...
PDF: Course 2: The Runway...
Course 2: The Runway ...
Quiz - End of Course 2 ...
PPT: C2 - Airport Runway...
PDF: Course 2: The Runway...
Course 2: The Runway ...
Quiz - End of Course 2 ...
Course 3: Airport acc...
PPT: C3 - Airport Acc...
PDF: Course 3: Airport ...
Course 3: Airport acc...
Quiz - End of Course 3
Course 4: Visual aids f...
PPT: Course 4 - Visual ...

Quiz - End of Course 2 - Part 2

Quiz Settings Questions Results Question bank More

Time left 0:09:21 Hide

Back

Question 5
Not yet answered
Marked out of 1
Flag question
Edit question
v3 (latest)

Match the following terms with their correct definitions:

Stopway Choose...
Clearway Choose...
RESA Choose...
Runway Strip Choose...
Choose...
A clear area beyond the runway end used for the initial climb of the aircraft.
An area beyond the runway intended to reduce damage in case of overrun.
An area that allows an aircraft to complete an interrupted take-off without damage.
A safety area including the runway and stopways.

Previous page

VR education, “Hands-on” learning scenarios

Immersive Learning Experience

Enhanced Knowledge Retention

VR training can be significantly more cost-effective than traditional methods, especially for industries that require specialized training or expensive equipment

Interactive Assessments

VR-based assessments offer real-time feedback and allow learners to practice skills repeatedly in a safe environment.



5. Conclusion: Key findings

- **Importance of skills for air transport institutions**
 - A slim majority of respondents from employees (54%) say that for them **digital skills are extremely important** and about 38% **very important**. This means that in most jobs in aviation, computer tools are used, the employees being forced to know these technologies.
 - **Innovation** is considered extremely important or important by 85% of respondents
 - **Green skills are considered less important than digital skills**. Only 26% of respondents consider them extremely important and 34% consider them important. This could mean that an institutional culture oriented towards reducing the impact on the environment and developing green competences among employees has not yet been formed. The occupations do not require environmental knowledge and skills.
- **Skills shortages, recruitment and retention**
 - There is still many managers of aviation institutions with a wrong approach to develop green skills to employees.
 - The development of **green skills is not only necessary for those directly involved in this sector, but for all employees**, especially for those who make decisions, because operational or development decisions must be taken considering societal responsibility.

Conclusion: Key findings

- **Tackling skill and qualification challenges**
 - 44 % of employees consider the **courses on digital skills** essential for their job
 - 43% of employees consider the **big data analyst** one of **the most demanded qualification**
 - 30% among the interviewees consider **ATC** as an occupation that will drastically change.
 - As is common with new technologies, there are also challenges such as **regulatory and safety challenges**.
 - **Personnel with interdisciplinary skills is needed**, for example: ICT and aviation, economics and aviation, marketing specialists for air transport, green energy and air transport infrastructure, management for air transport or for multimodal transport.
 - competences such as **people management, complex problem solving and decision-making will be imperative**
- **Employee training**
 - Initial HE is useful for the carrier development
 - 36% employees prefer face to face training and 23% like on job training



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Thank you very much for your attention!

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