



Research initiative for Enhancing and Adapting
Workforce SKILLS for Implementing TraNsport
Automation with Employment Growth

ReSKILLING Annual Virtual Stakeholder Event

From Automation to Employment: Skills for Europe's Transport Future

16 December | 13:30 - 16:45 (CET) | Online



Funded by
the European Union

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WELCOME!

Agenda

TIME (CET)	Session Title	Speaker
13:30-14:00 (30')	Introduction	Moderator
13:30 – 13:40 (10')	Event introduction and Interactive Icebreaker	Moderator
13:40-13:50 (10')	Opening Remarks	George Sarros, RESKILLING Project Officer (CINEA)
13:50 – 14:00 (10')	RESKILLING Introduction	Matina Loukea, RESKILLING Coordinator (CERTH)
14:00 – 14:40 (40')	Session 1: Understanding the Impacts of CCAM on Jobs & Skills	Moderator
14:00 – 14:05 (5')	Introductory interaction	Moderator
14:05 – 14:15 (10')	Mapping affected jobs across CCAM value chain	M. Teresa de la Cruz (ZLC)
14:15 – 14:25 (10')	Anticipating CCAM deployment impact on different job types	Davide Dolente (ECORYS)
14:25 – 14:40 (15')	Q&A	
14:40 – 15:10 (30')	Session 2: Preparing workers and social frameworks for CCAM deployment	Moderator
14:50 – 15:05 (15')	Labour Unions' perspective	Philip Freeman (ETF)
15:05 – 15:20 (15')	Policy recommendations on jobs' adaptation	Cristina Pronello, WE-TRANSFORM coordinator (Politecnico di Torino)

15:10 – 15:30 (20')	Session 3: Identifying training and reskilling needs	Moderator
15:10 – 15:15 (5')	Introductory interaction	Moderator
15:15 – 15:20 (5')	Training modules for updated and enhanced CCAM-specific professional skills	Susana Val (ZLC)
15:20 – 15:30 (10')	Broader perspective on training and reskilling needs	Fabienne-Agnes Baumann (VDI/VDE-IT)
15:30 – 15:40 (10')	BREAK	
15:40 – 16:35 (55')	Session 4: Engaging relevant stakeholders in a comprehensive and adapted response	Moderator
15:40 – 15:50 (10')	Building an impactful Stakeholder Community	Jorge Manso Garcia (POLIS)
15:50 – 16:05 (15')	Integrating international perspectives	Henriette Cornet (Urban Innovate)
16:05 – 16:35 (30')	Breakout Rooms: Identify pathways for cooperation	Moderator & Breakout room chairs
16:35 – 16:45 (10')	Conclusion	Moderator
16:35 – 16:40 (5')	Conclusions on priorities and next steps to take	Moderator & Breakout room chairs
16:40– 16:45 (5')	Closing & Next Steps	Moderator
16:45 – 17:30 (45')	Advisory Board Closed Meeting	AB Members and RESKILLING consortium



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Housekeeping rules

- Turn on your camera 😊
- Keep your mic closed when not speaking and raise your hand to intervene or ask questions in the chat – there are dedicated slots for Q&A in the agenda
- This event is recorded for publication

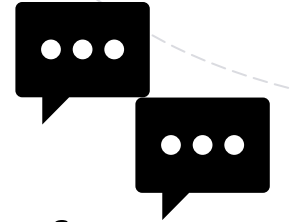




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01

Welcome & Introduction



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Opening Remarks



Georgios Sarros

**European Climate, Infrastructure
and Environment Executive Agency
(CINEA)**

Project Officer



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ReSKILLING Introduction



Matina Loukea
CERTH-HIT / RESKILLING
Project Coordinator



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Research initiative for Enhancing and Adapting Workforce SKILLs for Implementing TraNSport Automation with Employment Growth

Getting to know the ReSKILLING Project

RESKILLING Annual Virtual Stakeholder Event
From Automation to Employment: Skills for Europe's
Transport Future

Tuesday 16th December 2025



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ReSKILLING in a nutshell



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ReSKILLING in a nutshell



Consortium: 20 Partners from 10 Countries



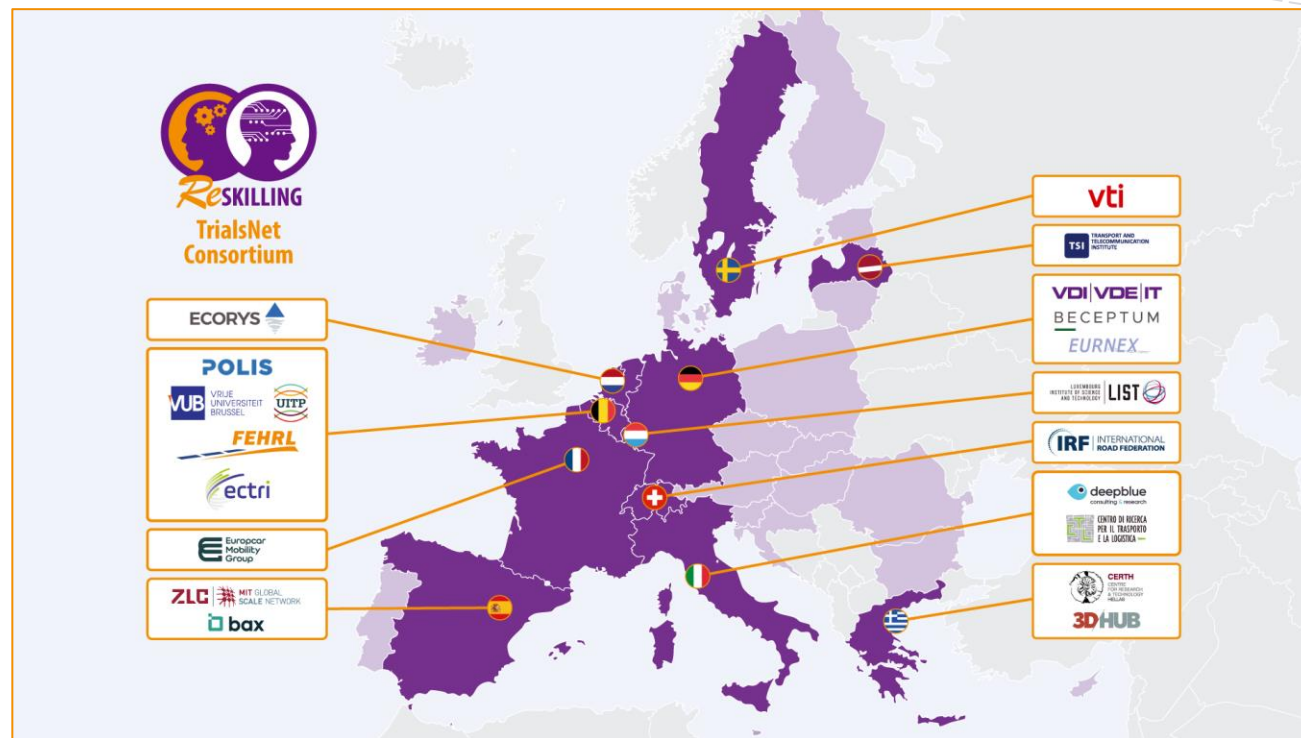
Budget: €1.99 million



Duration: January 2025 – December 2027



Coordinator: [CERTH/HIT](#)



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ReSKILLING in a nutshell

Coordinator



HELLENIC
INSTITUTE OF
TRANSPORT
CERTH / HIT



POLIS
CITIES AND REGIONS FOR TRANSPORT INNOVATION

VDI|VDE|IT



VRIJE
UNIVERSITEIT
BRUSSEL



ZLC

MIT GLOBAL
SCALE NETWORK



deepblue
consulting & research



CENTRO DI RICERCA
PER IL TRASPORTO
E LA LOGISTICA

LUXEMBOURG
INSTITUTE OF SCIENCE
AND TECHNOLOGY

LIST



ECORYS



bax

BECEPTUM
BUSINESS ENGINEERING
BEYOND INCEPTION



TRANSPORT AND
TELECOMMUNICATION
INSTITUTE



EURNEX



Europcar
Mobility
Group



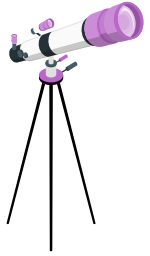
INTERNATIONAL
ROAD FEDERATION



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ReSKILLING in a nutshell



The Vision

ReSKILLING envisions to implement a strategic approach, which will empower the workforce and businesses of Europe's mobility (of people and goods) sector, to effectively cope with the anticipated changes in the sector from CCAM deployment, but also to actively participate in advancing and refining the sector.



The Aim

ReSKILLING aims to propose, implement, apply and validate a comprehensive approach, guided by **inclusivity, co-creation, and social innovation** principles, which will **efficiently and sustainably coordinate a range of novel services and tools**, fostering optimal adaptation of the mobility sector (covering both people and goods) to the deployment of CCAM solutions and services.



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New Skills



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02

ReSKILLING goals and methodology

ReSKILLING goals and methodology

The projects has set **4 Key Objectives (KOs)** responding to **4 Key Needs (KNs)**, interconnected as follows:

KO#1: Establish a **strong stakeholder community**

KO#2: To **investigate in depth** the short-, medium- and long-term employment **effects of CCAM deployment**

KN#1: enhanced and evidenced situational awareness of the CCAM-related socioeconomic impact

KN#3: upholding and extending the competitiveness of Europe

KN#2: workforce development & knowledge enhancement in CCAM

KN#4: new governance arrangements for enhancing interaction, synergies, & co-creation among key stakeholder groups

KO#4: Ensure **necessary skills are available** and up-scaled across several fields.

KO#3: **Enable businesses and workers** to mitigate CCAM's impacts



ReSKILLING goals and methodology

The methodology of the project evolves around 3 main pillars:

Pillar I: Stakeholders Engagement

So far, we identified 7 stakeholders' categories, with 32 sub-categories and 65 stakeholders' profiles for stakeholders' engagement

Pillar II: Jobs, Skills, and Education

We will assess CCAM job impacts, and create reskilling paths, training modules, and an Employment & Skills Observatory

Pillar III: Growth & (Social) Innovation

We will design innovative business models, align training with market needs, and build a roadmap for CCAM-related growth, social innovation, and sustainable workforce transition.



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ReSKILLING in a nutshell

The ReSKILLING WPs composition is as follows:

WP1: Project management & coordination (CERTH)

WP2: Stakeholder community engagement (POLIS)

WP3: Short-, medium- and long-term employment and socio-economic effects of CCAM (ZLC)

WP4: Towards job creation, growth and innovation (VDI/VDE)

WP5: Impact Assessment & Roadmap (VUB)

WP6: Communication, Dissemination & Exploitation (ECTRI)



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03

The ReSKILLING key outcomes



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ReSKILLING key outcomes



1. Stakeholder mapping & engagement methodology

2. CCAM professions and skills mapping and taxonomy



3. Employment and socioeconomic effects of CCAM

4. CCAM employment & skills Observatory



5. Novel CCAM Business Models Toolkit



6. Multi-layered replication & multimodal transferability



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ReSKILLING key outcomes



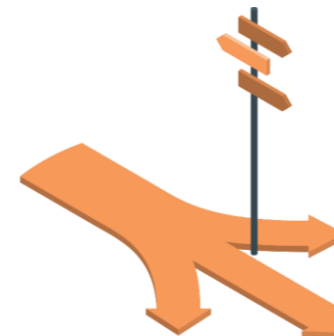
7. Tailored strategies & pathways for EU-wide adoption

8. Socially innovative CCAM skills ecosystem & scenarios of implementation



9. New (re) training curricula and modules

10. Guidelines and policy recommendations



11. Roadmap on socio-economic transition to CCAM



04

Contacts



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Contacts



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[@RESKILLINGProject](https://www.youtube.com/channel/UC...)



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Thank you



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02

SESSION 1

Understanding the
impacts of CCAM on
jobs & skills



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Understanding the impacts of CCAM on jobs & skills



M Teresa de la Cruz
Zaragoza Logistics Center (ZLC)
Project Manager



Davide Dolente
ECORYS
Transport, infrastructure and
mobility consultant



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ReSKILLING Annual Stakeholder Event

**From Automation to Employment:
Skills for Europe's Transport Future**

Taxonomy of jobs and skills affected by CCAM

**Teresa de la Cruz, Zaragoza Logistics Center
(ZLC)**

16 December | 13:30 - 16:45 (CET) | Online

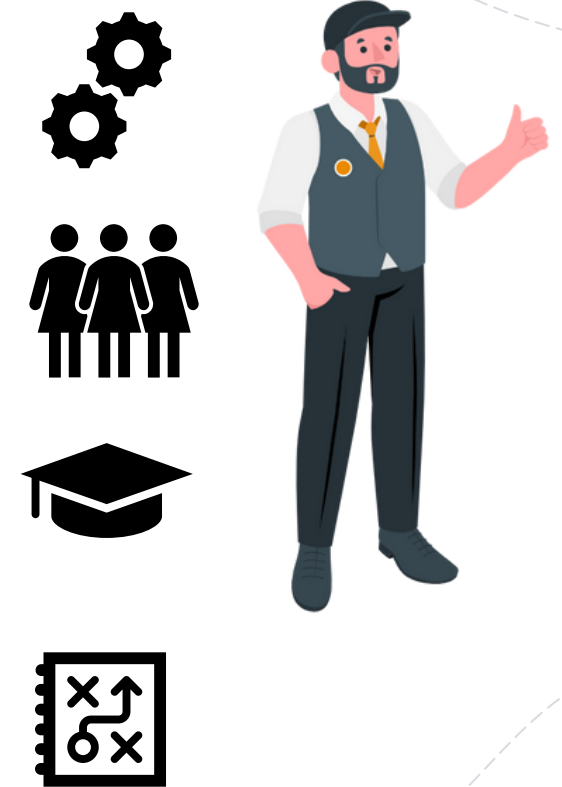


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Why Mapping Jobs in CCAM Matters:

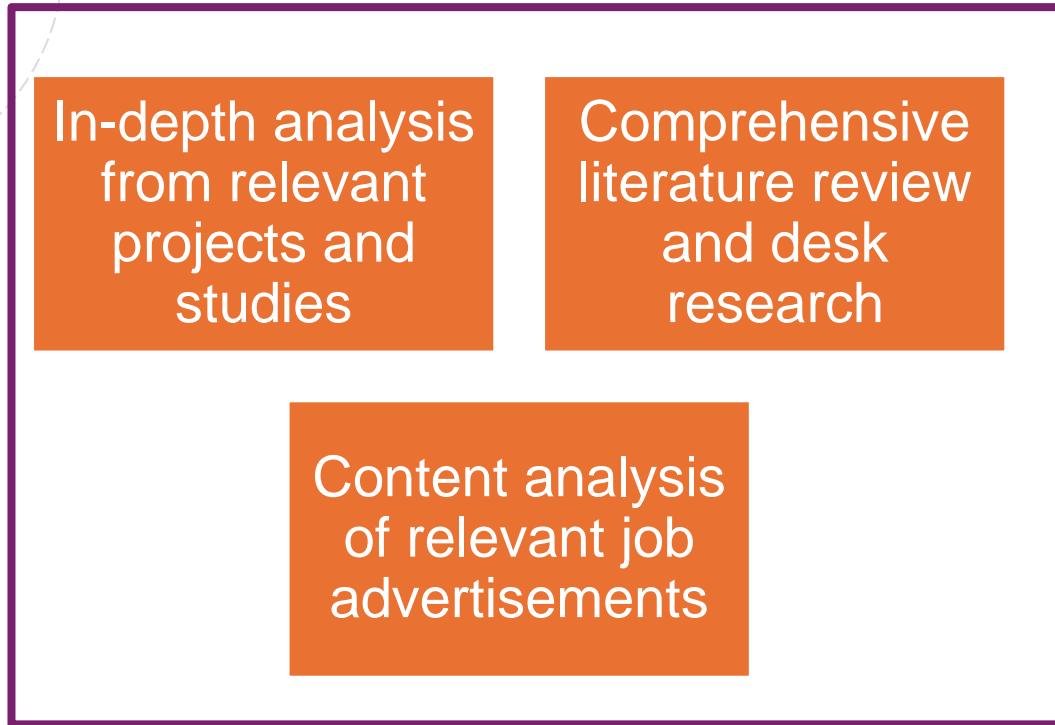
- Anticipate workforce transformation
- Identify emerging and disappearing roles
- Enable evidence-based reskilling strategies
- Support inclusive and just transition
- Guide policy and training investments
- Ensure competitiveness and societal acceptance



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ReSKILLING approach



+

Consortium/
External expertise



Taxonomy of affected/emerging jobs and skills requirements.
Aligned with various levels of automation and the corresponding training requirements

ReSKILLING approach

Mapping of jobs along the CCAM value chain

In-depth analysis
from relevant
projects and
studies

Comprehensive
literature review
and desk
research

Content analysis
of relevant job
advertisements



Consortium expertise



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110 Jobs impacted by the CCAM

Job	role	Mode	Type of mobil	ISCO-08	ISCO Skill Level	Job Family	Value Chain stage
Mobility Behavioral scientist	Analyzes how people interact with new mobility technologies and designing interventions to improve user experience, safety, and overall system	Cross-modal	passengers&freight	2634	4	HMI, UX & Human Factors Experts	Design & Development
Ethics expert/Transport philosophers	Ensure that the development and deployment of connected and automated mobility systems adhere to ethical principles, addressing societal	Cross-modal	passengers&freight	2633	4	Ethics & Philosophy Experts	Policy & Regulation
Data Scientist	Analyzes data to improve vehicle algorithms and performance	Cross-modal	passengers&freight	2511	4	Data Science & Analytics experts	Design & Development
Mobility Innovation expert	enhancing vehicle technology, and advancing digital systems for transportation, addressing autonomous vehicle research and smart infrastructure and sustainable transport strategies	Cross-modal	passengers&freight	2149	4	Engineers	Design & Development
Autonomous Systems expert	Develops algorithms for perception, decision-making, and control in self-driving vehicles	Cross-modal	passengers&freight	2149	4	Engineers	Design & Development
Human Factors & HMI Researcher	Studies driver/passenger interaction with automated systems	Cross-modal	passengers	2634	4	HMI, UX & Human Factors Experts	Design & Development
Automotive Engineer	Designs and develops vehicle systems and components	Road	passengers&freight	2144	4	Engineers	Design & Development
Automated Vehicle Assembly Technicians	Assemble vehicles with integrated sensors, AI systems, and connectivity modules	Road	passengers&freight	3114	3	Manufacturing & Assembly Technicians	Manufacturing & Assembly
Battery and Powertrain Engineers	Design and manufacture electric drivetrains and energy storage systems	Road	passengers&freight	2144	4	Engineers	Design & Development
Sensor and LiDAR Technicians	Install and calibrate perception systems for autonomous driving	Road	passengers&freight	3114	3	Manufacturing & Assembly Technicians	Manufacturing & Assembly
Software Integration Engineers	Embed and test vehicle control software and V2X (vehicle-to-everything) communication systems	Road	passengers&freight	2144	4	Engineers	Design & Development

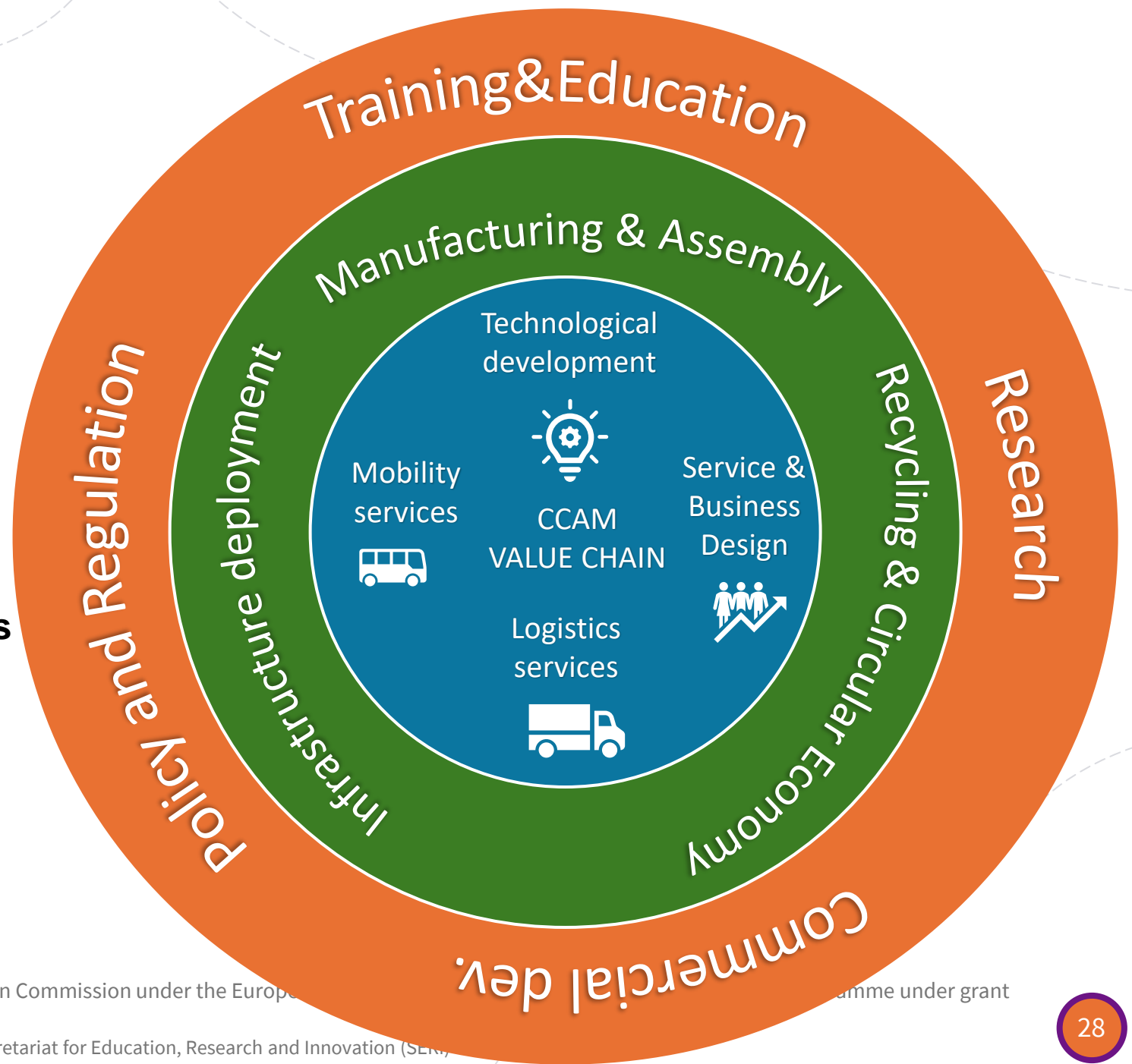
CCAM value chain

1. Research & Innovation
2. Design & Development
 - Technological Development
 - Service & Business Design
3. Manufacturing & Assembly
4. Recycling & Circular Economy
5. Infrastructure Deployment & Operations
6. Mobility Services & Logistics
7. Policy & Regulation
8. Market & Commercial Development
9. Training & Education



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MAPPING OF JOBS

International Standard Classification of Occupations Unit Groups (4-digit codes)

Aligned with the International Standard Classification of Education (ISCED)

A	B	C	D	E	F	G	H
Job	role	Mode	Type of mob	ISCO-08	SCO Skill I	Job Family	Value Chain stage
Mobility Behavioral scientist	Analyzes how people interact with new mobility technologies and designing interventions to improve user experience, safety, and overall system	Cross-modal	passengers&freig	2634	4	HMI, UX & Human Factors Experts	Design & Development
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Software Integration Engineers	Embed and test vehicle control software and V2X (vehicle-to-everything) communication systems.	Road	passengers&freig	2144	4	Engineers	Design & Development
Rail Automation Engineers	Develop and implement autonomous train control systems.	Rail	passengers&freig	2144	4	Engineers	Design & Development
Smart Infrastructure Technicians	Manufacture and maintain trackside sensors and communication systems.	Rail	passengers&freig	3114	3	Manufacturing & Assembly Technicians	Manufacturing & Assembly
Rail Vehicle Design engineer	Design train units with CCAM-compatible features like predictive maintenance and real-time data exchange.	Rail	passengers&freig	2144	4	Engineers	Design & Development

MAPPING OF JOBS

ISCO-08 (International Standard Classification of Occupations) is developed by the International Labour Organization.

- Classifies occupations based on tasks and responsibilities.
- Defines four skill levels (1–4) based on the complexity of tasks and the education/training typically required.

ISCED (International Standard Classification of Education)

- Developed by **UNESCO**.
- Classifies **education levels** (from early childhood to doctoral studies).

ISCO Skill Level	Typical ISCED Level	Description
Level 1	ISCED 0–2	Basic education; manual/routine tasks
Level 2	ISCED 3–4	Upper secondary or vocational training
Level 3	ISCED 5	Short-cycle tertiary or advanced vocational
Level 4	ISCED 6–8	Bachelor's, Master's, or Doctoral degrees



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33 Job families based on ISCO-08

Technical

- Engineers
- Software & Systems Development
- Cybersecurity & IT Protection
- Data Science & Analytics Experts
- HMI, UX & Human Factors Experts
- Manufacturing & Assembly Technicians
- Decommissioning & Recycling Technicians
- Recycling and Waste Management Operators
- Maintenance & Repair Operators
- Construction Workers

Social/Regulatory

- Emergency & Incident Management
- Urban Planning (Physical & Digital Infrastructure)
- Legal & Regulatory Professionals
- Policy Makers
- Insurance & Risk Assessment Professionals
- Ethics & Philosophy Experts
- Socioeconomic & Impact Analysts
- Health, Safety & Ergonomics
- Surveillance Operators

Business/Commercial

- Service & Business Designers
- Mobility and Services Platform Managers
- Freight, Warehouse & Port Workers
- Logistics Managers
- Traffic Control & Signalling
- Sales Workers
- Sales & Marketing Specialists
- Remote HR Specialist
- Remote Mobility Support Roles
- On-Site Mobility Assistance Roles
- Remote Operations
- Drivers

Education and Training

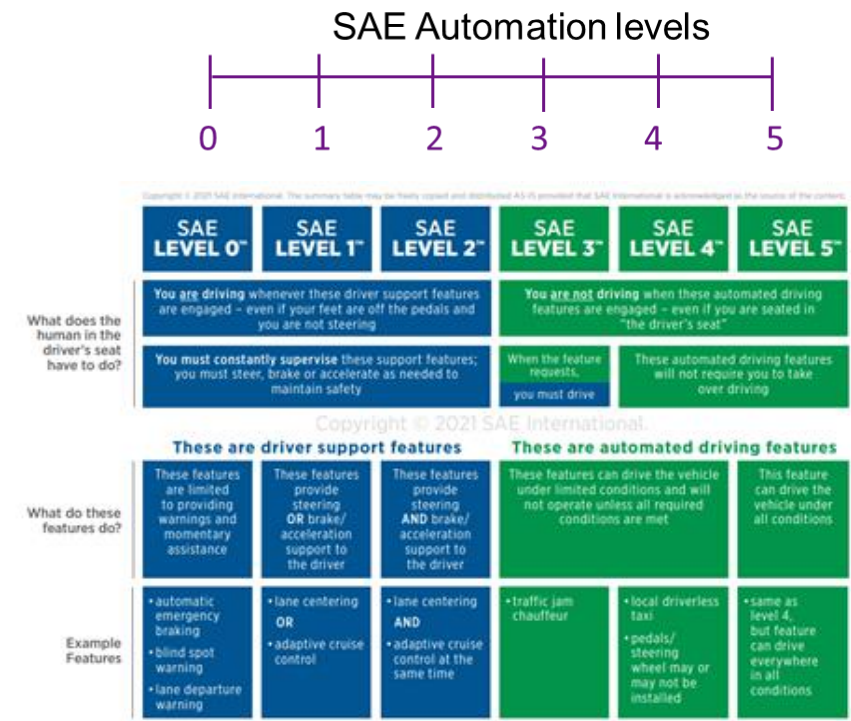
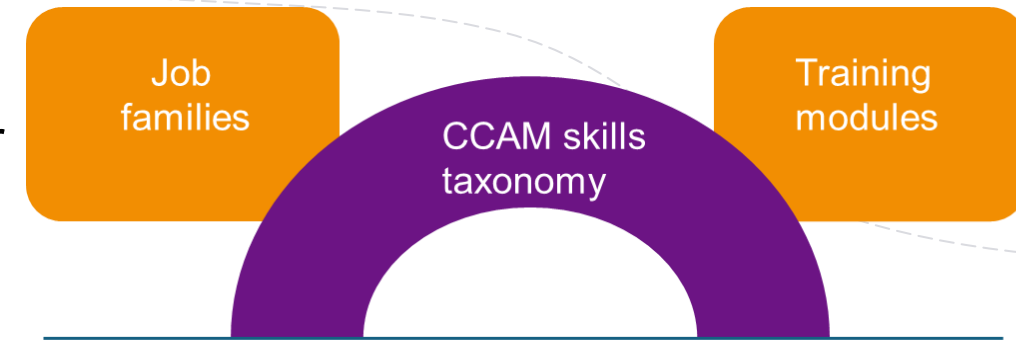
- Trainers (driving, simulators, additive manufacturing)
- Educational Program Developers

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What is the CCAM Skills Taxonomy?

- A structured classification of knowledge and skills for CCAM-related job families.
- Purpose:
 - Align skills with SAE automation levels (0–5).
 - Identify reskilling and upskilling needs for each role.
 - Serve as a reference for designing modular training programs.
- Built on Drive2theFuture taxonomy and ESCO (European Skills, Competences, Qualifications and Occupations) classification.
 - Enhanced with CCAM-specific roles and competencies.



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JOB FAMILY#1 (ISCO-08: XX; ISCO skill level: X).									
SKILL # (ESCO) SKILLS/KNOWLEDGE		DESCRIPTION	LEVELS OF AUTOMATION (SAE)						
		JOB FAMILY DESCRIPTION	0-No automation	1-Driver assistance	2-Partial automation	3-Conditional automation	4-High automation	5-Full automation	COMMENTS
1	SKILL 1	Description skill 1							Considerations regarding the SAE levels. Identification of emerging needs at highest levels of automation. Partial adequation of skills to the different SAE. Other considerations.
2	SKILL 2	Description skill 2							Considerations regarding the SAE levels. Identification of emerging needs at highest levels of automation. Partial adequation of skills to the different SAE. Other considerations.
3	SKILL 3	Description skill 3							Considerations regarding the SAE levels. Identification of emerging needs at highest levels of automation. Partial adequation of skills to the different SAE. Other considerations.
4	SKILL 4	Description skill 4							Considerations regarding the SAE levels. Identification of emerging needs at highest levels of automation. Partial adequation of skills to the different SAE. Other considerations.

The skill is needed for the SAE level
 The skill is needed partially for the SAE level
 The skill is not needed for the SAE level

Key Conclusions from Job Mapping and Taxonomy of Skills

- CCAM will **transform** the workforce.
- 100+ job profiles consolidated into job **families** and **value chain** approach
- Skills aligned with SAE **automation** levels.
- **High-skill** dominance: over 70% of roles are ISCO levels 3 and 4, requiring advanced technical and analytical skills.
- **Not only technical** roles: Social, customer-facing, and service-oriented jobs remain critical for user experience and inclusivity.
- Support and operational roles are **evolving**; remote and hybrid work models are **growing**.
- Skilled professionals need **upskilling**; unskilled workers require **reskilling** to remain employable.
- Technological clusters dominate and **transversal skills** remain essential.
- The exercise supports modular **training** programs.



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Thank you

Teresa de la Cruz

Project Manager, ZLC

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Research initiative for Enhancing and
Adapting Workforce SKILLS for
Implementing TraNsport Automation with
Employment Growth

Anticipating CCAM deployment impact on different job types

December 16, 2026



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Table of contents

1. Task description
2. Methodology
3. Insights from first workshop
4. Upcoming interviews

01

Task description



Task description

Employment effects of CCAM

Task	Task 3.2 - Employment effects of CCAM
Description	Examination of the direct and indirect impacts of CCAM deployment on various professions and job types across the entire CCAM value chain.
Actions	<ul style="list-style-type: none">▪ Research gap analysis▪ Skills matrix▪ Forecasting models and scenario analysis▪ Co-creation workshops▪ Expert interviews
Relevant Deliverable	D3.3 - Short, medium and long-term employment effects of CCAM.
Partners involved	ECORYS (Lead) , CERTH, VTI, POLIS, VUB, UITP, ZLC, FEHRL, DBL, CTL, LIST, Bax, Beceptum, TSI, 3DHUB, EURNEX, EUROPCAR, IRF



New Skills



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02

Methodology

Skills matrix, employment forecasting and scenario analysis

Skills matrix:

- Job families x CCAM penetration levels
 - Connecting relevant skills
- Focus on research gaps

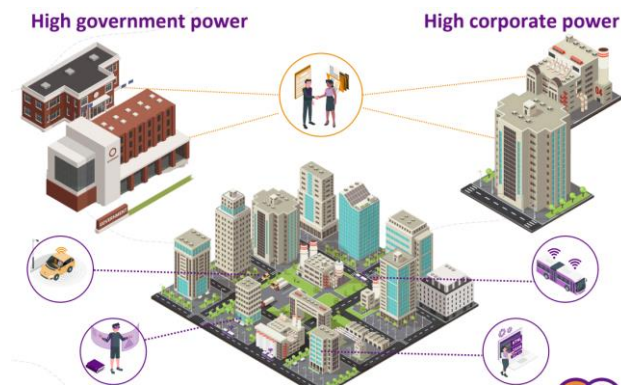
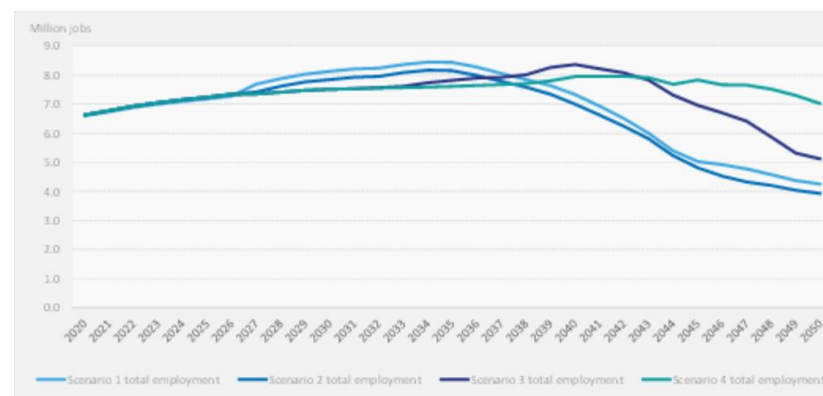
Employment forecasting:

- Update of previous Ecorys study
 - *Study on exploring the possible employment implications of connected and automated driving (2020)*
- Forecast of employment by sector

Scenario analysis:

- Analysis of future scenarios
 - Based on information from employment forecasting
- Qualitative assessment of employment conditions

Value chain stage	Job Family	Skills	Low CCAM (Level 3)	Mid CCAM (Level 3)	High CCAM (Level 4)
1 Design & Development	2.4.1.3 & 2.4.1.4 Factors Data Science & Analytics expert	4			
2 Manufacturing & Assembly	Manufacturing and assembly technicians	3		Training operators to install & disassemble workpieces, focusing on programming, maintenance and other technical skills (page 20)	
3 Maintenance & Logistics					
4 Installation & Operations					
5 Maintenance & Logistics					
6 Policy & Regulation					
7 Policy & Regulation					
8 Design & Development					
9 Manufacturing & Assembly					
10 Maintenance & Logistics					
11 Policy & Regulation					
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97 Policy & Regulation					
98 Design & Development					
99 Manufacturing & Assembly					
100 Maintenance & Logistics					
101 Policy & Regulation					
102 Policy & Regulation					
103 Design & Development					
104 Manufacturing & Assembly					



Methodology

Workshops and interviews

Workshops:

- Organisation of two co-creation workshops
 - First: *October 8, Brussels*
 - Second: *First half of 2026, TBD*
- Input from stakeholders and exploration of scenarios

Interviews:

- 50 expert interviews
- Focus on research gaps



03

Insights from first workshop



Insights

Workshop

Illustrations by Storyset / Freepik



Insights

Sessions and outcomes

Session 1 - Presentation and discussion of research findings:

- Transversal (communication, adaptation) vs specific skills (maintenance, data management)
- Transitional period insights (public acceptance, regional disparities, safety concerns)
- Effects of CCAM transition (demographic changes, types of maintenance, soft skills)

Session 2 - Scenario exploration:

- Positive CCAM adoption scenario might lead to exclusion from reskilling programmes
- Drawbacks of too much government power on competitiveness and job redundancy
- Risks of employment gaps due to skills mismatch
- Dangers of deregulation on road safety and proliferation of standards

Session 3 - Linking employment effects to business models:

- Discussions on operational models of PT fleet automation
- Subcontracting reskilling training vs internal training programs development
- Consultation of passenger rights groups before rolling out new business models



04

Upcoming interviews



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Interviews

Interview plan

Interviews:

- Total of 50 interviews to carry out
- Focus on research gaps
 - Transitional phase of CCAM adoption
 - Specific job families (infrastructure deployment, construction, UX design)
- Aim for 50/50 gender balance

Interview topics:

- Current skills and future skills
- Special workforce groups
- CCAM impacts to jobs
 - Changes to job
 - Creation of new jobs
- Skills required for changing/new jobs





Thank you



QUESTIONS?



03

SESSION 2

Preparing workers and social frameworks for CCAM deployment

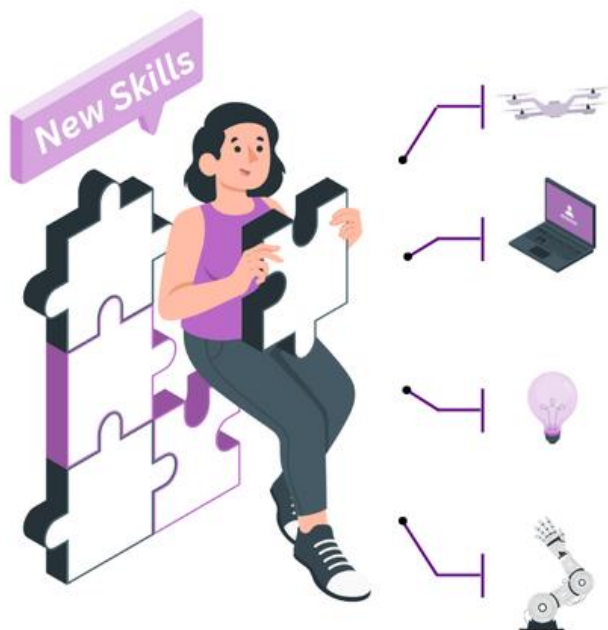


Illustration by Storyset / Freepik

Agenda

TIME (CET)	Session Title	Speaker
13:30-14:00 (30')	Introduction	Moderator
13:30 – 13:40 (10')	Event introduction and Interactive Icebreaker	Moderator
13:40-13:50 (10')	Opening Remarks	George Sarros, RESKILLING Project Officer (CINEA)
13:50 – 14:00 (10')	RESKILLING Introduction	Matina Loukea, RESKILLING Coordinator (CERTH)
14:00 – 14:40 (40')	Session 1: Understanding the Impacts of CCAM on Jobs & Skills	Moderator
14:00 – 14:05 (5')	Introductory interaction	Moderator
14:05 – 14:15 (10')	Mapping affected jobs across CCAM value chain	M. Teresa de la Cruz (ZLC)
14:15 – 14:25 (10')	Anticipating CCAM deployment impact on different job types	Davide Dolente (ECORYS)
14:25 – 14:40 (15')	Q&A	
14:40 – 15:10 (30')	Session 2: Preparing workers and social frameworks for CCAM deployment	Moderator
14:50 – 15:05 (15')	Labour Unions' perspective	Philip Freeman (ETF)
15:05 – 15:20 (15')	Policy recommendations on jobs' adaptation	Cristina Pronello, WE-TRANSFORM coordinator (Politecnico di Torino)

15:10 – 15:30 (20')	Session 3: Identifying training and reskilling needs	Moderator
15:10 – 15:15 (5')	Introductory interaction	Moderator
15:15 – 15:20 (5')	Training modules for updated and enhanced CCAM-specific professional skills	Susana Val (ZLC)
15:20 – 15:30 (10')	Broader perspective on training and reskilling needs	Fabienne-Agnes Baumann (VDI/VDE-IT)
15:30 – 15:40 (10')	BREAK	
15:40 – 16:35 (55')	Session 4: Engaging relevant stakeholders in a comprehensive and adapted response	Moderator
15:40 – 15:50 (10')	Building an impactful Stakeholder Community	Jorge Manso Garcia (POLIS)
15:50 – 16:05 (15')	Integrating international perspectives	Henriette Cornet (Urban Innovate)
16:05 – 16:35 (30')	Breakout Rooms: Identify pathways for cooperation	Moderator & Breakout room chairs
16:35 – 16:45 (10')	Conclusion	Moderator
16:35 – 16:40 (5')	Conclusions on priorities and next steps to take	Moderator & Breakout room chairs
16:40– 16:45 (5')	Closing & Next Steps	Moderator
16:45 – 17:30 (45')	Advisory Board Closed Meeting	AB Members and RESKILLING consortium



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Preparing workers and social frameworks for CCAM deployment



Philip Freeman
**European Transport
Workers' Federation (ETF)**
Policy Officer for Urban Public
Transport and Mobility



Cristina Pronello
**WE-TRANSFORM Project /
Politecnico di Torino**
Project Coordinator / Full Professor of
Transport / CEO of MobyforAll



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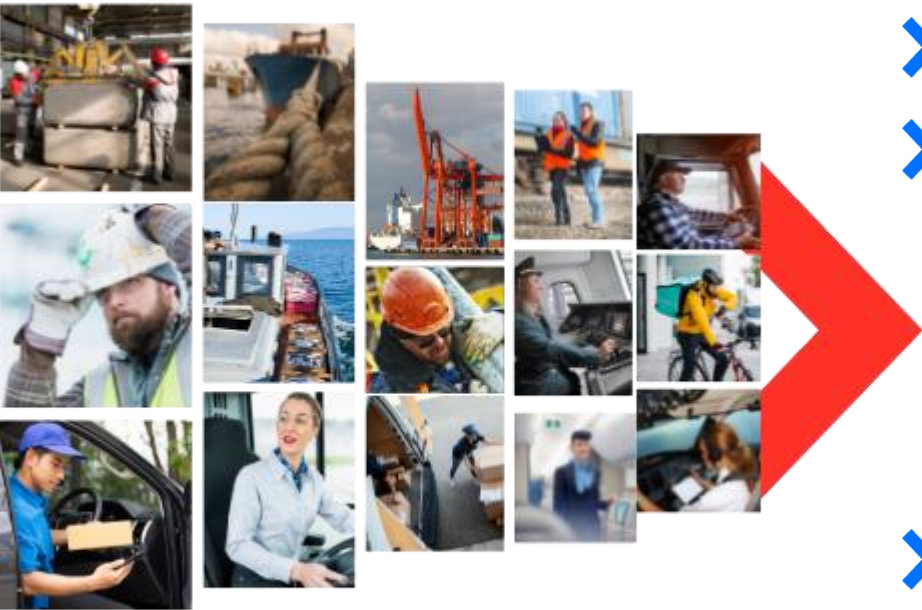
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CCAM – UPT WORKERS' PERSPECTIVE

RESKILLING Annual Virtual Stakeholder Event – 16/12/2025

WHO WE ARE



- 200 transport unions
- 5 million transport workers
- 37 European countries
- European Union, the European Economic Area and Central and Eastern European countries
- Social Partner in 8 Sectoral Social Dialogue Committees



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OUR VISION: FAIR TRANSPORT

Our Vision: Fair Transport

- *The vision of Fair Transport is what drives the work of the ETF. It represents a future where European transport is free of exploitation, with quality decent jobs for transport workers, safe, reliable and affordable services for passengers and customers and where environmental and social sustainability go hand in hand.*



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FIRST PRIORITY – JOB QUALITY



- Automation doesn't remove human labour – it obscures it
- Profile of “security drivers” for automation levels 3 and 4
- Application of UPT CBAs, threat of subcontracting
- Support of existing workers through the transition



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DEFENDING MOBILITY AS A FUNDAMENTAL RIGHT



CCAM is currently a relatively immature technology



PTOs and policymakers must prioritise citizens (workers + passengers)



UPT is facing budget squeezes, being asked to do more with less



Value for money is key – policymakers should not fall for empty promises



We must not repeat the mistakes made with ride hailing platforms!



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NEGATIVE VISION OF THE FUTURE

	2024	AT AV MATURITY	GROWTH
Uber UK price per mile*	£2.00	0.40p**	-80%
Transport for London licensed minicab fleet	97,000	1,900,000***	~2000%
London estimated app delivery fleet	100,000	2,000,000***	~2000%
Total London on-demand vehicles	197,000	3,900,000	~2000%

Calculation by Worker Information Exchange – “Uber’s autonomous dream for London”

*Based on Uber X service from Paddington station to Heathrow airport

**Based on Uber’s own predictions for pricing in US market

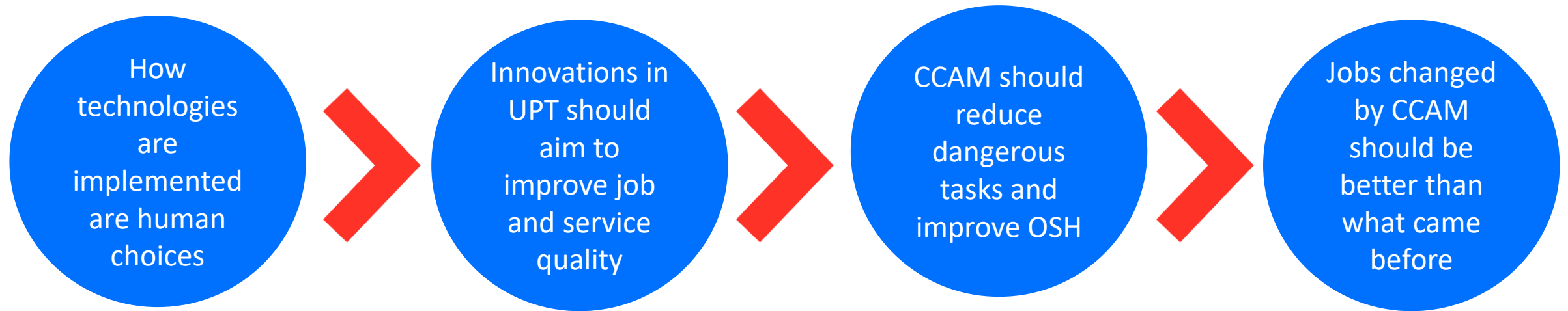
***Based on Uber’s own predictions for vehicle requirements in US market

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OUR VISION FOR CCAM



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SOME EXAMPLES



ssion under the European Union's Horizon Europe research and innovation programme under gran

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ETF-UITP JOINT RECOMMENDATIONS OF DIGITISATION (2021)



- Inclusive and participatory approach to digital transformation
- Ensure job security and skills
- Use digital transformation to improve working conditions and work-life balance
- Ensure data protection, privacy and dignity

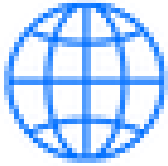


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CONNECT WITH US



<https://www.etf-europe.org/>



ETF_Europe



ETF.Europe



<https://www.linkedin.com/company/european-transport-workers'-federation/>



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we transform

16/12/2025

Policy recommendations on jobs' adaptation



Prof. Cristina Pronello
Project coordinator
WE-TRANSFORM



how to identify effective Policy recommendations

RATIONALE

Sectorial claims have hindered cross-fertilisation of experiences and practices, by maintaining a silos approach and hurting the creation of transversal tables of discussion

METHOD

Participatory approach that mixes different profiles

OBJECTIVES



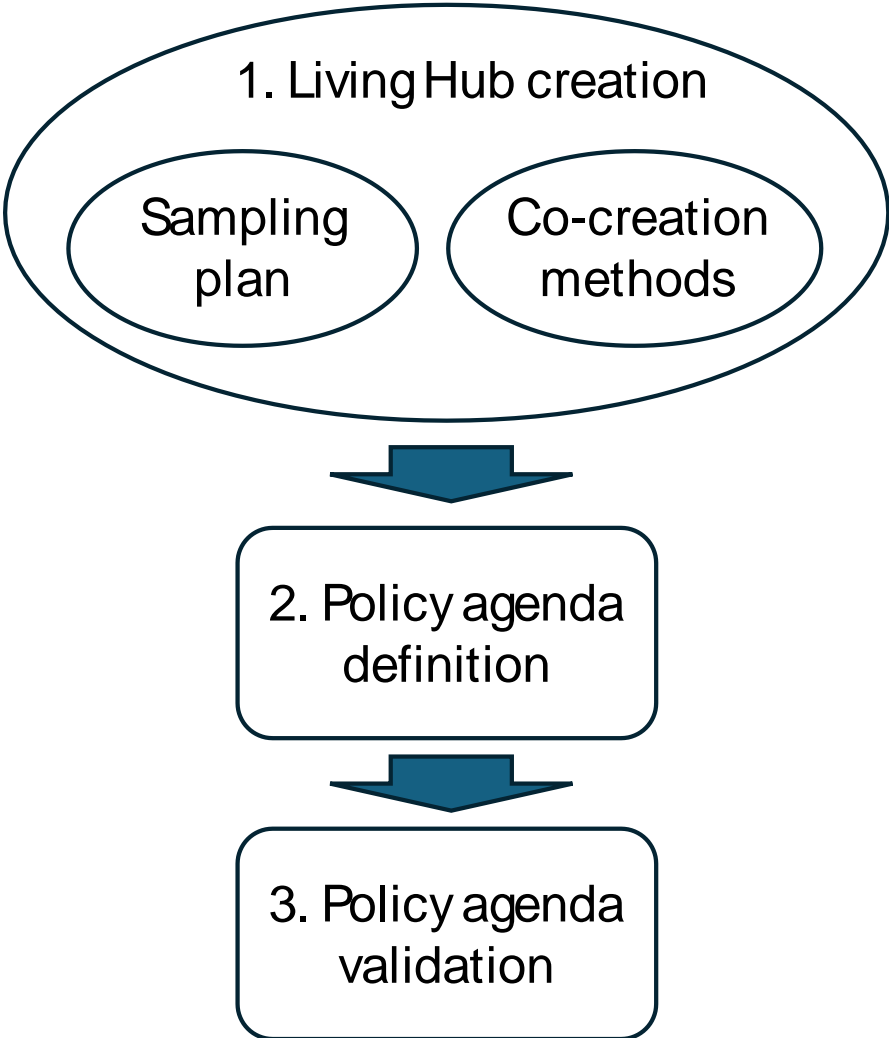
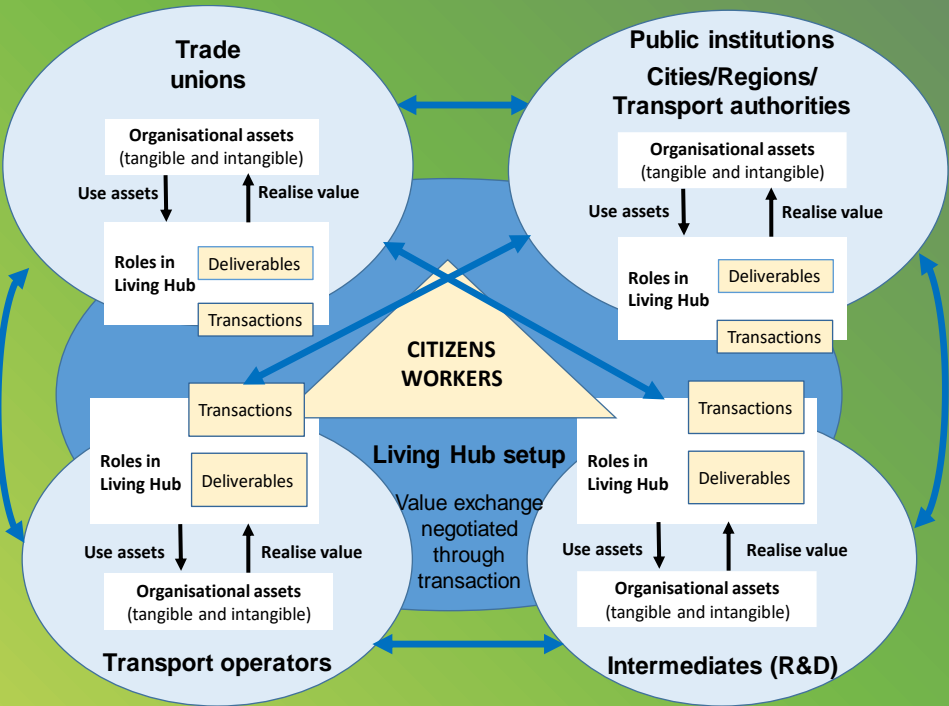
Define policies to allow workers to have a safe transition to increased digitalisation and automation



Check the exportability of the policies to extra-EU contexts in not regulated markets

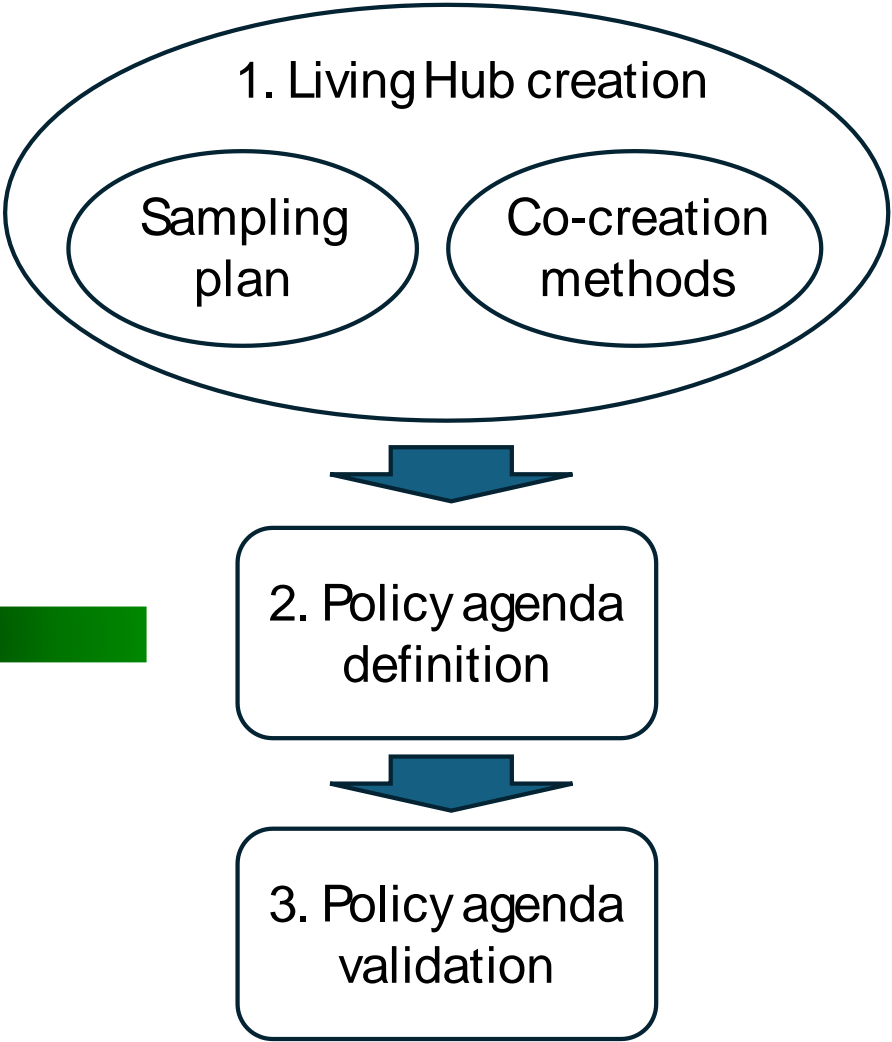
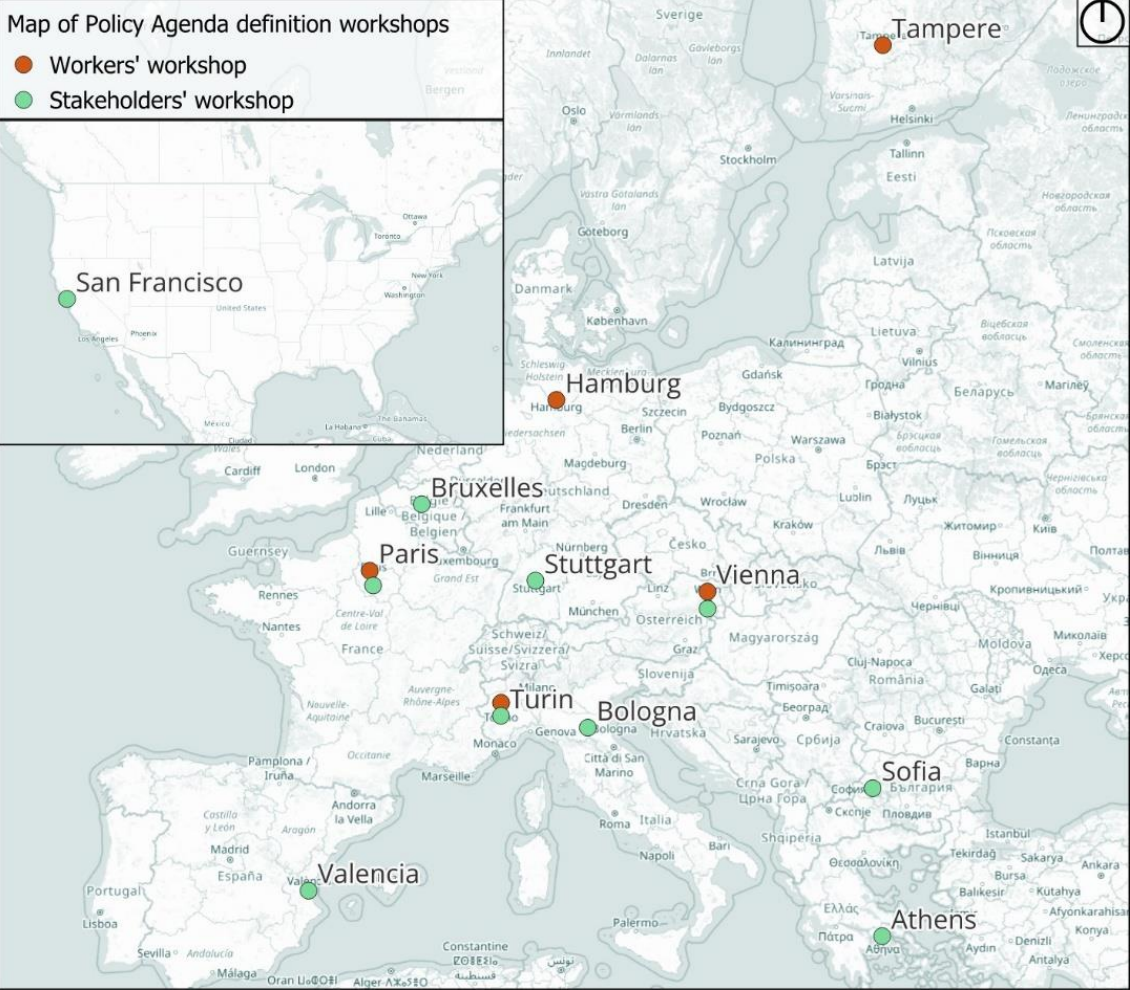


Methodology





Methodology





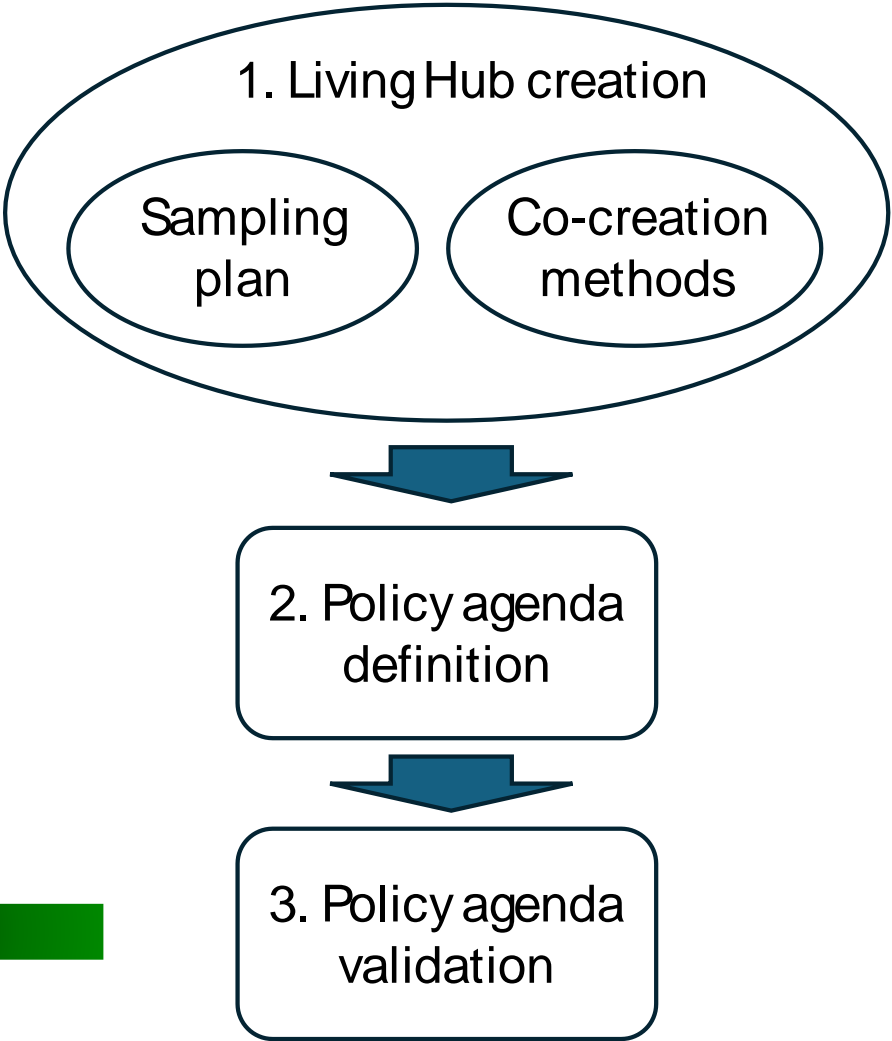
Methodology

Policy n° ...	Content			Implementation		
	Positive aspects	Negative aspects	Controversial aspects	Difficulties at EU level	Difficulties at national level	Difficulties at company level
Stakeholder 1						
Stakeholder 2						
Stakeholder 3						
Stakeholder						

Policy n° ...	Timeframe		Who oversees the implementation	
	Agreement with proposed timing	Suggestion of different timing	Agreement with proposed actors	Suggestion of different actors
Stakeholder 1				
Stakeholder 2				
Stakeholder 3				
Stakeholder				

Policy n°	Importance of the policy from 1 (not at all important) to 6 (extremely important)						General comments (please, write any comment or remark you like)
	1 (Not at all important)	2	3	4	5	6 (Extremely important)	
Stakeholder 1							
Stakeholder 2							
Stakeholder 3							
Stakeholder							

- a focus group in the USA (2024) with US experts in technology and workforce;
- interviews and questionnaire administered to the other stakeholders: Italy, Spain, Greece, France, Germany, Latvia, The Netherlands, UK, and Bulgaria + United States and South-Korea





1. Public governance and regulation



2. Industrial governance



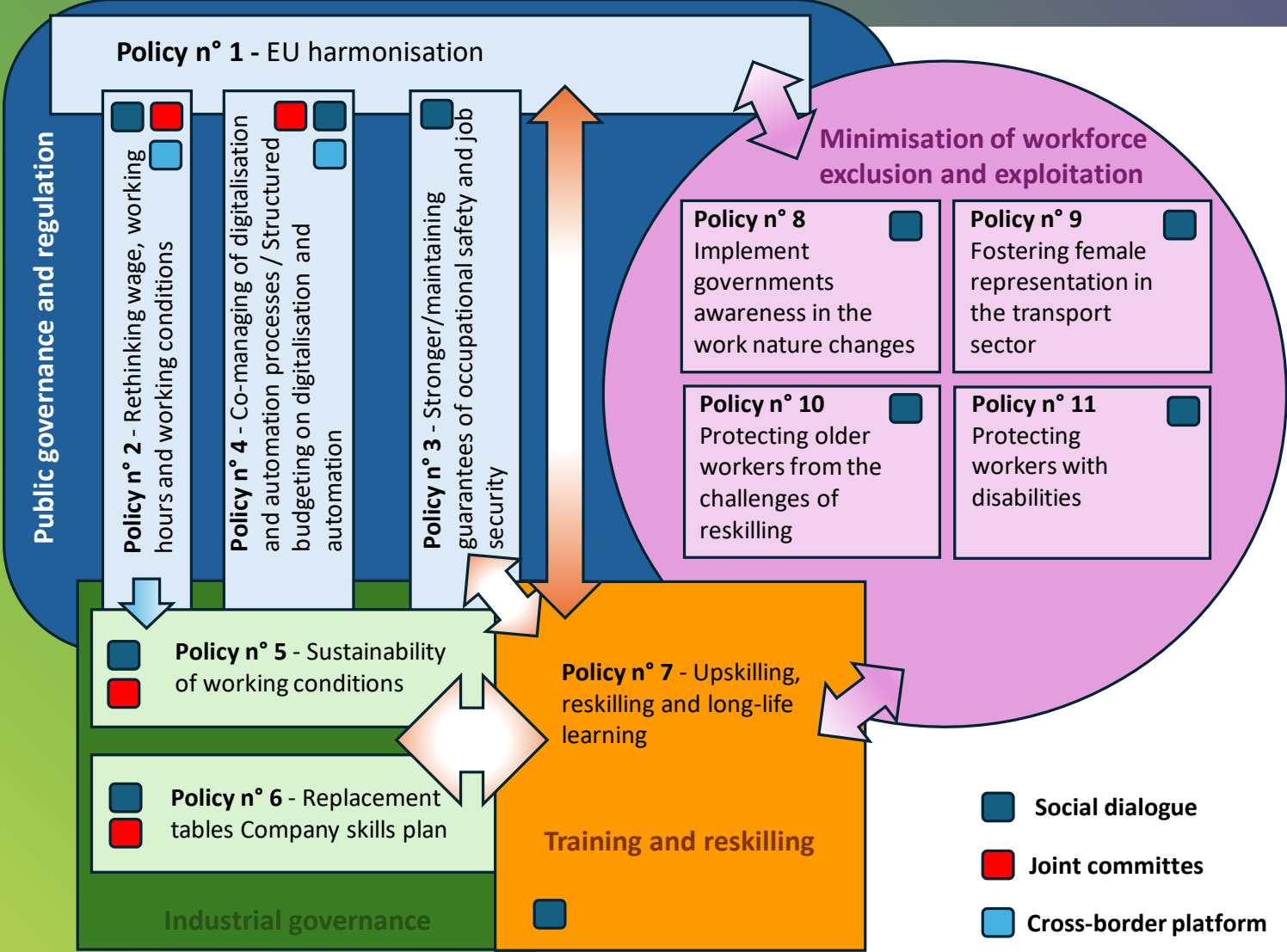
3. Training & reskilling



4. Minimisation of labour exclusion and exploitation

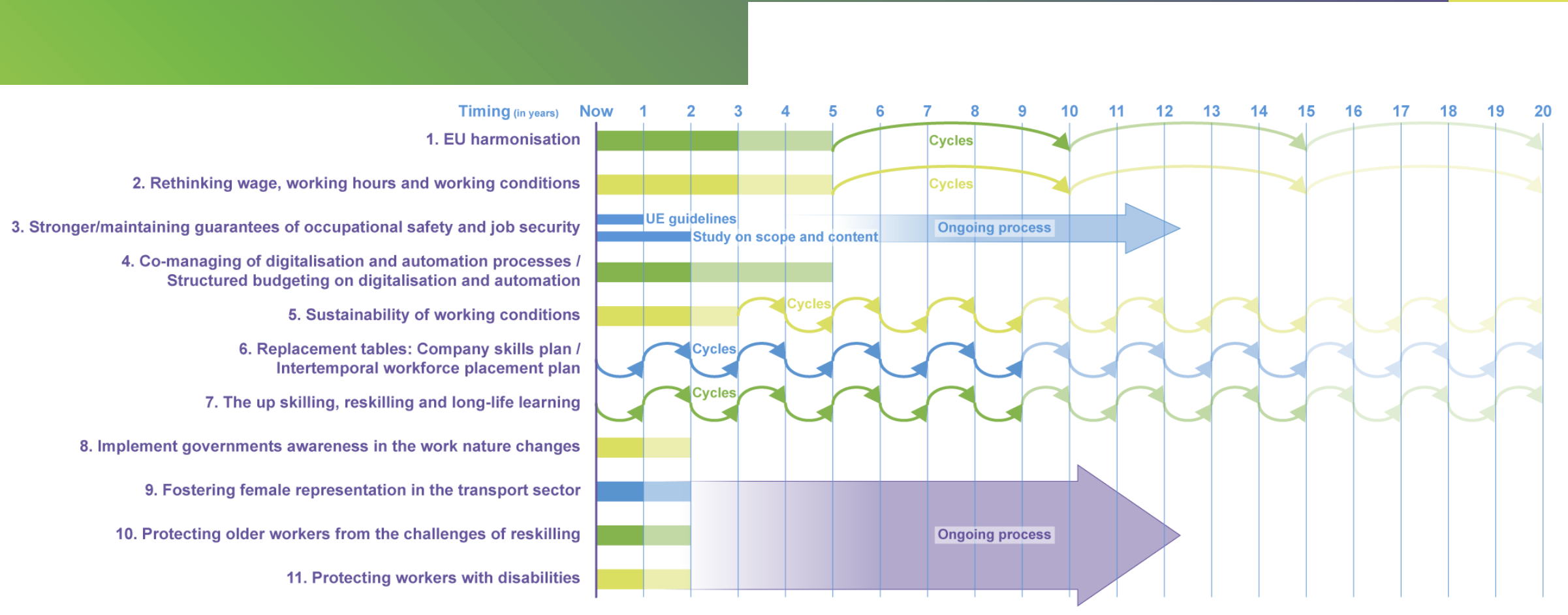
THEMATIC AREAS	POLICIES
AREA 1: Public governance and regulation	<ul style="list-style-type: none"> Policy n° 1: EU harmonisation. Policy n° 2: Rethinking wage, working hours and working conditions (Reciprocity between countries, competition, antidumping policies). Policy n° 3: Improving/preserving guarantees of occupational safety and job security. Policy n° 4: Co-managing of digitalisation and automation processes / Structured budgeting on digitalisation and automation
AREA 2: Industrial governance	<ul style="list-style-type: none"> Policy n° 5: Sustainability of working conditions (follow up of policy n° 2). <ul style="list-style-type: none"> ➤ Policy n° 5.1: Joint committee on working conditions. ➤ Policy n° 5.2: The worker at the centre of the technological evolution of the company. Policy n° 6: Replacement tables: Company skills plan / Intertemporal workforce placement plan Strengthening of second-level collective bargaining.
AREA 3: Training and reskilling	<ul style="list-style-type: none"> Policy n° 7: The up skilling, reskilling and lifelong learning Policy n° 11: Protecting workers with disabilities.
AREA 4: Minimisation of workforce exclusion and exploitation	<ul style="list-style-type: none"> Policy n° 8: Implement governments awareness in the work nature changes. Policy n° 9: Fostering female representation in the transport sector. Policy n° 10: Protecting older workers from the challenges of reskilling. Policy n° 11: Protecting workers with disabilities.

the policies



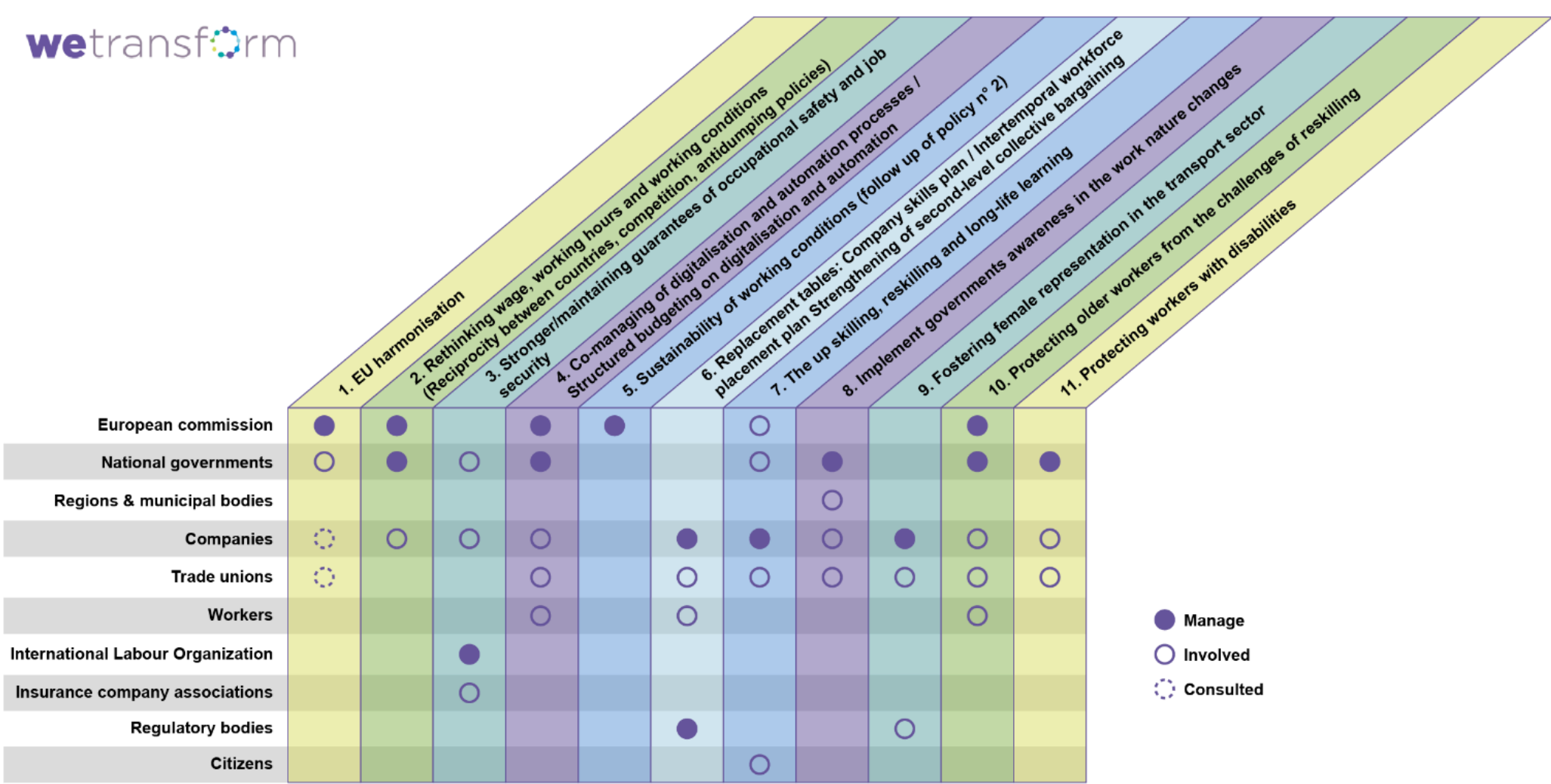


the policies: Timeframe





the policies: who oversees



the policies: EU vs US



EU Approach (WE-TRANSFORM)	US approach
THEMATIC AREA 1: Public governance and regulation	
<i>Policy n° 1: EU harmonisation</i>	
Emphasizes convergence, standardisation, and harmonisation of regulations across EU Member States to create a cohesive framework. Centralised coordination aims to avoid regulatory fragmentation and ensures uniform compliance.	Prefers market-driven solutions with minimal centralised regulation. Relies on voluntary industry standards and self-regulation. Labour laws are decentralised, with states setting their own rules, resulting in a patchwork of regulations and varied enforcement across states.
<i>Policy n° 2: Rethinking wage, working hours and working conditions</i>	
Promotes harmonised standards for minimum wage, working hours, and conditions to protect workers' rights and ensure fair competition within the single market. Flexibility is balanced with standardised protections.	Regulation primarily occurs at the state level, with minimal federal oversight. Flexible working hours are supported to adapt to changing work environments focusing on enhancing work-life balance. Emphasis on allowing flexibility rather than harmonisation.
<i>Policy n° 3: Improving/preserving guarantees of occupational safety and job security</i>	
Centralised and coordinated regulations emphasise mandatory social dialogue, collective bargaining, and worker protections in automated environments. Strong emphasis on risk assessments, safety equipment, and formal training programmes.	Federal (e.g., OSHA) and state agencies regulate workplace safety, often through industry-specific standards. They emphasise risk mitigation and voluntary safety initiatives. Worker reintegration programs exist but tend to be less coordinated nationally. Insurance for accidents related to new technologies is supported but varies by region.
<i>Policy n° 4: Co-managing of digitalisation and automation processes / Structured budgeting on digitalisation and automation</i>	
Compulsory, structured collective bargaining is promoted across sectors, ensuring workers' representation in decision-making about automation and labour conditions. Centralised governance supports social dialogue initiatives.	Collective bargaining is voluntary and primarily enterprise-level. Industry-specific collaborations exist but are not mandated. There is cautious support for enhancing social dialogue, with concerns about government interference and company autonomy.

EU Approach (WE-TRANSFORM)	US approach
THEMATIC AREA 2: Industrial governance	
<i>5.Sustainability of working conditions (follow up of policy No. 2)</i>	
Establishes joint committees and licensing systems to oversee workforce adaptation and technology integration, promoting cooperation between employers, workers, and regulators. These are centrally coordinated and often mandatory.	Joint committees vary by industry and region. Some businesses and unions support them, but concerns about autonomy and practicality limit widespread adoption. Licensing systems for labour adaptation are generally voluntary or non-existent.
<i>6.Replacement tables: Company skills plan / Intertemporal workforce placement plan. Strengthening of second-level collective bargaining</i>	
Implements comprehensive Replacement Tables and sectoral bargaining as central tools for workforce adaptation to technological changes. Coordination occurs at sector and EU levels.	Replacement Tables are mostly enterprise-level initiatives, if used at all, and vary widely across industries. Sectoral bargaining is rare; collective bargaining happens predominantly at the firm level. Large companies may have resources for such planning. Small firms often lack capacity.
EU Approach (WE-TRANSFORM)	US approach
THEMATIC AREA 3: Training and reskilling	
<i>7.The up skilling, reskilling and lifelong learning</i>	
Coordinated national and EU-wide strategies drive upskilling and reskilling programmes, often involving public funding, government mandates, and labour union participation to ensure broad access and consistency.	Upskilling is largely driven by individual companies or industry associations. Training plans are decentralised, tailored to company or sector needs, and motivated by competitiveness and talent retention rather than government policy. Government involvement is limited.

the policies: EU vs US

EU Approach (WE-TRANSFORM)	US approach
THEMATIC AREA 4: Minimisation of workforce exclusion and exploitation	
<i>8. Implement governments awareness in the work nature changes</i>	
Adopts proactive, centralised regulation to standardise protections for gig and platform workers, aiming to minimise precarity and unacceptable work conditions before issues arise.	Policies and laws evolve reactively, addressing gig work and platform economy concerns after they emerge. Regulations vary widely by state, with few standardised protections in advance.
<i>9. Fostering female representation in the transport sector</i>	
Strong legal frameworks mandate gender-neutral employment policies, supported by EU-wide initiatives promoting inclusivity, flexible working arrangements, and family-friendly policies.	Similar anti-discrimination laws and affirmative action policies exist. Private and public sector initiative promote diversity, mentorship, and inclusivity. Remote work and flexible scheduling are widely advocated.
<i>10. Protecting older workers from the challenges of upskilling/reskilling</i>	
Focus on active ageing through policy frameworks that promote reskilling, phased retirement, and mentorship programmes. EU law prohibits age discrimination and supports workforce inclusion for older employees.	Age discrimination is prohibited by federal and state laws. Workforce development programmes provide job training and placement. Flexible work arrangements and phased retirement are encouraged to support older workers' participation.
<i>11. Protecting workers with disabilities</i>	
Legal mandates across Member States require reasonable accommodations and promote diversity and accessibility. Government-funded programmes provide training and employment support for individuals with disabilities.	Federal and state laws prohibit discrimination and require accommodation. Numerous programmes support employment, training, and accessibility, with an emphasis on inclusion and diversity in the workplace.



Thank you

Contact us

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Project Coordinator

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04

SESSION 3

Identifying training and reskilling needs



Slido.com: #2935942



Illustration by Storyset / Freepik

Identifying training and reskilling needs



Susana Val

**Zaragoza Logistics Center (ZLC)
/ Research Institute ZLC**

Associate Research Professor / Deputy Director



Fabienne-Agnes Baumann

VDI/VDE-IT
Consultant



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ReSKILLING Annual Stakeholder Event

From Automation to Employment:
Skills for Europe's Transport Future

CCAM specific skills training for enhanced expertise

Susana Val, Zaragoza Logistics Center

16 December | 13:30 - 16:45 (CET) | Online



Funded by
the European Union

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2. METHODOLOGY
3. OUTCOMES

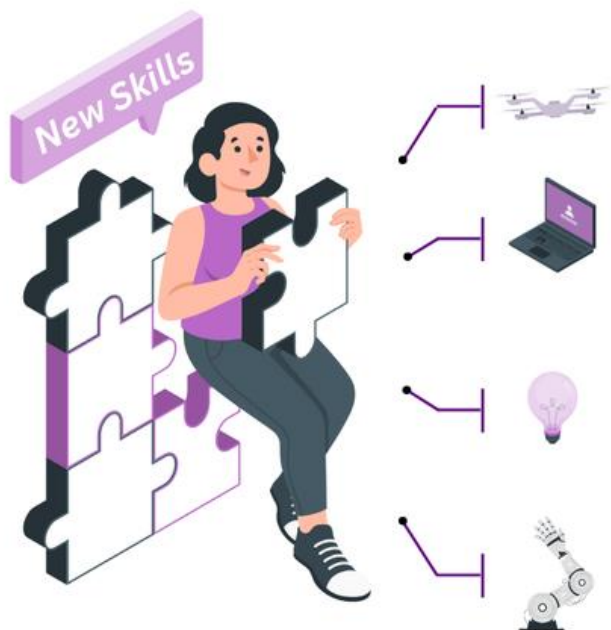


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01

OBJECTIVES



OBJECTIVES

Mitigate negative effects of CCAM deployment

Ensure necessary skills are available

Support job retention and sustainable employment growth

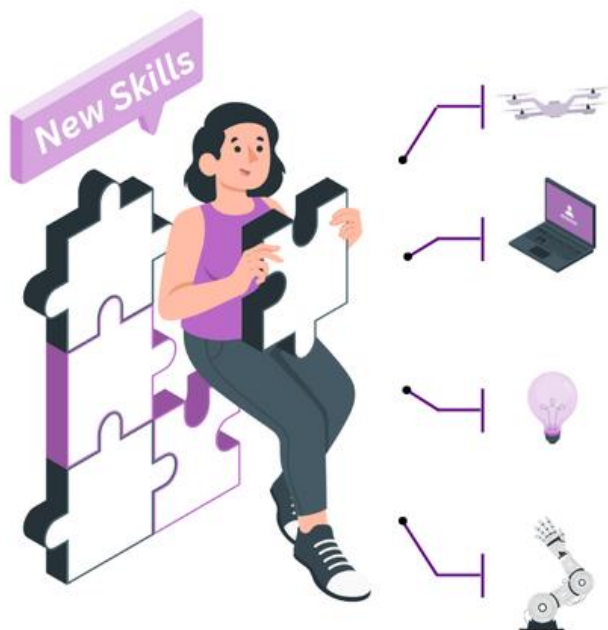
Improve capacity for social innovation

Specific objectives:

1. Suggest and prioritise (through Analytic Hierarchy Process – AHP) at least 20 (re)training schemes
2. Develop at least 5 curricula focused on retaining existing jobs and an additional 5 curricula for training in new/emerging jobs
3. Fully develop at least 3 of these new curricula into comprehensive training modules, inclusive of content and related tools

02

METHODOLOGY



SUPPORTING MATERIALS

CCAM Mapping of Jobs
Diverse training profiles from previous tasks
SKILLFUL, SHOW AND Drive2theFuture projects
Special workforce groups

AHP METHODOLOGY

Allow prioritization by pairs comparison
Include job families within the different value chains defined in our previous work
Include skills from the taxonomy with strong impact on CCAM
Allow assessment from all partners involved, with a variety of knowledge and skills
Providing a rigorous assesment

AHP OUTCOMES

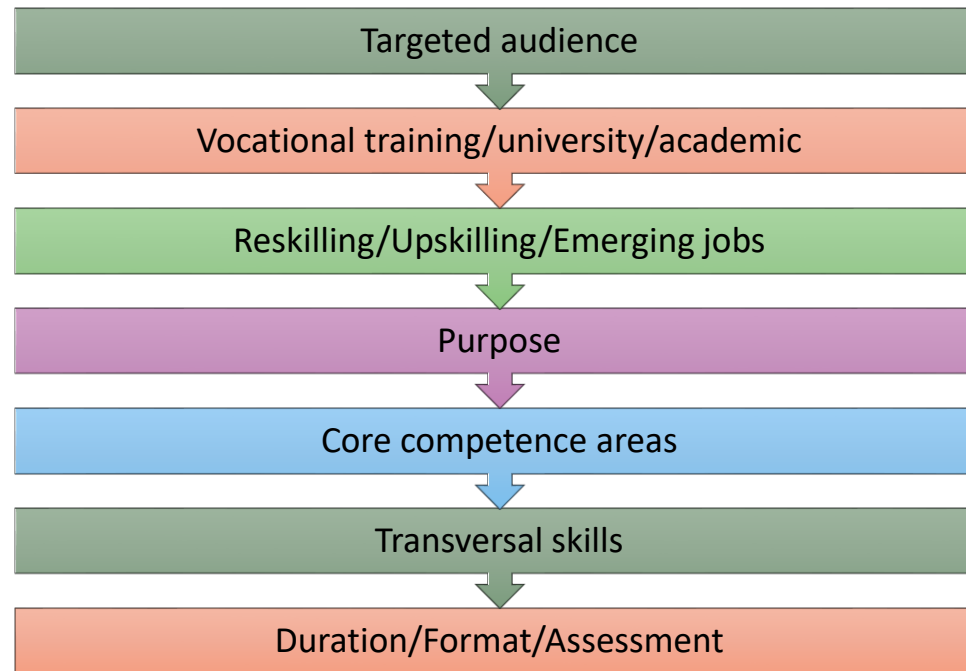
Result: A set of training profiles
Valuable results: Need to develop a training curricula in the short term to allow upskilling and reskilling professionals working in the CCAM
Trainers need to follow a systematic update given the constant changes of the CCAM through the different levels of automation

03

OUTCOMES



- ❑ Transformed into a **set of educational and (re)training modules** that will be developed (5 curricula on existing jobs + 5 curricula for training in new/emerging jobs).
 - Aligned with ESCO classification, Entre Comp and the Pact of Skills.
 - Connections with CCAM Knowledge Base developed in Fame EU project and the EU Common Evaluation Methodology
 - Curricula consisting on a detailed syllabus addressing:



- ❑ 3 of these new curricula will be fully developed into **comprehensive training modules**, inclusive of content and related tools.



Thank you

Susana Val

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Zaragoza Logistics Center

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ReSKILLING Annual Stakeholder Event

**From Automation to Employment:
Skills for Europe's Transport Future**

Towards job creation, growth and innovation

Fabienne-Agnes Baumann, VDI/VDE-IT

16 December | 13:30 - 16:45 (CET) | Online



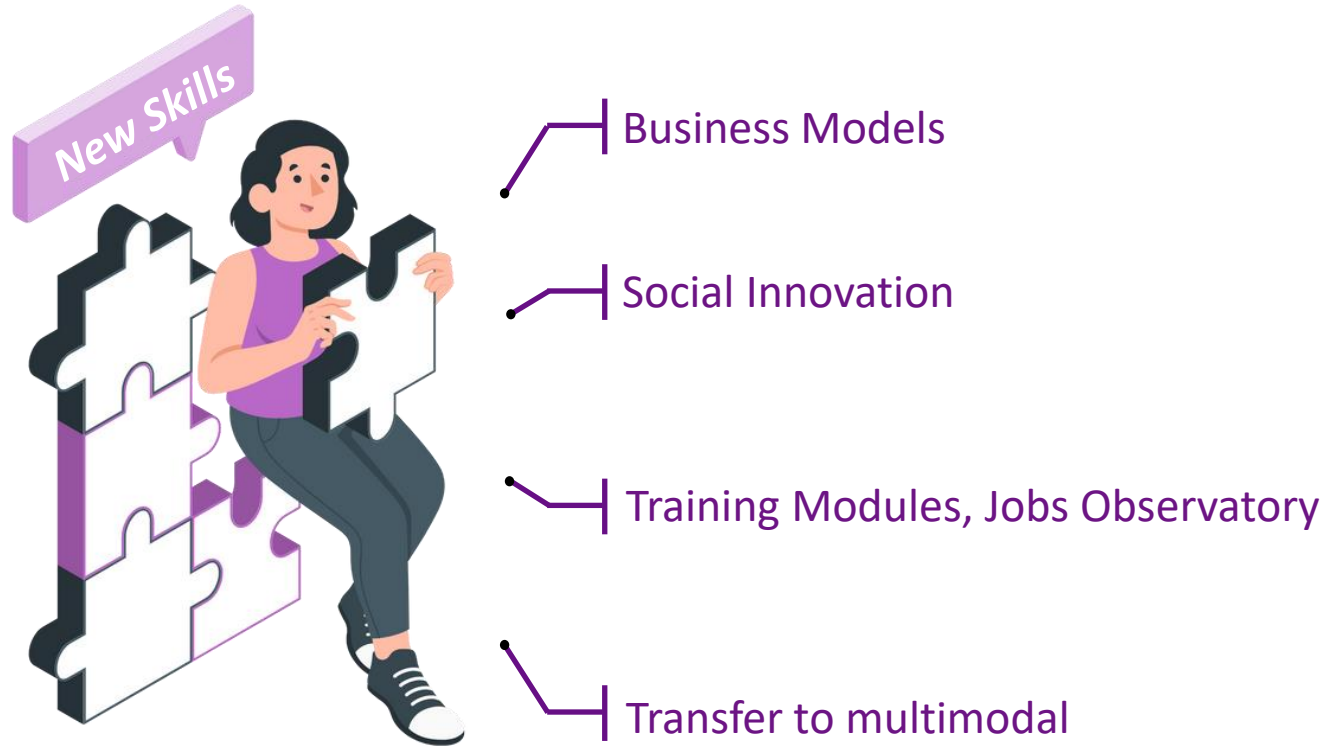
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Towards job creation, growth and innovation

Translating new job profiles and (re)training needs into:



Towards job creation, growth and innovation

Business model development and innovation

How can SMEs and start-ups navigate CCAM-related business model challenges, exploit arising opportunities and create/secure employment?

Key actions:

- Development of a Business Model Innovation and Adaptation Framework
 - Compilation of Business Model Toolkit
- Validation with real-world CCAM case studies



Insights on
jobs, skills
and
stakeholder
needs



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Towards job creation, growth and innovation

Social innovation

How can social innovation be infused into the development of training and (re-)skilling futures?

Key actions:

- Support co-creative development of a preliminary mission for a social skills ecosystem as basis for CCAM deployment
- Development of reskilling journeys for diverse personas covering different ages, genders, blue/white/mixed collar professions and jobs, special workforce groups, vocational and academic learning backgrounds



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Towards job creation, growth and innovation

Training modules

How can CCAM-specific professional skills be built, updated and enhanced?

Key actions:

- Development of Training Curricula
 - Development of Training Modules
 - Creation of a digital CCAM Jobs Observatory
- Test and validation with real-world CCAM case studies



Insights on
jobs, skills
and
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needs



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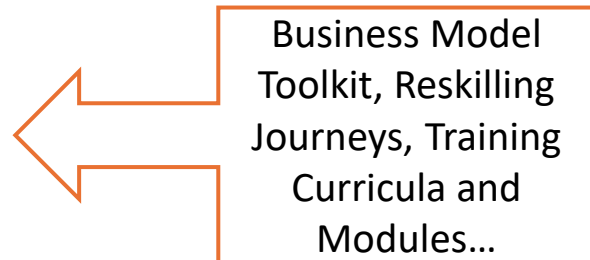
Towards job creation, growth and innovation

Transfer to multimodal

How can Reskilling outputs be made applicable to other transport modes, regions and CCAM deployment sites?

Key actions:

- Establishment of a Replication and Transferability Incubator



Business Model
Toolkit, Reskilling
Journeys, Training
Curricula and
Modules...



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Thank you



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A photograph of two blue ceramic coffee cups filled with latte, featuring intricate latte art. The cups are set on a rustic wooden table. The image is dimmed to serve as a background for the text.

BREAK
See you at 15:40 CET!

Agenda

TIME (CET)	Session Title	Speaker
13:30-14:00 (30')	Introduction	Moderator
13:30 – 13:40 (10')	Event introduction and Interactive Icebreaker	Moderator
13:40-13:50 (10')	Opening Remarks	George Sarros, RESKILLING Project Officer (CINEA)
13:50 – 14:00 (10')	RESKILLING Introduction	Matina Loukea, RESKILLING Coordinator (CERTH)
14:00 – 14:40 (40')	Session 1: Understanding the Impacts of CCAM on Jobs & Skills	Moderator
14:00 – 14:05 (5')	Introductory interaction	Moderator
14:05 – 14:15 (10')	Mapping affected jobs across CCAM value chain	M. Teresa de la Cruz (ZLC)
14:15 – 14:25 (10')	Anticipating CCAM deployment impact on different job types	Davide Dolente (ECORYS)
14:25 – 14:40 (15')	Q&A	
14:40 – 15:10 (30')	Session 2: Preparing workers and social frameworks for CCAM deployment	Moderator
14:50 – 15:05 (15')	Labour Unions' perspective	Philip Freeman (ETF)
15:05 – 15:20 (15')	Policy recommendations on jobs' adaptation	Cristina Pronello, WE-TRANSFORM coordinator (Politecnico di Torino)

15:10 – 15:30 (20')	Session 3: Identifying training and reskilling needs	Moderator
15:10 – 15:15 (5')	Introductory interaction	Moderator
15:15 – 15:20 (5')	Training modules for updated and enhanced CCAM-specific professional skills	Susana Val (ZLC)
15:20 – 15:30 (10')	Broader perspective on training and reskilling needs	Fabienne-Agnes Baumann (VDI/VDE-IT)
15:30 – 15:40 (10')	BREAK	
15:40 – 16:35 (55')	Session 4: Engaging relevant stakeholders in a comprehensive and adapted response	Moderator
15:40 – 15:50 (10')	Building an impactful Stakeholder Community	Jorge Manso Garcia (POLIS)
15:50 – 16:05 (15')	Integrating international perspectives	Henriette Cornet (Urban Innovate)
16:05 – 16:35 (30')	Breakout Rooms: Identify pathways for cooperation	Moderator & Breakout room chairs
16:35 – 16:45 (10')	Conclusion	Moderator
16:35 – 16:40 (5')	Conclusions on priorities and next steps to take	Moderator & Breakout room chairs
16:40– 16:45 (5')	Closing & Next Steps	Moderator
16:45 – 17:30 (45')	Advisory Board Closed Meeting	AB Members and RESKILLING consortium



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04

SESSION 4

Engaging relevant stakeholders in a comprehensive and adapted response



SESSION 4

Engaging relevant stakeholders in a comprehensive and adapted response



Jorge Manso Garcia

POLIS

Policy & Project Officer



Henriette Cornet

Urban Innovate

CEO

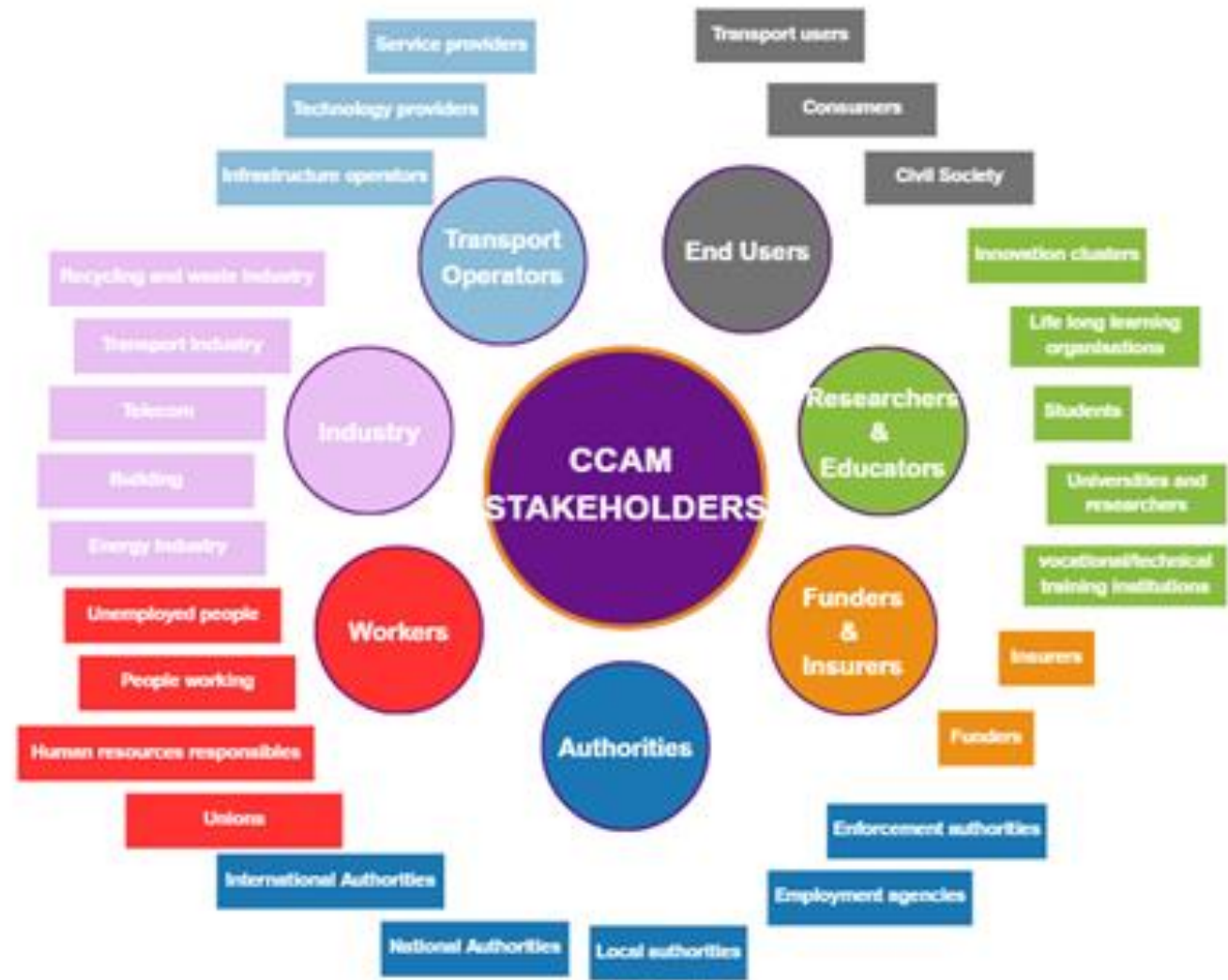


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Engaging everyone at the transition

How to ensure that all stakeholders are represented?





**JOIN
THE
CONVERSATION**

**REGISTER TO
OUR
STAKEHOLDER
FORUM
PLATFORM**



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Engagement timeline

2025 Co-creation workshop
in Brussels

'Women in Transport'
at RelStat 2025 in Riga

2026 Business Models
Stakeholder workshop
with BAX in Q1

Second co-creation
workshop in Q2

Expert Interviews

Labs on good practices
for social innovation



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From Automation to Employment Perspectives from the U.S.

RESKILLING Annual Event – Dec 16th, 2025

Dr Henriette Cornet
CEO Urban Innovate

Insightful? Now, let's talk!

- Breakout rooms
- Objective: Get to know each other & establish cooperation pathways
- What is cooperation?

Across stakeholder types, localities, countries, regions

- learn from each other
- co-create a tool/strategy/programme
- co-invest
- share data
- ...

How do you cooperate? How do you wish to cooperate? How can RESKILLING help?



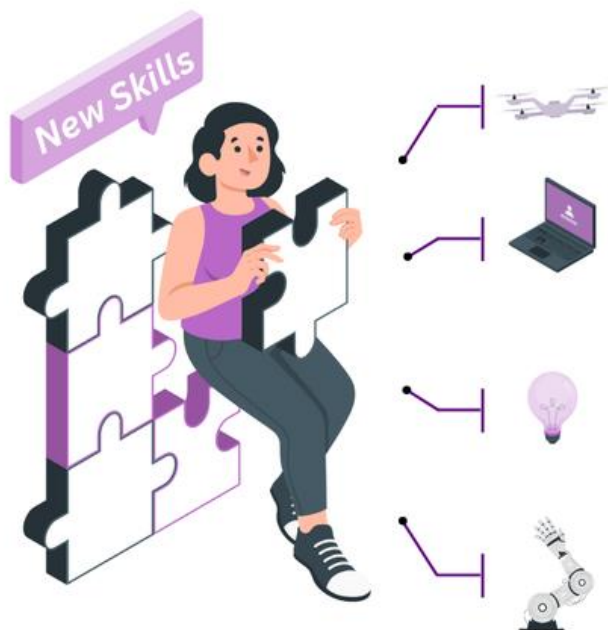
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05

CONCLUSION

Closing & Next Steps



Breakout rooms report



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Next steps

- Employment effects on specific workforce groups & Use cases definition
- Short, medium and long-term employment effects of CCAM
- Setup of the CCAM Employment & Skills Observatory
- Novel Business Models for CCAM and RESKILLING Toolkit



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Closing

- Join the RESKILLING Stakeholder Forum!

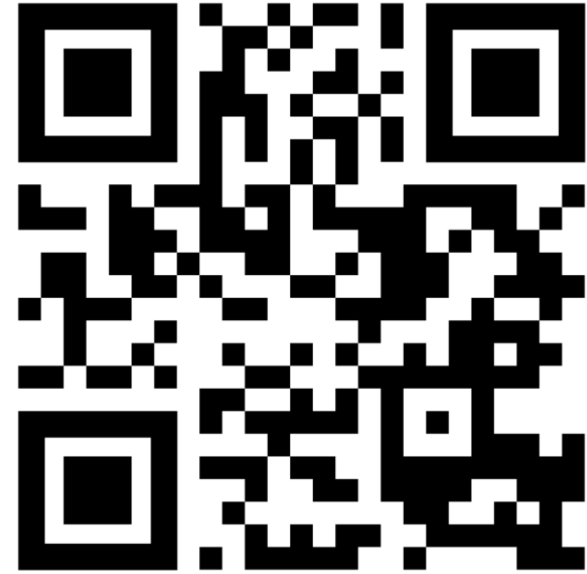
<https://reskilling.bettermode.io/>

- Follow us on social media



- Join our upcoming activities!

... And the next annual virtual event



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Thank you



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