ENGINEERS EUROPE

An Introduction

Dirk BOCHAR
Secretary General

website : www.engineerseurope.com

ENGINEERS EUROPE

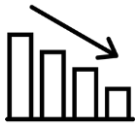
I. OUR OBJECTIVES

ENGINEERS EUROPE (previously FEANI) strives for **a single voice of the engineering profession** in Europe and wants to affirm and develop the professional identity of engineers.

ENGINEERS EUROPE issues and promotes the **EUR ING Certificate**, a document which facilitates the cross-border mobility of engineers and the mutual recognition of engineering qualifications in Europe.

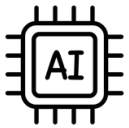
ENGINEERS EUROPE is Project Leader of the EU funded **"Engineers for Europe" (E4E)** ERASMUS+ Project (2022-2025), which has established a "European Engineering Skills Council" as a multi- stakeholder think-tank.

II. OUR CONCERNS



Europe is likely to face a **critical shortage of engineers** for the following years. This poses a significant concern for the **future competitiveness of Europe** in terms of innovative and technical capacities. Companies also face demographic changes with an aging workforce.

The structural problem of **skills mismatches** and the newly evolving and emerging skills, requires a more resilient review process of educational curricula to prepare the next generation of engineers. Systemic and critical thinking are key competencies to support the green and digital transition, next to soft and entrepreneurial skill sets.



The engineering profession is going through a **rapid evolution** with the development of the virtual world and Artificial Intelligence (AI), which causes the disappearance of old concepts and the appearance of new ones. **Up-skilling and re-skilling** are important elements to maintain future employability.

Founded in 1951

National Members in 33 EHEA Countries

± 350 National Engineering Associations

Representing ±6 million engineers

III. OUR ACTIONS

ENGINEERS EUROPE

National Members from 33 EHEA countries meet to **exchange best practices** in Regional Group Meetings and at the National Members' Forum every six months. ENGINEERS EUROPE is also a founding member of the **World Federation of Engineering Organizations (WFEO).**

We developed a ***Position Paper*** on **"The Role of the European Engineering Community with Regard to the UN Sustainability Goals"** and in particular on SDG 7, "Affordable and Clean Energy".

Since September 2023, ENGINEERS EUROPE established the **European Engineering Skills Council**, a think-tank for the engineering profession and a multi-stakeholder exchange platform, consisting of high level academic and business representatives, professional engineering organizations and policy makers.

Based on the EU Commission's Competence Frameworks of DigComp, Entre Comp, LifeComp and GreenComp, ENGINEERS EUROPE developed four (4) **Micro-Credential Courses** relating to those topics and skills.

ENGINEERS 4 EUROPE

An Introduction

Dirk BOCHAR
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website : www.engineers4europe.eu

ENGINEERS 4 EUROPE

An Erasmus + funded Project 2022-2025

Major Goal

How to close the Skills Gap ?

Major Objectives

1. Establish a European Engineering Skills Strategy
2. Establish a European Skills Council
3. Develop 4 Microcredentials
4. Disseminate Results

website : www.engineers4europe.eu

WELCOME TO THE ENGINEERS FOR EUROPE (E4E) PROJECT

Discover our free online courses on **Green**, **Digital**, **Entrepreneurial** and **Transversal** skills. Get started here!

Engineers 4 Europe Learning Platform

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- **Project Introduction**
  - Project Summary
  - Consortium Partners
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- **E4E Skills Strategy**
  - E4E Skills Strategy 2024
  - E4E Skills Strategy 2023
  - Best Practice Examples
- **Research Results for the E4E Skills Strategy**
- **Skills Council Rules of Procedure**
  - Skills Council Rules of Procedure
- **Roadshow Events**
  - Ordem dos Engenheiros & FEUP, 17 September 2024, Lisbon
  - Newport Group, 7 November 2024, Bratislava

Dissemination

- **Published articles**
  - Engineers Europe: Un'iniziativa per rafforzare la professione ingegneristica in Europa
  - VDI Newsletter February 2025
  - Nieuwe training voor ingenieurs voorgesteld op Campus De Nayer: "Sociale vaardigheden en levenslang leren zijn noodzakelijk"
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Gallery

- **Second Skills Council Meeting Brussels, 16-17 May 2024**
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Back Office Documents

- **Ongoing Working Documents**
- **E4E Project & Skills Council Meeting Brussels, 23 June 2025**
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  - Draft Agenda
  - A/D-List Project Meeting 5 December
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I. RESULTS OF THE SKILLS STRATEGY

WHO NEEDS TO DO WHAT BY 2030 ?

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1. Professional Organisations should cultivate an entrepreneurial! and interdisciplinary mindsets; inspire youth and support veteran engineers; drive LLL through tailored, quality-assured micro-credentials; host knowledge-sharing forums; certify cross-border competence; advocate in policy arenas and disseminate EU recognition tools in combination with project results, widely across Europe's engineering ecosystem.

2. Policy makers must reignite youth interest in STEM, broadening diversity through awareness campaigns and inclusive, problem-based learning. Sustainably fund HEI and VET modernisation, backing micro-credentials, joint and dual programs. Simplify visas, scholarships and a central talent platform to draw global engineers. Build an EU engineering micro-credentia! hub, embed Al competence frameworks and promote green-skills literacy across all education levels nationwide.

3. HEIs and **VET providers** must overhaul training to meet 21st-century demands. Integrate SDGs, making green and digital competences core of every curriculum by 2030. Adopt Education 4.0 pedagogies, expand micro-credentials and practical, hands-on learning to close theory-practice gaps. They must diversify pathways through vocational apprenticeships, dual degrees and STEM mentorship. Embed entrepreneurship skills - strategy, finance, opportunity recognition — into programs. Forge enduring industry partnerships, co-run labs with up-to-date equipment and upskill faculty in technology and pedagogy. Promote cross-border exchanges and EQF-aligned modular qualifications for learner mobility.

4. Industry should counter talent shortages by co-designing curricula with HEIs, offering project-based apprenticeships and mentorship; funding in-house, micro-credential upskilling in renewable and digital fields; retaining senior engineers through flexible work; broadening recruitment to women, underrepresented groups and career changers to build a competitive workforce.

II. WHY JOIN THE ENGINEERING SKILLS COUNCIL ?

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1. WHAT IT WANTS TO CONTINUE TO BE :

"An independent platform for Corporate Partnership and Stakeholder Dialogue at EU level, acting as an Observatory and ongoing Panel of Experts on the topic of European Engineers".

- Focusing on Europe-wide Data Collection on the challenges of the engineering profession : monitoring required competences, while analysing the demand + supply for the future.
- Ensuring ongoing Strategic Monitoring by proactively recognizing new trends and the need for action = annual up-dating of the Skills Strategy.
- Increasing Awareness and promoting the public Image of engineers in Europe and regularly communicate these findings.
- Formulating Recommendations to Policy Makers.

II. WHY JOIN THE ENGINEERING SKILLS COUNCIL ?

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2. WHAT IT WANTS TO CONTINUE TO DO :

- Reinforcing the liaison with other European Engineering Organizations.
- Ongoing monitoring of reports and publications on engineering competences.
- Establishing virtual WGs on specific subjects/topics and consider the findings at annual/semi-annual Skills Council Meeting to update the Skills Strategy
- Establishing and extending formal partnerships as associated membership, either individual or corporate = multinational companies, SMEs, sector organizations (HEI/VET providers, civil society organisations, etc.)
- Seeking longer term commitment : 3 years

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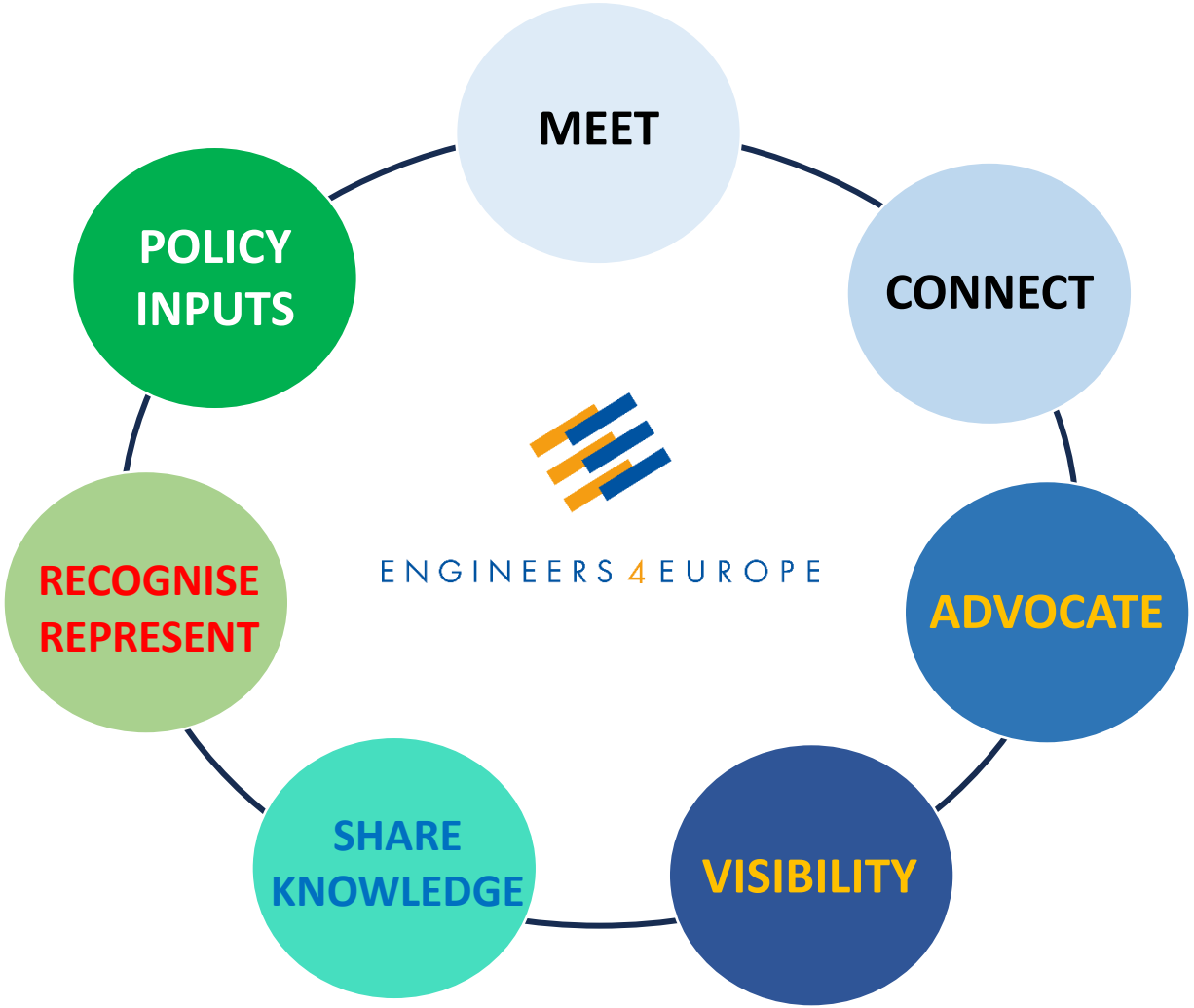
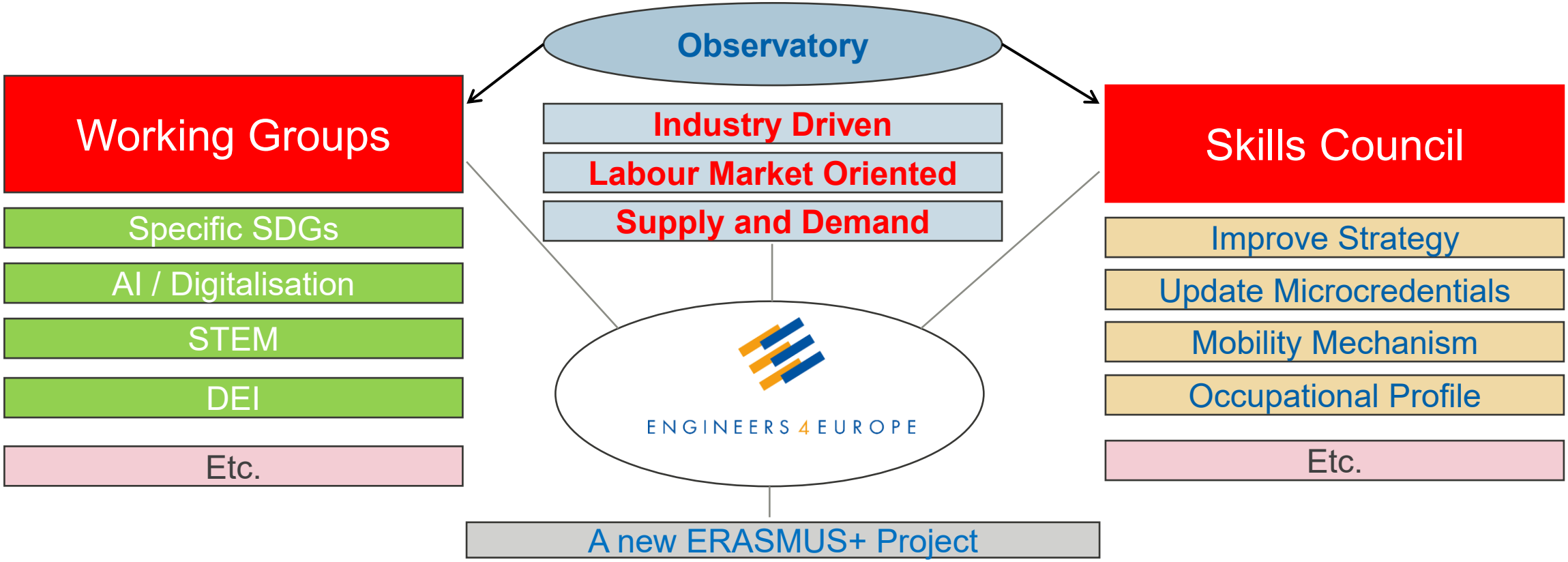
3. WHAT IT WANTS TO OFFER AS ADDED VALUE :

- Direct access to information and to unpublished background information from the stakeholders involved (i.e. best practice exchange, position papers, networking).
- Participation in future data collection (desk research, analysis of available data, interviews and surveys, etc.).
- Participation in thinking along for future versions of the Engineering Skills Strategy, as well as obtaining exposure and visibility while evaluating research findings (e.g. in podcasts).
- Regular and valuable liaison with other stakeholder groups.
- Common Event and Participation : 4 March - World Engineering Day.

II. WHY JOIN THE ENGINEERING SKILLS COUNCIL ?



ENGINEERS 4 EUROPE 2.0



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TRANSVERSAL COMPETENCES IDENTIFIED AND DESCRIBED BY E4E AND THE EU

III. Development of 4 Microcredentials

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DIGITAL SKILLS

ASIGNADO POR E4E A : NEWPORT GROUP

1. **MEET DigiERA**
   1.1 Browsing, searching and filtering data, information and digital content
   1.2 Evaluating data, information and digital content
   1.3 Managing data, information and digital content
2. **GET DigiSkills**
   2.1 Interacting through digital technologies
   2.2 Sharing through digital technologies
   2.3 Collaborating through digital technologies
   2.4 Netiquette
   2.5 Managing digital identity
3. **MASTER DigiCraftree**
   3.1 Developing digital content
   3.2 Integrating and re-elaborating digital content
   3.3 Copyright and licences
4. **SECURE DigiGuard**
   4.1 Protecting devices
   4.2 Protecting personal data and privacy
   4.3 Protecting the environment
5. **SOLVE DigiTeche**
   5.1 Solving technical problems
   5.2 Identifying needs and technological responses
   5.3 Creatively using digital technologies

DOCUMENTO JRC EUROPEAN COMMISSION

1. **Information and data literacy**
   1.1 Browsing, searching and filtering data, information and digital content
   1.2 Evaluating data, information and digital content
   1.3 Managing data, information and digital content
2. **Communication and collaboration**
   2.1 Interacting through digital technologies
   2.2 Sharing through digital technologies
   2.3 Engaging citizenship through digital technologies
   2.4 Collaborating through digital technologies
   2.5 Netiquette
   2.6 Managing digital identity
3. **Digital Content Creation**
   3.1 Developing digital content
   3.2 Integrating and re-elaborating digital content
   3.3 Copyright and licences
   3.4 Programming
4. **Safety**
   4.1 Protecting devices
   4.2 Protecting personal data and privacy
   4.3 Protecting health and well-being
5. **Problem solving**
   5.1 Solving technical problems
   5.2 Identifying needs and technological responses
   5.3 Creatively using digital technology
   5.4 Identifying digital competence gaps

GREEN SKILLS

ASIGNADO POR E4E A : TU DUBLIN

1. **Embodying Sustainability Values**
   1.1 The rise of Sustainability
   1.2 Policy Reaction to Sustainability and Climate Change
   1.3 What is Corporate Sustainability?
   1.4 Defining the ESG issues
   1.5 Articulate your business case
2. **Embracing complexity in sustainability**
   2.1 Sustainability Strategy & GreenComp
   2.2 Sustainability Vision
   2.3 Sustainability Priorities/Pillars
   2.4 Sustainability Targets
   2.5 Carbon Measurement
   2.6 SDGs and Targets
3. **Envisioning and acting for sustainability**
   3.1 ESG Actions
   3.2 Carbon Offsetting
   3.3 Sustainability Reporting
   3.4 Influencing for Sustainability Action

DOCUMENTO JRC EUROPEAN COMMISSION

1. **Embodying sustainability values**
   1.1 Valuing sustainability
   1.2 Supporting fairness
   1.3 Promoting nature
2. **Embracing complexity in sustainability**
   2.1 Systems thinking
   2.2 Critical thinking
   2.3 Problem framing
3. **Envisioning sustainable futures**
   3.1 Futures literacy
   3.2 Adaptability
   3.3 Exploratory thinking
4. **Acting for sustainability**
   4.1 Political agency
   4.2 Collective action
   4.3 Individual initiative

LIFE SKILLS

ASIGNADO A POR E4E A: KU LEUVEN

1. **What type of engineer am I now? Self-reflection!**
   1.1 How to reflect on our professional growth
   1.2 Discovering our preferred engineering role
2. **And what do the people around me think? Feedback literacy!**
   2.1 How do I experience feedback?
   2.2 How to make the most out of feedback?
3. **What type of engineer would I like to become? Self-regulation!**
   3.1 Why self-regulation is important
   3.2 Evaluating our preferred engineering role

DOCUMENTO JRC EUROPEAN COMMISSION

1. **THE PERSONAL AREA**
   1.1 Self-regulation
   1.2 Flexibility
   1.3 Wellbeing
2. **THE SOCIAL AREA**
   2.1 Empathy
   2.2 Communication
   2.3 Collaboration
3. **THE LEARNING TO LEARN AREA**
   3.1 Growth mindset
   3.2 Critical Thinking
   3.3 Managing Learning

ENTREPRENEURIAL SKILLS

ASIGNADO POR E4E A U. PORTO

1. **Opportunity Landscape – Innovation Opportunities**
   1.1 Responsible Innovation
   1.2 Opportunity Shaping and Reshaping
   1.3 Problem Solution Fit
   1.4 Workshop: Navigating Trends
2. **Strategy & Operations**
   2.1 Business Model Canvas – A Reflection
   2.2 Customer Job Discovery
   2.3 Test the Value Proposition
   2.4 Test the Value Creation / Business Model
3. **Business Deployment**
   3.1 Technology Adoption
   3.2 Solution-Market Fit / MVP
   3.3 Operating Model Canvas
   3.4 Metrics & Roadmap

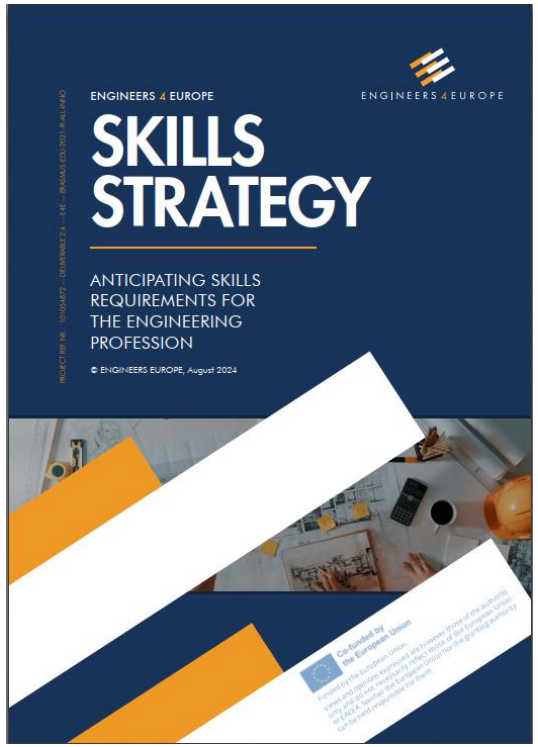
DOCUMENTO JRC EUROPEAN COMMISSION

1. **Ideas and Opportunities**
   1.1. Spotting opportunities
   1.2. Creativity
   1.3. Vision
   1.4. Valuing ideas
   1.5. Ethical and sustainable thinking
2. **Resources**
   2.1. Self-awareness and self-efficacy
   2.2. Motivation and perseverance
   2.3. Mobilising resources
   2.4. Financial and economic literacy
   2.5. Mobilizing others
3. **Into Action**
   3.1. Taking the initiative
   3.2. Planning and management
   3.3. Coping with uncertainty, ambiguity and risk
   3.4. Working with others
   3.5. Learning through experience

IV. Dissemination Results

ENGINEERS 4 EUROPE

40 European Events, Conferences and Seminars, directly addressing some 5.000 participants in total
29 Published Articles and Press Releases
20 Best Practice Examples
82 Post on Social Media
11.160 LinkedIn followers



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