



# REWIRE - Cybersecurity Skills Alliance

## A New Vision for Europe

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# R6.3 Impact

# Evaluation report No. 4



<b>Title</b>	R6.3 Impact Evaluation Report No. 4
<b>Document description</b>	The Impact Evaluation Report No. 4 presents the second Impact Evaluation of the REWIRE project covering the evaluation of the impact of project outputs delivered between month 37 and 49, namely from 01 November 2023 to 31 November 2024.
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<b>Version 02</b>	APIRO, LRQA, CCC	28/12/2024	Added information on the innovation and impact of the REWIRE project – with a focus on the ECSF and the certification schemes.
<b>Version 03</b>	UL	30/12/2024	Added information on the EuroSatory Military Forum and information on the First French FISEA Engineering Degree on Cybersecurity.
<b>Version 04</b>	ReadLab	09/01/2025	Integrated and homogenised the suggestions received from consortium partners.

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## 1 EXECUTIVE SUMMARY

The evaluation of the REWIRE project deliverables and other tangible results is essential for its continuous improvement. The report at hand presents the fourth Impact Evaluation of the REWIRE project summarizing the major achievements of the REWIRE project from month 37 to month 49, namely from 01 November 2023 to 30 November 2024, and discussing whether the project objectives had been met.

The 4<sup>th</sup> Impact Evaluation Report employs a mixed methodology in order to collect and analyse both qualitative and quantitative data on the second year of the project. It assesses the impact project level and examines whether the milestones and the key performance indicators have been achieved. This edition also incorporates external feedback received from stakeholder surveys and gives a comprehensive overview of the project's performance during its second year.

Overall, the REWIRE project has achieved significant milestones, engaging stakeholders across consortium countries through National Info Days, International Events, and the Final Project Conference. These events fostered meaningful discussions on cybersecurity skills development and raised awareness of the project's key outcomes. Evaluations of these engagements demonstrated high levels of satisfaction and highlighted the relevance of REWIRE's deliverables, including the REWIRE training courses and the CyberAbility Platform. The impact analysis of the courses underscored their effectiveness in enhancing cybersecurity competencies and their applicability to professional contexts, solidifying REWIRE's contribution to addressing the evolving needs of the cybersecurity sector.

## 2 INTRODUCTION

### 2.1 PROJECT BACKGROUND

The Cybersecurity Skills Alliance – New Vision for Europe – REWIRE project is the Alliance formed from the four winning pilot projects of the 2018 Horizon 2020 cybersecurity call "establishing and operating a pilot for a European Cybersecurity Competence Network and developing a common European Cybersecurity Research & Innovation Roadmap": CONCORDIA, ECHO, SPARTA and CyberSec4Europe. Thus, the REWIRE Alliance represents the more than 160 partners of the four pilot projects, including big companies, SMEs, universities and cybersecurity research institutes, from 26 EU Member States.

This project aims to provide concrete recommendations and solutions that would lead to the reduction of skill gaps between industry requirements and sectoral training provision and contribute to support growth, innovation, and competitiveness in the field of Cybersecurity. REWIRE is co-funded by the ERASMUS+ programme of the European Union (Agreement Number – 621701-EPP-1-2020-1-LT-EPPKA2-SSA-B) for a duration of four years (01.11.2020 to 30.1.2024).

### 2.2 PROJECT OBJECTIVES

REWIRE builds a Blueprint for the Cybersecurity industry and a concrete European Cybersecurity Skills Strategy. This strategy will bring together lessons learned from other initiatives (i.e. CONCORDIA, SPARTA, ECHO, CyberSec4Europe) and will be outlined from a holistic approach, identifying political, economic, social, technological, legal and other factors which may be affecting sector skills and training offer. Encompassed with activities, milestones, outcomes and outputs, these activities will be developed during the course of the project:

- Design and implementation of a Blueprint for the Cybersecurity industry.
- Develop a European Cybersecurity Skills Strategy.
- Develop a common methodology for the assessment of the current situation and to anticipate future needs, through identification of existing and emerging skills needs.
- Create a European Cybersecurity Skills Observatory integrated by specific actions, activities and tools that allow for anticipation and matching of skills supply and demands.
- Support the strategy and framework through the implementation of a digital on-line publicly accessible European Cybersecurity Skills Digital Observatory – CyberABILITY (for cybersecurity skills merging the market needs, the profiles, the competencies and the available training courses).
- Create a Cybersecurity Skills Framework containing profiles for the needed cybersecurity profiles and their analysis.

- Pilot a federated cyber range hosted by multiple project partners to support the goals of the project.
- Create at least four (4) educational curricula and relevant skills certification schemes for profiles contained in the Cybersecurity Skills Framework.
- Promoting the attractiveness of the sector and gender balance through specific actions to engage all relevant stakeholders.
- Develop actions for encouraging mobility through promoting the use of existing European tools (Erasmus+, EURES, EAfA etc.).
- Create networks to improve skills intelligence and information mechanisms and strengthen the exchange of knowledge and practice between the cybersecurity industry and the VET providers, adapting VET provision to the skills needs demanded by the sector.

REWIRE aims to get main market players involved taking up opportunities to make the best of their talents. They will constitute together with the partnership, the Sector Skills Alliance, the necessary driver to push a sustainable sectoral strategy and Blueprint implementation as mentioned above.

## 2.3 DOCUMENT OBJECTIVE

This report documents the impact attained during the fourth year of the project, namely from month 37 to 49. According to the QA plan, the objective of evaluating the impact is to assure *that target groups are satisfied and use the products and methodologies developed by the project, and targets planned for dissemination and exploitation are met.*

The impact of the project is assessed internally by the partnership and externally by the project's stakeholders (including sometimes by the Focus Group and Expert Advisory Board). The purpose of this report is to give an overview of the project's performance and impact indicators.

## 2.4 METHODOLOGY AND DATA COLLECTION

The impact evaluation reports require the use of both quantitative and qualitative methods using a combination of 5-score Likert scale questions, open-ended questions.

The current impact analysis is based upon primary and secondary sources such as feedback forms, questionnaires, checklists, web and social media analytics and post-event reports. In order to collect primary and secondary data on the project's impact, ReadLab used the following **tools** (as defined by the QA plan):

- Event Evaluation Surveys
- Post-Course surveys
- Website Usage Analytics Data

An Infoday evaluation form was administered by ReadLab in April 2024. The questionnaire, which included evaluation questions regarding impact, was uploaded on the Google Forms platform in the account owned by the REWIRE project in order to facilitate the compilation and subsequent collection of data. Attendees of the numerous infodays were requested to fill in the questionnaire at the end of each infoday. The same process was followed for the final conference evaluation survey. The data were collected and processed in an anonymous and aggregate form to prepare a summary report of the main elements emerging from the survey. Subsequently, ReadLab conducted a quantitative and qualitative analysis of the responses coming from surveys.

In addition to the stakeholder evaluation process described above, ReadLab post-course survey following the end of the first VLH Delivery period. The survey was sent to users who took REWIRE courses on the virtual learning hub. Requests to fill in the questionnaire were sent by email to all users. The data were collected and processed by ReadLab in an anonymous and aggregate form to prepare a summary report of the main elements emerging from the survey.

The usage data for the CyberAbility platform was collected anonymously throughout its operational period to ensure user privacy while gaining valuable insights. This data provided a comprehensive view of usage patterns, user engagement, and the platform's overall impact. Metrics such as visit duration, geographical distribution of users, and interactions with specific modules were analyzed to assess the platform's effectiveness in meeting the needs of cybersecurity professionals, organizations, and academic institutions.



### 3 STAKEHOLDERS

#### 3.1 NATIONAL INFODAYS

As the REWIRE Project made strides towards achieving its goals, it orchestrated a sequence of National Infodays across various European countries, playing a pivotal role in its continuous outreach and dissemination endeavours.

The principal and paramount aim of these events is to proficiently and extensively disseminate the significant outcomes, advancements, and objectives of the REWIRE project to a wide-ranging group of stakeholders. This, in turn, aims to cultivate a deeper comprehension of the project's mission and accomplishments among a diverse and influential audience.

A total of 23 events took place since the last Impact Evaluation report attracting over 1840 Participants.

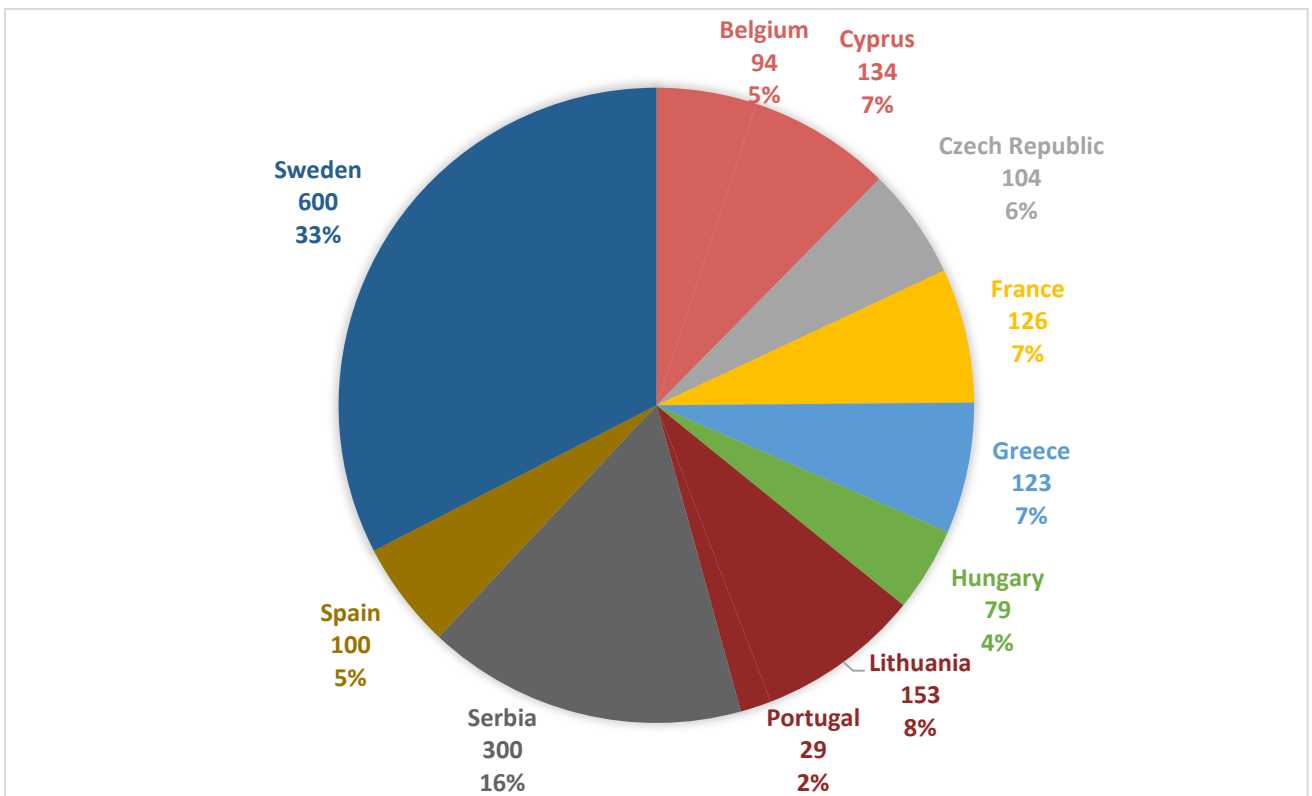


Figure 1 Infoday attendees per country

The participants of the REWIRE Infodays represented a diverse and multidisciplinary audience, encompassing key stakeholders from academia, industry, civil society, and the public sector. A significant portion of attendees were professionals, including cybersecurity and ICT experts, VET providers, and industry representatives, reflecting the relevance of the events to current workforce development needs. Academia was prominently represented, with higher education academic staff, students, and researchers actively engaging in discussions, underscoring the events' alignment with educational priorities. Policy-makers

and representatives from organizations such as the French or the Greek armed forces and NGOs also contributed to the discussions, highlighting the events' broader societal impact. This diverse composition of participants attests to the wide-reaching appeal and inclusivity of the REWIRE Info Days, fostering collaboration and knowledge exchange across multiple sectors.

The majority of the Infodays as well as well as the majority of the participations were in Person. Among the 23 total events, 12 were in-person, followed by 8 online and 3 hybrid. Similarly, participation numbers reflect this trend, with 1,348 participants attending in-person events, compared to 263 online and 233 hybrid.

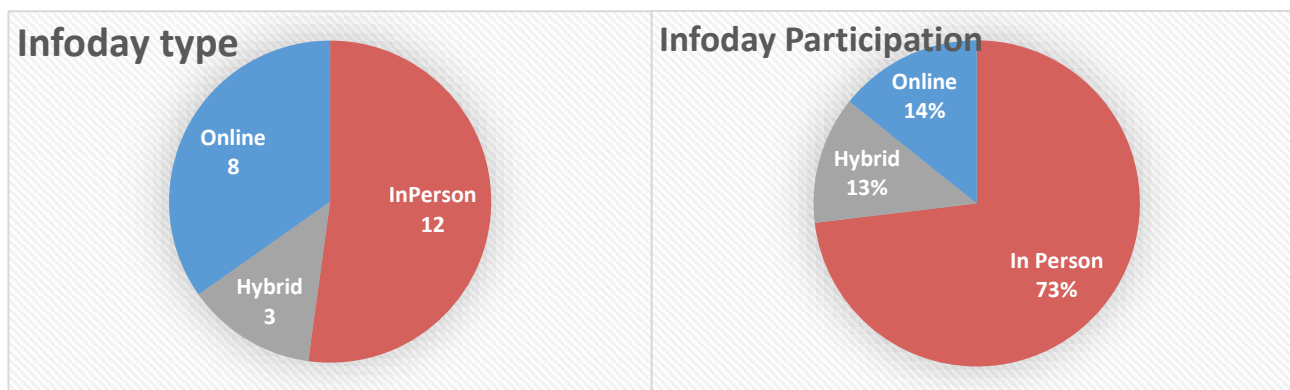


Figure 3 Infoday type

Figure 2 Infoday Participation breakdown

The dominance of in-person events, known for their effectiveness, highlights the project's strong impact. This format's prevalence among both events and participants underscores its success in fostering meaningful engagement.

### 3.1.1 Belgium

#### 2nd National Infoday 2023

The 2nd National Infoday in Belgium, titled *Securing Cyber Futures: Empowering Skills for Tomorrow*, took place on November 29, 2023, at EfVET premises in Brussels during the Lifelong Learning (LLL) Week. Organized by EfVET and EVTA, the event attracted 25 participants, including representatives from non-profit organizations, institutions, foundations, colleges, and EU national representative offices. The event served as a platform for diverse stakeholders to engage with the REWIRE project and broader discussions on cybersecurity.

The event had multiple objectives, including raising awareness about cybersecurity, presenting the REWIRE project and its training courses, addressing the gender gap in ICT and cybersecurity, and discussing cybersecurity from an EU policy perspective. The program featured a keynote by Giulia Meschino, Director-Secretary General at EVTA, followed by presentations from experts such as Matthews Jose (VL), who outlined the REWIRE course development process, and Saskia Brugman (Women 4 Cyber Foundation), who highlighted gender disparities and mentoring initiatives. Additional insights were shared by Hervé Docq

(Technobel) and Norman Röhner (ALL Digital), focusing on cybersecurity training and policy aspects. Paolo Nardi (EfVET) concluded the event with key takeaways and facilitated a Q&A session.

**Potential Impact:**

**Belgium**

The event generated considerable interest among participants, many of whom expressed curiosity about enrolling in the REWIRE courses and learning more about the project. Attendees recognized the relevance of such initiatives for both professional and personal development, emphasizing the need for greater visibility of projects like REWIRE. The event also enhanced EfVET and EVTA’s standing in the VET and ICT space, particularly by leveraging the platform of LLL Week to introduce REWIRE to new audiences.

**Bridging the Cybersecurity Gap – REWIRE Training Courses**

The event, Bridging the Cybersecurity Gap: The REWIRE Training Courses, was held online on May 14, 2024. Organized by EVTA and EfVET, it attracted 32 participants, including representatives from national cybersecurity centers, vocational education and training (VET) providers, academia, European institutions, and consultancy firms. Notable organizations in attendance included the National Cyber Security Centre of Lithuania, the European Digital SME Alliance, and DG EMPL & CNECT from the European Commission.

The event aimed to promote the second round of REWIRE training courses for four occupational profiles and emphasized their role in addressing the cybersecurity skills gap. Key presentations included Michael Horgan from DG EMPL outlining EU digital skills initiatives, and Alan Briones Delgado from Ramon Llull University showcasing the REWIRE courses and their innovative features, including the Virtual Learning Environment (VLE) and Cyber Range. Additional contributions came from Andrei Popescu, who introduced the European Cyber Skills Academy, and Caterina Bortolaso, who highlighted the Digital Large-Scale Partnership under the Pact for Skills initiative. Discussions focused on challenges, opportunities, and best practices in cybersecurity skills development and their relevance to workforce readiness in the digital age.

**Potential Impact:**

**Belgium**

Despite limited direct interaction during the online event, participants demonstrated interest through the Zoom platform and post-event follow-ups. Attendees expressed interest in the REWIRE courses as vital tools for advancing cybersecurity expertise. The event enhanced the project’s visibility and underscored the importance of collaboration among stakeholders to address Europe’s cybersecurity skills gap. It also highlighted EVTA and EfVET’s roles as key contributors to cybersecurity education and advocacy, fostering connections for future partnerships and innovation in the sector.

**3.1.2 Lithuania**

**2nd National Infoday 2023**

The 2nd National Infoday in Lithuania, titled “Challenges of Teaching Cybersecurity Competencies”, was held on November 17, 2023, at the Mykolas Romeris University Research and Innovation Centre. Organized by Mykolas Romeris University (MRU), the event welcomed

63 participants, including representatives from governmental institutions, certification and standardization bodies, businesses, and vocational training institutions. Notable attendees included the Ministry of Education, Science and Sport, Association INFOBALT, and Lithuanian Cybercrime Competence and Research Center.

The event aimed to present the updated REWIRE skills blueprint and the Vocational Open Online Courses (VOOCs) while gathering feedback from policymakers and business representatives on integrating these resources into educational and professional qualification systems. The agenda featured presentations on the EAGLE initiative for improving digital skills, the European Digital Innovation Hubs (EDIH) training network, and a state-of-the-art digital education platform utilizing individual learning accounts. These sessions were complemented by a panel discussion exploring challenges and solutions in advancing cybersecurity competencies.

**Potential Impact:**

**Lithuania**

The event effectively highlighted the importance of cybersecurity education, sparking in-depth discussions that extended beyond the allocated time. Participants expressed interest in integrating the REWIRE VOOCs into national qualification frameworks, with several requesting further materials and information post-event. The engagement demonstrated the potential for continued collaboration between academic, governmental, and business stakeholders to enhance Lithuania's cybersecurity capabilities.

**3rd National Infoday 2024**

The 3rd National Infoday in Lithuania, titled Cybersecurity Opportunities for SMEs, was held on May 8, 2024, at the Mykolas Romeris University (MRU) Research and Innovation Centre. The event was organized by the REWIRE project in collaboration with the Lithuanian Cybercrime Center of Excellence for Training, Research, and Education (L3CE). It attracted 90 participants, including SMEs, industry professionals, academic representatives, and policymakers.

The event showcased the updated REWIRE Cybersecurity Vocational Open Online Courses (VOOCs), including CISO, Penetration Tester, Cyber Incident Responder, and Cyber Threat Intelligence Specialist. The agenda also featured presentations on EU-funded projects, such as CYSSME, EAGLE, and DI4LithuanianID, highlighting resources and innovative solutions for cybersecurity readiness. Expert discussions addressed funding opportunities, free cybersecurity software, and strategies to mitigate cyber threats.

**Potential Impact:**

**Lithuania**

The event underscored the importance of cybersecurity skills for SMEs and society at large. Participants expressed strong interest in the VOOCs and their potential to enhance workforce capabilities. Practical insights from L3CE representatives and industry professionals reinforced the relevance of these resources in addressing cybersecurity challenges. By integrating EU-funded initiatives, the event positioned the REWIRE project as a key contributor to advancing cybersecurity education and resilience in Lithuania.

### 3.1.3 Serbia

#### 2nd National Infoday 2023

The 2nd National Infoday in Serbia was held on October 17, 2023, at the Hotel Crowne Plaza in Belgrade during the National CERT and RNIDS Cyber Conference. Titled *Information Security – Joint Responsibility*, the event attracted approximately 150 participants, representing a wide range of stakeholders, including government agencies, regulatory bodies, NGOs, academia, and private companies offering cybersecurity solutions and services. Notable speakers included Marko Jovanović, Deputy Minister of Information Society and Cybersecurity, and Dejan Đukić, Director of RNIDS.

The event aimed to facilitate the exchange of experiences, knowledge, and information about ongoing activities and initiatives in the field of information security. The agenda featured presentations by experts such as Milan Vojvodić from the Ministry of Information and Telecommunications, who discussed key changes in Serbia's cybersecurity legislation under the Draft Law on Information Security. Panel discussions covered critical topics, including the integration of AI into cybersecurity, risks and challenges in the financial sector, and strategies for aligning national frameworks with the EU's NIS 2 Directive. Special attention was also given to projects like REWIRE, Women4Cyber, and the Cyber Security Quiz app.

#### Potential Impact:

##### Serbia

The conference had a notable impact as it convened the largest gathering of Serbian cybersecurity stakeholders. The REWIRE project received significant attention, with participants expressing interest in its skill framework and VOOC courses. By highlighting Serbia's cybersecurity skills gap and showcasing capacity-building efforts, the event reinforced the importance of aligning national initiatives with European cybersecurity standards to meet growing challenges effectively.

#### 3rd National Infoday 2024

The third National Infoday in Serbia was held on May 17, 2024, at the Metropol Palace Hotel in Belgrade, as part of the Serbian Cybersecurity Challenge 2024 finale. The event attracted approximately 150 participants, including representatives from government agencies, regulatory bodies, NGOs, academia, and private companies offering cybersecurity solutions. Organized by Unicom-Telecom, the event provided a platform for diverse stakeholders to engage in discussions on information security and share insights into ongoing and planned initiatives.

The event featured presentations from the Cybersecurity Network Foundation, ISACA Belgrade Chapter, and eSigurnost organization, followed by a panel discussion focused on cybersecurity education. This session highlighted the REWIRE project, showcasing its contributions to skill development and cybersecurity training. Representatives from the University of Kragujevac and Metropolitan University provided insights into formal and

informal educational approaches, complementing the REWIRE project’s emphasis on accessible and applicable training resources.

<p><b><u>Potential Impact:</u></b></p> <p><b>Serbia</b></p>	<p>The infoday reinforced awareness of the cybersecurity skills gap in Serbia and underscored the relevance of capacity-building initiatives. Stakeholders expressed interest in the REWIRE skill framework, the VOOC courses, and the practical benefits of cyber range exercises and certification. As part of the broader Serbian Cybersecurity Challenge, the event strengthened collaboration across sectors and emphasized the importance of aligning education with national cybersecurity priorities.</p>
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### 3.1.4 Greece

#### 2nd National Infoday 2023

The 2nd National Infoday in Greece was hosted online via Microsoft Teams on November 1, 2023. Organized by the Technical University of Crete (TUC), AMC, ReadLab, and LRQA Hellas, the event attracted 50 participants, including institutional stakeholders, industry representatives, and members of academia. The audience reflected a diverse group of professionals interested in cybersecurity skills and training opportunities.

The event aimed to introduce the REWIRE courses and provide details about their upcoming launch while expanding the REWIRE stakeholder database. The agenda featured a presentation of the REWIRE project by Andrius Bambalas from Mykolas Romeris University. Guest speaker Dr. Ioannis Agrafiotis from ENISA presented insights on cybersecurity challenges, and Nefeli Papagiannacou from AMC showcased the REWIRE courses. The session concluded with a Q&A segment, allowing attendees to engage directly with the panelists and clarify their questions.

<p><b><u>Potential Impact:</u></b></p> <p><b>Greece</b></p>	<p>The event demonstrated strong interest in the REWIRE project, particularly in the courses and the European Cybersecurity Skills Framework (ECSF). Attendees appreciated the links provided to the REWIRE Virtual Learning Environment (VLE) and related platforms, which facilitated engagement ahead of the VLE’s launch. By presenting connections to other initiatives like the CyberSecPro project, the event strengthened REWIRE’s network and positioned it as a central resource for cybersecurity skills and certifications at both national and European levels.</p>
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#### 3rd National Infoday 2024

The 3rd National Infoday in Greece, titled *REWIRE Greek Info Day III – Courses Round 2*, took place online on April 23, 2024. Organized by the Technical University of Crete (TUC), AMC, ReadLab, and LRQA Hellas, the event was held via MS Teams and attracted 73 participants. Attendees included representatives from academia, industry, and national cybersecurity authorities, reflecting the broad dissemination efforts by the organizers and guest speakers.

The event aimed to provide detailed information about the REWIRE courses, the VLE, and the certification options available. The agenda included a welcome presentation and an overview

of the REWIRE project by Pinelopi Kyranoudi from TUC. Guest speakers, including Konstantinos Magkos from the National Cyber Security Authority of Greece and Spiros Borotis from Maggioli SpA, discussed key topics such as national cybersecurity efforts and the CyberSecPro collaborative project. The event culminated in a Q&A session that allowed attendees to address their questions to both presenters and guest speakers.

**Potential Impact:**

**Greece**

The event successfully raised awareness about the REWIRE project and its deliverables, with participants showing interest in the courses, VLE, and certification processes. Links to resources such as the European CyberSecurity Challenge (ECSC), SaferInternet4Kids, and CyberSecPro collaborative projects were shared with attendees to enhance their engagement with the broader cybersecurity community. The provision of links to the REWIRE website and social media further strengthened the network of stakeholders, ensuring continued dissemination of the project's outcomes.

### 3.1.5 Cyprus

#### 2nd National Infoday 2023

The 2nd National Infoday in Cyprus took place online on November 17, 2023 hosted by the European University of Cyprus (EUC), APIROPLUS Solutions Ltd, and the Cyprus Certification Company (CCC). The event brought together 54 participants, including faculty members and students from the EUC and other universities in Cyprus, as well as representatives from the Digital Security Authority (DSA), Cyprus Standardization Organization (CYS), ISO 27001-certified organizations, and cybersecurity professionals from various industries.

The event aimed to promote the four REWIRE cybersecurity training courses, providing detailed information about their structure, enrollment process, and the professional opportunities they offer. The program featured presentations from Y. Danidou (Director of CYBER.EUC), A. Chantzopoulou (APIROPLUS Solutions), and industry experts like G. Hadjichristofi and P. Panayiotou, who provided practical insights into the roles of Incident Responder and Chief Information Security Officer (CISO). The session concluded with a Q&A segment that allowed participants to address specific concerns and questions regarding the courses and careers in cybersecurity.

**Potential Impact:**

**Cyprus**

The event successfully generated interest among participants, particularly students and professionals eager to enroll in the courses and pursue certifications. Attendees raised questions about course prerequisites, career pathways, and how the training aligns with industry demands. Organizations such as CCC and APIROPLUS reported increased interest in the training courses and certifications, while EUC identified potential for new collaborations with students and faculty across Cyprus and abroad. This engagement underscores the event's impact in promoting the REWIRE project and its alignment with the national and international cybersecurity landscape.

### 3rd National Infoday 2024

The 3rd National Infoday in Cyprus took place on October 4, 2024, at the ICT Academy in Egkomi, Nicosia. The event, titled *Boosting SMEs Cybersecurity Resilience: The Importance of Skills, Compliance, and HR*, was organized by the European University Cyprus (EUC), APIROPLUS Solutions, and the Cyprus Certification Company (CCC). It attracted 50 participants, representing a diverse range of stakeholders, including national authorities, research and educational institutions, private companies, national and cybersecurity experts, business consultants, and IT students. Notable organizations such as ENISA, the Digital Security Authority, and the Cyprus Association of Information Protection and Privacy were in attendance.

The event aimed to emphasize the critical importance of cybersecurity for SMEs, particularly from a human resources perspective, highlighting the need for professionals with specialized skills to ensure compliance with legislation and directives. The agenda included a welcome address by the Deputy Commissioner for Communications, who introduced the Digital Security Authority's actions to support SMEs and announced a new funding scheme for cybersecurity initiatives. Presentations covered the European Cybersecurity Skills Framework (ECSF), the REWIRE project's contributions, and the challenges and opportunities in fostering a cybersecurity culture among SMEs. Two panel discussions were held, focusing on "Cybersecurity Culture for SMEs" and "The Cybersecurity Workforce of Tomorrow," emphasizing the role of certification and qualifications in workplace cybersecurity readiness.

#### **Potential Impact:**

#### **Cyprus**

The event generated substantial interest among participants, who asked questions about job opportunities, skill requirements, and the challenges faced by SMEs in hiring cybersecurity experts. Discussions underscored the constraints of small-scale Cypriot SMEs and their limited capacity to employ dedicated cybersecurity professionals. The event had a notable impact at both the national and organizational levels, highlighting the growing importance of cybersecurity culture in SMEs and aligning local practices with European and global trends. By emphasizing the need for a robust cybersecurity workforce, the event advanced efforts to build a stronger cybersecurity culture in Cyprus.

### 3.1.6 Czechia

#### **2nd National Infoday 2023**

The 2nd National Infoday in Czechia was held on November 15, 2023, at the CyberSecurity Hub in Brno. Organized by the Czech National Cyber and Information Security Agency in collaboration with Masaryk University, the event was part of the regular "Meeting of the Platform for Research and Development in Cyber and Information Security." The event attracted 60 participants, including representatives from research and educational organizations, key government bodies, and industry stakeholders, providing a comprehensive cross-sector audience.



The primary objective of the event was to inform participants about recent developments in cybersecurity research and education, with a specific focus on the REWIRE project. The keynote presentation, delivered by Jakub Cegan, highlighted the project's goals and results, emphasizing the Virtual Learning Environment (VLE) and its alignment with the EU Cybersecurity Skills Framework. Attendees were introduced to the training content, the role of the REWIRE Cyber Range (KYPO CRP), and were invited to participate in the forthcoming testing phase. A panel discussion followed, focusing on the importance of VLEs and cyber ranges in capacity building and the role of stakeholders in advancing cybersecurity education.

**Potential Impact:**

**Czechia**

The event demonstrated a high level of interest in the REWIRE project, particularly in the VLE training and its certification components. Discussions with stakeholders from education providers and public institutions resulted in confirmed cooperation for testing and implementing the VLE training. This engagement with stakeholders, including the Czech National Cyber and Information Security Agency, highlighted the event's impact on fostering collaboration and advancing the dissemination of the REWIRE project's results.

**3rd National Infoday 2024**

The 3rd National Infoday in Czechia took place on April 25, 2024, at the VUT v Brně campus in Brno. Hosted by BUT, MUNI, and the CyberSecurityHubCZ, the event was held in the Laboratory of Communication Technologies. It attracted 44 participants, including VET educators, students, and representatives of VET institutions. Due to high demand, the event was divided into two identical blocks of two hours each to accommodate the audience effectively.

The agenda included a presentation of the REWIRE project's objectives, an introduction to the newly developed online courses and certification schemes, and a hands-on demonstration of exercises in the VLE and KYPO Cyber Range. The sessions emphasized the Cybersecurity Incident Responder profile, while participants also explored other available courses, including those for Penetration Tester and Chief Information Security Officer. This structured format enabled participants to gain both theoretical insights and practical experience.

**Potential Impact:**

**Czechia**

The event demonstrated significant interest in the REWIRE project among participants, many of whom already had prior experience in cybersecurity education and certifications. Attendees provided valuable feedback on course content and expressed interest in integrating REWIRE resources into existing programs at institutions like BUT. Nearly half of the participants indicated a desire to stay engaged with REWIRE activities and pursue certification opportunities, highlighting the project's potential for sustainable impact in advancing cybersecurity education within Czechia.

### 3.1.7 Hungary

#### 2nd National Infoday 2023

The 2nd National Infoday in Hungary, titled Hungarian REWIRE Info Day on Courses, was held online via Microsoft Teams on November 24, 2023. Organized by Budapest University of Technology and Economics (BME), the event attracted 25 participants, primarily from academia and the public sector, as well as students interested in cybersecurity education. The audience reflected a focused group of stakeholders keen on exploring new educational opportunities in cybersecurity.

The event aimed to introduce the REWIRE courses, their goals, and their intended audience. The agenda included an introduction to the REWIRE project, a general overview of the courses, detailed descriptions of the four specialized courses, and an introduction to the REWIRE Cyber Range. The session concluded with a Q&A segment, during which participants asked about course pricing, availability, certification methods, and the long-term accessibility of the training resources.

#### Potential Impact:

#### Hungary

The event highlighted growing interest in the REWIRE courses and their practical applications, particularly the tasks on the Cyber Range platform. Students expressed enthusiasm for engaging with the courses as extracurricular activities, while academic and public sector representatives sought details on certifications and their alignment with professional development needs. This interest underscores the potential for REWIRE's resources to play a key role in advancing cybersecurity skills at both national and academic levels in Hungary.

#### 3rd National Infoday 2024

The 3rd National Infoday in Hungary, titled REWIRE – Learning Cybersecurity is Fun, was held on May 3, 2024, at BME's Building I in Budapest. Organized by Budapest University of Technology and Economics (BME), the event attracted 54 participants, including VET educators, representatives of VET institutions, SMEs, and students. The event provided an engaging platform to promote the REWIRE project and its innovative learning opportunities.

The event's agenda was structured into three key segments. The first part introduced the REWIRE project, highlighting its goals, partner organizations, and past activities. The second segment provided a demonstration of the Virtual Learning Environment (VLE), showcasing the four specialized courses (Cyber Incident Responder, Cyber Threat Intelligence Specialist, Penetration Tester, and Chief Information Security Officer) and the KYPO Cyber Range platform. The session concluded with a Q&A segment, addressing questions about course pricing, schedules, and the acceptance of REWIRE certifications.

<p><b><u>Potential Impact:</u></b></p> <p><b>Hungary</b></p>	<p>The event successfully generated interest in the REWIRE courses, with many participants expressing a desire to join the training programs. Questions about certification and integration with professional development pathways underscored the courses' relevance to stakeholders. Additionally, BME leveraged the event to promote its Digitaltech EDIH courses, using the opportunity to create cross-promotional visibility and attract potential participants for both initiatives.</p>
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### 3.1.8 France

#### 2nd National Infoday 2023

The University of Lorraine, in collaboration with TELECOM Nancy, hosted the second National Infoday in France on November 15, 2023. The event was held at the TELECOM Nancy Campus Scientifique in Villers-lès-Nancy and brought together approximately 50 participants. Attendees represented a diverse array of stakeholders, including industrial and service companies, institutional bodies, and academic organizations. Notable participants included EDF, Saint Gobain, Adista, La Banque Postale, Nancy Numérique, and Telindus/Proximus, as well as stakeholders from Luxembourg.

The primary objective of the event was to promote the REWIRE project and its most recent results, particularly the Virtual Open Online Courses (VOOCs). The agenda included a presentation of the REWIRE project and its organizational structure, an overview of the key components developed throughout the initiative, and a detailed explanation of the four online courses tailored to cybersecurity roles: Cyber Incident Responder, Cyber Threat Intelligence Specialist, Penetration Tester, and Chief Information Security Officer. The session featured speakers Matthews Jose, R&D Engineer, and Professor Remi Badonnel, who shared insights into the project outcomes and their practical applications.

<p><b><u>Potential Impact:</u></b></p> <p><b>France</b></p>	<p>The event contributed to increased visibility for the REWIRE project and its deliverables. Participants demonstrated interest in the certification of online courses and the practical components of the curricula. Additionally, the event allowed the University of Lorraine to promote its FISEA cybersecurity curriculum, which aligns with national standards and targets professional upskilling in cybersecurity.</p>
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#### 3<sup>rd</sup> National Infoday 2024

The University of Lorraine and TELECOM Nancy, in partnership with Telecom SudParis, hosted the third National Infoday in France on May 28, 2024. The event took place at TELECOM Nancy's Campus Scientifique in Villers-lès-Nancy, attracting approximately 80 participants. The audience comprised a diverse group of stakeholders, including representatives from academic and institutional sectors, industrial companies such as Airbus and SOCOMEC, and service organizations like PWC IT Consulting Group, CGI IT Consulting Group, and Post Luxembourg.

The event aimed to promote the REWIRE project, with a specific focus on showcasing the latest results, including the Virtual Open Online Courses (VOOCs). The agenda featured a presentation of the project’s organization and an overview of its main components, with an emphasis on the four specialized online courses: Cyber Incident Responder, Cyber Threat Intelligence Specialist, Penetration Tester, and Chief Information Security Officer. A live demonstration of the Virtual Learning Environment (VLE) further highlighted the practical applications of the REWIRE deliverables. Speakers Matthews Jose, R&D Engineer, and Professor Remi Badonnel guided the audience through these innovative developments.

**Potential Impact:**

**France**

The event effectively disseminated information about the REWIRE project and its associated training resources. Key topics of discussion included course certifications and the CyberAbility platform, which highlighted stakeholder interest in practical training solutions. Furthermore, the event aligned with efforts to establish the FISEA curriculum as a recognized cybersecurity program within France.

### 3.1.9 Spain

#### 2<sup>nd</sup> National Infoday 2023

The second National Infoday in Spain took place on November 9, 2023, during the XVI Telematics Engineering Conference (JITEL 2023) held at La Salle Campus Barcelona – URL. Hosted by Caixabank and La Salle URL, the event was attended by 75 participants, primarily comprising national academic stakeholders such as university lecturers, PhD students, and undergraduate program coordinators. The diverse audience reflected the growing interest in cybersecurity skills development within Spain's academic community.

The event focused on presenting the REWIRE Cybersecurity Skills Alliance and its comprehensive approach to addressing cybersecurity skills gaps. The agenda included an overview of the project’s structure and goals, an introduction to the European Cybersecurity Blueprint and Skills Framework (ECSF), and the methodology behind the development of four specialized REWIRE courses. Attendees were also provided with details about the Cyber Range exercises powered by KYPO and invited to enroll in the first round of courses, which opened on November 20, 2023.

**Potential Impact:**

**Spain**

The event generated substantial interest among participants, particularly in the REWIRE Cyber Range platform and the project's ability to address the persistent cybersecurity skills gap. Stakeholders from academia expressed curiosity about the course content and its application as an educational tool. Additionally, the REWIRE initiative attracted industrial interest, emphasizing the need for tools that align job market demands with training opportunities, bridging the gap between education and employment in the cybersecurity field.

#### 3<sup>rd</sup> National Infoday 2024

The third National Infoday in Spain was hosted by Caixabank and La Salle URL during the Barcelona Cybersecurity Congress on May 21, 2024. The event, titled "How do we reduce the

European Cyber Skills Gap?", took place from 15:30 to 16:30 and attracted 25 participants. Attendees included students, representatives from companies, and public sector officials, reflecting the diverse interest from Industry and Academy in addressing cybersecurity skills development within Spain.

The event focused on presenting the REWIRE project within the context of its four-year development. The agenda included an overview of the European Cybersecurity Blueprint and a discussion on bridging the gap between education and business needs. Participants were introduced to the four specialized REWIRE courses and engaged in a small group session featuring the Cyber Range platform integrated into the Virtual Learning Environment (VLE). This hands-on demo provided an opportunity to explore the practical applications of the training.

**Potential Impact:**

**Spain**

The event generated interest in the REWIRE courses and their practical components, particularly among students who were enthusiastic about registering for the programs and utilizing the Cyber Range platform. Business representatives appreciated the potential of offering these courses to their employees as a solution to existing skills gaps. The presentation successfully showcased REWIRE's relevance and potential impact on cybersecurity education and professional training.

### 3.1.10 Sweden

#### 2nd National Infoday 2023

KTH hosted the second National Infoday in Sweden on October 18, 2023, at the prestigious Aula Medica venue within the Karolinska Institute in Solna. This high-profile event attracted approximately 500 participants, representing a wide spectrum of stakeholders from industry, academia, and the public sector. Notable attendees included representatives from organizations such as the City of Stockholm, Stockholm University, Ericsson, Saab, and MSB, showcasing the diverse interest in cybersecurity initiatives at both local and national levels.

The event primarily aimed to promote research results from the Digital Futures research center, a collaborative effort between KTH, Stockholm University, and RISE, with a special focus on the REWIRE project. The program featured a presentation by György Dán, who highlighted the REWIRE project's key deliverables, including the four specialized online courses. The discussion emphasized the project's alignment with ongoing efforts in digital transformation and workforce skill development.

**Potential Impact:**

**Sweden**

The event raised awareness of the REWIRE project within Sweden's cybersecurity community. Discussions on certification pathways and target audiences underscored the interest in leveraging the project's resources for professional development. The event also reinforced KTH's position in promoting lifelong learning and integrating cybersecurity training into ongoing digital transformation efforts.

#### 3rd National Infoday 2024

KTH hosted the third National Infoday in Sweden as part of the CDIS Spring Conference on May 22, 2024. The event, held at KTH's facilities, brought together 200 participants from various stakeholder groups, including policymakers, industry representatives, public sector officials, and members of academia. The event was designed to foster dialogue and collaboration among diverse sectors interested in advancing cybersecurity education and training.

The primary objectives of the event were to inform stakeholders about the REWIRE project and disseminate the courses and methodologies developed as part of the initiative. The agenda included a detailed presentation of the REWIRE project's methodology, which explained how the security skills needs were identified and incorporated into the course material. Open discussions followed, with significant interest expressed in the curricula, the selection process for topics, and potential extensions of the training modules.

**Potential Impact:**

**Sweden**

The event underscored the relevance of the REWIRE project's outcomes in shaping cybersecurity education in Sweden. Organizations such as the newly established CyberCampus showed strong interest in the project's results, indicating potential opportunities for knowledge transfer and collaboration. The discussions highlighted the growing importance of cybersecurity education in the digitalization of society, reinforcing KTH's role as a key contributor to addressing national and regional cybersecurity challenges.

### 3.1.11 Portugal

#### 2nd National Infoday 2023

The 2nd National Infoday in Portugal, titled Rewire Info Day – Courses, took place online on November 14, 2023. Organized by Instituto Superior Técnico (IST), the event attracted 14 participants, comprising academia and cybersecurity professionals. The small yet focused audience reflected a dedicated interest in national-level cybersecurity education and training initiatives.

The event aimed to promote the REWIRE courses while fostering discussions on cybersecurity programs available nationally. The agenda included a welcome address, followed by a presentation of the REWIRE project and its four specialized courses by Pedro Adão from IST. Isabel Baptista from the Portuguese National Cybersecurity Center (C-Academy) provided an overview of national training offers in cybersecurity, and Miguel Pupo Correia from IST introduced the Técnico+ program. A Q&A session allowed participants to engage in discussions about the certification processes and sustainability of the training resources post-project.

**Potential Impact:**

**Portugal**

The event sparked meaningful discussions, particularly regarding the use of REWIRE courses as entry-level modules for other local training programs. Participants showed interest in the equivalence of certifications with existing degrees and raised questions about the accessibility and future sustainability of the courses. These discussions underscored the potential of REWIRE to complement

existing national cybersecurity education frameworks while addressing key industry and academic needs.

### 3rd National Infoday 2024

The 3rd National Infoday in Portugal, titled *REWIRE Cybersecurity Skills Alliance: A New Vision for Europe, Courses Info Day*, was held online on April 24, 2024. Organized by Técnico-Lisboa, the event attracted 15 participants, including representatives from academia, cybersecurity professionals, and HR departments specializing in cybersecurity talent. This focused audience highlighted the interest in bridging education and workforce needs within the cybersecurity sector.

The event's agenda began with a welcome address, followed by a presentation of the REWIRE project and its four courses by Pedro Adão of Instituto Superior Técnico. Nelson Escravana, Director of Cybersecurity and Executive Board Member at INOV, introduced the National Cybersecurity Competencies Framework and discussed the Cybersecurity Specialization under the Order of Engineers. A Q&A session followed, during which participants engaged with the speakers on topics related to course accessibility and certifications. The event concluded with closing remarks emphasizing the potential of REWIRE's training resources.

#### Potential Impact:

#### Portugal

The event had a meaningful impact on the organizations represented, particularly in its potential to address the national skills gap by reskilling and upskilling existing talent. Questions about the cost, sustainability, and pre-requisites for attending the courses reflected a keen interest in integrating REWIRE resources into professional development pathways. This interest underscored the project's relevance in supporting workforce development and addressing the acute shortage of cybersecurity professionals in Portugal.

## 3.2 INTERNATIONAL EVENTS

### European Cybersecurity Skills Conference 2022-2024

The REWIRE project has actively participated in the European Union Agency for Cybersecurity (ENISA)'s annual European Cybersecurity Skills Conference since its inception, contributing to all three editions to date. These conferences serve as pivotal platforms for uniting the cybersecurity skills community across Europe, facilitating the exchange of experiences, addressing challenges, and sharing best practices. The third edition, held on September 26-27, 2024, in Budapest, Hungary, under the auspices of the Hungarian Presidency of the Council of the EU, focused on the future direction of the European Cybersecurity Skills Framework (ECSF) and showcased activities stemming from the Cybersecurity Skills Academy.

ENISA

In the 2024 conference, REWIRE representatives, including Sara Ricci from Brno University of Technology and Argyro Chatzopoulou from APIROPLUS Solutions, delivered presentations on EU cybersecurity skills trends and needs, leveraging data from the Cybersecurity Job Analyzer—a dynamic web application that analyzes job advertisements across Europe. Their insights significantly contributed to discussions on the ECSF's future direction and the broader

cybersecurity skills landscape. This consistent engagement underscores REWIRE's commitment to addressing the cybersecurity skills gap and enhancing workforce development across Europe.

**Potential Impact:**

**Europe**

The REWIRE project's consistent participation in the European Cybersecurity Skills Conference has significantly enhanced its visibility and influence within the cybersecurity community. By actively contributing to discussions on the European Cybersecurity Skills Framework (ECSF) and presenting data-driven insights, REWIRE has positioned itself as a key player in shaping cybersecurity education and workforce development across Europe. This engagement has facilitated valuable collaborations, informed policy recommendations, and strengthened the alignment between industry needs and educational offerings, thereby contributing to a more resilient and skilled cybersecurity workforce.

**Roundtable Event: REWIRE the Future of the EU Cybersecurity Sector Skills**

The roundtable event, titled REWIRE the Future of the EU Cybersecurity Sector Skills, was held on October 27, 2023, at the Sheraton Rhodes Hotel in Greece. Organized by EfVET and EVTA, the event welcomed 38 participants, including VET educators, representatives of VET institutions, and companies that provide internships for VET students. This diverse audience provided a platform to engage multiple stakeholders involved in vocational education and training across Europe.

The event aimed to inform EfVET members about the REWIRE project and disseminate details about the REWIRE courses among the broader EfVET network. Structured as three consecutive 30-minute roundtable discussions, the agenda focused on presenting the REWIRE project, explaining the rationale behind the course content, and outlining the learning modules included in the training curricula. Each roundtable allowed for open conversations with participants, fostering curiosity about the project's methodology and implementation.

**Potential Impact:**

**Europe**

Participants showed significant interest in the REWIRE courses, particularly regarding their accreditation, sustainability, and relevance to digitalization and artificial intelligence initiatives. Many attendees expressed an intention to integrate the courses into their institutions or use the knowledge within their organizations. The event highlighted the increasing importance of cybersecurity in educational and professional settings, emphasizing its role in ensuring safe online practices and supporting ongoing digitalization efforts. This engagement reinforced EfVET and EVTA's commitment to advancing cybersecurity education and fostering collaboration across Europe.



### 3.3 INFODAY EVALUATIONS

A questionnaire was made available to attendees of the Infodays seeking to gauge their satisfaction with various aspects of the events and their familiarity with the REWIRE project objectives and results. The analysis highlights key trends in satisfaction levels, areas of interest, and future intentions regarding the REWIRE courses.

Your field of occupation:  
25 responses

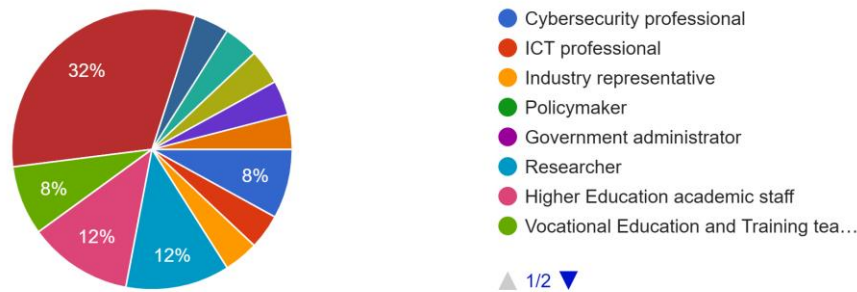
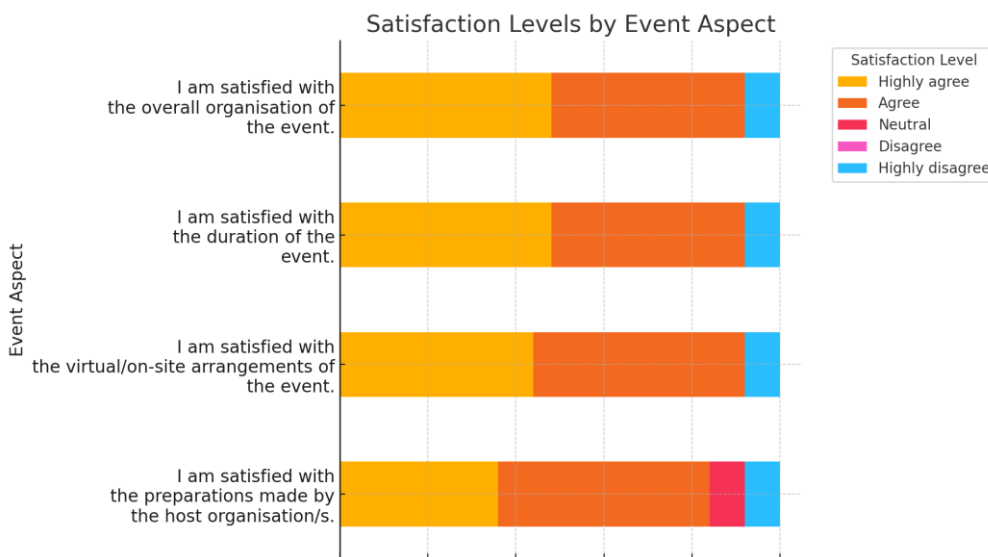


Figure 4 Attendee Occupation

The attendees represented a diverse range of professional backgrounds, highlighting the event's broad appeal across various sectors. Higher education students formed the largest group, indicating strong interest in the REWIRE project among emerging professionals. Other significant groups included higher education academic staff, vocational education and training (VET) teaching staff, and professionals from fields such as cybersecurity, ICT, and system engineering. The presence of representatives from specialized organizations like the French armed forces further underscores the event's relevance to both academic and applied cybersecurity domains.

#### SATISFACTION WITH EVENT ORGANIZATION



Most Participants reported positive satisfaction with the event's organization. A significant proportion rated either high or moderate satisfaction with the various aspects.

Figure 5 InfoDays Satisfaction with Event

How familiar are you with the REWIRE project objectives and results?  
 25 responses

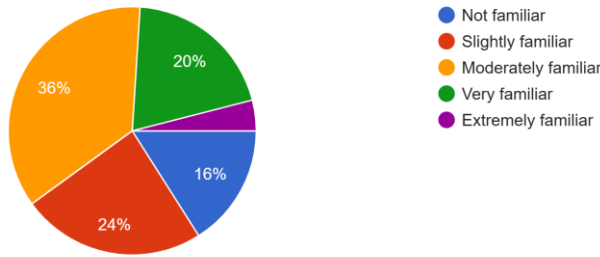


Figure 6 Familiarity with Project

The presentations were interesting and relevant.  
 25 responses

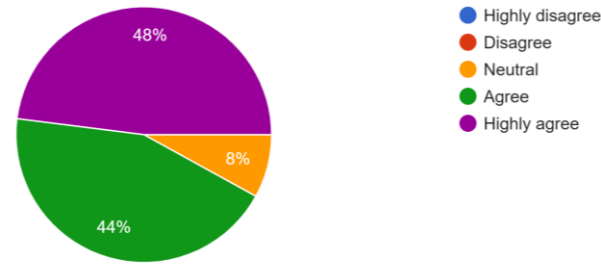


Figure 7 Perception of Presentations

Participants demonstrated varying levels of familiarity with the REWIRE project objectives and results. While some attendees reported being "Very Familiar" or "Moderately Familiar," others indicated only slight familiarity or no prior knowledge of the initiative. This variation highlights the importance of the event in raising awareness and bridging knowledge gaps about the project's goals and deliverables.

The presentations received highly positive feedback, with most participants agreeing that the content was interesting, relevant, and well-prepared. Specific highlights included the live demonstration of the Virtual Learning Environment (VLE), detailed discussions on certification opportunities, and insights into REWIRE courses and job profiles.

These findings indicate that the events successfully engaged participants, fostering deeper interest in the REWIRE project's offerings and its role in addressing the cybersecurity skills gap.

### 3.4 KEY OUTCOMES OF THE REWIRE INFODAYS

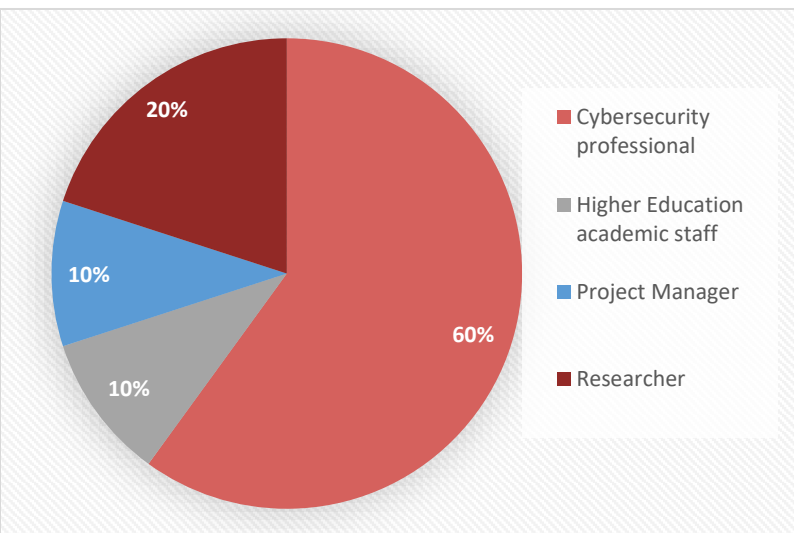
The REWIRE Infodays across multiple countries successfully promoted the project's objectives, including the dissemination of the REWIRE Courses and awareness of the European Cybersecurity Skills Framework (ECSF).

Key impacts include:

- 1. Increased Awareness and Engagement:**  
Info Days raised awareness of cybersecurity skills gaps and the importance of upskilling professionals across national and European levels. Attendees demonstrated significant interest in enrolling in the REWIRE courses and utilizing the Cyber Range for hands-on training.
- 2. Diverse Stakeholder Participation:**  
Events engaged a broad range of stakeholders, including SMEs, academia, government agencies, national cybersecurity centers, VET providers, and private sector organizations, fostering multi-sector collaboration and knowledge sharing.
- 3. Support for Workforce Development:**  
Discussions highlighted the relevance of REWIRE training for addressing cybersecurity workforce shortages. Stakeholders recognized the REWIRE Courses and certification options as valuable tools for reskilling and upskilling, particularly within SMEs and educational institutions.
- 4. National and Institutional Impact:**  
Several events identified opportunities to integrate REWIRE courses into national qualification frameworks and existing training programs. Universities, institutions, and SMEs expressed interest in further collaboration and course adoption to meet local workforce needs.
- 5. Focus on Practical Skills and Policy Alignment:**  
The integration of the Cyber Range and alignment with EU policies (e.g., Pact for Skills, NIS2 Directive) showcased REWIRE's ability to provide practical, policy-relevant solutions for cybersecurity training.
- 6. Gender and Inclusion Awareness:**  
Specific discussions addressed gender gaps in the ICT sector, fostering awareness and promoting initiatives to make cybersecurity education more inclusive.

### 3.5 FINAL PROJECT CONFERENCE SURVEY

As the REWIRE project came to its conclusion, a Final Conference was held on November 21st, 2024, in Brussels. The event brought together 51 in-person attendees and 61 online participants, reflecting strong engagement from a diverse audience. At the close of the conference, attendees were invited to complete a Google form to provide feedback and evaluate the event. The following is an analysis of the data collected.



The participants of the REWIRE Final Conference represented a diverse range of professional backgrounds, with a strong presence from cybersecurity professionals, followed by researchers, higher education academic staff, and project managers. Additionally, participants included industry representatives and individuals from fields such as network engineering and vocational education and training. This diversity highlights the broad relevance of the REWIRE project across sectors, reflecting its ability to engage both technical experts and educators in addressing cybersecurity challenges.

Figure 9 Final Conference Participants Occupation

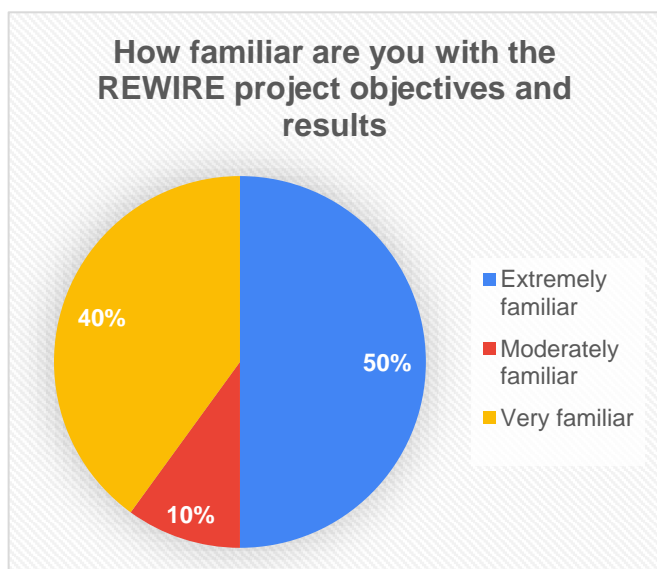


Figure 10 Final Conference attendee Familiarity with Rewire

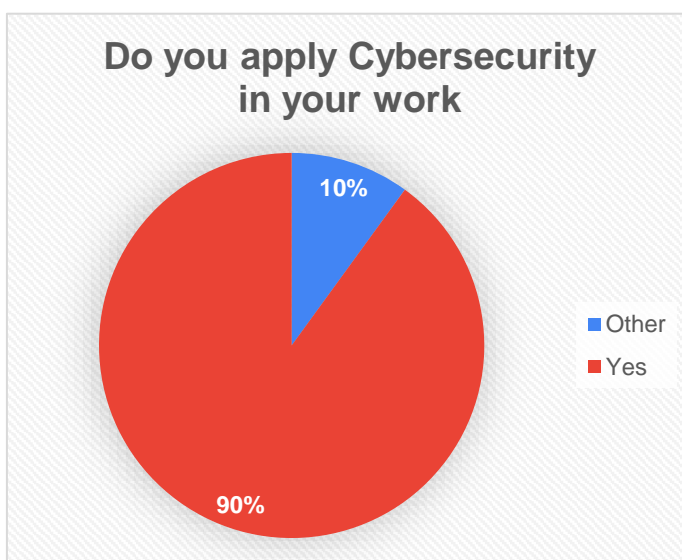


Figure 8 Final Conference attendee Cybersecurity relationship

A significant majority of participants reported being either Extremely Familiar or Very Familiar with the project, highlighting prior engagement and awareness of its outcomes. Additionally, nearly all respondents indicated that they actively apply cybersecurity in their professional

work, underscoring the relevance of REWIRE’s training courses and tools to their daily responsibilities. This combination of familiarity and practical application reflects a highly targeted audience, composed of professionals well-positioned to benefit from and implement the project's outcomes.

The Participants expressed high levels of satisfaction with the preparations by the host organization, the virtual/on-site arrangements, the duration, and the overall organization. Responses were primarily "Highly Agree" and "Agree," with no indications of dissatisfaction. Feedback on the event's duration was slightly more varied.

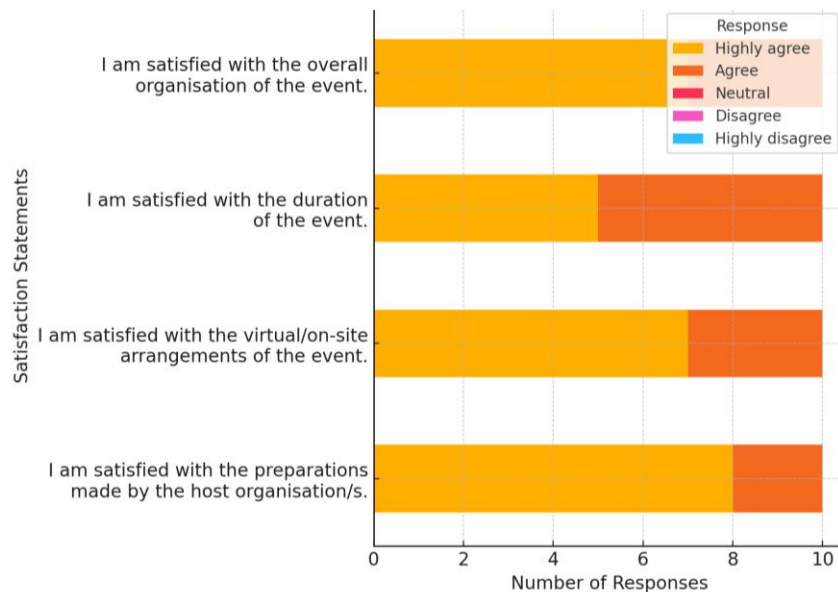


Figure 11 Event Satisfaction levels

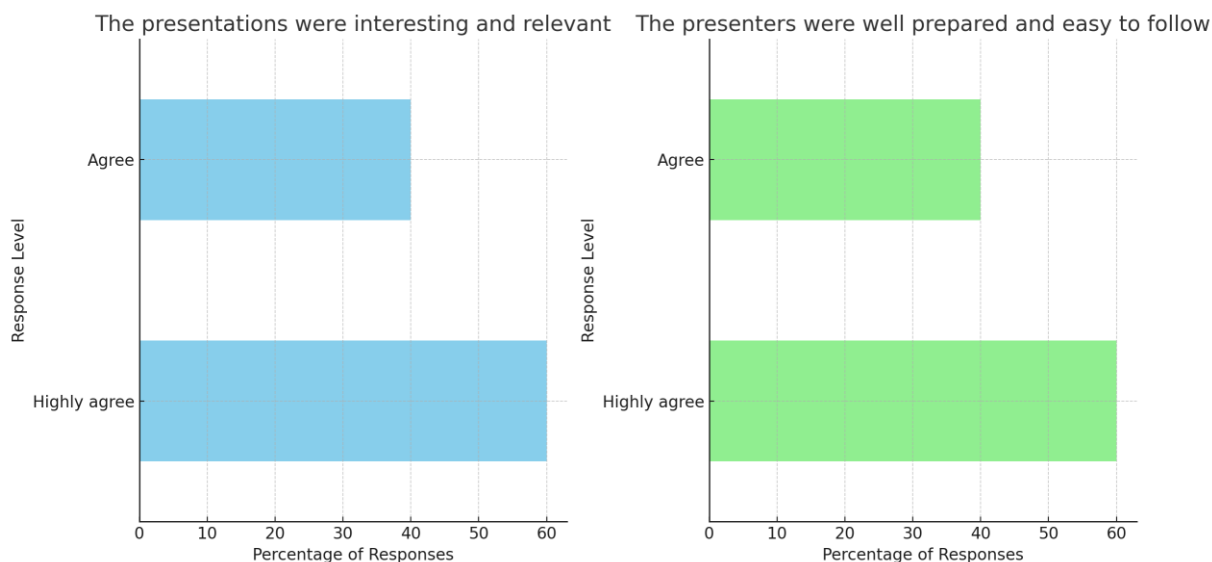
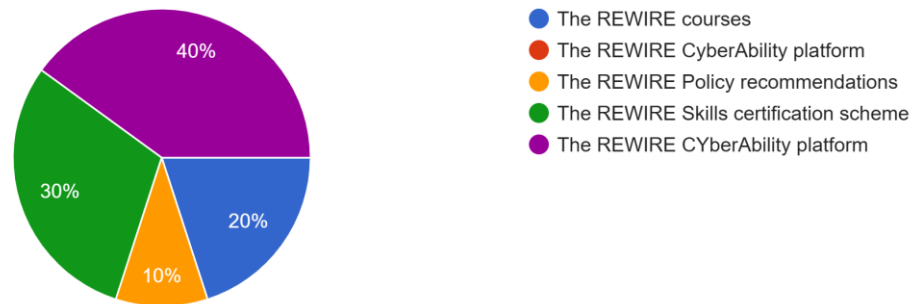


Figure 12 Presentation Satisfaction levels

The feedback on the presentations and presenters was overwhelmingly positive, with the majority of participants selecting Highly Agree, indicating that the content and delivery met participants' expectations.

Which REWIRE results do you find more useful/beneficial for your work/studies?

10 responses



Participants identified several key REWIRE outcomes as beneficial for their work or studies.

### Figure 13 Usefulness of Results

The REWIRE CyberAbility Platform stood out as the most frequently mentioned, valued for its practical and interactive approach to skill-building. The REWIRE Skills Certification Scheme and REWIRE Courses were also highlighted for their professional and educational relevance, while the REWIRE Policy Recommendations were recognized for their strategic importance. This feedback reflects the broad applicability of REWIRE’s deliverables across various contexts.

When asked about the most interesting aspects of the event in an open-ended question, participants highlighted a range of topics. The certifications and its practical exercises’ integration into the learning environment stood out:

*“The certifications approach and the integration of the cyber range in the learning environment.”*

Some participants highlighted broader themes, including **trends in the sector** as resonating with them.

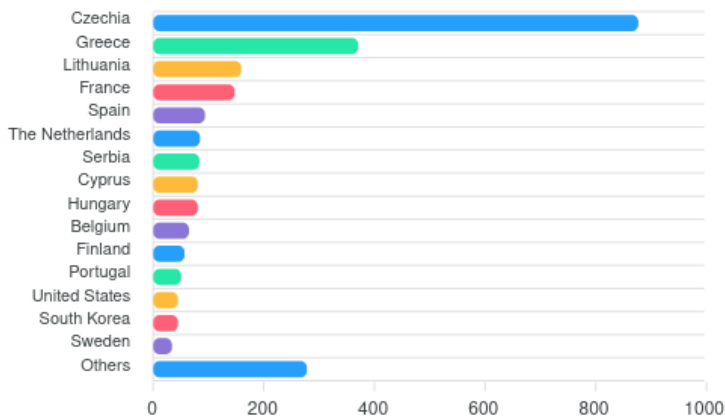
### 3.6 CYBERABILITY PLATFORM IMPACT

The CyberABILITY platform demonstrated strong engagement and utility within the cybersecurity sector, reflecting substantial interest and its growing role as a Cybersecurity Skills Digital Observatory. The following analysis illustrates the fact

CyberABILITY platform Key Statistics	
Total Number of Visitors	2565
Average Visit Duration	2 hours, 4 minutes, 11 seconds
Number of Registered Users	100

Table 1 CyberABILITY platform statistics

#### Visitors' Country



The majority of visitors are concentrated in Czechia (880 visitors), followed by Greece (372), Lithuania (160), and France (148). Notably, the platform also attracted visitors from countries outside the REWIRE consortium, such as the Netherlands and the United States, highlighting its growing international reach and relevance beyond the project's immediate partners.

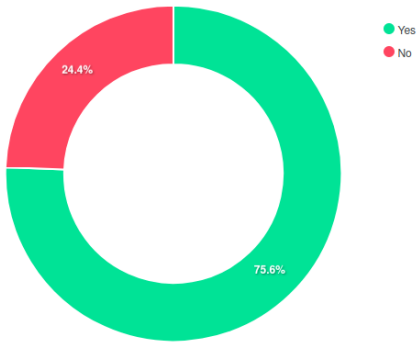
Figure 14 Users' Country of origin

User activity data reveals that the Job Ads Analyzer is the most frequently visited section, with 225 visits, followed by the ECSF Roles section (119) and the CSP Curricula (110). This trend suggests a clear demand for tools that provide insights into job market trends and essential skills, underscoring the platform's practical utility for both job seekers and organizations.



Figure 15 Most Visited section

Visitors' Satisfaction with the App



Survey results indicate high satisfaction with the platform, with a majority of respondents answering “Yes” when asked about their overall experience.

Figure 16 User Satisfaction

The CyberABILITY platform has not only achieved high user satisfaction but has also demonstrated significant engagement, as reflected in the average visit duration of over 2 hours and 4 minutes. While a portion of users spent less than 10 seconds (22%) or 1 minute (20%) on the platform, indicating brief exploratory visits, nearly half of the users (48%) engaged for longer periods. Specifically, 24% stayed for up to 10 minutes, 18% for up to 1 hour, and 9% explored the platform for over 2 hours, highlighting its ability to provide substantial value for a dedicated segment of users.

Duration of Visits

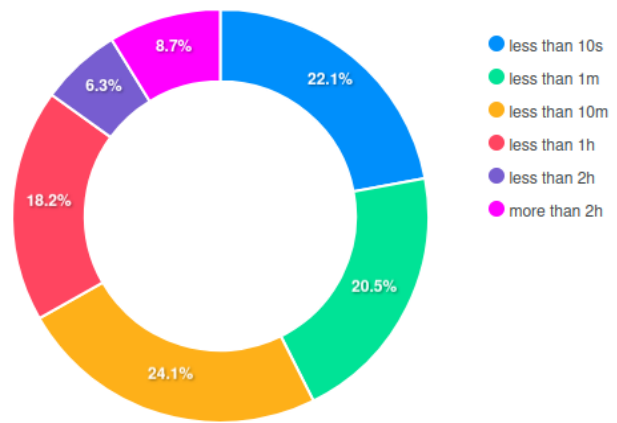


Figure 17 Users' visit duration

Visitors' Most Useful Module

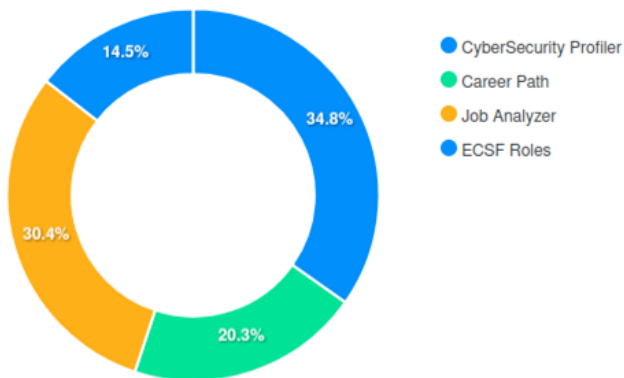


Figure 18 Modules' Comparison

When asked about the most useful module, most participants favored CyberSecurity Profiler and the Job Ads Analyzer. The prominence of these modules highlights their relevance in helping users identify job opportunities, explore career paths, and align their skills with industry standards.



## **IMPACT AND CONCLUSIONS**

The CyberABILITY platform's analytics demonstrate a significant impact in supporting cybersecurity professionals, organizations, and academic institutions. By offering tools such as the Job Ads Analyzer, skills profilers, and career pathways, the platform addresses critical gaps in the cybersecurity skills landscape. The high levels of user satisfaction, coupled with strong international engagement, affirm its role as an effective resource for enhancing cybersecurity readiness. Additionally, the sustained interest from diverse user groups reinforces its value as a long-term contributor to workforce development and strategic decision-making in cybersecurity.

### 3.7 IMPACT OF THE REWIRE COURSES

The impact evaluation of the of the REWIRE courses was conducted through a structured post-course survey completed by 20 participants. The survey captured both quantitative and qualitative feedback to assess the effectiveness of the courses in meeting learner needs and enhancing their cybersecurity competencies.

- **Quantitative Data:** Participants rated key course aspects—such as theoretical and practical content, quizzes, forums, and the Virtual Learning Environment (VLE)—on a scale from 1 to 5. Ratings also included evaluations of content quality, structure, relevance, and applicability to professional work.
- **Qualitative Data:** Open-ended questions provided additional insights into the strengths of the courses and areas for improvement, allowing participants to describe their experiences in greater depth.

#### 3.7.1 Impact Analysis of the REWIRE Courses

##### Enhanced Knowledge and Skills

The REWIRE courses demonstrated strong impact in improving learners' cybersecurity competencies. As shown in the figure below, 61% of respondents agreed or strongly agreed that the training improved their knowledge and skills. Participants highlighted the theoretical content as a cornerstone of the program's success, appreciating its depth, clarity, and alignment with established frameworks like SANS, NIST, and ISO 27001.



Figure 19 Satisfaction with knowledge and skills improvement results

##### Professional Relevance and Applicability

The courses provided direct professional benefits, with participants emphasizing their value for real-world application. Feedback on the applicability of the training to work was mixed, with many recognizing its relevance but identifying opportunities to improve alignment with practical scenarios.

The Skills Certification Scheme emerged as particularly impactful, offering formal validation of cybersecurity skills—critical for career advancement in the ICT and cybersecurity sectors.



Figure 20 Applicability to work results

### Participant Engagement and Course Structure

The courses' self-paced structure received positive feedback for enabling flexibility and accommodating diverse learner needs. 56% of respondents agreed or strongly agreed that the course content was of high quality

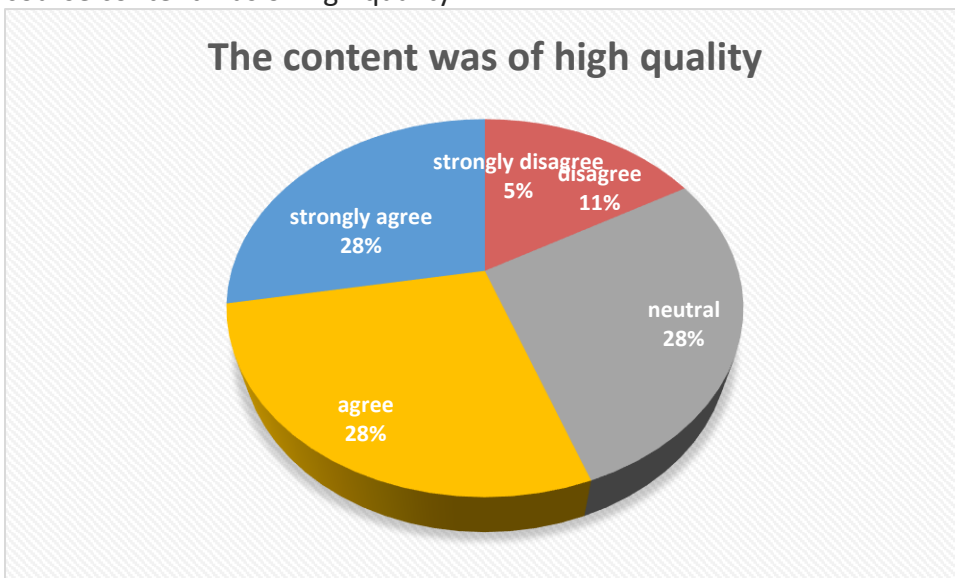


Figure 21 Course Quality Satisfaction results

The structure and engagement of the material were equally well-received.

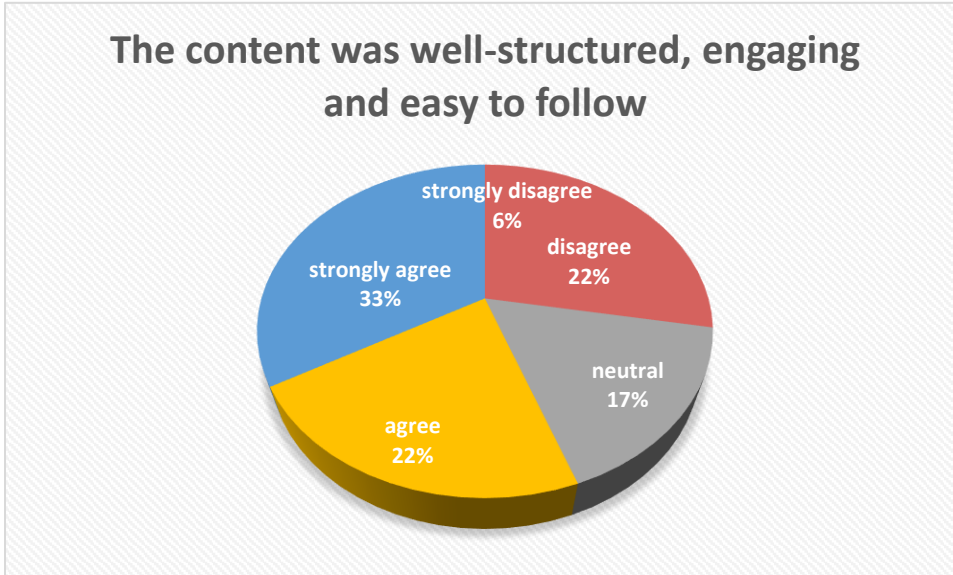
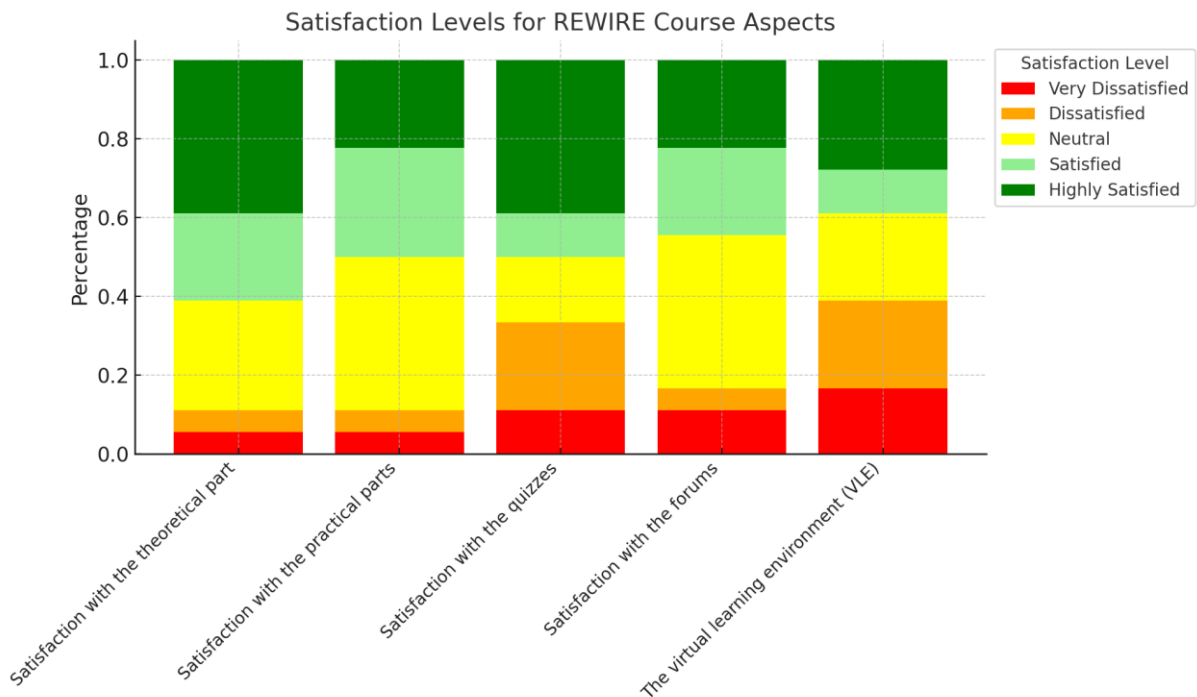


Figure 22 Course Structure and engagement results

### Constituent Aspects

However, feedback for the practical components and quizzes reflected more mixed results. Only 45% of respondents were satisfied with the practical parts, while 30% provided *Neutral* ratings, indicating opportunities to improve clarity, accessibility, and depth.



### ENGAGEMENT AND COLLABORATION IN FORUMS

The forums were a key contributor to the courses' success, fostering interaction and peer

learning. Approximately 40% of participants rated the forums as *Satisfied* or *Highly Satisfied*, with qualitative feedback praising their role in enabling discussion. However, a similar proportion rated them as *Neutral*, suggesting room for further improvement in engagement strategies.

### VIRTUAL LEARNING ENVIRONMENT (VLE) AND ACCESSIBILITY

The VLE was recognized for its user-friendliness, with 35% of respondents expressing high satisfaction. Despite this, 35% provided *Neutral* ratings, and a subset reported dissatisfaction, reflecting challenges in navigation, usability, and document accessibility.

The issues outlined made largely reference to issues with CyberRange and course material links, both areas have been comprehensively improved since the submission of the evaluation survey behind this data. And henceforth

### CHALLENGES AND AREAS FOR IMPROVEMENT

While the courses achieved strong outcomes, feedback highlighted areas requiring attention:

- **Practical Components:** Participants reported difficulties engaging with practical parts due to unclear guidance, missing elements such as quizzes, and issues with CyberRange access.
- **Content Accessibility:** Long documents and broken or complex navigation links were noted as challenges, particularly for time-constrained learners.
- **Engagement in Forums:** Although the forums were valued, there was potential to enhance their ability to foster deeper discussion and collaboration.

It is important to note that these challenges, particularly those related to CyberRange access and course content, **have been comprehensively addressed** since the evaluation survey, as part of the 2nd round of the VOOC delivery. These improvements ensure a smoother and more accessible learning experience, further strengthening the courses' impact.

## 3.8 OTHER ACHIEVEMENTS

### **The REWIRE project, the ECSF and ESCO.**

When the REWIRE project was initially conceived (proposal phase), ENISA had not yet created the European Cybersecurity Skills Framework (ECSF). It was the vision of the REWIRE project to build upon the results of the needs analysis in order to propose a Cybersecurity Skills framework that could become the shared common language missing from the market, in relation to Cybersecurity Roles. During the early years of the project, ENISA started work on the ECSF, and the project partners, adapted to the change. After relevant communications and discussions with ENISA, an early version of the ECSF was received. This draft version was reviewed, it was correlated to the results of the four pilot projects and comments and improvements were provided to ENISA. We are proud to claim that **48 of our suggestions were accepted and can be identified within the final – published version of the ECSF.**

Following the publication of the ECSF, the project tools were adapted to fit the ECSF and from then on, all project materials contain clear mappings and connections to the ECSF.

Followingly the project partners continued the analysis of the ECSF and the REWIRE skills. This analysis was extended to include the ESCO occupations and skills. Specifically, communications took place between the REWIRE project and ESCO and feedback was provided for the next revision of ESCO. The response of the REWIRE project included proposals for mappings to existing and new skills and knowledge. The response was adapted to the specific taxonomy of ESCO. In total 742 mappings were proposed – 187 of which were suggestions for new skills and knowledge, all related to the 12 ECSF profiles. In May 2024, the new version 1.2 of ESCO was released. The version now includes also cybersecurity related roles. For example, occupation 2529.7 – cyber incident responder is included in the ESCO v 1.2. classification. Unfortunately, it is not possible to extract a quantitative figure on how many of the project's suggestions were included in the new version, but it is safe to say that some (like the example) were included.

### **The REWIRE certification schemes for Cybersecurity Skills**

At this time, the certification schemes proposed by the REWIRE project are unique, since they are the only ones that can claim to conform to the following documents:

ISO/IEC 17024:2012,

the CONCORDIA Cybersecurity Skills Certification Framework and  
the ECSF.

The project was invited in various occasions to discuss on the Cybersecurity Skills conformity assessment scheme with ENISA and other stakeholders.

As noted in the Communication from the Commission to the European Parliament and the Council on “Closing the cybersecurity talent gap to boost the EU’s competitiveness, growth and resilience ('The Cybersecurity Skills Academy')” ENISA is to initiate the development of a pilot project setting up a European attestation scheme for cybersecurity skills in Q2 2023.<sup>1</sup>

The Schemes proposed by the REWIRE project, were presented in a joint presentation under the title: *Navigating the ECSF: Building an EU professional attestation scheme*, with Ms. Chloe BLONDEAU from ENISA. The proposal of the REWIRE project is based on the conformity assessment processes of certification and accreditation, which differs from the process of attestation of skills, but it is still considered as one of the alternatives. The discussions on the schemes will continue after the end of the project.

### **The REWIRE Project and the First French FISEA Engineering Degree on Cybersecurity**

The results of the REWIRE project, more particularly those on cybersecurity profiles, have contributed to the design and implementation by University of Lorraine (UL) of the First French Engineering Degree on Cybersecurity through the FISEA pathway, which was accredited by the CTI (*Commission des Titres d'Ingénieurs*, the French National Commission on Engineering Degrees). The FISEA pathway aims at training engineers that are rapidly operational on the cybersecurity market, by enabling an initial training under both the student status and the apprentice status. The first year (under the student status) is full time at the engineering school and targets acquiring scientific and technical fundamentals required for cybersecurity, while the second and third years (under the apprentice status) are spent half-time in a company to develop strong operational skills in cybersecurity, while benefiting from gradual immersion in the cybersecurity market. The accreditation by the CTI was performed in 2023, and the related cybersecurity engineering curriculum, with the first class of students, has successfully started in September 2024.

### **The REWIRE project results and the AKADIMOS & CADMUS projects**

A call on Advanced Digital Skills (DIGITAL-2023-SKILLS-05) was opened in late 2023 and was concluded in March 2024. The call requested proposals to be submitted for two different aspects (LOTs) in relation to the European Cybersecurity Skills Academy. The REWIRE project participated in the discussions for the uptake of the outcomes of the project with the partners of two of the successful proposals.

Specifically, we are happy that the AKADIMOS and CADMUS **projects will utilize some of the results of the REWIRE project.**

Specifically, the AKADIMOS project aims to support the creation and initial operation of the European Cybersecurity Skills Academy (henceforth "the Cyber Skills Academy" or "the Academy") which, as specified in the relevant EC Communication aims at a single point of entry that establishes synergies for cybersecurity training initiatives along with funding opportunities regarding the development of cybersecurity skills and thus contributing towards closing the skills gap of cybersecurity professionals across EU. The project will enhance the European Cybersecurity Skills Framework, and will also create tools for improved and effective monitoring of the impact of existing and future initiatives. It will create an information system for cybersecurity curricula that will contain all courses material, their metadata, the registry of Trainers, and provide Services to various entities for scale-up, and services for updating the Digital Skills and Jobs Platform and for validating content towards a solid and realistic plan for the sustainability of the Academy.

Whereas the CADMUS project, aims to address the cybersecurity expertise shortage in Europe by developing targeted training opportunities based on approaches including cyber range projects, games, hackathons, bootcamps, and traineeships. The project will utilize existing initiatives and offers in cyber security training to build upon and develop enhanced training curricula based on integrating proven training models and standards.

### **The REWIRE Project and the EuroSatory Military Forum**

In addition to national infodays, the results of the REWIRE project, including the REWIRE cybersecurity framework and the REWIRE related courses, have been promoted by University of Lorraine (UL) during the EuroSatory military forum, which took place in June 2024. EuroSatory is the largest international exhibition for the land and air-land defense and security industry, which is organized every two years at the Paris Villepinte Exhibition Center, France. This 16<sup>th</sup> edition of the EuroSatory military forum has attracted more than 42.000 professional visitors, including 44% of whom are international, more than 350 official delegations from 92 countries, and counted more than 2.000 exhibitors from 61 countries. One of three central themes of the event, in addition to crisis responses and to global security threats, was dedicated to technological innovations for defense and security, including cutting-edge technologies such as advanced communication systems, cyber defense and artificial intelligence to address modern threats and enhance operational capabilities of armed forces.

### **The REWIRE Project and ENISA AHWG group**

During ENISA AHWG group on September 25<sup>th</sup> 2024, **the REWIRE project was used as a pilot** to test the integration of EU research project deliverables into the European Cybersecurity Skills Framework (ECSF). The primary objective was to develop a process for identifying, evaluating, and integrating research outcomes to enhance the ECSF's relevance and long-term impact. The group focused on determining the information requirements for such integration and proposed a draft template for evaluating deliverables. This template included fields such as the deliverable's title, type (tangible, intangible, or both), its relation to the ECSF and other EU projects, the target audience, sustainability plans, and impact assessments.

The team also designed a process to assess deliverables based on their maturity and their potential contribution to the ECSF. This included criteria to evaluate alignment with ECSF profiles and their capacity to support the framework's long-term evolution. To test this process, two deliverables from the REWIRE project were presented. The first was the CyberABILITY Platform, a tool offering functionalities such as job ads analysis, cybersecurity profiling, and career path development, all of which are mapped to ECSF profiles. The second was the REWIRE Certification Schemes, which provide comprehensive cybersecurity skills certification aligned with ISO/IEC 17024 and ECSF profiles for roles like Cyber Incident Responder and Penetration Tester.

During the session, the group refined the evaluation template and demonstrated how research outcomes could enhance the ECSF.

### **The Integration of KYPO Cyber Range into the REWIRE VLE**

The integration of the KYPO Cyber Range into the REWIRE Virtual Learning Environment (VLE)



addressed a critical need for hands-on cybersecurity training, as highlighted by feedback from the project's courses. This seamless integration eliminated the need for manual password distribution and external logins, significantly enhancing the user experience and streamlining access to practical exercises. By providing direct access to real-world scenarios, the integration strengthened the applicability of the REWIRE courses, supporting learners in building the practical skills demanded in the cybersecurity sector.

Beyond its immediate benefits, the integration was further enhanced by the decision to open-source the code. This step extends the impact of the REWIRE project, enabling institutions and organizations worldwide to adopt and adapt the integration for their own training environments. This open-source release not only promotes scalability and reuse but also contributes to the broader cybersecurity training ecosystem by fostering collaboration and innovation.

### **The impact of the REWIRE project in Cyprus**

The Cyprus Digital Security Authority has been very supportive to the efforts of the REWIRE project partners. Specifically, all events had an active collaboration and contribution from the Digital Security Authority of Cyprus. The tools of the REWIRE project were promoted to different audiences: students in universities, professionals, the national authority, ENISA etc. It should be noted that the Cyprus Digital Security Authority, mentions and promotes the REWIRE project and especially the REWIRE courses and representatives of the project have been invited to present at different events on cybersecurity skills.

## 4 CONCLUSION

The fourth Impact Evaluation Report of the REWIRE project underscores its significant contributions to addressing the cybersecurity skills gap across Europe. Through its multifaceted initiatives—including the development of innovative training courses, the CyberAbility platform, and extensive stakeholder engagement via National Infodays and the Final Project Conference—the project has effectively raised awareness, fostered collaboration, and delivered tangible solutions to enhance cybersecurity competencies.

The REWIRE courses have demonstrated a meaningful impact on learners, equipping them with advanced knowledge and applicable skills, as evidenced by high satisfaction rates and positive feedback regarding their professional relevance. The CyberAbility platform has further solidified its role as a comprehensive resource, supporting professionals and organizations with tools for navigating the evolving cybersecurity landscape.

The National Info Days and international events have successfully engaged a diverse array of stakeholders, bridging gaps between academic, industrial, and governmental sectors. These efforts have not only expanded the reach of the REWIRE project but also highlighted its alignment with national and EU-level policy goals, such as the NIS2 Directive and the Pact for Skills.

While some challenges were identified in earlier phases, particularly in course accessibility and practical components, the improvements implemented during the second VOOC delivery period demonstrate the project's adaptability and commitment to continuous enhancement. These refinements have strengthened the overall impact and ensured that the project's outputs are both user-friendly and aligned with real-world demands.

In conclusion, the REWIRE project has successfully achieved its objectives, leaving a lasting legacy in cybersecurity education and workforce development. By addressing critical skill gaps, fostering cross-sector collaboration, and providing accessible, high-quality training resources, REWIRE has positioned itself as a cornerstone initiative in the ongoing effort to secure Europe's digital future.

## 5 REFERENCES

REWIRE project description

REWIRE project – R.6.1 Quality Assurance plan

REWIRE project – R.6.2 QA report no. 2 and no. 3

## 6 LIST OF ABBREVIATIONS AND ACRONYMS

Abbreviation	Explanation/Definition
ARES - ETACS	International Conference on Availability, Reliability and Security - Workshop on Education, Training and Awareness in Cybersecurity
BUT	Brno University of Technology
EAB	External Advisory Board
EFVET	European Forum of Technical and Vocational Education and Training
ENISA	European Union Agency for Cybersecurity
IMT	Institut Mines-Télécom
KPI	Key Performance Indicator
M1	Month 1
MRU	Mykolas Romeris University
PESTLE	Political, Economic, Social, Technological, Legal and Environmental
QA	Quality Assurance
ReadLab	Research Innovation and Development Lab
SME	Small and medium-sized enterprise
TUC	Technical University of Crete
UL	University of Lorraine
URL	Universitat Ramon Llull
VET	Vocational Education and Training
WP	Work Package

**Table 2** List of abbreviations and acronyms

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