

# 3<sup>RD</sup> EUROPEAN CYBERSECURITY SKILLS CONFERENCE

## Building an EU professional attestation scheme

Chatzopoulou Argyro  
APIROPLUS Solutions

Co-organized by Hungary and ENISA



EUROPEAN  
CYBERSECURITY  
SKILLS CONFERENCE

Budapest



# Certification of skills



They believe that they have the specific knowledge, skills and e-competencies necessary to be able to fulfill effectively the tasks of a specific role.

# What is certification of skills



They identify a certification scheme, containing specific

- competencies (i.e., ability to apply knowledge and skills to achieve intended results) and
- other requirements related to the specific occupational profile.

# What is certification of skills



They undergo, an assessment that evaluates the fulfilment of the requirements of the certification scheme.

A part of the assessment is an examination which measures a candidate's competence by one or more means, such as written, oral, practical and observational, as defined in the certification scheme.

# What is certification of skills



They receive a certificate, indicating that they have fulfilled the certification requirements and as such they have demonstrated that they fulfill

- competencies (i.e., ability to apply knowledge and skills to achieve intended results) and
- other requirements related to the specific occupational profile.

Certification for persons is one means of providing assurance that the certified person meets the requirements of the certification scheme. Confidence in the respective certification schemes for persons is achieved by means of a globally accepted process of assessment and periodic re-assessments of the competence of certified persons.

# Currently,...



ISO/IEC 17024:2012(en) ×

ISO/IEC 17024:2012(en) Conformity assessment — General requirements for bodies operating certification of persons

has been developed with the objective of achieving and promoting a globally accepted benchmark for organizations operating certification of persons.

This standard provides a minimum set of requirements for the certification bodies (and their activities) through which they determine that a person fulfils certification requirements, including application, assessment, decision on certification, recertification and use of certificates and logos/marks.

# Currently,...

CONCORDIA Cybersecurity Skills Certification Framework uses as a baseline the principles presented by ISO 17024 and provides additional requirements for the specific area of cybersecurity skills.

The document includes a number of requirements and information on the certification principles of

- Impartiality** (8 requirements),
- Responsiveness** (5 requirements),
- Confidentiality** (8 requirements),
- Responsibility** (5 requirements) and
- Competence** (18 requirements).



Horizon 2020 Program (2014-2020)  
Cybersecurity, Trustworthy ICT Research & Innovation Actions  
Security-by-design for end-to-end security  
H2020-SU-ICT-03-2018



Cyber security cOmpeteNCe fOR Research and InnovAtion<sup>1</sup>

**Work package 5: Exploitation, dissemination, certification and standardization**  
**Deliverable D5.#: CONCORDIA Cybersecurity Skills Certification Framework**

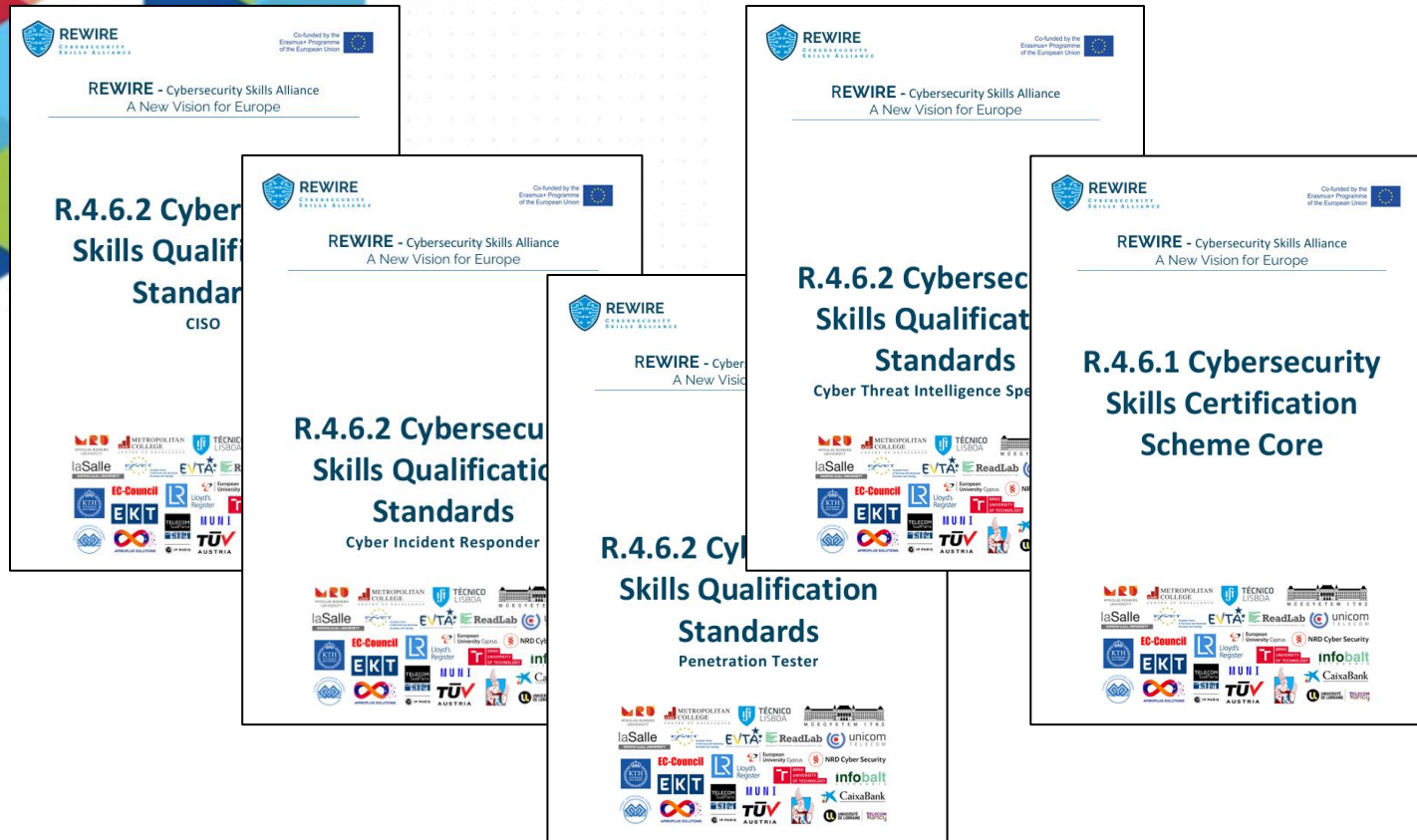
**Abstract:** This document contains CONCORDIA's recommendation for a Cybersecurity Skills Certification Framework. The document is aligned to and provides further specification on the requirements of ISO/IEC 17024:2012 CONFORMITY ASSESSMENT — GENERAL REQUIREMENTS FOR BODIES OPERATING CERTIFICATION OF PERSONS

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Editors	Chatzopoulou Argyro (TUV)
Contributors	Anisetti Marco (UMIL) Badonnel Remi (UL) Bena Nicola (UMIL) Carminati Barbara (UI) Cholez Thibault (UL) Cutas Felicia (EIT DIGITAL) Ferrari Elena (UI) Fournaris Apostolos (ISI) Franco Muriel (UZH) Prelipcean Dumitru Bogdan (BITDEFENDER)

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# REWIRE Certification schemes



Built adhering to: the requirements of ISO/IEC 17024 and the CONCORDIA Cybersecurity Certification Scheme, and using the respective four ECSF profiles as basis.



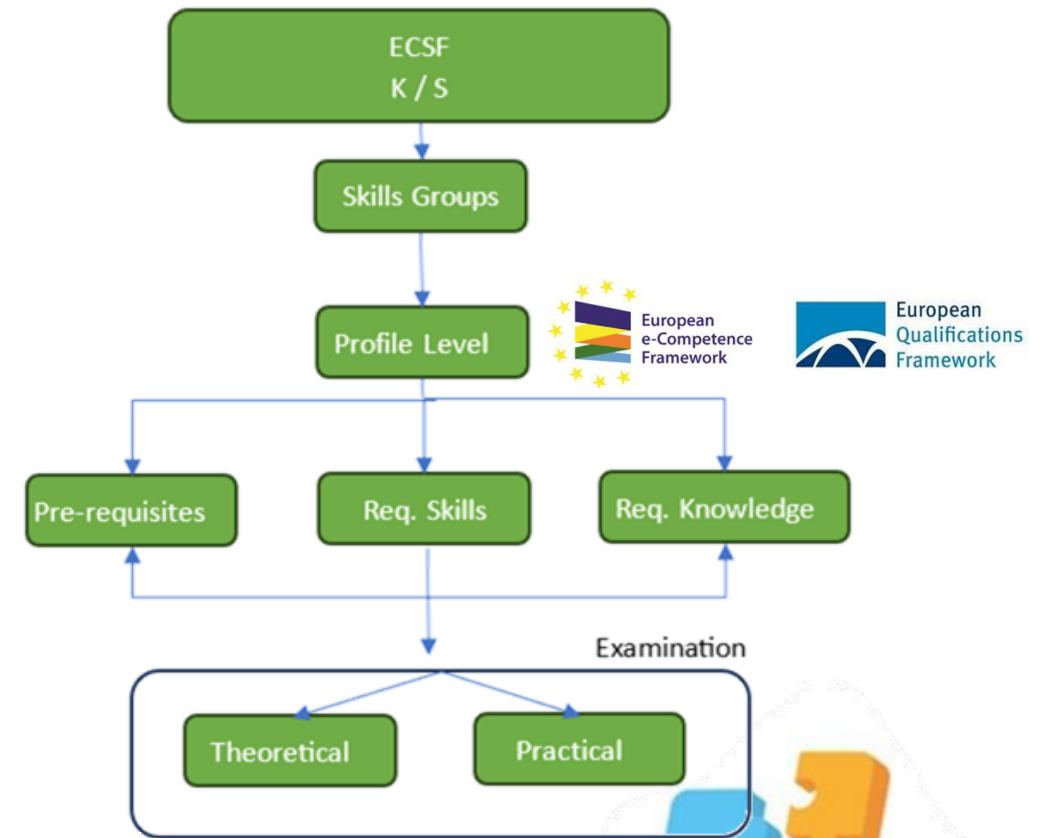


# Results from piloting the schemes

## Using the ECSF as a basis for certification




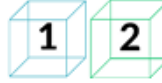

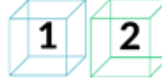

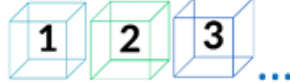




- knowledge and skills are not correlated to tasks
- the level of tasks, knowledge and skills is not provided
- the tasks, skills and knowledge are not presented in a standardized manner

## The REWIRE approach



# Results from piloting the schemes

Creating theoretical questions to fit the different levels of skills and knowledge

Type of question	EQF Level (1-8)	e-CF level (1-5)
True or False questions		
Single Choice questions		
Multiple Choice questions		
Free Choice or text input questions <sup>6</sup>		
Matrix sorting questions		
Sorting Choice questions		

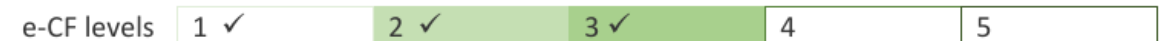
The REWIRE approach 

# Results from piloting the schemes

Creating practical examinations to fit the different levels of skills, aligned to the different task



- EQF 1: Basic skills required to carry out simple tasks.
- EQF 2: Basic cognitive and practical skills required to use relevant information in order to carry out tasks and to solve routine problems using simple rules and tools.
- EQF 3: A range of cognitive and practical skills required to accomplish tasks and solve problems by selecting and applying basic methods, tools, materials and information.
- EQF 4: A range of cognitive and practical skills required to generate solutions to specific problems in a field of work or study.
- EQF 5: A comprehensive range of cognitive and practical skills required to develop creative solutions to abstract problems.
- EQF 6: Advanced skills, demonstrating mastery and innovation, required to solve complex and unpredictable problems in a specialised field of work or study.
- EQF 7: Specialised problem-solving skills required in research and/or innovation in order to develop new knowledge and procedures and to integrate knowledge from different fields.
- EQF 8: The most advanced and specialised skills and techniques, including synthesis and evaluation, required to solve critical problems in research and/or innovation and to extend and redefine existing knowledge or professional practice.



- e-CF 1: Apply knowledge and skills to solve straight forward problems;
- e-CF 2: Uses theoretical knowledge and practical skills to solve complex problems within a predictable and sometimes unpredictable context.
- e-CF 3: Providing leadership and taking responsibility for team performances and development in unpredictable environments.
- e-CF 4: Deploying specialised integration capability in complex environments; strategic development of staff working in unfamiliar and unpredictable situations.
- e-CF 5: Providing innovative solutions and for shaping the future using outstanding leading edge thinking and knowledge.

The REWIRE approach 



Thank you!

Köszönöm