IT Professionalism Europe

Competent and careful. Recognised and respected.

CEN/TC 428
ICT Professionalism and Digital Competences

e-CF and Curriculum Guidelines in the prospect of EU Digital Skills agenda, Fostering ICT Professionals in Europe

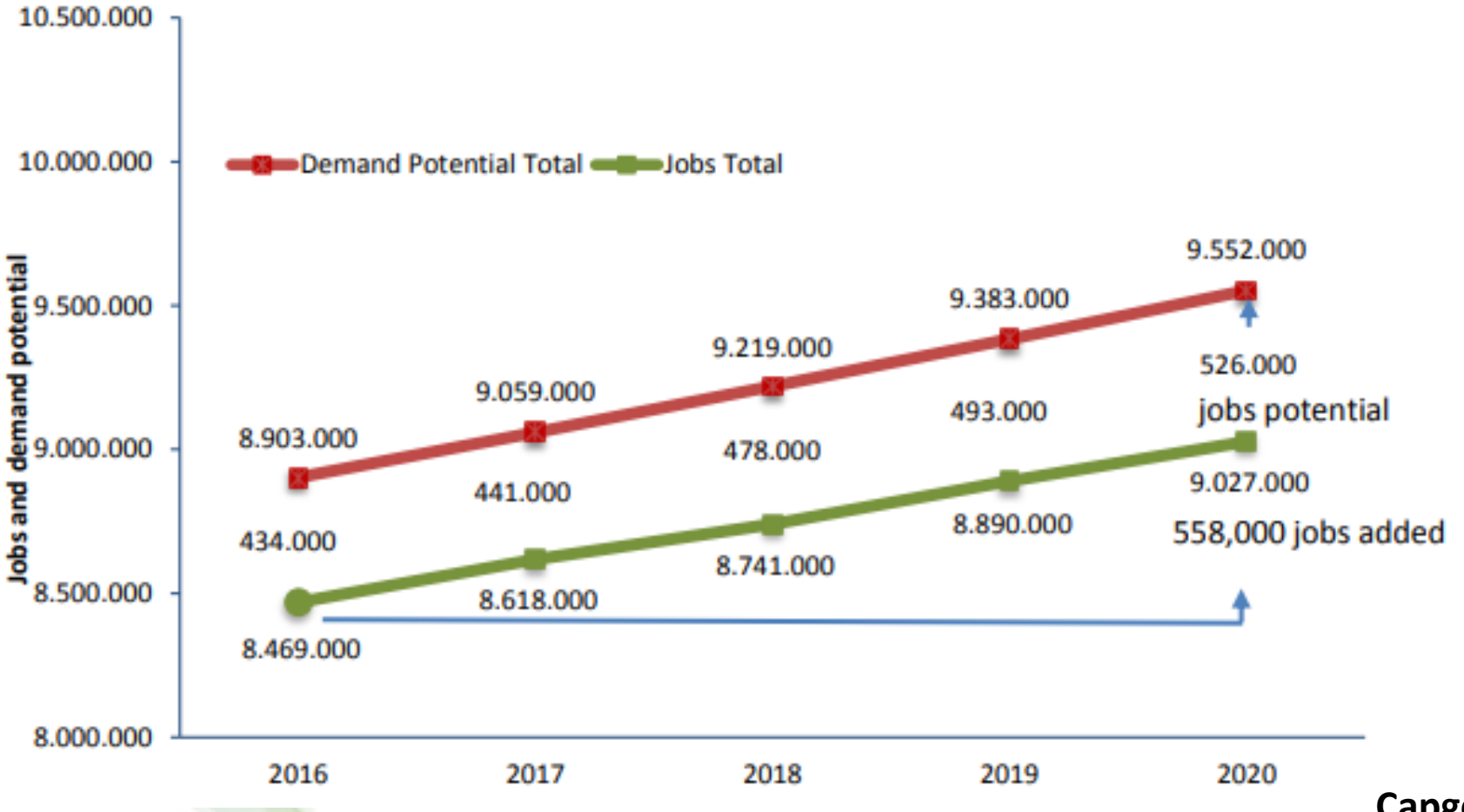
Mary Cleary, Irish Computer Society, ITPE
Rocco Defina, ITPE, Oxys Consulting

September 6th 2022

Why Europe is investing to foster the IT professionalism?

- Importance for society
  - IT is not a regulated profession but…
- Digital skills gap
  - Shortage of IT Professionals in 2020 → 756.00
  - Shortage of digital leaders in 2020 → 250.000
- Competitive advantage
  - Related to US, China
  - Issue of digital sovereignty

The Skills Gap Continues to Widen



Supply growing but outperformed by demand

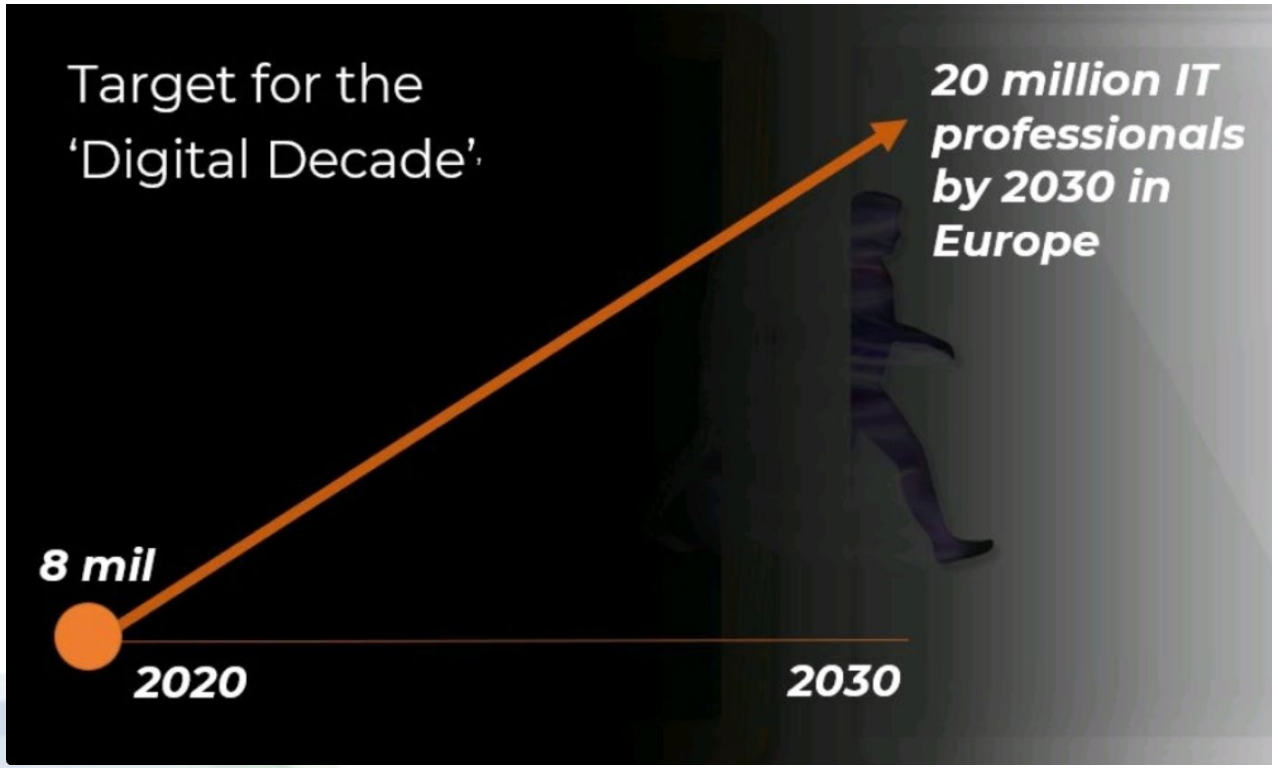
- Education/training
- Conversion
- Novel schemes
- Immigration

Capgemini 2018

Recovery and Resilience for Europe 2030

- Welcome for the RRF that includes 20% for digital transition and reform
- 4 Cardinal Points for digital in RRF targets in Europe
  - A **digitally skilled population** and highly skilled digital professionals
    - **Empowered and capable citizens** – protected from cyberattack
    - 20m ICT specialists (7.8m in 2019)
  - Secure and high-performing, sustainable digital infrastructures
  - Digital transformation of businesses
  - Digitalisation of public services – KEY to citizen skills
  - **Citizen/user skills** to **high level professional skills** part of a continuum, neither makes sense without the other

The Digital Decade



Europe needs a competent, respected, mature IT Profession to drive recovery and resilience

We need 20m IT professionals by 2030 – we have 8m in 2021

We can't allow urgency to let quantity trump quality

The ICT Profession

- Many investigations of the cause of the skills shortage
- Many initiatives to address it
- Critical factor might be the notion of professionalism

Collaboration between EC, CEN, Digital Skills and Jobs Coalition to address this

In the absence of tradition and a professional regulatory body, these agreed pillars must be standardised and assimilated into the realisation of IT professionalism

Professionalism Stakeholder Collaboration

- European Commission
- **CEN – Technical Committee 428 – ICT Professionalism and Digital Competences**
- **IT Professionalism Europe (ITPE)**
- **Professional bodies**
- Higher Education Sector

IT Professionalism Europe
Competent and careful. Recognised and respected.

CEN/TC 428
ICT Professionalism and Digital Competences

CEN Technical Committee 428

- Delegates from CEN National Standards Bodies
- Established in 2014 to create ICT competence standard from the CWA European e-Competence Framework (EN 16234-1:2019)
- Focus on maturing the IT profession
- Responsible for all standardisation related to the ICT Profession
  - Development of standards, TS, TR on remaining 3 “pillars” of ICT Professionalism and other prioritised areas
- Supported by European Commission

IT Professionalism Europe (ITPE)

- Network of stakeholders committed to the advancement of IT professionalism
- Includes public and private sector experts from critical IT domains, including policy, standards, HR and IT management, as well as education, training and other service providers that support IT professionalism
- Works closely with key public actors, from the European Commission, the European Parliament, CEN and National Standards Bodies, and Professional Bodies

IT Professionalism Europe
Competent and careful. Recognised and respected.

CEN/TC 428
ICT Professionalism and Digital Competences

IT Professional Bodies

- A professional body
  - Speaks for the profession
  - Guarantees highest standards for public
- Navigates a pathway for the profession in changing landscape
  - Social, economic, climate
    - Digital transformation
    - Healthy and green society
  - Vulnerabilities in digital space, dependence on external tech
    - Skills shortage
    - Digital Divide
    - Covid
    - Digital Sovereignty
- Trust/confidence/respect
- Builds on strengths, address weaknesses

The 43 IT competences are described in 4 dimensions

Dimension 1: **e-CF area**

Dimension 2: **Title + generic description**

Dimension 3: **level descriptors**

Dimension 4: **knowledge and skills examples**

Dimension 1 e-Comp. area	A. PLAN				
Dimension 2 e-Competence: Title + generic description	**A.2. Service Level Management** Defines, validates and makes applicable service level agreements (SLAs) and underpinning contracts tailored to services offered. Negotiates service performance levels taking into account the needs and capacity of stakeholders and business.				
Dimension 3 e-Competence proficiency level e-1 to e-5	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Level 5**
	–	–	Ensures the content of the SLA.	Negotiates revision of SLAs, in accordance with the overall objectives. Ensures the achievement of planned results.	–
Dimension 4 Knowledge examples *Knows/aware of/familiar with*	K1 SLA documentation K2 how to compare and interpret management data K3 the elements forming the metrics of service level agreements K4 how service delivery infrastructures work K5 impact of service level non-compliance on business performance				
Skills examples *Is able to*	S1 analyse service provision records S2 evaluate service provision against SLA S3 negotiate realistic service level targets S4 use relevant quality management techniques S5 anticipate and mitigate against potential service disruptions				

STANDARD

EXAMPLES FOR INSPIRING

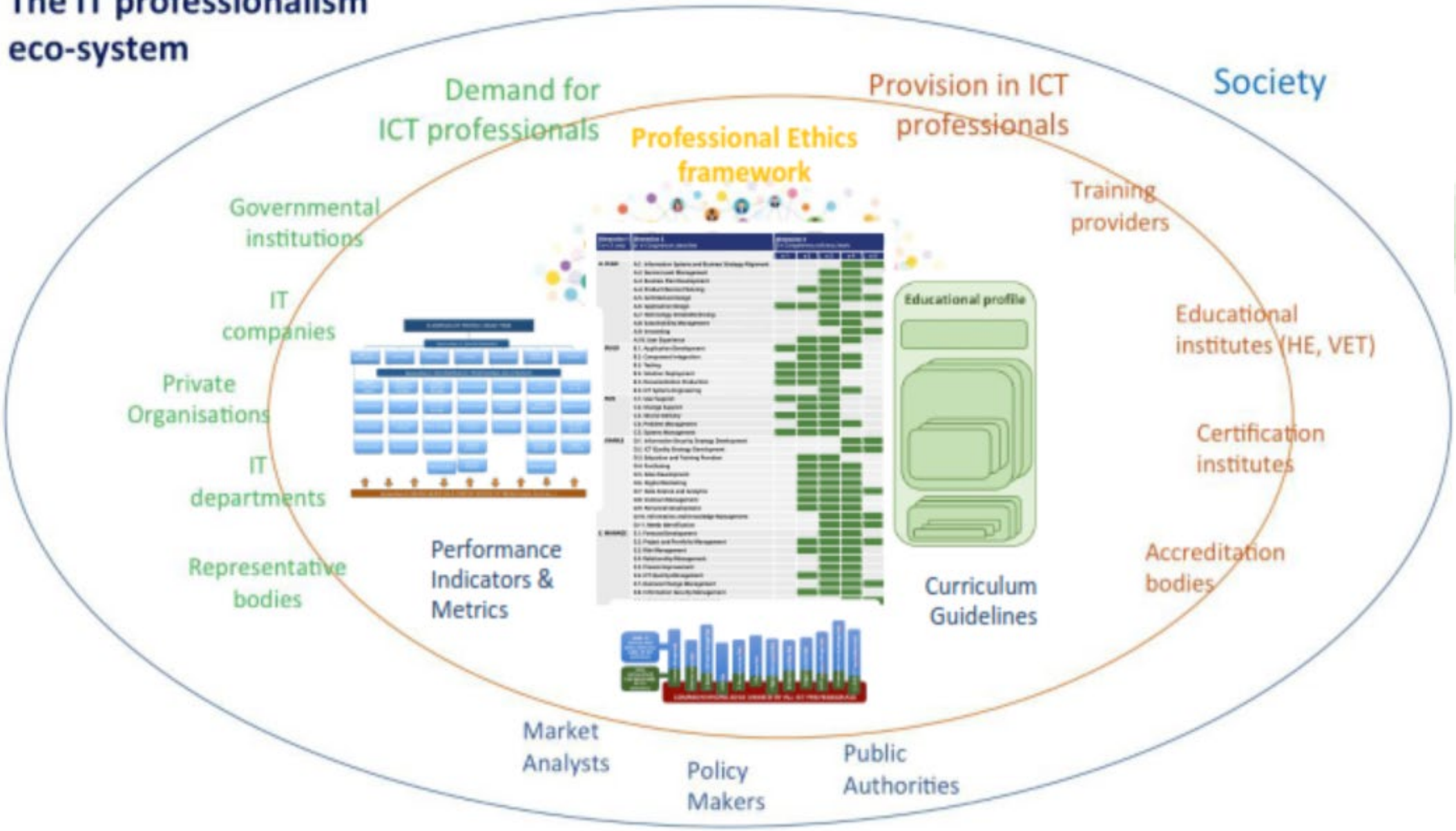
T1 Accessibility,
T2 Ethics
T3 ICT legal issues
T4 Privacy
T5 Security
T6 Sustaiinability
T7 Usability

Transversal Aspects

IT Professionalism Europe
Competent and careful. Recognised and respected.

CEN/TC 428
ICT Professionalism and Digital Competences

The IT professionalism eco-system

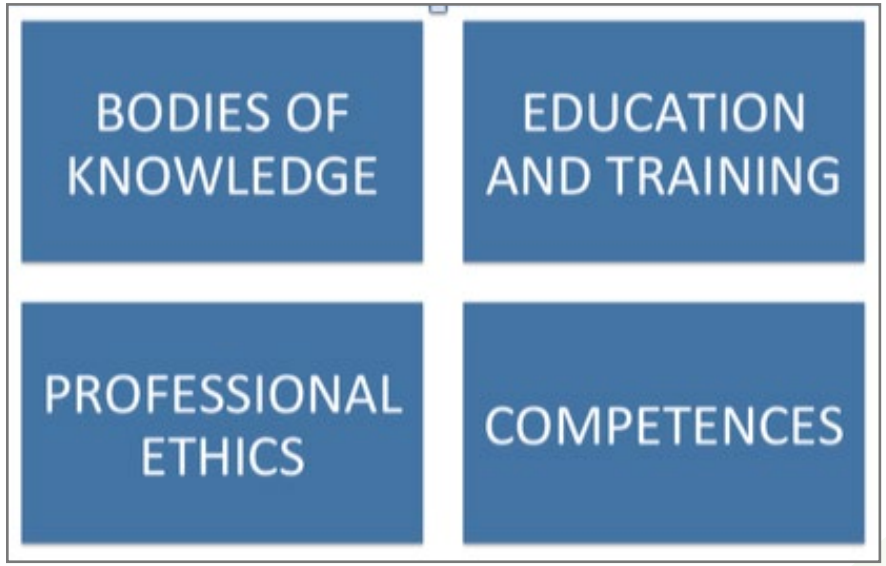


Professionalism

Development, promotion and adoption of common professional practices and professional standards by the IT workforce. IT Professionalism emphasises competent and careful individual practice and collective action to develop an IT profession that is recognised., respected and accountable

Professionalism Brochure

“Build the best IT Workforce to deliver Europe’s digital transition”



Professional Practice

Standards are regulations, rules or guidelines for technical, HR or ethics fields

They are developed by consensus among experts

Professional **practice** in IT is the set of **common behaviours** by IT workers that implement standards, covering:

- Approach to work and career
- Routine decision making and interpersonal relationships
- Emphasis on **competent** and **careful** individual practice, and collective action to ensure the IT profession is **recognised** and **respected**.

The industry-academia collaboration promoted by CEN/TC428

IT Professionalism Europe
Competent and careful. Recognised and respected.

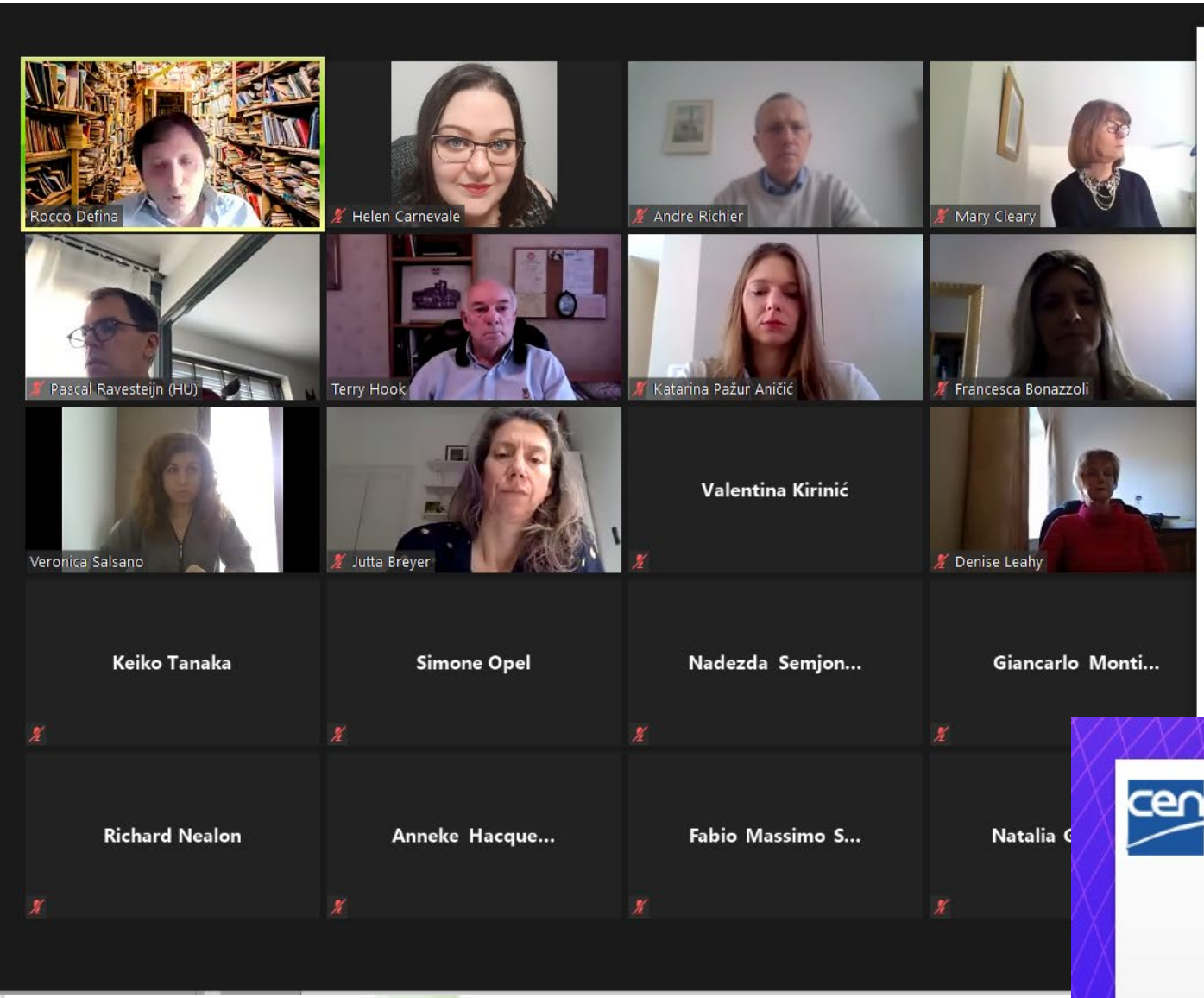
CEN/TC 428
ICT Professionalism and Digital Competences

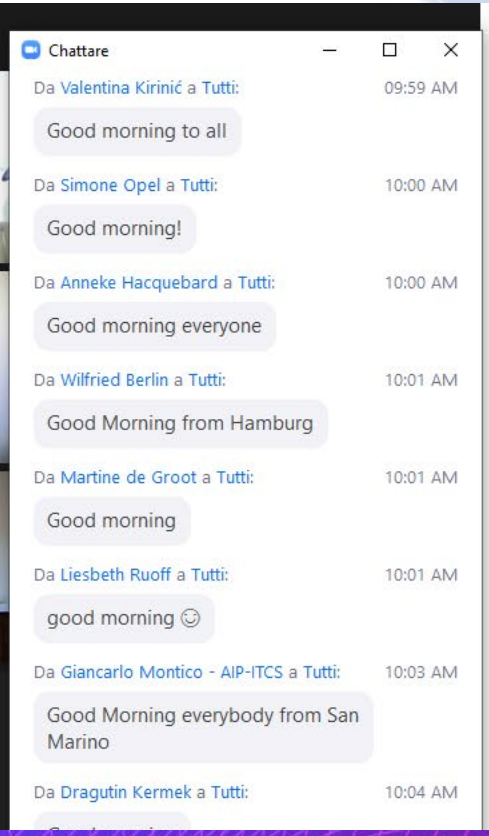
ICT Curriculum Guidelines

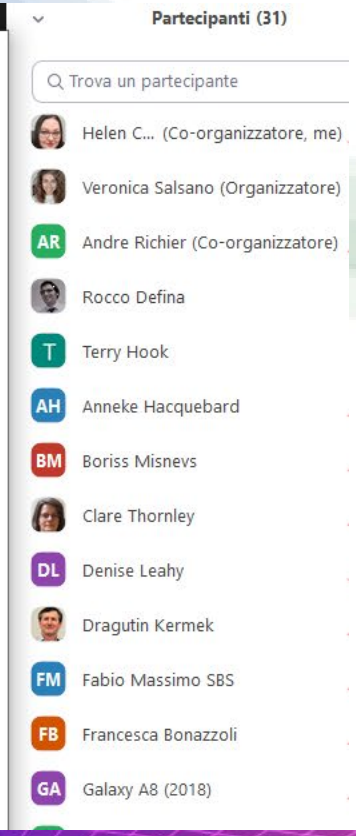
ICT Curriculum Guidelines for e-Competence and Digital Leadership is Technical Specification (TS) providing guidelines on

how to design, develop, maintain, adjust and compare ICT curricula for e-competence and digital leadership, as scoped by the European ICT Professionalism framework and its basic components

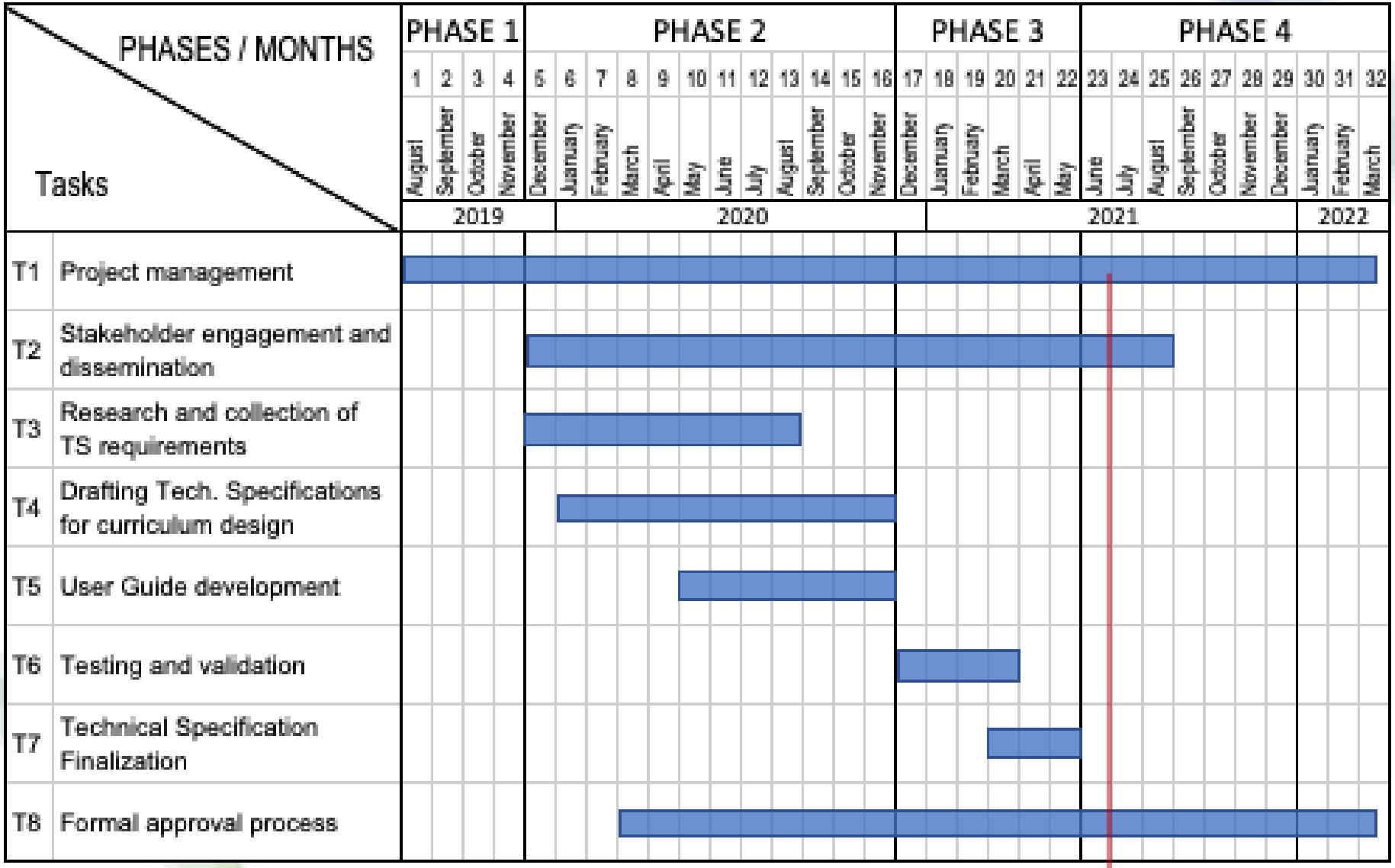
A joint effort and a sound methodology (1)







A joint effort and a sound methodology (2)

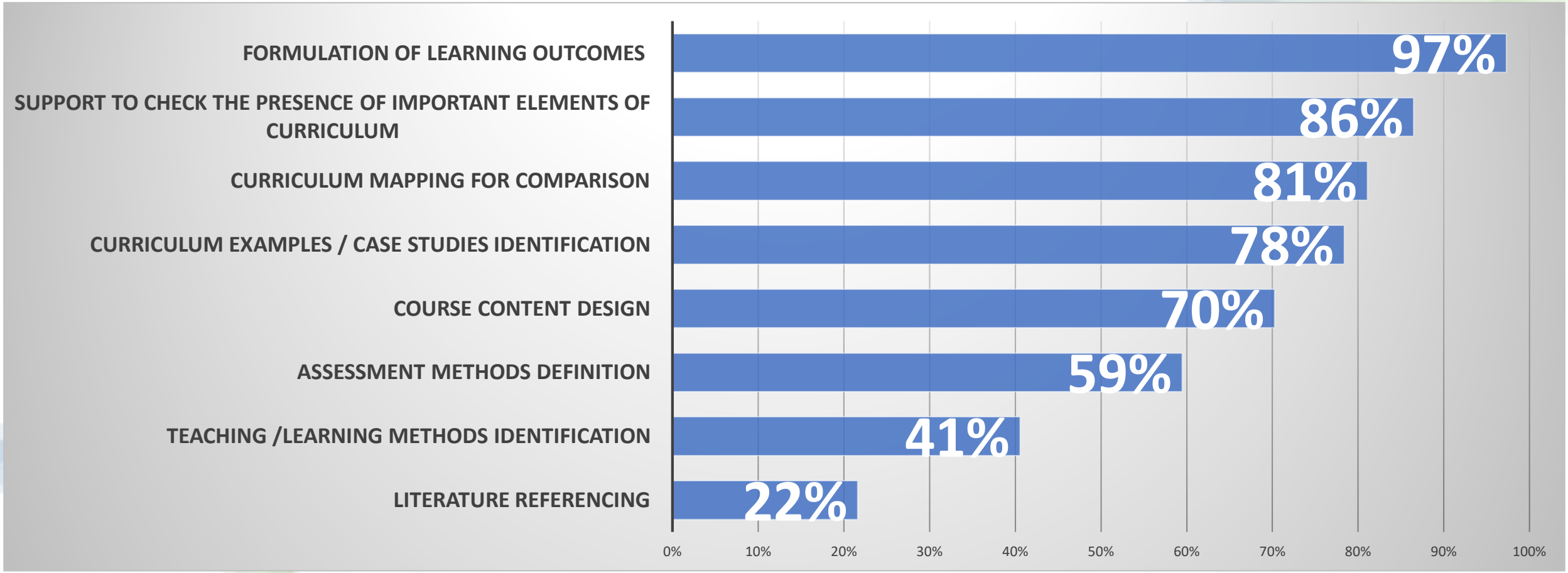


IT Professionalism Europe
Competent and careful. Recognised and respected.

CEN/TC 428
ICT Professionalism and Digital Competences

Expectations

«To what extent the ICT Curriculum Guideline can provide benefit to the following activities?»

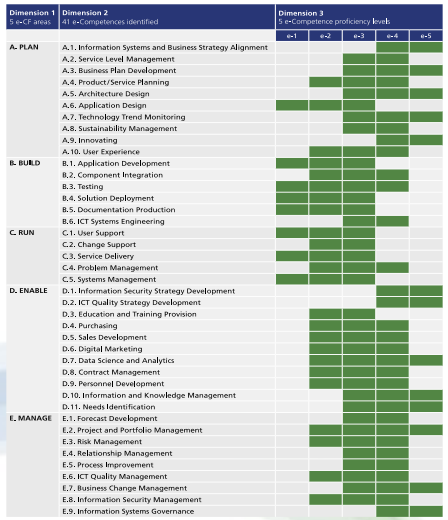


IT Professionalism Europe
Competent and careful. Recognised and respected.

CEN/TC 428
ICT Professionalism and Digital Competences

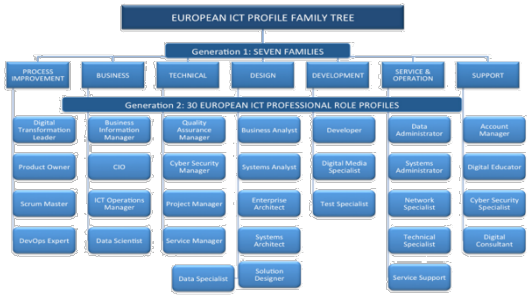
From any input to any educational programme using the educational profile

Competences from e-CF

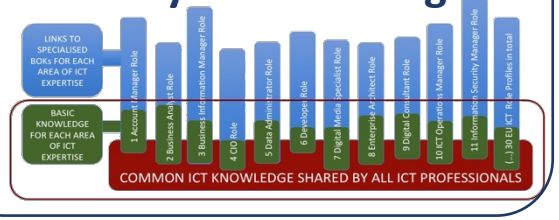


Dimension 1 5 e-CF areas	Dimension 2 41 e-Competences identified	Dimension 3 5 e-Competence proficiency levels				
		e-1	e-2	e-3	e-4	e-5
A. PLAN	A.1. Information Systems and Business Strategy Alignment				■	■
	A.2. Service Level Management			■	■	
	A.3. Business Plan Development			■	■	■
	A.4. Product/Service Planning		■	■	■	
	A.5. Architecture Design			■	■	■
	A.6. Application Design	■	■	■		
	A.7. Technology Trend Monitoring			■	■	■
	A.8. Sustainability Management			■	■	
	A.9. Innovating				■	■
	A.10. User Experience		■	■	■	
B. BUILD	B.1. Application Development	■	■	■		
	B.2. Component Integration		■	■	■	
	B.3. Testing	■	■	■	■	
	B.4. Solution Deployment	■	■	■		
	B.5. Documentation Production	■	■	■		
	B.6. ICT Systems Engineering			■	■	
C. RUN	C.1. User Support	■	■	■		
	C.2. Change Support		■	■		
	C.3. Service Delivery	■	■	■		
	C.4. Problem Management				■	
	C.5. Systems Management	■	■	■		
D. ENABLE	D.1. Information Security Strategy Development				■	■
	D.2. ICT Quality Strategy Development				■	■
	D.3. Education and Training Provision		■	■		
	D.4. Purchasing		■	■	■	
	D.5. Sales Development		■	■	■	
	D.6. Digital Marketing		■	■	■	
	D.7. Data Science and Analytics		■	■	■	■
	D.8. Contract Management		■	■	■	
	D.9. Personnel Development		■	■	■	
	D.10. Information and Knowledge Management			■	■	■
	D.11. Needs Identification			■	■	■
E. MANAGE	E.1. Forecast Development			■	■	
	E.2. Project and Portfolio Management		■	■	■	■
	E.3. Risk Management		■	■	■	
	E.4. Relationship Management			■	■	
	E.5. Process Improvement			■	■	
	E.6. ICT Quality Management		■	■	■	
	E.7. Business Change Management			■	■	■
	E.8. Information Security Management		■	■	■	
	E.9. Information Systems Governance				■	■

ICT professional role profiles



ICT Foundational Body of Knowledge

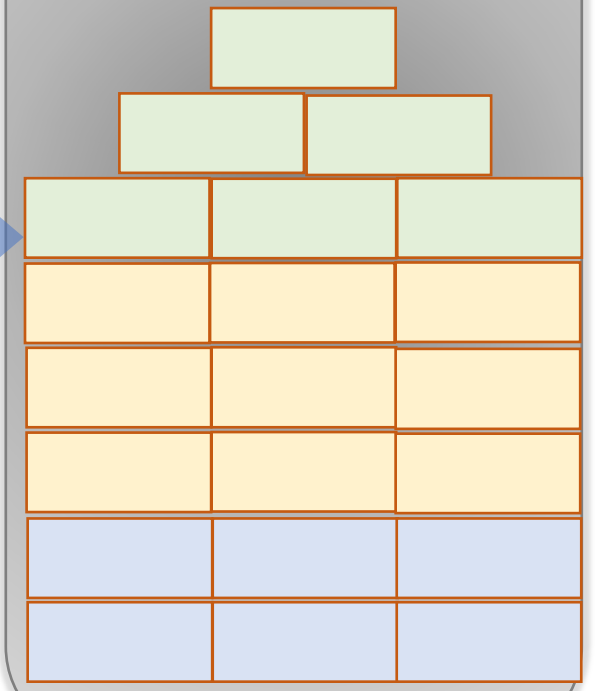


e-CF assessment indicators

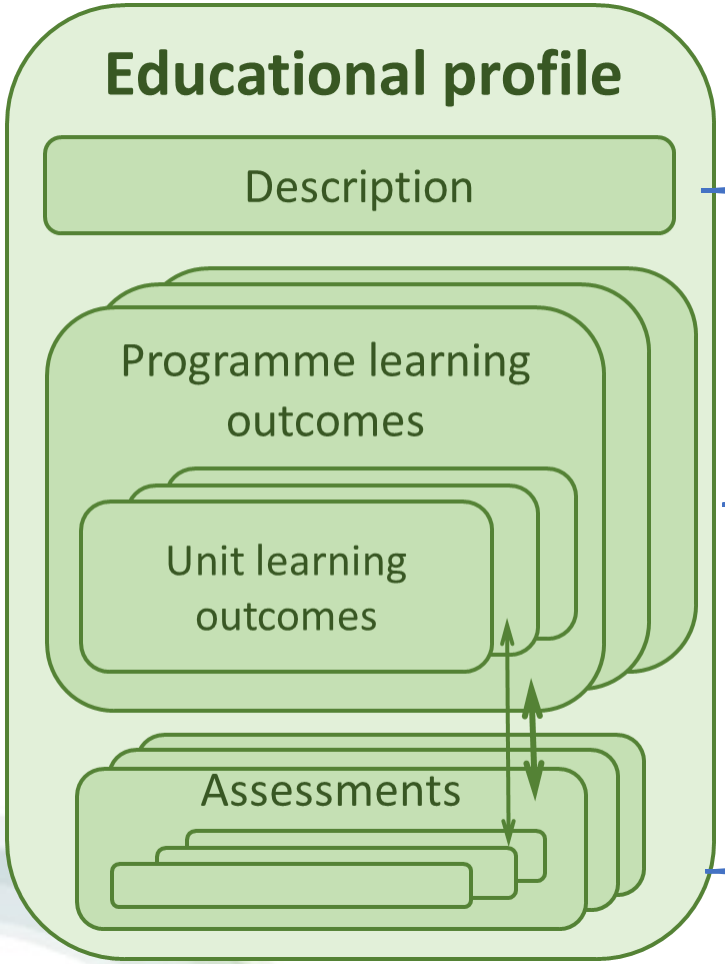
Educational profile

- Description
- Programme learning outcomes
- Unit learning outcomes
- Assessments

Learning programme (Curriculum)



The educational profile

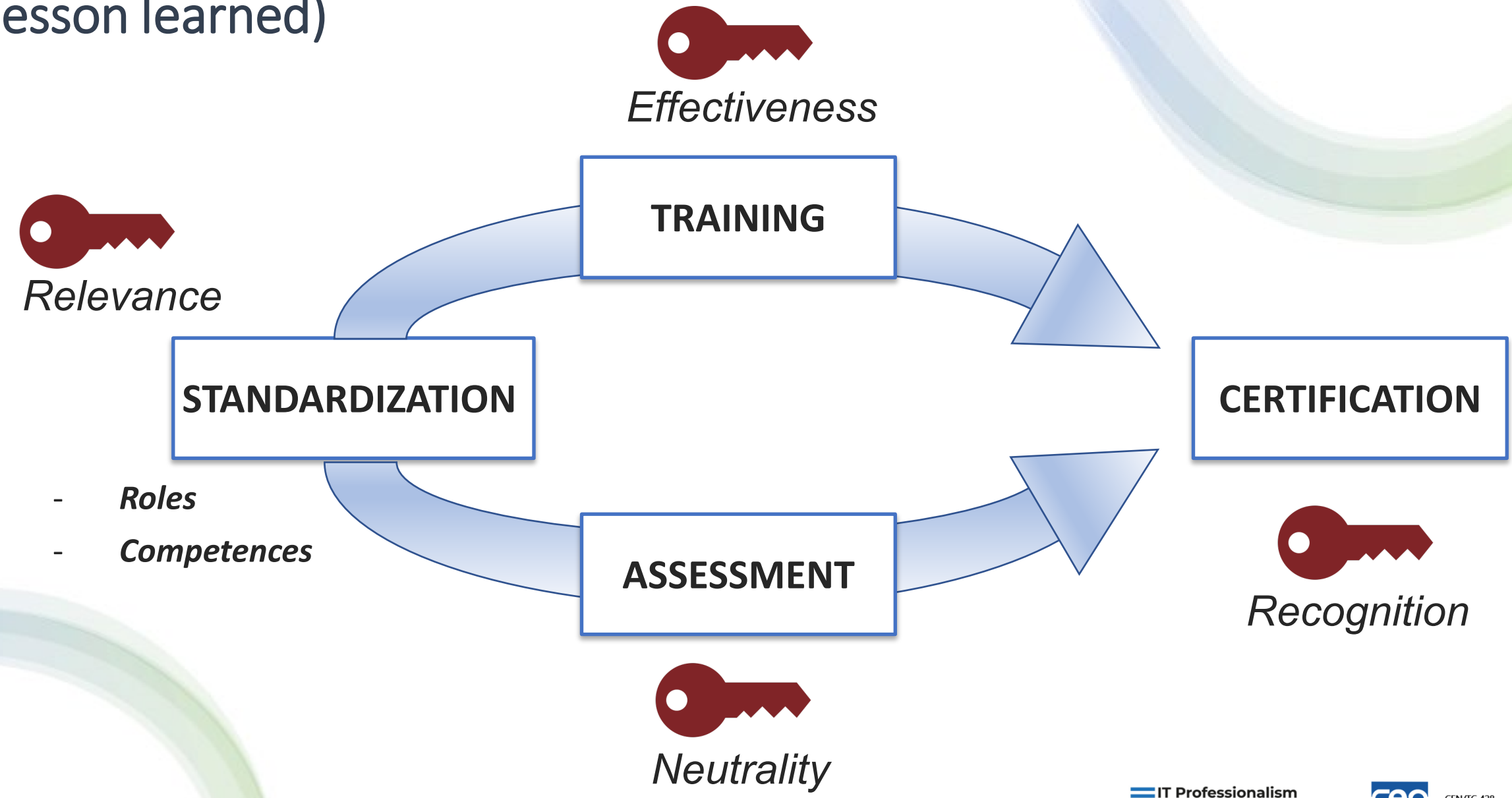


TITLE	Title of the Educational Profile
Description	
Goal	*A short description of the overall focus of the Profile in terms of results*
Scope	*An indication of the e-CF area and the knowledge domain; optionally a description of the professional field or specialism*
Competences	*An indication of the relevant e-competences*
Complexity	*An indication of the level of complexity and autonomy of the Profile; for example, in relation to the EQF's Dublin descriptors and/ or other qualification standards*
Deliverables	*A short list of the deliverables that learners should master*
Perspective	Professional perspective *A description of the possible professional functions and/or roles a person may fulfill.*
	Educational perspective *A description of the possible further education or training a person can take.*

1. Programme learning outcome	
Programme learning outcome	
learning outcomes	1.1 learning outcome 1
	1.2 learning outcome 2
	1….learning outcome …
… Programme learning outcome	
Programme learning outcome	
learning outcomes	….1 learning outcome 1
	….2 learning outcome 2
	…….learning outcome …

Assessment		
learning outcome	**Assessment type**	**Validation of prior knowledge**
1.1		
1.2		
1….		
….1		
….2		
……		

From standardization to certification (lesson learned)



THANK YOU !

IT Professionalism Europe
Competent and careful. Recognised and respected.

CEN/TC 428
ICT Professionalism and Digital Competences