SLOVENSKI STANDARD
SIST-TP CEN/TR 16234-4:2021

01-april-2021

Krovni seznam e-usposobljenosti (e-CF) - Skupno evropsko okolje za strokovnjake na področju informacijske in komunikacijske tehnologije v vseh sektorjih - 4. del: Študije primerov

e-Competence Framework (e-CF) - A common European Framework for ICT Professionals in all sectors - Part 4: Case Studies

e-Kompetenz Rahmenwerk (e-CF) - Ein gemeinsamer europäischer Rahmen für IKT-Fach- und Führungskräfte in allen Branchen - Teil 4: Fallstudien

Référentiel des e-Compétences - Référentiel européen commun pour les professionnels des technologies de l'information et de la communication dans tous les secteurs d'activité - Partie 4 : Études de cas

Ta slovenski standard je istoveten z: CEN/TR 16234-4:2021

ICS:

03.100.30	Vodenje ljudi	Management of human resources
35.020	Informacijska tehnika in tehnologija na splošno	Information technology (IT) in general

SIST-TP CEN/TR 16234-4:2021   **en,fr,de**

iTeh STANDARD PREVIEW
(standards.iteh.ai)

TECHNICAL REPORT

RAPPORT TECHNIQUE

TECHNISCHER BERICHT

CEN/TR 16234-4

February 2021

ICS 35.020

Supersedes CWA 16234-4:2014

English Version

e-Competence Framework (e-CF) - A common European Framework for ICT Professionals in all sectors - Part 4: Case Studies

Référentiel des e-Compétences - Référentiel européen commun pour les professionnels des technologies de l'information et de la communication dans tous les secteurs d'activité - Partie 4 : Études de cas

e-Kompetenz Rahmenwerk (e-CF) - Ein gemeinsamer europäischer Rahmen für IKT-Fach- und Führungskräfte in allen Branchen - Teil 4: Fallstudien

This Technical Report was approved by CEN on 15 February 2021. It has been drawn up by the Technical Committee CEN/TC 428.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

CEN/TR 16234-4:2021 (E)

Content

Page

2

European foreword

This document (CEN/TR 16234-4:2021) has been prepared by Technical Committee CEN/TC 428 "ICT Professionalism and digital competences", the secretariat of which is held by UNI.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes CWA 16234-4:2014.

In comparison with the previous edition, the following technical modifications have been made:

— Development of new case studies in the light of the EN 16234-1 revision and benefitting from multiple e-CF user experiences gathered and application feedback received.

The EN 16234-1 (e-CF) for ICT professional competence being the main reference of this document outlines the minimum requirements of competence (i.e. a threshold) in the work context. It includes typical knowledge and skills examples that are not standardized but provided to support orientation and understanding. When applying the EN 16234-1 (e-CF), this approach must be recognized to clearly distinguish between which elements are mandatory and which are merely examples (represented by, shall versus should/may/can etc.).

This European standard is made up of four parts:

— EN 16234-1 e-Competence Framework (e-CF) - A common European Framework for ICT Professionals in all sectors - Part 1: Framework. It provides the e-Competence Framework (e-CF) published as a European Norm - EN.

— CEN/TR 16234-2 e-Competence Framework (e-CF) - A common European Framework for ICT Professionals in all sectors - Part 2: User Guide. It provides the e-CF User guide published as a CEN Technical Report (TR).

— CEN/TR 16234-3 e-Competence Framework (e-CF) - A common European Framework for ICT Professionals in all sectors - Part 3: Methodology. It provides the e-CF Methodology published as a CEN Technical Report (TR).

— CEN/TR 16234-4 e-Competence Framework (e-CF) - A common European Framework for ICT Professionals in all sectors - Part 4: Case Studies. It provides a series of Case Studies illustrating e-CF practical use from multiple ICT sector perspectives published as a CEN Technical Report (TR).

Part 1 is fully standalone, and part 2, 3 and 4 rely on part 1.

CEN/TR 16234-4:2021 (E)

Introduction

EN 16234-1 e-Competence Framework (e-CF) - A common European Framework for ICT Professionals in all sectors Part 1: Framework was established as a tool to support mutual understanding and provide transparency of language through the articulation of competences required and deployed by Information and Communication Technology (ICT) professionals.

To support users and guide developers of applications to EN 16234-1 (e-CF), the following narrative provides an overview of the underpinning philosophy and principles adopted during the standard's construction and maintenance. Understanding these guiding principles is equally vital for applying the standard in multiple environments concerned with ICT professionalism.

EN 16234-1 (e-CF) Guiding Principles:

EN 16234-1 (e-CF) is an enabler; it is designed to be a tool to empower users, not to restrict them. It provides structure and content for application by many users from organisations in the private and public sector, ICT user or ICT supply organisations, educational institutions including higher education and private certification providers, social partners and individuals. Across this broad application context, EN 16234-1 (e-CF) is designed to support common understanding, not to mandate the use of each and every word used within it.

EN 16234-1 (e-CF) expresses ICT competence using the following definition: 'Competence is a demonstrated ability to apply knowledge, skills and attitudes for achieving observable results'. This holistic concept directly relates to workplace activities and incorporates complex human attitudes and resultant behaviours. Behaviour and attitude are important influences that facilitate successful knowledge and skills application. Within each competence, embedded attitudes are reflected in behaviour and enable the successful integration of knowledge and skills.

Competence is a durable concept and although technology, jobs, marketing terminology and promotional concepts within the ICT environment change rapidly, EN 16234-1 (e-CF) remains durable requiring maintenance approximately every three years to maintain relevance.

A competence can be a component of a job role, but it cannot be used as a substitute for similarly named job titles, for example; the competence, E.2. 'Project and Portfolio Management' does not represent the complete content of a 'Project Manager's' job role. Competences can be aggregated, as required, to represent the essential content of a job role or profile. On the other hand, one single competence may be assigned to a number of different job profiles.

Competence is not to be confused with process or technology concepts such as, 'Cloud Computing' or 'Big Data'. These descriptions represent evolving technologies and in the context of EN 16234-1 (e-CF), they may be integrated as knowledge and skills examples in Dimension 4.

EN 16234-1 (e-CF) does not attempt to cover every possible competence deployed by an ICT professional nor are the included competences necessarily unique to ICT. EN 16234-1 (e-CF) articulates competences associated with ICT professional roles including some that may be found in other professions but are very important in an ICT context; examples include, C.4. 'Problem Management' or E.3. 'Risk Management'. However, to maintain an ICT focus, EN 16234-1 (e-CF) avoids generic competences such as 'Communications' or 'General Management'. Although very applicable these generic competences are comprehensively articulated in other structures. Selecting competences for inclusion within EN 16234-1 (e-CF) is therefore a pragmatic rather than an exhaustive process. The selection was based on engagement with a broad cross-section of stakeholders who prioritize competence inclusion based upon industry knowledge and experience.

EN 16234-1 (e-CF) is structured across four dimensions. e-Competences in Dimensions 1 and 2 are presented from the organisational perspective as opposed to an individual's perspective. Dimension 3 defines e-Competence levels and relates to the European Qualifications Framework (EQF), it provides a bridge between organisational and individual competences. Dimension 4 provides examples of knowledge and skills in the e-Competences of Dimension 2; they are not intended to be exhaustive but included for inspiration and orientation.

This latest version of the standard incorporates a new element, transversal aspects; these recognize the relevance of a number of important cross-cutting aspects and provide additional generic ICT related descriptors for successful application of e-CF competences in the workplace. Accessibility, Ethics and Security are examples of transversal aspects that may be applied flexibly to match the application context.

EN 16234-1 (e-CF) has a sector specific relationship to the EQF; competence levels within EN 16234-1 (e-CF) provide a consistent and rational relationship to levels defined within the EQF. The relativity between EQF learning levels and the e-competence work proficiency levels of EN 16234-1 (e-CF) has been systematically established to enable consistent interpretation of the EQF in the ICT workplace environment. It should be noted that an exact equivalency is not possible due to the different purposes and contexts of the EQF and the e-CF, but relevant relationship information is provided.

Continuity of EN 16234-1 (e-CF) is imperative; following maintenance updates, it is essential that users are provided with a simple upgrade path. Users of EN 16234-1 (e-CF) invest considerable time and resources to align processes or procedures to it. Organisations deploying these downstream activities are reliant upon EN 16234-1 (e-CF) and need to be confident of the continued sustainability of their processes. Updates EN 16234-1 (e-CF) must respect this requirement and ensure continuity by enabling continued use of the existing standard until convenient to upgrade to the latest version.

EN 16234-1 (e-CF) is neutral; it does not follow the specific interests of a few major influencers, it is developed and maintained through an EU-wide balanced multi-stakeholder agreement process, under the umbrella of the European Committee for Standardization. EN 16234-1 is a key component of the European Digital Agenda for ICT professionalism; it is designed for use by any organization or individual engaged in ICT Human Resource planning and competence development.

CEN/TR 16234-4:2021 (E)

1 Scope

This document provides a series of practical case studies supporting understanding, adoption and use of EN 16234 (all parts) e-Competence Framework (e-CF) - A common European Framework for ICT Professionals in all sectors which provides a common reference of 41 ICT professional competences as required and applied at the Information and Communication Technology (ICT) professional work environment, using a common language for competences, skills, knowledge and proficiency levels that can be understood across Europe.

This document supports Information and Communication Technology (ICT) stakeholders dealing with ICT Professional competences from multiple perspectives, in particular:

— ICT service, demand and supply organisations;

— ICT professionals, managers and human resource (HR) departments;

— educational institutions, learning program and certification providers of all types including Vocational and Educational Training (VET), Higher Education (HE) and Continuous Professional Development (CPD);

— social partners (trade unions and employer associations);

— professional associations, accreditation, validation and assessment bodies;

— market analysts and policy makers;

— other organizations and stakeholders in public and private sectors across Europe;

to adopt, apply and use the framework in their environment.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 16234-1:2019, *e-Competence Framework (e-CF) — A common European Framework for ICT Professionals in all sectors — Part 1: Framework*

CEN/TR 16234-2:2021, *e-Competence Framework (e-CF) — A common European Framework for ICT Professionals in all sectors — Part 2: User Guide*

CEN/TR 16234-3:2021, *e-Competence Framework (e-CF) — A common European Framework for ICT Professionals in all sectors — Part 3: Methodology*

CWA 16458-1:2018, *European ICT Professional Role Profiles — Part 1: 30 ICT profiles*

CWA 16458-2:2018, *European ICT Professional Role Profiles — Part 2: User Guide*

CWA 16458-3:2018, *European ICT Professional Role Profiles — Part 3: Methodology documentation*

CWA 16458-4:2018, *European ICT Professional Role Profiles — Part 4: Case studies*

3   Terms and definitions

For the purposes of this document, the terms and definitions given in EN 16234-1 apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

• IEC Electropedia: available at http://www.electropedia.org/

• ISO Online browsing platform: available at https://www.iso.org/obp

4   Main Principles

4.1 e-CF overview: structure, content

The EN 16234-1 (e-CF) is structured across four dimensions. The dimensions reflect areas of business and human resource planning and incorporate job and work proficiency guidelines specified as follows. EN 16234-1 (e-CF) incorporates a transversal component providing generic descriptors applicable to all competences to support application of the e-CF in context.

Table 1 illustrates the four dimensions and the transversal aspects of EN 16234-1 (e-CF).

Table 1 — The e-CF four dimensions and transversal aspects

Dimension 1 **5 e-Competence areas** *MAY APPLY*	Derived from the ICT macro processes PLAN – BUILD – RUN – ENABLE – MANAGE. They provide the entry point to the e-Competences and reflect a process perspective based upon the waterfall approach. However, the e-CF is equally relevant to the steps applied in agile process structures such as Agile/ DevOps lifecycles.
Dimension 2 **41 e-Competences** *SHALL APPLY*	41 e-Competences in total provide the EN 16234-1 (e-CF) references of ICT Professional competence as required and performed in ICT work context. Each dimension 2 description contains a competence title and a generic competence description, defined from an organisational perspective.
Dimension 3 **5 e-CF proficiency levels** *SHALL APPLY*	5 e-Competence proficiency levels characterized by increasing levels of context complexity, autonomy, influence and typical behaviour. To each e-Competence, specifically relevant proficiency levels are assigned. The dimension 3 level descriptors provide the individual perspective of competence performance.
Dimension 4 **knowledge and skills examples** *MAY APPLY*	Examples of knowledge and skills relate to the e-Competences generic descriptions in Dimension 2. These examples are provided to add value to the competence descriptor and are not intended to be exhaustive. They offer inspiration and orientation for the identification of further specific knowledge and skills assignment according to contextual needs.
Transversal aspect components provide basic generic ICT related descriptors for successful application of e-CF competences in a workplace context. *MAY APPLY*	

The four-dimensional structure of the e-CF offers comprehensive insight into the competences required by organisations and executed by ICT professionals. The focus of the framework is to articulate the 41 competence descriptors found at the heart of the structure in dimension 2. This dimension, which is complemented by the remaining three, provides a usual start point for initial understanding of the e-CF.

CEN/TR 16234-4:2021 (E)

Figure 1 illustrates the content of a typical competence, A.2 Service Management, it shows how the central dimension 2 provides the competence description and how this can be further articulated in dimension 3, at different proficiency levels (level 3 and level 4 in this example). Furthermore, examples of knowledge and skills listed in dimension 4, provide additional illumination of the core competence description from dimension 2.

Figure 1 provides an example of e-Competence description in all four dimensions.

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 levels 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 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				

Figure 1 — EN 16234-1 (e-CF) e-Competence example A.2. Service Level Management

As stated above, 41 competences are defined by EN 16234-1:2019 (e-CF) and each are constructed in the same way, from the 4 dimensions, described previously. Table 2 presents the entire compendium of competences in a consolidated form. It demonstrates that although the format of each competence is structured in a similar way, the number of applicable dimension 3 level descriptions varies according to workplace relevance.

Table 2 — EN 16234-1 (e-CF) table overview

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

CEN/TR 16234-4:2021 (E)

In addition, EN 16234-1 (e-CF) incorporates a transversal component which provides basic generic ICT descriptors for successful application of e-CF competences in a workplace context.

Transversal aspects are represented by statements that complement the descriptors of dimension 2. Figure 2 illustrates the seven transversal aspects which are applied to every competence either from the standpoint of being 'aware of' or 'behaving proactively' according to context.

Being aware of and, if applicable, behaving proactively in

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

Figure 2 — Transversal Aspects applying across the entire framework

4.2 Overview of e-CF case studies provided by this document

In support of e-CF application across multiple environments, a series of illustrative case studies follow and illustrate examples, benefits and hints of how to make best use of the EN 16234-1 (e-CF).

These case studies relate to practical e-CF application experiences and have been elaborated together with organisations applying the e-CF from different perspectives Europe-wide.

Table 3 provides an overview of e-CF case studies described in this document.

Table 3 — Overview of e-CF case studies provided by this document

Case Study	Case study title and source	e-CF usage	Key perspectives
A 5.1	Skill-UP: Please, mind the gap – e-CF and ICT Professional Role Profile Mapping to accelerate company transformation. *Nexi Payments S.p.A./Mercury Payments S.p.A.; Italy*	e-CF and ICT Professional Role Profiling to standardize roles across markets, to map competences and experiences, to enhance Nexi IT organization with specialized job profiles and to boost people development	▪ Identification of future competence needs; ▪ Cross company and cross border common language; ▪ Competence gap identification; ▪ Decision support on develop or buy new competences.

10

Case Study	Case study title and source	e-CF usage	Key perspectives
B **5.2**	Educating the European ICT Professionals of the Future - an e-CF compliant curriculum. *HU University of Applied Sciences (HU), Utrecht, The Netherlands*	In order to create a future proof curriculum for the part-time (continuing education) Master of Informatics at the HU the e-CF was incorporated. Competences related to ICT Professional role profiles are taught across several modules in order to prepare IT professionals for their next challenge in their organization.	▪ Identification of current and future roles based on the EU ICT Professional Role Profiles; ▪ Education based on the related competences; ▪ Unique competitive advantage as e-CF competences are increasingly demanded.
C **5.3**	Teaching students human resources practices in the ICT profession within Informatics services management course – example of hiring process. *University of Zagreb, Faculty of Organization and Informatics*	One of the important topics within IT service management is human resources management, related to the ICT profession. In order to introduce students to the process of preparation of job advertisements and job applications, we used ICT profiles and related e-CF competences.	▪ Identification of job profiles/roles in an ICT company based on the EU ICT Professional Role Profiles; ▪ Preparation of job advertisements for a specific profile based on related e-competences; ▪ Preparation of a job application for a specified job ad (ICT profile); ▪ Evaluation of candidates according to their application.
D **5.4**	Implementation of Software Engineering Competence Remote Evaluation for Master Program Graduates - e-CF based Learning Outcome usage for Improving the Quality and Relevance of Higher Education (HE). *Transport and Telecommunication Institute (TTI), Riga, Latvia*	Boosting innovation and digital skills in European universities in order to deliver high quality education and digital skills. Software Engineering Master Program's learning outcome structuring on the base of e-CF competences.	▪ e-CF competence online evaluation for HE establishments as Open Educational Resource; ▪ Increased opportunities for professional development for ICT Master students; ▪ Greater understanding of interconnections between formal, non-formal education; ▪ Student oriented Software Engineering Master Program design.

CEN/TR 16234-4:2021 (E)

Case Study	Case study title and source	e-CF usage	Key perspectives
E 5.5	German VET ICT profile review process: use of e-CF. *Federal Institute for Vocational Education and Training in cooperation with Airbus Operations GmbH Bremen*	Use of the e-CF in the last process phase of the regulatory procedure of German vocational training ICT profiles and mapping of all the skills and competences to the e-CF to ensure a common European understanding.	▪ Translate vocational training ICT profiles into e-CF competences; ▪ Document reached proficiency levels of German ICT vocational training profiles.
F 5.6	Making a role profile of an early adopter of Blockchain using the e-CF standard. *The Dutch Blockchain Coalition (DBC)*	Along with other technical innovations, blockchain shares the trait that accepted descriptions of related skills, competences and knowledge are scarce or non-existent. Transfer and sharing of know-how on this decentralized database technology often takes place in masterclasses, short-term education and seminars. Early adopters, developers as well as users, render their experiences and findings, while discussing application in practice. In this environment, the e-CF is used the skills, knowledge and competences sort by Dutch Blockchain early adopters.	▪ Providing the base for the identification and development of new and evolving technology competence articulation.
G 5.7	UWV from Data Services towards Data Science using e-CF competences, EU Professional Profiles and the Edison Body of Knowledge. *UWV and Capgemini, The Netherlands*	e-CF applied to new job roles including e-competences. Demonstration of e-CF applied in conjunction with another standard; in this case the Edison data science body of knowledge.	▪ Implementation of new data services; ▪ Promote personal development; ▪ Broad support of organisational change; ▪ Workforce Transformation.

Case Study	Case study title and source	e-CF usage	Key perspectives
H 5.8	National approach to systematic multi-stakeholder engagement for ICT education; using e-CF as a common language. *Development of the Estonian National skills strategy by the Estonian Association of Information and Technology in co-operation with the National Qualifications Authority, Estonia*	Estonia decided upon an ICT competence approach to create national economic competitive advantage. This required co-operation and common understanding between industry, education providers and national qualifications authority. The e-CF provided a common structure and platform for co-operation.	▪ e-CF and ICT profiles were deployed; ▪ Competence was at the heart of the skills approach; ▪ Curriculum development was supported by the application of learning outcomes.
I 5.9	Using the e-CF to develop a certification framework and spin-off curricula and VET programmes. *Promanad, Rotterdam, The Netherlands*	In order to develop internationally recognizable curricula a certification framework was developed based on the e-CF in order to assess knowledge, comprehension and application of concepts that form the foundation for the development of the e-CF competences.	▪ By using the e-CF for defining a certification framework, it has a clear rationale behind it that can be easily explained to all stakeholders; ▪ By using the e-CF to develop exams, these are not only nationally but also internationally recognized; ▪ By using the e-CF and the European ICT Professionals Role Profiles to build ICT curricula, programs are not only much more appealing to students, but also to employers and to accreditation committees.
J 5.10	Aligning IT Professional Resources to the new Company Strategy. *VIVAT, The Netherlands*	In 2016, VIVAT refreshed its strategy to prepare for the future by focusing on four strategic themes: Customer Centricity, Digitalisation, Data and Innovation. Addressing ICT Human Resources was a key factor in this change process. The e-CF supported this imperative from tactics to strategy.	▪ Definition of ICT Job Descriptions; ▪ Connecting Job Description to Training Requirements; ▪ e-CF was adopted as reference framework supporting the HR management process at the strategic, tactical and operational levels for the integration with different frameworks (Cobit5, SAFe).