ICT knowledge, competenze, certificazioni/qualificazioni": il contesto internazionale, europeo ed italiano

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Assemblea congiunta GII-GRIN 08-09-2016

In breve

- Knowledge (BoK)/ Competences : contesto internazionale, europeo, italiano
- Framework vs certificazioni
- Proposte operative di collaborazione

Knowledge

- BoK: dalle “professional societies”
  - Computer Engineering (2004, 2016)
  - Computer Science (2001, 2008, 2013)
  - Information Systems (1997, 2002, 2006, 2010)
  - Information Technology (2008, 2016-7)
  - Software Engineering (2004, 2014)

Knowledge

- BoK: dal mondo “enterprise”
  - EITBoK (IEEE Professional Activities Board) 2010-2016
    - *“guide by practitioners for practitioners”*
  - EU Foundational ICT Body of Knowledge (EU Dir. Gen. Enterprise) 2014-2015
    - “*The European Foundational ICT Body of Knowledge is the base-level knowledge required to enter the ICT profession and acts as the first point of reference for anyone interested in working in ICT*”

Competences

Competence is "demonstrated ability to apply knowledge, skills and attitudes for achieving observable results"

- eCF (European e-competence Framework)
  - *40 competenze nell'ambito di 5 macro "business processes" (PLAN, BUILD, RUN, ENABLE, MANAGE) con 5 livelli di "proficiency"*
  - *è usata come parte di una "norma" UNI, sta diventando una "norma" CEN*
- SFIA (Skill Framework of the Information Age)
  - *96"skill" associate a 6 "areas" con 7 livelly di "proficiency"*
  - *progettata dalla BCS, diffusa nel mondo anglo-sassone*
- iCD (Giappone)

Competenze Digitali

- In Italia è attivo un "Osservatorio delle Competenze Digitali" (rapporto 2014, 2015, in fieri 2016)
- *Promosso da ASSINFORM, ASSINTEL, ASSINTER, AICA, con patrocinio di AGID*
- Indagine su circa 170 aziende (+ PA)
- Lato domanda: profili professionali ICT richiesti, competenze in casa e da acquisire, usa eCF
- Lato offerta: scarna e poco incisiva analisi del mondo della formazione (IT, ITS, UNI)
- dal 2016 CINI contribuisce per UNI

Framework vs certificazioni

- Più che “certificazioni” si lavora con servizi di “assessment”
- Il mercato delle “certificazioni” delle professionalità e competenze si sta sviluppando nell’ambito del framework eCF
  - Italia: AICA con eCFplus
  - Olanda: EXIN
- Esiste una “norma quadro UNI” sulle professioni ICT, si stanno rilasciando poi norme di settore
- Effetti pratici nei rapporti con la PA

Proposte di collaborazione

- Obiettivo: rendere visibile ed esplicito il rapporto fra la formazione istituzionale universitaria e le possibili richieste di *competenze* ICT espresse dal mondo aziendale e della PA

- Ricadute: di tipo politico/istituzionale, e pratiche se dalle aziende arrivano input “sensati”

Proposte di collaborazione

- Premesse:
  - GII (gruppo didattica organizzato da E. Vicario) ha sviluppato una web app per la descrizione dei corsi utilizzato il BoK IEEE/CS 2013.
  - GRIN ha un sistema di assessment di un corso di laurea ("bollino blu") inizialmente progettato su BoK IEEE/CS, poi integrato e modificato. Sta iniziando un'attività simile a quella di GII, sempre su BoK IEEE/CS 2013
  - CINI partecipa alla nuova versione dell' "Osservatorio delle competenze digitali" per caratterizzare l' *offerta istituzionale ICT*
  - CINI è riconosciuto come attore di riferimento in Italia per l'area "knowledge" e "formazione" nel progetto europeo "Framework for ICT Professionalism" (Capgemini – E&Y)

Proposte di collaborazione

- Principale:
  - Diffusione/sostegno alle iniziative GII e GRIN (sono unificabili/armonizzabili ?)
  - Costruzione di *meccanismo di mappatura* fra “ontologie/ tassonomie” diverse: quelle “knowledge based” IEEE/CS vs EU Foundational BoK, quelle “competence based” come eCF e eCFPlus (AICA) e/o vs quelle “enterprise knowledge based”
  - Consentirebbe di trasformare le mappature fatte sui corsi in assessment secondo gli schemi ed i framework esterni (EU BoK – eCF) .
  - “todo” con sostegno di CINI Lab CFC, massima apertura a chiunque voglia impegnarsi

Proposte di collaborazione

- Secondarie:
  - Esame diretto e sintetico per ambiti verticali di iniziative didattiche in essere (valutazione diretta sulla base di eCF/ BoK “enterprise”)
  - es1: “Security management” una KA del EU Foundational BoK (*in avvio* con Lab CINI Cybersecurity)
  - es2: possibili analisi di altri settori verticali derivanti da analisi dell’ “Osservatorio Competenze Digitali”

Grazie !

questa presentazione e altri documenti disponibili su

www.consorzio-cini.it/
(laboratorio CFC – news)

Assemblea congiunta GII-GRIN 08-09-2016

eCF
european e-Competence Framework
il driver europeo

La spinta dell'Unione Europea per una crescita "intelligente", uno dei tre pilastri della strategia **EUROPA 2020**, passa inderogabilmente attraverso l'investimento e lo sviluppo delle competenze nel settore dell' ICT (Information and communication technology).

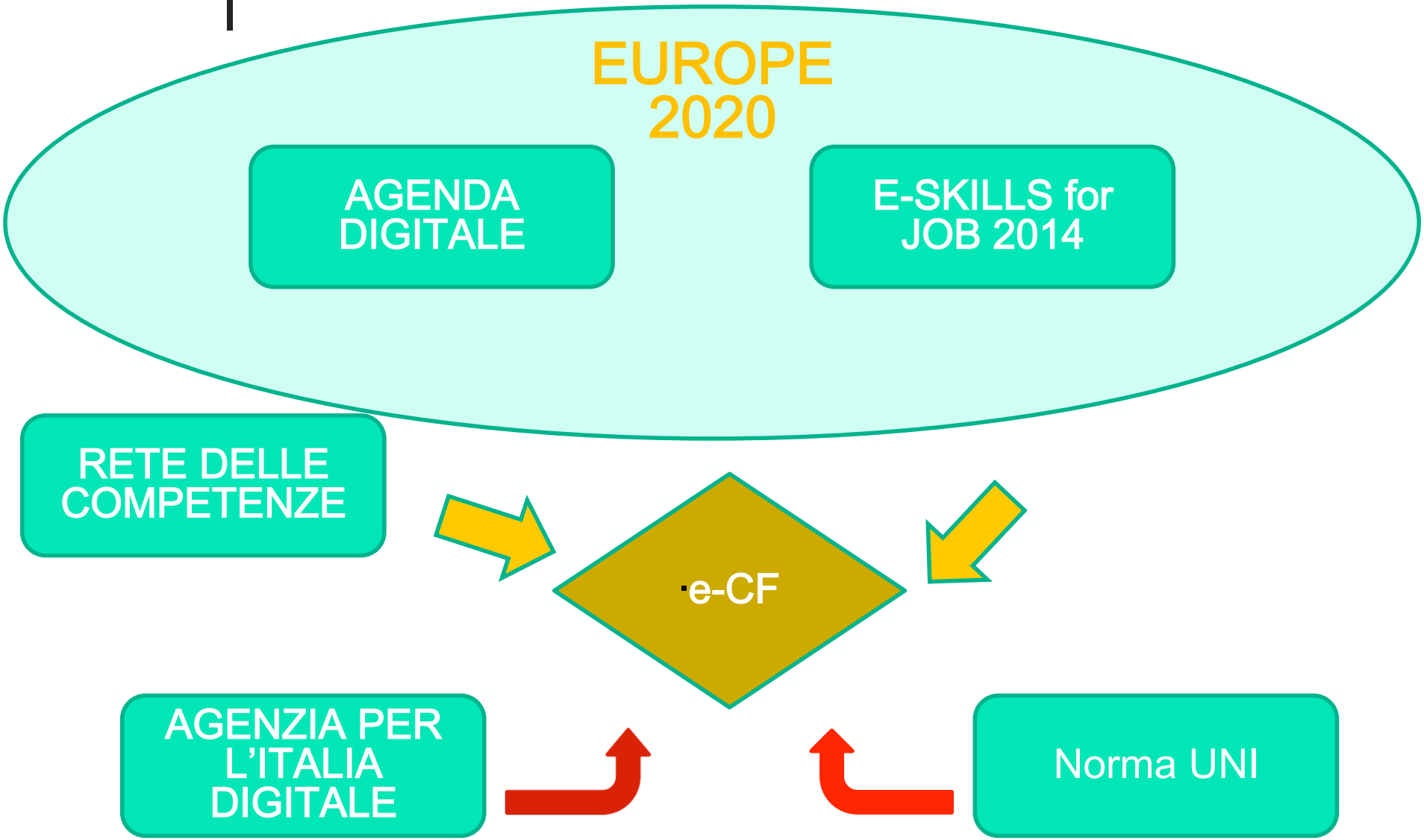
- **Agenda Digitale:** sfruttare al meglio il potenziale delle tecnologie dell'informazione e della comunicazione per favorire l'innovazione, la crescita economica e il progresso;

- **e-skills for Jobs 2014:** una campagna europea per lo sviluppo delle competenze digitali e per la crescita qualitativa e quantitativa dell'occupazione.

eCF
european e-Competence Framework
il contesto italiano

- **L'Agenzia per l'Italia Digitale del Ministero, definisce:** "L'e-CF e lo strumento di riferimento europeo dell'Agenda Digitale, a supporto delle imprese e delle persone che operano nel campo dell'*Information and Communication Technology* (ICT), finalizzato ad identificare e valutare le competenze che servono, per facilitare l'incontro tra domanda e offerta, per monitorare gli spazi di miglioramento e di crescita.";

- **Norma UNI 11506/2013:** "L'attività di normazione intende definire i criteri generali delle figure professionali operanti nel settore dell' ICT stabilendo i requisiti fondamentali per l'insieme di conoscenze, abilità e competenze che le contraddistinguono. Il progetto si applica alle figure professionali che operano in ambito ICT, indipendentemente dalle modalità lavorative e dalla tipologia del rapporto di lavoro. La norma emanata adotta il quadro europeo di riferimento e di definizione delle competenze e dei relativi skill: "e_Competence Framework 2.0""


EUROPE
2020
AGENDA
DIGITALE
E-SKILLS for
JOB 2014
RETE DELLE
COMPETENZE
e-CF
AGENZIA PER
L'ITALIA
DIGITALE
Norma UNI

eCF – evoluzione e contesto

- 2005 e-Skills Forum raccomandazione
- 2006 Kick-off del CEN ICT Skills Workshop
- 2008 eCF 1.0 (CWA 15893-1 …)
- 2010 eCF 2.0 (CWA 16234-1 …)
- 2013 eCF 3.0 (CWA Part 1-4)

120 stakeholder

supporto continuo della EU DG Enterprise and Industry

endorsement politico EU (2013 EU Commision e Council of Ministers)

eCF

Lo European e-Competence Framework è

pubblico

non proprietario

basato sul concetto di *competenza* (e di "*proficiency*")

strutturato in quattro *dimensioni*.

Non è basato su "job profiles" anche se propone esempi di profili, ma soprattutto strumenti per costruire *profili basati su competenze*.

www.ecompetences.eu

eCF

Alcune definizioni

Competenza

una abilità dimostrata di applicare conoscenza (knowledge), abilità (skills) e attitudini(attitudes) per raggiungere risultati osservabili.

skill

l'abilità di espletare funzioni tecniche o manageriali.

Gli skill tecnici e manageriali sono componenti delle competenze e specificano abilità fondamentali che formano una competenza.

Attitudine (Attitude)

la capacità cognitiva e relazionale (ad esempio la capacità di analisi, di sintesi, la flessibilità, il pragmatismo,..).

Conoscenza (Knowledge)

l'insieme di elementi del "sapere" (ad esempio, linguaggi di programmazione, tool di progettazione, …) e può essere descritta con specifiche operative.

eCF

Alcune definizioni

Proficiency level

il livello di *maturità* su una specifica competenza

tiene conto di tre aspetti:

autonomia

(da eseguire istruzioni a compiere scelte personali)

complessità del contesto

(stutturato-predicibile, non strutturato-non predicibile)

comportamento

(capacità di eseguire, capacità di ideare)

5 livelli (correlabili agli 8 livelli di EQF)

eCF - struttura

Dimensione 1	5 aree di e-Competence, derivate dai processi business dell' ICT PLAN (PIANIFICARE) – BUILD (REALIZZARE) – RUN (OPERARE) – ENABLE (ABILITARE) – MANAGE (GESTIRE)
Dimensione 2	Un insieme di e-Competence di riferimento per ciascuna area, con una descrizione generica per ciascuna competenza. Le 40 competenze identificate in totale forniscono le definizioni di riferimento.
Dimensione 3	Livelli di Capacità per ciascuna e-Competence: sono articolati in 5 livelli di e-Competence da e-1 a e-5, e messi in relazione con i livelli EQF da 3 a 8.
Dimensione 4	Esempi di knowledge e skill: sono in relazione alla dimensione 2 della e-Competence. Tali esempi descrivono il contesto aggiungendo valore al framework e non sono esaustivi.

eCF 3.0

European e-Competence Framework 3.0 overview

Dimension 1 5 e-CF areas (A – E)	**Dimension 2** 40 e-Competences identified	**Dimension 3** e-Competence proficiency levels e-1 to e-5, related to EQF levels 3–8				
		e-1	e-2	e-3	e-4	e-5
A. PLAN	A.1. IS 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. Sustainable Development			■	■	
	A.9. Innovating				■	■
B. BUILD	B.1. Application Development	■	■	■		
	B.2. Component Integration		■	■	■	
	B.3. Testing	■	■	■	■	
	B.4. Solution Deployment	■	■	■		
	B.5. Documentation Production	■	■	■		
	B.6. Systems Engineering			■	■	
C. RUN	C.1. User Support	■	■	■		
	C.2. Change Support		■	■		
	C.3. Service Delivery	■	■	■		
	C.4. Problem Management		■	■	■	

eCF 3.0

European e-Competence Framework 3.0 overview

Dimension 1 5 e-CF areas (A – E)	**Dimension 2** 40 e-Competences identified	**Dimension 3** e-Competence proficiency levels e-1 to e-5, related to EQF levels 3–8				
		e-1	e-2	e-3	e-4	e-5
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 Proposal Development		■	■		
	D.6. Channel Management			■	■	
	D.7. Sales Management			■	■	■
	D.8. Contract Management		■	■	■	
	D.9. Personnel Development		■	■	■	
	D.10. Information and Knowledge Management			■	■	■
	D.11. Needs Identification			■	■	■
	D.12. Digital Marketing		■	■	■	
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. IS Governance				■	■

eCF 3.0

Dimension 1 e-C...	A. PLAN				
Dimension 2 e-Competence: Title + generic description	**A.4. Product / Service Planning** Analyses and defines current and target status. Estimates cost effectiveness, points of risk, opportunities, strengths and weaknesses, with a critical approach. Creates structured plans; establishes time scales and milestones, ensuring optimisation of activities and resources. Manages change requests. Defines delivery quantity and provides an overview of additional documentation requirements. Specifies correct handling of products, including legal issues, in accordance with current regulations.				
Dimension 3 e-Competence proficiency levels e-1 to e-5, related to EQF levels 3 to 8	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Level 5**
	–	Acts systematically to document standard and simple elements of a product.	Exploits specialist knowledge to create and maintain complex documents.	Provides leadership and takes responsibility for, developing and maintaining overall plans.	–
Dimension 4 Knowledge examples *Knows / aware of / familiar with*	K1 effective frameworks and methodologies for governance plans K2 typical KPI (key performance indicators) K3 basic decision-making methods K4 IPR principles and regulation K5 agile techniques K6 structured Project Management Methodologies (e.g. agile techniques) K7 optimisation methods (e.g. lean management) K8 new emerging technologies				
Skills examples *Is able to*	S1 identify all potential targets for the product or service S2 define the communication plan; identify key users and create related documentation S3 produce quality plans S4 ensure and manage adequate information for decision makers S5 manage the change request process S6 manage the product/service development management lifecycle (inclusive of the formal change request process)				

eCF 3.0

Dimension 1 e-Comp. area	A. PLAN				
Dimension 2 e-Competence: Title + generic description	**A.6. Application Design** Analyses, specifies, updates and makes available a model to implement applications in accordance with IS policy and user/customer needs. Selects appropriate technical options for application design, optimising the balance between cost and quality. Designs data structures and builds system structure models according to analysis results through modelling languages. Ensures that all aspects take account of interoperability, usability and security. Identifies a common reference framework to validate the models with representative users, based upon development models (e.g. iterative approach).				
Dimension 3 e-Competence proficiency levels e-1 to e-5, related to EQF levels 3 to 8	**Level 1** Contributes to the design and general functional specification and interfaces.	**Level 2** Organises the overall planning of the design of the application.	**Level 3** Accounts for own and others actions in ensuring that the application is correctly integrated within a complex environment and complies with user/customer needs.	**Level 4** –	**Level 5** –
Dimension 4 Knowledge examples *Knows/aware of/ familiar with*	K1 requirements modelling and need analysis techniques K2 software developments methods and their rationale (e.g. prototyping, agile methods, reverse engineering, etc.) K3 metrics related to application development K4 user interface design principles K5 languages for formalising functional specification K6 existing applications and related architecture K7 DBMS, Data Warehouse, DSS … etc K8 mobile technologies K9 threat modelling techniques				
Skills examples *Is able to*	S1 identify customers, users & stakeholders S2 collect, formalise and validate functional and no-functional requirements S3 apply estimation models and data to evaluate costs of different software lifecycle phases S4 evaluate the use of prototypes to support requirements validation S5 design, organise and monitor the overall plan for the design of application S6 design functional specification starting from defined requirements S7 evaluate the suitability of different application development methods for the current scenario S8 establish systematic and frequent communication with customers, users and stakeholders S9 ensure that controls & functionality are built in to the design				

eCF 3.0

Dimension 1 e-Comp. area	B. BUILD				
Dimension 2 e-Competence: Title + generic description	**B.1. Application Development** Interprets the application design to develop a suitable application in accordance with customer needs. Adapts existing solutions by e.g. porting an application to another operating system. Codes, debugs, tests and documents and communicates product development stages. Selects appropriate technical options for development such as reusing, improving or reconfiguration of existing components. Optimises efficiency, cost and quality. Validates results with user representatives, integrates and commissions the overall solution.				
Dimension 3 e-Competence proficiency levels e-1 to e-5, related to EQF levels 3 to 8	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Level 5**
	Acts under guidance to develop, test and document applications.	Systematically develops and validates applications.	Acts creatively to develop applications and to select appropriate technical options. Accounts for others development activities. Optimizes application development, maintenance and performance by employing design patterns and by reusing proved solutions.	–	–
Dimension 4 Knowledge examples *Knows/aware of/ familiar with*	K1 appropriate software programs/modules K2 hardware components, tools and hardware architectures K3 functional & technical designing K4 state of the art technologies K5 programming languages K6 Power consumption models of software and/or hardware K7 DBMS K8 operating Systems and software platforms K9 Integrated development environment (IDE) K10 rapid application development (RAD) K11 IPR issues K12 modeling technology and languages K13 interface definition languages (IDL) K14 security				
Skills examples *Is able to*	S1 explain and communicate the design/development to the customer S2 perform and evaluate test results against product specifications S3 apply appropriate software and/or hardware architectures S4 develop user interfaces, business software components and embedded software components S5 manage and guarantee high levels of cohesion and quality S6 use data models S7 perform and evaluate test in the customer or target environment S8 cooperate with development team and with application designers				

eCF 3.0

Dimension 1 e-Comp. area	B. BUILD				
Dimension 2 e-Competence: Title + generic description	**B.3. Testing** Constructs and executes systematic test procedures for ICT systems or customer usability requirements to establish compliance with design specifications. Ensures that new or revised components or systems perform to expectation. Ensures meeting of internal, external, national and international standards; including health and safety, usability, performance, reliability or compatibility. Produces documents and reports to evidence certification requirements.				
Dimension 3 e-Competence proficiency levels e-1 to e-5, related to EQF levels 3 to 8	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Level 5**
	Performs simple tests in strict compliance with detailed instructions.	Organises test programmes and builds scripts to stress test potential vulnerabilities. Records and reports outcomes providing analysis of results.	Exploits specialist knowledge to supervise complex testing programmes. Ensures tests and results are documented to provide input to subsequent process owners such as designers, users or maintainers. Accountable for compliance with testing procedures including a documented audit trail.	Exploits wide ranging specialist knowledge to create a process for the entire testing activity, including the establishment of internal standard of practices. Provides expert guidance and advice to the testing team.	–
Dimension 4 Knowledge examples *Knows/aware of/ familiar with*	K1 techniques, infrastructure and tools to be used in the testing process K2 the lifecycle of a testing process K3 the different sorts of tests (functional, integration, performance, usability, stress etc.) K4 national and international standards defining quality criteria for testing K5 web, cloud and mobile technologies and environmental requirements				
Skills examples *Is able to*	S1 create and manage a test plan S2 manage and evaluate the test process S3 design tests of ICT systems S4 prepare and conduct tests of ICT systems S5 report and document tests and results				

eCF 3.0

Dimension 1 e-Comp. area	C. RUN				
Dimension 2 e-Competence: Title + generic description	**C.3. Service Delivery** Ensures service delivery in accordance with established service level agreements (SLA's). Takes proactive action to ensure stable and secure applications and ICT infrastructure to avoid potential service disruptions, attending to capacity planning and to information security. Updates operational document library and logs all service incidents. Maintains monitoring and management tools (i.e. scripts, procedures). Maintains IS services. Takes proactive measures.				
Dimension 3 e-Competence proficiency levels e-1 to e-5, related to EQF levels 3 to 8	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Level 5**
	Acts under guidance to record and track reliability data.	Systematically analyses performance data and communicates findings to senior experts. Escalates potential service level failures and security risks, recommends actions to improve service reliability. Tracks reliability data against SLA.	Programmes the schedule of operational tasks. Manages costs and budget according to the internal procedures and external constraints. Identifies the optimum number of people required to resource the operational management of the IS infrastructure.	–	–
Dimension 4 Knowledge examples *Knows/aware of/ familiar with*	K1 how to interpret ICT service delivery requirements K2 best practices and standards in ICT service delivery. K3 how to monitor service delivery K4 how to record service delivery actions and able to identify failures K5 the best practices and standards in information security management K6 web, cloud and mobile technologies				
Skills examples *Is able to*	S1 apply the processes which comprise the organisation's ICT service delivery strategy S2 fill in and complete documentation used in ICT service delivery S3 analyse service delivery provision and report outcomes to senior colleagues S4 plan and apply manpower workload/requirements for efficient and cost effective service provision				

eCF 3.0

Dimension 1 e-Comp. area	D. ENABLE				
Dimension 2 e-Competence: Title + generic description	**D.8. Contract Management** Provides and negotiates contract in accordance with organisational processes. Ensures that contract and deliverables are provided on time, meet quality standards, and conform to compliance requirements. Addresses non-compliance, escalates significant issues, drives recovery plans and if necessary amends contracts. Maintains budget integrity. Assesses and addresses supplier compliance to legal, health and safety and security standards. Actively pursues regular supplier communication.				
Dimension 3 e-Competence proficiency levels e-1 to e-5, related to EQF levels 3 to 8	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Level 5**
	–	Acts systematically to monitor contract compliance and promptly escalate defaults.	Evaluates contract performance by monitoring performance indicators. Assures performance of the complete supply chain. Influences the terms of contract renewal.	Provides leadership for contract compliance and is the final escalation point for issue resolution.	–
Dimension 4 Knowledge examples *Knows/aware of/ familiar with*	K1 applicable SLA K2 company policy for contract management K3 legal regulations applicable to ICT contracts K4 legal issues including IPR K5 different service models (SaaS, PaaS, IaaS), service levels and contractual translations (e.g. Cloud Computing)				
Skills examples *Is able to*	S1 foster positive relationships with stakeholders S2 negotiate contract terms and conditions S3 apply judgment and flexibility in contract negotiations compliant with internal rules and policies				

eCF 3.0

Dimension 1 e-Comp. area	D. ENABLE				
Dimension 2 e-Competence: Title + generic description	**D.11. Needs Identification** Actively listens to internal/external customers, articulates and clarifies their needs. Manages the relationship with all stakeholders to ensure that the solution is in line with business requirements. Proposes different solutions (e.g. make-or-buy), by performing contextual analysis in support of user centered system design. Advises the customer on appropriate solution choices. Acts as an advocate engaging in the implementation or configuration process of the chosen solution.				
Dimension 3 e-Competence proficiency levels e-1 to e-5, related to EQF levels 3 to 8	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Level 5**
	–	–	Establishes reliable relationships with customers and helps them clarify their needs.	Exploits wide ranging specialist knowledge of the customers business to offer possible solutions to business needs. Provides expert guidance to the customer by proposing solutions and supplier.	Provides leadership in support of the customers' strategic decisions. Helps customer to envisage new ICT solutions, fosters partnerships and creates value propositions.
Dimension 4 Knowledge examples *Knows/aware of/ familiar with*	K1 emerging technologies and the relevant market applications K2 business needs K3 organisation processes and structures K4 customer need analysis techniques K5 communication techniques K6 "Story telling" techniques				
Skills examples *Is able to*	S1 analyse and formalise business processes S2 analyse customer requirements S3 present ICT solution cost/benefit				

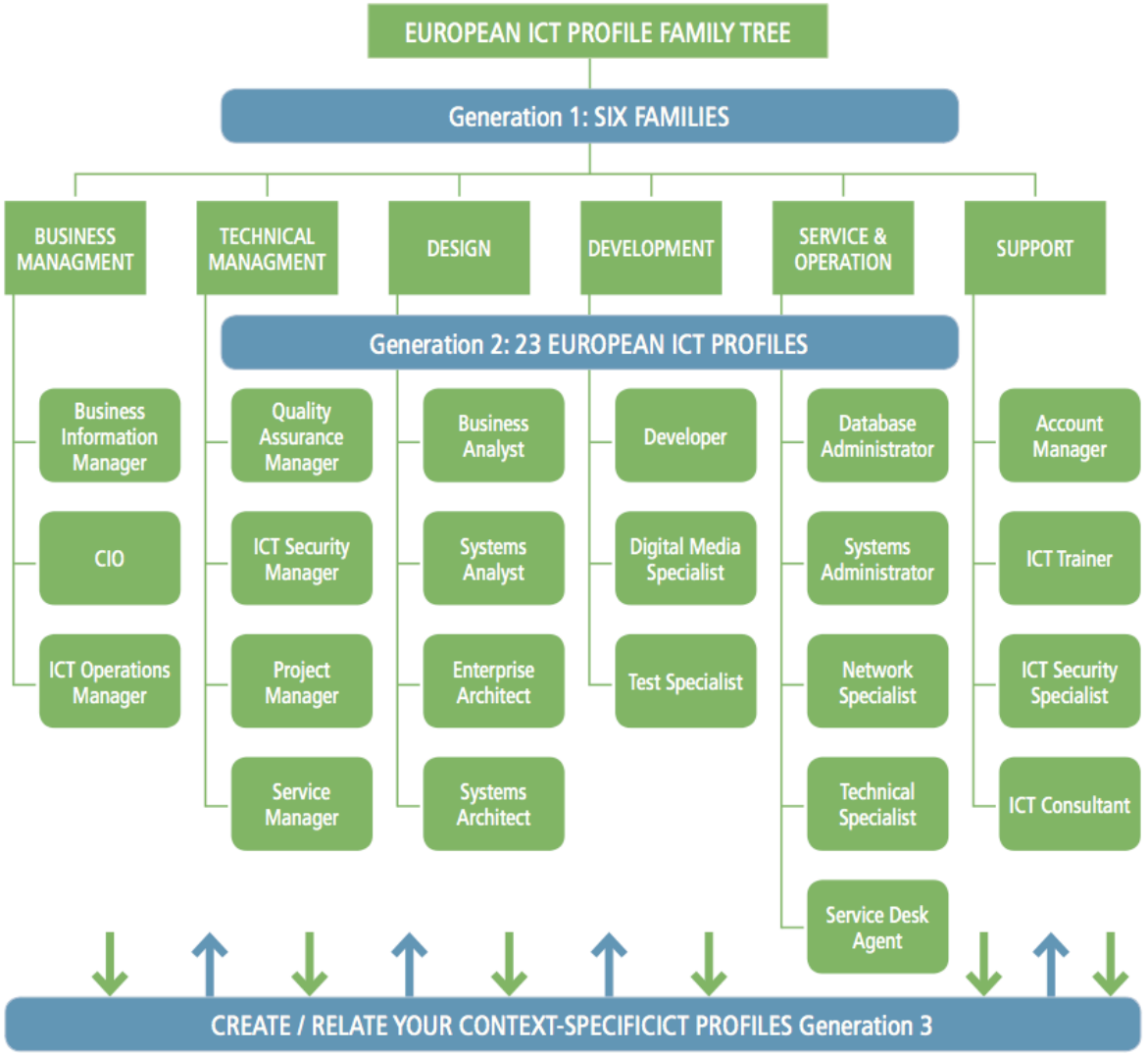
eCF 3.0

Dimension 1 e-Comp. area	E. MANAGE				
Dimension 2 e-Competence: Title + generic description	**E.6. ICT Quality Management** Implements ICT quality policy to maintain and enhance service and product provision. Plans and defines indicators to manage quality with respect to ICT strategy. Reviews quality measures and recommends enhancements to influence continuous quality improvement.				
Dimension 3 e-Competence proficiency levels e-1 to e-5, related to EQF levels 3 to 8	**Level 1** –	**Level 2** Communicates and monitors application of the organisation's quality policy.	**Level 3** Evaluates quality management indicators and processes based on ICT quality policy and proposes remedial action.	**Level 4** Assesses and estimates the degree to which quality requirements have been met and provides leadership for quality policy implementation. Provides cross functional leadership for setting and exceeding quality standards.	**Level 5** –
Dimension 4 Knowledge examples *Knows/aware of/ familiar with*	K1 which methods, tools and procedure are applied within the organisation and where they should be applied K2 the IS internal quality audit approach K3 regulations and standards in energy efficiency and e-waste				
Skills examples *Is able to*	S1 illustrate how methods, tools and procedures can be applied to implement the organisation's quality policy S2 evaluate and analyse process steps to identify strengths and weaknesses S3 assist process owners in the choice and use of measures to evaluate effectiveness and efficiency of the overall process S4 monitor, understand and act upon quality indicators S5 perform quality audits				

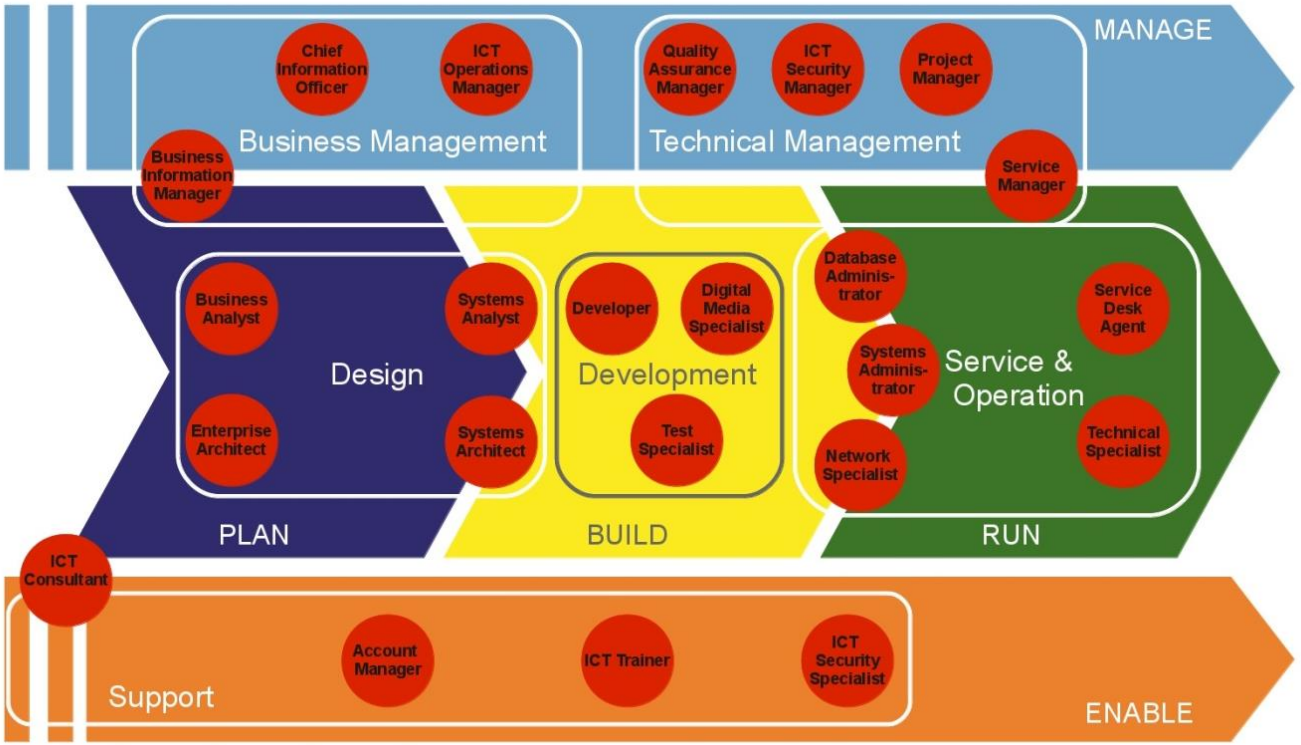
eCF – *proficiency* levels

e-CF Levels	e-CF Levels descriptions	Typical Tasks	Complexity	Autonomy	Behaviour
e-5	**Principal** Overall accountability and responsibility; recognised inside and outside the organisation for innovative solutions and for shaping the future using outstanding leading edge thinking and knowledge.	IS strategy or programme management	Unpredictable – unstructured	Demonstrates substantial leadership and independence in contexts which are novel requiring the solving of issues that involve many interacting factors.	Conceiving, transforming, innovating, finding creative solutions by application of a wide range of technical and/or management principles.
e-4	**Lead Professional / Senior Manager** Extensive scope of responsibilities deploying specialised integration capability in complex environments; full responsibility for strategic development of staff working in unfamiliar and unpredictable situations.	IS strategy/ holistic solutions		Demonstrates leadership and innovation in unfamiliar, complex and unpredictable environments. Addresses issues involving many interacting factors.	
e-3	**Senior Professional / Manager** Respected for innovative methods and use of initiative in specific technical or business areas; providing leadership and taking responsibility for team performances and development in unpredictable environments.	Consulting	Structured – unpredictable	Works independently to resolve interactive problems and addresses complex issues. Has a positive effect on team performance.	Planning, making decisions, supervising, building teams, forming people, reviewing performances, finding creative solutions by application of specific technical or business knowledge/skills.
e-2	**Professional** Operates with capability and independence in specified boundaries and may supervise others in this environment; conceptual and abstract model building using creative thinking; uses theoretical knowledge and practical skills to solve complex problems within a predictable and sometimes unpredictable context.	Concepts/ Basic principles	Structured – predictable	Works under general guidance in an environment where unpredictable change occurs. Independently resolves interactive issues which arise from project activities.	Designing, managing, surveying, monitoring, evaluating, improving, finding non standard solutions. Scheduling, organising, integrating, finding standard solutions, interacting, communicating, working in team.
e-1	**Associate** Able to apply knowledge and skills to solve straight forward problems; responsible for own actions; operating in a stable environment.	Support/ Service		Demonstrates limited independence where contexts are generally stable with few variable factors.	Applying, adapting, developing, deploying, maintaining, repairing, finding basic-simple solutions.

eCF – profili “standard” vs profili “user defined”



eCF – profili standard vs “dimensione 1”



eCF – struttura dei profili “standard”

- Un titolo per dare un nome al profilo;
- Una frase sintetica per indicare lo scopo principale del profilo;
- Una missione per descrivere il razionale del profilo;
- Un elenco di deliverable (al massimo 5 per focalizzarsi sui principali, con la notazione RACi) che devono essere prodotti dal profilo;
- Un elenco di task tipici che debbono essere svolti dal profilo;
- Una lista delle e-competence (dall’e-CF) necessarie per svolgere la missione;
- Un area di KPI (Key Performance Indicator) per suggerire come avvalersi di specifici indicatori che possano consentire la misurazione della performance nella missione e dei suoi risultati.

eCF – profili

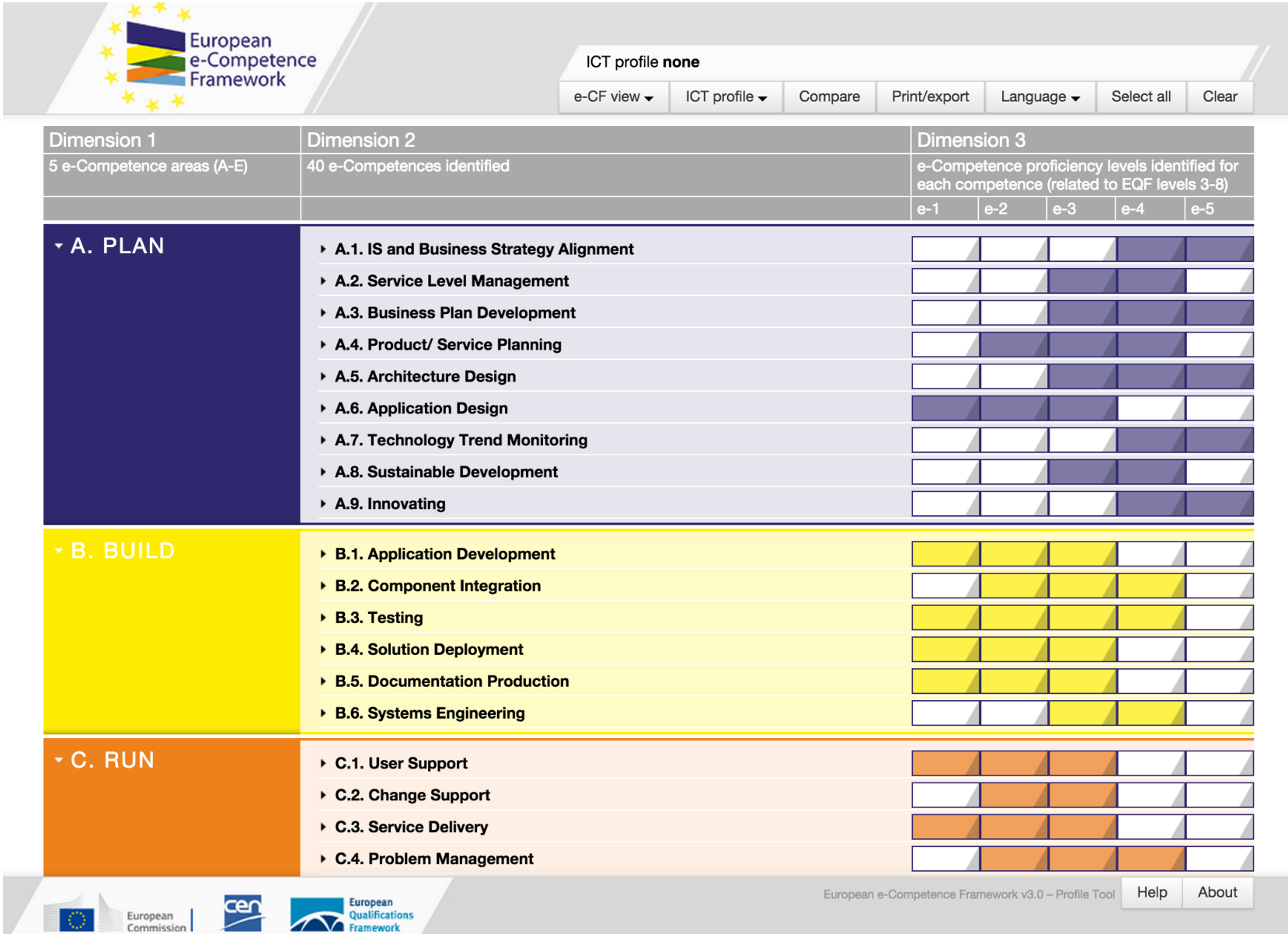
Profile title	**SERVICE MANAGER** (18)		
Summary statement	Plans, implements and manages solution provision.		
Mission	Manages the definition of Service Level Agreements (SLAs), Operational Level Agreements (OLAs) contracts and Key Performance Indicators (KPIs). Negotiates contracts with the various business domains or customers and in alignment with the *Business IS Manager*. Man manages the staff who monitor, report and fulfil the SLAs. Takes mitigation action in case of non-fulfilment of agreements. Contributes to the development of the maintenance budget together with business/finance organisations.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Solution in Operation	• Service Level Agreement • Solved incident	• Quality Performance Indicators • Technical Proposal
Main task/s	• Define Service requirements • Negotiate SLA / OLA • Manage solution operation • Provide service delivery		
e-competences *(from e-CF)*	A.2. Service Level Management		Level 4
	C.3. Service Delivery		Level 3
	C.4. Problem Management		Level 4
	D.8. Contract Management		Level 4
	D.9. Personnel Development		Level 3
KPI area	Fulfillment of Service Levels		

eCF – profili “user defined”

- Uno strumento on-line gratuito per “assemblare” un profilo;
- Il profilo può essere salvato e riusato;
- Si può fare una “gap analysis” rispetto ad un qualsiasi profilo standard;

http://profiletool.ecompetences.eu/#

eCF – profili “user defined”



eCF – politiche retributive

SCHEDE RETRIBUTIVE DEI PROFILI ICT

L'Indagine Retributiva fornisce un benchmark retributivo approfondito per le figure professionali che operano sia all'interno dei settori ICT, sia nelle aree funzionali dell'ICT delle aziende appartenenti a tutti gli altri settori merceologici[3] (si veda a pagina 102 la nota metodologica per i dettagli della scheda).

I profili professionali sono confrontati con la classificazione e-CF, EUCIP e IWA.

Nella tabella seguente sono indicati i 22 profili professionali ai quali è stato associato il corrispondente riferimento alle 3 classificazioni sopracitate:

	PROFILI	e-CF	ALTRE CLASSIFICAZIONI (EUCIP; IWA)
1	Direttore Sistemi Informativi	Chief Information Officer	IS Manager (EUCIP)
2	Responsabile Sistemi Informativi	ICT Operation Manager	IS Manager (EUCIP) – Web Project Manager (IWA)
3	Responsabile Sviluppo SW	Project Manager	IS Project Manager (EUCIP)
4	Project Leader IT	Project Manager	IS Project Manager (EUCIP) Web Project Manager (IWA)
5	Key Account Manager	Account Manager	Client Manager (EUCIP) – Account (IWA)
6	Responsabile Commerciale	Account Manager	Client Manager (EUCIP) – Account (IWA)
7	Analista Coordinatore	System Analyst	IS Analyst o Business Analyst (EUCIP)
8	Database Administrator	Database Administrator	Database Manager (EUCIP) Database Administrator (IWA)
9	Architect Engineer	Enterprise Architect	IT Systems Architect (EUCIP) Creative Information Architect (IWA)
10	System Engineer	Enterprise Architect	IT Systems Architect (EUCIP)

fonte: Osservatorio Competenze Digitali ASSINTEL 2014

eCF – politiche retributive

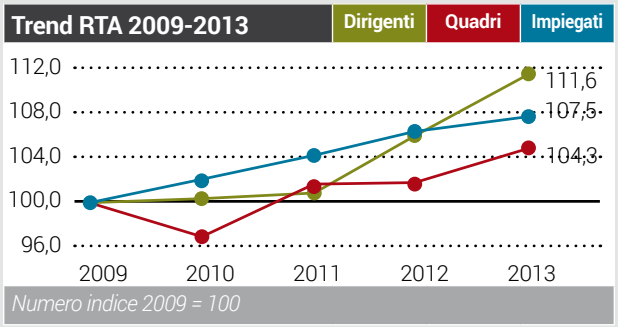
Responsabile Sviluppo SW

Elabora il piano dei programmi da sviluppare e ne assicura la realizzazione nei tempi e costi concordati. È responsabile della pianificazione, dello sviluppo, della realizzazione, del collaudo e della manutenzione dei programmi software aziendali. Distribuisce i programmi fra le aree che gli riferiscono, assicura lo sviluppo del personale dipendente, l'assegnazione delle risorse ed il mantenimento degli standard qualitativi previsti. Pianifica e gestisce l'attività di analisi secondo i tempi e le norme concordate con i clienti interni o esterni; può seguire il post vendita e la customer satisfaction.

Valori Retributivi (Media)

	Dirigenti		Quadri		Impiegati	
RTA (Retribuzione Totale Annua Lorda)	€ 85.473	^	€ 55.086	^	€ 35.126	^
RBA (Retribuzione Base Annua Lorda)	€ 80.581		€ 51.635		€ 34.141	
Retribuzione Variabile Annua Lorda (effettivamente percepita)	% Percettori	% Incidenza sulla RBA	% Percettori	% Incidenza sulla RBA	% Percettori	% Incidenza sulla RBA
	42,9%	14,6%	57,0%	12,1%	30,4%	9,7%

Benefit	Dirigenti	Quadri	Impiegati
Autovettura	50,0%	30,0%	12,8%
Mensa/buoni pasto	50,0%	62,5%	61,5%
Previdenza integrativa	n.d.	7,5%	n.d.
Cellulare	50,0%	80,0%	53,8%
Computer portatile	100,0%	75,0%	61,5%



fonte: Osservatorio Competenze Digitali ASSINTEL 2014

Difetti/debolezze di eCF

- Granularità “grossa”
- Dimensione 4 “Knowledge”: volutamente incompleto e aperto
- progetto DG “Body of Knowledge” (contractors CapGemini – E&Y)
- Difficile raccordo con il mondo della formazione istituzionale (secondaria e universitaria) che ragiona in termini di “learning outcomes” non di “competenze” – di qui l’importanza della Dimensione 4

- Evoluzione di eCF
  - eCF è un framework in continuo aggiornamento (eCF3.0)
  - c'è una proposta interna a CEN, a guida italiana, per preparare una Norma CEN
  - Mercato costruisce offerte di servizi basate su eCF

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