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European ICT professional role profiles - Part 4: case studies

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

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European foreword

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European ICT Professional Role Profiles Case Studies – Introduction

The European ICT Professional Role Profiles do not represent a rigid standard, they provide inspiration for the flexible creation of roles as input to job descriptions. Using pre-formatted profiles avoids the need to start with a 'blank sheet of paper' and they support and shape the construction of tailored ICT Professional Role characteristics.

There are many ways to apply the 30 typical ICT Profiles that cover the entire ICT business process. Typical case studies are provided below to illustrate use in a variety of environments. To simplify the wide range of available uses, we can divide them into three broad categories by:

- (1) Using one or many of the 30 provided ICT Profiles (generation 2) either in their original design or with a few user applied changes
- (2) Creating new profiles with greater granularity (generation 3) but associated and founded upon the 30 provided ICT Profiles
- (3) Adopting only, the structure and format of the European ICT Professional Role Profile template but using different content to establish radically different roles, related or even unrelated to ICT

The case studies represent the experience of a variety of organisations using the European ICT Professional Role Profiles to address e-Skills gaps from different perspectives. They are presented from the viewpoint of either:

- ICT Professionals
- HR Managers
- Education and training
- Market researchers and policy makers
- Procurement managers
- Professional associations

As the European e-Competence Framework (e-CF) is an integral component of the European ICT Professional Role Profiles it is common practice for users to deploy both tools simultaneously; this is reflected in the case studies that follow.

Overview all Case Studies

CASE STUDY	TITLE	COUNTRY	VIEWPOINT	PAGE
A	ICT OCCUPATION STANDARDS DEVELOPMENT	ESTONIA	POLICY MAKERS AND EMPLOYERS	4
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Case study A

Occupational Standards development from a policy makers and employers combined perspective

Baltic Computer Systems /BCS Koolitus and Estonian Association of Information Technology and Telecommunications; Estonia

The e-CF combined with the European ICT Professional Role Profiles is helpful in determining and agreeing on learning outcomes as it provides an understandable common language for people from job market and academia

Context

In Estonia the official qualifications authority, The Estonian Qualifications Authority, is concerned with:

- Skills strategy
- Developing occupational standards/ job profiles which can lead to certification
- Supporting vocational schools to link curriculum to occupational standards
- Supporting universities to link curriculum to occupational standards

According to national regulations VET curricula must be based on corresponding occupational standards developed by employers. It is also mandatory that all VET graduates take occupational qualification exams based on occupational standards.

The Estonian Association of Information Technology and Telecommunications participates in the occupational standards development from employing perspective.

This case study focuses on training and education of adults in ICT including the development of occupational standards and curricula within Vocational Education and Training (VET) and Higher Education (HE) (Bachelors and Masters) level.

e-CF and ICT Professional Profiles usage

The Estonian National Strategy of Life-long Learning aims among others at a better alignment of VET and higher education curricula to meet the needs of a rapidly changing employment market. From that comes the need to update occupational standards and use these in support of curriculum guidelines development.

Initially each workgroup engaged in developing occupational standards started to build their own "taxonomy". This proved to be very time consuming and produced inconsistent results. To systemise job profiles and tasks a common framework was required. SFIA and e-CF were considered and e-CF was chosen as it was less complex and its PLAN, BUILD, RUN, ENABLE, MANAGE structure (dimension 1) was aligned with the way employers think and therefore easy for them to use.

The overall aim is to have the outcomes of curriculum design (learning outcomes) aligned with job profiles (tasks and activities) and competences that employers identify for particular roles. This approach was used at different levels of seniority of the occupational standard e.g. Junior Security Specialist for Vocational Education, Security Specialist for Bachelors curriculum and Senior Security Specialist for Masters curriculum.

The e-CF and the European ICT Professional Role Profiles can be used as a common language that helps employers, curriculum developers and also lecturers to provide input into the development of

learning outcomes. The main topic for discussion then becomes learning outcomes. How they will be taught is up to the educators.

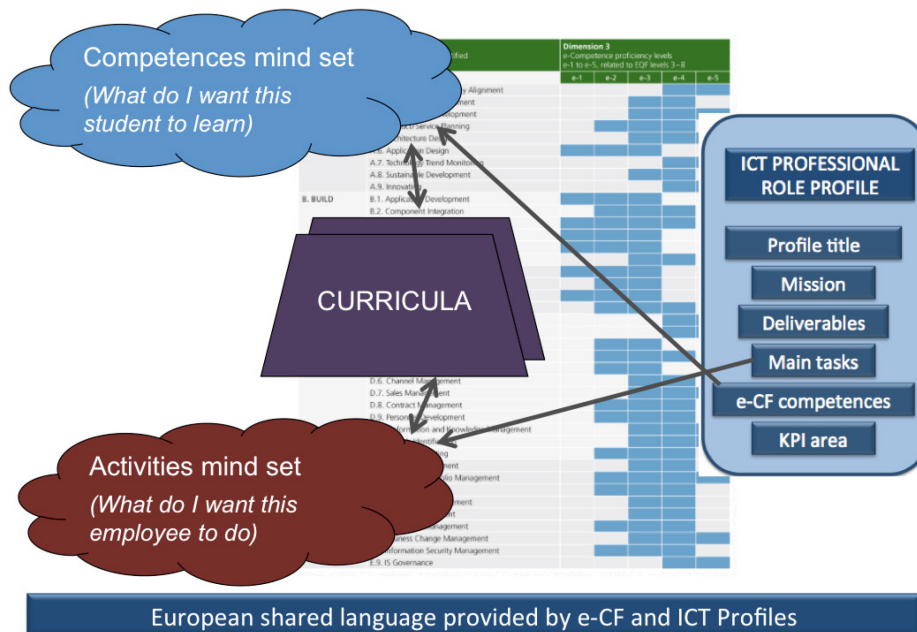


Figure 1: e-CF and ICT Profiles providing a common language to employers, curriculum developers and lecturers

Meeting challenges

In higher education most curricula cover more than one or two occupational standards and consequently at bachelor and masters level curriculum specific competence profiles are developed. These profiles are based on employers' input and the European e-Competence Framework (e-CF) is used to formulate and systemise it. Educators have limited real work experience on the structure of ICT jobs such as, an ICT Security Manager. The e-CF together with the ICT Profiles provide a common language and a structured way for employers to provide input to Curricula Developers.

The level of generality versus detail is a challenge. Knowledge and skills can easily become a very long list and then are not useful anymore. On the other hand, defining knowledge and skills related to job activities and tasks is useful. The ICT Profiles are at the right level of detail as a general approach in this context has proofed to be best. Employers and educators engage and take responsibility for developing the detail e.g. specific skills in a next step.

The e-CF is not something you understand in a second. When new people join advisory boards they sometimes say "Why are you using the e-CF? I have a better system much more understandable and easy." It is then needed to explain the e-CF again in more detail and to train people in how to use it. Employers will always trend to think in terms of what a person needs to do in their job and not in terms of competences, they have a vision of what the job is. HR people generally have a good level of understanding regarding this issue. The European ICT Profiles incorporating deliverables, tasks and competences provide here the second important brick to facilitate mutual understanding.

When designing curriculum a systematic approach is required, without the e-CF one can become totally lost with everyone having different ideas. There is a significant gap between a job description (task/ activities) and the knowledge/ skills/ outcomes that a curriculum focuses on. Four components need to be coordinated: task; competence; learning outcomes; subjects to teach/method. The e-CF together with the ICT Profiles provide a logical link between these.

The value add in summary

- 1) Common language of competences and profiles organised in a systematic way for educators and employers. To facilitate mutual understanding between employers and educators in the past many advisory boards were composed by educators who had worked in industry and employers who did some teaching. The e-CF and ICT Profiles helped to broaden the circle from this small group which was important.
- 2) Logical link between activities based perspective of employers and subject based perspective of educators. Employers tend to think in action/ activities based way and educators tend to think in a subject/ topic based way. The e-CF and ICT Profiles provide a link between these two ways of thinking by using competences to support learning outcomes definition.
- 3) Significant saving of time and effort to focus the debate at an appropriate level of detail. Before using these shared concepts it took 3-4 months to build a new occupational profile and standard. Now this can be achieved in less than half of the time as an accepted structure focuses discussion around the framework. The ICT Profiles are at the right level of detail as a general approach is in this context best. Employers and educators are then requested to engage and take responsibility for developing the detail, e.g. specific skills.

For more information see:

The Estonian Qualifications Authority (*Kutsekoda*) www.kutsekoda.ee

Estonian Association of Information Technology and Telecommunications (ITL) www.itl.ee

BCS Koolitus AS – awarding body of ICT qualifications www.bcskoolitus.ee

Case study B

Development of a certification scheme for Information Security Professionals from a professional association perspective

The Dutch Association of Information Security Professionals (PvIB); The Netherlands

The European e-CF and ICT Professional Role Profiles provide a wider recognisable basis for functions within ICT and subsequently also Information Security. The wheel does not need to be re-invented; recognition within Europe and probably worldwide.

Context

The Dutch Association of Information Security Professionals, together with the organisations of the public-private partnership QIS (Qualification of Information Security professionals), has set themselves the goal of strengthening the cyber security workforce by increasing the level of professionalism and establishing a clear and transparent situation in respect of qualification. This must also result in solving the enormous shortage in capable professionals, the influx of well-educated young talent, creating the outline for carrier perspectives and assure lifelong learning.

Over the past few years, a chaotic situation has arisen in respect of the qualification of information security professionals, leading to many difficulties to compare certificates and job titles. As a consequence, information security professionals are often unable to clearly identify their knowledge and experience on the basis of their job title and the supporting certificates. Employers are unable to see when the candidate before them is a well-trained and experienced information security professional. In parallel, teaching institutions are becoming increasingly cautious in investing in new training programs in information security.

e-CF and ICT Professional Profiles usage

The European e-Competence Framework (e-CF) has been used as a basis for the definition of the Information Security Profiles that will be used in a certification scheme. The description of the PvIB Professional Profiles is based on the European ICT Professional Role Profiles *ICT Security Manager* and *ICT Security Specialist*.

The certification scheme for information security professionals has been developed with the objective of increasing the level of professionalism within the field of information security.

Through the pursuit of a uniform qualification system for information security professionals, harmonization, mutual recognition and the global exchange of information security professionals will be advanced. The requirements for the certification system will ensure that the certification bodies operate in a manner that is marked by consistency, comparability and reliability. It is intended to be supplemented by and work in conjunction with the International Standards enshrined in the ISO/IEC Directives.

Meeting challenges

To be able to ensure uniform qualification of information security professionals, it was seen as crucial to identify precisely which professions are represented within the field, what those professions entail and which competences, knowledge and skills are required. The profession of information security is

broad in its scope and in this context it is useful to distinguish between the domains *information risk management* and *ICT security*.

	Security of the information (Information risk management)	Security of the ICT (ICT security)
Strategic and/or tactical	Chief Information Security Officer (CISO) * *	ICT Security Manager
Tactical and/or operational	Information Security Officer (ISO) * *	ICT Security Specialist *

Table 1. * The job profile ICT Security Specialist has three qualification levels numbered 1 (secondary vocational education level), 2 (higher vocational education level) and 3 (university level).

* * The job profiles for CISO and ISO were drawn up analogously to the CWA 16458 professional profile template and the e-competences.

Alongside these two domains there are a number of other domains each with their own uniform qualification, namely ICT audit, forensic investigation and business continuity management. Job profiles have already been drawn up for these domains. They are therefore beyond the scope.

Initially, the European ICT Professional Role Profiles for *ICT Security Manager* and *ICT Security Specialist* were adopted directly from the document CWA 16458. However, the *PvIB Working Group on the Qualification of Information Security Professionals* observed that the content of these profiles did not fully match with their specific job profile expectations for certification purposes. The profiles were extended with General (=soft) competences and education and experience norms/requirements. Accordingly application of the template only guides the 'core' competences included in the job profiles in order to maintain a manageable number of competence elements. For each job profile this means 3-5 e-competences and 3-5 general competences, and maximum 100 competence elements. In qualifying for a job profile, all the (core) competences described in the profile are completely assessed.

Value add in summary

1) Choosing the European e-Competence Framework European standard EN 162341 ensures broad acceptance across countries.

The PvIB Professional Profiles aim at a uniform qualification system for information security professionals. One essential precondition is broad acceptance of the profiles on the one hand by the group of professionals in question and on the other hand by the employers and teaching institutions that can make use of the profiles for the recruitment and selection of professionals and the organisation of study programmes, respectively. Basing the profiles on the e-CF ensures acceptance across organisations and countries.

2) Using the ICT Profiles template

For the description of the job profiles, use was made of the European ICT Professional Profiles description template. Widely available and recognisable profiles enable employing staff from everywhere in Europe without having to specifically check what they know when they confirm to the profile.

For more information see: www.pvib.nl

Case study C

Identification of skills gaps to be addressed by education and verified through certification from an ICT professional and certification perspective

ICT Profiles for Individual assessment to determine employability in different roles - based on the experience of e-Skills Match project and www.jobict.it portal

Working with the European e-Competence Framework (e-CF) and ICT Professional Role Profiles, using the competence requirements of each profile as an entry point for further consideration, helps to overcome the problem of role identification.

Context

ICT Profiles and the e-CF can be used together to support companies and individuals to assess competences, to build the list of ICT Role Profiles that can be covered by a specific person, to provide gap analysis and to suggest specific training paths.

Among others, two projects, “e-Skills Match” and “www.jobict.it”¹ portal, use this approach. In this case study the first project is described, but the description and the approach are valid for both.

The e-Skills Match project addresses:

- **ICT professionals and individuals** who wish to:
 - assess and visualize their skills;
 - identify possible learning paths;
 - enhance their ICT knowledge and fill some possible skills gaps
- **Vocational education and training (VET) and higher education (HE)** institutions interested in promoting courses that are linked to digital skills and ICT Profiles included in the e-Skills Match platform;
- **Certification providers**, interested in certifying the registered ICT Professionals' e-competences;
- **Anyone interested in information** on the current e-competence offers, in terms of training and certifications available by registered course providers and "skilled labour" updates.

e-CF and ICT Profiles usage

The e-Skills Match platform aims to allow individuals to create and manage their e-Portfolio, perform an e-Skills audit in order to analyse their e-Skills and digital competences, to self-assess their position in the labour environment and to plan learning routes for complementing occupational e-Skills, or in some cases to prepare for the validation through formal learning providers.

The project aimed furthermore to integrate e-CF, ICT profiles and ESCO as three relevant European frameworks in the field created for varied purposes into one service application.

Starting from an individual's self-assessment of the 40 e-CF competences these results are mapped for comparison against the European ICT Professional Role Profiles. Where a competence gap exists it is graphically represented and for each gap a suggested training option is offered. The identified skills are linked to the qualifications required for each occupation in the ICT sector. At the same time, the skills are matched with open learning and training providing courses that can help learner

acquire missing skills and competences. The ICT Professional Role Profiles used in eSkills Match are mapped to ESCO profiles. Moreover, ESCO is used to enrich the Dimension 4 of the e-CF framework in the eSkills Match tool.

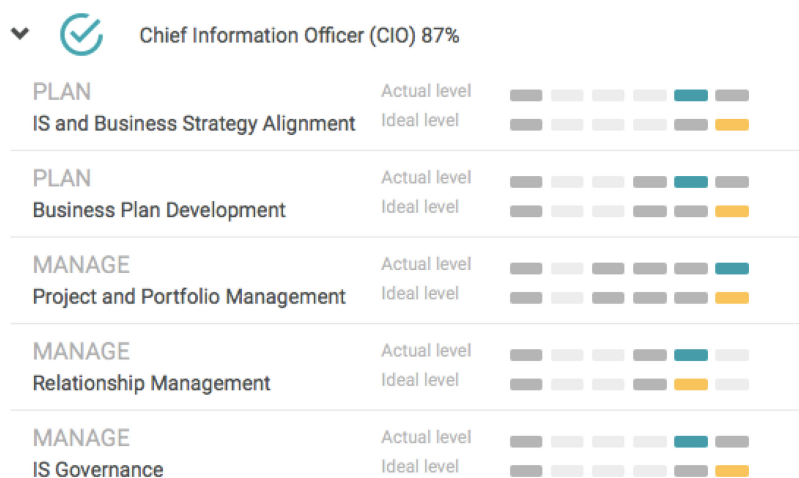


Figure 1: Example of part of the output of self-assessment

The e-Skills Match platform offers the following services:

- Competence elicitation and representation: a self-assessment process allows ICT Professionals to map their own e-Competences and show them in a graphic visualization;
- Detect e-competences required for different ICT occupations and perform audits in order to identify the individual's e-Competence gaps;
- Create an individual e-Portfolio - this is an electronic collection of evidence reflecting the professional and academic background that can serve as an electronic resume;
- Identify e-Competence/ job profile training resources available, including OER (Open Education Resources) and MOOCS (Massive Open On-line Courses), as well as certification opportunities offered by authorised providers and potentially based on competences validation procedures recognised at European level.

Meeting challenges

The main challenge encountered during the e-skills Match project is connected to the need of defining learning resources aimed to address the gaps identified with the self-assessment. This was addressed by defining training in terms of learning outcomes and offering the possibility to provide different content in terms of specific e-Competences. This work was based upon Dimension 4 of the e-CF.

Another challenge encountered was the relationship between ESCO with the European ICT Professional Profiles; the granularity and the approach are completely different. Moreover, ESCO in itself seems to have different levels of granularity. The difficulty was managed by deciding not to refer to ESCO for the assessment but only referring to it to enrich the contents of competences and learning modules.

Value add of e-CF and ICT Profiles in summary

There are two major key benefits for adopting the e-CF and ICT Profiles in this context:

- 1) Choosing the European e-Competence Framework European standard EN 162341 and ICT professional Profiles provide a common language ensuring acceptance and common understanding across organisations and countries.
- 2) Working with the ICT Profiles and using the e-competence requirements of each profile as an entry point for further consideration helps to overcome the problem of role identification. This is achieved by disregarding the “name” of the role but focusing on the competences that constitute the role.

For more information see: www.eskillsmatch.eu

Case study D

Creation of e-Job profiles for web professionals from the perspective of an accreditation institute

GAIA – EU professional profiles in the e-Jobs Observatory and e-Jobs Academy

The European ICT Professional Role Profiles are at the centre of the e-Jobs Academy approach. It is on the basis of these profiles which are driven and verified by actual market needs that training can and should be developed.

Context

The e-Jobs Observatory presents a compendium of Specialized Qualification Profiles for e-Jobs Professions based on the real market needs of the sectors. The profiles are addressed to Training Institutions of Europe willing to implement e-Jobs professions to their current training offer, in order to be more competitive and provide qualification valid within the territory of the EU, and to promote mobility among Europeans. Additionally, the profiles are addressed to recruiting companies or Human Resources departments for in-house training or definition of employee's profiles and personnel selection.

The e-Jobs Observatory certifies training organisations and manages qualification of digital workers in Europe. It also evaluates the curricula that are adjusted to labour market-focused functions. The objective is to cover the existing gap in the field of digital skills, identifying for this market needs and offering European training organizations new solutions.

The e-Jobs Tech-Academy is a European intermediary of cutting edge technology and learning. Through the management of this platform GAIA brings together training centres, industry (SMEs) and avant-garde technology centres in the development of new technologies with the objective of promoting employability by offering new professional profiles in line with leading technologies through a different training based on real case studies resulting from European projects.

GAIA has the European accreditation granted by the e-Jobs Observatory as an accreditation entity for the identification of new professional profiles. Thanks to this accreditation, GAIA and each local network of collaborators offer through the e-Jobs Academy a portfolio of training courses.

e-CF and ICT Profiles usage

This case study represents the work of the European initiative e-Jobs Observatory and e-Jobs Academy for promoting e-Skills and e-Competences for e-Jobs in the European Union to tackle the lack of skilled professionals in the field of ICT and Internet Services.

In 2009 Gaia identified with other EU sector stakeholders five e-Content development professions (web designer, web / multimedia developer, 2D / 3D animator, webmaster, web content manager), and developed European Specialist Profiles that outline the skills and competences needed for these professions.

These skills were mapped against the European Qualifications Framework (EQF) and the e-Competence Framework (e-CF) to identify a common and comparable set of skills at different learning levels. The main results were national qualification profiles for professions in e-content development and corresponding European Specialist Profiles for each of the jobs, market-near

training curricula guidelines and a methodology to map knowledge, skills and competences to learning outcomes in line with the European frameworks.

As a next step the e-Jobs Observatory was implemented, a European stakeholder network actively and continuously working on the improvement of training quality for e-Jobs and lobbying for the creation of European training standards for e-Jobs. Besides pure ICT skills required by e-Jobs, behavioural and business skills, the so-called “soft skills”, are also identified and included in the e-Job Profiles.

The e-Jobs Academy operates as a spinoff of the e-Jobs Observatory, aiming at training professionals on cutting edge technologies and to bridge the e-Skills gap by identifying market needs and enabling European Training Organizations to meet those needs. The e-Jobs Academy provides trainers a portfolio of e-Jobs Role Profiles in accordance to labour market needs, the EQF and the e-CF. Training providers can get accreditation at European Level (e-Jobs Observatory Label of Excellence), and get certification of their trainings (e-Jobs Observatory Seal of market Compliance and Certificate). Learning is a.o. achieved by working on real life Case Studies.

Today the European ICT Professional Role Profiles are the centrepiece of the e-Jobs Academy approach. It is on the basis of these profiles, which are driven and verified by actual market needs, that training can and should be developed.

Meeting challenges

Like all the technology based products and all the collaborative projects, eJobs Observatory and eJobs academy has faced some challenges related on one hand to the market research and technologies available (trying to identify the “not easily outdated technologies”) and on the other hand, challenges related to the common approach of all the partners regarding the guidelines and requirements of the certification.

It is therefore important to identify, collect and articulate these demands in a systematic way. The advantage of such an approach is the common understanding that is generated across sectors and national boundaries.

Each e-Jobs Profile is described in a standardized way, and based on the e-Competence Framework and ICT professional profiles, describing the summary a summary of the profile and the detailed function profile.

To this end, any organisation holding the e-Jobs Observatory Label of Excellence or any member of the e-Jobs Observatory network may submit proposals for changes to current profiles as well as suggestions for the development of new profiles.

Value add in summary

1) Choosing the European e-Competence Framework European standard EN 162341 and ICT Professional Profiles provided a common language ensuring acceptance and common understanding across organisations and countries.

2) The European ICT Professional Role Profiles provide a common template and shared reference for implementing the e-CF competences.

For more information see: www.ejobs-academy.eu

Case study E

Development of a Data Science occupation framework from a University perspective

EDISON Data Science Framework (EDSF) as a foundation for the Data Science Professional Profiles definition – Amsterdam University

The EDISON Data Science Framework (EDSF) implements the European e-Competence Framework (e-CF) and ICT Professional Role Profiles approach including the competences definition format mapping competences to knowledge and skills. The ICT Profiles update incorporates EDISON results.

Context

Modern research and industry require new types of specialists that are capable of supporting all stages of the data handling lifecycle - from data production, input and storage to data analysis to provide insight into organisational data and processes to support decision making. These specialists constitute the emerging profession of Data Scientist and corresponding family of Data Science and Analytics enabled professional profiles.

To address this demand from research and industry, the EDISON project was launched under the Horizon 2020 Programme to build the Data Science profession for European research and industry.

The EDISON Data Science Framework (EDSF), is a core product of the EDISON Project. It provides a basis for the definition of the Data Science profession and other components related to Data Science education, training, organisational roles definition and skills management, as well as professional certification.

The EDSF consists of four components:

- EDSF Part 1: [Data Science Competences Framework \(CF-DS\) Release 2](#)
- EDSF Part 2: [Data Science Body of Knowledge \(DS-BoK\) Release 2](#)
- EDSF Part 3: [Data Science Model Curriculum \(MC-DS\) Release 2](#)
- EDSF Part 4: [Data Science Professional Framework \(DSPP\) Release 2](#)

e-CF and ICT Professional Profiles usage

The EDSF Part 1 Data Science Competence Framework (CF-DS) includes the core competences required for successful work of Data Scientists in different work environments in industry and research and through the whole career path. The CF-DS adopts the same approach to competence definition as the e-CF v 3.0 – competences defined as abilities supported by knowledge and skills with applied proficiency levels. The competence groups are structured in a different way.

The EDSF Part 2 Data Science Professional Framework (DSPP) defines data related profiles using the European ICT Professional Role Profiles methodology approach and templates.

Furthermore, the European Skills, Competences, Qualifications and Occupations (ESCO) provides a good example of a standardised competences and skills taxonomy. The proposed Data Science related professional profiles are defined as a proposed extension of the ESCO taxonomy that extends

existing taxonomy groups and adds new Data Science and data handling/management top level taxonomy groups.

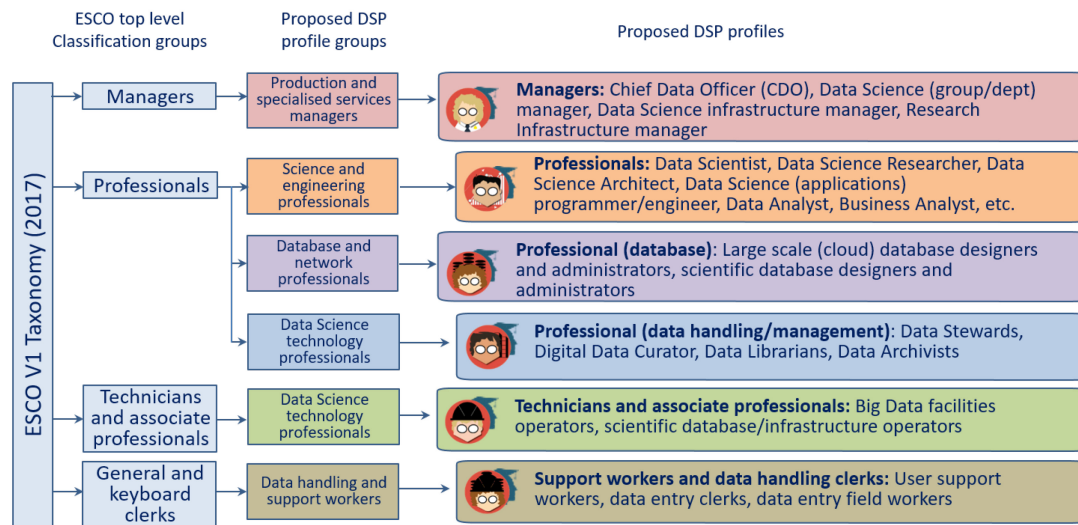


Figure 1: Data Science Professions family groups and professional profiles

Meeting challenges

Although the EDISON project benefitted from the great job done on defining the e-CF version 3.0, the major challenge, of the conceptual nature, has been imposed by a role and positioning of the Data Scientist in an organisational structure that is different from the traditional ICT: (a) ICT and organisational IT infrastructure typically acts as a supportive but independent component of the organisational structure, while Data Science and data analytics are closely integrated with the organisational workflow; (b) Data Science competences are defined for general data handling processes which is not differentiated from organisational workflow like in the e-CF 3.0; (c) Data Science as a technology area and a profession are not well defined, and the EDISON took a challenge to propose a consistent framework for the Data Science professional domain definition, including Data Science professional profiles.

Value add in summary

- 1) The European e-Competence Framework European standard EN 16234-1 (e-CF 3.0) and ICT Professional Profiles version 1 provided a good starting point for the EDISON work.
- 2) The European ICT Profiles definition and their mapping to e-CF v3.0 provide a useful example on how individual profiles can be mapped to competences, tasks, and deliverables.
- 3) Shared definitions and concepts between EDISON and the European ICT Professional Profiles allowed fast learning with mutual benefit to both structures. The new ICT Profiles version 2 incorporates two new data related ICT Professional Role Profiles inspired by the EDISON work, Data Scientist and Data Specialist, that can be easily linked to the more specific occupation descriptions of the

For more information see: www.edison-project.eu

Case study F

Consultancy support to retail industry managers for developing company ICT specific job descriptions

The European ICT Professional Role Profiles are used to implement the French CIGREF job profiles nomenclature in a large ICT User Company.

The European ICT Professional Role Profiles are a good practical standard to give managers the tools for mapping, prioritising and contextualising e-Competences and their maturity level for each ICT team and to create organisation specific job profiles.

Context

The French consultancy firm Connectitpeople uses the European ICT Professional Role Profiles to enable the implementation of the European e-Competence Framework (e-CF) alongside the job profiles framework of the French Association of Large ICT User Companies (CIGREF).

The CIGREF nomenclature covers the entire scope of ICT activities. It contains 9 families and 48 job profiles which are the result of an agreed definition between more than 140 members in cross industrial sectors. Since 2010 it has embedded the e-CF in its job profile descriptions.

In this particular case, Connectitpeople used the European ICT Professional Role Profiles to support a leading retail ICT organisation in deploying the CIGREF nomenclature job profiles to enlighten its capabilities after a strategic transformation.

e-CF and ICT Profiles usage

The European ICT Professional Role Profiles provide a good practical open standard to give ICT managers the tools for mapping, prioritising and contextualising the e-Competences and their maturity level for each ICT team and to create organisation specific job profiles.

The ICT Professional Role Profiles template specification for each profile contains a title, a summary statement, a mission statement, a list of deliverables which are the outcomes of a list of tasks, a list of necessary e-Competences to carry out the mission and a KPI area to inspire how to deduce specific KPIs allowing the measurement of the mission performance and its outputs.

Mission, activities, deliverables and KPIs link the profile to the organisation ICT business process. The list of core e-Competences and their maturity level link the profile to HR processes and HR development for individuals.

After identifying the scope of the job role needed by the ICT organisation the job profiles were selected based on the mission and activities described in the CIGREF nomenclature. Some new job profiles were created as needed following the template and shared with other CIGREF members. Collaboration between IT and HR department helped to align the new job profile with the HR organisation and to identify talent journeys.

A series of workshops with the different teams followed in order to map the job profiles and to give the management insight of the CIGREF nomenclature and e-CF mechanisms.

A purpose-developed business game based on the European ICT Professional Role Profiles gave managers a quick start with the e-CF and enabled them to select core e-Competences and maturity

levels needed in their teams. For each job profile they could define up to three different levels of seniority and specific KPIs and RACI matrix of selected deliverables.

Accurate information is stored in a database and shared to feed HR processes, it allows to edit and validate job profiles sheets for each ICT team.

FICHE FONCTION REPERE		_3.1_Responsable_des_systèmes_applicatifs				(CARACTERISTIQUES DE LA COMPETENCE) ("D" = Différentiante) ("A" = Applicable complètement ou partiellement)	
ACTIVER LES MACROS DU CLASSEUR POUR ACCEDER A L'APPLICATION		Afficher le détail de la mission et des activités de la fonction repère					
e-Compétence	Position CIGREF	Référent	Confirmé	Débutant	Commentaire éventuel si besoin	Niveau e-compétence Libellé	
A2-Gestion des niveaux de services	D				N-1 trop léger	N-1-S'assure du contenu du SLA N-2-Négocie les nouvelles conditions des SLAs en accord avec les objectifs généraux. S'assure de l'accomplissement des résultats prévus.	
A4-Planification des produits/services	A	A				N-1-Agit de façon systématique pour documenter les éléments standard et basique d'un produit. N-2-Mobilise les connaissances des experts pour produire et maintenir des documents complexes. N-3-Conduit et prend la responsabilité de la planification complète du produit ou service	
B2-Integration des systemes					le referent processus metier a plus la vision d'ensemble	N-1-Identifie de façon systématique la compatibilité des spécifications matérielles ou logicielles. Documente toute l'activité pendant l'installation et enregistre les écarts et corrections apportées. N-2-Prend en compte ses propres actions et celles des tiers dans le processus d'intégration. Respecte les normes et les procédures appropriées de contrôle des changements pour maintenir l'intégrité des fonctionnalités et la fiabilité de l'ensemble du système.	

Figure 1: e-Competence mapping tool

Meeting challenges

The CIGREF Job Profiles nomenclature is in its template structure very similar to the European ICT Professional Role Profiles. However, as a result of an agreed definition process between CIGREF members, the e-Competences list for each job profile is very large and many are overlapping. European ICT Professional Role Profiles focus on a maximum of 5 e-Competences per profile highlighting difference to the other profiles. Connectitpeople applied the European ICT Professional Role Profiles to:

- Select core e-Competences and confirm the proficiency level from the CIGREF competence list in a way to identify the essential content of each profile for a specific organisation and its ICT Teams
- Verify the consistency of the maturity level between each profile to enable talent journey identification and defined seniority levels
- Illustrate with relevant deliverables and RACI matrix the role of each profile toward the ICT business process.

The EU ICT Professional Role Profiles e-Competence scope defines the area of expertise for each role. In the context of large ICT user companies new job roles can be combined together like a Data Architect or DevOps Engineer or can be split to more specific activities like Project Management Office (PMO), program and project manager.

In this context, collaboration between the ICT and HR department is needed to achieve a transversal vision in support of talent journey development and training programs on demand, empowering managers and individuals to use the e-CF and collect accurate data to feed HR processes.

Value add in summary

1) Less is more: Focus on the most relevant e-Competences.

The European ICT Professional Role Profiles use facilitates the understanding of the e-CF mechanisms. The basic underlying principle "less is more" reduces the ICT Role Profile descriptions to

the most essential and helps managers to focus on the e-Competences relevant for evaluation in their team.

2) An open and agile standard that can be used with different organisational frameworks in parallel.

As an open standard, the European ICT Professional Role Profiles allow agility to adapt the profile structure to specific needs, in this case of large ICT user companies. It can be used with different organisational frameworks such as waterfall or Lean - Agile development process or best practices standardization like TOGAF, COBIT and, ITIL V3.

3) Transversal vision of the organisation through the embedded RACI model.

The RACI model embedded in the deliverables that are assigned to each ICT Professional Role Profile allows a transversal vision of the ICT organisation and enables transparency in career path and mobility.

For more information see:

www.cigref.fr

www.connectitpeople.com

Case study G

Profiles as a base for national standard creation from a policy implementation perspective

e-CF and ICT Profiles for National policy makers - Agenzia per l'Italia Digitale (AgID)

The European ICT Professional Role Profiles and European e-Competence Framework (e-CF) are used to standardise profile definitions, in order to provide ICT Professionals the possibility to be recognised in the market

Context

ICT profiles are a field of particular interest in Italy, from a normative viewpoint and for public administration e-procurement. The European ICT Professional Profiles are used to map ICT professionals and to give them the possibility to be recognized in the market, where there is a fragmentation of naming. Public administration and companies however need to clearly identify competence, knowledge and skills for ICT professionals. In this field, the standard definition of the European ICT Professional Role Profiles and more detailed purpose-developed definitions in the 3rd generation are intended to help all actors to identify specific profiles for specific activities.

The Italian law n. 4/2013 defines that for unregulated professions, the national normative body can develop national norms about specific professions. In the ICT field, the national normative body was delegated to develop standards for ICT (UNINFO) and develop a set of normative (UNI 11621 family) that retrieves CWA 16458 and sets some other national standard for third generation ICT profiles.

The European ICT Professional Profiles CWA 16458 was received as a great solution to support this regulation.

e-CF and ICT Professional Profiles usage

The European ICT Professional Role Profiles CWA 16458:2012 provided a major input to standardise ICT profiles at the 2nd and create new, more detailed standards for the 3rd generation. Additional standardisation of third generation profiles aims at supporting specific sectors (e.g. Web Professionals) to identify common names, competences, knowledge and skills that can be endorsed by different actors and in different areas (education, public administration, companies, recruitment, etc.).

The National government Agency (AgID), on behalf of ICT procurement activities, developed a set of guidelines that endorse the use of e-CF 3.0 (EN 16234-1) and the use of UNI 11621 multipart norm, setting the first government full endorsement of both CEN CWA's for e-CF 2.0 and the ICT profiles. The First edition of this multipart norm was established in 2016 and republished with normative references upgrade on July 2017. After the EN 16234-1 publication, the national normative body also updated another norm 11506. This became an evaluation and certification norm for EN 16234-1 containing both e-CF (2.0) and evaluation and certification processes. In summary, the following Italian standards were published:

- UNI 11621-1 Methodology to develop ICT profiles (CWA 16458 ICT Professional Role Profiles template definition)
- UNI 11621-2 23 European ICT Professional Profiles (from CWA 16458 version1)
- UNI 11621-3 25 Web Professional Profiles (Third generation of ICT Profiles)
- UNI 11621-4 12 ICT Security Profiles (Third generation of ICT Profiles)

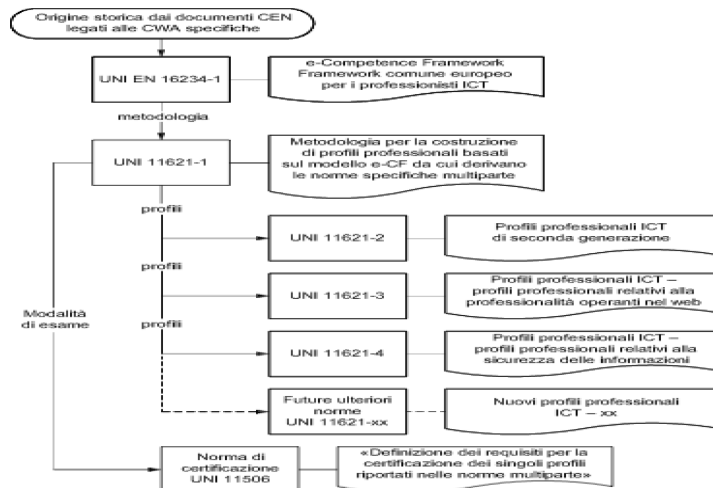


Figure 1: Overview of the Italian

Standardization Process based upon

All public administrations and their suppliers are invited to use this classification in their official documents. The European ICT Professional Role Profiles are furthermore a reference in the annual report of the major ICT associations working together in the national observatory for ICT. This also helps to promote a common language for ICT professions and occupations.

Meeting challenges

There is a difficulty in changing the market view from a generic profile definition and name to a well-structured ICT profiles definition based on a European Competence standard. Before this activity, many studies about the ICT profession used generic terms for the ICT profession, e.g. the term "Webmaster" was used to name different job profiles with different competences, e.g. website developer, web search designer, application developer or web server management. Inside UNI 11621-3, also, there is the "Web Accessibility Expert", an ICT profile in support of applying the Web Accessibility Directive from the European Union. Another difficulty was related to the endorsement of the full model by associations, this has now been achieved.

A significant issue for the future relates to the official endorsement of the Italian ICT profile standard definitions by the Italian statistic office (ISTAT) maintaining an active catalogue of all professions. AgID is working with ISTAT to adopt the standard in the next update in 2021.

Value add in summary

- 1) The European e-CF and the ICT Profile Role Profiles are very useful to support the market in the promotion of a common language of digital skills and jobs for ICT professionals.
- 2) Opening the opportunity to define third generation ICT Profiles, CWA 16458 helped the Italian national normative body and national government ICT agency in their institutional activities. In particular, the Government Agency benefits from normative activity.

For more information see: www.agid.gov.it

Case study H

Implementation of a career and assessment tool for ICT professionals and Managers by an ICT professional body

e-CF and ICT Professional Profiles supporting a career and assessment tool

Irish Computer Society (ICS): CareerPlus

The on-line tool CareerPlus makes it easy for managers to build project teams quickly and efficiently, using European e-Competence Framework and ICT Professional Role Profiles as agreed reference standards.

Context

The IT industry is an exciting, challenging and rewarding working environment offering a broad range of career opportunities across many professional roles. Constant evolution and innovation demands an organisational imperative to adapt to continual change. The European e-Competence Framework (e-CF EN 16234-1) and the ICT Professional Role Profiles provide an ideal basis for IT talent management, and on which to build a program of education, training and professional development for IT Professionals.

The Irish Computer Society has developed CareerPlus to enable organisations and IT professionals to use accepted European standards, agreed professional role profiles and essential business skills frameworks, combined with Continuous Professional Development (CPD) tracking, in an integrated online solution to understand, develop and deploy IT resources effectively.

CareerPlus is a complete solution for organisations of all sizes that use the e-CF and the ICT Professional Profiles to manage the professional skills development process, facilitating career planning for individuals and talent management for the organisation. CareerPlus incorporates an online personal CPD planning and recording system in order to assess an individual's competence in ICT and in a broad range of cross-cutting business skills.

e-CF and ICT Professional Profiles usage

CareerPlus assesses ICT skills against the European e-Competence Framework (e-CF) standard (EN-16234-1), and complementary business skills against the ICS Transversal Skills Framework (TSF). Essentially, once an individual's competence portfolio is established, CPD planning and career development is based on the European ICT Professional Role Profiles.

Employers in three Irish organisations across the public and private sectors have begun to use CareerPlus to manage their talent development and sustainability processes. With the e-CF and the ICT Professional Role Profiles underpinning it, immediate and long term needs of the organisations can be met, and employees' career planning facilitated.

As these organisations had already started on the journey of professional development for staff, they were in prime position to embark on CareerPlus. Their IT staff were used to competence map and to tailored education and training, albeit in an unstructured and subjective manner. Understanding the rationale of the assessment and analysis process was critical, and these organisations were open and willing to give a new system a chance to streamline their early efforts. The ICS Professional Development Team embarked on a briefing programme for ICT managers in each organisation. Key messages included the benefits of the use of CareerPlus, and a recommended methodology for its implementation.

Managers were advised to use the following methodology:

1. Encourage staff to read the supporting documentation and explore CareerPlus in their own time, with the opportunity to earn initial CPD points.
2. Show staff how to navigate the CareerPlus tool.
3. Set a time limit for employees to complete self-assessment to help focus minds; alternatively dedicate 2 hours at a pre-agreed time for staff to complete the exercise, bringing staff together to do this with a facilitator to assist.
4. For the first self-assessment, concentrate on 5/6 main competences.
 - a. Employees create a personal profile: If they have a documented role profile, with associated skills specified by the organisation, they start by assessing themselves on these competences.
 - b. They select the competences they have, and at which level, by reading the detailed descriptors in each category of the e-CF. Staff is urged to use the knowledge and skills information for additional guidance.
 - c. They carry out the same exercise with the Transversal Skills Framework to create an overall framework.
5. Managers and staff review the resulting report in a formal (periodic performance review) or informal manner, conduct a skill and competence gap analysis for the employee's current role and prospective more senior roles and finally set goals for competence enhancement and potential career progression..

Managers were also briefed in additional uses of CareerPlus, including the definition of custom role profiles based on the e-CF and TSF frameworks, and the validation of existing job specifications.

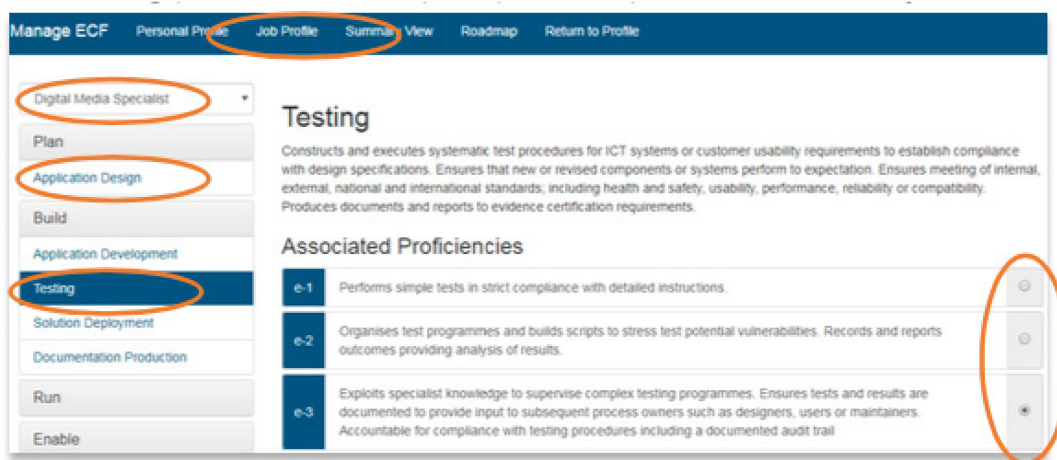


Figure 1: Using the European ICT Professional Role Profiles as starting point to job description

Meeting challenges

With carefully planned introduction, and detailed and honest explanation of the value of the framework, few challenges are encountered.

Initially, staff resistance and misgivings may arise, especially in organisations that do not have a culture of guided and supportive assessment and professional development. Staff need to be reassured that the process is equally beneficial to the individual as to the organisation, and that personal career planning is as much the objective of the process as internal management. Highlighting the personal gain for individuals is key to successful intervention. However, it may be necessary to stress that the outcome of the process is not guaranteed to result in promotion or

salary increases. It has also been found to be helpful to add in some organisation specific knowledge alongside the standard technical and business competences.

The Irish Computer Society takes the view that Continuous Professional Development (CPD) is an essential part of the life of a professional in this industry, and that it is indeed a journey, requiring accepted tools and standards to navigate in a satisfactory manner. The society's CPD tracking system where members can record their points earned by engaging in formal, informal and non-formal development activities is a key component of the process, providing positive reinforcement for up-skilling endeavours.

The briefing sessions provided for organisations aim to chart this journey for employees, using the tools of CareerPlus, the e-CF, the CEN Professional Profiles, Transversal Skills Framework (TSF) and the online profiling system.

Value add in summary

The European e-Competence Framework (e-CF EN 16234-1) and the ICT Professional Role Profiles provide an ideal basis for IT talent management, and on which to build a program of education, training and professional development for IT Professionals.

For more information see: www.ics.ie/news/discover-the-new-ics-careerplus-tool

Case study I

Creating standard profiles as a base for enhanced public service provision

Assinter Italia – The e-CF applied within public IT In-House companies

The European e-Competence Framework (e-CF) professional system and its assessment process allow to photograph the internal skills state and to develop career paths and training programs in a targeted and effective way.

Context

The Italian Association of companies for technological innovation in the regions, ASSINTER Italia, has a network of 17 associated companies with approximately 6.000 employees across Italy. The association promotes the e-CF within this network through a dedicated project named “The e-CF in concrete application within public IT In-House companies”.

In previous years, the majority of regions and provinces have used in-house companies for developing the Regional Computer System and implementing a Digital Agenda.

By focusing on the “public demand for innovation” the need for a comprehensive review of competences necessary to address this priority became apparent. Aware of the importance of this activity, ASSINTER created a regional group of ICT in-house companies to work together to identify competence needs of their own companies and then to subsequently promote career development and certified professional profiles based upon the e-CF and European ICT professional Profiles.

In 2016, seven companies have actively implemented within their organisations a generation three based professional system developed by ASSINTER for its membership. This project represents a unique experience in Italy and Europe in the public and para-public sector.

e-CF and ICT Professional Role Profiles usage

As a first step, ASSINTER customised some of the European ICT Professional Role Profiles (generation 2) to fit its context and also created some new profiles strictly related to the business of this specific sector consisting of quasi-public IT providers owned by public administration. Starting from the professional systems of members more compliant to e-CF, shared professional profiles were selected and, subsequently, integrated with new profiles useful to characterise future role requirements.

The resulting professional profiles were compared with the 23 original ICT Professional Profiles and rewritten according to e-CF formats, deriving the core competences from the corresponding European profiles, and integrating and customising where unique specific skills were required. The identified professional profiles were subdivided into organisational areas illustrated as follows:



Figure 1: The five organisation areas of in-house ICT

Subsequently, ASSINTER developed a tool mapping the 40 e-CF competences against the 29 customised profiles in total.

Seven ASSINTER associated companies are now assessing their employee’s competences against the new profiles. Final aim is to fully implement the e-CF and customised ICT profiles based approach

across the ICT professional teams of all Companies involved in the project. The ASSINTER professional system in operation has the following features:

- A prototype, representing a common denominator
- 29 professional profiles providing a core for an in-house ICT company
- The profiles can be remodelled and integrated according to the different in-house models

Meeting challenges

The definition of a common path between Assinter associates and the implementation of a Professional System based on the e-CF and ICT Profiles had to take into account the diversity of the individual companies. This was the biggest challenge that Assinter faced as it was essential to identify the common elements of the most advanced professional systems of the members as a basis on which to build a shared framework. Using the e-CF allowed Assinter members to carry out internal assessments and to gain a clear picture of internal competence requirements. This supported the subsequent objective of developing career paths and training programs in a more focused and effective way.

This challenge became a benefit when a training course dedicated to the e-CF and the importance of having a common system facilitated the sharing of the wealth of internal expertise across sixty employees from HR departments. This resulted in benefit to the entire national system, as they became digital culture ambassadors of the competence based system.

Today, the Assinter initiated e-CF professional system and its assessment allow to snapshot the state of the internal skills and to develop career paths and training programs in a much more targeted and effective way than in the past. The standard profiles offer transparency between market needs and the competences of ICT professional job candidates. In this way, the Assinter companies have become aware of their internal competence resources that they can turn to their advantage to support the digitization of services and public information systems and to improve the country's public services in the whole.

Value add in summary

The e-CF and ICT Professional Profiles provide a good basis to agree on a common language for competences, skills and jobs across organisations.

In a public or para-public environment, defining a standard for digital skills in the ICT profession provides management with cross-references for the employment of ICT professionals. It supports the integration of professional services within ICT service contracts and clarifies competence needs.

For more information see: www.asserinteritalia.it/eng

Case study J

Creating profiles as a base for organisational change from a management consultancy viewpoint

The potential of the European ICT Professional Role Profiles – Capgemini, The Netherlands

e-CF and ICT Profiles use is not limited to a specific application or sectors. Both can have many uses, in training courses and curricula design, competence development assessment, job family systems, competence profiles for new products/ services.

Context

Capgemini use the European ICT Professional Role Profiles to create organisation specific job profiles. The profiles are the base for future organisation changes or product/ service related transformation; e.g. Re-organisation, Outsourcing, Innovation.

The European e-Competence Framework (e-CF) offers a tremendous number of options for motivating an IT population and making it professional. However, this demands a clear vision, a well-defined objective and a practical, viable strategy. Without these criteria, the e-CF is merely a competence model. A good practical standard complementing the e-CF are the European ICT Professional Profiles which are based on the competences from the e-CF.

Implementing the e-CF and using the ICT Professional Profiles is usually not a goal in and of itself. The reasons for starting a project based upon the two concepts are more likely to be:

- A lack of insight into the capabilities present in an organisation, often after the merging of several organisational divisions, each with their own typical terminology.
- The need to professionalise because higher demands are being placed on the IT department in terms of flexibility, speed and cost management.
- The desire to increase internal mobility.

e-CF and ICT Professional Profiles usage

Over the years, organizations have gained the necessary experience in implementing the e-CF. Companies that have taken a serious approach to this have seen positive effects such as:

- Increased mobility thanks to transparency in career possibilities
- Clarity about the capabilities present in the organization
- Insight into the gaps in terms of ICT competences, information about inter-changeability between employees.
- More meaningful and objective content in assessments and personal development plans
- Increased employee satisfaction, often in combination with an increase in employees' pride about their own skills or the profession in general

In this context, Capgemini uses the European ICT Professional Role Profiles as a starting point of an e-CF implementation. The role profiles are the basis in defining areas of expertise. One or many jobs within an organisation can be plotted to one European ICT Professional Role Profile.

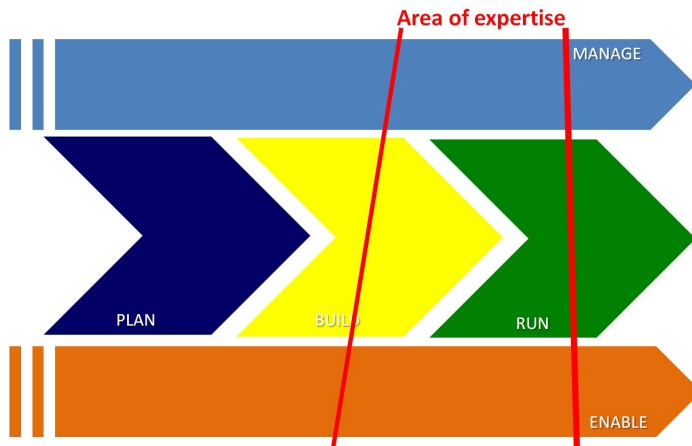


Figure 1. Defining areas of expertise within the e-CF supported by EU ICT Professional Role Profiles

The areas of expertise are defined by the competences from e-CF. Figure 1 example fits professions like Service Manager or Business Analyst. The e-CF structure as a base for role definition can also be used for new agile roles like DevOps or Digital Transformation.

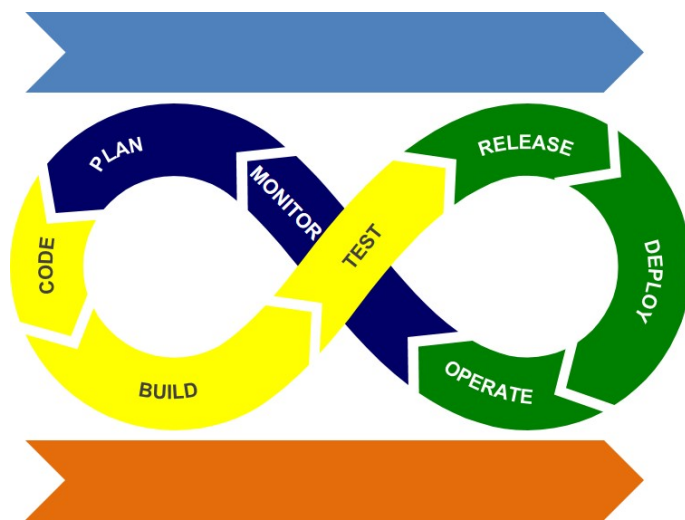


Figure 2. e-CF structure for an Agile/DevOps lifecycle

As Business and IT are working more and more closely to each other sometimes specific competences need to be added. e-CF competences are the base for a good job profile but personal competences (soft skills) and business competences need to be added, too. The personal competences are chosen to support the competences from e-CF. For example, a Service Manager must also have good communication skills and customer focus. To be an IT Professional, business knowledge, skills and experience are also necessary.

Dimension 1 5 e-CF areas (A - E)	Dimension 2 Select from 40 e-CF competences	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.2. Service Level Management					
B. BUILD						
C. RUN	C.3. Service Delivery					
	C.4. Problem Management					
D. ENABLE	D.8. Contract Management					
E. MANAGE	E.3. Risk Management					
	E.4. Relationship Management					
Competence guide Select from personal competences						
		e-1	e-2	e-3	e-4	e-5
	Communicating					
	Initiative					
	Customer Focus					
	Result orientation					
	Collaboration					
Domain or branche Select business area						
		e-1	e-2	e-3	e-4	e-5
	Finance					
	Procurement					
	HR					
	...					

Figure 3. Example of a competence profile for a customised “Service Manager” profile

Meeting challenges

The common element in all successful e-CF and ICT Profiles applications is a feasible implementation strategy. Implementing new competences, regardless of their type, is a sensitive matter. Making changes to competences essentially means changing the foundation of Human Resources. IT and HR must be able to work together in this regard. Other useful tips:

- Avoid reward systems; they will only add unnecessary complexity to the implementation process
- It will only appeal to employees if it offers them an advantage. Mandatory completion of a list of competence scores is not an advantage
- If it is merely an exercise on paper, for example filling in job descriptions using e-CF competences, then positive effects will be very limited.

Value add in summary

The use of e-CF and ICT Professional Profiles is not linked to a specific application or sectors. It can have many uses, designing training courses and curricula, competence development assessments, Job Family System, Competence profiles for new products/services.

Capgemini use the European ICT Professional Role Profiles as a starting point because they accelerate the e-CF implementation time. As an open standard used by different kinds of organisations it is credible and flexible in adaptation to organisational specific needs.

Capgemini invested in building up knowledge and skills in using the e-CF and collected best practices of their workforce transformation projects. Several assessments tools are built.

For more information see: Capgemini e-CF Implementation strategy
https://academy.capgemini.nl/sites/default/files/PDF/Factsheet_e-Competence_Framework_English.pdf

Case study K

European ICT Professional Role Profiles in support of cultural change in a large ICT user organisation

The potential of EU ICT Professional Profiles - Red Eléctrica de España (REE), Spain

The use of European e-CF and ICT Professional Role Profiles has allowed REE to minimise the execution time of its DTI Training and Development Project by being able to start from a recognised standard.

Context

At the time of editing, Red Eléctrica de España is engaged in an IT activity transformation process that can be sub-divided in three main areas:

- Organisational: The current IT Management Area, known as DTI, unites the previously various IT units in charge of different IT activities within the company
- Functional: The new DTI was born with the mission of increasing its level of maturity and becoming a Business Partner for the achievement of strategic objectives.
- Digital: The company as a whole is embarked on a process of Digital Transformation.

In this context, although there are many challenges, it is apparent that success depends upon the organisation's development of internal talent.

e-CF and ICT Professional Profiles usage

Red Eléctrica de España has used the European ICT Professional Role Profiles and the e-CF model as a starting point for implementing a Training and Development Plan for an Information Technology Management Area. Its use has made it possible to define a formal model of IT technical competences that facilitates, among others:

- Verify the employee's level of competence in the light of duties and responsibilities assigned, and therefore facilitate his or her professional development if needed.
- Identify strengths and weaknesses in the capacities of the Information Technology Management Area as a whole, facilitating anticipation of development needs.
- Promote a cultural change based on the continuous learning of the professionals of the Information Technology Management Area.



Figure 1: Impact of transformation on the organisation, DTI and the individual employee

The use of the European ICT Professional Role Profiles and the e-CF competence model has allowed REE to define the specific competence requirements of the current DTI roles, and also to define the future ones where needed.

Based on the analysis of the competence profile for each role and the adequacy of the people who perform the different roles, Training and Development Plans were designed in order to

- Cover individual skills gaps for the performance of the current roles
- Increase the versatility of each person in the DTI
- Globally train all the staff in competences associated with new trends in IT management and disruptive technologies

Based on the customised e-CF model, REE carried out an online self-assessment process for each person of the DTI. In this self-assessment, the employees evaluated not only competence levels, but also knowledge and skills associated with each competence, in order to identify specific training actions that are required for its development. In addition, individual development interviews of each of the participants with their managers were carried out to qualify and/ or complete the self-assessment content, and to agree on the development expectations and needs for each employee.



Figure 2: The e-CF and ICT Profiles based process from tool design to Individual development Plan

The final result has been specified in the different Training and Development Plans, both individual and collective, which are planned for the next two years.

Meeting challenges

For successful implementation, it was necessary to adapt the European ICT Professional Role Profiles and the e-CF standards to meet the culture and the organisational reality of REE. This purpose was achieved by two parallel action lines:

1) e-CF adaptation to local requirements: The e-CF was translated into Spanish and adapted to the reality of REE. Without changing the e-CF structure, small nuances were introduced both in the content of the competences and in each of the levels.

Additionally, the description of the knowledge and skills related to each competence has been enriched to facilitate the understanding of each competence and the elaboration of the associated development plans.

2) e-CF complementation by soft skills: Behavioural skills are recognized as a crucial requirement for IT professionals. In consequence, instead of altering the e-CF model another line of development for these generic skills (communication, team management, negotiation etc.) were defined to complement the development of the technical e-CF competences.

Value add in summary

The use of the European ICT Professional Profiles and the e-CF has allowed REE to minimise the execution time of its DTI Training and Development Project. Starting from a recognised standard that meets the required characteristics facilitated significantly a systematic approach that showed good results in a short period of time.

Using both frameworks throughout the development of the project allowed REE to incorporate several improvements into the IT organisation and its related functions:

- Homogenise profiles that perform similar functions among the different departments within the DTI
- Modify the internal distribution of roles and responsibilities after identifying profiles that required a very high number of skills.
- Implement a IT talent management process in collaboration with the HR area, which has proven a very effective approach to enrich the final result.

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