CEN Workshop on ICT Skills

CEN – European Committee for Standardization

Towards European ICT Profiles

(e-Job profiles)

Interim Report

The "Towards European e-Job profiles" project aim is to define a set of ICT Profiles;

- using the e-CF as the basis for competence identification; and
- illuminating each ICT Profile with a number of work outcomes or "Deliverables".

This interim report provides an overview of the project progress and the work still to do. Chapter 3 is the heart of the report; it summarises the main technical results achieved so far to engage with the CEN Workshop Community on a solid technical basis and support further work towards the European ICT Profiles over the coming months. Feedback and comments from the European ICT Stakeholder and e-Skills Community will help to adjust and consolidate the interim results presented here.

The report is presented by the CEN nominated expert team

Jutta Breyer (project leader), Wilfried Berlin, Hubert Delafon, Frédéric Lau, Terry Hook, Irmhild Rogalla, Riccardo Scquizzato.

It is supported by the input and views of the technical experts workgroup (EWG) and it benefits from the comments of the CEN ICT Skills Workshop Community.

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Delivery Interim report, updated according to stakeholder comments received: 28 April 2011

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1 Introduction

1.1 "Towards European e-Job profiles" background and rationale

The "Towards e-Job Profiles" project of the CEN Workshop on ICT-Skills has received EC/ EFTA[1] funding in the context of the 2009 ICT Standardization Work Programme. The project aims to describe a set of ICT Profiles and to associate them with Competences as described in the European e-Competence Framework Version 2.0, another key achievement of the CEN Workshop.

Published for the first time in November 2008 and updated by version 2.0 in November 2010, the **European e-Competence Framework** (e-CF) is a first response to this need for standardization and guidance to ICT practitioners (students or experienced) in their training and development.

Dimension 1	Dimension 2	Dimension 3				
5 e-Comp. areas (A – E)	36 e-Competences identified	e-Competence proficiency levels e-1 to e-5, related to EQF levels 3-8				
		e-CF levels identified per competence				
		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 or Project Planning		■	■	■	
	A.5. Design Architecture			■	■	
	A.6. Application Design	■	■	■		
	A.7. Technology Watching				■	■
	A.8. Sustainable Development			■	■	
B. BUILD	B.1. Design and Development		■	■	■	■
	B.2. Systems Integration		■	■	■	
	B.3. Testing	■	■	■		
	B.4. Solution Deployment	■	■	■		
	B.5. Documentation Production	■	■	■		
C. RUN	C.1. User Support	■	■	■		
	C.2. Change Support		■	■		
	C.3. Service Delivery	■	■	■		
	C.4. Problem Management		■	■	■	
D. ENABLE	D.1. Information Security Strategy Development				■	■
	D.2. ICT Quality Strategy Development				■	■
	D.3. Education and Training Provision		■	■		
	D.4. Purchasing		■	■	■	
	D.5. Sales Proposal Development		■	■	■	
	D.6. Channel Management			■	■	
	D.7. Sales Management			■	■	■
	D.8. Contract Management		■	■	■	
	D.9. Personnel Development		■	■	■	
	D.10. Information and Knowledge Management			■	■	■
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. IT Governance				■	■

Figure 1: European e-Competence Framework Version 2.0 (Overview) – a key input to the e-Job profile project

[1] European Free Trade Association

The European e-Competence Framework is based upon

- ICT processes, to make the framework less dependent on technologies, methodologies and organizations
- Observable results, to make it less dependent on activities and resources
- Levels to highlight the competence requirements in term of complexity and autonomy, defined in relation to the EQF (European Qualification Framework); these levels allow connections with non-ICT jobs.

Many job descriptions are only based on activities, to the detriment of predefined outcomes/ deliverables, structured competences, and performance criteria.

Job profiles are key elements to support understanding of;

- WHO does WHAT,
- WHICH tasks are involved,
- WHAT competences are required to fulfil the required tasks,
- HOW jobs relate to each other to produce deliverables,
- WHAT criteria are defined to evaluate results.

It is useful to highlight here three working definitions used in the project, *Job, Job descriptions* and *Job Profile*.

- **Jobs** provide a bridge between enterprises and individuals. Jobs reflect employment conditions in the labour market In addition jobs may indicate requirements, results, tasks, competences and required qualifications. Jobs brings together a number of perspectives and are defined by organizations. Jobs are identified or labeled by a single or few word description, for example, Programmer, Service Manager or Chief Information Officer.
- **Job descriptions** provide more detailed and specific information about a job and in this way qualify the single or short word description.
- **Job profiles** add to job descriptions by including additional job related components such as mission, main tasks, accountability, requested deliverables, KPI's etc. In this context a job profile provides a comprehensive description written and formal of a job.[2]

[2] See also chapter 6 project glossary

From this background, an up-to-date Pan-European agreed ICT Profile framework in line with the e-CF is planned to bring a number of benefits to all sectorial players, for example:

- Many stakeholders are very interested in having a common European ICT Profile framework reflecting current ICT Business needs
- Applying the e-CF to ICT profile development, operationalizes e-competences for stakeholders who are less used to work with the competence-based approach
- Consequently, the forthcoming ICT Profiles will facilitate e-CF application by companies and stakeholders familiar with job profile frameworks
- Europe-wide agreed ICT Profiles could also help to improve the communication of competence requirements between suppliers and customers.

The “Towards European e-Job profiles” project activities are directly contributing to the implementation of the EU e-skills strategy as defined in the European Commission's Communication on "e-Skills for the 21st Century: Fostering Competitiveness, Growth and Jobs".

1.2 Project objectives and deliverables

The prime objective of this project is to continue the convergence of the European ICT Skills landscape by developing and providing a set of ICT Profiles descriptions based on the e- CF.

The forthcoming European ICT Profile descriptions will provide a foundation for:

- Building individual position descriptions (one role may correspond to all or part of one or many jobs – depending on the size and structure of the enterprise);
- Providing career path guidance through a list of jobs that are recommended to pursue for self-development.

The new set of European ICT Profiles should:

- Remain generic and simple to be used by all enterprises regardless of structure or “make or buy” policy;
- Take into consideration that:
    - ICT products and services are now internationally available;
    - Information systems are becoming more and more integrated and complex, containing numerous components;
    - User involvement is fundamental during the process of designing an information system;
    - Business data processing is not merely a cost reduction exercise, but is a significant contributor to the fundamental productivity of enterprises;

- Some activities may be outsourced, with contracts based on Deliverables and results (and not on activities).

The forthcoming ICT Profile descriptions will be based on two fundamental concepts:

- The **European e-Competence Framework** as described above: for defining ICT Profiles a list of competences can be identified, to provide differentiation between profiles;
- **Outcomes/ Deliverables**
  - An ICT job is defined by a list of Deliverables, either in terms of accountable, responsible or in terms of contribution;
  - A Deliverable is a predefined result of a task in a working context;
  - One Deliverable can have only one associated accountable job but may have many contributors;
  - May or may not be seen by users, may be intermediate or final, but must always be identifiable and appreciable.

Based on these two fundamental concepts, the project aims to review the "Career Space" CWAs (in particular CWA 14925 – published in March 2004)

Complementary to the ICT Profile description work, the project will provide the European e-Competence Framework 2.0 (including user guidelines and also the final ICT profile outcomes) in four European languages (English, French, German and Italian).

The availability of the e-Competences Framework and the ICT Profiles in these languages will facilitate application by non-English speakers (SME HR managers for example).

Most national ICT stakeholders (representatives of government, trade unions, universities, big enterprises, training bodies…) need to reflect major ICT competence requirement changes during the past ten years by updating existing frameworks. Based on the European e-Competences Framework, a European e-Job Profiles structure will facilitate further convergence and/ or interoperability of existing skills and competence frameworks across Europe.

1.3 A European multi stakeholder process – parties and expert resources involved

The CEN ICT Skills Workshop community and further interested stakeholders are aware that the creation and maintenance of an endorsed European Framework require the involvement of a wide group of interested parties and experts. This has been successfully proven during the European e-Competence Framework development and updating process initiated by the CEN Workshop Community in 2006.

The key success factor in European project initiation is the involvement of multiple countries, companies and stakeholders, and this principle remains central to work on European ICT Profiles.

This "Towards European e-Job profiles" work builds upon the proven necessity to deepen engagement of European ICT sector players and stakeholders from business, politics and education and it embraces this approach as a working philosophy and strategy. At the political level it is important to gain the support of larger European multi-stakeholder partners.

In June 2010, a group of six experts, financed by CEN, commenced operational technical work and first methodological investigation on the "Towards European e-Job profiles" project; this team was reinforced by further methodological expertise in January 2011. Following successful experience during the e-CF 1.0 development and e-CF 2.0 updating work, the experts are supported on technical and political level by a wider voluntarily contributing community.

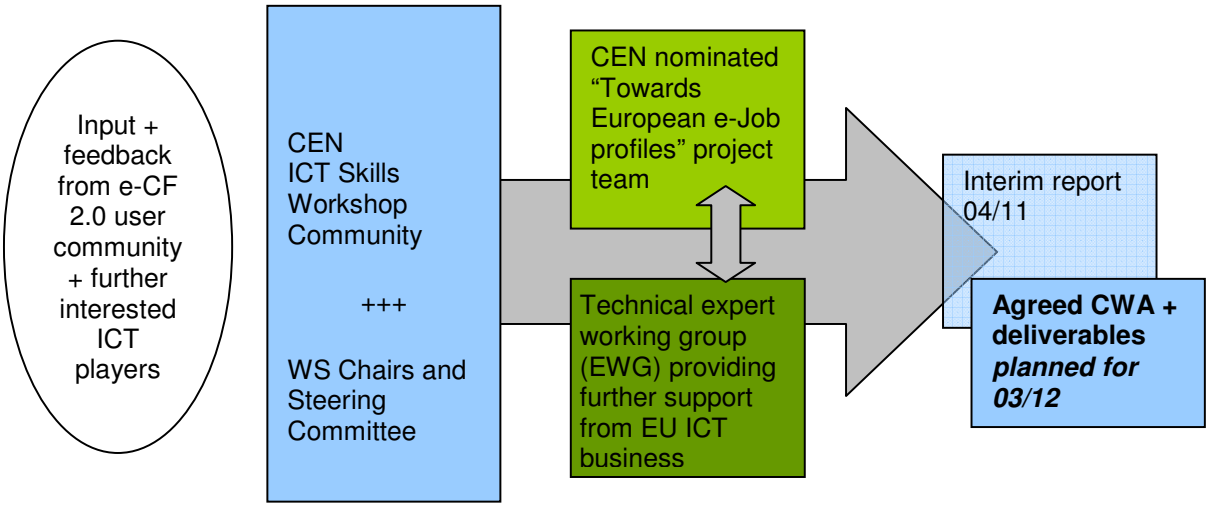

Figure 2: The "Towards European e-Job profiles" project – Working structure, experts and stakeholders involved

The technical expert working group consists of the CEN technical experts, including project coordination, and further interested and experienced representatives from European ICT business and HR development. The collective experts provide a high level of know-how in human resources and ICT management, qualification, framework development, implementation and maintenance with special focus on ICT Profiles. The experts come from ICT vendor industry (e.g. Deutsche Telekom) and the ICT demand industry (e.g. CIGREF, Airbus, EuroCIO, La Poste, Michelin). Experts also include members with knowledge of higher education, qualification and certification providers (e.g. Fondazione Politecnico di Milano, EXIN International, Eucip), trade unions (e.g. IG Metall) and further local frameworks (e.g. e-Skills UK/ SFIA, AITTS).

The inclusion of this wider knowledge and experience is very valuable and essential in enlarging the CEN expert's perspective. The expert colleagues analyse and discuss the CEN experts input in order

to reach common decisions on how to achieve first European consensus on the technical content for the future European ICT Profiles.

Further important feedback on possible improvements are gathered by ICT players from Europe who have significant experience in working with ICT job or role profiles and/ or have started to use the European e-Competence Framework.

The technical work process towards the forthcoming set of European ICT Profiles is supported and monitored by the CEN ICT Skills workshop community and the workshop Steering Committee. The final results are to be agreed and communicated by a CEN workshop agreement (CWA).

The knowledge of ICT qualifications, certification and human resource development across Europe provided by the CEN Community, as well as the widespread contacts of the workshop members, provides an important background for the project.

2 The work programme and project performance

2.1 The project plan 2010 – 2012: aims, scheduling and steps completed so far

As a first step of the operative project work starting in June 2010, the experts nominated by CEN agreed on a project plan, determining the most important steps, the timeline, the resources and the responsible lead management in each case.

This plan was based upon the original “Towards European e-Job profiles” project proposal conforming to a CEN call for tender. This background provided a road map for the project and, if necessary, it was readjusted according to experience gained from on going work. The following table 2 provides an overview on the latest iteration of the project plan and progress achieved so far, table 1 includes a legend for reading the project plan.

Project plan 2010/12 - legend
LM = lead management WIP = work in progress
CEN nominated experts JB – Jutta Breyer *(project coordination + internal/ external communication)* WB – Wilfried Berlin *(ICT demand, national and multinational)* HD – Hubert Delafon *(ICT demand multinational)* TH – Terry Hook *(ICT supply, multinational and SMEs)* FL – Frédéric Lau *(ICT demand, national and multinational)* RS – Riccardo Scquizzato *(ICT supply, multinational and SMEs)* IR – Irmhild Rogalla (methodology monitoring; since January 2011).

Table 1: Project plan 2010/12 - legend

	Step	Timeline	Methodology/approach	Activities	LM	Cooperation needed/ resources involved	Deliverables/ Publication of results	status
1	Call for experts and selection	June 2010	CEN process	Launch the call, select applicants	CEN pannel	CEN		ok
				Kick off conf call 5 July				ok
2	Setting up of the project team	07/10	Breakdown structure Tasks assignment Planning	Establish the project, structure the project, identify and assign tasks	JB	Project team		ok
				Follow up conf call 26 July	JB			ok
				3rd conf call early September	JB			ok
3	Setting up of the e-Job profiles expert group	07/10 – 10/10	Organize and plan meetings for Expert Group	Request voluntary expert group participants Organize the expert group Plan tasks and meetings	JB	Project team Voluntary EU Experts Community		ok
4	Translation of e-CF in 2 languages update German e-CF 1.0 to 2.0	10/10 – 03/11	Initial translation Rereading by experts Comments from other experts Final agreement	First translation Rereading Updating update German e-CF 1.0 to 2.0	HD (French) RS (Italian) JB (German, overall process)	Project team Translators (subcontracted) Native speaking external e-CF experts	e-CF 2.0 approved by CEN Community in • Italian • French • German Include Dutch in process? Documents ready to distribute	ok

	Step	Timeline	Methodology/approach	Activities	LM	Cooperation needed/ resources involved	Deliverables/ Publication of results	status
							(www.ecompetences.eu)	
		30 Sept in Brussels		1st physical meeting PT meeting end of September	JB	Project team	Further discussion and consolidation of project aims, draft methodology and next steps	ok
5	Quick survey on existing frameworks	09/10 – 10/10	Collect data from various organizations (big enterprises, governments, training bodies…)	Elaborate a questionnaire Execute the survey Summarize results	Project team	Expert Group/ ICT stakeholders	Survey results + draft list of # 20 profile titles	ok
6	Agreement on definitions and methodology	10/10 – 11/10	Brainstorming in the team Experimentation Methodology support	Definition of a job profile Definition of a Result/deliverable Description of the methodology	Project team incl. *methodology expert*		CEN experts suggested list ICT profiles, draft description template + profile example First expert suggestion Work deliverables	ok
		6,7,8 Dec in Roma		2nd meeting of the PT + 1st expert group meeting	JB	Confindustria, Project Team, Expert Group	Consolidation of results step 6	ok
7	List of results/ deliverables and list of job profiles Title and short generic description for each result/deliverabl	11/10 – 03/11	Iterative approach for describing ICT Profiles and deliverables in order to develop the matrix while remaining coherent until the end; Expert meetings Comparison with existing frameworks; Feedback from	Adapt the methodology and the level of detail Define lists for # 30-50 results/deliverables and for # 20 job profiles	Project team	Expert Group Technical sessions of WS	ICT Profiles experts agreed draft description: - Brief summary statement; - Mission; - Deliverables Deliverables experts agreed draft list	ok

	Step	Timeline	Methodology/approach	Activities	LM	Cooperation needed/ resources involved	Deliverables/ Publication of results	status
	e and each job profile		stakeholders Consensus process				- Title; - Description; Overview Matrix	
		03/11		3rd meeting of PT + 2nd expert group meeting	JB	CIGREF, Project team, Expert group	Consolidation of results step 7	ok
		03/11 – 04/11		Ensure internal communication and intermediate report	JB		Interim report incl. list of deliverables agreed by CEN ICT WS community and delivery to EC for approval as basis for draft CWA	ok
8	List of competences for each job profiles	04/11 – 06/11	Iterative approach for building the matrix, ensuring coherence throughout Expert meetings Feedback from stakeholders Consensus process	Define the methodology and the level of detail Ensure internal communication	Project team JB	Expert Group Technical session of WS		wip
		06/11		4th meeting of PT + 3rd expert group meeting	JB			to do

	Step	Timeline	Methodology/approach	Activities	LM	Cooperation needed/ resources involved	Deliverables/ Publication of results	status
9	Description of each job profile	12/10 – 10/11	Definition of a template Test and validation of the template Control of the overall coherence Coordination with the e-CF project team (if project not finished) Consensus process	Define the methodology and the level of detail Ensure internal communication	Project team JB	Expert Group Technical session of WS	List of 22 job profiles according to the project specification (see part 1.)	wip
		10/11		5th expert meeting of PT + Final expert group meeting	JB			
10		10/ 11 – 11/ 11		Ensure internal communication and DRAFT CWA	JB		Draft CWA for WS commenting	to do
11		12/12			AFNOR/ CEN, JB	EU ICT Stakeholder Community	Final CWA for public commenting	to do
12	Translation of job profiles in 3 languages	11/11 – 03/12	Initial translation Rereading by experts Comments from other experts Final agreement	First translation Rereading Updating	JB	Project team Translators (subcontracted) Expert Group	CWA ready for public commenting (download from www.cen.eu) (translation after voting process)	to do
13	External communication	01/12 – 04/12	Approach in coherence with the e-CF	Define the content Ensure validation	JB	Project team, EU ICT community	Internet site	to do

	Step	Timeline	Methodology/approach	Activities	LM	Cooperation needed/ resources involved	Deliverables/ Publication of results	status
				Ensure a few presentations				
14	Validation of CWA	04/12	CEN approach	Ensure internal communication and final report CWA	Project team	Expert Group Participants	CWA should be before step 10?	to do
15	CWA voting process	03/12	CEN approach	invitation to vote collecting votes publication of results	AFNOR/ CEN	CEN ICT Skills WS community	approved CWA	to do
16	Submission of final project report to EC	04/12	CEN approach	Preparation of the final project report	JB		Final report for European Commission incl. report on KPI's	to do

Table 2: *Towards European e-Job profiles* project plan (2010-12)

2.2 Project milestones: The expert meetings held in Brussels, Rome and Paris

The meetings of the technical expert working group (chapter 1.3.) are considered as project milestones and are essential components of work progress. The technical work meetings are mainly organised over three days. On the first day the CEN experts meet, review and agree work achievements to date. This agreement provides the input for the following two-day meeting of the larger technical expert working group. To achieve an appropriate, "European" ambiance, independent of national and regional influences, the meetings take place in different locations across Europe.

The **Brussels meeting in September 2010**, kindly hosted by CEN, was the kick-off for a set of technical expert meetings to be held during 2010 and 2011.

The most important initial aims were to create a common understanding of the "European e-Job profiles" project objectives on a technical level, to identify project relevant questions, hypothesis and first agreements and to identify the most appropriate steps for the further work on ICT Profiles and Deliverables.

In order to identify the most relevant ICT Profiles on the project committed level of granularity, the experts agreed on comparing and analysing the specific characteristics and benefits of a number of existing ICT Profile and Job frameworks in Europe. Adhering to the working milestones defined in the "e-Job profile" work programme they agreed on a pragmatic and broadly applicable approach on how to identify approximately 20 relevant ICT Profile titles for further specification over the course of the project.

In parallel, they discussed the identification of "Deliverables" issue which from the outset appeared challenging. Questions that needed addressing included how to identify and describe important ICT work Deliverables, at which level of granularity. This was complimented by ensuring that overall project aims were accounted for by checking why Deliverables were selected and for what purpose.

The outcome of the Brussels meeting was an agreement on next steps at the CEN technical experts level in order to prepare a first valuable input for discussion during the Rome expert meeting in December 2010 where further voluntary experts would also participate.

The **Rome meeting in December 2010,** kindly hosted by Confindustria Servizi Innovativi e Tecnologici, provided an opportunity to discuss and further consolidate the first draft list of ICT Profiles and Deliverables, and also to develop a first draft template for further ICT Profiles description specification over the course of the project. The outcome of the Rome meeting was the experts agreed draft list of ICT Profile titles for suggestion to the CEN Workshop Community in January, together with a number of possible approaches on how to identify and describe ICT Work Deliverables complementary to the overall project context and aims.

The **Paris meeting in March 2011**, kindly hosted by CIGREF, helped to further commit on the list of ICT Profiles identified and also to achieve a technical draft agreement on the list of ICT Work Deliverables. For both lists brief descriptions of each item were drafted and discussed. The further

consolidation of the Paris meeting outcomes established first visible and solid outcomes for further discussion by the European ICT Stakeholder Community; they are illustrated in chapter 3, which provides the core of this report.

2.3 Work between the meetings and further meetings planned

Whilst the three-day-workshops between CEN experts and the voluntary experts represent observable milestones of the project work, the work between the meetings is also crucial. Each meeting has an intensive follow-up: Here the challenge is to summarise the most important results and to provide and extract synthesis of results acceptable and applicable for all stakeholders involved.

The project lead management provides direction for the further work encompassing next steps and expected outcomes plus preparation of the next meeting. The CEN nominated experts are experienced in virtual communication techniques and maintain contact through e-mail, conference calls, CEN Plenary meetings and, if meaningful and necessary, additional CEN project team meetings.

Prior to the accomplishment of the "Towards European e-Job profiles" draft CWA publication in November 2011, two more technical expert working meetings are planned, firm dates and aims will be established based on work in progress.

3 Interim outcomes achieved – overview on project progress

This chapter summarises the main results achieved so far and aims at engagement with the CEN Workshop Community and to report back to the European Commission a solid technical basis for further work towards the European ICT Profiles over coming months. Feedback and comments from the European ICT Stakeholder and e-Skills Community will help to further adjust and consolidate the work achieved so far, especially on

- ICT Profiles (identification and brief description by title, summary statement, mission)
- ICT Deliverables (identification and brief description by a short definition)
- The ICT Profiles and Deliverables overview matrix (Deliverables assignment to each ICT Profile)
- The ICT Profile description template for further specification and definition of each ICT Profile until the end of the project.

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3.1 ICT Profiles identification and description methodology

The "Towards European e-job profiles" project aim is to define a set of job or ICT Profiles using the e-CF as the basis for competence identification. The proposal recommended that approximately 20 ICT Profiles should be developed which are generic and relevant to all organisation types and sizes.

It is probable that over 1.000 job titles and derivatives are in use by organisations across Europe. A quantitative exercise was undertaken to identify the plethora of existing role titles.

The expert project team identified a non-exhaustive list of more than one hundred and forty titles from a variety of sources including corporate career paths, government advisory services, technical education pathways and SME representative structures. In particular, the following frameworks were analysed:

- Michelin, international level
- EUCIP, European level
- AITTS, Germany
- Airbus, international level
- CIGREF, France
- an SME framework from UK
- am SME company framework from Germany
- UK Government framework
- Microsoft Technet, international level
- IBM, international level

With this background of innumerable roles an approach was adopted which recognized the need to identify titles that are clear and easily understood by all stakeholders.

A multi faceted spread sheet was created which consolidated the range and scope of identified roles. This collective set was characterized by the presence of a range of granularity levels, from Packaged Application Specialist (a specialist proprietary job title) – Technician (a very general title).

Clearly a target group of approximately 20 ICT Profiles needs to be of consistent granularity. This was achieved by recognizing the essential connection with competences; the experts were able to use this e-CF relationship as a yardstick for granularity guidance.

In addition the frequency of title usage was taken into account to inform the final title selections.

Initially, 19 titles were selected which fitted the requirements of being,

i) easy to understand (plain English),

ii) generic and

iii) of similar granularity.

These essential characteristics were tested against the selected profiles. It was then verified that each of the originally identified (over 140) titles could be represented by the selected role title profiles; all be it at a more generic level. [3]

The outcomes of the expert work were presented to a wider stakeholder and expert community to seek further opinion and refinement of the profiles title selection. As identifying titles is not an exact science, testing of the appropriateness and value of the selected titles will continue throughout the project life cycle.

The following 22 ICT Profile Titles are the experts agreed result from the above described process:

1	Account Manager
2	Auditor / Quality Assurance Manager
3	Business Analyst
4	Business ICT Manager
5	Chief Information Officer (CIO)
6	Database specialist
7	Developer
8	Digital Media Designer
9	Enterprise Architect
10	ICT Trainer
11	ICT Consultant
12	ICT Manager
13	ICT Security Manager
14	ICT Security Specialist
15	Network Specialist
16	Project Manager
17	Service Desk Agent
18	Service Manager
19	Systems Administrator
20	Systems Analyst
21	Technical Specialist
22	Test Specialist

Table 3: 22 ICT Profile titles for further definition during the project

3 See Annex 1 – ICT Profiles identification exercise

Job profiles are subject to many variables and the ongoing work of the project team will focus on the following characteristics and make pragmatic choices on how they will finally be presented.

- Organisational structures, company sizes and company cultures all have an influence on job descriptions and the resultant ideal job profiles. The work content of a job in one organisation often varies considerably, despite having the same title. This manifests itself in the organisations requirement for deliverables, which will vary in terms granularity and responsibility dependent upon the job context.
- The detail and scope of tasks found within jobs differs widely and is often related to the organisations size. For example SMEs may use job profiles with wide ranging but less in depth detail than larger corporations that define very specialised jobs influencing consequent job profile content.
- The 22 profile titles defined by the project are subject to modification as the project progresses. In current form they do not clearly represent the aim of providing generic titles and generic profiles. They could be mistaken as an attempt to standardise jobs into twenty-two profiles to be used to cover the thousands of job variables that currently exist. This is not the aim, the project will provide a foundation for job profile construction enabling users to make use of the provided job profiles and tailor them to fit requirements. In consequence, serious consideration will be made to reflect this generic flavour into the way in which the job profiles are labelled.
- Sustainability of role profiles in the face of new technologies and the ever increasing pace of change in ICT dependent organisation raises the question of maintaining currency. This issue is closely linked to that of competence currency and the need for ongoing e-CF maintenance. Fundamentally competences and job profiles do not change as rapidly as the implementation of new technologies as they are structured to be technology and vendor independent. However the inextricable link between competence and profiles determines they should be revised concurrently.

In chapter 3.2. the profiles are positioned on an ICT Profile overview chart which illustrates the challenging interaction between Business and Technology. It also demonstrates positioning of the profiles on an axis representing level of Complexity and Autonomy.

Chapter 3.6. provides the first draft definitions of the forthcoming European ICT Profiles in terms of three components consisting of summary statement, mission and Deliverables.

To ensure overall understanding of the project approach, chapter 3.3. and 3.4. show how the Deliverables were identified and described.

3.2 ICT Profiles overview chart

The technical debate about how to identify and further specify the (now 22) ICT Profiles selected on the intended level of granularity showed it would be very useful to look at all profiles from a generic and holistic perspective and to position them according to two main criteria:

- Is the job positioned towards the Business or Technology side of the work process?
- The level of autonomy and/ or complexity represented by each job

This positioning cannot be regarded as an exact science owing to the many variables which exist in 'real life' application of the ICT Profiles. To further increase accuracy, the introduction of a third dimension by splitting the autonomy/ complexity axis may be required. However, this may make the visualisation more difficult and go beyond the primary aim of the chart. The key function of the graphic is to provide orientation and communication support to expert and stakeholders discussions about overall understanding of ICT Profiles.

In this sense, the chart helps to create a common approximation and understanding of the profiles identified to support the further description and agreement process over the course of the project.

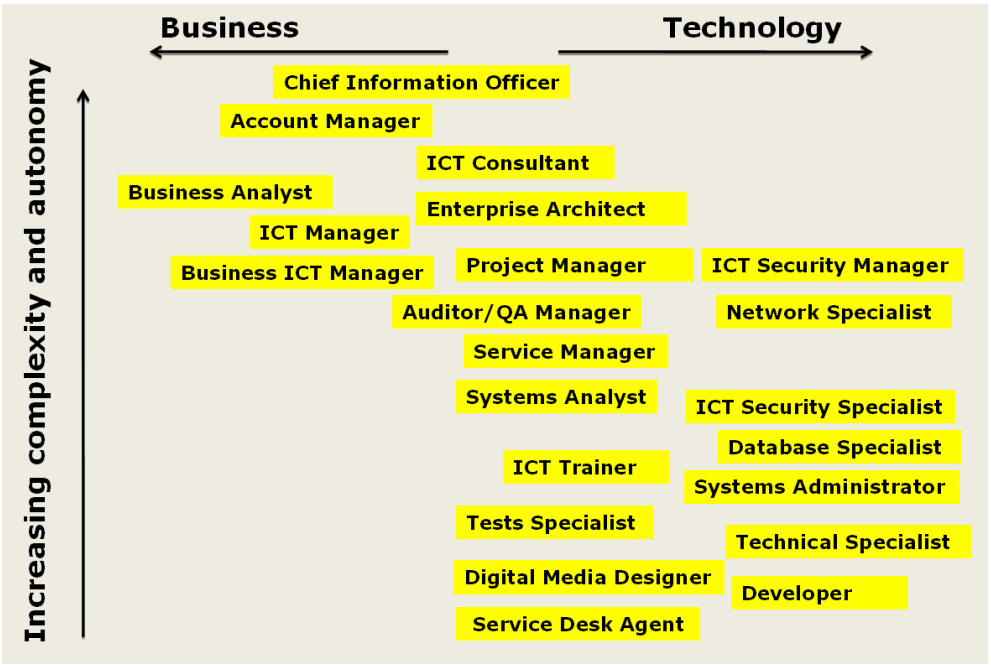

Figure 3: Overview scheme ICT Profiles

3.3 Deliverables identification and description methodology

In general terms a 'Deliverable' is the outcome of a working tasks. Jobs can contribute in different ways towards the production of a 'Deliverable'.

Deliverables are an important attribute in ICT Profiles definitions; using them we can direct mission, tasks and competences to illustrate observable results.

Deliverables may be tangible or intangible but they must be "Observable". The need of intangible deliverables is illustrated by the following example:

The mission of the "Account Manager" is to "build business relationships". It is therefore logical that "business relationships" are a Deliverable, although intangible.

The definition of Deliverables does not include quality attributes like "Well managed Project". Quality issues are meaningful only if quantified. The expert team have chosen to identify quality parameters using KPI's (Key Performance Indicator) which are included in the Profile definition.

A complete list of Deliverables is not required to meet the project aim, merely the identification of those applicable to the identified Jobs.

Choices were made to identify relevant Deliverables which added value to e-Job profiles in order to better characterize their mission. For this project application 'Deliverables' are selected to illustrate Observable Results, whether tangible or intangible.

To support approximately 20 ICT Profiles the Deliverables list was limited to approximately 60-70 items.

The process for identifying Deliverables was inspired from three different sources:

i) e-CF 2.0 Framework

ii) Waterfall Development Process

iii) ICT Profile Iteration

The following paragraphs describe in more detail how the three different sources were used.

i) Firstly a set of Deliverables was extracted from e-CF 2.0 Framework extracting them from dimensions 2, 3 and 4. As more then one Competence can contribute to a Deliverable, so the same Deliverable may be present in more than of one Competence;

   this extraction process guaranteed a high consistence with e-CF Competence definitions.

   49 Deliverables were defined using this process.

ii) The Waterfall Development Process is a well known model used for describing how to organize the development of a System. It was therefore investigated to identify additional Deliverables to be integrated with the previous list.

   New Deliverables were assigned to 1 or more of the 36 e-Competences of e-CF 2.0.

11 Deliverables were identified using the Waterfall Process.

iii) Further Deliverables were inspired through the ICT Profile definition process. After mission and tasks of the ICT Profiles were identified an iterative cycle was established between the identification of the deliverables and the further description of the ICT profiles.

New Deliverables were assigned to one or more of the 36 e-Competences of e-CF 2.0.

6 additional Deliverables were identified from this process.

Currently 66 applicable Deliverables have been identified, but this number will change during the ICT Profile definition. Only the Deliverables that substantially help to illuminate the ICT Profiles will be retained (an iterative cycle).

To facilitate common understanding of the Deliverables, the following scheme provides a satellite view of the Deliverables identified. In accordance with the waterfall model they can be regrouped generically by 7 types of Deliverables through the categories highlighted in the blue boxes:

Figure 4 – Deliverables classes according to the general ICT process (satellite view)

It should be noted that owing to the variance of ICT jobs in terms of complexity and autonomy, not all Deliverables identified are of the same level of granularity. Whilst a high level Deliverable such as “ICT Strategy” assigned to the CIO is very generic, others provided at a lower level of complexity and Autonomy, e.g. “Audit Reports” are more specific and more detailed.

3.4 Deliverables overview charts

Figure 4 shows an overview of Deliverables identified and classified according to the European e-Competence Framework.

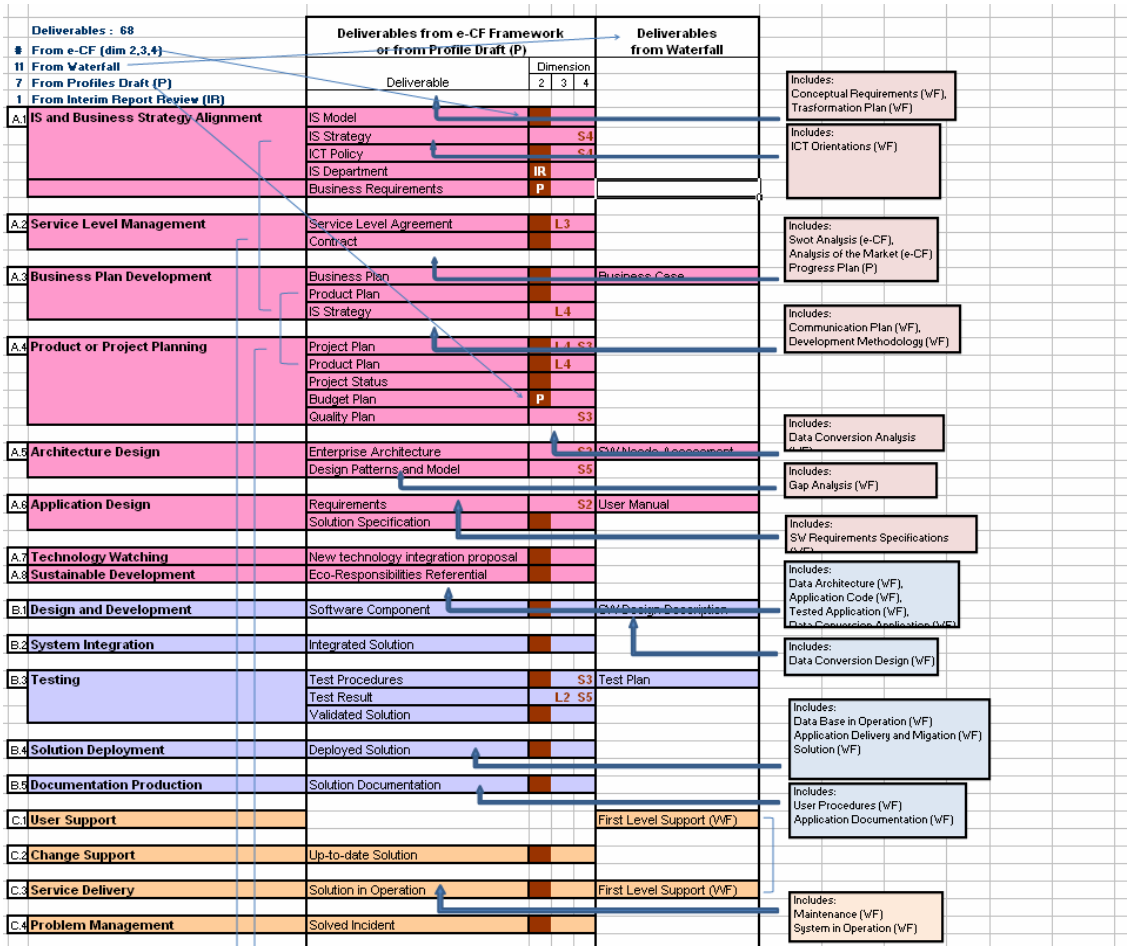

Figure 5 – Part I: Deliverables in the e-CF areas PLAN, BUILD, RUN

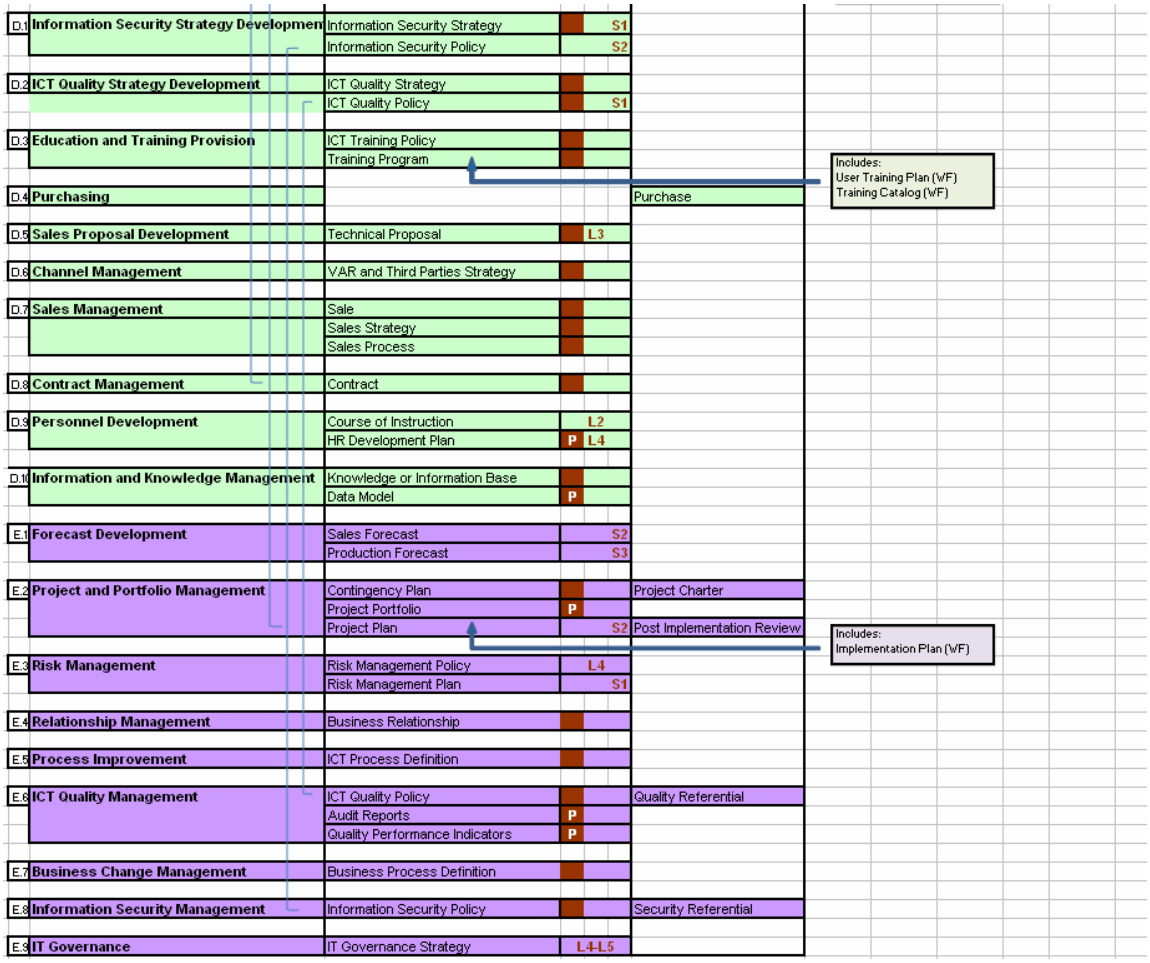

Figure 5 – Part II: Deliverables in the e-CF areas ENABLE and MANAGE

The following Table 4 provides a list in alphabetic order with a brief draft description of each Deliverable. Furthermore, each deliverable is specified in terms of accountable identified, e-Competence area assigned, and positioning of the Deliverable in the general process phases as they are shown in chapter 3.3, Figure 4 (the satellite view).

	Domain Dependent	DELIVERABLES	Profile accountable for deliverable	e-CF Comp Area					General Process Phases								DELIVERABLE DESCRIPTION
				PLAN	BUILD	RUN	ENABLE	MANAGE	Business Needs	Project Plan	General Specification	Design Specification	Module Tested	Solutiuon Tested	Solution Delivered	Sales	
1		Audit Report	YES					■		■							Results of performed controls and actions that should be taken to correct wrong situations
2		Budget Plan	YES	■					■								A model of how our business might perform financially if strategies, events and plans are carried out
3		Business Case	YES	■					■								Captures the reasoning for initiating a project or task
4		Business Plan	NO	■					■								Formal statement of a set of business goals, why they are believed attainable, and the plan for reaching those goal
5		Business Process Definition	NO					■	■								A collection of related, structured activities that will accomplish a specific organizational goal
6		Business Relationship	YES					■				■				■	A formal contractual relationship established to provide business services
7		Business Requirements	YES	■					■								Describes what a business needs so that it may be able to operate successfully
8		Contingency Plan	NO					■		■							A plan devised for a specific situation when things could go wrong
9	■	Contract	YES	■			■			■							Legally enforceable agreement between two or more parties with mutual obligations
10		Course of Instruction	YES				■								■		Single unit of a Training Program
11		Data Model	YES				■								■		Description of data and relations in terms of dependency, consistency and integrity
12		Design Patterns and Model	NO	■						■							General reusable solution or model to a commonly occurring problem in software design
13		Eco-Responsibilities Referential	NO	■						■							Reference for Eco-Responsibilities
14		Enterprise Architecture	YES	■											■		Rigorous description of the structure of an enterprise related to ICT
15		First Level Support (WF)	YES			■									■		Services providing first level user assistance
16		Deployed Solution	NO		■										■		Operated stable and secure solution used by the final
17		Hardware Component	YES		■								■				Physical artifact of a technology
18		HR Development Plan	NO				■			■							Systematic process of matching interest,skills and talents of individual with long-term organisation goals

19		ICT Policy	NO															Principle or rule to guide decisions and achieve rational outcome(s) in ICT
20		ICT Process Definition	NO															Defines a collection of related, structured activities or tasks that will accomplish ICT development goals
21		ICT Quality Policy	NO															Principle or rule to guide decisions and achieve rational outcome(s) in ICT quality policy
22		ICT Quality Strategy	NO															Defines goals and strategy for quality in the ICT Process
23		ICT Training Policy	NO															Principle or rule to guide decisions and achieve rational outcome(s) in ICT training
24		Information Security Policy	YES															Principle or rule to guide decisions and achieve rational outcome(s) in Information Security
25		Information Security Strategy	NO															Defines goals and strategy for quality in Information Security Process
26		Integrated Solution	NO															Solution at the stage where all components and sub-systems are integrated and tested
27		ICT Department	YES															Organisation, Processes, Human Resources and Infrastructure needed to implement I CT Strategy
28		ICT Model	NO															Description of user functions and services provided by an information system
29		ICT Strategy	YES															Defines goals and strategy ICT
30		ICT Governance Strategy	NO															Defines goals and strategy for the Governance of ICT Processes
31		Knowledge or Information Base	YES															Model for collection, organization, and retrieval of information and knowledge.
32		New technology integration proposal	YES															Illustrates goals, benefits and strategy for introducing new ICT technology
33		Post Implementation Review	NO															Review at the end of an Implementation stage wich address problems to improve product, service or process
34		Product Plan	NO															A formal, approved document used to guide product development
35		Production Forecast	NO															Projection of achievable production volumes, based on market needs, historical sales data and current Production Capacity
36		Project Charter	NO															Statement of the scope, objectives and participants in a project
37		Project Plan	YES															A formal, approved document used to guide both project execution and project control
38		Project Portfolio	YES															Set of documents for analyzing and collectively managing a group of current or proposed projects based on numerous key characteristics
39		Project Status	NO															Illustrates Project status including at least Plan Update, Budget, Risks,New Issues.
40		Purchase	NO															A product or service that has been bought
41		Quality Performance Indicators	NO															Indicators measuring how quality policy is implemented on ICT project and ICT solutions in operation
42		Quality Plan	NO															Defines activities to deliver solutions achieveing customer's quality expectations on the basis of the quality standards set by the organization delivering the product.
43		Quality Referential	NO															Defines how products and services have to be developed, distributed and used in terms of Quality Assurance

44		Requirements	NO															Documented needs of what a particular solution should be or perform
45		Risk Management Plan	NO															Document to foresee risks, to estimate the effectiveness, and to create response plans to mitigate them
46		Risk Management Policy	NO															Principle or rule to guide decisions and achieve rational outcome(s) in Risk Management
47		Sale	YES															Contract involving transfer of the possession and ownership (title) of a good or property, or the entitlement to a service, in exchange for money or value.
48		Sales Forecast	NO															Projection of achievable sales revenue, based on historical sales data, analysis of market surveys and trends, and sales persons' estimates
49		Sales Process	NO															Defines a collection of related, structured activities or tasks accomplishing Sales goals
50		Sales Strategy	NO															Planned approach to account-management policy formation,prospect identification and qualification in order generation aimed at achieving a firm's sales quotas or targets.
51		Security Referential	NO															Defines Processes, Rules and Monitoring Activities to achieve Security goals
52		Service Level Agreement	NO															Part of a service contract where the level of service is formally defined
53		Software Component	YES															Software package, web service, or module that encapsulates a set of related functions (or data)
54		Solution Documentation	NO															Set of Documents which illustrate all aspect related to the Solution
55		Solution in Operation	YES															Solution deployed and running in the final environment
56		Solution Specification	NO															Set of Documents which define in detail the Solution to be developed
57		Solved Incident	YES															Incident in the stage where a Solution to address the failure has been applied
58		SW Design Description	NO															Set of Documents which illustrate all the characteristic of Software to be developed
59		SW Needs Assessment	YES															Describes Needs in terms of Software after a detailed organisation assessment
60		Technical Proposal	NO															Document that lists and defines the technical requirements of a contract or project, and explains the approach and plan formulated to address them.
61		Test Plan	NO															A formal, approved document used to guide Test Phase
62		Test Procedures	NO															A set of tests which addresses homogeneous solution areas
63		Test Result	NO															Details results after one of several sessions during Test Phase
64		Training Program	NO															Program for the acquisition of knowledge, skills, and competencies
65		Up-to-date Solution	NO															Updated Solution during the Maintenance Phase
66		User Manual	NO															Illustrates the features and the usage of a Solution
67		Validated Solution	YES															Solution at the end of Test and Validation Phase
68		VAR and Third Parties Strategy	NO															Defines goals and strategy for Selling Channel Development

Table 4: Deliverables from A to Z: Title, accountable profile identified yes/ no, e-Competence Area, General Process, deliverables description

3.5 ICT Profiles and Deliverables matrix

The relationship between ICT jobs and Deliverables is built using the types of engagement of the job in the Deliverable creation.

Three types are possible:

- Accountable
- Responsible
- Contributor

The three types come from RACI Chart definition.[4] In detail:

Accountable:

- *"Owner" of the work.*
- *He/She must sign off or approve when the task, objective or decision is complete.*
- *He/she must make sure that responsibilities are assigned in the matrix for all related activities.*
- *There is only one person accountable, which means that the buck stops there.*

Responsible:

- *The "Doers" of the work.*
- *They must complete the task or objective or make the decision.*
- *Several people can be jointly responsible.*

Contributor:

- *They need to give input before the work can be done and signed-off on.*
- *They are "in the loop" and active participants.*

The basic rules for ICT job/ Deliverable relationship and type usage are:

i) Only one ICT job may be Accountable (A) for each Deliverable

ii) More than one ICT job may Responsible (R) or Contributor (C) for each Deliverable.

iii) Each ICT Profile may be described using from 1 to 6 Deliverables

iv) Each one of three levels (A,R or C) may have no Deliverable associated.

[4] See e.g. http://www.pmhut.com/what-is-the-raciarci-matrix-in-project-management

The following matrix shows a first-sight overview which ICT job is dealing with which deliverables in which way (A,R or C)

		Account Manager	Auditor / Quality Assurance Manager	Business Analyst	Business ICT Manager	Chief Information Officer (CIO)	Database specialist	Developer	Digital Media Designer	Enterprise Architect	ICT Trainer	ICT Consultant	ICT Manager	ICT Security Manager	ICT Security Specialist	Network Specialist	Project Manager	Service Desk Agent	Service Manager	Systems Administrator	Systems Analyst	Technical Specialist	Test Specialist
1	Audit Report		A																				
2	Budget Plan												A										
3	Business Case			R																			
4	Business Plan			C	C					C													
5	Business Process Definition									C													
6	Business Relationship	R		R								C											
7	Business Requirements			A								C											
9	Contract				A																		
10	Course of Instruction										A												
11	Data Model						A																
13	Eco-Responsibilities Assurance												C										
14	Enterprise Architecture									A													
15	First Level Support																	R					
17	Hardware Component							A													C		
18	HR Development Plan												R										
20	ICT Process Definition				C																C		
21	ICT Quality Policy		C																				
23	ICT Training Policy										C												
24	Information Security Policy		C											A	C								
25	Information Security Strategy					R								R									
26	Integrated Solution																C				R		C
27	ICT Department					A																	
28	ICT Model			C			C														C		
29	ICT Strategy			C		A								C									
31	Knowledge or Information Base									C		R		R	A								

		Account Manager	Auditor / Quality Assurance Manager	Business Analyst	Business ICT Manager	Chief Information Officer (CIO)	Database specialist	Developer	Digital Media Designer	Enterprise Architect	ICT Trainer	ICT Consultant	ICT Manager	ICT Security Manager	ICT Security Specialist	Network Specialist	Project Manager	Service Desk Agent	Service Manager	Systems Administrator	Systems Analyst	Technical Specialist	Test Specialist
32	New technology integration proposal									C		A		C	R								
34	Product Plan				C												R						
35	Production Forecast	C																	C				
37	Project Plan											C					A						
38	Project Portfolio				A																		
40	Purchase																						
41	Quality Performance Indicators		R																C				
42	Quality Plan																C						
43	Quality Assurance		C																				
45	Risk Management Plan														C								
46	Risk Management Policy		C			C								C	C								
47	Sale	A																					
48	Sales Forecast	C																					
51	Security Assurance															C							
52	Service Level Agreement				R	R													R				
53	Software Component							A													C		
54	Solution Documentation							R									R					C	C
	Network															R							
55	Solution in Operation						R	C	R										A				
	Network															R							
	Systems																			R			
56	Solution Specification				R		R														R		
	Network															R							
57	Solved Incident						C									C		C	R	C		A	
58	SW Design Description							C															
59	SW Needs Assessment																				A		
60	Technical Proposal	C																	C		R		
61	Test Plan																						R
62	Test Procedures						C	C															R

		Account Manager	Auditor / Quality Assurance Manager	Business Analyst	Business ICT Manager	Chief Information Officer (CIO)	Database specialist	Developer	Digital Media Designer	Enterprise Architect	ICT Trainer	ICT Consultant	ICT Manager	ICT Security Manager	ICT Security Specialist	Network Specialist	Project Manager	Service Desk Agent	Service Manager	Systems Administrator	Systems Analyst	Technical Specialist	Test Specialist
63	Test Result																						R
64	Training Program							C			C												
67	Validated Solution																A						C

Table 5: ICT Profiles and Deliverables Matrix

3.6 22 ICT Profiles identified and their description *(wip)*

As specified in the project plan, this interim report provides the first draft definitions of the forthcoming European ICT Profiles in terms of summary statement, mission and Deliverables. For specifying the summary statement, the mission and the Deliverables of each ICT Profile, the following rules were agreed.

SUMMARY STATEMENT RULE

- The **purpose** is to present to stakeholders and users a brief, concise understanding of the specified ICT Profile. It should be understandable by ICT professionals, ICT managers and Human Resource personnel.

- The **structure** should consist of a short sentence (up to approximately 15 words). It should not repeat the entire ICT Profile name. It should provide a statement of the job's main activity.

e.g. Database specialist – Designs, implements, monitors and maintains databases.

e.g. Business Information Manager – Leads the development of the Business Information Strategy.

MISSION RULE

- The **purpose i**s to specify the delegated job defined the ICT Profile

- The **structure** consists of
    - Performance context of the job (business, organization, IS etc.).
    - Main objectives in the performance context. The following verbs may be used for literal description or at least for structuring the thinking about how to express the mission:
        - ***Guarantees***
        - ***Ensures***
        - ***Contributes***

e.g. Enterprise Architect – Balancing between technological possibilities and available resources, guarantees the coherence of the Information System based on the business needs and ambitions

e.g. Developer – As a team member of an ICT project, contributes to the development of ICT application modules

DELIVERABLES RULE

- The **purpose** is to illuminate the ICT Profiles and to explain there relevance including the perspective from an non-ICT point of view
- We also add the dimension of ***responsible*** following the RACI model
- For **choosing and structuring Deliverables**, **please use the agreed list and clearly mark when you add a new one**
- Please choose **only the most important Deliverables** which help to understand the ICT Profile, e.g. not more than 6 in total (A,R,C together) for each profile

Table 6 – Rules for specifying summary statement, mission and deliverables of each profile

As the project takes an iterative approach the following ICT Profile specifications should not be seen as final. Further modification may take place over the course of the project in constructive interaction with expert and stakeholder communities.

Profile title	**(1) Account Manager**		
Summary statement (5 – 15 words)	Senior focal point for client sales and customer satisfaction.		
Mission	Builds business relationships with clients to facilitate the sale of hardware, software, telecommunications or IT services. Identifies opportunities and manages sourcing and delivery of products to customers. Has responsibility for achieving sales targets and maintaining profitability.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Sale	• Business Relationship	• Sales Forecast • Technical proposal • Production Forecast

Profile title	**(2) Auditor / Quality Assurance Manager**		
Summary statement (5 – 15 words)	Guarantees that Information Systems are delivered according to organization policies (quality, risks, Service Level Agreement).		
Mission	Sets up and operates the ICT quality approach in consistency with the overall organization quality approach. Ensures that controls are correctly implemented in order to guarantee assets safeguard, data integrity and operations focused on the organization‘s goals and objectives. Guarantees that corrective actions plans are made.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Audit report	• Quality performance indicators	• Quality assurance • ICT quality policy • Risk management policy • Information security policy

Profile title	**(3) Business Analyst** *(Not to be confused with Systems Analyst)*		
Summary statement (5 – 15 words)	Represents Information System customers for improving their business performance with the use of ICT.		
Mission	Identifies areas where information system changes are needed to support business plans and then monitors the impact in terms of change management. Proposes and promotes ICT solutions which contribute to business organization performance. Contributes to general functional requirements needed by the business organization in the area of ICT solutions. Guarantees the quality of expression of the business needs in the area of ICT solutions.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Business requirements	• Business case • Business relationship	• Business plan • ICTstrategy • ICT model

Profile title	(4) Business IS Manager		
Summary statement (5 – 15 words)	Proposes, plans and manages functional and technical evolutions of the Information System within the assigned functional domain.		
Mission	Manages and implements new projects and the updating of existing applications including maintenance activities guided by the needs, costs and plans agreed with internal users. Guarantees quality of service and internal user satisfaction. Ensures technological and functional watch to propose new solutions.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Contract • Project portfolio	• Solution specification • Service level agreement	• Business plan • ICT process definition • Product plan

Profile title	(5) Chief Information Officer (CIO)		
Summary statement (5 – 15 words)	Develops and maintains Information Systems for the Business and Company needs.		
Mission	Defines and implements the ICT strategy and governance. Determines necessary resources for ICT strategy implementation. Anticipates ICT market evolutions and company business needs. Contributes to the development of the strategic plan. Leads or participates in larger change projects.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• ICT Strategy & implementation • ICT Department & budget	• Project Portfolio • Service Level Agreement • Information Security Strategy	• Risk management policy

Profile title	(6) Database specialist		
Summary statement (5 – 15 words)	Designs, implements, monitors and maintains databases.		
Mission	Ensures the design, implementation, maintenance and repair of an organization's database to support information system solutions to business information needs. Ensures the development and design of database strategies, monitoring and improving database performance and capacity, and planning for future expansion requirement. Plans, co-ordinates and implements security measures to safeguard the database.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Data model	• Solution Specification • Solution in operation	• ICT model • Test procedure • Solved incident

Profile title	(7) Developer		
Summary statement (5 – 15 words)	Designs and builds/codes ICT solutions and specifies ICT products according to the customer needs.		
Mission	Ensures building and implementing of ICT applications. Contributes to planning, low level design.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Hardware Component • Software Component	• Solution Documentation	• SW Design Description • Test Procedures • Training Program • Solution in Operation

Profile title	(8) Digital Media Designer		
Summary statement (5 – 15 words)	Creates websites and multimedia applications combining the power of digital technology with effective use of graphics, audio, photographic and video images.		
Mission	Designs, lays out and codes, multimedia applications and websites to maximize information presentation, including marketing messages. Makes recommendations on technical interfaces and ensures sustainability through application of appropriate content management systems.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
		• Solution in Operation	• Solution in Operation

Profile title	(9) Enterprise Architect		
Summary statement (5 – 15 words)	Designs and maintains the Enterprise Architecture.		
Mission	In order to come to a balanced and solid Enterprise Architecture: Balances technological possibilities versus business (process) requirements, guarantees taking a holistic view of the organisation's strategy, processes, information and ICT assets and the coherence between the Information System and the business needs and its evolution.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Enterprise Architecture	• Linkage between other architectural areas (application architecture, infrastructure architecture, data architecture etc.)	• Business Plan • New Technology integration proposal • Knowledge or Information Base • Business Process Definition

Profile title	(10) ICT Trainer		
Summary statement (5 – 15 words)	Educates and trains others to reach predefined standards of ICT technical /business competence.		
Mission	Provides students with the knowledge and skills required to ensure that students are able to effectively perform tasks in the workplace. .		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Course of Instruction		• ICT training policy • Training Program

Profile title	(11) ICT Consultant		
Summary statement (5 – 15 words)	Helps to provide the understanding of how new ICT technologies add value to the business.		
Mission	Ensures technological watch to inform stakeholders of emergent technologies. Anticipates and brings to maturity ICT projects by raising awareness of new technologies. Identifies and explains the value creation of new technologies to the business. Contributes to the project definition based on new technologies.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• New technology integration proposal	• Knowledge or information base (on his domain)	• Business relationship • Business requirements Project plan

Profile title	(12) ICT Manager		
Summary statement (5 – 15 words)	Manages operations, people and further resources for the ICT activity.		
Mission	Designs, implements and maintains a designated part of the ICT Ensures that activities are conducted in accordance with ICT rules, processes and standards. Anticipates necessary changes according to company strategy and cost controls. Evaluates and recommends investments based on new technologies. Ensures the effectiveness of the ICT and associated risk management.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Budget plan	• HR Development plan • Training Program	• Eco-responsibilities Assurance

Profile title	(13) ICT Security Manager		
Summary statement (5 – 15 words)	Manages the Information System security policy.		
Mission	Defines the Information System security policy. Manages its deployment on all of the Information System. Ensures the provision of information availability. Recognized as the ICT security expert by inside and outside stakeholders.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Information security policy	• Knowledge or Information base • Information security strategy	• Risk Management policy • New technology integration proposal • IS Strategy

Profile title	(14) ICT Security Specialist		
Summary statement (5 – 15 words)	Ensures the implementation of the security policy.		
Mission	Performs works and proposes the necessary updates. Ensures the role of advising support, information, training and security awareness. Takes action directly on all or part of a network or system. Is the ICT security expert for inside stakeholders.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Knowledge or Information base	• New technology integration proposal	• Risk Management policy • Risk Management Plan • Information security policy

Profile title	(15) Network Specialist		
Summary statement (5 – 15 words)	Ensures the alignment of the network domain to organization communication needs.		
Mission	Manages and operates a networked information system, solving problems and faults to ensure defined service levels. Monitors and improves network performances.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
		• Network Solution Documentation • Network Solution in Operation • Network Solution Specification	• Solved Incident • Security Assurance

Profile title	(16) Project Manager		
Summary statement (5 – 15 words)	Manages the project with the objective of achieving optimal performance in line with its specifications.		
Mission	Defines, implements and manages a project from conception to final delivery to reach optimal results, in conformity with requirements in terms of quality, scope, performance, costs, time, sustainability and safety.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Project Plan • Validated solution	• Solution documentation • Product Plan	• Quality Plan • Integrated Solution

Profile title	(17) Service Desk Agent		
Summary statement (5 – 15 words)	Provides first line telephone or e-mail support to clients with technical issues.		
Mission	To provide user support and troubleshoot ICT problems and issues. The primary objective is to enable users to maximize their productivity through efficient use of ICT equipment or software applications.		
Accountability	The timely provision of constructive responses to client requests for support. It involves active listening to client issues and translating them for technical analysis provision and providing solutions.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
		• First level Support	• Solved Incident

Profile title	(18) Service Manager		
Summary statement (5 – 15 words)	Planning, implementation and control of solution provision.		
Mission	Ensures the definition of the Service and Product Lines descriptions, the Service Levels Agreements (SLA), Operational Level Agreements (OLA) contracts and Key Performance Indicators (KPIs) together with the various involved business domains in alignment with the *Business Information Manager*. Monitors, reports and manages the fulfilment of the SLAs. Ensures actions for mitigation in case of non-fulfilment in alignment with the *Business Information Manager*. Contributes to the maintenance cost allocation together with business/finance organisation.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Solution in Operation	• Service Level Agreement • Solved incident	• Production Forecast • Quality Performance Indicators • Technical Proposal

Profile title	(19) Systems Administrator		
Summary statement (5 – 15 words)	Administers ICT System components to ensure service required.		
Mission	Installs, configures and upgrades ICT systems. Ensures day-to-day operations in order to satisfy continuity of service, recovery, security and performance needs.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
		• Solution in Operation	• Solved Incident

Profile title	(20) Systems Analyst		
Summary statement (5 – 15 words)	Plans solutions, researches problems, recommends software and systems, and coordinates development to meet requirements.		
Mission	Ensures the design, development and testing and contributes to implementation of new ICT applications and/or enhancements.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Software Needs Assessment	• Integrated Solution • Solution Specification • Technical Proposal	• Hardware Component • Software Components • ICT Process definition • *ICT Model

Profile title	(21) Technical Specialist *(includes Service Technician/ Service and Repair Field Technician)*		
Summary statement (5 – 15 words)	Maintains and repairs hardware and software on client premises.		
Mission	To install, troubleshoot, repairing and perform preventive maintenance on hardware and/or software components. Responsible for delivering timely and effective repairs to ensure optimal system performance and superior customer satisfaction.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Solved Incident		• Solution Documentation

Profile title	(22) Test Specialist		
Summary statement (5 – 15 words)	Designs and performs testing plans.		
Mission	Contributes to correctness and completeness of a system ensuring that solutions meet technical and user requirements. Contributes in several different areas of systems development testing system functionality, identifying anomalies and diagnosing possible causes.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
		• Test Plan • Test Procedures • Test Result	• Integrated Solution • Validated Solution • Solution Documentation

Table 7 – The 22 ICT Profiles specified by summary statement, mission and deliverables

3.7 The final outcome to be expected: one fully developed ICT Profile example

Another important outcome of the work achieved so far is the agreement on a template how all (22) ICT Profiles should be defined and further specified at the end of the project.

Influenced by usage in ICT organizations across Europe and by defining practical aspects to be taken into consideration, the template specification for each profile will contain definitions as follows:

- A **title** to give a name to the profile;
- A **summary** statement to indicate the main purpose of the profile;
- A **mission** statement to describe the rationale of the profile;
- An **accountability** statement to indicate the level of responsibility assigned to the mission;
- A list of **deliverables** (maximum 5 to focus on main ones, with mention of the level of responsibility – accountable, responsible or contributor) to be carried out by the profile;

- A list of typical **tasks** to be performed by the profile;
- A list of necessary **competences** (from the e-CF) to carry out the mission;
- The work **environment** of the mission (interfaces with other profiles, areas where the profile is necessary, localization of the profile from a strategic or operational point of view…)
- A list of **KPI's** (Key Performance Indicator) to measure the performance of the mission and its outputs.

The following profile "Service Desk Agent" provides a draft example where all items have been specified.

Profile title	**(8) Service Desk Agent**		
Summary statement	Provides first line telephone or e-mail support to clients with technical issues.		
Mission	To provide user support and troubleshoot ICT problems and issues. The primary objective is to ensure users are able to maximize their productivity through efficient use of ICT equipment or software applications.		
Accountability	The timely provision of constructive responses to client requests for support. It involves active listening to client issues and translating them for technical analysis provision and providing solutions.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
		First level Support	Solved Incident
Main task/s	• Identify and diagnose issues and problems • Categorize and record reported queries and provide solutions • Support problem identification • Advise users on appropriate course of action • Monitor issues from start to resolution • Escalate unresolved problems to higher levels of support		
e-CF competences assigned	• C1 User support Levels 2 OR 3 • C4 Problem Management Level 2		
Environment	Interfaces with ICT users to identify problems. Works with technical solution team to specify issues and identify route causes.		
KPI's	Responsiveness % calls answered in x minutes Solution % achievement % issues fixed first time		

Table 8: The expected final project outcome – draft example "Service Desk Agent"

4 e-CF 2.0 translation

The European e-Competence Framework developed in the context of the CEN ICT Skills workshop has proven to be a valuable tool for ICT career and competence development across Europe.

However, it is obvious that its availability only in the English language creates some barriers for application in different National environments. To make a start with providing the e-CF in other languages aside,, it was decided to provide at least two more official translations in the context of the e-Job profile project. Due to voluntary engagement of further National stakeholders, the number may be increased from 3 to 5 languages (aside from English) by the end of the project.

4.1 e-CF 2.0 in French, Italian and German

During the first project phase, native speaking members of the team monitored and ensured the provision of the European e-Competence Framework 2.0 including user guidelines in three more main European languages (French, German and Italian).

While the French and Italian version had to be developed from zero, the German version could make use of the e-CF Version 1.0 translated by National stakeholders in 2009.

Important outcomes of the project are therefore not only the e-CF 2.0 and user guidelines in French and Italian, but also in German.

Based on these translation experiences and in interaction with the CEN Workshop Management, a quality assurance process was defined. This process, which is described in detail in chapter 4.3. benefits from the CEN ICT Skills Workshop structures and it can offer standardised process support to other interested National stakeholders (see examples in chapter 4.2.)

4.2 e-CF translations by national stakeholders outside CEN project programme

All CEN Workshop achievements build upon a fruitful interaction between expert services co-financed by the European Commission and voluntary expert contributions from sector representatives.

This approach also becomes beneficial for the e-CF translation process. Whilst some translations can initially be provided by CEN project activities, others may be provided by stakeholders arising from engaged and interested countries.

This has been the case with Germany for the translation of the e-CF 1.0 into German, possibilities to provide CEN agreed official e-CF 2.0 versions in Dutch and Estonian are currently under investigation and others may follow in the near future.

4.3 e-CF translation process – quality assurance

To avoid confusion, multiple work and possible image-damaging consequences for the e-CF in other European languages, it is important to provide a quality assurance process supporting stakeholders in the development of their National versions. The following steps have been identified as valuable in the experience of the e-CF translating work done so far:

- **First translation** by a technical native speaking translator
- **Revision** by a native speaking expert responsible (CEN expert or National stakeholder, in Estonia it is the Estonian Qualification Authority)
- **Proposal** of this second version to a small number (e.g. 5) of native speaking ICT business experts
- **Integration** of their feedback by the native speaking expert responsible
- **Provision** of the consolidated version to the CEN Workshop Community
- **Integration** of possible feedback
- **Publication** on CEN Website for public commenting
- **Provision of the final CEN approved official version via www.ecompetences.eu**.

Table 9: e-CF translation into other EU languages – Quality assurance process in multi-stakeholder cooperation

All seven steps have been accomplished for the Italian, German and French versions of the e-CF 2.0, the Dutch and Estonian possible versions are still under development.

5 Outlook at the further project work

This Interim report provides the important half time milestone towards the **European ICT Profiles CWA** for Publication early 2012. It provides a basis to reinforce the stakeholder discussion on the interim outcomes achieved and to further consolidate the ICT Profiles identified together with their respective brief descriptions over the course of next months.

To provide consistent final project outcomes, further technical debate followed by stakeholder commenting will be necessary. Important choices and decisions are still to be made about

- Possible levelling of ICT jobs
- Definition of main tasks of each profile
- Assignment of e-CF competences to each profile
- Possible indications about the profile application environment
- Identification of Key Performance Indicators (KPI's).

Taking this interim report for discussion and further revision in the context of the CEN ICT Skills Workshop Community and further interested sector players as basis, the above mentioned items will be further discussed and specified for each profile, in order to provide a consistent and broadly accepted final outcome – a commonly agreed European set for ICT Profiles based on Deliverables and the e-CF – by end of this year.

6 Glossary

Project glossary, work in progress

Term	Definition/ description	see also (Glossary)	see also (Chapter)
Accountable	To be Accountable is to be the only "owner" of the work. The owner must sign off or approve when the task, objective or decision is complete. He/she must make sure that responsibilities are assigned for all related activities. There is only one owner accountable for each deliverable. The term "accountability" is also used as generic term, without relationship to the RACI Matrix.	Contribute Deliverable RACI Matrix Responsible	1.2, 3.5, 3.6, 3.7
Activities	A very generic term, similar to operations or workings		
Application field	[to complete]		
Attitude	Attitude**,** in the context of the European e-Competence Framework, means the "cognitive and relational capacity" (e.g. analysis capacity, synthesis capacity, flexibility, pragmatism...). If skills and knowledge are the components of competences, attitudes are the glue, which keep them together.	Competence	
Contribute	Contributors provide input before work can be completed and signed-off on. They are "in the loop" and active participants. Several people can be contributors to one deliverable.	Accountable Deliverable RACI Matrix Responsible	1.2, 3.5, 3.6, 3.7
Competence	In the European e-Competence Framework: Demonstrated ability to apply knowledge, skills and attitudes to achieve observable results.	Attitude Knowledge Skills Job Task	1.1, 1.2, 3.3, 3.4
Complexity and Autonomy	[to complete (from e-CF user guide)]		
Deliverable	A predefined result of a task in a working context. Deliverables are observable results, that may be tangible or intangible.	Accountable Contribute Responsible Task	1.1, 1.2, 3.3, 3.4, 3.5, 3.6
e-	[to complete]		
Function	A function in an organisation is the same as a position (see Position)	Position	
ICT	Information and Communication Technology		
IS	Information System		

Term	Definition/ description	see also (Glossary)	see also (Chapter)
Job	Jobs provide a bridge between enterprises and individuals. Jobs reflect employment conditions in the labour market In addition jobs may indicate requirements, results, tasks, competences and required qualifications. Jobs brings together a number of perspectives and are defined by organizations .Jobs are identified or labeled by a single or few word description, for example, Programmer, Service Manager or Chief Information Officer.	Competence Occupation Position Profession Role Task	3.7
Job Descriptions	Job descriptions provide more detailed and specific information about a job and in this way qualify the single or short word description	Job	
Key Performance Indicator (KPI)	Tasks that have been agreed between an employee and line manager/ HR with an expectation that they will be completed satisfactorily in the time agreed or as an ongoing task.	Job	
Knowledge	In the European e-Competence Framework (and the EQF): Knowledge represents the "set of know-what" (e.g. programming languages, design tools...) and can be described by operational descriptions.	Competence	
Occupation	[to complete]	Job	
Organisation	A structural framework, which establishes the basis for determining the responsibility, authority, and relationships of the members of the enterprise. (How the resources are arranged to meet objectives). Organizational design should address function/position, coordination, authority, responsibility and accountability.	Position RACI Matrix	
Position	A position is an assigned group of duties and responsibilities, temporary or permanent, requiring the full-time or part-time employment of one person. It may be occupied or vacant. Could be also named as function or “job/job profile”.	Job Organisation	1.2
Profession	[to complete]	Job	
Professional	[to complete]	Job	
Profile	Job profiles add to job descriptions by including additional job related components such as mission, main tasks, accountability, requested deliverables, KPI's etc. In this context a job profile provides a comprehensive description written and formal of a job**.**	Job	
RACI	A RACI (Responsible – Accountable – Contribute/Consulted - Informed) Matrix describes the participation by various roles in completing deliverables for a project or business process. (Source: PMBOK Guide*)*	Accountable Contribute Deliverable Responsible Role	3.5, 3.6, 3.7

Term	Definition/ description	see also (Glossary)	see also (Chapter)
Responsible	The “Doers” of the work are responsible for the work. They must fulfil the task or objective or make the decision. Several people can be jointly responsible for one deliverable. The terms” responsible” and “responsibility” are also used as generic terms, without relationship to the RACI Matrix.	Accountable Deliverable RACI Matrix Contribute	1.2, 3.5, 3.6, 3.7
Role	Normally expressed as a role profile: a specialised combination of skills or competences with specific responsibilities to fulfil a specific type of tasks and to produce pre-defined deliverables, mostly used in engineering, especially SW-engineering models.	Deliverables Job Profile Task	
Skill	In the European e-Competence Framework: The item skill is defined as "ability to carry out managerial or technical tasks". Managerial and technical skills are the components of competences and specify some core abilities which form a competence.	Competence	
Task	A distinct work activity (normally partially predefined) which has an identifiable beginning and end and observable results.	Deliverable Job Role	

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