A DIGITAL SKILLS PROFILE EVERYBODY (CAN) MAKE AND WORK WITH

Customising and Mapping Frameworks

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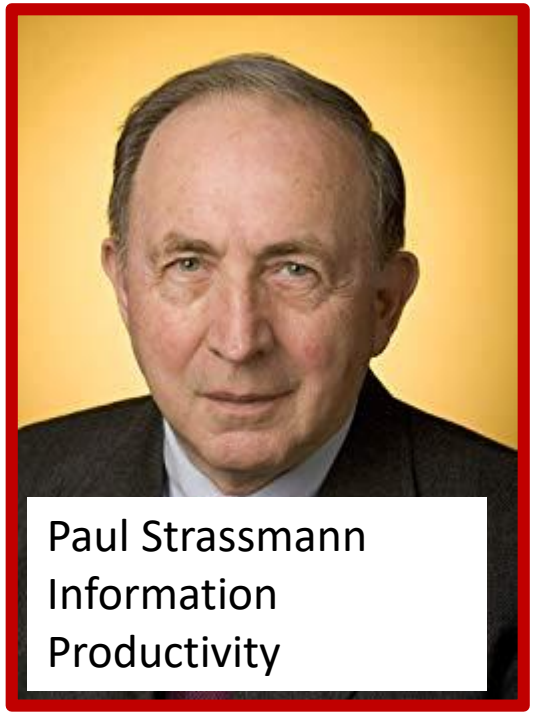
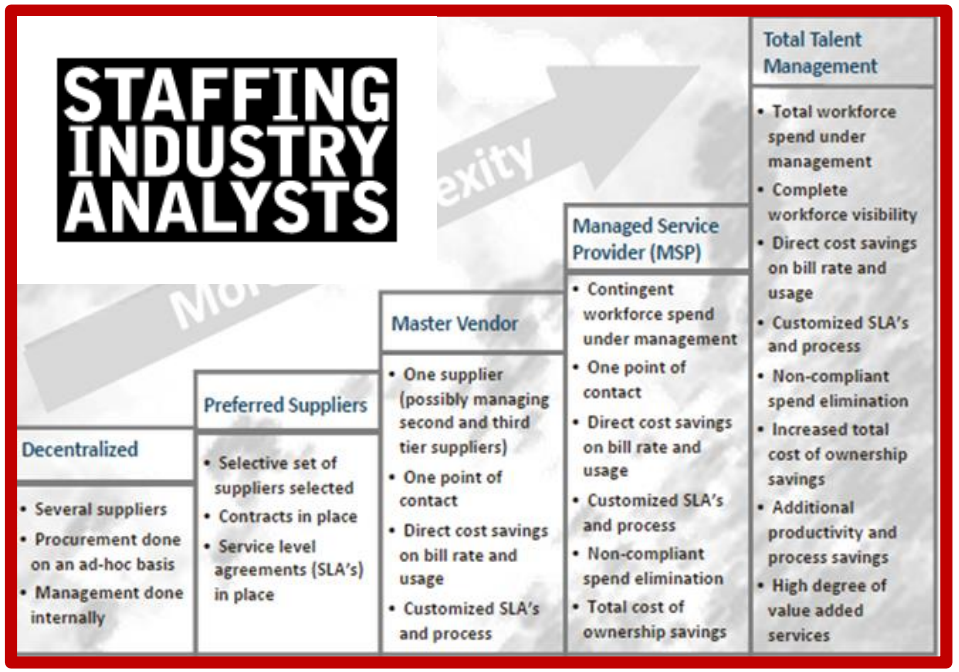
INSPIRED BY

IDC
ANALYZE THE FUTURE



Paul Strassmann
Information
Productivity



RECAP

THE STRATEGIC ROLE OF ICT STANDARDISATION IN THE CONTEXT OF EU POLICY MAKING

E-SKILLS AND E-LEARNING

In support of the objectives set out in the Communications "A New Skills Agenda for Europe"[3], "A Digital single market strategy for Europe[4] and "e-Skills for the 21st Century: Fostering Competitiveness, Growth and Jobs[5]", the Commission is planning to issue in 2018 a standardisation request as announced in the AUWP to develop standards for a comprehensive European framework for the ICT profession which would complement and build on the existing European e-Competence framework.

The e-Competence Framework (EN 16234-1:2016) provides an efficient and broadly accepted common European language about knowledge, skills and competences of the ICT professional workforce and it has proved to be a useful benchmark for all EU industry sectors and HR companies. In 2017, the Commission initiated the first revision of the EN, in line with current business needs, framework development, digitization of industry and ICT market trends.

European e-Competence Framework 3.0 overview

Dimension 1 5 e-CF areas (A – E)	Dimension 2 40 e-Competences identified	Dimension 3 e-Competence proficiency levels e-1 to e-5, related to EQF levels 3–8				
		e-1	e-2	e-3	e-4	e-5
A. PLAN	A.1. IS and Business Strategy Alignment				■	■
	A.2. Service Level Management			■	■	
	A.3. Business Plan Development			■	■	■
	A.4. Product/Service Planning		■	■	■	
	A.5. Architecture Design			■	■	■
	A.6. Application Design	■	■	■		
	A.7. Technology Trend Monitoring				■	■
	A.8. Sustainable Development			■	■	
	A.9. Innovating				■	■
B. BUILD	B.1. Application Development	■	■	■		
	B.2. Component Integration		■	■	■	
	B.3. Testing	■	■	■	■	
	B.4. Solution Deployment	■	■	■		
	B.5. Documentation Production	■	■	■		
	B.6. Systems Engineering			■	■	
C. RUN	C.1. User Support	■	■	■		
	C.2. Change Support		■	■		
	C.3. Service Delivery	■	■	■		
	C.4. Problem Management		■	■	■	
D. ENABLE	D.1. Information Security Strategy Development				■	■
	D.2. ICT Quality Strategy Development				■	■
	D.3. Education and Training Provision		■	■		
	D.4. Purchasing		■	■	■	
	D.5. Sales Proposal Development		■	■		
	D.6. Channel Management			■	■	
	D.7. Sales Management			■	■	■
	D.8. Contract Management		■	■	■	
	D.9. Personnel Development		■	■	■	
	D.10. Information and Knowledge Management			■	■	■
	D.11. Needs Identification			■	■	■
	D.12. Digital Marketing		■	■	■	
E. MANAGE	E.1. Forecast Development			■	■	
	E.2. Project and Portfolio Management		■	■	■	■
	E.3. Risk Management		■	■	■	
	E.4. Relationship Management			■	■	
	E.5. Process Improvement			■	■	
	E.6. ICT Quality Management		■	■	■	
	E.7. Business Change Management			■	■	■
	E.8. Information Security Management		■	■	■	
	E.9. IS Governance				■	■

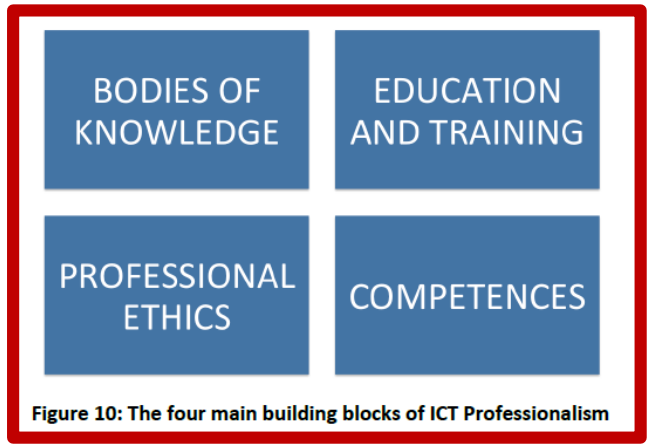
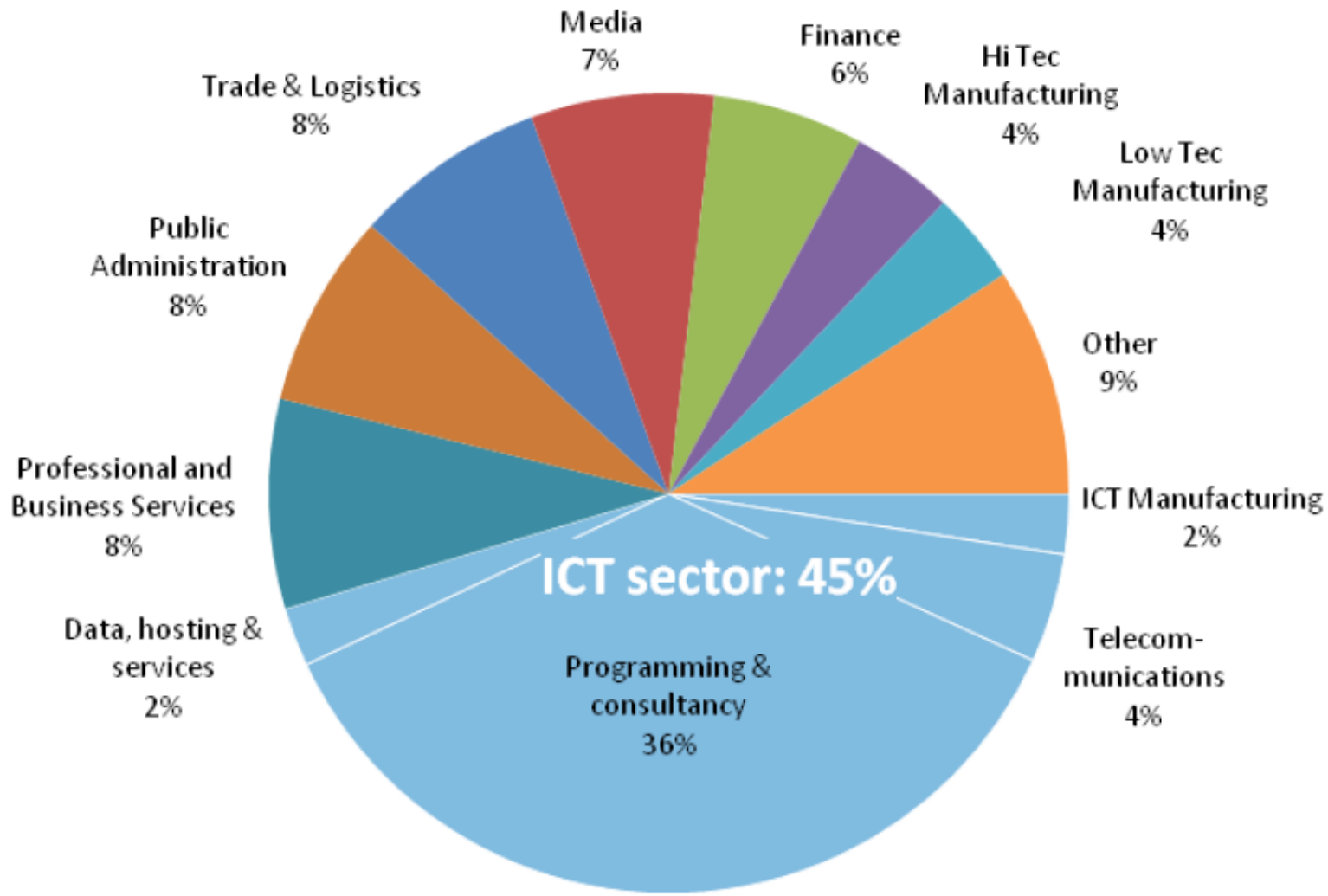


Figure 10: The four main building blocks of ICT Professionalism

ICT EU PROFESSIONAL WORKFORCE 2016

Figure 5-3 ICT professional workforce in Europe 2016 by ICT and Non-ICT industry[53]



Based on ISCO-08 minor groups 25 and 35									
	ICT sector	Professional and Business Services	Public Administration	Trade & Logistics	Finance	Media	Hi Tec Manufacturing	Low Tec Manufacturing	Other
NACE rev. 2	26;61-63	68-74;77;78;82	84;85	45-53	64-66	58-60	20;21;27-30	10-19;22-25;31-33	1-9;35-43;55;56;75;79-81;86-99

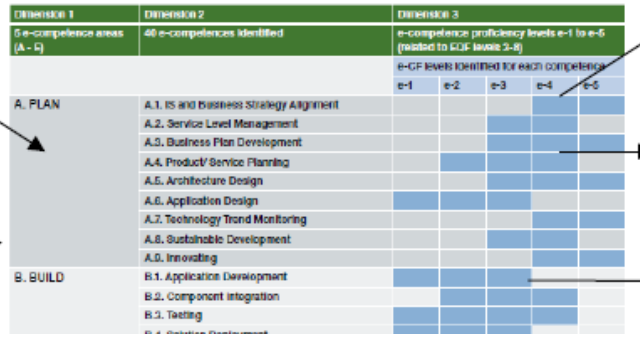
A shared European language to close the e-Skills gap

European e-Competence Framework

- ICT demand
- ICT supply
- multinationals
- SME's
- educational institu
- higher educa
- private certification providers
- professional associations
- social partners
- individuals

Higher Education Curricula

National frameworks



Market scenarios

Certification programs

HR planning

HOW !

ICT Professional CV Self promotion

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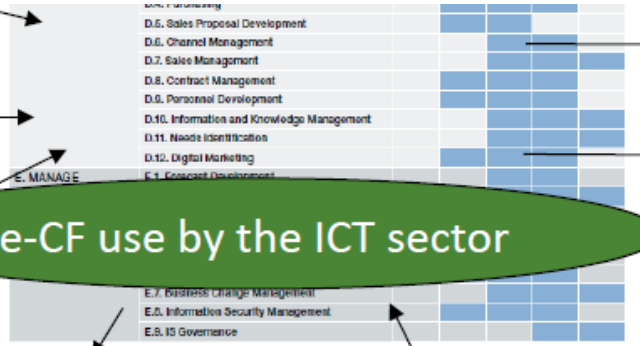


Competence assessment

Individual training plans

e-CF use by the ICT sector

Use e-CF content

Create e-CF links

- Multi-stakeholder user community from all kind of market perspectives

BUILDING BLOCKS

DESCRIPTION OF A COMPETENCE

PROFILE DESCRIPTION

DELIVRABLES AND DESCRIPTION LIST

MATRIX OF COMPETENCE AND ROLE PROFILE

EUROPEAN ICT PROFILE FAMILY TREE

MATRIX OF DELIVRABLES AND ICT PROFILES

MAPPING STRUCTURE SFIA AND E-CF

ICT PROFILE TEMPLATE

ICT PROFESSIONAL ROLE PROFILES-ESCO RELATIONSHIP

ADAPTATION TEMPLATE OF EXISTING PROFILES

ICT PROFILE TEMPLATE

Question	Template Descriptor	ICT Professional Role Profile Example
What is the role about?	***Title*** Formed of a few words, the title offers a common name for the role	**DEVELOPER ROLE**
What is done in this role?	***Summary statement*** Formed of a single sentence, this summary presents a brief, concise description of the role.	Designs and/ or codes components to meet solution specifications.
Why is this role needed?	***Mission*** Within a maximum of three sentences this element describes the rational and context of the role within the organisation.	Ensures building and implementing of ICT applications. Contributes to low-level design. Writes code to ensure optimum efficiency and functionality and user experience.
What will it achieve?	***Deliverables*** Sub-divided into accountable (A), responsible (R) and contributor (C) and using a maximum of six deliverables they illustrate the responsibilities associated with the role	Accountable: • Documented code Responsible: Software component Contributor: • Software Design Description • Test Procedure • User Experience Design
What is done in more detail?	***Main task/s*** Using between six and eight activities the tasks offer an understanding of the actions taken and the end results required of the role.	• Develop and engineer components • Follow user experience guidelines • Aware of and address known security vulnerabilities, applying security by design • Shape documentation • Provide advanced, component technical support • Resolve issues prior to and following testing
What competences are required?	***e-competences*** Between 4 and 5 competences each defined by a proficiency level provide the overview of the skills, knowledge and attitudes required of the role.	B.1. Application Development: Level 3 B.2. Component Integration: Level 2 B.3. Testing: Level 2 B.5. Documentation Production: Level 3 C.4. Problem Management: Level 3
Why does this role matter?	***KPI (Key Performance Indicator) area*** Constructed of a simple statement the KPI area is a general, high level, guideline that highlights the contribution of the role to the organisations performance.	Fully functional components

Table 3: The European ICT Profiles template: Questions, template descriptors, ICT Profile example

e-CF COMPETENCE DESCRIPTION AND FORMAT

Dimension 1 e-Comp. area	A. PLAN				
Dimension 2 e-Competence: Title + generic description	**A.2. Service Level Management** Defines, validates and makes applicable service level agreements (SLAs) and underpinning contracts for services offered. Negotiates service performance levels taking into account the needs and capacity of stakeholders and business.				
Dimension 3 e-Competence proficiency levels e-1 to e-5, related to EQF levels 3 to 8	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Level 5**
	–	–	Ensures the content of the SLA.	Negotiates revision of SLAs, in accordance with the overall objectives. Ensures the achievement of planned results.	–
Dimension 4 Knowledge examples *Knows/aware of/ familiar with*	K1 SLA documentation K2 how to compare and interpret management data K3 the elements forming the metrics of service level agreements K4 how service delivery infrastructures work K5 impact of service level non-compliance on business performance K6 ICT security standards K7 ICT quality standards				
Skills examples *Is able to*	S1 analyse service provision records S2 evaluate service provision against SLA S3 negotiate realistic service level targets S4 use relevant quality management techniques S5 anticipate and mitigate against potential service disruptions				

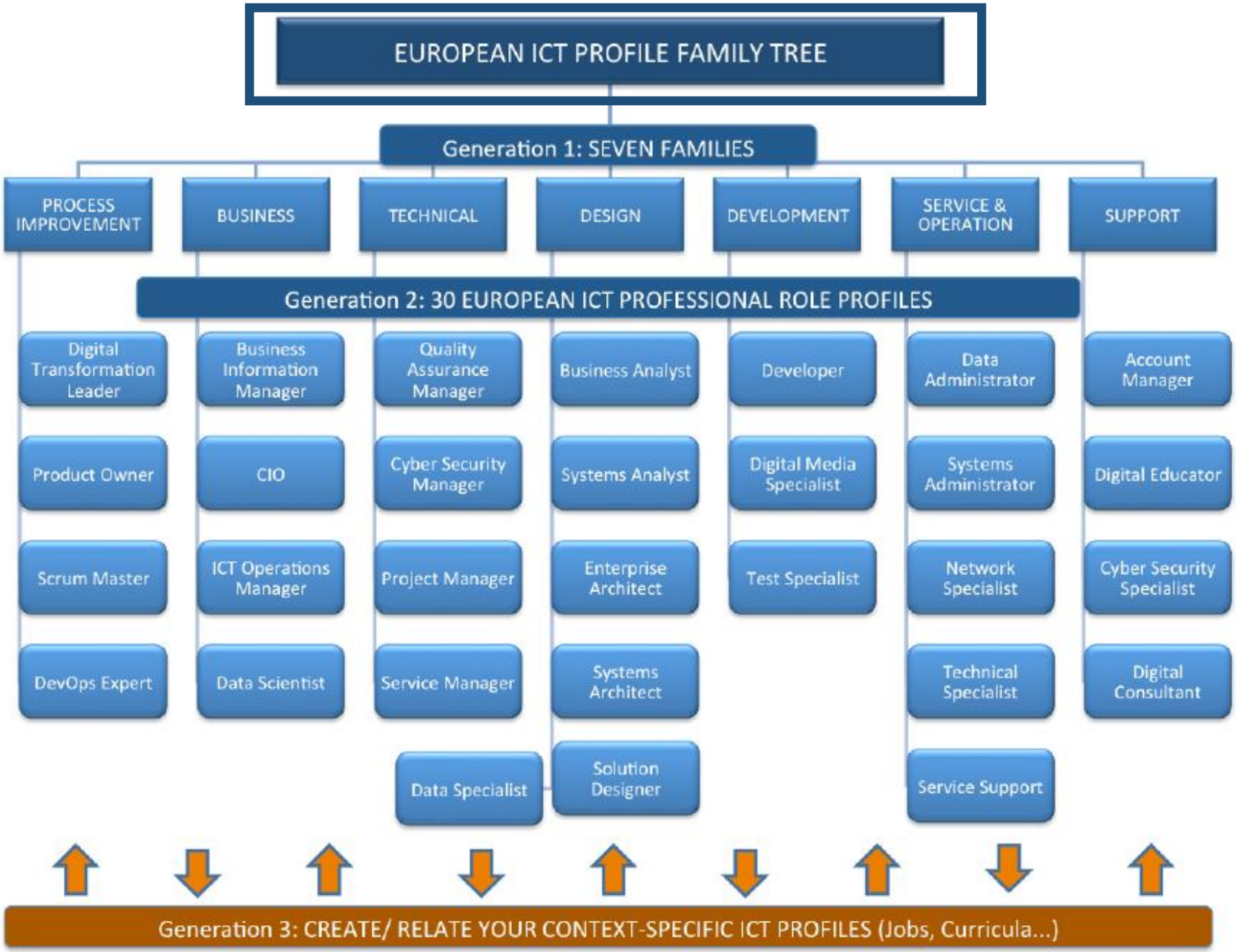


Figure 4: 30 European ICT Professional Role Profiles (generation 2) in seven families (generation 1) at the top of the European ICT Profile Family Tree

EU ICT PROFESSIONAL ROLE PROFILES - ESCO RELATIONSHIP

ANNEX C: European ICT Professional Role Profiles – ESCO relationships

Important note: The relationship between the two columns does not represent an equivalence it offers a best fit approximation that readers may wish to investigate.

ESCO Occupation Title (from ICT occupations list)	EU ICT Professional Role Profile Title	Comment
database administrator	Data Administrator Role	
ICT system administrator	Systems Administrator Role	
ICT network administrator	Network Specialist Role	
IT auditor	Quality Assurance Manager Role	
telecommunications engineering technician	Network Specialist Role	
webmaster	Digital Media Specialst Role	
ethical hacker	Data Specialist Role	
digital forensics expert	Data Scientist Role	
ICT security technician	Cyber Security Specialist Role	
data centre operator	Systems Administrator Role	
ICT security administrator	Cyber Security Specialist Role	
search engine optimisation expert	Digital Media Specialst Role	
online community manager	Digital Media Specialst Role	
ICT trainer	Digital Educator Role	
ICT consultant	Digital Consultant Role	
ICT system integration consultant	Systems Architect Role	
green ICT consultant	Digital Consultant Role	
ICT security consultant	Cyber Security Specialist Role	
ICT technician	Technical Specialist Role	
ICT help desk agent	Service Support Role	
broadcast technician	Technical Sepecialist Role	
ICT network technician	Network Specialist Role	
mobile devices technician	Technical Specialist Role	
communication infrastructure maintainer	Network Specialist Role	
telecommunications technician	Network Specialist Role	
big data archive librarian	Data Specialist Role	
telecommunications equipment maintainer	Technical Specialist Role	
radio technician	Technical Specialist Role	
ICT presales engineer	Account Manager	
ICT buyer	Service Manager Role	
software manager	ICT Operations Manager Role	
ICT research manager	Digital Consultant Role	
ICT operations manager	ICT Operations Manager Role	
ICT help desk manager	Service Manager Role	
telecommunications manager	Service Manager Role	
e-learning architect	Systems Architect Role	
ICT resilience manager	Cyber Security Specialist Role	
ICT project manager	Project Manager Role	
web content manager	Digital Media Specialist Role	
ICT environmental manager	ICT Operations Manager Role	
ICT quality assurance manager	Quality Assurance Manager Role	
ICT auditor manager	Quality Assurance Manager Role	
ICT security manager	Cyber Security Manager Role	
ICT documentation manager	Quality Assurance Manager Role	

EU ICT PROFESSIONAL ROLE PROFILE TEMPLATE

Profile title	SERVICE MANAGER ROLE (18)		
Summary statement	Plans, implements and manages solution provision.		
Mission	Manages the definition of Service Level Agreements (SLAs), Operational Level Agreements (OLAs) contracts and Key Performance Indicators (KPIs). Provides people management of staff monitoring, reporting and fulfilling service activities. Takes mitigation action in case of non-fulfilment of agreements.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Solution in Operation	• Service Level Agreement • Solved incident • Service Catalogue	• Quality Performance Indicators • Technical Proposal
Main task/s	• Define Service requirements • Negotiate SLA / OLA • Manage solution operation • Provide service delivery • Maintain and contribute to the creation of the department budget • Staff development		
e-Competences *(from e-CF)*	A.2. Service Level Management		Level 4
	C.3. Service Delivery		Level 3
	C.4. Problem Management		Level 4
	D.8. Contract Management		Level 3
	D.9. Personnel Development		Level 3
KPI area	Fulfilment of Service Levels		

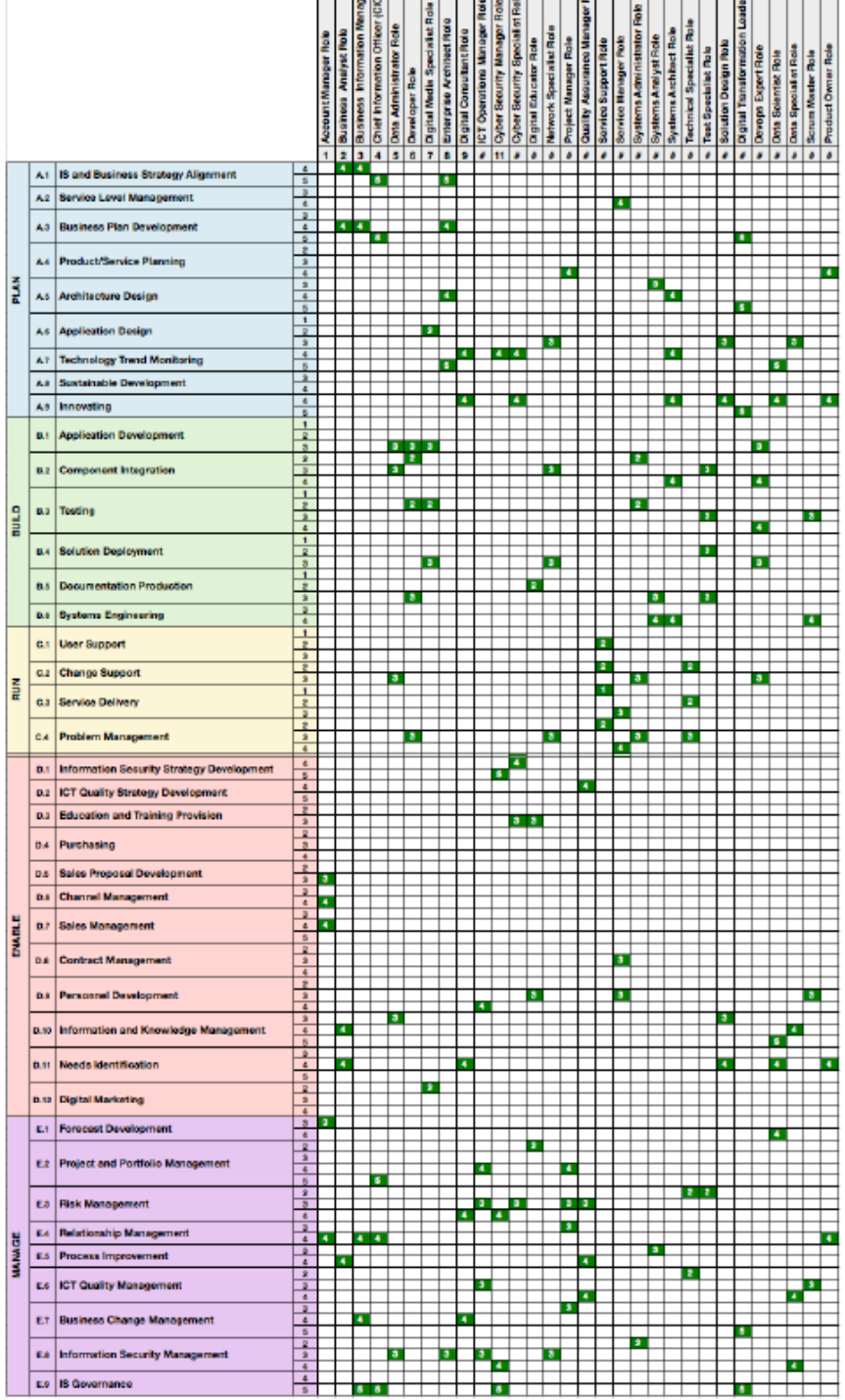
EU LIST OF DELIVERABLES

ANNEX B: Deliverables and descriptions full list

DELIVERABLES	PLAN	BUILD	RUN	ENABLE	MANGE	e-COMPETENCES	DELIVERABLE DESCRIPTION
1. Budget Plan	■					A.4	A description of the amount of money spent on an organization's Information Technology systems and services, including compensation for IT professionals and expenses related to the construction and maintenance of enterprise-wide systems and services.
2. Business Case (Lightweight Business Case)	■					A.3	An explanation of why the investment should be made and how the business will see a return on that investment (ROI) at some point in the future. A well-considered business case provides decision makers with the information they need to decide if the investment should proceed.
3. Business Plan (Strategic Themes)	■					A.3	A formal statement of a set of business goals, why they are attainable, and the plan for reaching them.SAFe strategic themes provide business context for decision-making within the portfolio and influence investments in Value Stream. Strategic Themes provide the enterprise with the differentiators going forward from current state to future state; they help drive innovation and competitive differentiation that is achievable only via effective portfolio solutions.
4. Business Process Definition					■	E.5,E.7	A formal definition and description of related, structured activities that will accomplish a specific organizational goal
5. Business Relationship				■		D.11, E.4	A relationship established to provide business services
6. Business Requirements	■					A.1	A description of what a business needs so that it can operate successfully
7. Change Management Plan					■	E.7	A plan which addresses the impact of change to an organization, easing the transition.
8. Data Analytics				■		D.10	A method of Data, Information and Knowledge management which use data aggregation and data mining to provide insight into the past and answer: "What has happened?" This take the form of reports, dashboards, etc.
9. Data Collection and Representation				■		D.10	The result of a process where specific, structured information are gathered in a systematic fashion, subsequently enabling data analysis to be performed on resulting information
10. Data Management Plan				■		D.10	A plan by which the required data is acquired, validated, stored, protected, and processed, and by which its accessibility, reliability, and timeliness is ensured to satisfy the needs of the data users.
11. Data Management System		■		■		B.1, D.10	A system designed to define, manipulate, retrieve and manage data in a database.
12. Data Model				■		D.10	A description of data and relations in terms of dependency, consistency and integrity
13. Data Protection Policy				■	■	D.10, E.8	A set of principles or rules to guide decisions and achieve optimal outcome(s) in Data protection policy
14. Data Selection				■		D.10	The result of the process of determining the appropriate data type and source, as well as suitable instruments to collect data
15. Development Process		■				B.6	A process of dividing software development work into distinct phases to improve design, product management, and project management.
16. Digital Transformation Roadmap					■	E.2	A sophisticated project plan that details durations and dependencies of all the initiatives in the Digital Transformation. The roadmap also provides checkpoints for assessing the progress and success of the Digital Transformation down the road.
59. Solution in Operation			■			C.3	A solution deployed and running in the actual operational environment
60. Solution Requirement	■			■		A.6, D.11	A software requirements specification is a description of a software system to be developed. It lays out functional and non-functional requirements, and may include a set of use cases that describe user interactions that the software must provide.
61. Solution Specification				■		A.6	A set of Documents which define in detail the Solution to be developed
62. Solved Incident			■			C.4	An incident at the stage where a Solution to address the problem has been applied
63. Sprint Planning					■	E.2	A time when the Scrum team gathers to agree on a sprint goal and determine what subset of the product backlog it can deliver during the forthcoming sprint.
64. Sustainable IT Policy	■					A.8	An IT Policy built on the principles of Green IT – reducing the environmental impact of IT products and infrastructure adding aspects of social responsibility such as working environment and socially responsible manufacturing of IT products.
65. Team Backlog	■					A.6	A set of user and enabler Stories that originate from the Program Backlog, as well as stories that arise locally from the team's specific context. It can contain other work items as well, representing all the things a team needs to do to advance their portion of the system
66. Technical Proposal				■		D.5	A document that defines the technical requirements of a project, and explains the plan formulated to address them.
67. Test Plan		■				B.3	A document describing the scope, approach, resources and schedule of intended test activities.
68. Test Procedure		■				B.3	A set of tests which addresses homogeneous/ similar solution areas
69. Test Result		■				B.3	A document which details the results after one of several sessions during Test Phase
70. Training Course				■		D.3-D.9	A component of a Training Program that has specific goals of improving one's capability, capacity, productivity and performance. Suggest replace with as follows as *It may not be part of traing programme., also this revised description 'matches' what we say re training programme deliverable. An event with the aim of the acquisition of knowledge, skills, and competences*
71. Training Policy				■		D.3	A set of principles/rules to guide decisions and achieve optimal outcome(s) in ICT training
72. Training Program				■		D.3	A program for the acquisition of knowledge, skills, and competences (note link to training course..)
73. Up-to-date Solution			■			C.2	An updated Solution during the Maintenance Phase
74. User Engagement Evaluation Tools				■		D.12	A set of appropriate tools and targets for the channels adopted to evaluate levels of customer engagement
75. User Experience Design		■				B.6	A set of product specifications to enhance user satisfaction by improving the usability, accessibility, and pleasure provided in the interaction with the product. User experience design encompasses traditional human–computer interaction design, and extends it by addressing all aspects of a product or service as perceived by users
76. Validated Solution		■				B.3	A solution at the end of Test and Validation Phase

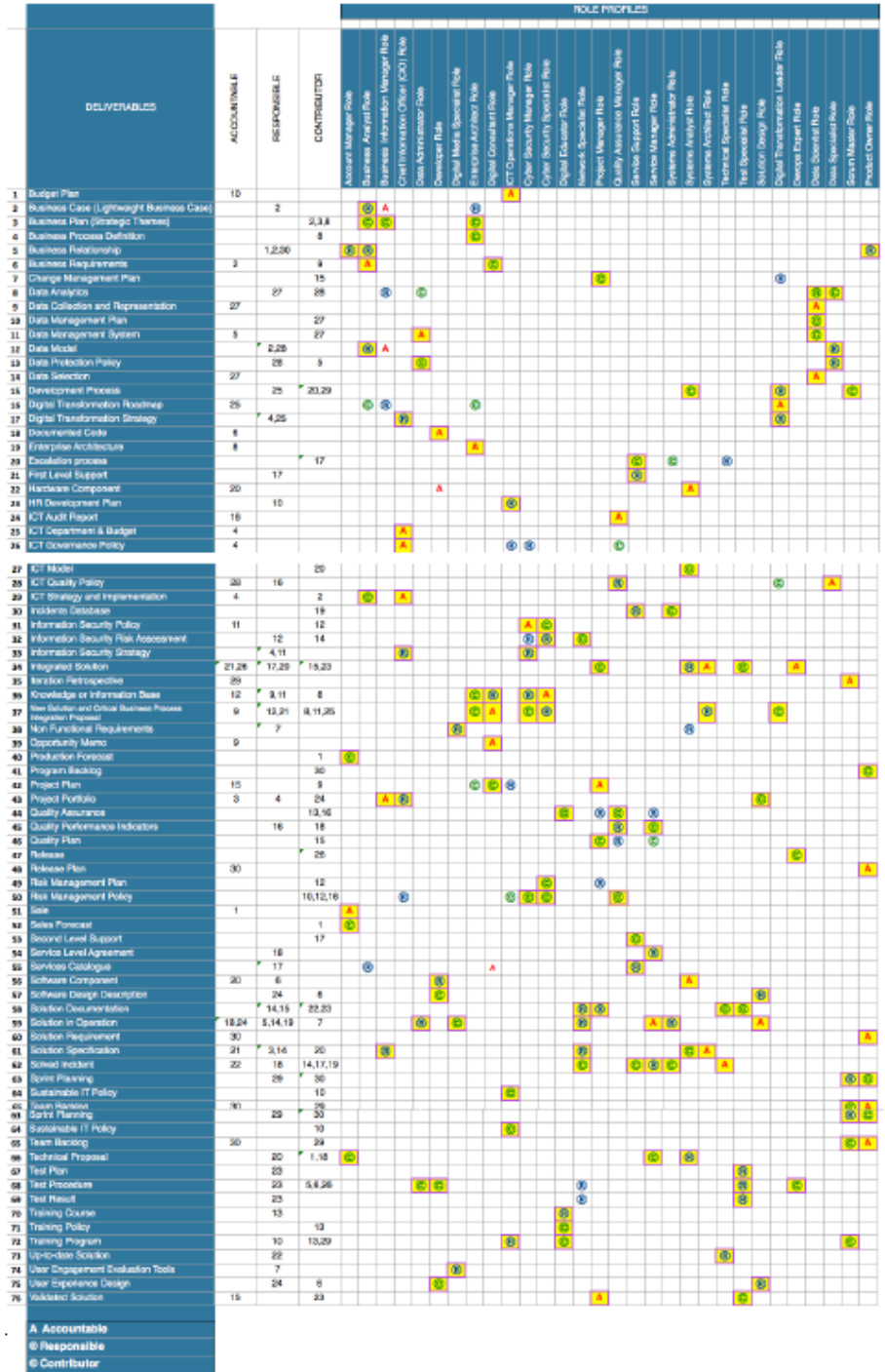
Table B: Deliverables, related e-CF area and e-Competences, deliverable descriptions

MATRIX
E-CF COMPETENCIES - ROLE PROFILES



MATRIX
ICT ROLE PROFILES – DELIVERABLES

Annex B: ICT Profiles – Deliverables Matrix see CWA Part 2 USER GUIDE for more detail.



TEMPLATE USE EXISTING EU PROFILES

PROFILE TITLE ***Reuse or define***	**Gives a commonly used name to a profile.** Before starting check that there is strong distinction between new proposed profile with the 2nd generation profiles. If not use existing title and modify remainder of profile. If significantly different create a new title that does not conflict or completely overlap with existing.
SUMMARY STATEMENT ***Adapt***	**Indicates the main purpose of the profile.** The purpose is to present a brief, concise understanding of the new specified ICT Profile. It should be understandable by ICT professionals, ICT managers, Human Resource personnel and education and training institutions. 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. *Note:* Ensure that the statement discriminates between other profiles.
MISSION ***Adapt***	**Describes the rationale of the profile.** The purpose is to specify the designated job role defined in the ICT Profile. It should provide the performance context of the job within an organisational structure. The following verbs *may be* used within the description or at least for structuring the thinking about how to express the mission: Guarantees, Ensures, Contributes
DELIVERABLES ***Keep or add***	**Illuminates the ICT Profiles and explains relevance including the perspective from a non-ICT point of view.** Also add the dimension of responsible following the RACI model. Select only the most important deliverables*, which help to illustrate the ICT Profile, e.g. not more than 6 in total (A,R,C together, not all three aspects have to be necessarily covered) * see list of deliverables in table X *Note:* A cross check may be useful to ensure deliverables do not overlap. Also it may help to identify the existence of an existing profile that could be used rather than creating a new one.

Accountable (A)	Responsible (R)	Contributor (C)
…	…	…

MAIN TASKS ***Keep or add***	**A list of typical tasks to be performed by the profile.** A task is an action taken to achieve a result within a broadly defined context. Tasks may be associated with deadlines, resources, goals, specifications and/or the expected results; however this depends upon the context of the task and they may be omitted, however the action must always be described. A task is defined by a short description using a verb and the objective or goal of the action. List no more than ten. Each task should contribute in defining a Profile.
e-CF COMPETENCES ***Keep or add***	**A list of necessary competences (from the e-CF) to carry out the mission.** Level assignment is important. Must include 4 to 5 competences. SELECTION CRITERIA: A competence is a consequence of the above-derived Profile definition and helps to separate profiles one from another.
SKILLS/ KNOWLEDGE ***Not part of gen. 2***	**A list of necessary knowledge and skills.** Some examples for inspiration are provided in European e-Competence Framewo Dimension 4.
Key Performance Indicators (KPIs) ***Derive from KPI area***	**Must relate to the key deliverables in order to measure them.** In all 30 ICT Profiles KPI areas are provided, reflecting a long-term point of view of good role performance. The KPI areas give an inspiration to enable development of
	specific KPI's for specific job descriptions. Such KPI measurements can be more short-term oriented. To facilitate KPI definition, see also section 3.3. The meaningful KPI's have to be identified in each context by the following rules: • Use KPI's examples which are strictly connected to the profile domain • Use KPI's examples which are strictly connected to the KPI area • Use KPI's examples which inspire a simple mode to measure them (bad examples: ease in navigation, user satisfaction)
QUALIFICATION/ CERTIFICATIONS ***Not part of gen. 2***	
ATTITUDES (non ICT) ***Not part of gen. 2***	**Up to 5.**
RELATIONSHIPS/ REPORTING LINE ***Not part of gen. 2***	**Reports to… Interacts with…**

Table 4: The European ICT Profile Template supporting context-specific adaptation of the profiles at Generation 3

MAPPING STRUCTURE SFIA AND e-CF

SFIA – e-CF Comparison & Mapping Review, May 2016

SFIA	e-CF		Comment
Category/sub-category	e-CF Area	Dimension 1	A convenience for organising the skills and competencies. SFIA has an 'area of work' view and e-CF has a 'lifecycle view'. Both have more of a business change than an engineering flavour.
Skill	Competence	Dimension 2	The Skills or Competencies in the framework: for example: Project Management (SFIA) & Project Management (e-CF)
Skill Description	(Competence) Description		A description of the Skill (SFIA) or Competency (e-CF) These are generally similar although style varies between the frameworks.
Level	Proficiency Level	Dimension 3	The competence or proficiency scale SFIA: 7 levels. e-CF: 5 levels.
Skill at Level	Proficiency at Level		A description of the Skill (SFIA) or Competency (e-CF) at each Level. Both describe actions performed for the skill or competence at increasing levels of proficiecy or competence.
	Skill Area	Dimension4	These are additional statements of actions for an e-CF Competence. SFIA: These statements are usually included in the Skills Description and/or the Skill at Level. e-CF: Additional skills statements apply to all levels.
	Knowledge Area		SFIA: deliberately does not define knowledge areas for the skills. It does, however, imply knowledge of appropriate technologies and, more specifically, non-technical aspects within the levels. e-CF: identifies a mix of technical and non-technical knowledge.
Generic Responsibility Attributes			SFIA: This is key - a generic description of attributes for any level. e-CF: Not explicitly defined other than in the description of alignment with the EQF but Business Skills and Influence are not explicitly covered and some descriptions span levels.

Mapped Structure of the Frameworks

Use cases
Customising and Mapping e-CF Framework

- Job profiles for information security 2.0, PvIB QIS
- Supplier Management: KPN consulting IT-CMF – e-CF
- Data Science, EU-Edison project, University of Amsterdam
- E-CF© NEXT, profile tool / assessment of EXIN
- Rake-Shape, blockchain f.e. UWV, LRWA

USE CASE SECURITY
role profiles - e-CF competencies

QIS

PvIB
Platform voor InformatieBeveiliging

Job profiles for information security 2.0

A basis for uniform qualification of information security professionals

Picture by suphakit73 / FreeDigitalPhotos.net

ICT Security Manager

Profile title	ICT SECURITY MANAGER		
Summary statement	Defines the organisation's ICT security policies in line with the organisation's information security strategy and architecture and organises and manages the organisation's ICT security.		
Mission	Defines the ICT security policies anticipating the ICT security threat landscape, trends, the organisation's ICT and future needs. Sets up the ICT security organisation and determines and assigns necessary resources. Manages ICT security deployment across all ICT systems. Ensures an appropriate level of ICT security based on the organisation's needs and risk appetite.		
Deliverables	Accountable	Responsible	Contributor
	• ICT security policies and its implementation • ICT security organisation and expertise • ICT security projects • ICT security assessments, tests, reviews and audits	• ICT security project portfolio • ICT security procedures • Risk analyses for ICT • Monitoring and reporting on ICT risks • ICT continuity plan and testing • ICT security training policy	• Risk management policy • Information security strategy • Information security architecture • Service Level Agreements • Information security implementation • New technology • integration proposals
Main tasks	• Define the organisation's ICT security policies in line with the organisation's information security strategy and architecture • Organise ICT security and the necessary expertise • Manage the implementation of the organisation's ICT security policies • Provide an ICT security project portfolio • Define ICT security training policy • Define and implement procedures linked to ICT security • Perform risk analyses for ICT • Monitor and report on ICT risks • Establish the ICT continuity plan and ensure regular testing • Initiate and supervise ICT security projects • Ensure the quality of ICT security assessments, tests, reviews and audits • Watch technology trends with respect to ICT security • Inform (C)ISO and senior general management about ICT security status and incidents and present improvement proposals		
e-Competences (from e-CF)	A.7. Technology Trend Monitoring		Level 2
	E.3. Risk Management		Level 2
	E.8. Information Security Management		Level 3
General competences	G.2. Project management		Level 3
	G.3. Communication and persuasion		Level 3
	G.6. Management		Level 3
	G.7. Analytical skills		Level 2
	G.8. Integrity		Level 3
Education and experience	• A completed relevant Bachelor study[21] or equivalent level of knowledge and skills • Three years' work experience in an ICT security position • Three years' work experience in a management position		
KPI	An appropriate level of ICT security based on organisation's needs and risk appetite.		

USE CASE IT-CMF - KPN
e-CF competencies – skills and knowledge

SUM

Supplier Management

Goal: Manage interactions between the IT function and its suppliers

Core statement: Innovatie via de supply chain

People
- A2 Service Level Management
- D8 Contract Management
- D4 Purchasing
- E4 Relationship Management

Proces
- ITIL Supplier Management
- Procurement (order & fulfillment)
- Contract Management
- Risk management
- Supplier development (practices)

Technology
<relevante tooling die van toepassing is>
- Service Management tooling bijv. ServiceNow
- …

Koppeling/ vergelijking tussen IT-CMF capability level en eCF proficiency level:
- Level 1 en 2 bij prof. level 3
- Level 3 en hoger bij prof. level 4

Beschrijving groei in levels: (knowledge en skills)
Basis: A2: K1, D8: K1
2 -> 3: A2: K 2 + S1 + S2 D4: K5, D8: K1
3 -> 4: A2 K5 + S5, E4: S3
4 -> 5:

Artefacts:
- **Supplier engagement model…**
- **Supplier relationship mgt systems**
- **SLA/OLA/UC (XLA)**

POM's (doel)
L2: contact, escalaties en frequentie meetings vaststellen, process vaststellen, performance review meeting met suppliers, training na major incidenten, contingency plan alt. suppliers
L3: Assign relationship mgr. benchmark contracten, performance tracking, joint product development
L4: uitnodigen leveranciers in str. + oper. Meetings, OLA's voor de supply chain, geharmoniseerde supplier mgt practices, richtlijnen voor wederzijdse relaties, relationships mgt feedback
L5: review supplier op switching flexibility en redundancy, benchmark relationship mgt. practices. Implement strat. Ontwikkelings programma

Supporting capabilities
- Innovation Management (IM)
- Sourcing (SRC)
- Relationship Management (REM)
- Service Provisioning (SRP)

N.b. Uitgangspunt van de beschrijving van levels e.d. is de IT-CMF capability

USE CASE DATA SCIENCE
role profiles

6.2 Example DSPP profiles in CWA 16458 (2012) format

Profile title	DATA SCIENTIST (DSPP04)		
Summary statement	Use data analytics to deliver data insight, optimise analytics process, present and visualise data		
Mission	Data scientists find and interpret rich data sources, manage large amounts of data, merge data sources, ensure consistency of data-sets, and create visualisations to aid in understanding data. Build mathematical models, present and communicate data insights and findings to specialists and scientists, and recommend ways to apply the data. Develop compelling visualisation applications, interactive dashboards.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Data collection and preparation • Data selection	• Data analytics applications • Data Analysis to support decision making	• Data Management • Data storage and processing infrastructure and tools
Main task/s	• Develop data analytics applications using Machine Learning technology, algorithms, tools (including supervised, unsupervised, or reinforced learning) • Apply Prescriptive Analytics methods to initial data insight and organisational workflow optimisation • Develop effective pipeline for data preparation and preprocessing • Define the whole data analysis workflow to support decision making • Identify, investigate and correct problems or inconsistencies related to data analysis • Develop effective visualiation and storytelling tools, create dashboards and data analytics reporting applications		
Competences *(from CF-DS)*	SDSDA01 Use Machine Learning technology, algorithms, tools (including supervised, unsupervised, or reinforced learning)		Level 3
	SDSDA05 Apply Prescriptive Analytics methods		Level 3
	SDSDA08 Apply analytics and statistics methods for data preparation and pre-processing		Level 2
	SDSDA10 Use effective visualiation and storytelling methods to create dashboards and data analytics reports		Level 2
	SDSRM01 Use research methods principles in developing data driven applications and implementing the whole cycle of data handling		Level 3
KPI area	Effective data analytics applications (measurable performance) Contribution to the organisational goals fulfilment, or scientific discovery by providing actionable data insight		

USE CASE assessment

EXIN e-CF© NEXT

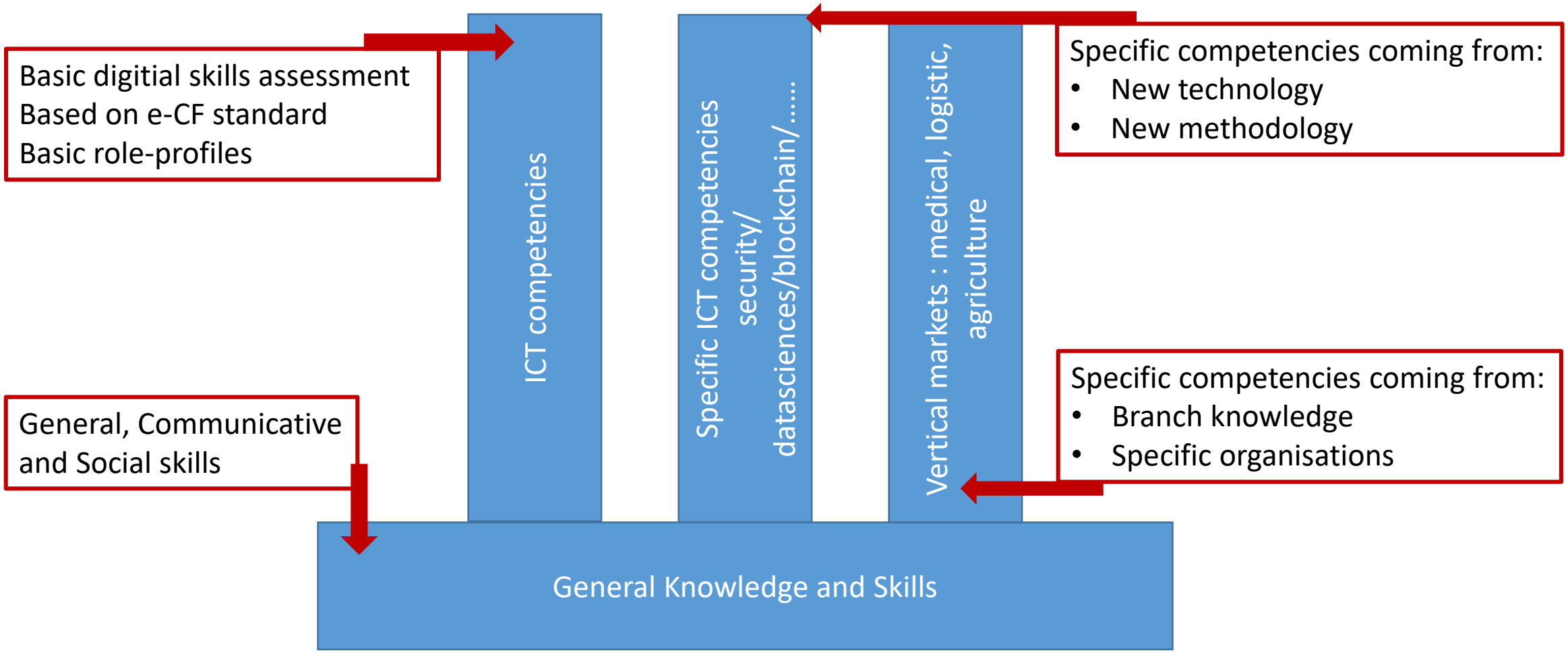
Area		Competence Name	e-1	e-2	e-3	e-4	e-5
A. Plan	A.1.	Information System and Business Strategy Alignment					
	A.2.	Service Level Management				80%	
	A.3.	Business Plan Development			85%		80%
	A.4.	Product / Service Planning			40%	75%	
	A.5.	Architecture Design					
	A.6.	Application Design					
	A.7.	Technology Trend Monitoring				75%	
	A.8.	Sustainable Development					
	A.9.	Innovating				45%	
B. Build	B.1.	Application Development					
	B.2.	Component Integration					
	B.3.	Testing					
	B.4.	Solution Deployment			30%		
	B.5.	Documentation Production	80%		55%		
	B.6.	Systems Engineering					
C. Run	C.1.	User Support	40%	70%			
	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					50%
	D.3.	Education and Training Provision		80%			
	D.4.	Purchasing		70%			
	D.5.	Sales Proposal Development		75%	100%		
	D.6.	Channel Management				75%	
	D.7.	Sales Management			75%	50%	80%
	D.8.	Contract Management		80%		75%	
	D.9.	Personnel Development		75%	80%	80%	
	D.10.	Information and Knowledge Management			80%	80%	80%
	D.11.	Needs Identification			75%	75%	75%
	D.12.	Digital Marketing		75%			
E. Manage	E.1.	Forecast Development			55%	90%	
	E.2.	Project and Portfolio Management		80%		50%	30%
	E.3.	Risk Management		40%			
	E.4.	Relationship Management			75%	75%	
	E.5.	Process Improvement			55%	60%	
	E.6.	ICT Quality Management		55%			
	E.7.	Business Change Management			45%		80%
	E.8.	Information Security Management				70%	
	E.9.	IS Governance					

Percentages below 30% are not shown, because competence levels with low mastery cannot be calculated precise enough.

- General mastery (70-100%)
- Partial mastery (30-69%)
- Unmeasurable (<30%)

USE CASE LRWA
e-CF competencies – change/innovative teams

RAKE-SHAPE in the DIGITAL WORLD



LRWA

Questions

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Customising and Mapping Frameworks

LIESBETH RUOFF - VAN WELZEN

- *CHAIR SIG DIGITAL SKILLS KNVI*
- *MEMBER OF CEN COMMISSION TC428*

AVAILABLE BUILDING BLOCKS

DESCRIPTION OF A COMPETENCE

PROFILE DESCRIPTION

DELIVRABLES AND DESCRIPTION LIST

MATRIX OF COMPETENCE AND ROLE PROFILE

EUROPEAN ICT PROFILE FAMILY TREE

MATRIX OF DELIVRABLES AND ICT PROFILES

MAPPING STRUCTURE SFIA AND E-CF

ICT PROFILE TEMPLATE

ICT PROFESSIONAL ROLE PROFILES-ESCO RELATIONSHIP

ADAPTATION TEMPLATE OF EXISTING PROFILES

ICT PROFILE TEMPLATE

Question	Template Descriptor	ICT Professional Role Profile Example
What is the role about?	***Title*** Formed of a few words, the title offers a common name for the role	**DEVELOPER ROLE**
What is done in this role?	***Summary statement*** Formed of a single sentence, this summary presents a brief, concise description of the role.	Designs and/ or codes components to meet solution specifications.
Why is this role needed?	***Mission*** Within a maximum of three sentences this element describes the rational and context of the role within the organisation.	Ensures building and implementing of ICT applications. Contributes to low-level design. Writes code to ensure optimum efficiency and functionality and user experience.
What will it achieve?	***Deliverables*** Sub-divided into accountable (A), responsible (R) and contributor (C) and using a maximum of six deliverables they illustrate the responsibilities associated with the role	Accountable: • Documented code Responsible: Software component Contributor: • Software Design Description • Test Procedure • User Experience Design
What is done in more detail?	***Main task/s*** Using between six and eight activities the tasks offer an understanding of the actions taken and the end results required of the role.	• Develop and engineer components • Follow user experience guidelines • Aware of and address known security vulnerabilities, applying security by design • Shape documentation • Provide advanced, component technical support • Resolve issues prior to and following testing
What competences are required?	***e-competences*** Between 4 and 5 competences each defined by a proficiency level provide the overview of the skills, knowledge and attitudes required of the role.	B.1. Application Development: Level 3 B.2. Component Integration: Level 2 B.3. Testing: Level 2 B.5. Documentation Production: Level 3 C.4. Problem Management: Level 3
Why does this role matter?	***KPI (Key Performance Indicator) area*** Constructed of a simple statement the KPI area is a general, high level, guideline that highlights the contribution of the role to the organisations performance.	Fully functional components

Table 3: The European ICT Profiles template: Questions, template descriptors, ICT Profile example

e-CF COMPETENCE DESCRIPTION AND FORMAT

Dimension 1 e-Comp. area	A. PLAN				
Dimension 2 e-Competence: Title + generic description	**A.2. Service Level Management** Defines, validates and makes applicable service level agreements (SLAs) and underpinning contracts for services offered. Negotiates service performance levels taking into account the needs and capacity of stakeholders and business.				
Dimension 3 e-Competence proficiency levels e-1 to e-5, related to EQF levels 3 to 8	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Level 5**
	–	–	Ensures the content of the SLA.	Negotiates revision of SLAs, in accordance with the overall objectives. Ensures the achievement of planned results.	–
Dimension 4 Knowledge examples *Knows/aware of/ familiar with*	K1 SLA documentation K2 how to compare and interpret management data K3 the elements forming the metrics of service level agreements K4 how service delivery infrastructures work K5 impact of service level non-compliance on business performance K6 ICT security standards K7 ICT quality standards				
Skills examples *Is able to*	S1 analyse service provision records S2 evaluate service provision against SLA S3 negotiate realistic service level targets S4 use relevant quality management techniques S5 anticipate and mitigate against potential service disruptions				

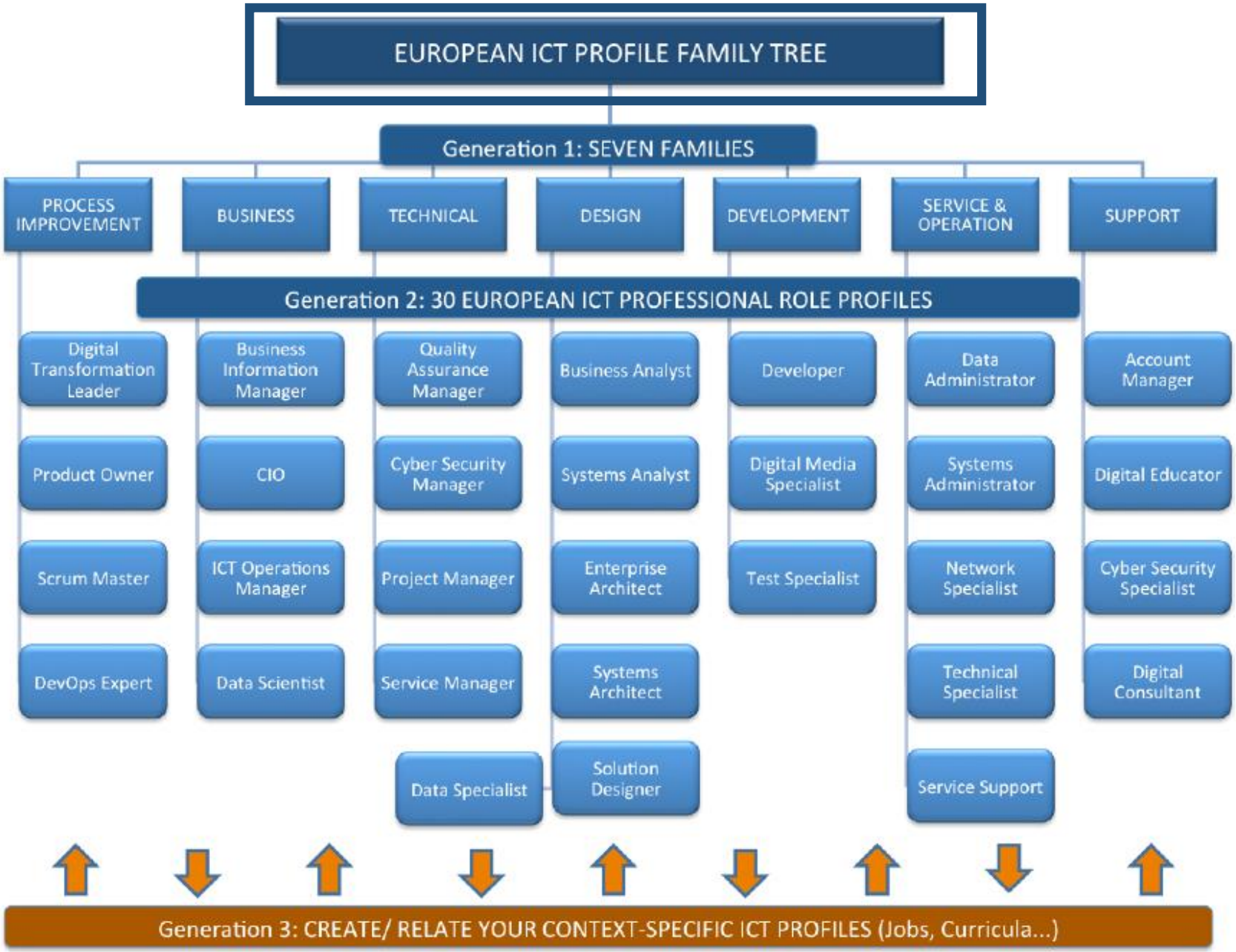


Figure 4: 30 European ICT Professional Role Profiles (generation 2) in seven families (generation 1) at the top of the European ICT Profile Family Tree

EU ICT PROFESSIONAL ROLE PROFILES - ESCO RELATIONSHIP

ANNEX C: European ICT Professional Role Profiles – ESCO relationships

Important note: The relationship between the two columns does not represent an equivalence it offers a best fit approximation that readers may wish to investigate.

ESCO Occupation Title (from ICT occupations list)	EU ICT Professional Role Profile Title	Comment
database administrator	Data Administrator Role	
ICT system administrator	Systems Administrator Role	
ICT network administrator	Network Specialist Role	
IT auditor	Quality Assurance Manager Role	
telecommunications engineering technician	Network Specialist Role	
webmaster	Digital Media Specialst Role	
ethical hacker	Data Specialist Role	
digital forensics expert	Data Scientist Role	
ICT security technician	Cyber Security Specialist Role	
data centre operator	Systems Administrator Role	
ICT security administrator	Cyber Security Specialist Role	
search engine optimisation expert	Digital Media Specialst Role	
online community manager	Digital Media Specialst Role	
ICT trainer	Digital Educator Role	
ICT consultant	Digital Consultant Role	
ICT system integration consultant	Systems Architect Role	
green ICT consultant	Digital Consultant Role	
ICT security consultant	Cyber Security Specialist Role	
ICT technician	Technical Specialist Role	
ICT help desk agent	Service Support Role	
broadcast technician	Technical Sepecialist Role	
ICT network technician	Network Specialist Role	
mobile devices technician	Technical Specialist Role	
communication infrastructure maintainer	Network Specialist Role	
telecommunications technician	Network Specialist Role	
big data archive librarian	Data Specialist Role	
telecommunications equipment maintainer	Technical Specialist Role	
radio technician	Technical Specialist Role	
ICT presales engineer	Account Manager	
ICT buyer	Service Manager Role	
software manager	ICT Operations Manager Role	
ICT research manager	Digital Consultant Role	
ICT operations manager	ICT Operations Manager Role	
ICT help desk manager	Service Manager Role	
telecommunications manager	Service Manager Role	
e-learning architect	Systems Architect Role	
ICT resilience manager	Cyber Security Specialist Role	
ICT project manager	Project Manager Role	
web content manager	Digital Media Specialist Role	
ICT environmental manager	ICT Operations Manager Role	
ICT quality assurance manager	Quality Assurance Manager Role	
ICT auditor manager	Quality Assurance Manager Role	
ICT security manager	Cyber Security Manager Role	
ICT documentation manager	Quality Assurance Manager Role	

EU ICT PROFESSIONAL ROLE PROFILE TEMPLATE

Profile title	SERVICE MANAGER ROLE (18)		
Summary statement	Plans, implements and manages solution provision.		
Mission	Manages the definition of Service Level Agreements (SLAs), Operational Level Agreements (OLAs) contracts and Key Performance Indicators (KPIs). Provides people management of staff monitoring, reporting and fulfilling service activities. Takes mitigation action in case of non-fulfilment of agreements.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Solution in Operation	• Service Level Agreement • Solved incident • Service Catalogue	• Quality Performance Indicators • Technical Proposal
Main task/s	• Define Service requirements • Negotiate SLA / OLA • Manage solution operation • Provide service delivery • Maintain and contribute to the creation of the department budget • Staff development		
e-Competences *(from e-CF)*	A.2. Service Level Management		Level 4
	C.3. Service Delivery		Level 3
	C.4. Problem Management		Level 4
	D.8. Contract Management		Level 3
	D.9. Personnel Development		Level 3
KPI area	Fulfilment of Service Levels		

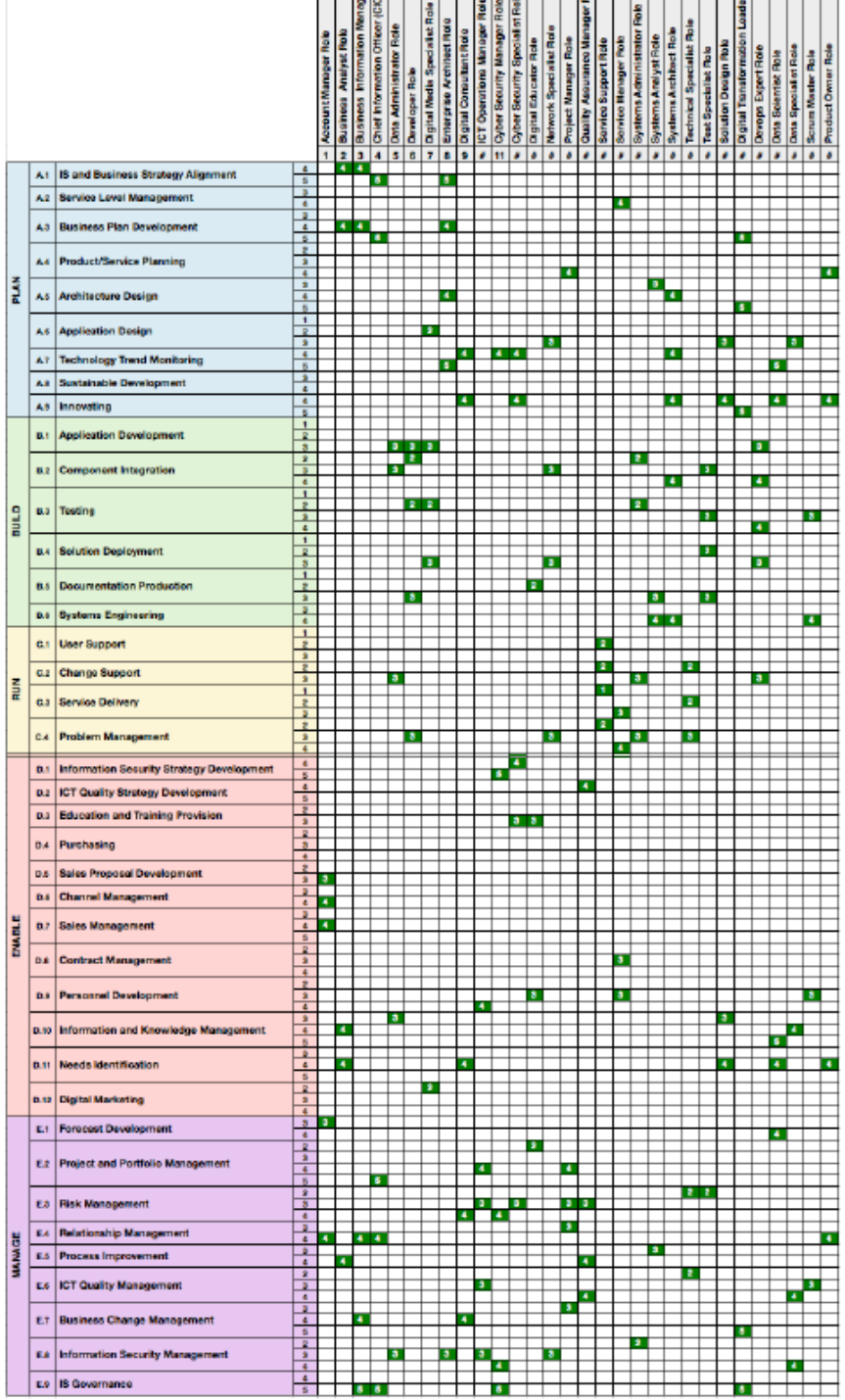
EU LIST OF DELIVERABLES

ANNEX B: Deliverables and descriptions full list

DELIVERABLES	PLAN	BUILD	RUN	ENABLE	MANGE	e-COMPETENCES	DELIVERABLE DESCRIPTION
1. Budget Plan	■					A.4	A description of the amount of money spent on an organization's Information Technology systems and services, including compensation for IT professionals and expenses related to the construction and maintenance of enterprise-wide systems and services.
2. Business Case (Lightweight Business Case)	■					A.3	An explanation of why the investment should be made and how the business will see a return on that investment (ROI) at some point in the future. A well-considered business case provides decision makers with the information they need to decide if the investment should proceed.
3. Business Plan (Strategic Themes)	■					A.3	A formal statement of a set of business goals, why they are attainable, and the plan for reaching them.SAFe strategic themes provide business context for decision-making within the portfolio and influence investments in Value Stream. Strategic Themes provide the enterprise with the differentiators going forward from current state to future state; they help drive innovation and competitive differentiation that is achievable only via effective portfolio solutions.
4. Business Process Definition					■	E.5,E.7	A formal definition and description of related, structured activities that will accomplish a specific organizational goal
5. Business Relationship				■		D.11, E.4	A relationship established to provide business services
6. Business Requirements	■					A.1	A description of what a business needs so that it can operate successfully
7. Change Management Plan					■	E.7	A plan which addresses the impact of change to an organization, easing the transition.
8. Data Analytics				■		D.10	A method of Data, Information and Knowledge management which use data aggregation and data mining to provide insight into the past and answer: "What has happened?" This take the form of reports, dashboards, etc.
9. Data Collection and Representation				■		D.10	The result of a process where specific, structured information are gathered in a systematic fashion, subsequently enabling data analysis to be performed on resulting information
10. Data Management Plan				■		D.10	A plan by which the required data is acquired, validated, stored, protected, and processed, and by which its accessibility, reliability, and timeliness is ensured to satisfy the needs of the data users.
11. Data Management System		■		■		B.1, D.10	A system designed to define, manipulate, retrieve and manage data in a database.
12. Data Model				■		D.10	A description of data and relations in terms of dependency, consistency and integrity
13. Data Protection Policy				■	■	D.10, E.8	A set of principles or rules to guide decisions and achieve optimal outcome(s) in Data protection policy
14. Data Selection				■		D.10	The result of the process of determining the appropriate data type and source, as well as suitable instruments to collect data
15. Development Process		■				B.6	A process of dividing software development work into distinct phases to improve design, product management, and project management.
16. Digital Transformation Roadmap					■	E.2	A sophisticated project plan that details durations and dependencies of all the initiatives in the Digital Transformation. The roadmap also provides checkpoints for assessing the progress and success of the Digital Transformation down the road.
59. Solution in Operation				■		C.3	A solution deployed and running in the actual operational environment
60. Solution Requirement	■			■		A.6, D.11	A software requirements specification is a description of a software system to be developed. It lays out functional and non-functional requirements, and may include a set of use cases that describe user interactions that the software must provide.
61. Solution Specification				■		A.6	A set of Documents which define in detail the Solution to be developed
62. Solved Incident				■		C.4	An incident at the stage where a Solution to address the problem has been applied
63. Sprint Planning					■	E.2	A time when the Scrum team gathers to agree on a sprint goal and determine what subset of the product backlog it can deliver during the forthcoming sprint.
64. Sustainable IT Policy	■					A.8	An IT Policy built on the principles of Green IT – reducing the environmental impact of IT products and infrastructure adding aspects of social responsibility such as working environment and socially responsible manufacturing of IT products.
65. Team Backlog	■					A.6	A set of user and enabler Stories that originate from the Program Backlog, as well as stories that arise locally from the team's specific context. It can contain other work items as well, representing all the things a team needs to do to advance their portion of the system
66. Technical Proposal				■		D.5	A document that defines the technical requirements of a project, and explains the plan formulated to address them.
67. Test Plan		■				B.3	A document describing the scope, approach, resources and schedule of intended test activities.
68. Test Procedure		■				B.3	A set of tests which addresses homogeneous/ similar solution areas
69. Test Result		■				B.3	A document which details the results after one of several sessions during Test Phase
70. Training Course				■		D.3-D.9	A component of a Training Program that has specific goals of improving one's capability, capacity, productivity and performance. Suggest replace with as follows as *It may not be part of traing programme., also this revised description 'matches' what we say re training programme deliverable. An event with the aim of the acquisition of knowledge, skills, and competences*
71. Training Policy				■		D.3	A set of principles/rules to guide decisions and achieve optimal outcome(s) in ICT training
72. Training Program				■		D.3	A program for the acquisition of knowledge, skills, and competences (note link to training course..)
73. Up-to-date Solution				■		C.2	An updated Solution during the Maintenance Phase
74. User Engagement Evaluation Tools				■		D.12	A set of appropriate tools and targets for the channels adopted to evaluate levels of customer engagement
75. User Experience Design		■				B.6	A set of product specifications to enhance user satisfaction by improving the usability, accessibility, and pleasure provided in the interaction with the product. User experience design encompasses traditional human–computer interaction design, and extends it by addressing all aspects of a product or service as perceived by users
76. Validated Solution		■				B.3	A solution at the end of Test and Validation Phase

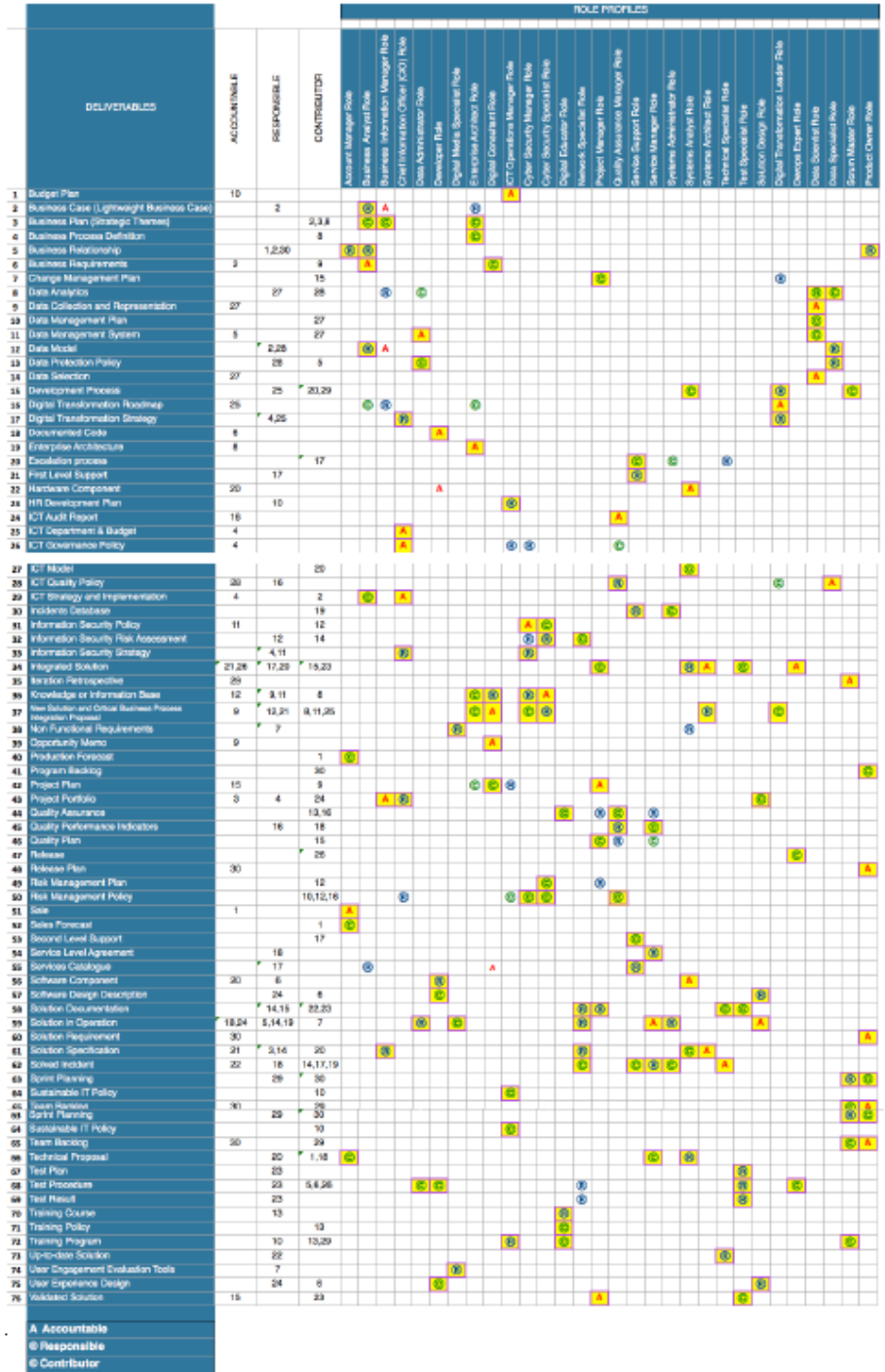
Table B: Deliverables, related e-CF area and e-Competences, deliverable descriptions

MATRIX
E-CF COMPETENCIES - ROLE PROFILES



MATRIX
ICT ROLE PROFILES – DELIVERABLES

Annex B: ICT Profiles – Deliverables Matrix see CWA Part 2 USER GUIDE for more detail.



USAGE OF EXISTING EU PROFILES

PROFILE TITLE ***Reuse or define***	**Gives a commonly used name to a profile.** Before starting check that there is strong distinction between new proposed profile with the 2nd generation profiles. If not use existing title and modify remainder of profile. If significantly different create a new title that does not conflict or completely overlap with existing.
SUMMARY STATEMENT ***Adapt***	**Indicates the main purpose of the profile.** The purpose is to present a brief, concise understanding of the new specified ICT Profile. It should be understandable by ICT professionals, ICT managers, Human Resource personnel and education and training institutions. 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. *Note:* Ensure that the statement discriminates between other profiles.
MISSION ***Adapt***	**Describes the rationale of the profile.** The purpose is to specify the designated job role defined in the ICT Profile. It should provide the performance context of the job within an organisational structure. The following verbs *may be* used within the description or at least for structuring the thinking about how to express the mission: Guarantees, Ensures, Contributes
DELIVERABLES ***Keep or add***	**Illuminates the ICT Profiles and explains relevance including the perspective from a non-ICT point of view.** Also add the dimension of responsible following the RACI model. Select only the most important deliverables*, which help to illustrate the ICT Profile, e.g. not more than 6 in total (A,R,C together, not all three aspects have to be necessarily covered) * see list of deliverables in table X *Note:* A cross check may be useful to ensure deliverables do not overlap. Also it may help to identify the existence of an existing profile that could be used rather than creating a new one.

Accountable (A)	Responsible (R)	Contributor (C)
…	…	…

MAIN TASKS ***Keep or add***	**A list of typical tasks to be performed by the profile.** A task is an action taken to achieve a result within a broadly defined context. Tasks may be associated with deadlines, resources, goals, specifications and/or the expected results; however this depends upon the context of the task and they may be omitted, however the action must always be described. A task is defined by a short description using a verb and the objective or goal of the action. List no more than ten. Each task should contribute in defining a Profile.
e-CF COMPETENCES ***Keep or add***	**A list of necessary competences (from the e-CF) to carry out the mission.** Level assignment is important. Must include 4 to 5 competences. SELECTION CRITERIA: A competence is a consequence of the above-derived Profile definition and helps to separate profiles one from another.
SKILLS/ KNOWLEDGE ***Not part of gen. 2***	**A list of necessary knowledge and skills.** Some examples for inspiration are provided in European e-Competence Framewo Dimension 4.
Key Performance Indicators (KPIs) ***Derive from KPI area***	**Must relate to the key deliverables in order to measure them.** In all 30 ICT Profiles KPI areas are provided, reflecting a long-term point of view of good role performance. The KPI areas give an inspiration to enable development of
	specific KPI's for specific job descriptions. Such KPI measurements can be more short-term oriented. To facilitate KPI definition, see also section 3.3. The meaningful KPI's have to be identified in each context by the following rules: • Use KPI's examples which are strictly connected to the profile domain • Use KPI's examples which are strictly connected to the KPI area • Use KPI's examples which inspire a simple mode to measure them (bad examples: ease in navigation, user satisfaction)
QUALIFICATION/ CERTIFICATIONS ***Not part of gen. 2***	
ATTITUDES (non ICT) ***Not part of gen. 2***	**Up to 5.**
RELATIONSHIPS/ REPORTING LINE ***Not part of gen. 2***	**Reports to… Interacts with…**

Table 4: The European ICT Profile Template supporting context-specific adaptation of the profiles at Generation 3

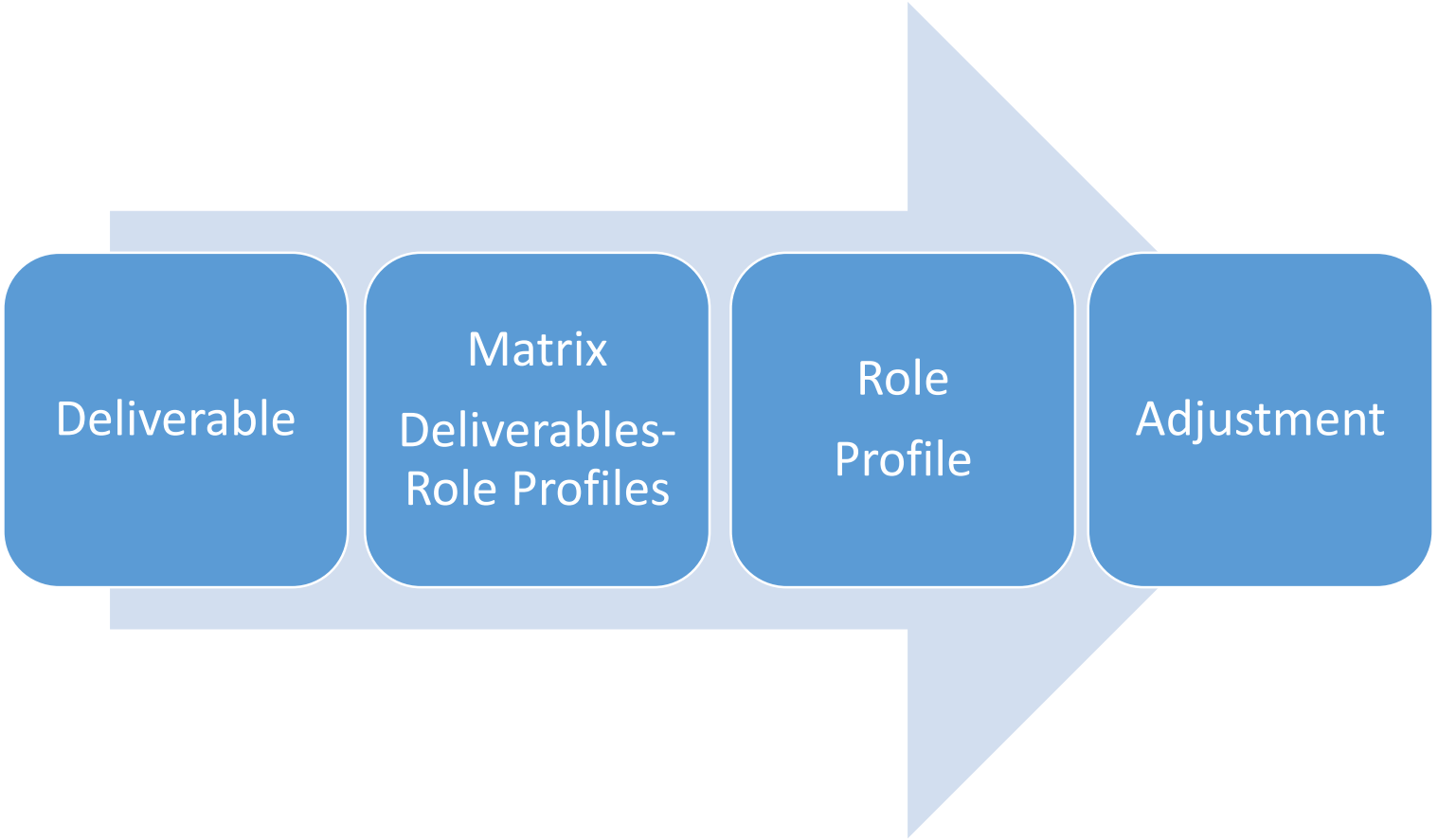
MAPPING STRUCTURE SFIA AND e-CF

SFIA – e-CF Comparison & Mapping Review, May 2016

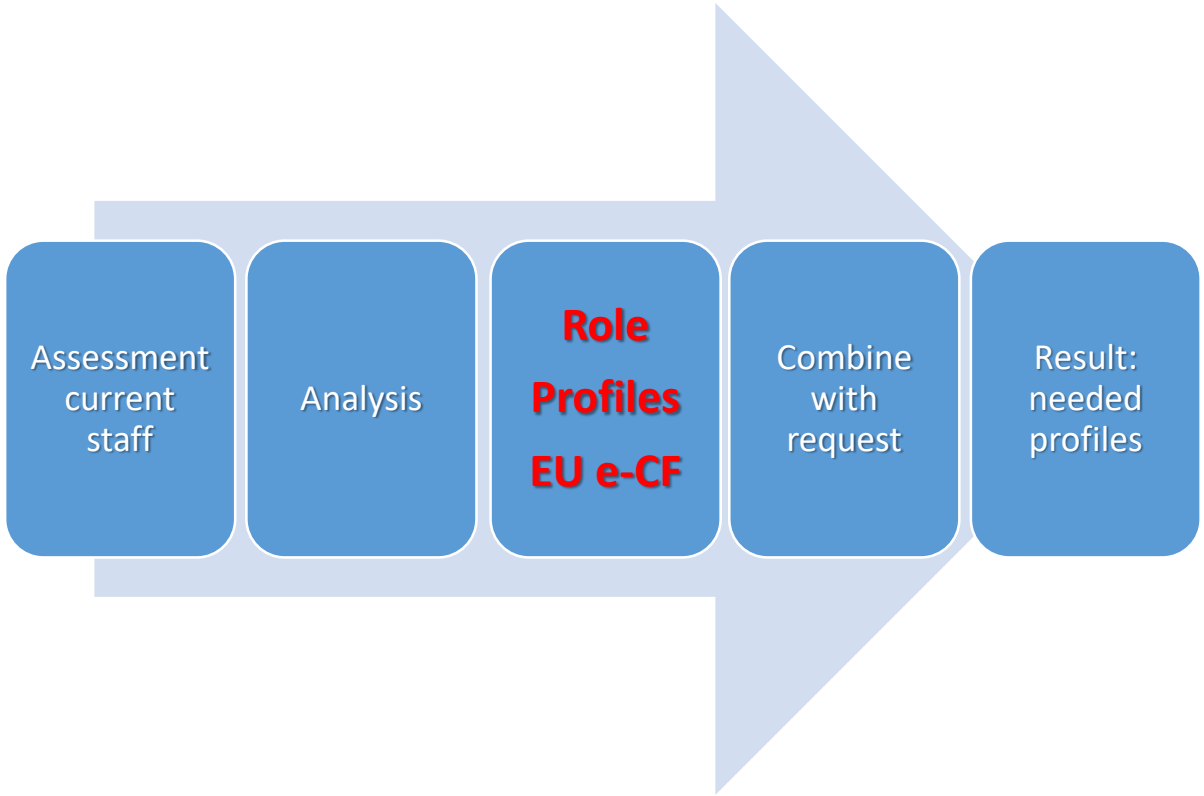
SFIA	e-CF		Comment
Category/sub-category	e-CF Area	Dimension 1	A convenience for organising the skills and competencies. SFIA has an 'area of work' view and e-CF has a 'lifecycle view'. Both have more of a business change than an engineering flavour.
Skill	Competence	Dimension 2	The Skills or Competencies in the framework: for example: Project Management (SFIA) & Project Management (e-CF)
Skill Description	(Competence) Description		A description of the Skill (SFIA) or Competency (e-CF) These are generally similar although style varies between the frameworks.
Level	Proficiency Level	Dimension 3	The competence or proficiency scale SFIA: 7 levels. e-CF: 5 levels.
Skill at Level	Proficiency at Level		A description of the Skill (SFIA) or Competency (e-CF) at each Level. Both describe actions performed for the skill or competence at increasing levels of proficiecy or competence.
	Skill Area	Dimension4	These are additional statements of actions for an e-CF Competence. SFIA: These statements are usually included in the Skills Description and/or the Skill at Level. e-CF: Additional skills statements apply to all levels.
	Knowledge Area		SFIA: deliberately does not define knowledge areas for the skills. It does, however, imply knowledge of appropriate technologies and, more specifically, non-technical aspects within the levels. e-CF: identifies a mix of technical and non-technical knowledge.
Generic Responsibility Attributes			SFIA: This is key - a generic description of attributes for any level. e-CF: Not explicitly defined other than in the description of alignment with the EQF but Business Skills and Influence are not explicitly covered and some descriptions span levels.

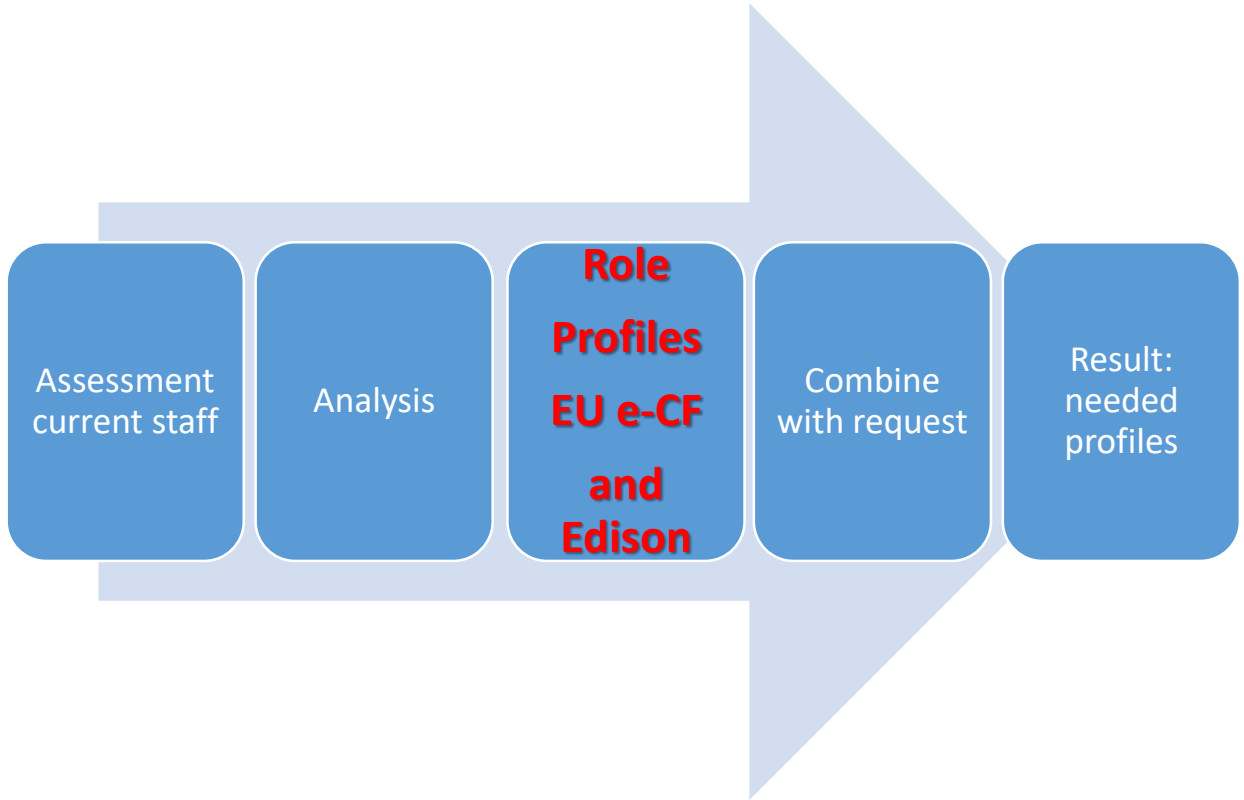
Mapped Structure of the Frameworks

STARTING POINT: WE NEED A ……..?
WHAT DOES THIS ROLE HAVE TO ACHIEVE



STARTING POINT:
WE NEED DATASCIENCE PEOPLE:





Questions

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