

# THE EUROPEAN STANDARD: E-CF

## *CUSTOMISING AND MAPPING OPPORTUNITIES*

*December 4th 2018*

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# AGENDA

- E-CF current status
- E-CF building blocks
- E-CF use cases
- How to

# e-CF: CURRENT SITUATION

## 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"<sup>3</sup>, "A Digital single market strategy for Europe"<sup>4</sup> and "e-Skills for the 21st Century: Fostering Competitiveness, Growth and Jobs"<sup>5</sup>, 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.



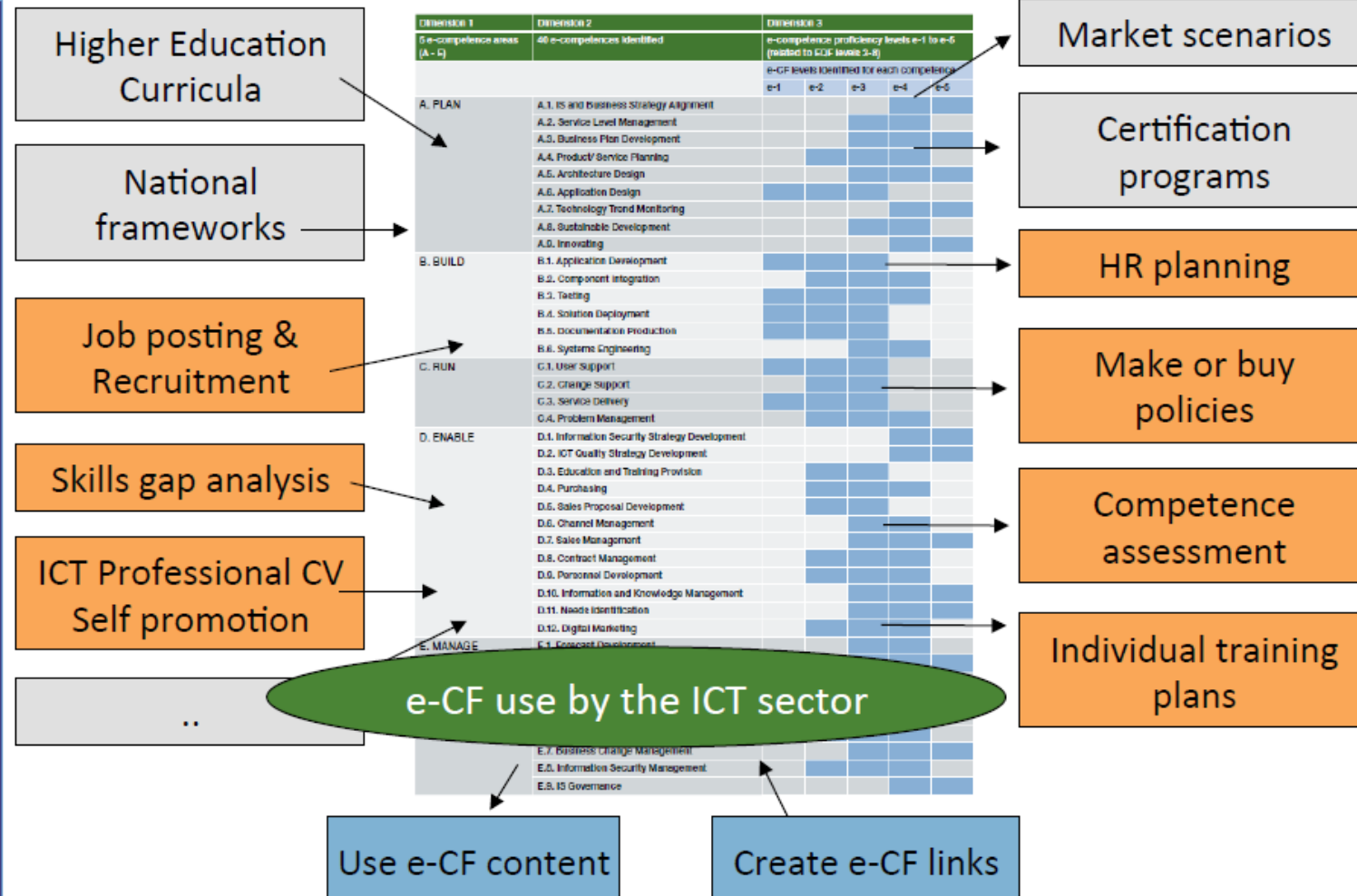
Figure 10: The four main building blocks of ICT Professionalism

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					



# A shared European language to close the e-Skills gap

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



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

**E-CF  
2019**



# Feedback processed and evaluated → e-CF updating highlights

TRENDS IDENTIFIED FROM SURVEY		Dimension 1 6 e-competence areas (A - G)	Dimension 2 40 e-competences identified
HIGH PRIORITY	Big data	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. Innovation
	Business Intelligence		
	Machine Learning (ML)		
	AI (Artificial Intelligence)		
	Ethical issues with data driven economics		
	Mobile	B. BUILD	B.1. Application Development B.2. Component Integration B.3. Testing B.4. Solution Deployment B.5. Documentation Production
	Cloud		
	IoT Internet of Things: software & hardware development		
	IoT Internet of Things: worldwide networking and interconnection		
	Blockchain		
	Social Engineering (addressed in ISC2 and however an attitude)	C. RUN	C.1. Systems Engineering C.2. User Support C.3. Incident Response C.4. Service Recovery C.5. Incident Management
	Digital Transformation		
		D. ENABLE	D.1. Strategy Development D.2. Development D.3. Innovation D.4. Division D.5. Innovation
LOW PRIORITY	3dPrinting and 3D Design		
	Game development better Gamification		

**update existing competences in dimensions 2, 3 and 4**

- keep them relevant in language
- update where meaningful also in content

**+ 3 new competences**

- User Experience
- Systems Management
- Data Analysis and Science

**- existing 3 Sales competences merged to 1**

**+ NEW: TRANSVERSAL ASPECTS**

*to know/ to be proactively aware of*

Security, Quality, Accessibility, Privacy,  
Usability, Sustainability, Ethics, ICT legal issues

# AGENDA

- E-CF current status
- E-CF building blocks
- E-CF use cases
- How to

# e-CF 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

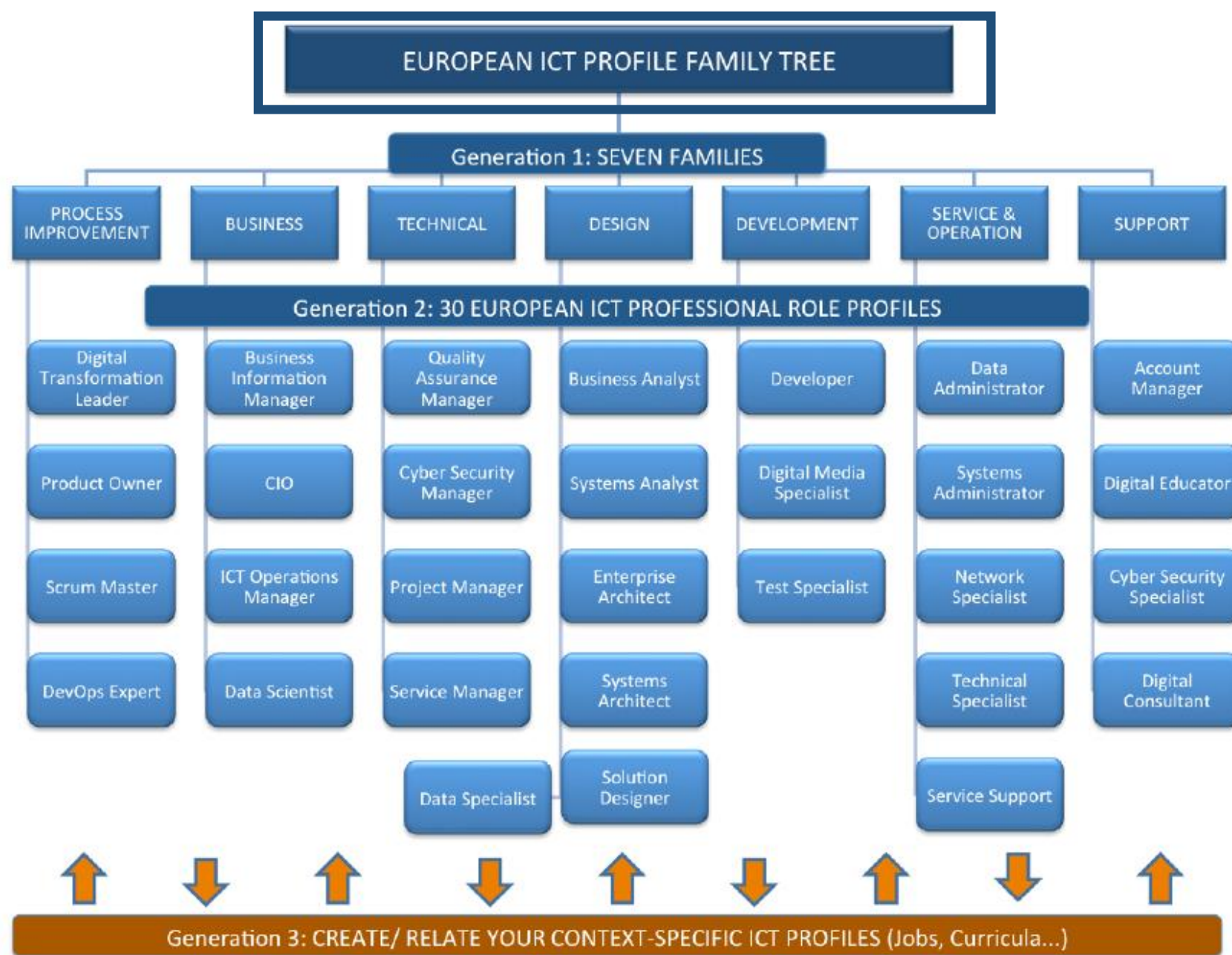
ICT PROFESSIONAL  
ROLE PROFILES-  
ESCO  
RELATIONSHIP

ADAPTATION  
TEMPLATE OF  
EXISTING PROFILES

## e-CF COMPETENCE DESCRIPTION AND FORMAT

Dimension 1 e-Comp. area	A. PLAN				
<b>Dimension 2</b>  e-Competence: Title + generic description	<b>A.2. Service Level Management</b>  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.				
<b>Dimension 3</b>  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.	–
<b>Dimension 4</b>  Knowledge examples  <i>Knows / aware of / familiar with</i>	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  <i>Is able to</i>	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 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
	<ul style="list-style-type: none"> <li>Solution in Operation</li> </ul>	<ul style="list-style-type: none"> <li>Service Level Agreement</li> <li>Solved incident</li> <li>Service Catalogue</li> </ul>	<ul style="list-style-type: none"> <li>Quality Performance Indicators</li> <li>Technical Proposal</li> </ul>
Main task/s	<ul style="list-style-type: none"> <li>Define Service requirements</li> <li>Negotiate SLA / OLA</li> <li>Manage solution operation</li> <li>Provide service delivery</li> <li>Maintain and contribute to the creation of the department budget</li> <li>Staff development</li> </ul>		
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		

# ICT PROFILE TEMPLATE

Question	Template Descriptor	ICT Professional Role Profile Example		
What is the role about?	<b>Title</b> Formed of a few words, the title offers a common name for the role	<b>DEVELOPER ROLE</b>		
What is done in this role?	<b>Summary statement</b> 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?	<b>Mission</b> 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?	<b>Deliverables</b> 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	Responsible	Contributor
		<ul style="list-style-type: none"> <li>Documented code</li> </ul>	<ul style="list-style-type: none"> <li>Software component</li> </ul>	<ul style="list-style-type: none"> <li>Software Design Description</li> <li>Test Procedure</li> <li>User Experience Design</li> </ul>
What is done in more detail?	<b>Main task/s</b> Using between six and eight activities the tasks offer an understanding of the actions taken and the end results required of the role.	<ul style="list-style-type: none"> <li>Develop and engineer components</li> <li>Follow user experience guidelines</li> <li>Aware of and address known security vulnerabilities, applying security by design</li> <li>Shape documentation</li> <li>Provide advanced, component technical support</li> <li>Resolve issues prior to and following testing</li> </ul>		
What competences are required?	<b>e-competences</b> 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?	<b>KPI (Key Performance Indicator) area</b> 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

## TEMPLATE USE EXISTING EU PROFILES

<b>PROFILE TITLE</b> <i>Reuse or define</i>	<b>Gives a commonly used name to a profile.</b>  Before starting check that there is strong distinction between new proposed profile with the 2 <sup>nd</sup> 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.						
<b>SUMMARY STATEMENT</b> <i>Adapt</i>	<b>Indicates the main purpose of the profile.</b>  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.  <u>Note:</u> Ensure that the statement discriminates between other profiles.						
<b>MISSION</b> <i>Adapt</i>	<b>Describes the rationale of the profile.</b>  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 <i>may be</i> used within the description or at least for structuring the thinking about how to express the mission: Guarantees, Ensures, Contributes						
<b>DELIVERABLES</b> <i>Keep or add</i>	<b>Illuminates the ICT Profiles and explains relevance including the perspective from a non-ICT point of view.</b>  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  <u>Note:</u> 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.						
	<table><tr><td><b>Accountable (A)</b></td><td><b>Responsible (R)</b></td><td><b>Contributor (C)</b></td></tr><tr><td>...</td><td>...</td><td>...</td></tr></table>	<b>Accountable (A)</b>	<b>Responsible (R)</b>	<b>Contributor (C)</b>	...	...	...
<b>Accountable (A)</b>	<b>Responsible (R)</b>	<b>Contributor (C)</b>					
...	...	...					

<b>MAIN TASKS</b> <i>Keep or add</i>	<p><b>A list of typical tasks to be performed by the profile.</b></p> <p>A task is an action taken to achieve a result within a broadly defined context.</p> <p>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.</p> <p>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.</p>
<b>e-CF COMPETENCES</b> <i>Keep or add</i>	<p><b>A list of necessary competences (from the e-CF) to carry out the mission.</b></p> <p>Level assignment is important.</p> <p>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.</p>
<b>SKILLS/ KNOWLEDGE</b> <i>Not part of gen. 2</i>	<p><b>A list of necessary knowledge and skills.</b></p> <p>Some examples for inspiration are provided in European e-Competence Framework Dimension 4.</p>
<b>Key Performance Indicators (KPIs)</b> <i>Derive from KPI area</i>	<p><b>Must relate to the key deliverables in order to measure them.</b></p> <p>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</p>

	<p>specific KPI's for specific job descriptions. Such KPI measurements can be more short-term oriented.</p> <p>To facilitate KPI definition, see also section 3.3. The meaningful KPI's have to be identified in each context by the following rules:</p> <ul style="list-style-type: none"> <li>Use KPI's examples which are strictly connected to the profile domain</li> <li>Use KPI's examples which are strictly connected to the KPI area</li> <li>Use KPI's examples which inspire a simple mode to measure them (bad examples: ease in navigation, user satisfaction)</li> </ul>
<b>QUALIFICATION/ CERTIFICATIONS</b> <i>Not part of gen. 2</i>	
<b>ATTITUDES (non ICT)</b> <i>Not part of gen. 2</i>	<b>Up to 5.</b>
<b>RELATIONSHIPS/ REPORTING LINE</b> <i>Not part of gen. 2</i>	<b>Reports to... Interacts with...</b>

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



# EU LIST OF DELIVERABLES

ANNEX B: Deliverables and descriptions full list

DELIVERABLES	PLAN	BUILD	RUN	ENABLE	MANAGE	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 takes 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: <i>It may not be part of training programme, also this revised description 'matches' what we say in training programme deliverable. An event with the aim of the acquisition of knowledge, skills, and competences.</i>
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

		Account Manager Role																																																																																																				Business Analyst Role																																																																																																				Business Information Manager Role																																																																																																				Chief Information Officer Role																																																																																																				Data Administrator Role																																																																																																				Developer Role																																																																																																				Digital Media Specialist Role																																																																																																				Enterprise Architect Role																																																																																																				ICT Operations Manager Role																																																																																																				Operational Security Manager Role																																																																																																				Operational Security Specialist Role																																																																																																				Digital Educator Role																																																																																																				Network Specialist Role																																																																																																				Project Manager Role																																																																																																				Quality Assurance Manager Role																																																																																																				Service Support Role																																																																																																				Systems Administrator Role																																																																																																				Systems Analyst Role																																																																																																				Systems Architect Role																																																																																																				Technical Specialist Role																																																																																																				Team Specialist Role																																																																																																				Solution Design Role																																																																																																				Digital Transformation Lead																																																																																																				Design Expert Role																																																																																																				Data Scientist Role																																																																																																				Data Specialist Role																																																																																																				Security Master Role																																																																																																				Product Owner Role																																																																																																			
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## MATRIX

### ICT ROLE PROFILES – DELIVERABLES

[illegible]

*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.

## EU ICT PROFESSIONAL ROLE PROFILES - ESCO RELATIONSHIP

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 Specialist 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 Specialist Role	
online community manager	Digital Media Specialist 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 Specialist 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	



## 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 proficiency or competence.
	Skill Area	Dimension 4	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.

# AGENDA

- E-CF current status
- E-CF building blocks
- E-CF use cases
- How to

# Use cases

## Customising and Mapping e-CF Framework

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

# USE CASE SECURITY

## role profiles - e-CF competencies



## 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
	<ul style="list-style-type: none"> <li>ICT security policies and its implementation</li> <li>ICT security organisation and expertise</li> <li>ICT security projects</li> <li>ICT security assessments, tests, reviews and audits</li> </ul>	<ul style="list-style-type: none"> <li>ICT security project portfolio</li> <li>ICT security procedures</li> <li>Risk analyses for ICT</li> <li>Monitoring and reporting on ICT risks</li> <li>ICT continuity plan and testing</li> <li>ICT security training policy</li> </ul>	<ul style="list-style-type: none"> <li>Risk management policy</li> <li>Information security strategy</li> <li>Information security architecture</li> <li>Service Level Agreements</li> <li>Information security implementation</li> <li>New technology</li> <li>Integration proposals</li> </ul>
Main tasks	<ul style="list-style-type: none"> <li>Define the organisation's ICT security policies in line with the organisation's information security strategy and architecture</li> <li>Organise ICT security and the necessary expertise</li> <li>Manage the implementation of the organisation's ICT security policies</li> <li>Provide an ICT security project portfolio</li> <li>Define ICT security training policy</li> <li>Define and implement procedures linked to ICT security</li> <li>Perform risk analyses for ICT</li> <li>Monitor and report on ICT risks</li> <li>Establish the ICT continuity plan and ensure regular testing</li> <li>Initiate and supervise ICT security projects</li> <li>Ensure the quality of ICT security assessments, tests, reviews and audits</li> <li>Watch technology trends with respect to ICT security</li> <li>Inform (C)ISO and senior general management about ICT security status and incidents and present improvement proposals</li> </ul>		
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	<ul style="list-style-type: none"> <li>A completed relevant Bachelor study<sup>21</sup> or equivalent level of knowledge and skills</li> <li>Three years' work experience in an ICT security position</li> <li>Three years' work experience in a management position</li> </ul>		
KPI	An appropriate level of ICT security based on organisation's needs and risk appetite.		

# Supplier Management

Goal: Manage interactions between the IT function and its suppliers

Core statement: Innovatie via de supply chain		
<b>People</b> <ul style="list-style-type: none"> <li>A2 Service Level Management</li> <li>D8 Contract Management</li> <li>D4 Purchasing</li> <li>E4 Relationship Management</li> </ul>	<b>Proces</b> <ul style="list-style-type: none"> <li>ITIL Supplier Management</li> <li>Procurement (order &amp; fulfillment)</li> <li>Contract Management</li> <li>Risk management</li> <li>Supplier development (practices)</li> </ul>	<b>Technology</b> <relevante tooling die van toepassing is> <ul style="list-style-type: none"> <li>Service Management tooling bijv. ServiceNow</li> <li>...</li> </ul>
<b>Koppeling/ vergelijking tussen IT-CMF capability level en eCF proficiency level:</b> <ul style="list-style-type: none"> <li>Level 1 en 2 bij prof. level 3</li> <li>Level 3 en hoger bij prof. level 4</li> </ul>	<b>Beschrijving groei in levels: (knowledge en skills)</b> 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:	
<b>Artefacts:</b> <ul style="list-style-type: none"> <li><b>Supplier engagement model...</b></li> <li><b>Supplier relationship mgt systems</b></li> <li><b>SLA/OLA/UC (XLA)</b></li> </ul>	<b>POM's (doel)</b> 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	<b>Supporting capabilities</b> <ul style="list-style-type: none"> <li>Innovation Management (IM)</li> <li>Sourcing (SRC)</li> <li>Relationship Management (REM)</li> <li>Service Provisioning (SRP)</li> </ul>

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
	<ul style="list-style-type: none"><li>• Data collection and preparation</li><li>• Data selection</li></ul>	<ul style="list-style-type: none"><li>• Data analytics applications</li><li>• Data Analysis to support decision making</li></ul>	<ul style="list-style-type: none"><li>• Data Management</li><li>• Data storage and processing infrastructure and tools</li></ul>
Main task/s	<ul style="list-style-type: none"><li>• Develop data analytics applications using Machine Learning technology, algorithms, tools (including supervised, unsupervised, or reinforced learning)</li><li>• Apply Prescriptive Analytics methods to initial data insight and organisational workflow optimisation</li><li>• Develop effective pipeline for data preparation and preprocessing</li><li>• Define the whole data analysis workflow to support decision making</li><li>• Identify, investigate and correct problems or inconsistencies related to data analysis</li><li>• Develop effective visualiation and storytelling tools, create dashboards and data analytics reporting applications</li></ul>		
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

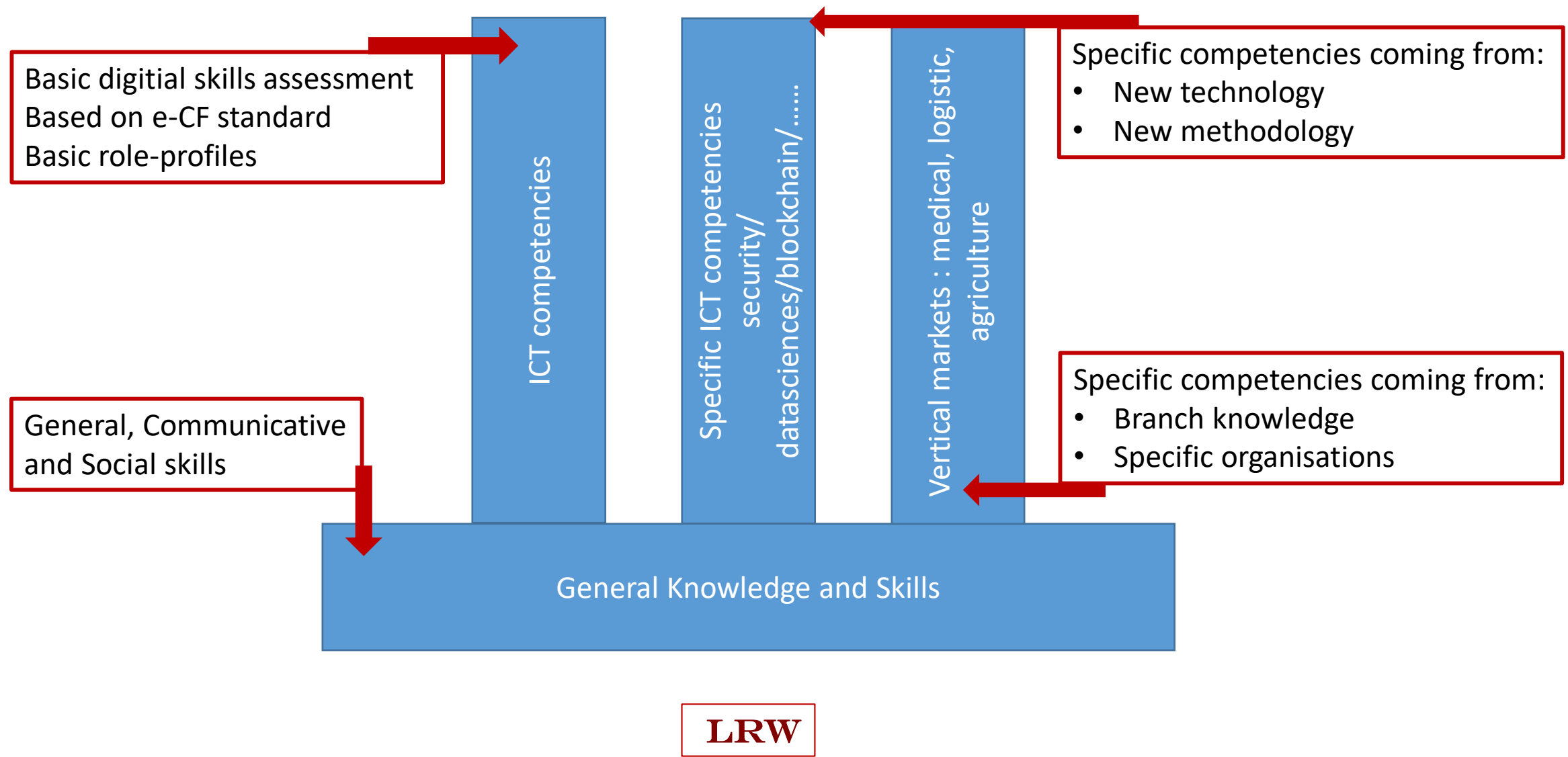
EXIN e-CF® NEXT

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%)

# RAKE-SHAPE in the DIGITAL WORLD

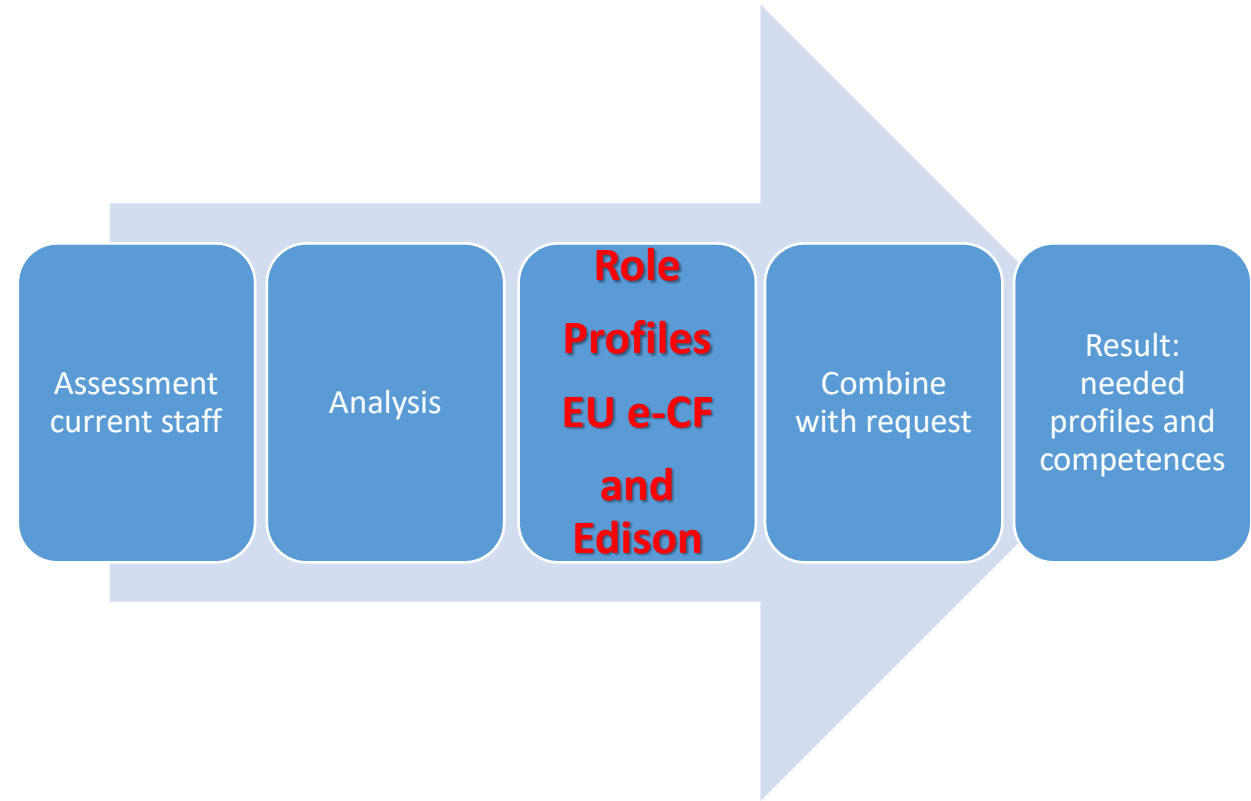
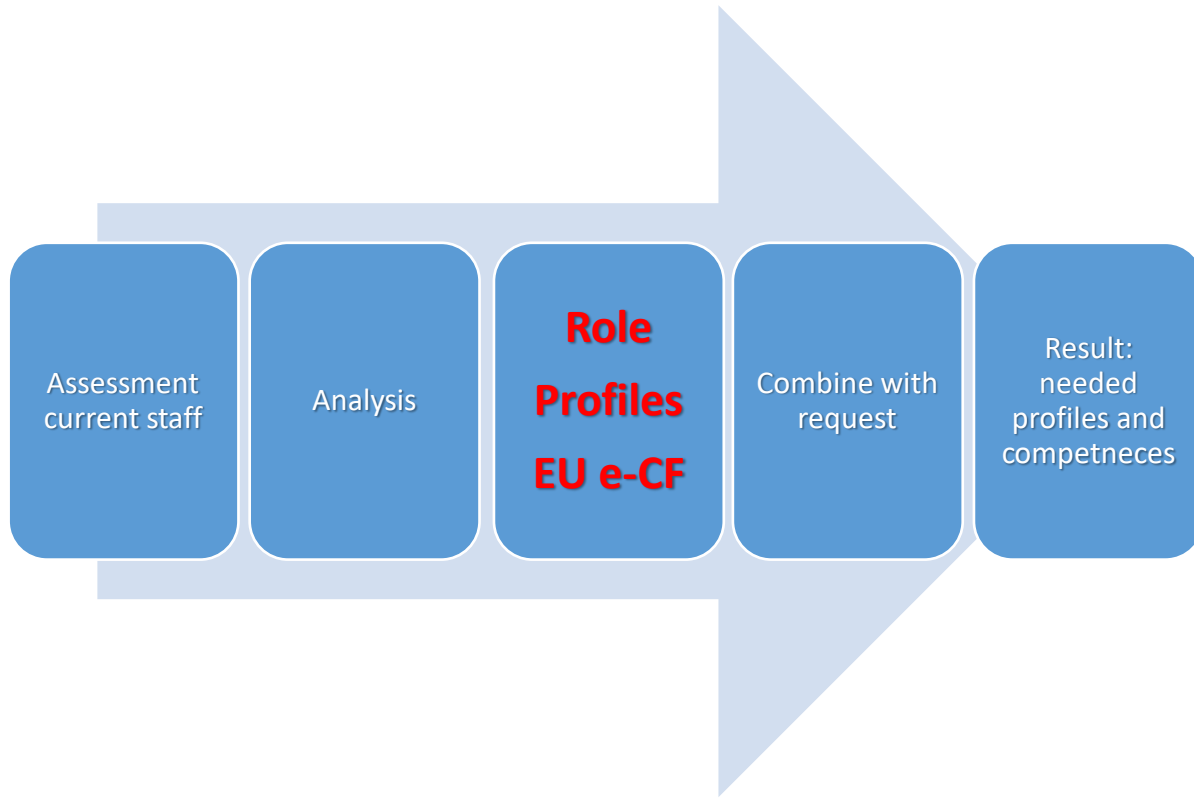




# AGENDA

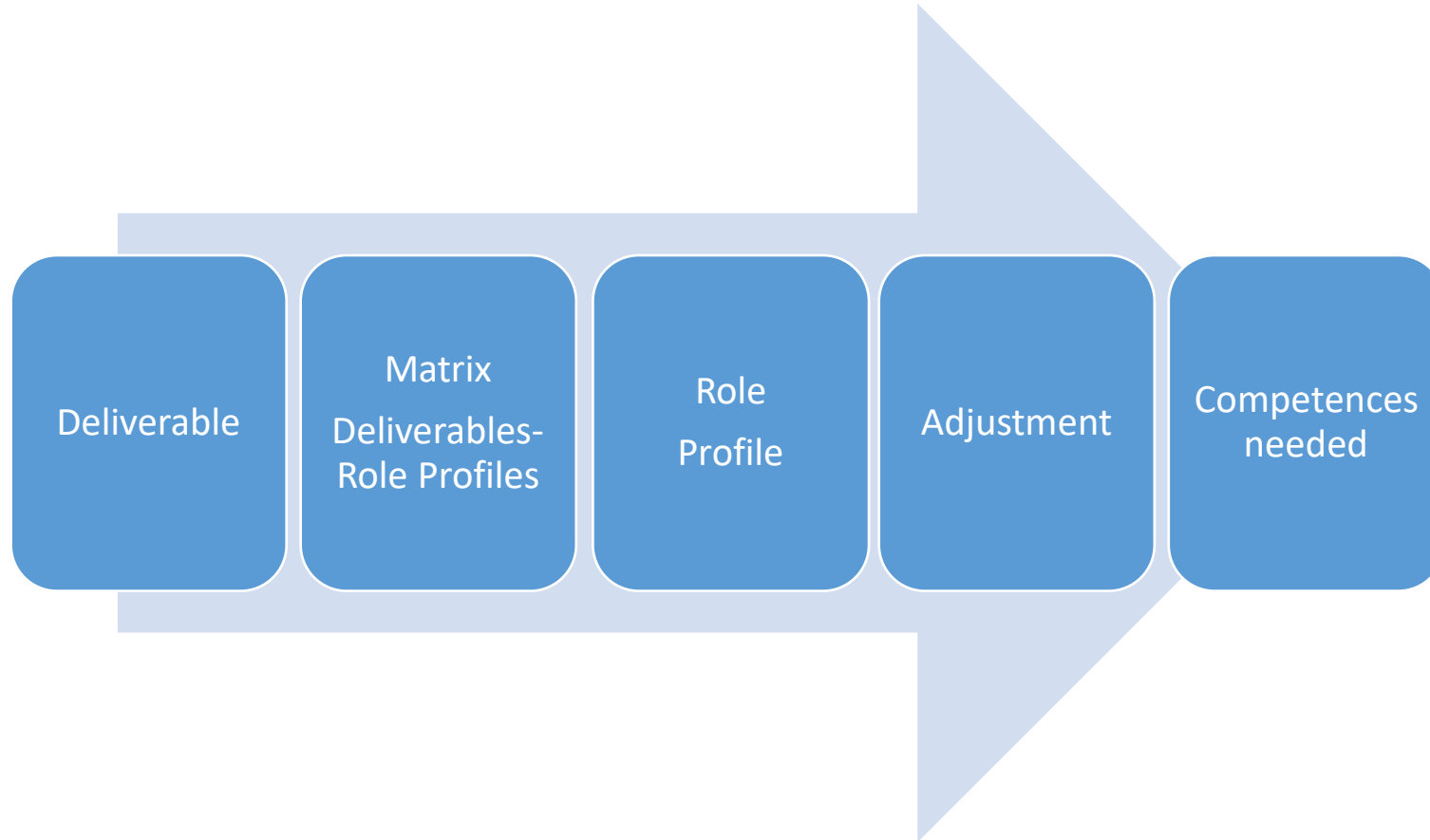
- E-CF current status
- E-CF building blocks
- E-CF use cases
- How to

# STARTING POINT: WE NEED DATASCIENCE PEOPLE:



STARTING POINT: WE NEED A .....?

STARTING QUESTION: WHAT DOES THIS ROLE HAVE TO ACHIEVE



# QUESTIONS?

**THANK YOU!**

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