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WORKSHOP

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AGREEMENT

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European ICT professionals role profiles - Part 1: 30 ICT profiles

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European foreword

CWA 16458-1:2018 was developed in accordance with CEN-CENELEC Guide 29 “CEN/CENELEC Workshop Agreements – The way to rapid agreement” and with the relevant provisions of CEN/CENELEC Internal Regulations - Part 2. It was agreed on 2018-06-07 in a Workshop by representatives of interested parties, approved and supported by CEN following a public call for participation made on 2018-02-16. It does not necessarily reflect the views of all stakeholders that might have an interest in its subject matter.

The final text of CWA 16458-1 was submitted to CEN for publication on 2018-06-08. It was developed and approved by:

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EXECUTIVE SUMMARY

This CEN Workshop Agreement (CWA) Part 1 provides the **European ICT Professional Role Profiles version 2 full descriptions**.

The European ICT Professional Role Profiles make a key contribution to increasing transparency and convergence of the European ICT Skills landscape. Incorporating the competences of the European e-Competence Framework (e-CF, EN 16234-1) as a main component of profile descriptions, the 30 ICT Professional Role Profiles provide a generic set of typical roles performed by ICT Professionals in any organisation, covering the full ICT business process.

Complementary to the e-CF, the European ICT Professional Role Profiles contribute to a shared European reference language for developing, planning and managing ICT Professional needs in a long-term perspective and to maturing the ICT Profession overall.

The profiles are a flexible tool for ICT professional development and profile construction. They are not intended to represent a rigid standard. The role profiles were built as a foundation and inspiration, from an organisational viewpoint, for the flexible creation of more context-specific profiles in a broad variety of areas (e.g. job profiles, curriculum design). Implementing the e-CF competences from a profile construction perspective, the European ICT Professional Role Profiles provide a tool and entry point for e-CF application to individuals and organisations working with the e-CF EN 16234-1 standard.

The function of European ICT Professional Role Profiles is to offer users structure and clarity for designing or identifying and clustering the multitude of activities that are essential to support the digital strategy of an organisation. They are less detailed and less specific than job descriptions and offer a simple but flexible start point. They also represent a European multi-stakeholder shared perspective and provide a common reference language and communication tool to support mutual understanding e.g. both between countries and stakeholders but also within organisations such as between HR and ICT departments. Although the profiles are focused upon ICT professional competence and performance the ultimate objective is to influence the ability of organisations to leverage ICT for better performance.

The top of a European ICT Profiles Family Tree

In the first version of European ICT Professional Role Profiles the idea of an ICT family tree was introduced. Stakeholder and expert consultation proved that the family tree is still a valid view which can be used to facilitate navigation and demonstrate relationships between profiles.

The profiles may be used for reference or alternatively as a base to develop further profile generations. Structured from now seven main ICT Profile families, the currently 30 profiles reflect the top of a European ICT Profile Family Tree. The concept is broadly analogous to a human family where characteristics from one generation pass from one generation to the next but are also combined with new characteristics. In a similar way it is envisaged that the core components of the now 30 generation 2 profiles may be passed down and adapted as needed to user generated profiles with higher granularity.

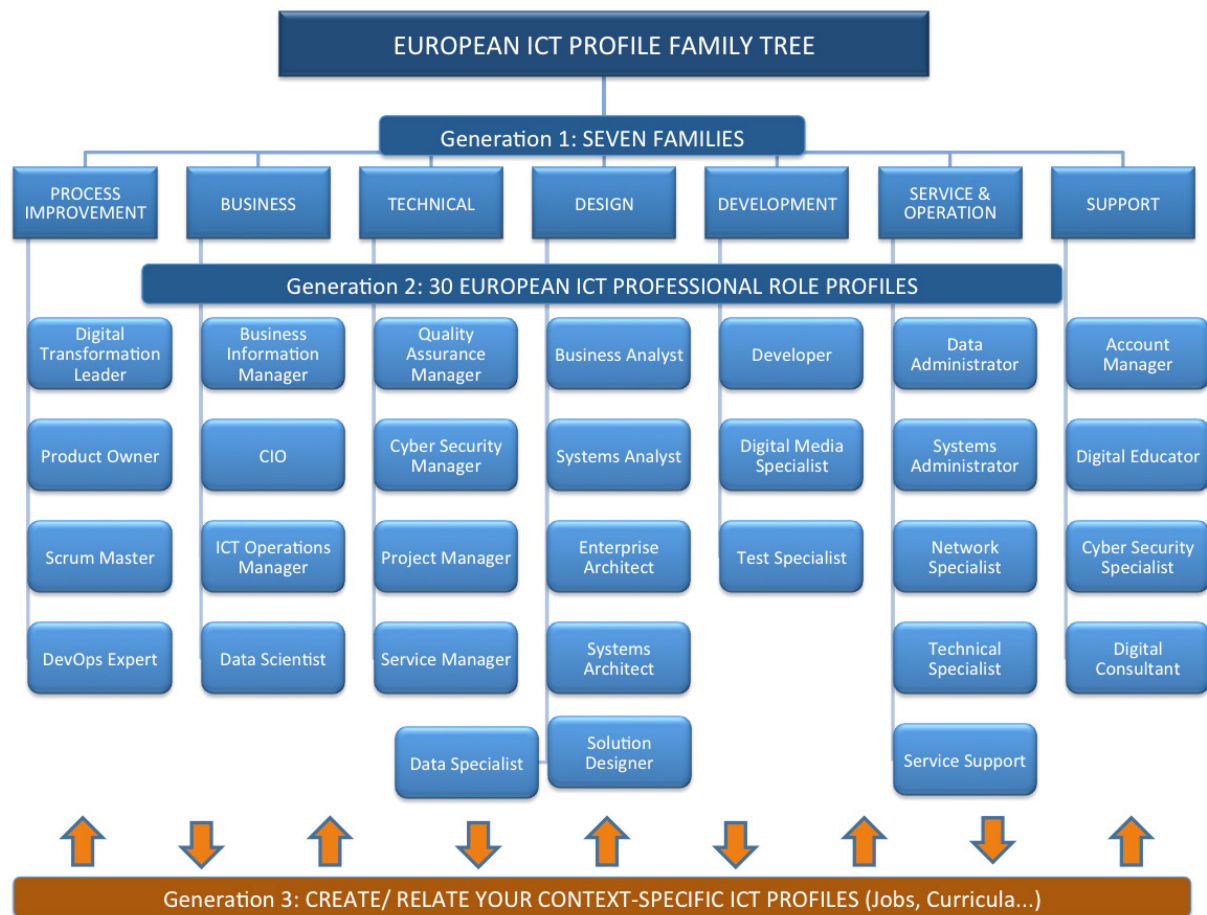


Figure 1: European ICT Professional Role Profiles version 2: 30 profiles (generation 2) in seven families (generation 1) at the top of the European ICT Profile Family Tree

Some basic observations

For a European set of ICT Professional Role Profiles to add value they must be easily adaptable to the employment environment and their contents must be readily recognisable by ICT professionals. They are not useful if, on the contrary, the employer has to change practices to meet profile descriptions.

The European ICT Profile descriptions are therefore reduced to their core characteristics which clearly differentiate them one from another. Further context-specific elements can be added to the Profiles according to the specific environments in which they Profiles are to be integrated. Technology is constantly changing resulting in the introduction of new products and services, often proprietary, which lead to a requirement for ICT professional knowledge update. However, in line with the e-CF, the role profiles are constructed to be supplier neutral and recognise that the underpinning competences and deliverables remain constant, often regardless of the specific technology deployed. For example, different information technology operating systems are not explicitly identified nor are application names.

Flexibility for users, is a founding principle of the development of European ICT Professional Role Profiles; this is reflected in a pragmatic application of the acronyms ICT (Information and Communication Technology) or IS (Information Systems). At Generation 2 of the European ICT Profiles Family Tree, it is too restrictive and possibly inaccurate to be prescriptive about the use of ICT or IS. The default is to use the more general term ICT, except in exceptional circumstances where only IS, is applicable. However, IS or ICT can be applied more specifically within Generation 3 Profiles to accurately focus the profile in context.

The European ICT Professional Role Profiles have therefore been created in a generic and simple way, in order to enable reference and use by all types of organisations, whatever their size and their structure. In consequence, the ICT Profiles provide high level outlines of typical ICT Professional Roles; easy to break down to the next context specific application level, for instance job descriptions. CWA Part 2 USER GUIDE provides pragmatic guidance on how to apply the European ICT Professional Role Profiles from multiple stakeholder perspectives and for a broad range of application purposes.

Version 2 update highlights

Since version 1 of The European ICT Profiles CWA (year 2012) there have been rapid advances in organisation processes and consequently the role requirements of ICT professionals determining the profile update.

The original, 23 profiles have been updated in content, based upon user experience and feedback.

Additional structural rules have been applied, such as number of competences and tasks, to provide even more consistent profile descriptions.

The original 6 families have been extended to 7 (including a new Process Improvement family)

Seven new profiles have been added to the portfolio, again influenced by industry changes and feedback from existing and potential users. These new roles are intended to reflect innovations in the workplace and are designed to co-exist with more traditional roles that are still relevant and prevalent across the ICT workforce. All seven are customer-focused roles and although contemporary they are added to complement traditional roles. Furthermore, the roles have been created to address significant workplace process and subsequent job structure changes.

A consistency cross-check was carried out once all Profiles were fully updated:

- Have all items described been identified in a coherent and consistent way?
- Is there a clear distinction between all profiles and have overlaps been avoided?
- On the assigned level of granularity; are all relevant missions and deliverables of the ICT business process covered?

The technical interim and final results were presented at several occasions to the wider European experts and stakeholders community, seeking further feedback and final improvement, see chapter 5.2. of CWA Part 3 complemented by the acknowledgement section for all detail.

The outcome of this process, all 30 European ICT Professional Role Profiles with full descriptions, are presented in the following sections. An overview of all changes from version 1 to 2 in title, summary statement, mission and e-Competences and the new profiles added can be found in Annex A.

Complementary publications

There are many ways to apply the 30 typical ICT Profiles, that are described in this CWA. **To support overall understanding and use of the European ICT Professional Role Profiles, three complementary publications are available:**

CWA Part 2 USER GUIDE explains the European ICT Professional Role Profiles basic principles and provides pragmatic guidance on how to apply the European ICT Professional Role Profiles from multiple stakeholder perspectives and for a broad range of application purposes, such as, for example, HR planning, job advertisements, digital transformation process support, curriculum design and qualifications.

CWA Part 3 METHODOLOGY DOCUMENTATION explains the overall methodology approach and the main choices underpinning the European ICT Professional Role Profiles development; applying a sound conceptual framework combined with in-depth ICT sector and HR development expertise, and with thorough and widespread stakeholder consultation.

CWA Part 4 CASE STUDIES provides examples, benefits and hints of how to make best use of the profiles. The 11 case studies reflect practical experiences from different viewpoints and have been elaborated together with European ICT Professional Role Profiles and e-CF applying organisations Europe-wide.

EUROPEAN ICT PROFESSIONAL ROLE PROFILES

VERSION 2

FULL DESCRIPTIONS

Profile title	ACCOUNT MANAGER ROLE (1)		
Summary statement	Senior focal point for client sales and customer satisfaction.		
Mission	Builds business relationships with clients to facilitate the sale of hardware, software, telecommunications or ICT services. Identifies opportunities and manages sourcing and delivery of products to customers. Has responsibility for achieving sales targets and maintaining profitability.		
Deliverables	Accountable	Responsible	Contributor
	• Sale	• Business Relationship	• Sales Forecast • Technical Proposal • Production Forecast
Main task/s	• Maintain overall customer satisfaction with products and/or services • Identify opportunities to propose new products or services • Provide the primary contact point for client executive management • Deliver value added presentations related to products and services to customer executive management • Lead negotiations to establish profitable contracts with client(s) • Maintain and enhance business relationships		
e-competences (from e-CF)	D.5. Sales Proposal Development		Level 3
	D.6. Channel Management		Level 4
	D.7. Sales Management		Level 4
	E.1. Forecast Development		Level 3
	E.4. Relationship Management		Level 4
KPI area	Customer Satisfaction		

Profile title	BUSINESS ANALYST ROLE (2)		
Summary statement	Analyses the business domain and optimises business performance through technology application.		
Mission	Analyses the information and the processes needed to support business plans. Formulates functional and non-functional requirements of the business organisation and advises on the lifecycle of the information solutions. Evaluates the impact in terms of change management.		
Deliverables	Accountable	Responsible	Contributor
	• Business Requirements	• Business Case • Business Relationship • Data Model	• Business Plan • ICT Strategy & Implementation
Main task/s	• Contribute to the preparation of the organisation’s business plan • Analyse business requirements and design related processes • Support Digital Transformation, identifying areas for improvement in business processes • Provide possible ICT solutions compliant with the ICT strategy • Develop business cases related to the proposed solutions • Analyse required information and documents • Develop plan for continuity of operations		
e-Competences (from e-CF)	A.1. IS and Business Strategy Alignment		Level 4
	A.3. Business Plan Development		Level 4
	D.10. Information and Knowledge Management		Level 4
	D.11. Needs Identification		Level 4
	E.5. Process Improvement		Level 4
KPI area	Adequacy of the business requirements in response to the business plan		

Profile title	BUSINESS INFORMATION MANAGER ROLE (3)		
Summary statement	Proposes, plans and manages functional development of the Information System (IS) focusing upon the needs of users.		
Mission	Aligns the Information System to the business strategy within their area/domain. Ensures continuous enhancement whilst accounting for user requirements, service quality and budgetary constraints.		
Deliverables	Accountable	Responsible	Contributor
	• Project Portfolio	• Solution Specification	• Business Plan
Main task/s	• Manage the information and communication technology development focused on user needs • Prepare for changes to the Information System influenced by technology updates or user needs • Formalise, consolidate and drive the development of the IS configuration • Evaluate the relevance of the Information Systems to users • Liaise between the user community and the IS infrastructure • Translate user requirements into functional specifications		
e-Competences (from e-CF)	A.1. IS and Business Strategy Alignment	Level 4	
	A.3. Business Plan Development	Level 4	
	E.4. Relationship Management	Level 4	
	E.7. Business Change Management	Level 4	
	E.9. IS Governance	Level 5	
KPI area	Business user requirement satisfaction		

Profile title	CHIEF INFORMATION OFFICER (CIO) ROLE (4)		
Summary statement	Develops and maintains Information Systems to generate value for the business and meet the organisation’s needs.		
Mission	Ensures the alignment of the Information Systems strategy with the business strategy. Provides leadership for the implementation and development of the organisations architecture and applications.		
Deliverables	Accountable	Responsible	Contributor
	• ICT Strategy and Implementation • ICT Governance Policy • ICT Department & Budget	• Digital Transformation Strategy • Project Portfolio • Information Security Strategy	
Main task/s	• Enable the company’s digital strategy • Define and implement ICT strategy and ICT governance • Ensure the reliability, confidentiality, security and integrity of Information Systems • Ensure the quality and management of ICT customer-supplier relationships in particular contracts • Define and ensure compliance with Service Level Agreements • Ensure that ICT change management processes are implemented		
e-Competences (from e-CF)	A.1. IS and Business Strategy Alignment		Level 5
	A.3. Business Plan Development		Level 5
	E.2. Project and Portfolio Management		Level 5
	E.4. Relationship Management		Level 4
	E.9. IS Governance		Level 5
KPI area	Overall added value, efficiency and effectiveness of the information system		

Profile title	DATA ADMINISTRATOR ROLE (5)		
Summary statement	Designs, implements or monitors and maintains data sets, structured (databases) and unstructured (big data).		
Mission	Administer and monitor data management systems and ensures design, consistency, quality and security.		
Deliverables	Accountable	Responsible	Contributor
	• Data Management System	• Solution in Operation (data management system)	• Test Procedure • Data Protection Policy
Main task/s	• Apply standards methods and tools for measuring and reporting on wide set of relevant performance indicators (response time, availability, safety, integrity) • Produce data set procedures and instructions for other analysts or administrators • Monitor and maintain data management systems • Ensure the integrity and security of existing data management systems • Identify, investigate and correct problems or incidents related to data management systems • Provide training, support, advice and guidance on data set issues to other information system practitioners		
e-Competences (from e-CF)	B.1. Application Development		Level 3
	B.2. Component integration		Level 3
	C.2. Change Support		Level 3
	D.10. Information and Knowledge Management		Level 3
	E.8. Information Security Management		Level 3
KPI area	Accessibility, availability and integrity of data set		

Profile title	DEVELOPER ROLE (6)		
Summary statement	Designs and/ or codes components to meet solution specifications.		
Mission	Ensures building and implementing of ICT applications. Contributes to low-level design. Writes code to ensure optimum efficiency and functionality and user experience.		
Deliverables	Accountable	Responsible	Contributor
	Documented Code	Software Component	- Software Design Description - Test Procedure - User Experience Design
Main task/s	- Develop engineer and integrate 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		
e-Competences (from e-CF)	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
KPI area	Fully functional components		

Profile title	DIGITAL MEDIA SPECIALIST ROLE (7)		
Summary statement	Integrates digital technology components for internal and external communication purposes.		
Mission	Designs and codes social media applications and websites. Makes recommendations on Application Programming Interface (API) and supports efficiency through appropriate content management systems.		
Deliverables	Accountable	Responsible	Contributor
		• Non Functional Requirements • User Engagement Evaluation Tools	• Solution in Operation
Main task/s	• Carry out user experience design methods and translate into application requirements • Design web and multimedia applications content in line with user and customer needs • Test and resolve any technical, usability and accessibility issues • Ensure compliance with privacy, legal requirements and accessibility standards • Provide guidance on search engine optimisation (SEO)		
e-Competences (from e-CF)	A.6. Application Design		Level 2
	B.1. Application Development		Level 3
	B.3. Testing		Level 2
	B.4. Solution Deployment		Level 3
	D.12. Digital Marketing		Level 2
KPI area	Integration level of social media apppplication		

Profile title	ENTERPRISE ARCHITECT ROLE (8)		
Summary statement	Designs and maintains the holistic architecture of business processes and information systems.		
Mission	Maintains a holistic perspective of the organisation strategy, processes, information, security and ICT assets. Links the mission, strategy and business processes to the IT strategy. Ensures project choices are integrated consistently, efficiently and in a sustainable manner according to the enterprise’s digital standards.		
Deliverables	Accountable	Responsible	Contributor
	Enterprise Architecture		- Business Plan - New Solution and Critical Business Process Integration Proposal - Knowledge or Information Base - Business Process Definition
Main task/s	- Align digital and ICT strategies and planning with the organisation’s business goals - Anticipate future business needs and plan for how architecture will support/enable it - Streamline business processes, functions, procedures and workflows and apply a consistent implementation approach - Manage stakeholder engagement in the development of new processes and systems and verifies feasibility - Conduct post-implementation reviews to evaluate benefits accrued from new processes and systems - Build and maintain standards and enterprise architecture model and principles, for example process mapping - Evaluate the impact of changes within the ecosystem of the organisation (including political, technical, social, regulatory, legal) on the enterprise architecture		
e-Competences (from e-CF)	A.1. IS and Business Strategy Alignment	Level 5	
	A.3. Business Plan Development	Level 4	
	A.5. Architecture Design	Level 4	
	A.7. Technology Trend Monitoring	Level 5	
	E.8. Information Security Management	Level 3	
KPI area	Quality and consistency of enterprise architecture aligned with business objectives		

Profile title	DIGITAL CONSULTANT ROLE (9)		
Summary statement	Supports understanding of how digital technologies add value to a business.		
Mission	Maintains a technology watch to inform stakeholders of existing and emerging technologies and their potential to add business value. Supports the identification of needs and solutions for achieving business and IS strategic goals.		
Deliverables	Accountable	Responsible	Contributor
	• New Solution and Critical Business Process Integration Proposal • Opportunity Memo	• Knowledge or Information Base (relevant domain)	• Business Requirements • Project Plan
Main task/s	• Provide advice on how to optimize the use of existing tools and systems • Raise awareness of information technology innovations and potential value to a business • Make recommendations for the development and implementation of a business project or technological solution • Participate in scoping the business case for potential projects • Participate in the assessment and choice of digital solutions • Assess risks of change to business continuity and for information security		
e-Competences (from e-CF)	A.7. Technology Trend Monitoring		Level 4
	A.9. Innovating		Level 4
	D.11. Needs Identification		Level 4
	E.3. Risk Management		Level 4
	E.7. Business Change Management		Level 4
KPI area	Relevance of proposals to business needs		

Profile title	ICT OPERATIONS MANAGER ROLE (10)		
Summary statement	Manages operations, people and overall ICT resources.		
Mission	Implements and maintains a designated part of an ICT operation ensuring that activities are conducted in accordance with organisational rules, processes and standards. Plans changes and implements them in accordance with organisational strategy and budget. Risk manages and ensures the effectiveness of the ICT infrastructure.		
Deliverables	Accountable	Responsible	Contributor
	• Budget Plan	• HR Development Plan • Training Program	• Sustainable ICT Policy
Main task/s	• Coordinate and manage staff • Direct, organize, plan and monitor activities • Negotiate the objectives and resources • Manage the departmental budget • Establish and monitor management information • Analyse and propose solutions for continuous productivity improvement • Manage the implementation and monitoring of IS quality assurance and security • Communicate with internal business departments and project owners		
e-Competences (from e-CF)	D.9. Personnel Development		Level 4
	E.2. Project and Portfolio Management		Level 4
	E.3. Risk Management		Level 3
	E.6. ICT Quality Management		Level 3
	E.8. Information Security Management		Level 3
KPI area	Optimisation of overall resources		

Profile title	INFORMATION SECURITY MANAGER ROLE (11)		
Summary statement	Leads and manages the organisation information security policy.		
Mission	Defines the information security strategy and manages implementation across the organisation. Embeds proactive information security protection by assessing, informing, alerting and educating the entire organisation.		
Deliverables	Accountable	Responsible	Contributor
	• Information Security Policy	• Knowledge or Information Base • Information Security Strategy	• Risk Management Policy • New Solution and Critical Business Integration Proposal
Main task/s	• Define the information security strategy and standards • Contribute to the development of the organisation’s security policy • Manages security audits • Evaluate risks, threats and consequences • Establish and manage prevention, detection, correction and remediation plans • Inform and raise awareness among general management and across all IT users and professionals • Conduct information security operations		
e-Competences (from e-CF)	A.7. Technology Trend Monitoring	Level 4	
	D.1. Information Security Strategy Development	Level 5	
	E.3. Risk Management	Level 4	
	E.8. Information Security Management	Level 4	
	E.9. IS Governance	Level 5	
KPI area	Security policy effectiveness		

Profile title	INFORMATION SECURITY SPECIALIST ROLE (12)		
Summary statement	Ensures the implementation of the organisation's information security policy by the secure and appropriate use of ICT resources.		
Mission	Defines, proposes and implements necessary information security techniques and practices in compliance with information security standards and procedures. Contributes to security practices, awareness and compliance by providing advice, support, information and training.		
Deliverables	Accountable	Responsible	Contributor
	• Knowledge or Information Base (Security)	• Solution and Critical Business Process Integration Proposal (Security) • Information Security Risk Assessment	• Risk Management Policy • Information Security Risk Treatment Plan • Information Security Policy
Main task/s	• Evaluate information security risks, threats and consequences and take appropriate action • Provide information security training and education • Provide technical validation of security tools, implement, configure and manage appropriate tools • Contribute to the definition of and actively promote information security standards and procedures throughout the IT and IT user communities • Identify and remediate security vulnerabilities • Monitor security developments to ensure the continued efficiency and effectiveness of information security processes and controls • Proactively evaluate new threats and counter potential information security incidents • Implements security techniques on all or part of an application, process, network or system within area of responsibility		
e-Competences (from e-CF)	A.7. Technology Trend Monitoring		Level 4
	A.9. Innovating		Level 4
	D.1. Information Security Management		Level 4
	D.3. Education and Training Provision		Level 3
	E.3. Risk Management		Level 3
KPI area	Security measures in place		

Profile title	DIGITAL EDUCATOR ROLE (13)		
Summary statement	Educates and trains Professionals to reach optimal digital competence to support business performance.		
Mission	Provide the knowledge and skills required to ensure that people are able to effectively perform tasks in the workplace.		
Deliverables	Accountable	Responsible	Contributor
		• Training Course	• Training Policy • Training Program • Quality Assurance (Training)
Main task/s	• Conduct training needs analyses • Design programs to meet needs • Produce and/or update existing training materials (content and method) • Adapt third party training material to support individual competence development in line with organisational needs • Deliver effective training in classroom, on-line or informally • Monitor, evaluate and report effectiveness of training • Evaluate and report student performance • Encourages continuous professional development		
e-Competences (from e-CF)	B.5. Documentation Production	Level 2	
	D.3. Education and Training Provision	Level 3	
	D.9. Personnel Development	Level 3	
	E.2. Product and Portfolio Management	Level 2	
KPI area	Impact of the training		

Profile title	NETWORK SPECIALIST ROLE (14)		
Summary statement	Ensures the alignment of the network, including telecommunication and/or computer infrastructure to meet the organisation's communication needs.		
Mission	Manages and operates a networked information system, solving problems and faults to ensure defined service levels. Monitors and improves network performances and security.		
Deliverables	Accountable	Responsible	Contributor
		• Solution Documentation (Network) • Solution in Operation (Network) • Solution Specification (Network)	• Solved Incident • Information Security Assessment
Main task/s	• Ensure communication performance, recovery, and security needs meet agreed service agreement standards • Contribute to define network design policies, philosophies and criteria • Investigate, diagnose and solve network problems • Use network management system tools to determine network load and model performance statistics • Maintain awareness of relevant legislation affecting network security • Configure network to protect against security threats • Monitor network to identify and address traffic bottle necks		
e-Competences (from e-CF)	A.6. Application Design		Level 3
	B.2. Component Integration		Level 3
	B.4. Solution Deployment		Level 3
	C.4. Problem Management		Level 3
	E.8. Information Security Management		Level 3
KPI area	Level of Network Services Quality		

Profile title	PROJECT MANAGER ROLE (15)		
Summary statement	Manages projects to achieve optimal performance and results.		
Mission	Defines, implements and manages projects from conception to final delivery. Responsible for achieving optimal results, conforming to standards for quality, safety and sustainability and complying with defined scope, performance, costs, and schedule. Deploys agile practices where applicable.		
Deliverables	Accountable	Responsible	Contributor
	• Project Plan • Validated Solution	• Solution Documentation	• Quality Plan • Integrated Solution • Change Management Plan
Main task/s	• Organize, coordinate and lead the project team • Maintain stakeholder engagement and communication • Supervise project progress • Coordinate, record and ensure quality compliance • Circulate and distribute information from the project owner • Ensure the project helps to support the organisation’s wider goals • Comply with budgets and delivery times • Update the project according to changing circumstances		
e-Competences (from e-CF)	A.4. Product/Service Planning		Level 4
	E.2. Project and Portfolio Management		Level 4
	E.3. Risk Management		Level 3
	E.4. Relationship Management		Level 3
	E.7. Business Change Management		Level 3
KPI area	Project scope achievement		

Profile title	QUALITY ASSURANCE MANAGER ROLE (16)		
Summary statement	Ensures that processes and organisations implementing Information Systems comply to quality policies.		
Mission	Establishes and operates an ICT quality approach aligned with the organisation's culture. Commits the organisation to the achievement of quality goals and an encourages an environment of continuous improvement.		
Deliverables	Accountable	Responsible	Contributor
		• Quality Performance Indicators • ICT Quality Policy	• Quality Assurance • Risk Management Policy
Main task/s	• Establish and deploy the ICT quality policy • Organise and provide quality training • Provide ICT managers with quality performance indicators • Perform quality audits • Organise customer satisfaction surveys • Assist project team members to build and perform project quality plans		
e-Competences (from e-CF)	D.2. ICT Quality Strategy Development		Level 4
	E.3. Risk Management		Level 3
	E.5. Process Improvement		Level 4
	E.6. ICT Quality Management		Level 4
KPI area	Achievement of company quality goals		

Profile title	SERVICE SUPPORT ROLE (17)		
Summary statement	Provides remote or onsite diagnosis or guidance to internal or external clients with technical issues.		
Mission	Provides user support and troubleshoots ICT problems and issues. The primary objective is to enable users to maximize their productivity through efficient and secure use of ICT equipment or software applications.		
Deliverables	Accountable	Responsible	Contributor
		• First Level Support • Incidents Database	• Solved Incident • Escalation Process • Second Level Support
Main task/s	• Identify and diagnose issues and problems • Categorize and record reported queries and provide solutions • Support problem identification • Advise users on appropriate course of action • Monitor issues from start to resolution • Escalate, if needed, unresolved problems to a higher level of support • Provide essential online security advice and support		
e-Competences (from e-CF)	C.1. User Support		Level 2
	C.2. Change Support		Level 2
	C.3. Service Delivery		Level 1
	C.4. Problem Management		Level 2
KPI area	Responsiveness and accuracy of solution provision for specific problem		

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 • Manage 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		

Profile title	SYSTEMS ADMINISTRATOR ROLE (19)		
Summary statement	Administers ICT System components to meet service requirements.		
Mission	Installs software, configures and upgrades ICT systems. Administers day-to-day operations to satisfy continuity of service, recovery, security and performance needs.		
Deliverables	Accountable	Responsible	Contributor
		Solution in Operation	- Solved Incident - Incidents Database
Main task/s	- Investigate, diagnose and solve system related problems - Install and upgrades software - Test upgrades - Schedule installation work, to minimize disruption - Diagnose and solve hardware or software problems - Comply with organisation procedures to ensure integrity and security of the system		
e-Competences (from e-CF)	B.2. Component Integration		Level 2
	B.3. Testing		Level 2
	C.2. Change Support		Level 3
	C.4. Problem Management		Level 3
	E.8. Information Security Management		Level 2
KPI area	Systems in operation		

Profile title	SYSTEMS ANALYST ROLE (20)		
Summary statement	Analyses organisation requirements and specifies software and system requirements for new IT solutions.		
Mission	Ensures the technical design and contributes to the implementation of new and/or enhanced software provision. Provides solutions for the improvement of organisational efficiency and productivity.		
Deliverables	Accountable	Responsible	Contributor
	• Software Component • Hardware Component	• Integrated Solution • Technical Proposal	• ICT Model • Solution Specification
Main task/s	• Analyse existing systems and business models • Recommend resolutions and improvements • Provide integrated solutions • Provide consolidate findings on components or processes • Author technical performance requirements • Ensure security by design • Maps and documents interfaces between legacy and new systems		
e-Competences (from e-CF)	A.5. Architecture Design		Level 3
	B.5 Documentation Production		Level 3
	B.6. Systems Engineering		Level 4
	E.5. Process Improvement		Level 3
KPI area	Fully functional ICT applications		

Profile title	SYSTEMS ARCHITECT ROLE (21)		
Summary statement	Plans, designs and integrates ICT system components including hardware, software and services.		
Mission	Designs, integrates and implements complex technical ICT solutions ensuring procedures and models for development are current and comply with common standards. Monitors new technology developments and applies if appropriate. Provides technological design leadership.		
Deliverables	Accountable	Responsible	Contributor
	• Solution Specification • Integrated Solution	• Solution and Critical Business Process Integration Proposal	• Development Process
Main task/s	• Specify and implement the architecture of complex ICT solutions • Lead development and integration of components • Lead and/ or conduct system integration • Ensure incorporation of security by design • Analyse technical and business requirements • Develop and maintain a comprehensive record of usability requirements		
e-Competences (from e-CF)	A.5. Architecture Design		Level 4
	A.7. Technology Trend Monitoring		Level 4
	A.9. Innovating		Level 4
	B.2. Component Integration		Level 4
	B.6. Systems Engineering		Level 4
KPI area	Effectiveness and efficiency of solution implementation		

Profile title	TECHNICAL SPECIALIST ROLE (22)		
Summary statement	Maintains and repairs hardware, software and service applications.		
Mission	Effectively maintains customer hardware/software. Responsible for delivering timely and effective repairs to ensure optimal system performance and superior customer satisfaction.		
Deliverables	Accountable	Responsible	Contributor
	Solved Incident	Up-to-date Solution	Solution Documentation
Main task/s	- Identify software and hardware problems and repair - Perform regular maintenance on hardware and software components - Install cables and configures hardware and software - Document system addresses and configurations - Run diagnostic programs or use test equipment to locate source of problems - Communicate effectively with end users and customer management - Maintain security and functionality through application of program temporary fixes		
e-Competences (from e-CF)	C.2. Change Support		Level 2
	C.3. Service Delivery		Level 2
	C.4. Problem Management		Level 3
	E.3. Risk Management		Level 2
	E.6. ICT Quality Management		Level 2
KPI area	Customer satisfaction		

Profile title	TEST SPECIALIST ROLE (23)		
Summary statement	Designs and performs testing plans.		
Mission	Ensures delivered or existing products, applications or services comply with technical and user needs and specifications. For existing systems, applications, innovations and changes; diagnoses failure of products or services to meet specification.		
Deliverables	Accountable	Responsible	Contributor
		• Test Plan • Test Procedure • Test Result	• Integrated Solution • Validated Solution • Solution Documentation
Main task/s	▪ Select and develop integration testing techniques to ensure the system meets requirements. ▪ Design and customize integration tests, identify open issues. ▪ Organise test plans and procedures for white and black box testing at unit, module, system and integration levels. ▪ Establish procedures for result analysis and reporting. ▪ Design and implement defect tracking and correction procedures ▪ Write test program to assess software quality ▪ Develop tools to increase test effectiveness		
e-Competences (from e-CF)	B.2. Component Integration		Level 3
	B.3. Testing		Level 3
	B.4. Solution Deployment		Level 2
	B.5. Documentation Production		Level 3
	E.3. Risk Management		Level 2
KPI area	Consistency of the test plan according to the quality plan of the project		

Profile title	SOLUTION DESIGNER ROLE (24)		
Summary statement	Provides the translation of business requirements into end-to-end IT solutions.		
Mission	Proposes and designs solutions in line with technical architecture which fit business requirements and support change.		
Deliverables	Accountable	Responsible	Contributor
	• Solution in Operation	• Solution Design Description • User Experience Design	• Project Portfolio
Main task/s	• Examine and interpret business requirements • Establish solution intent • Align solution with technical architecture • Identify potential technical design risks • Supervise the built in quality • Operate within the budgetary framework to validate the financial impact of design decisions • Identify opportunities for innovation • Plan technology roadmaps		
e-Competences (from e-CF)	A.6. Application Design	Level 3	
	A.9. Innovating	Level 4	
	D.10. Information and Knowledge Management	Level 3	
	D.11. Needs Identification	Level 4	
KPI area	Effectiveness of the solution		

Profile title	DIGITAL TRANSFORMATION LEADER ROLE (25)		
Summary statement	Provides leadership for the implementation of the digital transformation strategy of the organisation.		
Mission	Drives cultural change and builds digital capability to deliver innovative business models and processes.		
Deliverables	Accountable	Responsible	Contributor
	Digital Transformation Roadmap	Digital Transformation Strategy	Solution and Critical Business Process Integration Proposal
Main task/s	- Shape and deliver a digital strategy - Develop awareness and education to improve digital capability - Demonstrate the benefits of digital transformation implementation - Advise and support on a 'digital by design' approach - Lead cultural change required to facilitate digital strategy - Lead and mobilise key organisation influencers to implement digital transformation		
e-Competences (from e-CF)	A.3. Business Plan Development		Level 5
	A.5. Architecture Design		Level 5
	A.9. Innovating		Level 5
	E.7. Business Change Management		Level 5
	E.9. Governance		Level 5
KPI area	Successful strategy implementation		

Profile title	DEVOPS EXPERT ROLE (26)		
Summary statement	Implements processes and tools to successfully deploy DevOps techniques across the entire solution development lifecycle.		
Mission	Applies a cross-functional, collaborative approach for the creation of customer-centric software solutions. Introduces automation throughout the software production system to deliver better software faster.		
Deliverables	Accountable	Responsible	Contributor
	• Integrated Solution	• Development Process	• Test Procedure • Release
Main task/s	• Implement and manage continuous distribution methodologies • Design systems with high levels of availability and scalability • Manage testing across the release lifecycle • Facilitate cross functional collaboration and engagement • Design and manage process automation tools • Adopt an agile software development methodology • Manage continuous integration tool management		
e-Competences (from e-CF)	B.1. Application Development		Level 3
	B.2. Component Integration		Level 4
	B.3. Testing		Level 4
	B.4. Solution Deployment		Level 3
	C.2. Change Support		Level 3
KPI area	Reduced time to implement solutions		

Profile title	DATA SCIENTIST ROLE (27)		
Summary statement	Leads the process of applying data analytics. Delivers insights from data by optimising the analytics process and presenting visual data representations.		
Mission	Finds, manages and merges multiple data sources and ensures consistency of datasets. Identifies the mathematical models, selects and optimises the algorithms to deliver business value through insights. Communicates patterns and recommends ways of applying data.		
Deliverables	Accountable	Responsible	Contributor
	• Data Collection and Representation • Data Selection	• Data Analytics	• Data Management Plan • Data Management System
Main task/s	• Represent business challenges through mathematical models • Collect, understand, clean, analyse, integrate and investigate internal and external data to achieve the mission • Create and test hypothesis • Uncover data correlations/relationships in support of measurement and predication • Identify the right visualisation models depending on the business challenges and the data sets • Address data security through active preventative strategies • Select and optimise algorithms using data science tools • Comply with ethical guidelines and legal requirements		
e-Competences (from e-CF)	A.7. Technology Trend Monitoring		Level 5
	A.9. Innovating		Level 4
	D.10. Information and Knowledge Management		Level 5
	D.11. Needs Identification		Level 4
	E.1. Forecast Development		Level 4
KPI area	Value and effectiveness of data analytics		

Profile title	DATA SPECIALIST ROLE (28)		
Summary statement	Ensures the implementation of the organisations data management policy.		
Mission	Ensures asset protection through the provision of clean, consistent, quality assured data. Maintains the integrity of data, stores and searches data and supports presentation of data analysis.		
Deliverables	Accountable	Responsible	Contributor
	• ICT Quality Policy (data)	• Data Protection Policy • Data Model	• Data Analytics
Main task/s	• Define, build and optimise data models • Proactively protect confidentiality and security of data • Ensure data lifecycle support • Curate and archive data • Advise on appropriate data analytic methodology • Ensure data quality and integrity • Maintain data quality and compliance to legal standards		
e-Competences (from e-CF)	A.6. Application Design		Level 3
	D.10. Information and Knowledge Management		Level 4
	E.6. ICT Quality Management		Level 4
	E.8. Information Security Management		Level 4
KPI area	Compliance with national data legislation		

Profile title	SCRUM MASTER ROLE (29)		
Summary statement	Leads and coaches an agile team.		
Mission	Creates a high performance self-managed dynamic team minimising impediments to development progress. Drives team by applying the agile process to achieve an optimised work-flow through continuous improvement. Supports team goals and coordinates activities with other teams.		
Deliverables	Accountable	Responsible	Contributor
	Iteration Retrospective	Sprint Planning	- Development Process - Team backlog - Training Program
Main task/s	- Help team improve and take responsibility for their actions to deploy agile values, principles and practices - Support Product Owner in the backlog management - Apply team-building techniques to improve performances. - Promote continuous learning and professional development of team members - Ensure continuous improvement of software quality - Support team self-defined processes and rules - Facilitate regular team meetings, including daily stand-up, Iteration planning, team demo, and retrospective iteration		
e-Competences <i>(from e-CF)</i>	B.3. Testing		Level 3
	B.6. Systems Engineering		Level 4
	D.9. Personnel Development		Level 3
	E.4. Relationship Management		Level 3
	E.5. Process Improvement		Level 3
KPI area	Continuous enhancement of agile methodology deployment		

Profile title	PRODUCT OWNER (30)		
Summary statement	Represents the needs of the stakeholder community, the voice of the customer, to the agile team.		
Mission	Understands customer requirements and validates that the developed software solution meets requirements. Links business and Agile teams.		
Deliverables	Accountable	Responsible	Contributor
	• Team Backlog • Solution Requirements • Release Plan	• Business Relationship	• Program Backlog • Sprint Planning
Main task/s	• Build, edit, and maintain the team backlog • Define, prioritise and validate software requirements through User Stories • Establish story acceptance criteria and accept stories in the baseline • Drive iteration goals and iteration content • Work across teams to define and implement improvement stories to enhance speed and quality • Participate in team demo and retrospective		
e-Competences <i>(from e-CF)</i>	A.4. Product/ Service Planning		level 4
	A.9. Innovation		level 4
	D.11. Needs Identification		level 4
	E.4. Relationship Management		level 4
KPI area	Customer satisfaction achievement		

Annex A: ICT Profiles – e-Competences Matrix

see CWA Part 2 USER GUIDE for more detail. E)

			Account Manager Role	Business Analyst Role	Business Information Manager Role	Chief Information Officer (CIO)	Data Administrator Role	Developer Role	Digital Media Specialist Role	Enterprise Architect Role	Digital Consultant Role	ICT Operations Manager Role	Cyber Security Manager Role	Cyber Security Specialist Role	Digital Educator Role	Network Specialist Role	Project Manager Role	Quality Assurance Manager Role	Service Support Role	Service Manager Role	Systems Administrator Role	Systems Analyst Role	Systems Architect Role	Technical Specialist Role	Test Specialist Role	Solution Design Role	Digital Transformation Leader	DevOps Expert Role	Data Scientist Role	Data Specialist Role	Scrum Master Role	Product Owner Role
PLAN	A.1	IS and Business Strategy Alignment	4	4	4	5			5																							
	A.2	Service Level Management	3																	4												
	A.3	Business Plan Development	3	4	4	5			4																							
	A.4	Product/Service Planning	2																								5					
	A.5	Architecture Design	3							4							4					3	4									4
	A.6	Application Design	1								2																	5				
	A.7	Technology Trend Monitoring	2									2																				
	A.8	Sustainable Development	3										4	4	4	3							4								3	
	A.9	Innovating	4									5											4								5	
BUILD	B.1	Application Development	1																													
	B.2	Component Integration	2																													
	B.3	Testing	1																													
	B.4	Solution Deployment	2																													
	B.5	Documentation Production	1																													
	B.6	Systems Engineering	2																													
	C.1	User Support	3																													
RUN	C.2	Change Support	1																													
	C.3	Service Delivery	2																													
	C.4	Problem Management	3																													
	D.1	Information Security Strategy Development	1																													
ENABLE	D.2	ICT Quality Strategy Development	2																													
	D.3	Education and Training Provision	3																													
	D.4	Purchasing	2																													
	D.5	Sales Proposal Development	3	3																												
	D.6	Channel Management	4	4																												
	D.7	Sales Management	4	4	4																											
	D.8	Contract Management	5																													
	D.9	Personnel Development	2																													
	D.10	Information and Knowledge Management	3																													
	D.11	Needs Identification	4	4																												
	D.12	Digital Marketing	3																													
	MANAGE	E.1	Forecast Development	4	3																											
E.2		Project and Portfolio Management	2																													
E.3		Risk Management	3																													
E.4		Relationship Management	4	4	4	4																										
E.5		Process Improvement	3																													
E.6		ICT Quality Management	2																													
E.7		Business Change Management	3																													
E.8		Information Security Management	4																													
E.9		IS Governance	5																													

Annex B: ICT Profiles – Deliverables Matrix

see CWA Part 2 USER GUIDE for more detail.

	DELIVERABLES	ACCOUNTABLE	RESPONSIBLE	CONTRIBUTOR	ROLE PROFILES																											
					Account Manager Role	Business Analyst Role	Business Information Manager Role	Chief Information Officer (CIO) Role	Data Administrator Role	Developer Role	Digital Media Specialist Role	Enterprise Architect Role	Digital Consultant Role	ICT Operations Manager Role	Cyber Security Manager Role	Cyber Security Specialist Role	Digital Educator Role	Network Specialist Role	Project Manager Role	Quality Assurance Manager Role	Service Support Role	Service Manager Role	Systems Administrator Role	Systems Analyst Role	Systems Architect Role	Technical Specialist Role	Test Specialist Role	Solution Design Role	Digital Transformation Leader Role	Devops Expert Role	Data Scientist Role	Scrum Master Role
1	Budget Plan	10																														
2	Business Case (Lightweight Business Case)		2																													
3	Business Plan (Strategic Themes)			2,3,8																												
4	Business Process Definition			8																												
5	Business Relationship		1,2,30																													
6	Business Requirements	2		9																												
7	Change Management Plan			15																												
8	Data Analytics		27	28																												
9	Data Collection and Representation	27		27																												
10	Data Management Plan			27																												
11	Data Management System	5		27																												
12	Data Model		2,28																													
13	Data Protection Policy		28	5																												
14	Data Selection	27																														
15	Development Process		25	20,29																												
16	Digital Transformation Roadmap	25																														
17	Digital Transformation Strategy		4,25																													
18	Documented Code	6																														
19	Enterprise Architecture	8																														
20	Escalation process		17																													
21	First Level Support		17																													
22	Hardware Component	20																														
23	HR Development Plan		10																													
24	ICT Audit Report	16																														
25	ICT Department & Budget	4																														
26	ICT Governance Policy	4																														
27	ICT Model			20																												
28	ICT Quality Policy	28	16																													
29	ICT Strategy and Implementation	4		2																												
30	Incidents Database			19																												
31	Information Security Policy	11		12																												
32	Information Security Risk Assessment		12	14																												
33	Information Security Strategy		4,11																													
34	Integrated Solution	21,26	17,20	15,23																												
35	Iteration Retrospective	29																														
36	Knowledge or Information Base	12	9,11	8																												
37	New Solution and Critical Business Process Integration Proposal	9	12,21	8,11,25																												
38	Non Functional Requirements		7																													
39	Opportunity Memo	9																														
40	Production Forecast			1																												
41	Program Backlog			30																												
42	Project Plan	15		9																												
43	Project Portfolio	3	4	24																												
44	Quality Assurance			13,16																												
45	Quality Performance Indicators		16	18																												
46	Quality Plan			15																												
47	Release			26																												
48	Release Plan	30																														
49	Risk Management Plan			12																												
50	Risk Management Policy			10,12,16																												
51	Sale	1																														
52	Sales Forecast			1																												
53	Second Level Support			17																												
54	Service Level Agreement		18																													
55	Services Catalogue		17																													
56	Software Component	20	6																													
57	Software Design Description		24	6																												
58	Solution Documentation		14,15	22,23																												
59	Solution in Operation	18,24	5,14,19	7																												
60	Solution Requirement	30																														
61	Solution Specification	21	3,14	20																												
62	Solved Incident	22	18	14,17,19																												
63	Sprint Planning		29	30																												
64	Sustainable IT Policy			10																												
65	Team Backlog	30		29																												
66	Technical Proposal		20	1,18																												
67	Test Plan		23																													
68	Test Procedure		23	5,6,26																												
69	Test Result		23																													
70	Training Course		13																													
71	Training Policy			13																												
72	Training Program		10	13,29																												

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ANNEX C: Overview all Profiles changes in title and summary statement and new profiles added from version 1 to version 2.

A more detailed logfile (title – summary statement – mission – e-CF competences) is available in a separate file.

EU ICT Professional Role Profile Title		ICT Profile Summary statement	
Version 1	Draft Version 2	Version 1	Draft Version 2
Account Manager (1)	Account Manager Role (1)	Senior focal point for client sales and customer satisfaction.	No change
Business Analyst (2)	Business Analyst Role (2)	Analyses Information System for improving business performance.	Analyses the business domain and optimises business performance through technology application.
Business Information Manager (3)	Business Information Manager Role (3)	Proposes plans and manages functional and technical evolutions of the Information System within the relevant business domain.	Proposes, plans and manages functional development of the Information System (IS) focusing upon the needs of users.
Chief Information Officer (4)	Chief Information Officer Role (4)	Develops and maintains Information Systems compliant to business and organisation's needs.	Develops and maintains Information Systems to support and meet the organisation's needs.
Database Administrator (5)	Data Administrator Role (5)	Designs and implements, or monitors and maintains databases.	Designs, implements, or monitors and maintains data sets, structured (databases) and unstructured (big data).
Developer (6)	Developer Role (6)	Builds/codes ICT solutions and specifies ICT products according to the customer needs.	Designs and codes components to meet solution specifications.
Digital Media Specialist (7)	Digital Media Specialist Role (7)	Creates websites and multimedia applications combining the power of digital technology with effective use of graphics, audio, photographic and video images.	Integrates digital technology components for internal and external communication purposes.
Enterprise Architect (8)	Enterprise Architect Role (8)	Designs and maintains the Enterprise Architecture.	Designs and maintains the holistic architecture of business processes and Information Systems.
ICT Consultant (9)	Digital Consultant Role (9)	Supports understanding of how new ICT technologies add value to a business.	Supports understanding of how digital technologies add value to a business.

EU ICT Professional Role Profile Title		ICT Profile Summary statement	
Version 1	Draft Version 2	Version 1	Draft Version 2
ICT Operations Manager (10)	ICT Operations Manager Role (10)	Manages operations, people and further resources for the ICT activity.	Manages operations, people and overall ICT resources.
ICT Security Manager (11)	Information Security Manager Role (11)	Manages the information security policy.	Leads and manages the organisation information security policy.
ICT Security Specialist (12)	Information Security Specialist Role (12)	Ensures the implementation of the organisations security policy.	Ensures the implementation of the organisation's information security policy by the secure and appropriate use of ICT resources.
ICT Trainer (13)	Digital Educator Role (13)	Educates and trains ICT professionals and practitioners to reach predefined standards of ICT technical /business competence.	Educates and trains Professionals to reach optimal digital competence to support business performance.
Network Specialist (14)	Network Specialist Role (14)	Ensures the alignment of the network, including telecommunication and/or computer infrastructure to meet the organisation's communication needs.	No change
Project Manager (15)	Project Manager Role (15)	Manages project to achieve optimal performance that conforms to original specifications.	Manages projects to achieve optimal performance and results.
Quality Assurance Manager (16)	Quality Assurance Manager Role (16)	Guarantees that Information Systems are delivered according to organisation policies (quality, risks, Service Level Agreement).	Ensures that processes and organisations implementing Information Systems comply to quality policies.
Service Desk Agent (17)	Service Support Role (17)	Provides first line telephone or e-mail support to clients with technical issues.	Provides remote or onsite diagnosis or guidance to internal or external clients with technical issues.
Service Manager (18)	Service Manager Role (18)	Plans, implements and manages solution provision.	No change
Systems Administrator (19)	Systems Administrator Role (19)	Administers ICT System components to meet service requirements.	No change

EU ICT Professional Role Profile Title		ICT Profile Summary statement	
Version 1	Draft Version 2	Version 1	Draft Version 2
Systems Analyst (20)	Systems Analyst Role (20)	Analyses requirements and specifies software and systems.	Analyses organisation requirements and specifies software and system requirements for new ICT solutions.
Systems Architect (21)	Systems Architect Role (21)	Plans and is accountable for the implementation and integration of software and/or ICT systems.	Plans, designs and integrates ICT system components including hardware, software and services.
Technical Specialist (22)	Technical Specialist Role (22)	Maintains and repairs hardware and software on client premises.	Maintains and repairs hardware, software and service applications.
Test Specialist (23)	Test Specialist Role (23)	Designs and performs testing plans.	No change

New profiles added for version 2

European ICT Professional Role Profile Title	ICT Profile Summary statement
Solution Designer Role (24)	Provides the translation of business requirements into end-to-end ICT solutions.
Digital Transformation Leader Role (25)	Provides leadership for the implementation of the digital transformation strategy of the organisation.
Devops Expert Role (26)	Implements processes and tools to successfully deploy DevOps techniques across the entire solution development lifecycle.
Data Scientist Role (27)	Leads the process of applying data analytics. Delivers insights from data by optimising the analytics process and presenting visual data representations.
Data Specialist Role (28)	Ensures the implementation of the organisations data management policy.
Scrum Master Role (29)	Leads and coaches an agile team.
Product Owner Role (30)	Represents the voice of the customer in an agile team.

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