European e-Competence Framework (e-CF) Version 3.0 - DRAFT CWA

The white lines contain the e-CF v 2.0 content,

The green lines contain the e-CF v 3.0 update. Changes are highlighted in red.

The pink lines detail the updating made.

Dim 1	Dimension 2	Dimension 3 e-CF levels e-1 to e-5, related to EQF level 3-8					Dimension 4	
	competence title and generic description	level 1	level 2	level 3	level 4	level 5	knowledge	skills
A	**PLAN**							
A.1	**IS and Business Strategy Alignment**							
	Anticipates long term business requirements and determines the IS model in line with organisation policy. Makes strategic IS policy decisions for the enterprise, including sourcing strategies.				Provides leadership for the construction and implementation of long term innovative IS solutions.	Provides IS strategic leadership to reach consensus and commitment from the management team of the enterprise.	K1 business strategy concepts K2 trends and implications of ICT internal or external developments for typical organisations K3 the potential and opportunities of relevant business models K4 the business aims and organisational objectives K5 the issues and implications of sourcing models	S1 analyse future developments in business process and technology application S2 determine requirements for processes related to ICT services S3 identify and analyses long term user/customer needs S4 contribute to the development of ICT strategy and policy S5 contribute to the development of the business strategy
UPDATE e-CF v 3.0	Anticipates long term business requirements, influences improvement of organisational process efficiency and effectivenes. Determines the IS model and the enterprise architecture in line with the organisation's policy and ensures a secure environment. Makes strategic IS policy decisions for the enterprise, including sourcing strategies.				Provides leadership for the construction and implementation of long term innovative IS solutions.	Provides IS strategic leadership to reach consensus and commitment from the management team of the enterprise.	K1 business strategy concepts K2 trends and implications of ICT internal or external developments for typical organisations K3 the potential and opportunities of relevant business models K4 the business aims and organisational objectives K5 the issues and implications of sourcing models K6 the new emerging technologies (e.g. distributed systems, virtualisation, mobility, data sets) K7 architectural frameworks K8 security	S1 analyse future developments in business process and technology application S2 determine requirements for processes related to ICT services S3 identify and analyses long term user/customer needs S4 contribute to the development of ICT strategy and policy, including ICT security and quality S5 contribute to the development of the business strategy S6 analyse feasibility in terms of costs and benefits S7 review and analyse effects of implementations S8 underrstand the impact of new technologies on business (e.g. open/big data, dematerialisation opportunities and strategies) S8 understand the business benefits of new technologies and how this can add value and provide competitive advantage (e.g. open/big data, dematerialisation opportunities and strategies) S9 understand the enterprise architecture S10 undesrtand the legal & regulatory landscape in order to factor into business requirements

						K (Knowledge)	S (Skills)
	enhanced content		no change	no change		K 6 and K7 added + K8	S4 modified, S6-S9 added +S10
A.2	**Service Level Management**						
	Defines, validates and makes applicable service level agreements (SLA) and underpinning contracts for services offered. Negotiates service performance levels taking into account the needs and capacity of customers and business.		Influences and prepares the final Service Level Agreement (SLA) and accounts for the final content.	Provides leadership to amend the enterprise strategy with respect to Service Level Agreements (SLA) in order to achieve forecasted results.		K1 service level agreement 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	S1 analyse service provision records S2 evaluate service provision against service level agreement S3 negotiate realistic service level targets S4 use relevant quality management techniques S5 anticipate and mitigate against potential service disruptions
UPDATE e-CF v 3.0	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.		Ensures the content of the SLA.	Negotiates revision of SLAs, in accordance with the overall objectives. Ensures the achievement of planned results.		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	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
	no change "customer" replaced with "stakeholders"		improved wording	improved wording		K6 and K7 added	no change
A.3	**Business Plan Development**						
	Addresses the design and structure of a business or product plan including the identification of alternative approaches as well as return on investment propositions. Considers the possible and applicable sourcing models. Presents cost benefit analysis and reasoned arguments in support of the selected strategy. Ensures compliance with business and technology strategies. Communicates and sells business plan to relevant stakeholders and addresses political, financial, and organisational interests, including SWOT analysis.		Exploits specialist knowledge to provide analysis of market environment etc.	Provides leadership for the creation of an information system strategy that meets the requirements of the business.	Applies strategic thinking and organisational leadership to exploit the capability of Information Technology to improve the business.	K1 business plan elements and milestones K2 the present and future market size and needs K3 competition and SWOT analysis techniques (for product features and also the external environment) K4 value creation channels K5 profitability elements K6 the issues and implications of sourcing models K7 financial planning and dynamics	S1 address and identify essential elements of product or solution value propositions S2 define the appropriate value creation channels S3 build a detailed SWOT analysis S4 generate short and long term performance reports (e.g. financial, profitability, usage and value creation) S5 identify main milestones of the plan

UPDATE e-CF v 3.0	Addresses the design and structure of a business or product plan including the identification of alternative approaches as well as return on investment propositions. Considers the possible and applicable sourcing models. Presents cost benefit analysis and reasoned arguments in support of the selected strategy. Ensures compliance with business and technology strategies. Communicates and sells business plan to relevant stakeholders and addresses political, financial, and organisational interests.			Exploits specialist knowledge to provide analysis of market environment etc.	Provides leadership for the creation of an information system strategy that meets the requirements of the business (e.g. distributed, mobility-based) and includes risks and opportunities	Applies strategic thinking and organisational leadership to exploit the capability of Information Technology to improve the business.	K1 business plan elements and milestones K2 the present and future market size and needs K3 competition and SWOT analysis techniques (for product features and also the external environment) K4 value creation channels K5 profitability elements K6 the issues and implications of sourcing models K7 financial planning and dynamic K8 new emerging technologies K9 risk and opportunity assessment techniques	S1 address and identify essential elements of product or solution value propositions S2 define the appropriate value creation channels S3 build a detailed SWOT analysis S4 generate short and long term performance reports (e.g. financial, profitability, usage and value creation) S5 identify main milestones of the plan
	no change "including SWOT analysis" removed			no change	additional wording	no change	K8 added + K9	no change
A.4	**Product or Project Planning**							
	Analyses and defines current and target status. Estimates cost effectiveness, points of risk, opportunities, strengths and weaknesses, with a critical approach. Creates structure plans; establishes time scales and milestones. Manages change requests. Defines delivery quantity and provides an overview of additional documentation requirements. Specifies correct handling of products.	Acts systematically to document standard and simple elements of product or project.	Exploits specialist knowledge to create and maintain complex documents of the project or product.	Acts with wide ranging accountability to take responsibility for complete project or product plan.			K1 effective frameworks and methodologies for project governance K2 typical KPI (key performance indicators) K3 basic decision-making methods	S1 identify all potential targets for the product or project S2 define the communication plan; identify key users and create related documentation S3 produce project and quality plans including milestones S4 ensure and manage adequate information for decision makers S5 manage the change request process
UPDATE e-CF v 3.0	**Product/ Service Planning** Analyses and defines current and target status. Estimates cost effectiveness, points of risk, opportunities, strengths and weaknesses, with a critical approach. Creates structured plans; establishes time scales and milestones, ensuring optimisation of activities and resources. Manages change requests. Defines delivery quantity and provides an overview of additional documentation requirements. Specifies correct handling of products, including legal issues in accordance with current regulations.	Acts systematically to document standard and simple elements of a product.	Exploits specialist knowledge to create and maintain complex documents.	Provides leadership and takes responsibility for, developing and maintaining overall plans.			K1 effective frameworks and methodologies for governance plans K2 typical KPI (key performance indicators) K3 basic decision-making methods K4 IPR principles and regulation K5 agile techniques K5 structured Project Management Methodologies (e.g. agile techniques) K6 optimisation methods (e.g. lean management) K7 new emerging technologies	S1 identify all potential targets for the product or service S2 define the communication plan; identify key users and create related documentation S3 produce quality plans S4 ensure and manage adequate information for decision makers S5 manage the change request process S5 manage the product/service development management lifecycle (inclusive of the formal change request process)
	focused title, slightly enhanced content	focused wording	focused wording	additional wording			K4-K7 added	focused skills
A.5	**Architecture Design**							

	Specifies, refines, updates and makes available a formal approach to implement solutions, necessary to develop and operate the IS architecture. Manages the relationship with the business stakeholders to ensure that the architecture is in line with business requirements. Identifies the need for change and the components involved; hardware, software, applications, processes, information and technology platform. Ensures that all aspects take account of interoperability, scalability usability and security.		Exploits specialist knowledge to define relevant ICT technology and specifications to be deployed in the construction of multiple ICT projects, applications or infrastructure improvements.	Acts with wide ranging accountability to define the strategy to implement ICT technology compliant with business need. Takes account of the current technology platform, obsolescent equipment and latest technological innovations		K1 architecture frameworks and systems design tools K2 systems architecture requirements: performance, maintainability, extendibility, scalability, availability, security and accessibility K3 costs, benefits and risks of a system architecture K4 the company's enterprise architecture and internal standards	S1 provide expertise to help solve complex technical problems and ensures best architecture solutions are implemented S2 use knowledge in various technology areas to build and deliver the enterprise architecture S3 understand the business objectives/divers that impact the architecture component (data, application, security, development etc). S4 assist in communication of the enterprise architecture and standards, principles and objectives to the application teams S5 develop design patterns and models to assist system analysts in designing consistent applications
UPDATE e-CF v 3.0	Specifies, refines, updates and makes available a formal approach to implement solutions, necessary to develop and operate the IS architecture. Identifies change requirements and the components involved: hardware, software, applications, processes, information and technology platform. Takes into account interoperability, scalability, usability and security. Maintains alignment between business evolution and technology developments.		Exploits specialist knowledge to define relevant ICT technology and specifications to be deployed in the construction of multiple ICT projects, applications or infrastructure improvements.	Acts with wide ranging accountability to define the strategy to implement ICT technology compliant with business need. Takes account of the current technology platform, obsolescent equipment and latest technological innovations	Provides ICT strategic leadership for implementing the enterprise strategy. Applies strategic thinking to discover and recognize new patterns in vast datasets and new ICT systems, to achieve business savings.	K1 architecture frameworks, methodologies and systems design tools K2 systems architecture requirements: performance, maintainability, extendibility, scalability, availability, security and accessibility K3 costs, benefits and risks of a system architecture K4 the company's enterprise architecture and internal standards K5 new emerging technologies (e.g., distributed systems, virtualisation models, datasets, mobile systems)	S1 provide expertise to help solve complex technical problems and ensures best architecture solutions are implemented S2 use knowledge in various technology areas to build and deliver the enterprise architecture S3 understand the business objectives/divers that impact the architecture component (data, application, security, development etc). S4 assist in communication of the enterprise architecture and standards, principles and objectives to the application teams S5 develop design patterns and models to assist system analysts in designing consistent applications
	rewording [to ensure consistency with Bs and with new competence D11]		no change	no change	adding level 5, enhancing e-lead	enhanced K1, added K5	no change
A.6	**Application Design**						

					K (Knowledge)	S (Skills)
	Defines the most suitable ICT solutions in accordance with ICT policy and user/customer needs. Accurately estimates development, installation and maintenance of application costs. Selects appropriate technical options for solution design, optimising the balance between cost and quality. Identifies a common reference framework to validate the models with representative users.	Contributes to the design and general functional specification and interfaces.	Organises the overall planning of the design of the application	Accounts for own and others actions in ensuring that the application is correctly integrated within a complex environment and complies with user/customer needs	K1 requirements modelling and need analysis techniques K2 software developments methods and their rationale (e.g. prototyping, agile methods, reverse engineering, etc.) K3 metrics related to application development K4 user interface design principles K5 languages for formalising functional specification K6 existing applications and related architecture K7 DBMS, Data Warehouse, DSS … etc	S1 identify customers, users & stakeholders S2 collect, formalise and validate functional and no-functional requirements S3 apply estimation models and data to evaluate costs of different software lifecycle phases S4 evaluate the use of prototypes to support requirements validation S5 design, organise and monitor the overall plan for the design of application S6 design functional specification starting from defined requirements S7 evaluate the suitability of different application development methods for the current scenario
UPDATE e-CF v 3.0	Analyses, specifies, updates and makes available a model to implement applications in accordance with IS policy and user/customer needs. Selects appropriate technical options for application design, optimising the balance between cost and quality. Designs data structures and builds system structure models according to analysis results through modelling languages. Ensures that all aspects take account of interoperability, usability and security. Identifies a common reference framework to validate the models with representative users, based upon development models (e.g. iterative approach).	Contributes to the design and general functional specification and interfaces.	Organises the overall planning of the design of the application	Accounts for own and others actions in ensuring that the application is correctly integrated within a complex environment and complies with user/customer needs	K1 requirements modelling and need analysis techniques K2 software developments methods and their rationale (e.g. prototyping, agile methods, reverse engineering, etc.) K3 metrics related to application development K4 user interface design principles K5 languages for formalising functional specification K6 existing applications and related architecture K7 DBMS, Data Warehouse, DSS … etc K8 mobile technologies K9 threat modeling techniques	S1 identify customers, users & stakeholders S2 collect, formalise and validate functional and no-functional requirements S3 apply estimation models and data to evaluate costs of different software lifecycle phases S4 evaluate the use of prototypes to support requirements validation S5 design, organise and monitor the overall plan for the design of application S6 design functional specification starting from defined requirements S7 evaluate the suitability of different application development methods for the current scenario S8 establish systematic and frequent communication with customers, users and stakeholders S9 ensure that controls & functionality are built in to the design
	significant content amendment to rationalise area B.	no change	no change	no change	K8 added	S8 added + S9
A.7	Technology Watching					

	Explores latest ICT technological developments to establish understanding of evolving technologies. Devises innovative solutions for integration of new technology into existing products, applications or services or for the creation of new solutions.		Exploits wide ranging specialist knowledge of new and emerging technologies, coupled with a deep understanding of the business, to envision and articulate the solutions of the future. Provides expert guidance and advice, to the leadership teams in business and in technology, about potential innovations to support strategic decision-making.	Provides strategic leadership. Envisions and articulates future solutions and directs the organisation to build and exploit them.	K1 emerging technologies and the relevant market applications K2 market needs K3 relevant sources of information (e.g. magazines, conferences and events, news letters, opinion leaders, etc.) K4 the rules of discussions in web communities	S1 monitor sources of information and continuously follow the most promising S2 identify vendors and providers of the most promising solutions; evaluates, justifies and proposes the most appropriate. S3 identify business advantages and improvements of adopting emerging technologies S4 create a proof of concept
UPDATE e-CF v 3.0	**Technology Trend Monitoring** Investigates latest ICT technological developments to establish understanding of evolving technologies. Devises innovative solutions for integration of new technology into existing products, applications or services or for the creation of new solutions.		Exploits wide ranging specialist knowledge of new and emerging technologies, coupled with a deep understanding of the business, to envision and articulate solutions for the future. Provides expert guidance and advice, to the leadership team to support strategic decision-making.	Makes strategic decisions envisioning and articulating future ICT solutions for customer-oriented processes, new business products and services; directs the organisation to build and exploit them.	K1 emerging technologies and the relevant market applications K2 market needs K3 relevant sources of information (e.g. magazines, conferences and events, news letters, opinion leaders, on-line forum, etc.) K4 the rules of discussions in web communities K5 applied research programme approaches	S1 monitor sources of information and continuously follow the most promising S2 identify vendors and providers of the most promising solutions; evaluates, justifies and proposes the most appropriate. S3 identify business advantages and improvements of adopting emerging technologies
	improved title, small enhancement in wording		improved wording	improved wording, highlighting e-leadership	K5 added K3 specification	S4 moved to A9
A.8	**Sustainable Development**					
	Estimates the impact of ICT solutions in terms of eco responsibilities including energy consumption. Advises business and ICT stakeholders on sustainable alternatives that are consistent with the business strategy. Applies an ICT purchasing and sales policy which fulfils eco-responsibilities.		Promotes awareness, training and commitment for the deployment of sustainable development and applies the necessary tools for piloting this approach.	Defines objective and strategy of sustainable IS development in accordance with the organisation's sustainability policy.	K1 metrics and indicators related to sustainable development K2 corporate social responsibility (CSR) of stakeholders within the IT infrastructure	S1 monitor and measures the IT energy consumption S2 apply recommendations in projects to support latest sustainable development strategies S3 master regulatory constraints and international standards related to IT sustainability

					K	S
UPDATE e-CF v 3.0	Estimates the impact of ICT solutions in terms of eco responsibilities including energy consumption. Advises business and ICT stakeholders on sustainable alternatives that are consistent with the business strategy. Applies an ICT purchasing and sales policy which fulfils eco-responsibilities.		Promotes awareness, training and commitment for the deployment of sustainable development and applies the necessary tools for piloting this approach.	Defines objective and strategy of sustainable IS development in accordance with the organisation's sustainability policy.	K1 metrics and indicators related to sustainable development K2 corporate social responsibility (CSR) of stakeholders within the IS infrastructure	S1 monitor and measures the ICT energy consumption S2 apply recommendations in projects to support latest sustainable development strategies S3 master regulatory constraints and international standards related to ICT sustainability
	no change		no change	no change	no change (IT replaced by IS	no change (IT replaced by ICT)
A.9	**Innovating**					
UPDATE e-CF v 3.0	Devises creative solutions for the provision of new concepts, ideas, products or services. Deploys novel and open thinking to envision exploitation of technological advances to address business/ society needs or research direction.		Applies independent thinking and technology awareness to lead the integration of disparate concepts for the provision of unique solutions.	Challenges the status quo and provides strategic leadership for the introduction of revolutionary concepts.	K1 existing and emerging technologies and market applications K2 habits, trends and needs K3 business, society and/ or research habits, trends and needs K4 innovation processes techniques	S1 identify business advantages and improvements of adopting emerging technologies S2 create a proof of concept S3 think out of the box S4 identify appropriate resources
	NEW COMPETENCE (example of enhancement in e-leadership)		NEW COMPETENCE	NEW COMPETENCE	NEW COMPETENCE	NEW COMPETENCE