

Request for Change

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Target Version: SFIA v8

Rational:

Over the last years Cloud engineering emerged as a new field of engineering that focuses on cloud services, such as "software as a service", "platform as a service", and "infrastructure as a service". The term of cloud engineering is at least ten years old. Extensive research has been conducted on specific areas in cloud engineering, such as development support for cloud patterns, and cloud business continuity services. The first IEEE International Conference on Cloud Engineering (IC2E) took place in March 2013.

Whilst in the first years cloud engineering was a multidisciplinary method encompassing contributions and skills from traditional engineering disciplines like systems engineering, software engineering, information technology engineering, and security engineering, the nature of commodity-like capabilities delivered by cloud services and the inherent challenges in this business model drive the need for cloud engineering as a core discipline.

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It is suggested to add a new skill "Cloud Engineering" at levels 4,5 and 6 to the SFIA Framework.

Cloud Engineering (CLOU)

Overall description:

The design of IT service solution to meet specified requirements, compatible with agreed cloud computing architectures, adhering to corporate policies and industry standards and within constraints of performance and feasibility. The identification of multidisciplinary concepts and methods and their translation into a coherent design, which forms the basis for integration of commodity-like capabilities and services as well as their verification. The design or selection of building blocks and practices such as Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS). The development of a complete set of detailed models, properties, and/or characteristics described in a form suitable for cloud realization. The adoption and adaptation of the end-to-end iteration of Cloud development, delivery and management during design-time and run-time based on the context of the work and selecting appropriately from predictive (plan-driven) approaches or adaptive (iterative/agile) approaches. In addition, provide advice in the transition of traditional existing IT service solutions to cloud computing based infrastructures and/or services.

Level 4 description:

Designs cloud services and capabilities using appropriate modelling techniques following agreed architectures, design standards, patterns and methodology. Identifies and evaluates alternative design options and trade-offs. Creates multiple design views to address the concerns of the different stakeholders of the architecture and to handle both functional and non-functional requirements. Models, simulates or prototypes the behaviour of proposed cloud services to enable approval by stakeholders. Produces detailed service design specification to form the

basis for the realization of cloud-based service solutions. Reviews, verifies and improves own designs against specifications.

Level 5 description:

Adopts and adapts appropriate cloud computing design methods, tools and techniques selecting appropriately from predictive (plan-driven) approaches or adaptive (iterative/agile) approaches, and ensures they are applied effectively. Designs large or complex cloud-based service solutions. Undertakes impact analysis on major design options and trade-off. Makes recommendations and assesses and manages associated risks. Reviews others' cloud-based service designs to ensure selection of appropriate technology, efficient use of resources, and integration of multiple cloud providers and technology. Ensures that the cloud-based service design balances functional and non-functional requirements. Contributes to development of service design policies and standards and selection of architecture components and building blocks. Plans and direct migration of IT services from traditional infrastructure to cloud computing based infrastructures and / or services.

Level 6 description:

Develops organisational policies, standards, guidelines, and methods for cloud based service design. Champions the importance and value of cloud-based design principles and the selection of appropriate service design lifecycle models; whether predictive (plan-driven) approaches or more adaptive (iterative/agile) approaches. Drives adoption of and adherence to relevant policies, standards, strategies and architectures. Leads cloud-based service design activities for strategic, large and complex solution development programmes. Develops effective implementation and procurement strategies, consistent with specified requirements, architectures and constraints of performance and feasibility. Develops cloud-based service solutions requiring introduction of new technologies or new uses for existing technologies. Evaluates the suitability of cloud computing based solutions for IT services considering policies, standards, cost-effectiveness, performance and corporate strategy.