EPI®

Data Centre

Competence Framework©

EPI-DCCF©

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2. Introduction

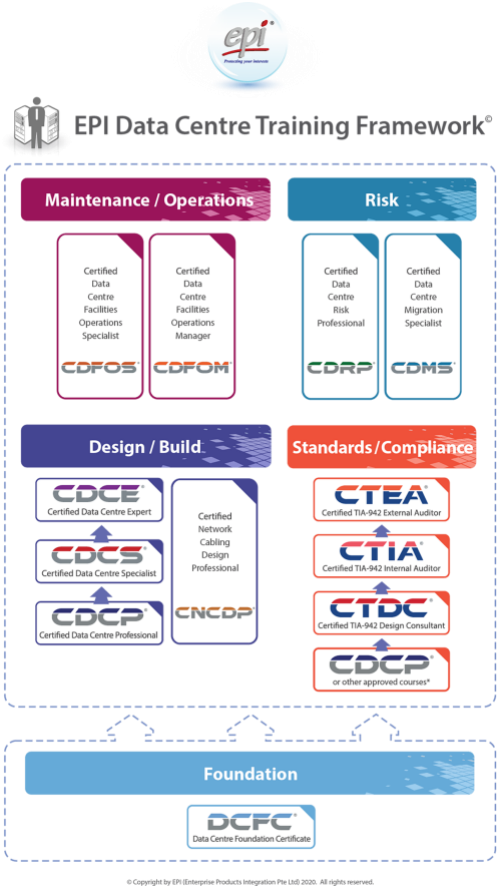
2.1 About EPI®

EPI, with world-wide offices, is a European origin company offering a wide range of data centre infrastructure services enabling businesses worldwide to design, implement, optimise, test, operate and maintain their mission critical data centre to ensure it meets and exceeds the business expectations.

All of our mission critical infrastructure services are aimed at helping customers to:

- Increase the availability
- Improve efficiency and manageability
- Minimize risk of business interruption

EPI is the first and by far largest data centre training provider in the world. We have developed the well-respected and widely adopted data centre training framework for data centre professionals;



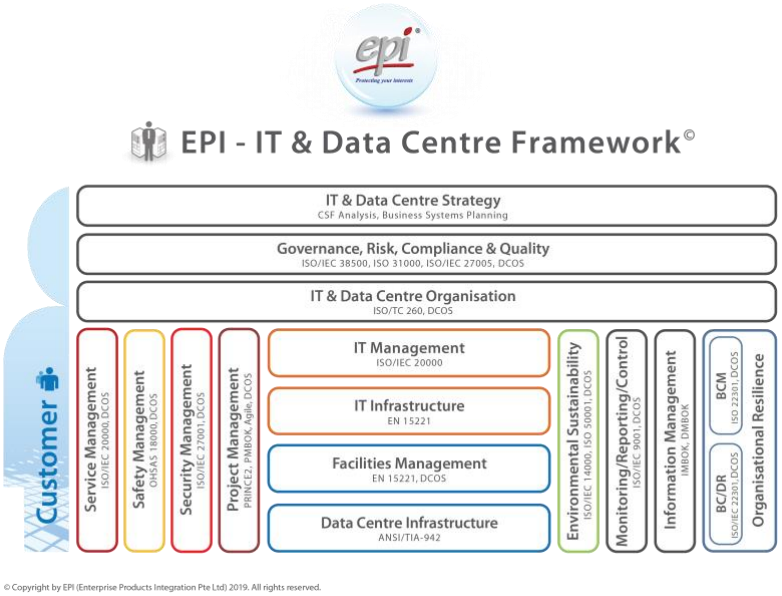
The EPI data centre training curriculum has been developed by veterans in the data centre industry who design, build and manage data centres for a living creating therefore very practical courses which provide direct benefit to anyone attending the training.

Our courses are based on the EPI-DCCF© which is now being made available to the industry.

2.2 About EPI-DCCF©

The EPI Data Centre Competence Framework© (DCCF©) provides a reference of 40 competences as required and applied at the data centre workplace, using a common language for competences, skills, knowledge and proficiency levels that can be understood across the industry. The EPI-DCCF© framework enables the data centre operator/owners to map job functions to the required competences for designing and operating a data centre with high-availability and efficiency in mind ensuring that the data centre provides an adequate level of services in line with the business requirements of its customers.

The EPI-DCCF© is based on the EPI-Data Centre Framework© depicted below. A full description of the EPI-Data Centre Framework© can be found on the website; www.epi-ap.com



The EPI-DCCF© has been developed by EPI for the data centre industry and is free of charge. Copies and extractions of this document are allowed taking into account the principles of the restrictions detailed in "Section-10; Intellectual Property / Copyright Protection" of this document.

The EPI-DCCF© is a living document which will be enhanced on a regular basis to make further improvements and to meet new business requirements in the industry. EPI welcomes feedback on the framework ensuring industry feedback is considered in future releases.

Please direct your feedback to: support@epi-ap.com

3. EPI – DCCF© Overview

The EPI- DCCF© framework provides a structured approach for any data centre operator/owner/investor to define job scopes and descriptions as well as competences required to deliver appropriate service levels to its customers. The EPI-DCCF© will allow managers and human resource departments to plan adequate and competent resources and provide career progression planning for its resources in line with the business objectives of the data centre.

The EPI-DCCF© is provided as a flexible framework and guidance applicable for any data centre type as well as for any potential model of resources fulfilment being either fully in-house, outsourced or mixed. The descriptions are generic and depending on size and complexity of the data centre operations certain job scopes and titles can be merged or expanded in levels such as junior, senior etc.

The illustration below shows the full EPI-DCCF© framework. The descriptions of the various dimensions are indicated in the sections below.

Dimension-1 5 - DCCF areas (A-E)	**Dimension-2** DCCF-Competences identified	**Dimension-3** DCCF-Competence proficiency levels e-1 to e-5				
		e-1	e-2	e-3	e-4	e-5
A. Plan	A.1. Data Centre and Business Strategy Alignment					
	A.2. Business plan development					
	A.3. Service Level Management					
	A.4. Technology trend monitoring					
	A.5. Site Planning					
	A.6. Architecture Design					
	A.7. Sustainable development					
B. BUILD	B.1. Architectural					
	B.2. Electrical engineering					
	B.3. Mechanical engineering					
	B.4. Telecommunication engineering					
	B.5. Fire and safety engineering					
	B.6. Physical Security engineering					
	B.7. Test and Commissioning					
	B.8. Documentation production					
C. RUN	C.1. Service delivery					
	C.2. User support					
	C.3. Problem management					
	C.4. Change support					
D. ENABLE	D.1. Quality strategy development					
	D.2. Human resource management					
	D.3. Education and Training					
	D.4. Information management					
	D.5. Knowledge management					
	D.6. Sales management					
	D.7. Sales proposal development					
	D.8. Purchasing					
	D.9. Contract management					
	D.10. Vendor management					
E. MANAGE	E.1. Data centre operations management					
	E.2. Facilities Management					
	E.3. Risk Management					
	E.4. Project and portfolio management					
	E.5. Relationship management					
	E.6. Quality management					
	E.7. EH&S management					
	E.8. Process management					
	E.9. Information security management					
	E.10. Asset management					
	E.11. Governance					

3.1 Dimension-1; High-level competence areas

Dimension-1 of the EPI-DCCF© outlines the five different high-level competence areas of the data centre life cycle.

1. **Plan;** Focus on the planning of the data centre business. This includes planning of the services to be offered as well as the technology to be deployed considering availability, sustainability, security and operability of the data centre. This includes continuous improvement plans.
2. **Build;** Focus on the detailed design of the data centre as well as the erection of the building (where applicable) and fit-out of the data centre facilities including testing and commissioning and documentation creation and archiving.
3. **Run;** Focus on the support infrastructure for the data centre including change control
4. **Enable;** Focus on the supporting functions to ensure continuous quality improvement, adequate staffing, adequate vendor management program etc.
5. **Manage;** Focus on the daily operations of the data centre.

3.2 Dimension-2; Detailed competence requirements

Dimension-2 provides and easy reference of the 40 disciplines required to design, build and operate a data centre. It should be understood that not all disciplines are necessarily required to be in-house as an organisation might decide to outsource specific competences.

Note: Some disciplines might also be included in multiple high-level competence areas. For example, Service Level Management will affect almost every part of the data centre service delivery model. Some disciplines might also cross multiple high-level competence areas as data centres are continuously evolving.

3.3 Dimension-3: Competence proficiency levels

Dimension-3 provides 5 levels of proficiency required within each competence itself. These levels are widely recognized in the industry.

Level-1: Associate	Able to apply knowledge and skills to solve straight forward problems; responsible for own actions; operating in a stable environment.
Level-2: Professional	Operates with capability and independence in specified boundaries and may supervise others in this environment; conceptual and abstract model building using creative thinking; uses theoretical knowledge and practical skills to solve complex problems within a predictable and sometimes unpredictable context.
Level-3: Senior Professional/ Manager	Respected for innovative methods and use of initiative in specific technical or business areas; providing leadership and taking responsibility for team performances and development in unpredictable environments.
Level-4: Lead Professional/ Senior Manager	Extensive scope of responsibilities deploying specialised integration capability in complex environments; full responsibility for strategic development of staff working in unfamiliar and unpredictable situations.
Level-5: Principal	Overall accountability and responsibility; recognised inside and outside the organisation for innovative solutions and for shaping the future using outstanding leading edge thinking and knowledge.

4. Dimension-1: A. PLAN

4.1 A.1. Data Centre and Business Strategy Alignment

Dimension-1 DC-Competence area	**A. PLAN**				
Dimension-2 DC-Competence Title + Generic Description	**A.1. Data Centre and Business Strategy Alignment** Anticipates long term business requirements, influences improvement of organisational process efficiency and effectiveness. Determines the data centre model and the facilities architecture in line with the organisation's policy and ensures a secure environment. Makes strategic data centre policy decisions for the enterprise, including sourcing strategies.				
Dimension-3 DC-Competence proficiency levels e-1 to e-5	**Level-1**	**Level-2**	**Level-3**	**Level-4**	**Level-5**
	-	-	-	Provides leadership for the construction and implementation of long term innovative data centre solutions.	Provides data centre strategic leadership to reach consensus and commitment from the management team of the enterprise.
Dimension-4 Knowledge examples *(Knows/aware of/ familiar with)*	K1	business strategy concepts			
	K2	trends and implications of data centre internal or external developments			
	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 data centre technologies, designs and life cycles			
	K7	architectural data centre frameworks (e.g. electrical. Mechanical, telecom, building)			
	K8	security (physical and logical)			
	K9	data centre standards and guidelines (e.g. TIA-942, Tier, Rated, DCOS®, EN-50600)			
Skill examples *Is able to*	S1	analyse future developments in business process and data centre technologies			
	S2	determine requirements for processes related to data centre services			
	S3	identify and analyse long term user /customer/ market needs			
	S4	contribute to the development of data centre strategy and policy			
	S5	contribute to the development of the business strategy			
	S6	analyse feasibility in terms of costs, cost of ownerships and benefits			
	S7	review and analyse effects of implementations (e.g. risk analyses)			
	S8	understand the impact of new technologies on business (e.g. opportunities and strategies)			
	S9	understand the business benefits of new technologies and how this can add value and provide competitive advantage (e.g. opportunities and strategies)			
	S10	understand the enterprise data centre architecture (roadmap in relation to innovation)			
	S11	understand the legal, local, tax, regulatory landscape in order to factor into business requirements			

4.2 A.2. Business Plan Development

Dimension-1 DC-Competence area	**A. PLAN**				
Dimension-2 DC-Competence Title + Generic Description	**A.2. Business Plan Development** Addresses the intent, design and structure of a business including the data centre location, product/services offered and/or market 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 elected strategy. Ensures compliance with business and technology strategies. Communicates and sells business plan to relevant stakeholders and addresses political, financial, and organisational interests.				
Dimension-3 DC-Competence proficiency levels e-1 to e-5	**Level-1**	**Level-2**	**Level-3**	**Level-4**	**Level-5**
	-	-	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 and data centre Technology to improve the business.
Dimension-4 Knowledge examples *(Knows/aware of/ familiar with)*	K1	business plan elements and milestones			
	K2	the present and future market size and needs			
	K3	competition and SWOT analysis techniques and risks			
	K4	value creation channels			
	K5	profitability elements			
	K6	the issues and implications of sourcing models			
	K7	financial planning and basic calculations			
	K8	new and emerging technologies and services (e.g. Cloud, IaaS, PaaS, SaaS, etc.)			
	K9	risk and opportunity assessment techniques (risk- and availability analyses)			
Skill examples *Is able to*	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 identify main milestones of the plan			
	S6	understand and have generic knowledge of the ICT landscape (e.g. colocation, cloud, hosting, storage, back-up, servers, etc.)			

4.3 A.3. Service Level Management

Dimension-1 DC-Competence area	**A. PLAN**				
Dimension-2 DC-Competence Title + Generic Description	**A.3. Service Level Management** Defines, validates and makes applicable service level agreements (SLAs) and underpinning contracts for services offered. Negotiates service performance levels taking into account the needs and capacity of stakeholders, business and customers.				
Dimension-3 DC-Competence proficiency levels e-1 to e-5	**Level-1**	**Level-2**	**Level-3**	**Level-4**	**Level-5**
	-	-	Ensures the content of the SLA.	Negotiates revision of SLAs, in accordance with the overall objectives. Ensures the achievement of planned results.	-
Dimension-4 Knowledge examples *(Knows/aware of/ familiar with)*	K1	SLA documentation			
	K2	how to compare and interpret management data			
	K3	the elements forming the metrics of service level agreements			
	K4	how service delivery infrastructures work			
	K5	impact of service level non-compliance on business performance			
	K6	ICT and data centre security standards			
	K7	ICT and data centre process standards and organization structure			
	K8	ICT and data centre quality standards			
Skill examples *Is able to*	S1	analyse service provision records			
	S2	standardise and unify existing SLA contracts in line with industry standards and best practices			
	S3	evaluate service provision against SLA (e.g. to management, internal organizations and customers)			
	S4	negotiate realistic service level targets			
	S5	use relevant quality management techniques			
	S6	realize the optimal balance between customer- and business needs and requirements			
	S7	anticipate and mitigate against potential service disruptions			

4.4 A.4. Technology Trend Monitoring

Dimension-1 DC-Competence area	**A. PLAN**				
Dimension-2 DC-Competence Title + Generic Description	**A.4. Technology Trend Monitoring** Investigates latest data centre technologically and design methodology developments to establish an understanding of new and evolving technologies. Proposes innovative solutions for integration of new technology into existing data centre environments, products and/or services or creation of new solutions or for making to improve current data centre environment (e.g. more cost effective, more efficient or effective)				
Dimension-3 DC-Competence proficiency levels e-1 to e-5	**Level-1**	**Level-2**	**Level-3**	**Level-4**	**Level-5**
	-	-	-	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 data centre solutions for customer-oriented processes, new business products and services; directs the organisation to build and exploit them.
Dimension-4 Knowledge examples *(Knows/aware of/ familiar with)*	K1	emerging data centre technologies and the relevant market trends			
	K2	market needs			
	K3	relevant sources of information (e.g. magazines, conferences and events, newsletters, opinion leaders, on-line forum, seminars etc.)			
	K4	the rules of discussions in web communities (e.g. forums, LinkedIn)			
	K5	how to make proposals for standardization and replacement inside the data centre technical environment itself as well throughout the whole data centre chain (multiple sides present)			
	K6	applied research programme approaches			
Skill examples *Is able to*	S1	monitor sources of information and continuously follow the most promising			
	S2	identify vendors, providers of the most promising solutions; evaluate, justify and propose the most appropriate.			
	S3	identify business advantages and improvements of adopting emerging technologies			

4.5 A.5. Site Planning

Dimension-1 DC-Competence area	**A. PLAN**				
Dimension-2 DC-Competence Title + Generic Description	**A.5. Site Planning** Specifies, refines, updates and makes available a formal approach to implement site planning methodology and requirements. Takes into account conformity to standards of choice, availability, scalability, efficiency, sustainability, business continuity and security. Maintains alignment with the current and future planned business requirements.				
Dimension-3 DC-Competence proficiency levels e-1 to e-5	**Level-1**	**Level-2**	**Level-3**	**Level-4**	**Level-5**
	-	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.	-

Dimension-4 Knowledge examples *(Knows/aware of/ familiar with)*	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
	K6	structured project management methodologies (e.g. agile techniques)
	K7	optimization methods (e.g. lean management)
	K8	new emerging technologies
Skill examples *Is able to*	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
	S6	manage the product / service development management lifecycle (inclusive of the formal change request process)

4.6 A.6. Architectural Design

Dimension-1 DC-Competence area	**A. PLAN**				
Dimension-2 DC-Competence Title + Generic Description	**A.6. Architectural Design** Specifies, refines, updates and makes available a formal approach to implement solutions, necessary to develop and operate the data centre 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.				
Dimension-3 DC-Competence proficiency levels e-1 to e-5	**Level-1**	**Level-2**	**Level-3**	**Level-4**	**Level-5**
	-	-	Exploits specialist knowledge to define relevant data centre technology and specifications to be deployed in the construction of multiple data centre projects, applications, systems or infrastructure improvements.	Acts with wide ranging accountability to define the strategy to implement data centre technology compliant with business need. Takes account of the current technology platform, obsolete equipment, sustainable and latest technological innovations.	Provides data centre strategic leadership for implementing the enterprise strategy. Applies strategic thinking to discover and recognize new patterns new data centre systems or environments, to achieve business savings.
Dimension-4 Knowledge examples *(Knows/aware of/ familiar with)*	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 the data centre architecture (e.g. single point of failures)			
	K4	the company's enterprise architecture and (internal) standards (e.g. clarity, standardization, etc.)			
	K5	new emerging technologies (e.g., distributed systems, virtualisation models, datasets, mobile systems, renewable energy solutions, etc.)			
Skill examples *Is able to*	S1	provide expertise to help solve complex technical problems (ITIL problem management) and ensure best architecture solutions are implemented			
	S2	use knowledge in various technology areas to build and deliver the enterprise architecture			
	S3	understand the business objectives / drivers 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 analysts in designing consistent data centre environments			

4.7 A.7. Sustainable Development

Dimension-1 DC-Competence area	**A. PLAN**				
Dimension-2 DC-Competence Title + Generic Description	**A.7. Sustainable Development** Estimates the impact of the data centre solutions in terms of eco responsibilities including energy consumption and renewable energy possibilities Advises business and the data centre stakeholders on sustainable alternatives that are consistent with the business strategy. Applies a purchasing and sales policy which fulfils eco-responsibilities.				
Dimension-3 DC-Competence proficiency levels e-1 to e-5	**Level-1**	**Level-2**	**Level-3**	**Level-4**	**Level-5**
	-	-	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.	-
Dimension-4 Knowledge examples *(Knows/aware of/ familiar with)*	K1	metrics and indicators related to sustainable development			
	K2	Corporate Social Responsibility (CSR) strategies and standards			
	K3	data centre/ ICT energy awareness and energy efficiency standards and guidelines			
	K4	energy saving instruments, product and service strategies			
	K5	energy- and environmental studies and best practices (e.g. Code of Conduct, etc.)			
	K6	data centre energy performance analyses			
Skill examples *Is able to*	S1	monitor, measure, analyse and report the data centre and ICT energy consumption (PUE - Power Usage Effectiveness) and other selected factors real time			
	S2	apply recommendations before and in projects to support latest sustainable development strategies			
	S3	control regulatory constraints and international standards related to data centre and ICT sustainability (throughout the whole ICT chain from data centre to server application layer)			
	S4	close material, water and energy loops (Cradle 2 Cradle)			
	S5	support and advice data centre customers and –industry with expertise how to realize everyone's CSR			

5. Dimension-1: B. BUILD

5.1 B.1. Architectural

Dimension-1 DC-Competence area	**B. BUILD**				
Dimension-2 DC-Competence Title + Generic Description	**B.1. Architectural** Analyses, specifies, updates and makes available specifications to implement architectural design solutions in accordance with the customer needs. Selects appropriate architectural and technical options optimising the balance between costs, quality, energy efficiency, availability, scalability and standards. Identifies change requirements and the components involved. Maintains alignment between business evolution and technology developments.				
Dimension-3 DC-Competence proficiency levels e-1 to e-5	**Level-1**	**Level-2**	**Level-3**	**Level-4**	**Level-5**
	-	Designs and implements a future architecture within the framework of the target architecture. Determines the impact on existing applications and identifies bottlenecks. Takes technical developments into account.	Develops, analyses and determines the target architecture within the strategic vision in line with the technical developments. Defines technical frameworks.	Provides a strategic vision on the importance of technical developments for the business. Develops a vision, based on the strategy of the business and technological developments.	-
Dimension-4 Knowledge examples *(Knows/aware of/ familiar with)*	K1	impact analyses (investment, risks), development (International) standards			
	K2	data centre design layers (core, aggregation and access) , data centre design models (e.g. Tier, Rating etc.) and data centre industry trends			
	K3	requirement studies (e.g. cost/revenue analysis, customer needs) and translating them in to evidence-based alternative solutions			
	K4	project proposals and data centre (target) architecture			
	K5	data centre network and facility topologies, multi path routing			
	K6	cost management, scalability models (business growth), service and business continuity, security and conformity			
	K7	business standards (e.g. portfolio, methods, tools, processes, financial, legal, technical, commercial, etc.)			
Skill examples *Is able to*	S1	identifies change requirements and components involved			
	S2	create support (internal and at business units), control and coach projects (leaders)			
	S3	investigate, substantiate choices and create business support			
	S4	spread developments and contribute to standardization			
	S5	develop documentation and training for client and personnel			
	S6	implement customer of deployable solutions and requirements in the architecture			
	S7	elaborate technical performance or functional prerequisite for applications and systems within the ambient architecture/infrastructure			
	S8	expert driven customer support before, during and after architectural projects			

5.2 B.2. Electrical Engineering

Dimension-1 DC-Competence area	**B. BUILD**				
Dimension-2 DC-Competence Title + Generic Description	**B.2. Electrical Engineering** Analyses, specifies, updates and makes available specifications to implement electrical design solutions in accordance with the customer needs. Selects appropriate technical options optimising the balance between costs, quality, energy efficiency, availability, scalability and standards. Identifies change requirements and the components involved. Maintains alignment between business evolution and technology developments.				
Dimension-3 DC-Competence proficiency levels e-1 to e-5	**Level-1**	**Level-2**	**Level-3**	**Level-4**	**Level-5**
	-	Designs, analyses, manage and improves electrical data centre power specifications (e.g. devices, infrastructures, etc.)	Plans, supervises and implement research methodologies and procedures to apply principles of electrical theory to electrical data centre engineering projects	Responsible for providing capital project programs for new electrical equipment or major repairs. Authorizes budgets, estimating labour, material and construction costs	-

Dimension-4 Knowledge examples *(Knows/aware of/ familiar with)*	K1	electricity, electro-magnetism, electrics, power, control systems, signal processing and telecommunications
	K2	computer assisted engineering and computer assisted design software and design equipment
	K3	electrical drawings, -single lines, -specification, -systems and topographical maps
	K4	customer and data centre standard requirements and designs
	K5	renewable (electrical) energy sources (e.g. wind, solar, biofuels, etc.)
	K6	techniques for numbering schemes and labelling power infrastructure
	K7	large scale electrical systems (e.g. motor controls, power transmission, energy transmitting, utilizing electricity)
Skill examples *Is able to*	S1	plan layout of electrical power infrastructure data centre plants
	S2	oversee project production efforts to assure projects are completed on time within budget
	S3	prepare specification for purchasing material and equipment
	S4	investigate and test vendors and competitors' products
	S5	investigate customers of data centre operations electrical complains, determine nature extent of problems (e.g. failures or single point of failures, etc.)
	S6	recommend remedial measures to the data centre management
	S7	integrate electrical systems with renewable energy systems to improve the overall energy efficiency of the data centre
	S8	develop detailed calculations to compute establish manufacturing, construction and installation standards and specifications

5.3 B.3. Mechanical Engineering

Dimension-1 DC-Competence area	**B. BUILD**				
Dimension-2 DC-Competence Title + Generic Description	**B.3. Mechanical Engineering** Analyses, specifies, updates and makes available specifications to implement mechanical design solutions in accordance with the customer needs. Selects appropriate technical options optimising the balance between costs, quality, energy efficiency, availability, scalability and standards. Identifies change requirements and the components involved. Maintains alignment between business evolution and technology developments.				
Dimension-3 DC-Competence proficiency levels e-1 to e-5	**Level-1**	**Level-2**	**Level-3**	**Level-4**	**Level-5**
	-	Designs, analyses, manage and improves mechanical data centre specifications (e.g. devices, infrastructures, etc.)	Plans, supervises and implements research methodologies and procedures to apply principles of mechanical theory to mechanical data centre engineering projects	Responsible for providing capital project programs for new mechanical equipment or major repairs. Authorizes budgets, estimating labour, material and construction costs	-
Dimension-4 Knowledge examples *(Knows/aware of/ familiar with)*	K1	data centre standards, requirements and designs			
	K2	renewable (mechanical) energy and cooling trends (e.g. free air cooling, etc.)			
	K3	laws, regulations and industrial refrigeration			
	K4	mechanical directives, standards, safety regulations and inspection requirements			
	K5	CAD systems (2D-3D), -applications			
	K6	machinery-, plants- tools- and equipment lay-outs			
	K7	cost material estimates and project schedules			
	K8	mechanical designs, - fabrication, -testing and -documentation			
Skill examples *Is able to*	S1	control failure analyses, document results, recommend and support corrective actions			
	S2	analyse and estimate productions costs (e.g. labour, equipment, plant space, etc.)			
	S3	test mechanical data centre plant installations, components, machines to define characteristics (e.g. performance, strength, response to strass, etc.)			
	S4	ensure specifications, designs and sketches for the data centre mechanical plant related to the generation, transmission and use of mechanical and fluid energy			
	S5	oversee, monitor and inspect mechanical installation and –construction projects			
	S6	realize equipment inspection (reliability) schedules and work plans			
	S7	interpret engineering sketches, -drawings and -specifications			
	S8	support testing through activities (e.g. setting up instrumentation for crash testing, major changes, etc.)			

5.4 B.4. Telecommunication Engineering

Dimension-1 DC-Competence area	**B. BUILD**				
Dimension-2 DC-Competence Title + Generic Description	**B.4. Telecommunication Engineering** Analyses, specifies, updates and makes available specifications to implement telecommunication design solutions in accordance with the customer needs. Selects appropriate technical options optimising the balance between costs, quality, energy efficiency, availability, scalability and standards. Identifies change requirements and the components involved. Maintains alignment between business evolution and technology developments.				
Dimension-3 DC-Competence proficiency levels e-1 to e-5	**Level-1**	**Level-2**	**Level-3**	**Level-4**	**Level-5**
	-	Designs, builds and manage the data centre telecommunication infrastructure/ network systems that carry out the transmission, processing and storage of information as electrical or optical signals.	Plans, supervises and implements research methodologies and procedures to apply principles of telecommunication and network theories to telecom data centre engineering projects	Responsible for providing capital project programs for new telecommunication equipment or major repairs. Authorizes budgets, estimating labour, material and construction costs	-
Dimension-4 Knowledge examples *(Knows/aware of/ familiar with)*	K1	laws, legal codes, court procedures, precedents, government telecommunication regulations, executive orders and organization rules			
	K2	principles and processes for providing customer and personal data centre telecommunications services (e.g. customer needs assessments, - satisfaction, quality standards for data centre telecommunication services)			
	K3	communication wirelines-, wireless- and cable & satellite service domains concerning voice, data and video			
	K4	transmission, cable standards and -types (e.g. fibre, copper, UTP, etc.), broadcasting, telecommunications routing, switching and patching			
	K5	telecommunication provider services and –landscape (e.g. BT, AT&T, Telefonica, etc.)			
	K6	network protocols and – standards (e.g. TCP/IP, Ethernet, etc.) , distribution frames			
	K7	ANSI/TIA-606 administration standards for the commercial telecommunications infrastructure (e.g. physical labelling, administration procedures, etc.)			
	K8	ANSI/TIA-942 telecommunication infrastructure standards for data centres (e.g. logical layouts, network cable architecture, etc.)			
	K9	telecommunications cable routing, in rack cabling and high-density cabling (e.g. MRJ-21, etc.)			
Skill examples *Is able to*	S1	use logic and reasoning to identify the strength and weakness of alternative solutions, conclusions and approaches to (solve) problems			
	S2	explain how to install, test and repair communication network,- lines and -systems			
	S3	supervise maintenance of telecommunications equipment and -cabling			
	S4	provide system activity performance reports, analyse system performance (e.g. capacity, etc.)			
	S5	define physical configuration (e.g. device locations conduit pathways, etc.)			
	S6	leads system renovation projects, performance maintenance, back-up- and (disaster) recovery procedures			
	S7	defining layout of telecommunication infrastructure data centre plants			
	S8	implement system renovation projects, controls to provide security (e.g. data, software etc.)			

5.5 B.5. Fire and Safety Engineering

Dimension-1 DC-Competence area	**B. BUILD**				
Dimension-2 DC-Competence Title + Generic Description	**B.5. Fire and Safety Engineering** Analyses, specifies, updates and makes available specifications to implement fire fighting systems and safety design solutions in accordance with applicable standards and industry best practices. Selects appropriate technical options optimising the balance between costs, quality, energy efficiency, availability, scalability and standards. Identifies change requirements and the components involved. Maintains alignment between business evolution and technology developments.				
Dimension-3 DC-Competence proficiency levels e-1 to e-5	**Level-1**	**Level-2**	**Level-3**	**Level-4**	**Level-5**
	-	Quantify the hazards and risks of fire and its effects by analyses, specifies updates and makes available specifications to implement. Designs, builds and improves data centre fire systems that protects the data centre assets and the safety of people.	Takes responsibility for preventing fire damage and human safety issues by controlling proper design, construction, arrangement and use of the data centre building, materials, structures, industrial processes and transportation systems	Responsible for optimize and control proactive and preventive measures, including design, installation and maintenance of active and passive fire and life safety systems necessary to limit, within prescribed levels and the consequences of fire in data centre projects	-

Dimension-4 Knowledge examples *(Knows/aware of/ familiar with)*	K1	data centre architecture, -standards, -electrical sources (e.g. equipment, electrical distribution, light fixtures, etc.) and (bad) connections
	K2	Fire safety systems standards (e.g. ISO14520, local codes, NFPA75, etc.)
	K3	fire handheld extinguishers classes (e.g. A, B, C, etc.) , emergency signage's
	K4	fire and safety regulations and best practices (e.g. EPO, fire codes, etc.)
	K5	fire suppression calculations (e.g. NOAEL, gross and net volume, etc.)
	K6	safety rules, typologies of accidents and safety pre-cautions
	K7	Safety standards (SOP e.g. fire, power outage, bomb threats, etc.)
	K8	the Fire Triangle (Oxygen-, heat sources and physical state of fuel)
	K9	fire-, emergency- and safety plans, contracts and procedures
Skill examples *Is able to*	S1	inspect, test, assess maintenance fire suppression system plans
	S2	define a proper and complete set of safety rules (e.g. industrial, data centre specific, etc.)
	S3	ensure awareness and compliancy of safety regulations and personal safety
	S4	review and ensure that technical measures are still in place to safeguard the health and safety of personnel
	S5	save life, protect property and preserve the data centre environment and heritage from destructive fire
	S6	use logic and reasoning to identify the strength and weakness of alternative solutions, conclusions and approaches to (solve) problems and risks
	S7	develop detailed calculations to compute establish manufacturing, construction and installation standards and specifications
	S8	ensure safety rules so that all individuals are protected from potential incidents which could impact their health
	S9	design and develop detection-, fire suppression systems

5.6 B.6. Physical Security Engineering

Dimension-1 DC-Competence area	**B. BUILD**				
Dimension-2 DC-Competence Title + Generic Description	**B.6. Physical Security Engineering** Analyses, specifies, updates and makes available specifications to implement physical security systems in accordance with applicable standards, industry best practices and customer needs. Selects appropriate technical options optimising the balance between costs, quality, energy efficiency, availability, scalability and standards. Identifies change requirements and the components involved. Maintains alignment between business evolution and technology developments.				
Dimension-3 DC-Competence proficiency levels e-1 to e-5	**Level-1**	**Level-2**	**Level-3**	**Level-4**	**Level-5**
	-	Designs, implements, operates and manage a data centre Information Security Management System (ISMS)	Monitors, manages, reviews and controls the performance and effectiveness of the data centre Information Security Management System (ISMS)	Improves and maintains the data centre Information Security Management System (ISMS) by ensuring objective measurements. Responsible for defining, deploy and assure the data centre security management process (approach) and strategy.	-

Dimension-4 Knowledge examples *(Knows/aware of/ familiar with)*	K1	perimeter controls (e.g. CCTV, fence, wall, visible intrusion detection systems, etc.)
	K2	physical inspections and security patrols
	K3	good delivery processes and holding areas
	K4	entry controls (e.g. staff, visitors and vehicles, public transport, individual, etc.)
	K5	physical access controls (e.g. internal-, external- and vendor staff, customers, etc.)
	K6	electric badge- and card reader systems, scanners (e.g. bag, body, eye, etc.)
	K7	general access and out-going inspections procedures
	K8	security standards and guidelines (e.g. ISO/IEC 27001, SS507, ANSI/TIA942, etc.)
	K9	security incident management (ISO/IEC 18044)
Skill examples *Is able to*	S1	understand the data centre information security requirements and needs to establish policy and objectives for information security
	S2	implement and operate controls to manage information security risks vs. the overall data centre business risks
	S3	preserve the confidentially, integrity, and availability of organisational security
	S4	impose restrictions for secure areas (e.g. computer-, telco rooms, etc.)
	S5	assess criteria for information security incidents (e.g. detection, notification, etc.)
	S6	deterrence, detect, delay, response, recover and re-evaluate security plans
	S7	design the security countermeasures that the data centre organization uses in reports, construction projects, operations, consulting, project management and engineering

5.7 B.7. Test and Commissioning

Dimension-1 DC-Competence area	**B. BUILD**				
Dimension-2 DC-Competence Title + Generic Description	**B.7. Test and Commissioning** Constructs and executes systematic test procedures for IET (Individual Equipment Test) and IPVT/IST (Integrated Performance Verification Test/Integrated System Test) for the data centre facilities and related equipment. Verifies and ensures meeting the data centre facility design specifications as well as meeting of internal, external, national and International standards; including health and safety, usability, performance, reliability or compatibility. Ensures that new or revised components or systems perform to expectation. Produces documents and reports to evidence certification requirements.				
Dimension-3 DC-Competence proficiency levels e-1 to e-5	**Level-1**	**Level-2**	**Level-3**	**Level-4**	**Level-5**
	-	-	Exploits and controls the pre-design and design phase by developing and planning commissioning staging plans, test plans and commissioning schedules.	Leads and integrates the construction, occupancy and operations phase by securing and managing inspection and test plans (IET, IPVT/IST), commissioning outage plans and commissioning co-ordination programs	-
Dimension-4 Knowledge examples *(Knows/aware of/ familiar with)*	K1	data centre technical equipment, -facilities, - designs, protection and control schemes			
	K2	equipment tests (e.g. fundamental, protection, metering, field, etc.), factory- and site tests			
	K3	visual inspection- and commissioning procedures			
	K4	fault finding and diagnostic techniques			
	K5	occupational Health & Safety principles and -enterprise responsibilities			
	K6	commissioning meetings, kick-off meeting, commissioning reports and -reviews			
	K7	maintenance-, isolation-, visual inspections- and tagging procedures			
	K8	manufacture requirements and specs			
	K9	best practices and safe working practices			
	K10	statutory and safety considerations			
Skill examples *Is able to*	S1	develop data centre project requirements and initial commissioning plan outline			
	S2	perform commissioning focusses design review and update the commissioning plan			
	S3	develop commissioning requirements for the specifications			
	S4	design and create verification checklists, functional tests, system manuals and training requirements			
	S5	review submittals, monitor development of shop and coordinating drawings and review Operation & Maintenance (O&M) manuals			
	S6	perform on-going construction observation, verification checks, diagnostic monitoring and functional testing			
	S7	develop commissioning reports, system manuals and re-commissioning plans			
	S8	resolve outstanding commissioning issues			
	S9	perform seasonal/deferred testing and near warranty-end review			

5.8 B.8. Documentation Production

Dimension-1 DC-Competence area	**B. BUILD**				
Dimension-2 DC-Competence Title + Generic Description	**B.8. Documentation Production** Produces documents describing the data centre design, products, services, components, policies, procedures and work instructions to establish compliance with relevant documentation requirements. Selects appropriate style and media for documentation materials. Creates templates for document-management systems. Ensures that existing documents are valid and up to date.				
Dimension-3 DC-Competence proficiency levels e-1 to e-5	**Level-1**	**Level-2**	**Level-3**	**Level-4**	**Level-5**
	Creates, drafts and produce data centre documents and understands which kind of documents are available in the organization.	Designs and optimizes documents lay-outs. Checks documents on completeness, actuality and revision management. Records documents.	Perform spot checks on documents and take corrective actions if needed. Revises documents. Controls the quality of documents and archiving.	Responsible for actual, complete and up to date document database. Governs the document management control system. Responsible for the availability, accessibility, software updates and maintenance planning of the system. Manages complex demands and deviations from internal data centre departments.	-
Dimension-4 Knowledge examples *(Knows/aware of/ familiar with)*	K1	tools for production, editing and distribution of professional documents			
	K2	tools for multimedia presentation creation			
	K3	different technical documents required for designing, developing and deploying products, applications and services			
	K4	version control of documentation production			
	K5	document input management (e.g. production planning, digital data import, metadata, etc.)			
	K6	document process management (e.g. classification, data extraction, data conversions, etc.)			
	K7	document output management (e.g. generating performance data, etc.)			
Skill examples *Is able to*	S1	observe and deploy effective use of corporate standards for publications			
	S2	prepare templates for shared publications			
	S3	organise and control content management workflow			
	S4	keep publications aligned to the solution during the entire lifecycle			
	S5	keep all documents actual (discipline) and follow up closely			

6. Dimension-1: C. RUN

6.1 C.1. Service Delivery

Dimension-1 DC-Competence area	**C. RUN**				
Dimension-2 DC-Competence Title + Generic Description	**C.1. Service Delivery** Ensures service delivery in accordance with established service level agreements (SLAs). Takes proactive action to ensure stable and efficient data centre infrastructure to avoid potential service disruptions, attending to capacity planning and to physical security. Updates operational document library and logs all service incidents. Maintains monitoring and management tools (i.e. scripts, procedures). Maintains data centre facilities services. Takes proactive measures.				
Dimension-3 DC-Competence proficiency levels e-1 to e-5	**Level-1**	**Level-2**	**Level-3**	**Level-4**	**Level-5**
	Acts under guidance to record and track reliability data	Systematically analyses performance data and communicates findings to senior experts. Escalates potential service level failures and security risks, recommends actions to improve service reliability. Tracks reliability data against SLA.	Programs the schedule of operational tasks. Manages costs and budget according to the internal procedures and external constraints. Identifies the optimum number of people required to resource the operational management	-	-
Dimension-4 Knowledge examples *(Knows/aware of/ familiar with)*	K1	how to interpret data centre service delivery requirements			
	K2	best practices and standards in data centre service delivery			
	K3	how to monitor service delivery			
	K4	how to record service delivery actions and able to identify failures			
	K5	processes, work domains and services			
	K6	the best practices and standards in information security management			
	K7	how to optimize service delivery by scaling, standardization and effective outsourcing			
Skill examples *Is able to*	S1	apply the processes which comprise the organisation's data centre service delivery strategy			
	S2	fil in and complete documentation used in data centre service delivery			
	S3	analyse service delivery provision and report outcomes to senior colleagues			
	S4	plan and apply manpower workload /requirements for efficient and cost effective service provision			
	S5	liaise between service provider, organization and customer			
	S6	achieve an optimal functioning chain of core processes, systems and services			
	S7	achieve planned structural improvements /renovations and managerial exploitation on demand and agreed service levels			

6.2 C.2. User Support

Dimension-1 DC-Competence area	**C. RUN**				
Dimension-2 DC-Competence Title + Generic Description	**C.2. User Support** Responds to user service requests, access requests, package and goods delivery and issues, recording relevant information. Assures resolution or escalates incidents and optimises system performance in accordance with predefined service level agreements (SLAs). Understands how to monitor solution outcome and resultant customer satisfaction.				
Dimension-3 DC-Competence proficiency levels e-1 to e-5	**Level-1**	**Level-2**	**Level-3**	**Level-4**	**Level-5**
	Interacts with users, applies basic product knowledge to respond to user requests. Solves incidents, following prescribed procedures.	Systematically interprets user problems and identifies solutions and possible side effects. Uses experience to address user problems and interrogates database for potential solutions. Escalates complex or unresolved incidents. Records and tracks issues from outset to conclusion	Manages the support process and accountable for agreed SLA. Plans resource allocation to meet defined service level. Acts creatively, and applies continuous service improvement. Manages the support function budget.	-	-

Dimension-4 Knowledge examples *(Knows/aware of/ familiar with)*	K1	relevant data centre user applications (e.g. access provision, workflow systems, etc.)
	K2	corporate escalation procedures
	K3	sources of information for potential solutions
	K4	data centre processes, work instructions, workflows and procedures
	K5	ITIL (e.g. service requests, change-, incident process, etc.)
	K6	user introductions and user instructions
Skill examples *Is able to*	S1	effectively interrogate users to establish symptoms
	S2	analyse symptoms to identify broad area of user error or technical failure
	S3	deploy support tools to systematically trace source of error or technical failure
	S4	clearly communicate with end users (or data centre customers) and provide instructions on how to progress issues
	S5	record and code issues to support growth and integrity of online support tools
	S6	dispatch complex problems, incidents, complains and sales leads to specialist and coordinates, handles and communicate the progress to users
	S7	control and monitor the performance of a wide range of computer data centre equipment (platforms)
	S8	recognize business opportunities and generate leads

6.3 C.3. Problem Management

Dimension-1 DC-Competence area	**C. RUN**				
Dimension-2 DC-Competence Title + Generic Description	**C.3. Problem Management** Identifies and resolves the root cause of incidents. Takes a proactive approach to avoidance or identification of root cause of data centre problems (ITIL). Deploys a knowledge system based on recurrence of common errors. Resolves or escalates incidents. Optimises data centre facilities, change, security and facilities performance.				
Dimension-3 DC-Competence proficiency levels e-1 to e-5	**Level-1**	**Level-2**	**Level-3**	**Level-4**	**Level-5**
	-	Identifies and classifies incident types and service interruptions. Records incidents cataloguing them by symptom and resolution.	Exploits specialist knowledge and in-depth understanding of the data centre and ICT infrastructures and change/incident/problem management process (ITIL) to identify failures and resolve with minimum outage. Makes sound decisions in emotionally charged environments on appropriate action required to minimize business impact. Rapidly identifies failing component, selects alternatives such as repair, replace or reconfigure.	Provides leadership and is accountable for the entire problem management process. Schedules and ensures well trained human resources, tools, and diagnostic equipment are available to meet emergency incidents. Has in-depth of expertise to anticipate critical component failure and make provision for recovery with minimum downtime. Constructs escalation processes to ensure that appropriate resources can be applied to each incident.	-

Dimension-4 Knowledge examples *(Knows/aware of/ familiar with)*	K1	the organisation's overall ICT and data centre infrastructures and key components
	K2	the organisation's reporting procedures and processes (e.g. change management conform ITIL)
	K3	the organisation's critical situation escalation procedures
	K4	the application and availability of diagnostic tools
	K5	the link between system infrastructure elements and impact of failure on related business processes.
	K6	incident trend analysis and -classification
	K7	performance improvement and learning capacity of organizations
Skill examples *Is able to*	S1	monitor and audit progress of issues throughout lifecycle, communicate and report errors and problems effectively
	S2	identify potential critical component failures and take action to mitigate effects of failure
	S3	conduct risk management audits and act to minimise exposures
	S4	allocate appropriate resources to maintenance activities, balancing cost and risk
	S5	communicate at all levels to ensure appropriate resources are deployed internally or externally to minimise outages
	S6	proactive and reactive eliminating and preventing repetitive errors in the ICT and data centre infrastructure by providing the best possible quality of service agreed in SLAs
	S7	reduce the number of incidents to a structural minimum

6.4 C.4. Change Support

Dimension-1 DC-Competence area	**C. RUN**				
Dimension-2 DC-Competence Title + Generic Description	**C.4. Change Support** Anticipates long term business requirements, influences improvement of organisational process efficiency and effectiveness. Determines the data facilities architecture is in line with the organisation's policy and ensures a secure environment. Makes strategic data centre policy decisions for the enterprise, including sourcing strategies.				
Dimension-3 DC-Competence proficiency levels e-1 to e-5	**Level-1**	**Level-2**	**Level-3**	**Level-4**	**Level-5**
	-	During change, acts systematically to respond to day by day operational needs and react to them, avoiding service disruptions and maintaining coherence to (SLA) and information security requirements.	Ensures the integrity of the system by controlling the application of functional updates, software or hardware additions and maintenance activities. Complies with budget requirements.	-	-
Dimension-4 Knowledge examples *(Knows/aware of/ familiar with)*	K1	functional specifications of the information system			
	K2	the existing ICT application and data centre technical architecture			
	K3	how business processes are integrated and their dependency upon ICT applications and data centre services (e.g. WAN, SAN, connectivity, Cloud, continuity, hosting, storage etc)			
	K4	change management tools and technique (conform ITIL)			
	K5	best practices and standards in information security management			
	K6	Plan of actions, risk analyses and impact analyses			
Skill examples *Is able to*	S1	share functional and technical specifications with ICT, project teams, customers (internal and external) and data centre operation in charge of the maintenance and evolution of ICT and data centre solutions			
	S2	manage communications with all teams including data centre build organisation in charge of the maintenance and the evolution of information systems solutions			
	S3	analyse the impact of functional /technical changes on users			
	S4	anticipate all actions required to mitigate the impact of changes (e.g. training, documentation, new processes, etc.).			
	S5	evaluate all incoming changes from workflow system on impact according to agreed processes (ISO 9001) and security (ISO 27001) and makes a clean order check			
	S6	keep overview and final accountability realization for all activities within the changes. Keep maximum balance between quality, delivery, cost and satisfaction			
	S7	coordinate and manage the production of customized-, standard (custom) changes (orders) and internal data centre changes (e.g. power upgrades, major maintenance windows, etc.)			

7. Dimension-1: D. ENABLE

7.1 D.1. Quality Strategy Development

Dimension-1 DC-Competence area	**D. ENABLE**				
Dimension-2 DC-Competence Title + Generic Description	**D.1. Quality Strategy Development** Defines, improves and refines a formal strategy to satisfy customer expectations and improve business performance (balance between cost and risks). Identifies critical processes influencing service delivery and product performance for definition in the data centre quality management system. Uses defined standards to formulate objectives for service management, product and process quality. Identifies data centre quality management accountability.				
Dimension-3 DC-Competence proficiency levels e-1 to e-5	**Level-1**	**Level-2**	**Level-3**	**Level-4**	**Level-5**
	-	-	-	Exploits wide ranging specialist knowledge to leverage and authorise the application of external standards and best practices.	Provides strategic leadership to embed data centre quality (i.e. metrics and continuous improvement) into the culture of the organisation

Dimension-4 Knowledge examples *(Knows/aware of/ familiar with)*	K1	the major information technology industry frameworks, e.g. COBIT, ITIL, CMMI, ISO – and their implications for corporate ICT- and data centre governance
	K2	the information strategy of the organisation
	K3	the different service models (SaaS, PaaS, IaaS) and operational translations (e.g. cloud computing)
	K4	business administration
	K5	measurement methodologies, -techniques, quality methods/programs and project management.
	K6	administrative measures and go/no go qualifying
	K7	guidelines, frameworks, quality/management processes and protocols
	K8	research and improvement projects
Skill examples *Is able to*	S1	define an ICT quality policy to meet the organisation's standards of performance and customer satisfaction objectives
	S2	identify quality metrics to be used
	S3	apply relevant standards and best practices to maintain information quality
	S4	create consensus by influencing decision makers
	S5	ensure the appropriate follow-up of performance and quality agreements with parties (company-wide).
	S6	initiates and develops (proactively) innovative research programmes and formulates research strategies
	S7	check the conditions for service introductions (pre-implementation audit, risk management) and/or customer programs
	S8	deliver insights and sending on quality/performance (efficiency/effectiveness) of new and/or business-critical services/processes/systems by implementation and coordination

7.2 D.2. Human Resource Management

Dimension-1 DC-Competence area	**D. ENABLE**				
Dimension-2 DC-Competence Title + Generic Description	**D.2. Human Resource Management (HRM)** Defines policies and procedures for workforce planning. Diagnoses individual and group competence, identifying skill needs and skill gaps. Reviews training and development options and selects appropriate methodology taking into account the individual, project and business requirements. Coaches and /or mentors individuals and teams to address learning needs.				
Dimension-3 DC-Competence proficiency levels e-1 to e-5	**Level-1**	**Level-2**	**Level-3**	**Level-4**	**Level-5**
	-	Realize, optimise, communicate and manage, guidelines, procedures and programs. Advises and acts on questions about recruitment, compensations, benefits, talent management and talent development.	Consult, develop and implement policies, procedures and programs. Initiates and supports complex HR change projects and prepare policies. Designs, organizes and supervises human resource deployment tools and models.	Responsible for managing HRM strategies, Performance Management, policies, programs, procedures and guidelines relating to all Human Resources (recruitment, compensation & benefits and talent management & development).	-

Dimension-4 Knowledge examples *(Knows/aware of/ familiar with)*	K1	human resource systems, processes, programs, strategies, organization objectives and guidelines
	K2	talent development programs and business partner principles
	K3	process development and implementation programs
	K4	Human resource themes (e.g. culture, motivation, stimulation, rewards, leadership, wages, etc.)
	K5	change- and generation management
	K6	strategic workforce plans and employee rating systems and systematics
	K7	collective HR agreements, pensions, working-, hiring- and firing conditions
Skill examples *Is able to*	S1	optimize the human resources and bring them in line with the business objectives
	S2	improve the human resource skills and knowledge of line managers
	S3	ensure that all activities comply with relevant laws and regulations and ethical standards
	S4	support managers in case of problems in the relationship with employees
		ensure that managers understand and implement the human resource processes in the organisation
	S5	manage and support (strategic and tactical) the business lines in relation to human resource directives and procedures
	S6	represent the company in employer groups, industry associations, government agencies, unions and other relevant organizations

7.3 D.3. Education and Training

Dimension-1 DC-Competence area	**D. ENABLE**				
Dimension-2 DC-Competence Title + Generic Description	**D.3. Education and Training** Defines and implements data centre facilities training policies to address organisational skill needs and gaps. Structures, organises and schedules training programmes and evaluates training quality through a feedback process and implements continuous improvement. Adapts training plans to address changing demand.				
Dimension-3 DC-Competence proficiency levels e-1 to e-5	**Level-1**	**Level-2**	**Level-3**	**Level-4**	**Level-5**
	-	Organises the identification of training needs; collates organisational requirements, identifies, selects and prepares schedule of training interventions.	Acts creatively to analyse skills gaps; elaborates specific requirements and identifies potential sources for training provision. Has specialist knowledge of the training market and establishes a feedback mechanism to assess the added value of alternative training programmes.	-	-
Dimension-4 Knowledge examples *(Knows/aware of/ familiar with)*	K1	appropriate pedagogical approaches and education delivery methods e.g. classroom, online, text, TOD – Training On Demand			
	K2	the competitive market for educational offering and proposition			
	K3	training needs analysis methodologies			
	K4	empowerment techniques			
	K5	data centre training certifications and accreditations (EXIN, CCNA, etc.)			
Skill examples *Is able to*	S1	organise training and education schedules to meet market needs			
	S2	identify and maximise use of resources required to deliver a cost-effective schedule			
	S3	promote and market education and training provision			
	S4	analyse feedback data and use it to drive continuous improvement of education and training delivery			
	S5	design curricula and training programmes to meet customer ICT/ data centre education needs			
	S6	address and manage CPD (Continuing Professional Development) need of staff to meet organisational requirements			

7.4 D.4. Information Management

Dimension-1 DC-Competence area	**D. ENABLE**				
Dimension-2 DC-Competence Title + Generic Description	**D.4. Information Management** Identifies information sources and manages structured and unstructured information and considers information distribution policies. Creates a standardized information structure, access and distribution methods to enable exploitation and optimisation of information including the technical means to achieve so.				
Dimension-3 DC-Competence proficiency levels e-1 to e-5	**Level-1**	**Level-2**	**Level-3**	**Level-4**	**Level-5**
	-	-	Analyses business processes and associated information requirements and provides the most appropriate information structure.	Integrates the appropriate information structure into the corporate environment.	Correlates information and knowledge to create value for the business. Applies innovative solutions based on information retrieved.
Dimension-4 Knowledge examples *(Knows/aware of/ familiar with)*	K1	information and business processes			
	K2	ICT devices and tools applicable for the storage and retrieval of data			
	K3	data sets (e.g. big data, etc.) and unstructured data (e.g. data analytics, etc.)			
	K4	process information instruments, (administrative) information provisioning, information control			
	K5	strategic research methods, strategic models (e.g. pricing, cost accounting), market analysis, business analysis, -financial analysis			
	K6	data centre professional domains, portfolio, strategies and policies			
	K7	benchmark methods, customer value development, business risks models			
	K8	information plans and reporting models			
Skill examples *Is able to*	S1	gather internal and external knowledge and information needs			
	S2	formalise customer requirements and demands in form and content			
	S3	translate / reflect business behaviour into structured information			
	S4	make information available			
	S5	ensure that IPR and privacy issues are respected			
	S6	capture, storage, analyze, data sets, that are complex and large, not structured and in different formats			
	S7	apply data mining methods			
	S8	be the pioneer of professional renewal			
	S9	prepare, manage and evaluate briefings to external research agencies			

7.5 D.5. Knowledge Management

Dimension-1 DC-Competence area	**D. ENABLE**				
Dimension-2 DC-Competence Title + Generic Description	**D.5. Knowledge Management (KM)** Provides operational processes and technology to ensure that the right information is delivered to the appropriate place or competent person at the right time to enable informed decision with the aim to improve the quality of management decisions by ensuring that reliable and secure information and data is available throughout the service lifecycle.				
Dimension-3 DC-Competence proficiency levels e-1 to e-5	**Level-1**	**Level-2**	**Level-3**	**Level-4**	**Level-5**
	-	-	Analysing issues and problems systematically, gathering broad and balanced input, drawing sound conclusions and translating conclusions into timely decisions and actions. Gather data on user experience and implements plans of action to improve user experiences	Monitor, integrate and evaluate the knowledge sharing program, including external benchmarking and evaluation programs/opportunities. Recommend, implement and administer methods, tools, systems and procedures to enhance KM operations .	Correlates knowledge to create value for the business. Applies innovative solutions based on knowledge retrieved. Develop strategies for long-term, sustainable systems to support the delivery of instruction
Dimension-4 Knowledge examples *(Knows/aware of/ familiar with)*	K1	business tools and information infrastructures			
	K2	life cycle- and project management			
	K3	knowledge management systems, -services, -programs, -procedures, -programs, -methods and -products			
	K4	product development			
	K5	database and spreadsheet programs, data analyses and record keeping systems			
	K6	technological knowledge development trends			
Skill examples *Is able to*	S1	preparation case studies			
	S2	to get consensus and collaboration across all business units			
	S3	understand, troubleshoot and respond effectively on clients' needs			
	S4	evaluate new learning systems products that support the organization			
	S5	customizes services and products as appropriate			
	S6	promote collaborative tools (e.g. activity rooms to facilitate sharing of ideas, work among internal teams, external partnering, etc.)			
	S7	promote knowledge sharing through the organization's operational business processes and systems			
	S8	facilitates communication regarding to KM programs, products and projects			
	S9	oversee and direct product development.			
	S10	strength links and improves the integration between knowledge sharing and the information systems			

7.6 D.6. Sales Management

Dimension-1 DC-Competence area	**D. ENABLE**				
Dimension-2 DC-Competence Title + Generic Description	**D.6. Sales Management** Drives the achievement of sales results through the establishment of a sales strategy. Demonstrates the added value of the organisation's products and services to new or existing customers and prospects. Establishes a sales support procedure providing efficient response to sales enquiries, consistent with company strategy and policy. Establishes a systematic approach to the entire sales process, including understanding customer needs, forecasting, prospect evaluation, negotiation tactics and sales closure.				
Dimension-3 DC-Competence proficiency levels e-1 to e-5	**Level-1**	**Level-2**	**Level-3**	**Level-4**	**Level-5**
	-	-	Contributes to the sales process by effectively presenting data centre products, services or solutions to customers.	Assesses and estimates appropriate sales strategies to deliver company results. Decides and allocates annual sales targets and adjusts incentives to meet market conditions.	Assumes ultimate responsibility for the sales performance of the organisation. Authorises resource allocation, prioritises product and service promotions, advises board directors of sales performance.
Dimension-4 Knowledge examples *(Knows/aware of/ familiar with)*	K1	customer organisations (needs, budget allocation and decision makers)			
	K2	company specific processes (sales, ITIL, etc.)			
	K3	market trends and own service offering portfolio			
	K4	legal, financial and contractual rules			
	K5	bid review-, project- and review-forms and other relevant procedures			
	K6	current market imperatives e.g. risks, changes, innovation			
	K7	cross-selling models between different business units, divisions and sectors within the company			
Skill examples *Is able to*	S1	develop strong co-operation between customers and own organisation			
	S2	keep abreast of market news e.g. risks, changes, innovations and communicate to internal business units, to improve service and product portfolio			
	S3	react proactively to customer business changes and communicate them internally			
	S4	generate sustainable customer relationships			
	S5	analyse sales performance to build forecasts and develop a tactical sales plan			
	S6	register information relating to customers, contacts and prospects correctly and is able to keep the sales-pipeline model up to date (e.g. solution selling).			

7.7 D.7. Sales Proposal Development

Dimension-1 DC-Competence area	**D. ENABLE**				
Dimension-2 DC-Competence Title + Generic Description	**D.7. Sales Proposal Development** Develops technical proposals to meet customer solution requirements and provide sales personnel with a competitive bid. Underlines the energy efficiency and environmental impact related to a proposal. Collaborates with colleagues to align the service or product solution with the organisation's capacity to deliver.				
Dimension-3 DC-Competence proficiency levels e-1 to e-5	**Level-1**	**Level-2**	**Level-3**	**Level-4**	**Level-5**
	-	Organises collaboration between relevant internal departments, for example, technical, sales and legal. Facilitates comparison between customer requirement and available 'off the shelf' solutions.	Acts creatively to develop proposal incorporating a complex solution. Customises solution in a complex technical and legal environment and ensures feasibility, legal and technical validity of customer offer.	-	-

Dimension-4 Knowledge examples *(Knows/aware of/ familiar with)*	K1	customer needs and technical support
	K2	internally adopted sales, marketing techniques
	K3	legal requirements
	K4	internal business practices
	K5	product or service unique selling points
	K6	the different service models (SaaS, PaaS, IaaS), operational translations (e.g. hosting, cloud computing) , data centre services (e.g. power, energy efficiency, etc.) and competitors
	K7	sales processes and working methods
	K8	technical standards and compliancy procedures
	K9	cost-benefit analyses
Skill examples *Is able to*	S1	construct the framework for proposal documentation
	S2	co-ordinate and facilitate multidisciplinary teams contributing to the proposal
	S3	interpret the terms and conditions of the tender documentation
	S4	evaluate the strengths and weaknesses of potential competitors
	S5	ensure that a proposal is of high quality and is submitted on time
	S6	communicates the energy efficiency and environmental-related aspects of a proposal
	S7	ensure that proposals meet compliance requirements
	S8	makes proposals to improve and offer the solutions to achieve competitive advantage
	S9	analyses new and lost contracts from technical, competition, cost perspective
	S10	applies technical analysis techniques to complex design solutions which meet with critical customer business requirements

7.8 D.8. Purchasing

Dimension-1 DC-Competence area	**D. ENABLE**					
Dimension-2 DC-Competence Title + Generic Description	**D.8. Purchasing** Applies a consistent procurement procedure, including deployment of the following sub processes: specification requirements, supplier identification, proposal analysis, evaluation of the energy efficiency and environmental compliance of products, suppliers and their processes, contract negotiation, supplier selection and contract placement. Ensures that the entire purchasing process is fit for purpose, adds business value to the organisation compliant to legal and regulatory requirements.					
Dimension-3 DC-Competence proficiency levels e-1 to e-5	**Level-1**	**Level-2**	**Level-3**	**Level-4**	**Level-5**	
	-	Understands and applies the principles of the procurement process; places orders based on existing supplier contracts. Ensures the correct execution of orders, including validation of deliverables and correlation with subsequent payments.	Exploits specialist knowledge to deploy the purchasing process, ensuring positive commercial relationships with suppliers. Selects suppliers, products and services by evaluating performance, cost, timeliness and quality. Decides contract placement and complies with organisational policies.	Provides leadership for the application of the organisation's procurement policies and makes recommendations for process enhancement. Applies experience and procurement practice expertise to make ultimate purchasing decisions.	-	
Dimension-4 Knowledge examples *(Knows/aware of/ familiar with)*	K1	purchase contract terms and conditions				
	K2	organisation purchasing policies				
	K3	financial models e.g. discount structures				
	K4	the current market for relevant products or services				
	K5	the issues and implications of outsourcing services				
	K6	different service models (SaaS, PaaS, IaaS), operational translations (e.g. cloud computing) and data centre infrastructure (e.g. cooling, power, building, etc.)				
	K7	professional and ethical methodologies and processes				
Skill examples *Is able to*	S1	interpret product /service specifications				
	S2	negotiate terms, conditions and pricing				
	S3	analyse received proposals /offers				
	S4	manage the purchasing budget				
	S5	lead purchase process improvements and certain purchase strategies				
	S6	analyse the energy efficiency and environmental-related aspects of a proposal				
	S7	verify that purchasing processes respect legal issues including IPR				
	S8	bring purchase contracts in line with the data centre TCO - total cost of ownership				

7.9 D.9. Contract Management

Dimension-1 DC-Competence area	**D. ENABLE**				
Dimension-2 DC-Competence Title + Generic Description	**D.9. Contract Management** Provides and negotiates contract in accordance with organisational processes. Ensures that contract and deliverables are provided on time, meet quality standards, and conform to compliance requirements. Addresses non-compliance, escalates significant issues, drives recovery plans and if necessary, amends contracts. Maintains budget integrity. Assesses and addresses supplier compliance to legal, health and safety and security standards. Actively pursues regular supplier communication.				
Dimension-3 DC-Competence proficiency levels e-1 to e-5	**Level-1**	**Level-2**	**Level-3**	**Level-4**	**Level-5**
	-	Acts systematically to monitor contract compliance and promptly escalate defaults.	Evaluates contract performance by monitoring performance indicators. Assures performance of the complete supply chain. Influences the terms of contract renewal.	Provides leadership for contract compliance and is the final escalation point for issue resolution.	-

Dimension-4 Knowledge examples *(Knows/aware of/ familiar with)*	K1	applicable SLA
	K2	company policy for contract management
	K3	legal regulations applicable to ICT contracts
	K4	legal issues including IPR
	K5	different service models (SaaS, PaaS, IaaS), service levels and contractual translations (e.g. cloud computing, hosting, colocation, etc.)
	K7	contract databases including contracts, amendments to the agreements and documents (e.g. Legal, clauses, Rate Tables, etc.)
	K9	versioning and redlining of contracts
Skill examples *Is able to*	S1	foster positive relationships with stakeholders
	S2	negotiate contract terms and conditions
	S3	apply judgment and flexibility in contract negotiations compliant with internal rules and policies
	S4	standardized contracting templates and languages
	S5	simplify information retrieval during extended negotiations
	S6	import and maintain old contracts into the database of the system
	S7	ensure compliance through templates and workflow tools
	S8	implement a simple and uniform paradigm to contract across all provider, broker and employer types
	S9	integrate the contract database with all the back-office systems to feed contract commissions and rate data to payer back office systems
	S10	realize real time viewing into all contract's pipelines (active, upcoming for renewable and expired contracts)

7.10 D.10. Vendor Management

Dimension-1 DC-Competence area	**D. ENABLE**				
Dimension-2 DC-Competence Title + Generic Description	**D.10. Vendor Management** Provides the discipline of establishing service, quality, cost, and satisfaction goals and selecting and managing third party companies to consistently meet these goals. Defines the full life cycle from qualification, selection, managing and releasing a vendor.				
Dimension-3 DC-Competence proficiency levels e-1 to e-5	**Level-1**	**Level-2**	**Level-3**	**Level-4**	**Level-5**
	-	Plan and acquire contracting & SLA, vendor selection and request for proposal (RFP) development. Deploy and create successful vendor launching (on boarding) and implement the vendor contract in the organization	Monitor, measure and manage to optimize delivery and value of the vendor and organization, by acting on multi-vendor policy relationship and performance. Evaluating, reviewing, replacing vendors (contract extension)	-	-
Dimension-4 Knowledge examples *(Knows/aware of/ familiar with)*	K1	business requirements of data centre operations			
	K2	data centre service delivery life cycle and service requirements analyses			
	K3	data centre operations service deliverables			
	K4	vendor management processes analysis, selection and transition			
	K5	commercial, legal and technical requirements			
	K6	Request for Proposal (RFP) and RFI (information) requirements and respond handling			
	K7	Vendor Service Level Agreements (SLAs)			
Skill examples *Is able to*	S1	Make financial and quantitative analysis and evaluate vendor performance			
	S2	build a relationship with suppliers and service providers that will strengthen both businesses.			
	S3	build partnerships for het Long Term (based on trust, preferential treatment and access to insider or expert knowledge) at the best quality and price			
	S4	understand the vendor ‘s business too (contribute knowledge or resources that help the vendor better serve you)			
	S5	Stimulating steady process enhancement to present increasing operational efficiency in entire business partner processes.			
	S6	balance between commitment and competition by gaining the commitment of your vendors to assist and support the operations of your business			
	S7	participate to formulate workflow processes, methods and policies for applying vendors			
	S8	evaluate and improve the procurement database to change the way goods and services are purchased and suppliers be managed to support and enhance			
	S9	analyse business requirements and defining vendor quality standards			
	S10	understand policies and procedures associated with vendor contracts such as indemnification and amendments			

8. Dimension-1: E. MANAGE

8.1 E.1. Data Centre Operations Management

Dimension-1 DC-Competence area	**E. MANAGE**				
Dimension-2 DC-Competence Title + Generic Description	**E.1. Data Centre Operations Management** Responsible for the overall planning and day to day business of the data centre operations. Implements the management of the operations of the data centre through the application of policies and procedures. Plans for the management of deployment of ICT equipment through its life cycle taking into consideration all aspects including staging, capacity planning, monitoring, maintenance and retirement.				
Dimension-3 DC-Competence proficiency levels e-1 to e-5	**Level-1**	**Level-2**	**Level-3**	**Level-4**	**Level-5**
	-	Evaluate and report team performance and addresses changes in personnel needs. Escalate unusual operational problems in accordance with applicable guidelines. Collecting and reporting statistical data for customers and management	Develops and implements policies and procedures to business objectives, in accordance with the annual business plan, budget and enterprise programs.	Manage and coordinate activities in supporting financial-, business continuity- and operational objectives. Defines goals to satisfy customer and meet required service levels. Provides strategic advice on operational issues to senior management.	-
Dimension-4 Knowledge examples *(Knows/aware of/ familiar with)*	K1	relevant laws and regulations and ethical standards			
	K2	Data centre technical infrastructures (e.g. mechanical, electrical, architecture, telecom, etc.), maintenance, technical knowledge (e.g. LAN/WAN, TCP/IP, firewalls, switches, Routers, etc.)			
	K3	change standards and workflow systems (e.g. SAP, ITIL, etc.)			
	K4	business case justifications and cost/benefit analyses for Operations spending and initiatives			
	K5	company guideline policies and procedures, communication lines and review			
	K6	data centre standards and compliancy policies (e.g. Tier, TIA942, NEN, ISO, etc.)			
	K7	budgeting, replacement and cost effectiveness calculations, cost saving models and reports			
Skill examples *Is able to*	S1	guide data centre employees in periodic assessments and personal development			
	S2	maintain contact with key customers, account managers, colleagues and (technical) service providers/vendors by offering expert technical guidance and advice to support			
	S3	detect and exploited opportunities in current activities, to improve processes and working methods, implements changes if required			
	S4	lead implementation of new service areas, technologies and business processes or systems in collaboration with assigned customers, other business units and data centre colleagues (e.g. technical project managers, maintaining organization, etc.)			
	S5	ensures that the day-to-day operations of the data centre are aligned with the business needs and are consistent compliant with the company's values and – business model			
	S6	leads and monitors the operational data centre team to ensure efficient day-to-day delivery of services to customers and organization (e.g. cloud, hosting, storage, etc.)			
	S7	maintain data centre course training certifications. Define data centre compliancy course requirements			
	S8	ensure the team is operationally optimised at all times in providing full coverage of duties within			

8.2 E.2. Facilities Management

Dimension-1 DC-Competence area	**E. MANAGE**				
Dimension-2 DC-Competence Title + Generic Description	**E.2. Facilities Management** Ensuring the availability of requested facilities to ensure that the data centre organization can deliver planned and committed results. Provides managed services for all supporting services. Implements the management of the facilities of the data centre through the application of policies and procedures aligned with facilities management disciplines and standards.				
Dimension-3 DC-Competence proficiency levels e-1 to e-5	**Level-1**	**Level-2**	**Level-3**	**Level-4**	**Level-5**
	-	-	Manage and use of facilities. Implementation Facilities Management policies, procedures to optimise the use of resources, continuity and availability of systems, technical infrastructure and services	Design and plan of facilities. Developing Facilities Management policies, procedures and programmes to ensure the use of resources, continuity and availability of systems, technical infrastructure and services	-
Dimension-4 Knowledge examples *(Knows/aware of/ familiar with)*	K1	maintenance contracts and out-sourcing models (e.g. performance contracts, SLA, KPI, etc.)			
	K2	preventive- and corrective maintenance, multi-year maintenance- plans and replacement plans			
	K3	maintenance standards and methods (TIMS, DCOS®)			
	K4	financial models, replacement and cost effectiveness calculations, cost saving models and reports			
	K5	data centre architectural, -mechanics, -electricity (standards), -telecom, -security, -safety, -monitoring models (e.g. DCIM, etc.), and -control techniques			
	K6	installation components status inventory models incl. condition assessment conform NEN 2767			
	K7	laws and regulations, environmental requirements (e.g. harmful substances, PGS30, ISO14001), auditing procedures and permits			
	K8	subcontracting and installation responsibility standards (NEN3840)			
	K9	maintenance schedules, -plans, electricity switching plans, maintaining conditions and maintenance risk analyses			
Skill examples *Is able to*	S1	deal with notifications and solving issues and complaints regarding Facilities management			
	S2	manage and service the objects under scope and propose new solutions to increase the availability and continuity of the technical environment			
	S3	manage, coordinate and transforming to Operational Facilities Excellence			
	S4	monitor the implementation by, and the quality of, contractors and other suppliers			
	S5	proactively innovate the life cycles and the adequate management of agreed requirements and KPI's			
	S6	propose efficiency and innovation benefits (e.g. contracts, cost saving, energy efficiency, renewable energy, etc.)			
	S7	monitor, analyse and innovate the plants availability			
	S8	develop and implements policies and transform procedures into business objectives, responsible for annual Facilities Management business plan			
	S9	monitor and analyse the availability of installations, investigate and report the condition levels of the plant and building			
	S10	advise, support and execute technical changes in the data centre Facilities infrastructure			

8.3 E.3. Risk Management

Dimension-1 DC-Competence area	**E. MANAGE**				
Dimension-2 DC-Competence Title + Generic Description	**E.3. Risk Management** Implements the management of risk across data centre through the application of the enterprise defined risk management policy and procedure. Assesses risk to the organisation's business. Documents potential risk and containment plans.				
Dimension-3 DC-Competence proficiency levels e-1 to e-5	**Level- 1**	**Level-2**	**Level-3**	**Level-4**	**Level-5**
	-	Understands and applies the principles of risk management and investigates data centre solutions to mitigate identified risks.	Decides on appropriate actions required to adapt security and address risk exposure. Evaluates, manages and ensures validation of exceptions; audits data centre processes and environment.	Provides leadership to define and make applicable a policy for risk management by considering all the possible constraints, including technical, economic and political issues. Delegates assignments.	-
Dimension-4 Knowledge examples *(Knows/aware of/ familiar with)*	K1	corporate values and interests to apply risk analysis taking into account corporate values and interests			
	K2	return on investment calculations and risk avoidance analysis			
	K3	best practices methodologies			
	K4	risk management models (risk assessment, asset allocation review, new allocation review, ongoing risk)			
	K5	Data centre telecommunication-, infrastructure-, telecom-, monitor- and security network technologies			
	K6	operational risks (e.g. fraud prevention, control and process, technology and systems, etc.)			
	K7	business risks (e.g. key person, capital stability, reputation, alignments of interest and governance, etc.)			
	K8	investment risks (market, liquidity, leverage, model failure and diversification			
	K9	legal and compliance risk management (e.g. concentration, legal/regulatory, documentations and financing stability, etc.)			
Skill examples *Is able to*	S1	review and rebalance portfolio, technical risks and updates (client) risk tolerance			
	S2	communicate and promote the organisation's risk analysis outcomes and risk management processes			
	S3	design and document the processes for risk analysis and management			
	S4	apply mitigation and contingency actions			
	S5	implement and develop new tactical allocations			
	S6	asses client tolerance and quantifying risk designs (e.g. Single Points Of Failures)			
	S7	respond to ongoing changes (e.g. economic, technical, event, legal, standards, etc.)			

8.4 E.4. Project and Portfolio Management

Dimension-1 DC-Competence area	**E. MANAGE**					
Dimension-2 DC-Competence Title + Generic Description	**E.4. Project and Portfolio Management** Plans and directs a single or portfolio of data centre projects to ensure co-ordination and management of interdependencies. Orchestrates projects to develop or implement new, internal or externally defined processes to meet identified business needs. Defines activities, responsibilities, critical milestones, resources, skills needs, interfaces and budget, optimises costs and time utilisation, minimises waste and strives for high quality. Develops contingency plans to address potential implementation issues. Delivers project on time, on budget and in accordance with original requirements. Creates and maintains documents to facilitate monitoring of project progress.					
Dimension-3 DC-Competence proficiency levels e-1 to e-5	**Level-1**	**Level-2**	**Level-3**	**Level-4**	**Level-5**	
	-	Understands and applies the principles of project management and applies methodology tools and processes to manage simple projects, optimises costs and minimises waste.	Accounts for own and others' activities, working within the project boundary, making choices and giving instructions, optimizing activities and resources. Manages and supervises relationships within the team; plans and establishes team objectives and outputs and documents results.	Manages complex projects or programmes, including interaction with others. Influences project strategy by proposing new or alternative solutions and balancing effectiveness and efficiency. Is empowered to revise rules and choose standards. Takes overall responsibility for project outcomes, including finance and resource management and works beyond project boundary.	Provides strategic leadership for extensive interrelated programs of work to ensure that Information Technology is a change enabling agent and delivers benefit in line with overall business strategic aims. Applies extensive business and technological mastery to conceive and bring innovative ideas to fruition.	
Dimension-4 Knowledge examples *(Knows/aware of/ familiar with)*	K1	project methodologies, including approaches to define project steps and tools to set up action plans				
	K2	technologies to be implemented within the project				
	K3	company business strategy and business processes				
	K4	development and compliance to financial plans and budgets				
	K5	IPR (Intellectual Property Right) principles and regulation				
	K6	structured project management methodologies (e.g. agile techniques)				
Skill examples *Is able to*	S1	identify project risks and define action plans to mitigate				
	S2	define a project plan by breaking it down into individual project tasks				
	S3	communicate project progress to all relevant parties reporting on topics such as cost control, schedule achievements, quality control, risk avoidance and changes to project specifications				
	S4	delegate tasks and manage team member contributions appropriately				
	S5	manage external, contracted resources to achieve project objectives				
	S6	optimise project portfolio timelines and delivery objectives by achieving consensus on stakeholder priorities				

8.5 E.5. Relationship Management

Dimension-1 DC-Competence area	**E. MANAGE**				
Dimension-2 DC-Competence Title + Generic Description	**E.5. Relationship Management** Establishes and maintains positive business relationships between stakeholders (internal or external) deploying and complying with organisational processes. Maintains regular communication with customer/partner/supplier, and addresses needs through empathy with their environment and managing supply chain communications. Ensures that stakeholder needs, concerns or complaints are understood and addressed in accordance with organisational policy.				
Dimension-3 DC-Competence proficiency levels e-1 to e-5	**Level-1**	**Level-2**	**Level-3**	**Level-4**	**Level-5**
	-	-	Accounts for own and others' actions in managing a limited number of stakeholders.	Provides leadership for large or many stakeholder relationships. Authorises investment in new and existing relationships. Leads the design of a workable procedure for maintaining positive business relationships.	-

Dimension-4 Knowledge examples *(Knows/aware of/ familiar with)*	K1	organisation processes including, decision making, budgets and management structure
	K2	business objectives, own and of other stakeholders
	K3	how to measure and apply resources to meet stakeholder requirements
	K4	business challenges and risks
	K7	business partnering and alliances
	K8	Data centre market- and competitors' analyses
	K9	defining business plans in cooperation and agreement with business partner and alliances
Skill examples *Is able to*	S1	deploy empathy to customer needs
	S2	identify potential win-win opportunities for customer and own organisation
	S3	establish realistic expectations to support development of mutual trust
	S4	monitor ongoing commitments to ensure fulfilment
	S5	communicate good and bad news to avoid surprises
	S6	ensures clear communication of the data centre marketing strategy to all customers/accounts
	S7	securing alignments of the partnership-offer on the data centre offer
		develop and extend relationships to a higher level
	S8	leads, coordinates and stimulates data centre activities and business partners into close cooperation

8.6 E.6. Quality Management

Dimension-1 DC-Competence area	**E. MANAGE**				
Dimension-2 DC-Competence Title + Generic Description	**E.6. Quality Management** Implements data centre quality policy to maintain and enhance service and product provision. Plans and defines indicators to manage quality with respect to data centre strategy. Reviews quality measures and recommends enhancements to influence continuous quality improvement.				
Dimension-3 DC-Competence proficiency levels e-1 to e-5	**Level-1**	**Level-2**	**Level-3**	**Level-4**	**Level-5**
	-	Communicates and monitors the application of the quality policy of the organisation.	Evaluates quality management indicators and processes based on data centre quality policy and proposes remedial action.	Assesses and estimates the degree to which quality requirements have been met and provides leadership for quality policy implementation. Provides cross functional leadership for setting and exceeding quality standards.	-
Dimension-4 Knowledge examples *(Knows/aware of/ familiar with)*	K1	data centre tools, standards and procedures			
	K2	the IS internal quality audit approach and improvement proposals			
	K3	regulations and standards in energy efficiency and e-waste			
	K4	service releases (pre-implementation audit) and customer programs			
	K5	research programmes and research strategies			
	K6	service releases (pre-implementation audit) and customer programs			
	K7	guidelines, quality/management processes, protocols and improvement projects			
Skill examples *Is able to*	S1	illustrate how methods, tools and procedures can be applied to implement the organisation's quality policy			
	S2	evaluate and analyse process steps to identify strengths and weaknesses			
	S3	assist process owners in the choice and use of measures to evaluate effectiveness and efficiency of the overall process			
	S4	monitor, understand and act upon quality indicators			
	S5	follow-up of performance and quality appointments			
	S6	perform quality audits			
	S7	conduct research into Quality-Guidelines and best practices. Reports results and findings to management			
	S8	review conditions for service introductions (pre-implementation audit, risk management) and/or customer programs.			

8.7 E.7. EH&S Management

Dimension-1 DC-Competence area	**E. MANAGE**				
Dimension-2 DC-Competence Title + Generic Description	**E.7. EHS Management** Develops and implements a structured approach for the data centre Environmental Health and Safety (EHS) strategic sustainability goals to manage the identification of hazards and the evaluation and control of work-related risks in line with company, national and international standards and best practices with the aim at zero incidents.				
Dimension-3 DC-Competence proficiency levels e-1 to e-5	**Level-1**	**Level-2**	**Level-3**	**Level-4**	**Level-5**
	-	Measure performance, prioritize and complete projects to mitigate risks and improve metrics. Improve technical support to data centre operations and facilities. Implement EHS incidents and implement corrective actions.	Establish EH&S metrics and communicate results. Benchmark EH&S leaders to identify opportunities for improvement. Develop and deploy EH&S standards. Assure compliance and identify improvements through EH&S audits.	Manage remediation, mergers, acquisitions, divestitures and litigation. Strategic developing and providing long term EHS perspectives. Finding new solutions and opportunities through full EHS life cycle of products, services, etc.	-

Dimension-4 Knowledge examples *(Knows/aware of/ familiar with)*	K1	global and corporate EHS standards and (best) practices
	K2	sustainability and compliancy (global) programs (ISO 14001, ISO 50001)
	K3	enterprise risks associated with environmental, health, or safety failures
	K4	environmental regulations and agreements with governments, energy-, water efficiency and renewable energy sources
	K5	processes and techniques within data centre environment, ICT and service organizations
	K6	NEN 3140, NEN 3840 and pointing policy
	K7	environmental and safety requirements, Service Level Agreements and customer contracts
Skill examples *Is able to*	S1	establish relationships with, and asses EHS needs of stakeholders
	S2	optimize use of natural and financial resources
	S3	creating a systematic approach to manage waste, and reducing the company's carbon footprint
	S4	improve sustainability performance
	S5	integrate EHS objectives into the Executive Committee objectives and tied to compensation
	S6	reduce the data centre carbon footprint
	S7	preserve the natural environment

8.8 E.8. Process Management

Dimension-1 DC-Competence area	**E. MANAGE**				
Dimension-2 DC-Competence Title + Generic Description	**E.8. Process Management** Measures effectiveness of existing data centre operations and maintenance processes. Researches and benchmarks data centre process design from a variety of sources. Follows a systematic methodology to evaluate, design and implement process changes for measurable business benefit. Assesses potential adverse consequences of process change.				
Dimension-3 DC-Competence proficiency levels e-1 to e-5	**Level-1**	**Level-2**	**Level-3**	**Level-4**	**Level-5**
	-	-	Exploits specialist knowledge to research existing data centre processes and solutions in order to define possible innovations. Makes recommendations based on reasoned arguments	Provides leadership and authorises implementation of innovations and improvements that will enhance competitiveness or efficiency. Demonstrates to senior management the business advantage of potential changes	-

Dimension-4 Knowledge examples *(Knows/aware of/ familiar with)*	K1	research methods, benchmarks and measurements methods
	K2	evaluation, design and implementation methodologies
	K3	existing internal processes
	K4	improvement methods for new developments (e.g. virtualization, open data, etc.)
	K5	data centre (chain) Organization, -(internal) processes, systems, infrastructure and services (e.g. Cloud, Hosting, Mobile, web, etc.)
	K6	resource optimisation and waste reduction
	K7	methods to get insights in bottlenecks from (customer) wishes and requirements
	K8	process designs and -principles
	K9	change processes in service, performance and service levels
Skill examples *Is able to*	S1	compose, document and catalogue essential processes and procedures
	S2	propose process changes to facilitate and rationalise improvements
	S3	translate processes into practice; give group-oriented explanation, guidance and training
	S4	to monitor uniformity
	S5	ensure chain operation, initiate improvement actions and take care of information communication
	S6	advising users and clients about process developments and bottlenecks
	S7	perform intensive consultations, customer relationship management and tunes with (e.g. service owners, user groups, customers, suppliers, management, etc.)

8.9 E.9. Information Security Management

Dimension-1 DC-Competence area	**E. MANAGE**				
Dimension-2 DC-Competence Title + Generic Description	**E.9. Information Security Management** Implements information security policy. Monitors and takes action against intrusion, fraud and security breaches or leaks. Ensures that security risks are analysed and managed with respect to enterprise data and information. Reviews security incidents, makes recommendations for security policy and strategy to ensure continuous improvement of security provision.				
Dimension-3 DC-Competence proficiency levels e-1 to e-5	**Level-1**	**Level-2**	**Level-3**	**Level-4**	**Level-5**
	-	Systematically scans the environment to identify and define vulnerabilities and threats. Records and escalates non-compliance.	Evaluates security management measures and indicators and decides if compliant to information security policy. Investigates and instigates remedial measures to address any security breaches.	Provides leadership for the integrity, confidentiality and availability of data stored on information systems and complies with all legal requirements.	-
Dimension-4 Knowledge examples *(Knows/aware of/ familiar with)*	K1	the organisation's security management policy and its implications for engagement with customers, suppliers and subcontractors			
	K2	best practices and information security management standards			
	K3	critical risks for information security management			
	K4	the ICT and data centre internal audit approaches and procedures			
	K5	security detection techniques, including mobile and digital			
	K6	cyber-attacks, counter measures for avoidance and government data security crime policies (e.g. the United States Patriot Act, Freedom act, etc.)			
	K7	computer forensics			
	K8	standards for security			
Skill examples *Is able to*	S1	document the information security management policy, linking it to business strategy			
	S2	analyse the company critical assets and identify weaknesses and vulnerability to intrusion or attack			
	S3	establish a risk management plan to feed and produce preventative action plans			
	S4	perform security audits			
	S5	apply monitoring and testing techniques			
	S6	establish the recovery plan			
	S7	implement the recovery plan in case of crisis			
	S8	take care of availability of -information, security systems and help desk services			

8.10 E.10. Asset Management

Dimension-1 DC-Competence area	**E. MANAGE**					
Dimension-2 DC-Competence Title + Generic Description	**E.10. Asset Management** Implements asset management policy and procedures. Defines level of details to be recorded. Provides a clear asset tagging policy and methodology. Ensures that assets are managed throughout their life cycle.					
Dimension-3 DC-Competence proficiency levels e-1 to e-5	**Level-1**	**Level-2**	**Level-3**	**Level-4**	**Level-5**	
	Design, develop & adapt functional requirements (availability, reliability), risk profiles and lifetime costs in actions.	Translate strategic objectives into functional requirements. Improve asset systems with the maximum contribution to strategic goals. Makes mid-term plans for design, development and defines asset systems goals. Managing integral trade-offs between system requirements, risks and lifecycle costs. Designs a long-term investment programme.	Translates stakeholders needs into strategic asset goals. Supervising the strategic asset plan. Responsible for the asset vision (e.g. chain management, -control, etc.). Reviewing performance and supervise the asset management organisation.	-	-	
Dimension-4 Knowledge examples *(Knows/aware of/ familiar with)*	K1	ISO 55000 and BSI PAS 55				
	K2	ISO 55001 (system requirements) and ISO55002 (implementation)				
	K3	accounting and finance				
	K4	policies, statements, laws and regulations				
	K5	ICT/ data centre technical infrastructure and maintaining plans				
	K6	data centre organization plans, goals and portfolio				
	K7	company policies (e.g. needs stakeholders, leadership, commitments, organization roles, responsibilities, authority, etc.)				
	K8	information-, risk- and life cycle management				
Skill examples *Is able to*	S1	determining the scope of objectives and asset management system				
	S2	planning to achieve asset management objectives				
	S3	address risk- and opportunity actions				
	S4	implementing plans to asset management portfolio				
	S5	evaluate performance and improvements (e.g. monitoring, measurement, analyses, review, etc.)				
	S6	develop the asset management system (e.g. resources, awareness, communication, information requirements and –documentation, etc.)				
	S7	audit the internal asset management organization and systems				
	S8	optimize life cycles, systems, investments throughout data centre chain				

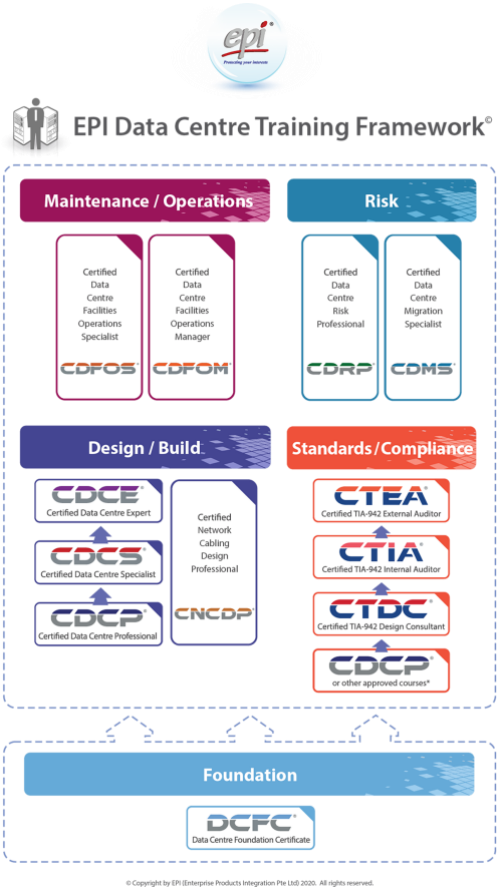
8.11 E.11. Governance

Dimension-1 DC-Competence area	**E. MANAGE**				
Dimension-2 DC-Competence Title + Generic Description	**E.11. Governance** Defines, deploys and controls the management of the data centre in line with business imperatives. Takes into account all internal and external parameters such as legislation and industry standard compliance to influence risk management and resource deployment to achieve balanced business benefit.				
Dimension-3 DC-Competence proficiency levels e-1 to e-5	**Level-1**	**Level-2**	**Level-3**	**Level-4**	**Level-5**
	-	-	-	Provides leadership for data centre governance strategy by communicating, propagating and controlling relevant processes across the entire data centre infrastructure.	Defines and aligns the data centre governance strategy incorporating it into the organisation's corporate governance strategy. Adapts the data centre governance strategy to take into account new significant events arising from legal, economic, political, business, technological or environmental issues.
Dimension-4 Knowledge examples *(Knows/aware of/ familiar with)*	K1	the ICT/ data centre infrastructure, the business organisation and -architecture			
	K2	the business strategy (planning) and alignment			
	K3	the business values			
	K4	legal requirements and laws			
	K5	portfolio management and acquisition			
	K6	program management and strategy execution			
	K7	compliancy, security and risks models			
	K8	budgeting, funding and resource allocation			
	K9	requirement and demand management			
	K10	budgeting, funding and resource allocation			
Skill examples *Is able to*	S1	manage applicable governance models			
	S2	analyse the business context of the company and its evolution			
	S3	define and implement appropriate KPI's			
	S4	communicate the value, risks and opportunities derived from the IS strategy			
	S5	prioritize requirements to ensure proper governance and risk mitigation			
	S6	Innovate and improve control framework			
	S7	explain technical jargon in simplify terms			

9. Example Job Profiles / Functions

The following sections provide the data centre owner/operator with examples of various job profiles/functions. The job profiles and descriptions in this chapter should be used as a starting point and are certainly not to be taken as an all-encompassing and complete task description as this will vary for each organization depending on many factors such as the organizational structure, size of the organization, all in-house/outsourced or mixed environment and other. For larger organizations there might be a need for more levels within each job profile such as junior/senior/specialist/expert. Smaller organizations might require for a single person to hold multiple roles however, one should ensure (as much as possible) that there is no conflict of interest within those combined roles. The descriptions are not indicating skills such as 'presentation, communication, negotiations skills' etc. due to their generic nature.

For each job profile there is an indication which parts of the 14 disciplines of the EPI Data Centre Framework© it influences. We have also indicated examples of which EPI data centre training programs a data centre owner/operator should consider ensuring that the person acquires/validates his/her skill, knowledge and competence. Each course will be closed with an exam and as such assists the data centre to validate whether the person has the right level required for such critical role/function. The training suggestions have been separated by 'required' for essential/critical skills for the job profile as well as 'added value' suggestions to further enhance the knowledge to get a better-rounded view of the data centre and its operations. The training suggestions can aid the (human resource) manager in the career path planning of its staff.



For more information about the above frameworks and courses, please visit www.epi-ap.com

9.1 Data Centre Manager

Profile title	Data Centre Manager		
Summary statement	Develops, operates, guides and maintains a data centre which is compliant to relevant standards/codes and meets the business needs.		
Mission/general skills description	Specifies the strategic direction for the data centre (organization) and converts it into a strategic business plan. Translates the mission and vision, together with his management team and sets the tactical strategy and operational objectives. Has overall responsibility and accountability for the strategy, the financials and the operational result.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Strategic business plan	• Business requirements • Financials • Management business review	• ICT strategy
Main task/s	• Budget control and responsibility: Profit and Loss (CapEx, OpEx, EBITDA, EBIT) • Define the data centre business strategy to support the ICT environment • Responsible for the quality and management of customer-supplier relationships • Define and ensure compliance with Service Level Agreements • Negotiate complex contracts with vendors, suppliers and third parties • Make recommendations to general ICT management • Responsible for the operational results and human resource management		
DC-Competence *(From DCCF©)*	A.1. Data Centre Business and Strategy Alignment		Level 5
	A.2. Business Plan Development		Level 5
	D.2. Human Resource Management		Level 4
	E.5. Relationship Management		Level 4
	E.11. Governance		Level 4-5
KPI area	Overall added value, efficiency and effectiveness of the data centre		
EPI-DC Framework© Disciplines	• All disciplines		
EPI courses	**Required;** • CDCP • CDCS • CNCDP • CDFOM **Added value;** • CDCE • CDRP • CTDC • CDMS • CITM		

9.2 Finance Manager

Profile title	Finance Manager		
Summary statement	Provides financial advice and support to the data centre business, clients and colleagues to enable them to make financially sound business decisions.		
Mission/general skills description	Provides clear budgetary planning for both the short and long term. Provides financial analysis for implications of any decision before proceeding. Ensures that financial practices are in line with all statutory legislation and regulations.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Financial Plan • Compliance	• Budget controls • Forecasting	• Financial transparency • Stakeholder results
Main task/s	• Managing revenues and expenses • Provide financial planning and control cycle • Plans operational and investment costs and benefits • Check and monitor spending's, adjusting budgets • Identify improvements and propose measures to improve • Annual planning information and business information management • Control investment analysis and budgets • Progress reports: planning versus realisation (budgetary and billing statement, profit and loss) and recommendations for improvements		
DC-Competence *(From DCCF©)*	A.1. Data Centre and Business Strategy Alignment		Level 5
	A.2. Business Plan Development		Level 4
	D.4. Information Management		Level 5
	D.9. Contract Management		Level 3
	E.11. Governance		Level 4
KPI area	Provide timely financial services, monitors, controls and reports the profit and loss (EBITDA) on operating activities in full compliance to regulations		
EPI-DC Framework© Disciplines	• Governance & Management Administration		
EPI courses	**Required;** • n/a **Added value;** • DCFC • CITM		

9.3 Lawyer/Legal Advisor

Profile title	Lawyer/Legal Advisor		
Summary statement	Provides legal protection and service by advising corporations on their legal rights and duties, including the duties and responsibilities of management.		
Mission/general skills description	Has in-depth knowledge of all aspects of contract law, tax law, accounting, securities law, bankruptcy, intellectual property rights, licensing laws, and the laws specific to the business of the corporations that they work for. Works closely with DC Manager, Policy & Compliance Officer, Human Resource Manager and Finance Manager.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Legal matters	• Legal compliancy • Laws and regulations	• Risk Management • Policies and Compliance
Main task/s	• Solving legal problems and issues • Analysing and developing legal issues • Define and create legal concepts • Analysing, studying and describing facts and events • Advising management (e.g. acquisitions, joint ventures, equity issues, etc.) • Handle Legal Affairs concerning Human Resources • Managing the data centre insurance portfolio • Preparation and accurate checking of contracts (e.g. license agreements, warranty provisions, SLAs, etc.) • Pronouncing or settling disputes between opposing parties		
DC-Competence *(From DCCF©)*	C.1. Service Delivery		Level 2
	D.2. Human Resource Management		Level 3
	D.9. Contract Management		Level 3-4
	E.3. Risk Management		Level 3
	E.11. Governance		Level 4
KPI area	Handling all legal affairs of the data centre		
EPI-DC Framework© Disciplines	• Service Level Management • Governance & Management Administration • Data Centre Location		
EPI courses	**Required;** • n/a **Added value;** • DCFC • CDRP • CITM		

9.4 HR Manager (Human Resource)

Profile title	HR Manager (Human Resource)		
Summary statement	Develops, advises on and implement policies and executes effective management of personnel within an organization.		
Mission/general skills description	Requires HR management, and skill/ experience to plan the policy for the attraction, selection, training, assessment, and rewarding of employees, while also overseeing organizational leadership and culture, and ensuring compliance with employment and labour laws.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Human Resource Strategy	• Workforce planning • Policies and programs	• Data Centre Business Plan
Main task/s	• Detect and analyse relevant internal and external HR developments • Translate developments to consequences and opportunities for the organization • Develop organizational policies • Formulate HR objectives for realization of organizations' objectives • Offers policy proposals to data centre management • Translates approved policy proposals to a HR policy plan • Perform human resource management (e.g. recruitment, selection, development, assessment, etc.) • Support managers in case of problems in the relationship with employees • Represent the company in employer groups, industry associations, government agencies, unions and other relevant organizations		
DC-Competence *(From DCCF©)*	A.2. Business Plan Development		Level 3
	D.2. Human Resource Management		Level 3-4
	D.3. Education and Training		Level 3-4
	D.4. Information Management		Level 4-5
	E.11. Governance		Level 4
KPI area	Human Resources Management tasks are carried out in a proper and effective way and internally established standards are realized		
EPI-DC Framework© Disciplines	• Governance & Management Administration • Organization • Organizational Resilience		
EPI courses	**Required;** • n/a **Added value;** • DCFC		

9.5 Policy and Compliance Officer

Profile title	Policy and Compliance Officer		
Summary statement	Provides and maintains compliance to (new) laws, codes, standards and regulations concerning the data centre to maintain the reputation and integrity of the data centre business.		
Mission/general skills description	Ensure the data centre is compliant with applicable governmental codes and selected standards and codes of practice, adopts and follows national, international and industry codes and standards. For example, with regards to fire prevention and suppression – this requires both local code conformances and alignment with international practices. Practical knowledge of common compliance standards such as the Sarbanes-Oxley Act, PCI etc.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Compliancy policy	• Compliancy risk analyses • Reputation and integrity	• Legal • Risk Management
Main task/s	• Determine which regulations and standards applies to the data centre • Appoint auditors and manage the audit process • Identify obligations with high impact on business operations • Impact analysis and prioritization; controlling high priority obligations (direct action) • Supporting management in making and implementing policies • Create awareness about the new policy within the organization • Monitors compliance and certifications • Prevent conflicts with commercial objectives • Ensure that objectives can be achieved within frameworks of compliance (e.g. law, standards, etc.) • Ensure policies, standards and procedures are in compliance with applicable local, state and federal laws and regulations and third-party guidelines		
DC-Competence *(From DCCF©)*	A.5. Site Planning		Level 4
	C.1. Service Delivery		Level 3
	E.3. Risk Management		Level 3
	E.11. Governance		Level 5
KPI area	Protect the reputation and the integrity of the data centre		
EPI-DC Framework© Disciplines	• Governance & Management Administration • Organization • Security Management		
EPI courses	**Required;** • CDRP **Added value;** • DCFC/CDCP • CITM		

9.6 Risk Manager

Profile title	Risk Manager		
Summary statement	Assess, identify and manage risk mitigation plans for potential risks that may hinder the reputation, safety, security and financial prosperity of the data centre.		
Mission/general skills description	Performs risk analysis for the data centre with regards to investment feasibility, site selection, contract, exposure, construction project constraints, operational risk exposure, non-compliance, etc. General principles and processes involved in risk management analysis and evaluation techniques. Evaluates and manages implications of relevant regulations. Provides performance and quality management metrics for service delivery.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Risk Plan	• Risk analyses • Risk Management policy	• Business Continuity Management • Security Management
Main task/s	• Identification and mapping of goals (strategic and operational risks) • Perform risk analyses (e.g. investment feasibility, site selection, exposure, etc.) • Control measures (avoidance, prevention and reduction of risks) • Anchor the risks in the organization (control, support and advice) • Evaluate the risks (relevance of the measure, policy adjustments) • Providing an overall risk plan (objectives, analyses, measures, assurance, evaluation) • Direct professional analysts (e.g. Security-, Business Continuity-, EH&S-, Sustainable-, DC Design Manager, etc.)		
DC-Competence *(From DCCF©)*	A.5. Site Planning		Level 4
	C.1. Service Delivery		Level 3
	E.3. Risk Management		Level 3-4
	E.11. Governance		Level 4-5
KPI area	Prevent and manage all common data centre risks		
EPI-DC Framework© Disciplines	• Security Management • Organizational Resilience • Physical Infrastructure • Data Centre Location		
EPI courses	**Required;** • DCFC/CDCP • CDRP • CITM **Added value;** • CDMS • CITD		

9.7 Security Manager

Profile title	Security Manager		
Summary statement	Maintains a safe and secure environment for customers and employees by establishing and enforcing security policies and procedures and overseeing the development of security systems for the protection of facilities, personnel, data and assets.		
Mission/general skills description	General principles and processes involved in risk and security management analysis and evaluation techniques. Evaluates and manages implications of relevant regulation and provides performance and quality management metrics for service delivery.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Security strategy	• Security policy • ISMS (Information Security Management System)	• Risk Management • Business Continuity Management
Main task/s	• Establish the data centre security prevention Plan and ISMS • Perform security audits and conformity (e.g. ISO27001, PCI DSS, etc.) • Standards for integrity • Define and implement procedures linked to data centre security • Contribute to the development of the data centre security policy • Inform and raise awareness among management • Ensure the promotion of the data centre charter among (security)employees, users and customers (collocation) • Inspect and ensure that principles and rules for data centre security are applied and maintained		
DC-Competence *(From DCCF©)*	A.5. Site Planning		Level 3
	C.1. Service Delivery		Level 3
	E.3. Risk Management		Level 3
	E.9. Information Security Management		Level 3-4
	E.11. Governance		Level 4
KPI area	Security Policy effectiveness		
EPI-DC Framework© Disciplines	• Security Management • Organizational Resilience • Physical Infrastructure • Data Centre Location		
EPI courses	**Required;** • DCFC/CDCP • CDRP • CDFOM **Added value;** • CITM		

9.8 Business Continuity Manager

Profile title	Business Continuity Manager		
Summary statement	Develops and maintains corporate business continuity strategies to ensure critical services are maintained at agreed levels at times of service disruption or degradation due in adverse conditions.		
Mission/general skills description	Performs risk analysis for the data centre with regards to investment feasibility, site selection, contract, exposure, construction project constraints, operational risk exposure, non-compliance, BC/DR, etc. Understands general principles and processes involved in risk management analysis and evaluation techniques Implications of relevant regulation communication and presentation techniques performance and quality management metrics for service delivery.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Business Continuity Plan (BCP)	• Risk analyses data centre organizational • Business impact analyses	• Risk Management • Security Management
Main task/s	• Risk analyses on business processes; providing process improvement proposals • Perform Business Continuity strategy with the right response techniques • Design, manage and maintain the Business Continuity Plan and Disaster Recovery Plan • Identify operational disruptions and control business risks • Achieve crucial improvements and measures • Keep ahead of the competition in case of a big crises • Prevent financial claims by crossing Service Level Agreements • Manage calamities and incidents, defining alternate and emergency possibilities • Connect Business Continuity to the business processes • Conformity with ISO 22301		
DC-Competence *(From DCCF©)*	A.5. Site Planning		Level 3
	C.1. Service Delivery		Level 3
	E.3. Risk Management		Level 3
	E.8. Process Management		Level 4
	E.11. Governance		Level 4
KPI area	Preventing disruptions in the business activities		
EPI-DC Framework© Disciplines	• Security Management • Organizational Resilience • Physical Infrastructure • Data Centre Location		
EPI courses	**Required;** • DCFC/CDCP • CDRP • CDMS • CITM **Added value;** • CDFOM • CNCDP		

9.9 EHS Manager (Environmental Health & Safety)

Profile title	**EHS Manager (Environmental Health & Safety)**		
Summary statement	Develops and implement health and safety programs to ensure conformance to environmental, national, health and safety standards in the applicable jurisdiction to safeguard the health and safety of all persons within the data centre.		
Mission/general skills description	Full understanding of relevant standards such as ISO14001. Develop EHS programs to include measures to address ergonomics, air quality, and other aspects of workplace safety that could affect the health and well-being of employees.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• EHS data centre policy	• EHS life cycle • Preventing EHS incidents and accidents	• Risk management policy • Security management
Main task/s	• Ensure conformance to environmental, national, health and safety standards • Enforces health and safety practices during construction (work safely) • Conformity with ISO 14001 (environmental) • Secure workplace and human safety • Secure the health and well-being of people • Identify operational disruptions and control business risks • Develop, manage and improve EH&S directives, methodologies and guidelines • Develops, manages and frequently test data centre evacuation plans • Control the emergency response team; tunes evacuation plan with local emergency departments (e.g. fire, police, hospital, local, etc.) • Prevent damage to the environment (e.g. waste, air pollution, etc.)		
DC-Competence *(From DCCF©)*	A.5. Site Planning		Level 3
	A.7. Sustainable Development		Level 3
	E.3. Risk Management		Level 3
	E.7. EHS Management		Level 3-4
	E.11. Governance		Level 4
KPI area	Prevent all common Environmental Health & Safety risks		
EPI-DC Framework© Disciplines	• Safety Management • Organizational Resilience • Monitoring/Reporting/Control		
EPI courses	**Required;** • DCFC/CDCP **Added value;** • CDFOM • CITM		

9.10 Sustainability Manager

Profile title	Sustainability Manager		
Summary statement	Sustainability manager is responsible for the development and implementation of an EMS (Environmental Management System) including compliance with environmental legislation and industry best practices.		
Mission/general skills description	Creates the 'Green" policy for the data centre. Understands relevant standards and data centre best practices. Ability to create policies and plans, awareness programs to promote sustainability within the data centre organizations.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Sustainability strategy	• Energy efficiency • Carbon emission • Renewable energy policy	• Corporate Social Responsibility (CSR)
Main task/s	• Structure and proactive coordinate of all sustainability activities • External and internal profiling of sustainability aspects • Review Corporate Social Responsibility performance (e.g. Carbon Disclosure project, etc.) • Collect, translate and provide data centre sustainability possibilities and solutions • Act as point of contact for organization and customer questions, offering at-a-glance information • Participate in sustainability branch meetings, communicate and participate in sales and marketing meetings • Proactive identifying and realizing new wishes, demands and developments of data centre sustainability opportunities • Image and realize a data centre Corporate Social Responsibility (CSR) strategy • Responsible for data centre energy efficiency (PUE) analyses, benchmark's, improvement advices and measurements (conform ISO 26001 conformity)		
DC-Competence *(From DCCF©)*	A.1. Data Centre and Business Strategy Alignment		Level 4
	A.2. Business Plan Development		Level 4
	A.4. Technology Trend Monitoring		Level 4
	A.5. Site Planning		Level 5
	A.7. Sustainable Development		Level 4-5
KPI area	Ensure that the data centre "Becomes a leading sustainable and carbon neutral data centre in 20XX"		
EPI-DC Framework© Disciplines	• Environmental Sustainability • Monitoring/Reporting/Control		
EPI courses	**Required;** • DCFC/CDCP **Added value;** • CDCS		

9.11 Site Selection Manager

Profile title	Site Selection Manager		
Summary statement	Develops the companies owned data centres location strategy and manage the site selection effort for real estate, including partnering with teams focused on economic development incentives, energy and utilities, network connectivity, legal, policy, and financial considerations		
Mission/general skills description	The site selection manager will locate and develop the data centre infrastructure the right way to ensure high uptime, capacity availability, flexibility and capital and operational cost efficiency. A qualified site selection manager has extensive experience negotiating large, complex deals and a strong knowledge of the legal agreements that accompany them. He has a keen ability to think both strategically and analytically, develop out-of-the box solutions and is able to navigate the challenges that accompany leasing projects and portfolios of large magnitude.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Efficient data centre location selection • On time delivery of new sites including public utilities and required permits.	• Data centre location strategy • Site acquisitions • Real estate capacity	• Data centre Strategy • Financial results
Main task/s	• Develop the companies owned data centre location strategy and manage the site selection effort for real estate, including partnering with teams focused on economic development incentives, energy and utilities, network connectivity, legal, policy, and financial considerations • Lead feasibility discussions and contract negotiations with service providers, property owners, economic development agencies, and utility companies • Negotiate letters of intent, land or building purchases, economic development incentives, water and sewer supply, and other site-specific agreements • Support power negotiations • Partner with internal organizations including capacity planning, energy teams, data centre design, construction, network engineering, legal, policy, communications and finance • Prepare project location recommendations and present to management for approval		
DC-Competence *(From DCCF©)*	A.1. Data Centre and Business Strategy Alignment		Level 5
	A.2. Business plan Development		Level 5
	A.5. Site Planning		Level 4
	D.8. Purchasing		Level 3
	E.3. Risk management		Level 3
KPI area	Developing and executing the data centre real estate strategy		
EPI-DC Framework© Disciplines	• Governance & Management Administration • Data Centre Location		
EPI courses	**Required;** • CDCP • CDCS • CDCE • CTDC **Added value;** • CDFOM • CTIA		

9.12 Data Centre Design Manager

Profile title	Data Centre Design Manager		
Summary statement	Develops and maintains a data centre which can achieve its business goals by establishing and managing an effective and efficient design plan.		
Mission/general skills description	Provides comprehensive planning and design services tailored to the project criteria. Experience in facility design and ICT design best practices are needed to create reliable and sustainable solutions.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Design policy	• Design plan	• Business strategy/goals • Product Management • Solution architecture
Main task/s	• Develop Design policy; translate policy to reality • Build a structure for data centre design • Contribute value of product and service • Enable innovation and create effectively designed data centre ICT and facilities for ongoing processes, business decisions, and strategies • Enhance the quality of life and provide organizational success • Link design, innovation, technology, management and customers to provide competitive advantage across economic, social/cultural, and environmental factors • empower design to enhance collaboration and synergy between "design" and "business" to improve design effectiveness • Manage design processes to solve general business problems • Responsible for making decisions about how design is used in the organization		
DC-Competence *(From DCCF©)*	A.5. Site Planning		Level 4
	A.6. Architecture Design		Level 4-5
	A.7. Sustainable Development		Level 4
	E.4. Project and Portfolio Management		Level 5
	E.11. Governance		Level 5
KPI area	Secure an effective efficient data centre design plan		
EPI-DC Framework© Disciplines	• ICT Infrastructure • Physical Infrastructure • Data Centre Location • Environmental Sustainability		
EPI courses	**Required;** • CDCP • CDCS • CDCE • CNCDP • CTDC • CDFOS **Added value;** • CDMS • CDRP • CTIA • CDFOM • CITM		

9.13 Solution Architect

Profile title	Solution Architect		
Summary statement	Translates business and technical requirements into a data centre architecture which is effective, efficient, compliant, scalable and flexible.		
Mission/general skills description	Manages the planning to implementation of solutions including the functional and capacity analysis. Requires both broad and deep analytical and technical skills. Must have experience on multiple data centre, connectivity, hardware and software environments and be understand complex heterogeneous systems environments.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Architectural vision	• Functional analyses (FA) • Architectural solutions	• Date Centre design Management • Project Management
Main task/s	• Determined, based on business requirements, technical architecture business methods and business projects • Secure the technical architecture for business operations and business-projects in the project start architecture • Before realization of the projects composes global designs • Provided the necessary expertise and investments for the implementation of the solution • Responsible for a unified architecture • Help to expand the reference architecture, capturing, keys on feasibility and maintaining the relevant principles and guidelines for the production and maintenance processes of all data centre services		
DC-Competence *(From DCCF©)*	A.5. Site Planning		Level 4
	A.6. Architecture Design		Level 4-5
	A.7. Sustainable Development		Level 4
	E.4. Project and Portfolio Management		Level 5
	E.11. Governance		Level 5
KPI area	Secure the technical enterprise architecture for business methods and business projects		
EPI-DC Framework© Disciplines	• Project Management • ICT Infrastructure • Physical Infrastructure • ICT Service management		
EPI courses	**Required;** • CDCP • CDCS • CNCDP • CITM **Added value;** • CDMS • CDRP • CITO		

9.14 Product Manager

Profile title	Product Manager		
Summary statement	Develops data centre service products by execute all phases of product planning, implementation and maintenance throughout the product lifecycle in line with company's overall strategy and goals.		
Mission/general skills description	Is responsible for the success of all data centre products (services) and has control over the development, production and marketing. Accompanies the product lifecycle from the beginning till retirement. Keeps commercial, long term goals in mind to sell the product in the best way. Ensures the success of product through development, marketing, and good budgeting. Ensures that the product or product line is profitable and remains profitable. Ensures that the company continues to make profit on the products at the lowest Total Cost of Ownership. Replace or retire non-profitable product. Has in-depth knowledge of data centre products/services, technical specifications and support requirements. Understands the technical details of a data centre setup.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Product Plan	• Market share • Product portfolio	• Sales • Business plan
Main task/s	• Manage market research • Examine possibilities and applications for new- and existing products • Examines the best way how to position products in the market • Manage and support the marketing and communication of products • Image the competition, their market positions, market trends and market innovation trends • Manage the development and improvement process • Inventory at Account- and Service Level Management for new product modifications or new products needs and opportunities • Contributes to selling products as much as possible • Connect product range to market needs • Provides market-based products at the highest possible profit		
DC-Competence *(From DCCF©)*	A.1. Data Centre and Business Strategy Alignment		Level 4
	A.2. Business Plan Development		Level 5
	A.3. Service Level Management		Level 3
	A.4. Technical Trend Monitoring		Level 5
	D.6. Sales Management		Level 3
KPI area	Increase the current market position (share) of the data centre product portfolio		
EPI-DC Framework© Disciplines	• Service Level Management		
EPI courses	**Required;** • CDCP • CDCS • CNCDP • CDFOM • CITM **Added value;** • CDMS • CDRP		

9.15 Service Level Manager

Profile title	Service Level Manager (SLM)		
Summary statement	Manages all service level agreements (SLAs) across the organization ensuring the service commitments are met whilst driving service improvement programs.		
Mission/general skills description	Knowledge of Information Technology Infrastructure Library (ITIL). Experience in handling service providers and knowledge of negotiation on SLAs. Excellent customer focus and customer advocate for service improvements.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Service requirements	• Customer satisfaction • Service Level (Agreement)	• Product management • Account management
Main task/s	• Manage Service Level of existing outsourcing contract (e.g. customer, vendor, etc.) • Optimize quality of Service Level Management • Improve customer satisfaction • Design and document the Service Level Management process, policies, rules and guidelines • Define and document the KPIs, reporting and key controls for the Service Level Management process • Set up and lead expertise ITIL Service Level Management process forums with process experts • Builds ITIL compliant Service Level Management process knowledge in the organization. • Standardization to enable offshore targets • Drive service management best-practice and ITIL process standardization • Define new customer needs and wishes. Generate leads to Product management and Account management		
DC-Competence *(From DCCF©)*	A.2. Business Plan Development		Level 3
	A.3. Service Level Management		Level 3-4
	C.1. Service Delivery		Level 3-4
	D.6. Sales Management		Level 3
	E.5. Relationship Management		Level 3
KPI area	Percentage reduction in SLA targets threatened		
EPI-DC Framework© Disciplines	• Service Level Management		
EPI courses	**Required;** • DCFC/CDCP • CDFOM • CITM **Added value;** • CDMS • CDRP		

9.16 Account Manager

Profile title	Account Manager		
Summary statement	Manages the relationship with customers being the focal point for client sales and customer satisfaction.		
Mission/general skills description	Building business relationships with clients to facilitate the sales of data centre services, and connectivity (cabling and telecom). Identifies opportunities and manages sourcing and delivery of data centre products to customers. Has responsibility for achieving sales targets and maintaining profitability. Has a broad understanding of data centre products, data centre standards and best practices and general data centre setup including operational requirements.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Sales	• Solution selling • Business Relationships	• Technical proposal • Sales Forecast
Main task/s	• Maintain overall customer satisfaction • Identify opportunities to propose new data centre services to clients • Be the primary contact point for client (executive management) • Deliver value added presentations related to data centre services to customer executive management • Lead negotiations to establish profitable contracts with client(s) • Maintain and enhance business relationships		
DC-Competence *(From DCCF©)*	A.2. Business Plan Development		Level 3
	A.3. Service Level Management		Level 3
	D.6. Sales Management		Level 5
	D.7. Sales Proposal Development		Level 3
	E.5. Relationship Management		Level 4
KPI area	Sales quota achievement		
EPI-DC Framework© Disciplines	• Service Level Management • Physical Infrastructure • Data Centre Location • ICT Infrastructure		
EPI courses	**Required;** • DCFC/CDCP • CDFOS **Added value;** • CNCDP • CITM • CDFOM		

9.17 Project Manager

Profile title	Project Manager		
Summary statement	Manages projects to achieve optimal performance conforming to original specifications		
Mission/general skills description	Provides the owner/investor organization with a single point of management accountability for project outcomes. Creates the project plan, establishes the implementation team, develops project budgets and manages the schedule. Although contractual relationships might vary, the single point of responsibility will ensure appropriate accountability for performance and progress.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Project Plan • Validated Solution	• Solution documentation	• Integrated Solutions • Quality Plan
Main task/s	• Supervise project progress • Organize, coordinate and lead project team • Coordinate, record and ensure quality compliance • Implement the new service or equipment or environment, etc. • Comply with budgets and delivery times • Plan maintenance and customer support		
DC-Competence *(From DCCF©)*	E.2. Facilities Management		Level 3
	E.3. Risk Management		Level 2
	E.4. Project and Portfolio Management		Level 4-5
	E.5. Relationship Management		Level 3
	E.8. Process Management		Level 3
KPI area	Project scope achievement, timing and budget		
EPI-DC Framework© Disciplines	• Project Management • ICT Infrastructure • Physical Infrastructure		
EPI courses	**Required;** • CDCP • CDFOS **Added value;** • CNCDP • CDMS • CTDC • CDRP • CITM		

9.18 Site Manager

Profile title	Site Manager		
Summary statement	Manages the onsite build activities on behalf of the construction inspecting the daily progress of the site build activities.		
Mission/general skills description	To plan and inspect work during the implementation phase, is well-organized, and prepared for responsibility and decision making. Should have a good level of understanding on ICT and has detailed data centre skills and is well skilled at solving problems. Has a good understanding of building and health and safety regulations, as well as other legislation. Has particularly strong people and communication skills due to the interaction with individuals at all levels, from staff to sub-contractors		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Site construction works	• Safety • Implementation • Guidance • Delivery	• Project management
Main task/s	• Controlling, monitoring and guidance of the daily work within the project • Responsible for managing, monitoring and control of the execution planning and progress of the project on site • Coordinating, organizing and controlling the work process • Draft adequate delivery forecasts and tunes progress with Project Manager • Final inspection and delivery of the project • Chairing and possibly taking minutes of construction meetings • Assess out of scope activities required • Track construction administration: money, time, and quality during the work process • Secure the safety (safe working, people) on the construction site • Ensure compliance with data centre specific risk assessments, regulations, procedures and work instructions		
DC-Competence *(From DCCF©)*	E.4. Project and Portfolio Management		Level 3-4
	E.7. EH&S Management		Level 2-3
KPI area	Delivery of the project within agreed budget, quality and time		
EPI-DC Framework© Disciplines	• Project Management • ICT Infrastructure • Physical Infrastructure • Safety Management • Security Management		
EPI courses	**Required;** • CDCP • CDCS • CDCE • CNCDP **Added value;** • CTDC • CDRP • CITM		

9.19 Civil Engineer/Construction Engineer

Profile title	Civil Engineer/Construction Engineer		
Summary statement	Plans, designs, overseas and manages all civil and construction related matters of the data centre.		
Mission/general skills description	Ensures that a building is built to be strong and stable enough to resist all appropriate structural loads (e.g., weight, gravity, wind, snow, rain, seismic (earthquake), temperature, traffic etc.) in order to prevent or reduce loss of life or injury. Design structures to be stiff enough to not deflect or vibrate beyond acceptable limits during deployment of large and (heavy data) centre equipment and their operations. Consideration is given to durability of materials against possible deterioration which may impair performance over the design lifetime.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Civil and construction blueprints	• On- site Management of actual construction • Civil and construction projects	• Architect (design) • Structural engineer
Main task/s	• Planning data centre civil and construction structures • Concentrates on the elements of the design • Translate the architectural design into more civil and constructions details (e.g. place to build, access roads, sewage, type of soul, fences, parking spaces, energy supply, etc.) • Making certain that the structure can endure normal and extreme conditions • Is involved in the design process • Analyse and find ways to make the structural design possible • Ensure that the design can be implemented in a safe and reliable manner • Responsible for finding suitable materials, suggesting modifications and alterations • Evaluating the structural integrity to transform the architect's vision into realization • Design, planning and analysis construction project (civil engineering) • On-site management of actual construction (construction engineering)		
DC-Competence *(From DCCF©)*	A.4. Technology Trend Monitoring		Level 4
	A.5. Site Planning		Level 4
	A.6. Architecture Design		Level 4
	A.7. Sustainable Development		Level 4
	B.1. Architectural		Level 3-4
KPI area	Effectiveness and efficiency of construction and civil implementation		
EPI-DC Framework© Disciplines	• Data Centre Location • Physical Infrastructure • Project Management • Environmental Sustainability		
EPI courses	**Required;** • DCFC/CDCP **Added value;** • CTDC • CNCDP		

9.20 Architect

Profile title	Architect		
Summary statement	Designs new, extensions, alterations and conservation of buildings taking into account construction techniques ensuring an optimized and efficient data centre.		
Mission/general skills description	The architect is concerned with data centre building space use, appearance, relationships among users and spaces and finishes, as well as the overall coordination of all parties involved in the planning and design process. In a D/B/B method, the architect is likely to be in charge of the process to select the general contractor and may be involved, during construction, in quality control inspections and other activities on behalf of the investor/owner.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Data centre building design	• Aesthetic and functionality of the building design	• Civil engineer/ construction engineer • Structural engineer • Overall architecture design
Main task/s	• Develop design patterns and model the data centre building • Analyse, technology, business and building requirements • Lead development and integrations of data centre building design • Focus on the spatial functionality and aesthetics of the development work • Concerned with the artistry, look, feel and functionality of the building design • Take the lead role in terms of the design of the structure • Initiate and create the design, including the shape, colour and spaces of the development work • Processes the wishes of customers and his own knowledge into a building design (collocation) • Sustainable development consideration		
DC-Competence *(From DCCF©)*	A.4. Technology Trend Monitoring		Level 5
	A.5. Site Planning		Level 4
	A.6. Architecture Design		Level 4-5
	A.7. Sustainable Development		Level 4
	B.1. Architectural		Level 4
KPI area	Effectiveness and efficiency design of the data centre architecture		
EPI-DC Framework© Disciplines	• Data Centre Location • Physical Infrastructure • Project Management • Environmental Sustainability		
EPI courses	**Required;** • CDCP • CDCS • CTDC **Added value;** • CDFOS		

9.21 Structural Engineer

Profile title	Structural Engineer		
Summary statement	Designs structures to withstand stresses and pressures imposed on the data centre and supporting structures through environmental conditions and human ensuring that they do not deflect, rotate, vibrate beyond acceptable limits or collapse and that they remain stable and secure throughout their use.		
Mission/general skills description	Is concerned with translating the overall high-level data centre architectural building design into detailed building construction drawings and calculations. Translates the vision and ideas of the architect into visuals and substantiated how the construction (backbone) should look like in detail. Determines and calculates what materials should be used (e.g. steel, concrete, wood, etc.). Secure that the contractor can provide a safe structure. Support, advices and substantiate specialist content in contribution to the data centre design (architect), operations and data centre facilities. A structural engineer will typically have a four- or five-year undergraduate degree, followed by a minimum of three years of professional practice before being considered fully qualified. Structural engineers are licensed or accredited by different learned societies and regulatory bodies around the world.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Building construction engineering	• Construction calculation and drawing	• Architect • Project Management • Data centre building design
Main task/s	• Translate artistic design (from the civil engineer) to working- drawings (for contractor) • Outlines and calculates basic models; translate them in construction drawings • Advises structural changes and better alternatives to the architectural design • Using a range of computer packages for developing detailed design and engineering • Undertaking complex and repetitive calculations to ensure a sound design • Compiling equipment and material specs and supervising tendering procedures • Resolving design and development problems • Scheduling material and equipment purchases and delivery		
DC-Competence *(From DCCF©)*	A.5. Site Planning		Level 4
	A.6. Architecture Design		Level 3
	B.1. Architectural		Level 2
	B.8. Documentation Production		Level 2
KPI area	Effectiveness and efficiency of structural engineering		
EPI-DC Framework© Disciplines	• Data Centre Location • Physical Infrastructure • Project Management • Environmental Sustainability		
EPI courses	**Required;** • CDCP • CDCS • CTDC **Added value;** • n/a		

9.22 Electrical Engineer/ Designer

Profile title	Electrical Engineer/ Designer		
Summary statement	Design, develop and maintain electrical systems and/or components to required specifications, focusing on safety, reliability, quality and sustainability.		
Mission/general skills description	Designs the power infrastructure (e.g., transformers, switch gear, grounding, breakers, UPS, PDUs, etc.) both the supply and distribution (SLD) and develops detailed electrical distribution diagrams and specifications with power calculations and layouts to meet the customer's requirements (current and future) in compliance with local electrical code and industry requirements. Provides technical expertise to train the client's facility engineering staff on the safe and optimal electrical operations of the plant. Support, advices and substantiate specialist content in contribution to the data centre design (architect).		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Power Infrastructure design	• Electrical distribution diagram • Electrical distribution specification and calculation	• Project Management
Main task/s	• Draw electrical diagrams (e.g. single lines, etc.) • Define electrical design and engineers the design (specifications and calculations) • Compare electrical data centre networks to regulations and standards • Choose materials and equipment for the electrical infrastructure • Oversee and prepare the roll-out of new electrical installations • Give advice and support at electrical changes, adjustments and extensions • Control failure analyses and support testing • Is able to use best practices and new technologies		
DC-Competence *(From DCCF©)*	A.6. Architecture Design		Level 3
	A.7. Sustainable Development		Level 3
	B.2. Electrical Engineering		Level 3-4
	B.8. Documentation Production		Level 2
KPI area	Efficiency and effectiveness of electrical design and engineering		
EPI-DC Framework© Disciplines	• Project Management • ICT Infrastructure • Physical Infrastructure • Monitoring/Reporting/Control		
EPI courses	**Required;** • CDCP • CDCS **Added value;** • CTDC • CDFOS		

9.23 Mechanical Engineer/Designer

Profile title	Mechanical Engineer		
Summary statement	Design, develop and maintain mechanical systems and/or components to required specifications, focusing on safety, reliability, quality and sustainability.		
Mission/general skills description	Designs the mechanical infrastructure (e.g., cooling & ventilation, water, plumbing, elevators, Fire Suppression, etc.) both the supply and distribution sides and develops detailed mechanical diagrams and specifications with proper structural calculations and layouts to meet the customer's requirements (current and future) in compliance with local architectural and structural codes and industry requirements. Provide technical expertise to train the Client's Facility Engineering staff on the safe and optimal mechanical operations of the plant. Support, advices and substantiate the specialist content in contribution to the data centre design (architect), operations and data centre facilities.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Mechanical Infrastructure design	• Mechanical distribution diagram • Mechanical distribution specification and calculation	• Project Management
Main task/s	• Draw mechanical diagrams (e.g. single lines, etc.) • Define mechanical design and engineers the design (specifications and calculations) • Compare mechanical data centre networks to regulations and standards • Choose materials and equipment for the mechanical infrastructure • Oversee and prepare the roll-out of new mechanical installations • Give advice and support at mechanical changes, adjustments and extensions • Control failure analyses and support testing • Is able to use best practices and new technologies		
DC-Competence *(From DCCF©)*	A.6. Architecture Design		Level 3
	A.7. Sustainable Development		Level 3
	B.3. Mechanical Engineering		Level 3-4
	B.8. Documentation Production		Level 2
KPI area	Efficiency and effectiveness of mechanical design and engineering		
EPI-DC Framework© Disciplines	• Project Management • ICT Infrastructure • Physical Infrastructure • Monitoring/Reporting/Control • Sustainability		
EPI courses	**Required;** • CDCP • CDCS **Added value;** • CTDC • CDFOS		

9.24 Fire/Safety Systems Engineer/Designer

Profile title	Fire/Safety Systems Engineer/Designer		
Summary statement	Design, develop and fire and safety systems and/or components to required specifications, focusing on safety, reliability, quality and sustainability.		
Mission/general skills description	Designs the safety systems infrastructure (e.g. fire handheld extinguishers, fire suppression systems, fire detection systems, fire alarm systems, etc.) both the supply and distribution sides and develops detailed safety systems diagrams and specifications with proper structural calculations and layouts to meet the customer's requirements (current and future) in compliance with local architectural, safety, structural codes and industry requirements. Provide technical expertise to train the client's facility engineering staff on the safe and optimal safety systems operations of the plant. Support, advices and substantiate specialist content in contribution to the data centre design (architect), operations and data centre facilities.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Fire/Safety systems design	• Safety systems engineering	• Project Management • EH&S Management
Main task/s	• Provide safety systems drawings • Define safety systems design end engineers the design (specifications and calculations) • Compare data centre safety systems to regulations and standards • Choose materials and equipment for the safety system infrastructure • Oversee and prepare the roll-out of new safety systems installations • Give advice and support at safety systems changes, adjustments and extensions • Control failure analyses and support testing • Is able to use best practices and new technologies • Monitor fire, emergency and safety Plans • Take, during design and engineering, continuous into account the safety and effects on people		
DC-Competence *(From DCCF©)*	A.6. Architecture Design		Level 3
	A.7. Sustainable Development		Level 3
	B.5. Fire and Safety Engineering		Level 3-4
	B.8. Documentation Production		Level 2
KPI area	Efficiency and effectiveness of safety systems design and engineering		
EPI-DC Framework© Disciplines	• Project Management • ICT Infrastructure • Physical Infrastructure • Monitoring/Reporting/Control		
EPI courses	**Required;** • CDCP • CDCS • CDFOS **Added value;** • CTDC • CDFOM		

9.25 Security Systems Engineer/Designer

Profile title	Security Systems Engineer/Designer		
Summary statement	Design, develop and maintain security systems and/or components to required specifications, focusing on safety, reliability, quality and sustainability.		
Mission/general skills description	Designs and engineers the security systems of the data centre such as perimeter controls (e.g. CCTV, fence, wall, visible intrusion detection systems, etc.), good delivery and holding areas security systems, entry controls (e.g. staff, visitors and vehicles, public transport, individual, etc.), physical access controls (e.g. internal-, external- and vendor staff, customers, etc.), electric badge- and card reader systems, scanners (e.g. bag, body, eye, etc.) and the Information management system (ISMS). Provide technical expertise to train the client's facility security staff on the safe and optimal safety systems operations of the plant. Support, advice and substantiate specialist content in contribution to the data centre design (architect), operations and data centre security employees/officer.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Information Security Management System (ISMS)	• Physical access systems • Security and Perimeter systems	• Project Management
Main task/s	• Design and engineer security systems through the entire data centre life cycle • Compare data centre security systems to regulation and (compliancy)standards • Choose materials and contractors for the security systems in practice • Oversee and prepare the roll-out of new security systems installations • Give advice and support at security systems changes, adjustments and extensions • Control failure- and incident analyses, support testing • Is able to use best practices and new technologies • Monitor and contribute to emergency and safety Plans		
DC-Competence *(From DCCF©)*	A.5. Site Planning		Level 4
	A.6. Architecture Design		Level 3
	B.6. Physical Security Engineering		Level 3-4
	B.8. Documentation Production.		Level 2
KPI area	Efficiency and effectiveness of security systems design and engineering		
EPI-DC Framework© Disciplines	• Project Management • ICT Infrastructure • Physical Infrastructure • Monitoring/Reporting/Control		
EPI courses	**Required;** • CDCP • CDCS • CDFOS • CDRP **Added value;** • CTDC • CDFOM • CNCDP		

9.26 Monitoring and Automation Systems Engineer/Designer

Profile title	Monitoring and Automation Systems Engineer/Designer		
Summary statement	Design, develop and maintain monitoring/control (EMS/BMS/DCIM) systems and/or components to required specifications, focusing on safety, reliability, quality and sustainability.		
Mission/general skills description	Design and engineer a virtual single centralized interface automation system (cockpit) to monitor real-time every device and area in the facility (e.g. power equipment, security devices, ICT equipment, environmental sensors, cooling systems, etc.). Defines a monitoring point matrix which includes all items to be monitored. Develop reporting engines with for example management reports, customer web-portal for tracking SLAs, energy efficiency (PUE). Integrate an automated service desk system (e.g. access requests, incident tickets, service requests, etc.). Objective is to automate and centralize systems of the data centre at various levels to monitor problems which could turn into disaster or to monitor performance trends; if desired in an open sourced virtual platform interface. Implement and upgrade EMS/BMS/DCIM solutions and customer dashboards.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Data centre monitoring design	• IT automation and monitoring engineering • IT automation and monitoring solutions	• Project manager • Management
Main task/s	• Design, implement, and manage data centre IT Automation and monitoring solutions in the technical infrastructure. • Integrate balanced supply of infrastructure resources to meet business demands • Integrate critical infrastructure usage and metrics over time • Integrate future application pipelines to predict the consumption of data centre resources • Design future trends based on past use and report on key capacity metrics • Minimize the risks associated with outages or service disruption • Bridge the gap between IT and Facilities monitoring		
DC-Competence *(From DCCF©)*	A.6. Architecture Design		Level 3-4
	B.8. Documentation Production.		Level 2-3
	D.4. Information Management		Level 4
	E.6. Quality Management		Level 2
	E.9. Information Security Management		Level 3
KPI area	Design and engineer efficient and effective data centre infrastructure monitor solutions		
EPI-DC Framework© Disciplines	• Project Management • ICT Infrastructure • Physical Infrastructure • Monitoring/Reporting/Control		
EPI courses	**Required;** • CDCP • CDCS **Added value;** • CDFOS • CTDC • CNCDP		

9.27 ICT Technology and Network Engineer/ Designer

Profile title	ICT Technology and Network Engineer/Designer		
Summary statement	Design, develop and maintain ICT and Network infrastructure systems and/or components to required specifications, focusing on safety, reliability, quality and sustainability.		
Mission/general skills description	Develops detailed specifications for ICT equipment and floor layout diagrams to maximize rack space, cooling /heat removal to meet the customer's requirements (current and future) in compliance with ICT industry and data centre rating level requirements. Provides technical expertise to train the client's ICT systems engineering, electrical and mechanical engineering staff on the safe and optimal technical requirements and operations of the ICT infrastructure layer.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• ICT Technology and Network design	• ICT Network engineering • ICT network layout	• Project Manager
Main task/s	• Define network design policies, philosophies and criteria • Design and engineer a secure ICT network infrastructure that the data centre organization rely on to access, share, and store information. • Design and engineer local area networks (LAN), wide area networks (WAN), and the virtual private network (VPN) • Design and engineer the ICT infrastructure through the entire data centre life cycle • Secure ICT infrastructure design with regulation and (compliancy)standards • Choose materials and contractors for the ICT infrastructure in practice • Oversee and prepare the roll-out of new ICT infrastructure components • Control failure- and incident analyses, support testing • Is able to use best practices and new technologies • Secure the ICT infrastructure for hackers (firewalls; security policy)		
DC-Competence *(From DCCF©)*	A.6. Architecture Design		Level 3
	B.4. Telecommunication Engineering		Level 3-4
	B.7. Sustainable Development		Level 3
	B.8. Documentation Production.		Level 2
	E.9. Information Security Management		Level 3
KPI area	Efficiency and effectiveness of ICT infrastructure/network design and engineering		
EPI-DC Framework© Disciplines	• Project Management • ICT Infrastructure • Physical Infrastructure • Monitoring/Reporting/Control • ICT Service Management		
EPI courses	**Required;** • CDCP • CDCS • CNCDP • CTDC • CITM **Added value;** • CDFOS		

9.28 Cabling Engineer

Profile title	Cabling Engineer		
Summary statement	Installs cable pathway systems, firestop systems, various electronic components, various cable that includes but is not limited to: structured twisted pair cable, stranded cable, low voltage cable, single mode fiber optical cable and multi-mode fiber optical cable.		
Mission/general skills description	Able to work without little or no supervision. Cabling projects must be implemented according to the data centres network design and applicable standards. Cable installation includes placement, termination, testing, labelling & documentation. Larger projects may be outsourced to an external supplier, where the cabling engineer will supervise the installation activities.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Network services	• Network installation and maintenance • Correct installation and dressing of the data centres cabling infrastructure.	• Operation manager
Main task/s	• Complies with all applicable codes, regulations, governmental agency and company directives related to building operations and work safety. • Install, terminate, test, label and document horizontal, backbone & other cables • Build out telecom and equipment rooms • Supervise external vendors to ensure the regulations and operational procedures are followed • Oversees and inspects the cabling work performed by outside contractors. • Test, troubleshoot, & document test results for cabling • Review and update network drawings and documentation • Responds quickly to emergency situations, summoning additional assistance as needed.		
DC-Competence *(From DCCF©)*	B.4. Telecommunication engineering		Level 2
	B.8. Documentation production		Level 1
	C.1. Service delivery		Level 2
	C.2. User support		Level 1
	D.9. Vendor management		Level 2
KPI area	Preventing disruptions in the business activities		
EPI-DC Framework© Disciplines	• ICT Infrastructure • Monitoring/Reporting/Control • Physical Infrastructure		
EPI courses	**Required;** • CNCDP • CDCP • CDCS **Added value;** • CDFOS		

9.29 Commissioning/Testing Manager

Profile title	Commissioning/Testing Manager		
Summary statement	Develop and deliver the commissioning strategy for the design and construction phases to final testing and handover to operations		
Mission/general skills description	Full knowledge, monitoring and evaluation of mechanical and electrical systems and the interoperation procedures under different normal and failure modes. Able to understand the technical specifications, drafting the testing scripts and procedures and conduct the testing with proper documentation and professional advice.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Integrate reliable systems	• Commissioning Plan • Test Plan	• Project Manager
Main task/s	• Manage a team of testing and commissioning engineers • Responsible for all testing and commissioning activities in the data centre technical infrastructure excluding architectural and construction aspects • Ensure serial numbers are added to the asset management database as each item of equipment is installed by test engineers or replaced following changes or failure • Ensure Health, Safety and Environmental requirements are complied • Promote a zero accident / incident culture and environment • Certify the system and /or systems are fit for purpose and formally handover to the client • Ensure that testing and commissioning is carried out and recorded in accordance with correct and up to date drawings, plans, specifications and computer software and data • Ensure that the quality of the testing and commissioning is in accordance with business, Client, Manufacturers and Legal procedures, processes, regulations and standards • Undertake regular audits of the testing and commissioning operation to ensure business, Client, Manufacturers and Legal procedures, processes, regulations and standards are being complied with		
DC-Competence *(From DCCF©)*	B.7. Test and Commissioning		Level 3-4
	B.8. Documentation Production		Level 2
	D.10. Vendor Management		Level 2
	E.4. Project and Portfolio Management		Level 4
	E.10. Asset Management		Level 2
KPI area	Secure the reliability of delivered systems and ensure they meet capacity, redundancy and performance deliverables.		
EPI-DC Framework© Disciplines	• Project Management • ICT Infrastructure • Physical Infrastructure • Monitoring/Reporting/Control • ICT Service Management		
EPI courses	**Required;** • CDCP • CDCS • CDCE • CNCDP • CTDC **Added value;** • CTIA • CDFOS		

9.30 Building Manager

Profile title	Building Manager		
Summary statement	Manages and maintains the data centre property on behalf of, and to the satisfaction of, the owner and the tenant taking into account all aspects including safety.		
Mission/general skills description	Oversee employee and visitor safety, building maintenance, repair and upgrades, and comply with environmental, safety and health procedures. Manage the accounts and finances of the real estate properties, and participate in or initiate litigation with tenants, contractors and insurance agencies. Litigation is at times considered a separate function, set aside for trained attorneys.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Building services	• Building maintenance and repair • Building repairs	• Operation Manager • Facilities Manager
Main task/s	• Maintain relationship with contractors and repair companies • Monitor the quality of all building repairs and -maintenance • Operating expenses and budgeting • Physical management of the structures and outdoor areas (e.g. roofs, walls, plumbing landscaping, etc.) • Manage Compliance and Regulatory Risks • Control linkage between overall data centre facility performance and real estate performance • Ensure a safe, secure and healthy building, fire safety • Provide occupants with updates of electrical, water and other service outages and scheduled shutdowns • Develop and implement facility emergency plans (risk management) • Environmentally responsible and energy efficient building management		
DC-Competence *(From DCCF©)*	A.5. Site Planning		Level 3
	C.1. Service Delivery		Level 3
	D.10. Vendor Management		Level 3
	E.7. EH&S Management		Level 2
	E.10. Asset Management		Level 2
KPI area	Maximizing the return on investment of the property through efficient performance		
EPI-DC Framework© Disciplines	• Governance & Management Administration • Physical Infrastructure • Data Centre Location • Environmental Sustainability		
EPI courses	**Required;** • DCFC/CDCP • CDFOS **Added value;** • CDFOM • CNCDP		

9.31 Building Engineer

Profile title	Building Engineer		
Summary statement	Performs complex preventive maintenance and corrective repair of buildings, industrial systems, vehicles, equipment and grounds.		
Mission/general skills description	Working under limited supervision, monitors building system operations and performance. Utilizes several trade skills such as carpentry, plumbing, electrical, painting, roofing, heating and cooling.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Building services	• Building maintenance and repair • Building adjustments	• Building maintenance • Facilities maintenance
Main task/s	• Complies with all applicable codes, regulations, governmental agency and company directives related to building operations and work safety. • Inspects building systems including fire alarms, office HVAC, and plumbing to ensure operation of equipment is within design capabilities and achieves environmental conditions prescribed by client. • Oversees and inspects the work performed by outside contractors. Contracted work includes landscaping, snow removal, remodelling, office HVAC, plumbers, and cleaning. • Performs assigned repairs, emergency and preventive maintenance. Completes maintenance and repair records as required. • Maintains the building lighting system, including element and ballast repairs or replacements. • Performs welding, carpentry, furniture assembly and locksmith tasks as needed. • Responds quickly to emergency situations, summoning additional assistance as needed.		
DC-Competence *(From DCCF©)*	A.5. Site Planning		Level 2
	C.1. Service delivery		Level 1
	C.2. User support		Level 1
	D.9. Contract management		Level 2
	E.10. Asset management		Level 1
KPI area	Preventing disruptions in the business activities		
EPI-DC Framework© Disciplines	• Security Management • Physical Infrastructure • Data Centre Location		
EPI courses	**Required;** • CDCP • CDCS **Added value;** • CDFOS		

9.32 Facilities Manager

Profile title	Facilities Manager		
Summary statement	Manages and maintains the data centre facilities to ensure continuity and availability of data centre services in an effective and efficient manner.		
Mission/general skills description	Provides managed services for all supporting services of the data centre to optimize the infrastructure and prevent technical outages. Acts upon the requests of the operations- and/or floor Manager to provide feasibility and costing for the implementation and removal of a defined functionality. After approvals, the facilities manager is responsible and accountable for the implementation of the change. The operations and floor manager ultimately determine what is required. Facility managers are an advising, supporting and executing function. Has to ensure corporate and regulatory compliance plus the proper operation of all aspects of a building to create an optimal, safe and cost effective environment for the occupants to function. This includes managing EHS, fire safety, security, maintenance (testing and inspection), cleaning and operation management.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Availability and capacity of the data centre facility	• Maintenance plans • Providing Managed Services	• Operations Manager • Floor Manager
Main task/s	• Ensure an equipment life cycle and testing program • Manage a team of data centre facilities (technical infrastructure) engineers • Responsible for the Building Management System (monitoring availability of the data centre technical infrastructure) • Instantly solve deviations, alarms and incidents • Supports floor manager with realisation of operational custom changes (e.g. connecting power racks, etc.) • Monitor and report power consumption and proactively sends overruns • Annual maintenance and management plans (e.g. end of life, major changes, etc.) • Corrective and preventive maintenance; incident- and safety (work, people) reports • Provides and ensures maintenance planning and checklists facility engineers • Provides scripts and risk analyses for planned maintenance work (risk management)		
DC-Competence *(From DCCF©)*	B.7. Test and Commissioning		Level 4
	C.1. Service Delivery		Level 3
	E.2. Facilities Management		Level 3-4
	E.3. Risk Management		Level 2-3
	E.7. EH&S Management		Level 3-4
KPI area	By efficient and effective maintenance ensuring the continuity of the data centre facility		
EPI-DC Framework© Disciplines	• Monitoring/Reporting/Control • Governance & Management Administration • Facilities Management Building Management • Environmental Sustainability • Physical Infrastructure • ICT Service Management		
EPI courses	**Required;** • CDCP • CDCS • CDFOM **Added value;** • CDRP • CTDC • CNCDP		

9.33 Facilities Engineer

Profile title	Facilities Engineer		
Summary statement	Operates, monitors and supports physical facilities conditions. Some of these duties will include heating and cooling of air and water, power supply, generators, UPS systems, electrical distribution and control and monitoring systems.		
Mission/general skills description	Able to work without little or no supervision to operate UPS's, Generators, Automatic Transfer Switch's, Switchgear, Chillers, Variable Frequency Drive's, Motor Starters, Power Meters, Computer Based Control/Alarm systems, Fire Alarm, Security Alarm, CCTV and Card Access.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Facility services	• Facilities maintenance and repair • Daily inspections of the critical infrastructure including data collection and evaluation	• Building maintenance • Facilities maintenance
Main task/s	• Complies with all applicable codes, regulations, governmental agency and company directives related to building operations and work safety. • Repair and perform preventive maintenance on CRAHs, AHUs, Chillers, Pumps, Cooling Towers, Plumbing, and Insulation. • Oversees and inspects the work performed by outside contractors. Contracted work includes maintenance on electrical systems, mechanical systems and other facilities related systems. • Performs assigned repairs, emergency and preventive maintenance. Completes maintenance and repair records as required. • Troubleshoot complex electrical, mechanical, and control systems and equipment. Supervise external vendors to ensure the regulations and operational procedures are followed. • Review and update complex mechanical and electrical drawings • Responds quickly to emergency situations, summoning additional assistance as needed.		
DC-Competence *(From DCCF©)*	B.2. Electrical engineering		Level 2
	B.3. Mechanical engineering		Level 2
	B.8. Documentation production		Level 3
	C.1. Service delivery		Level 2
	E.10. Asset management		Level 1
KPI area	Preventing disruptions in the business activities		
EPI-DC Framework© Disciplines	• ICT infrastructure • Physical Infrastructure • Monitoring/Reporting/Control		
EPI courses	**Required;** • CDCP • CDFOS **Added value;** • CDCS • CNCDP		

9.34 Operations Manager

Profile title	Operations Manager		
Summary statement	Manages the operations team responsible for running a high available, effective, efficient and flexible data centre organization.		
Mission/general skills description	Setting up the data centre operations team. Defines the scope of control needs and determines the structure of the data centre operations team. The scope includes e.g. architectural, physical, conditioned power, telecommunication, continuity, security, safety, etc. Responsible for the overall planning of upcoming requirements, daily operations, upkeep and improvement of procedures and processes, monitoring and reporting. Translates business requirements into data centre requirements. Manages SLAs by monitoring and reporting performance/uptime of technical environment based on SLAs, vendor performance, reporting on incidents, etc.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Data centre availability and efficiency	• Operations team • Daily operations	• Data Centre Business Plan • DC Manager
Main task/s	• Responsible for the Change (delivery) process (ITIL); timely and qualitative provision of managed services and data centre (custom) projects on the data floors • Manage daily business around Managing data centre operations • Manage and coach the operational team; improve team performance • Resolve technical and organisational problems • Manage budget and costs (OpEx, CapEx), Profit & Lost responsibility, energy efficiency (PUE) and effectiveness • Secures the continuity, security and connectivity of the data centre to conform and align to Service Level Agreements • Human resource management, training and development • Handle and maintain safety requirements, legal provisions, compliances, conformities and standards (e.g. ANSI/TIA-942, ASHRAE, ISO, etc.) • Manage the capacity management plan and monitors design limits		
DC-Competence *(From DCCF©)*	D.2. Human Resource Management		Level 4
	E.1. Data Centre Operations Management		Level 3-4
	E.2. Facilities Management		Level 4
	E.10. Asset Management		Level 3
	E.11. Governance		Level 4-5
KPI area	Effective and efficient data centre operations management		
EPI-DC Framework© Disciplines	• Monitoring/Reporting/Control • Governance & Management Administration • Facilities Management Building Management • Environmental Sustainability • Physical Infrastructure • ICT Service Management		
EPI courses	**Required;** • DCFC/CDCP • CTDC • CDFOM **Added value;** • CDCS • CDRP • CITM • CNCDP		

9.35 Floor Manager

Profile title	Floor Manager		
Summary statement	Manages all infrastructure and activities within the computer room.		
Mission/general skills description	Accountable for allocation of resources within the data centre computer room such as allocation of floor/rack space, power points whilst ensuring balance across the phases as well as not exceeding agreed thresholds and allocation of network connections and make the final technical decision (Go/No Go). Coordinates all work carried out on the computer floors. Checks the works performed. Goal is to fulfil customer appointments, maximum and optimal use of available space and monitors if computer floor conditions are in line with (customer) SLAs. Has basic electrical-, networks and IT system skills		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Data centre computer floors	• Data centre computer room/floor activities	• Operations Manager • Facilities Manager • DC engineer
Main task/s	• Draft and manage a capacity management floorplan and define design limits • Monitor compliance to all policies and procedures • Asset Management (Control the Configuration Management Data Base) • Inspection of equipment coming into the data centre computer room • Final inspection after completing installation • Allocation of equipment location (floor/rack space), power and network connectivity and cooling capacity/density • Safety and Security considerations • Oversee equipment, racks, suits, cages, cabling installations • Monitor that the environmental conditions, cooling and power conditions inside the computer room are in line and with agreed customer SLAs • Report SLA deviations, preventing claims		
DC-Competence *(From DCCF©)*	E.1. Data Centre Operations Management		Level 2
	E.2. Facilities Management		Level 3
	E.4. Project and Portfolio Management		Level 3
	E.8. Process Management		Level 3
	E.10. Asset Management		Level 3
KPI area	Ensure that computer floor facility conditions are in line with (customer) SLAs		
EPI-DC Framework© Disciplines	• Monitoring/Reporting/Control • Facilities Management Building Management • Physical Infrastructure • ICT Service Management		
EPI courses	**Required;** • CDCP • CDCS • CNCDP • CDFOS • CDMS **Added value;** • CTDC • CITO • CDFOM		

9.36 Data Centre Engineer

Profile title	Data Centre Engineer		
Summary statement	Provide installation, operational support and maintenance of ICT and network infrastructure		
Mission/general skills description	Perform end execute installation, change and closure projects on the data centre computer room/ floor. Is controlled by work orders (workflow ticket system); often through multiple commands. Responsible for on time and qualitative delivery of racks, connectivity, patches, cages, racks, racking and staging servers, etc. Test the connections and operation (servers) before logoff jobs. Guides customers, contractors and suppliers and ensures that they are able to perform efficiently. Locates and fixes issues with connections. Has vendor specific installation knowledge and general data centre (facilities) knowledge		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Realise data centre (customer) changes/projects	• Install in time and budget • Install conform standards	• Floor Manager • Projects/customers
Main task/s	• Deploy, test and label copper, coax and fibre cables and patch cords connecting data centre customer and infrastructure • Install and decommission data centre infrastructure components (e.g. cabinets/racks, ladder racks, fibre ducts, cages, cables – nonelectrical, etc.) • Troubleshoot, Test and Repair copper, coax and fibre connectivity for continuity and loss using industry standard testing tools and methods • Assist network-facility engineers, project managers, floor manager and customers to complete projects and tickets • Manage build materials (i.e. copper/fibre patch cords, server cabinets, cable ties, ladder racks, fibre ducts) • Maintain documentation of network infrastructure up to date in the Configuration Management Data Base (CMDB) • Dispose of project material residues • Managing workload in ticketing systems • Adhere to existing data centre installation best practices		
DC-Competence *(From DCCF©)*	E.4. Project and Portfolio Management		Level 2
	E.10. Asset Management		Level 1
KPI area	On time and qualitative delivery of installation work		
EPI-DC Framework© Disciplines	• ICT Infrastructure		
EPI courses	**Required;** • DCFC/CDCP • CDFOS • CNCDP **Added value;** • CTDC • CITO		

9.37 Service Desk Staff

Profile title	Service desk		
Summary statement	Acts as first point of contact, record, analyse and attempt to resolve incidents and service requests or escalate to second line support.		
Mission/general skills description	Provides first-line telephone or e-mail or web portal support to internal and external data centre clients with technical issues, questions, access requests or incidents. Provides user support and troubleshoot ICT/data centre problems and issues. Primary objective is to enable clients to maximize their productivity and business through efficient use of their data centre services, ICT equipment, connectivity and software. Has vendor specific installation knowledge and general data centre knowledge.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Timely reception and handling of incidents and queries	• First level support • Data centre access requests	• Solved incidents
Main task/s	• Identify and diagnose issues and problems • Categorize and record reported queries and provide solutions • Support problem identification • Support external (outbound) communication (e.g. Major changes, calamities, etc.) • Monitor issues from start to resolution • Escalate unsolved problems to higher levels of support or data centre management		
DC-Competence *(From DCCF©)*	C.1. Service Delivery		Level 1
	C.3. User Support		Level 2
	C.3. Problem Management		Level 2
KPI area	Responsiveness and accuracy of solution provision for questions and specific problems		
EPI-DC Framework© Disciplines	• ICT Infrastructure		
EPI courses	**Required;** • DCFC • CITO **Added value;** • CDFOS		

9.38 NOC Manager

Profile title	NOC Manager		
Summary statement	Manages customers, vendors and technical team to ensure the ICT and Network performs as per the committed levels of the SLAs.		
Mission/general skills description	Coordinates the duty shift table for the NOC operations and carefully allocates staff members (NOC technicians and NOC engineers) on different shift duties for ensuring the whole NOC shift works in an efficient and effective manner. Provides innovative solutions to various networking problems and ensures that customer needs are properly defined and satisfactorily met. Implements and evaluates the working of networking systems and stays abreast of new technologies emerging in the industry. In some data centres the NOC also monitors the facility and security.		
Deliverables	**Accountable**	**Responsible**	**Contributor**
	• Detection and resolution of incidents and problems	• First level support • Technical support	• Business Continuity Manager • Solved incidents • Problem management
Main task/s	• Responsible for monitoring the availability of the ICT data platforms and networks • Control and responsible for a team of network-, system-, database specialists • Operational management of ICT platforms and networks • Monitor issues from start to resolution • Directly respond to deviations or alarms • Initiate failures of escalations, incidents and possible calamities in accordance with ITIL procedure • Identify and diagnose issues and problems • Categorize and record reported queries and provide solutions • Support problem identification		
DC-Competence *(From DCCF©)*	C.1. Service Delivery		Level 1
	C.3. User Support		Level 2
	C.3. Problem Management		Level 2
KPI area	Total (%) incidents on the ICT network and platforms solved within the SLA		
EPI-DC Framework© Disciplines	• ICT Service Management • Monitoring/Reporting/Control		
EPI courses	**Required;** • DCFC/CDCP • CDFOS • CITM • CNCDP **Added value;** • CDMS • CDFOM		

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