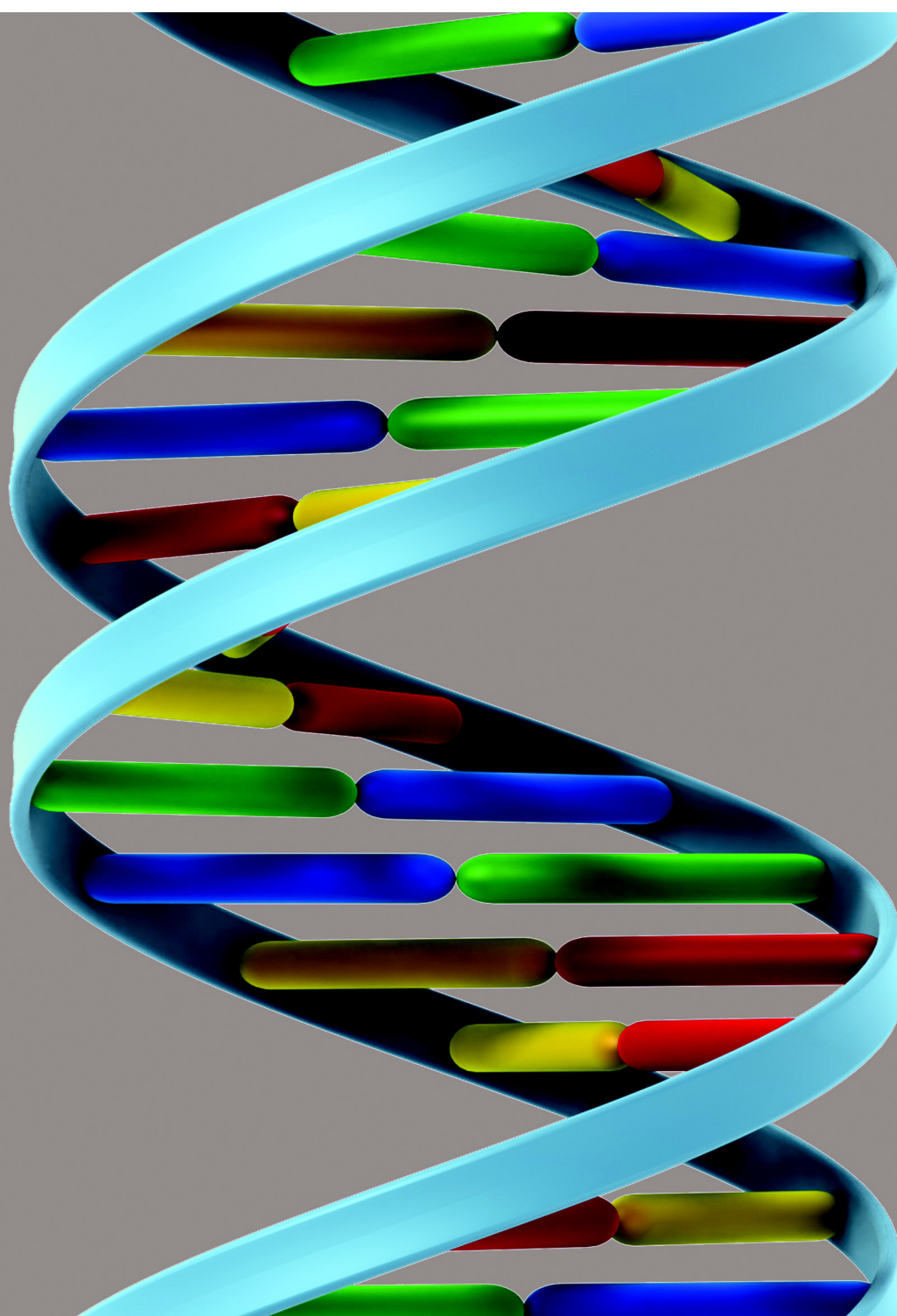


# SFIA 5 framework reference

**Skills defined in categories and subcategories**





# Skills Framework for the Information Age

Introducing the fifth version of the common language for IT.

When working to create The Skills Framework for the Information Age, the developers were determined that SFIA would be a useful tool for managers and professionals working in Information technology around the world.

In order to achieve that, the design goals were:

- emphasis on skills, not technologies or products
- enough detail to be useful, but able to be summarised on one piece of paper
- a practical tool that fits into any scheme of management
- reflects informed thinking in the IT industry

These were achieved so successfully that SFIA has become the IT world's favourite skills framework.

However, the fourth design objective implies an on-going commitment. The not-for-profit SFIA Foundation was established to fulfil that commitment. It has done so by leading a triennial process of review that has made sure that SFIA remains compatible with current views on skills, and is not distracted by technological developments.

Avoiding dramatic change and discontinuity, SFIA has stayed relevant by evolving as its users' needs have evolved.

This guide presents version 5 of The Skills Framework for the Information Age. The SFIA Foundation commends it to you as the common language of skills in IT today.

*R McLaren*

Operations Manager  
SFIA Foundation

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# Framework summary

Category	Subcategory	Skill	Code	1	2	3	4	5	6	7
Strategy and architecture	Information strategy	IT governance	GOVN					5	6	7
		Information management	IRMG				4	5	6	7
		Information systems co-ordination	ISCO						6	7
		Information security	SCTY			3	4	5	6	
		Information assurance	INAS					5	6	7
		Information analysis	INAN			3	4	5	6	7
		Information content publishing	ICPM	1	2	3	4	5	6	
	Advice and guidance	Consultancy	CNSL					5	6	7
		Technical specialism	TECH				4	5	6	
	Business strategy and planning	Research	RSCH			3	4	5	6	
		Innovation	INOV					5	6	
		Business process improvement	BPPE					5	6	7
		Enterprise & business architecture development	STPL					5	6	7
		Business risk management	BURM				4	5	6	7
		Sustainability strategy	SUST					5	6	
	Technical strategy and planning	Emerging technology monitoring	EMRG				4	5	6	
		Continuity management	COPL				4	5		
		Software development process improvement	SPIM					5	6	7
		Sustainability management for IT	SUMI					5	6	
		Network planning	NTPL					5	6	
		Solution architecture	ARCH					5	6	
		Data management	DATM				4	5	6	
		Methods and tools	METL				4	5	6	
Business change	Business change implementation	Portfolio management	POMG					5	6	7
		Programme management	PGMG						6	7
		Project management	PRMG				4	5	6	7
		Portfolio, programme and project support	PROF		2	3	4	5		
	Business change management	Business analysis	BUAN			3	4	5	6	
		Requirements definition and management	REQM		2	3	4	5	6	
		Business process testing	BPTS				4	5	6	
		Change implementation planning & management	CIPM					5	6	
		Organisation design and implementation	ORDI					5	6	
		Benefits management	BENM					5	6	
		Business modelling	BSMO		2	3	4	5	6	
		Sustainability assessment	SUAS				4	5	6	
	Relationship management	Stakeholder relationship management	RLMT				4	5	6	7
	Skills management	Learning and development management	ETMG			3	4	5	6	7
		Learning and development assessment	LEDA			3	4	5	6	
		Learning design and development	TMCR				4	5		
		Learning delivery	ETDL			3	4	5		
		Teaching and subject formation	TEAC					5	6	
		Resourcing	RESC					5	6	
		Professional development	PDSV				4	5	6	

Category	Subcategory	Skill	Code	1	2	3	4	5	6	7
<b>Solution development and implementation</b>	Systems development	Systems development management	DLMG					5	6	7
		Data analysis	DTAN		2	3	4	5		
		Systems design	DESN		2	3	4	5	6	
		Network design	NTDS					5	6	
		Database/repository design	DBDS		2	3	4	5	6	
		Programming/software development	PROG		2	3	4	5		
		Animation development	ADEV			3	4	5	6	
		Safety engineering	SFEN			3	4	5	6	
		Sustainability engineering	SUEN				4	5	6	
		Information content authoring	INCA	1	2	3	4	5	6	
		Testing	TEST	1	2	3	4	5	6	
	Human factors	User experience analysis	UNAN			3	4	5		
		Ergonomic design	HCEV			3	4	5	6	
		User experience evaluation	USEV		2	3	4	5		
		Human factors integration	HFIN					5	6	7
	Installation and integration	Systems integration	SINT		2	3	4	5	6	
		Porting/software integration	PORT			3	4	5	6	
		Systems installation/decommissioning	HSIN	1	2	3	4	5		
<b>Service management</b>	Service strategy	IT management	ITMG					5	6	7
		Financial management for IT	FMIT				4	5	6	
	Service design	Capacity management	CPMG				4	5	6	
		Availability management	AVMT				4	5	6	
		Service level management	SLMO		2	3	4	5	6	7
	Service transition	Service acceptance	SEAC				4	5	6	
		Configuration management	CFMG		2	3	4	5	6	
		Asset management	ASMG				4	5	6	
		Change management	CHMG		2	3	4	5	6	
	Service operation	Release and deployment	RELM			3	4	5	6	
		System software	SYSP			3	4	5		
		Security administration	SCAD			3	4	5	6	
		Radio frequency engineering	RFEN		2	3	4	5	6	
		Applications support	ASUP		2	3	4	5		
		IT operations	ITOP	1	2	3	4			
		Database administration	DBAD		2	3	4	5		
		Storage management	STMG			3	4	5	6	
		Network support	NTAS		2	3	4	5		
		Problem management	PBMG			3	4	5		
		Service desk and incident management	USUP	1	2	3	4	5		
		IT estate management	DCMA			3	4	5	6	
<b>Procurement and management support</b>	Supply management	Procurement	PROC				4	5	6	7
		Supplier relationship management	SURE		2	3	4	5	6	7
		Contract management	ITCM				4	5	6	
	Quality and conformance	Quality management	QUMG					5	6	7
		Quality assurance	QUAS			3	4	5	6	
		Quality standards	QUST		2	3	4	5		
		Conformance review	CORE			3	4	5	6	
		Safety assessment	SFAS					5	6	
		Technology audit	TAUD				4	5	6	7
<b>Client interface</b>	Sales and marketing	Marketing	MKTG			3	4	5	6	
		Selling	SALE				4	5	6	
	Client support	Account management	ACMG					5	6	
		Sales support	SSUP	1	2	3	4	5	6	
		Client services management	CSMG			3	4	5	6	

# The common language of IT

As IT gets more complex and pervasive there is an ever growing need clearly to define, recruit and grow the skilled resources that you need. SFIA provides a language that is the foundation for consistent, unambiguous and clear definitions of IT based skills.

Whether recruiting through agencies or the press, using contractors or outsourcing whole capabilities, never has there been a greater need for simplicity and consistency of language. SFIA provides and will continue to provide the common language that integrates with an organisation's way of working, to improve capability and resource planning, resource deployment and performance management.

SFIA has achieved worldwide recognition and use. It reflects the views of informed professionals; it is based on practical management considerations; it is compatible with different ways of working. It is the product of the collaboration of many individuals and groups working in IT. As a result SFIA answers a need experienced by all IT managers. SFIA

- gives recognisable descriptions of the professional skills needed by people working in IT
- contains a set of consistent levels of attainment
- clearly distinguishes professional skills from technical knowledge
- integrates flexibly with an organisation's existing ways of working
- is available free of charge from The SFIA Foundation – a non-profit organisation
- is maintained and updated by a process of open consultation – by the IT industry, for the IT industry

## What SFIA is

### Generic skills and levels of responsibility

7	set strategy, inspire, mobilise
6	initiate/influence
5	ensure/advise
4	enable
3	apply
2	assist
1	follow

The foundation of SFIA is a set of generic business skills that make up SFIA's seven levels of responsibility.

The seven generic levels are recognisable in the workplace. Each level has a full definition expressed in terms of Autonomy, Complexity, Influence and Business skills. In addition to the full description, each level also has a memory-jogging tag that conveys the spirit of the level.

The levels cover the gamut from starter to senior IT manager and world-leading technologist.

### Professional skills – what they are, what they are not

SFIA's aim is to provide a management tool to help those who are making decisions about the use or development of skills. For this reason the skill definitions are diagnostic, not prescriptive: they contain enough information to enable a rational management judgement as to whether someone has the skill, and if so at what level. They do not attempt to list all the things that the skilled individual might be able to do.

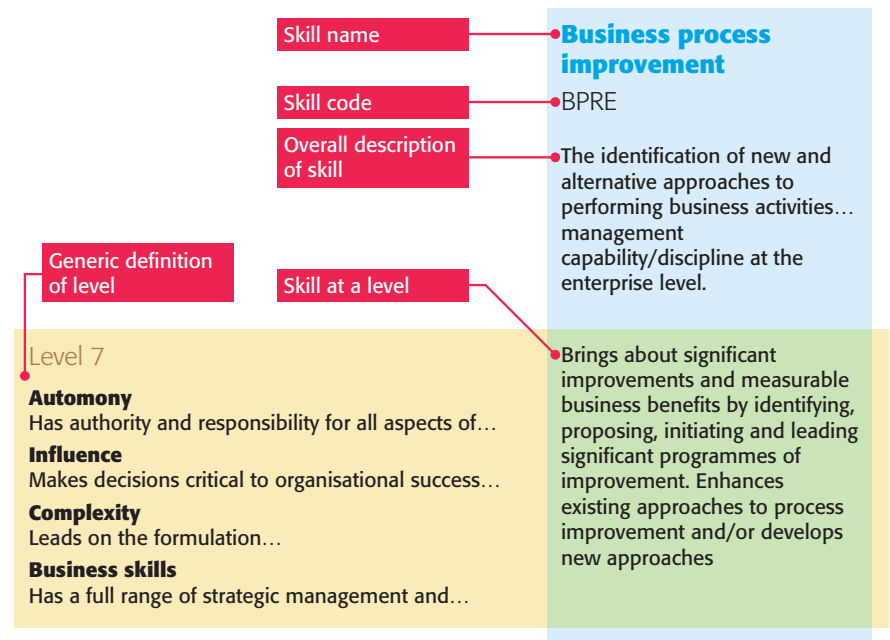
Importantly, the definitions provide precise statements of the various levels of skill required.

The IT industry contains a wealth of information, formal and informal, supporting each skill. This covers many complex aspects, processes and methods that may relate to the skill. SFIA's purpose is not to include that information, but to provide a management tool that helps managers make sense of the complexity.

SFIA's descriptors are not, in general, described in terms of technologies or products. They do not describe processes, jobs, general areas of activity, or even parts of an organisation – just skills.

## When generic meets specific

SFIA's generic levels provide a background against which the specific professional skills can be judged.



An example of the layout of a skill (Business process improvement – BPRE) is shown here: the skill has a name, a code and an overall description; there is also a specific interpretation of the skill at each of the levels at which it is recognised. The example shows just one of the three levels (Level 7) of Business process improvement, and illustrates how the skill definition relate to SFIA's generic definition of Level 7. The descriptions have been abbreviated.

## The skills context

IT professional capability comes from a combination of professional skills, behavioural skills and knowledge. Experience and qualifications validate that overall capability.



**Professional skills.** Business process improvement and Database design are just two examples of almost 100 fundamental professional IT skills defined by SFIA.

**Behavioural skills.** Most organisations recognise a set of behavioural skills. These vary considerably from one organisation to another.

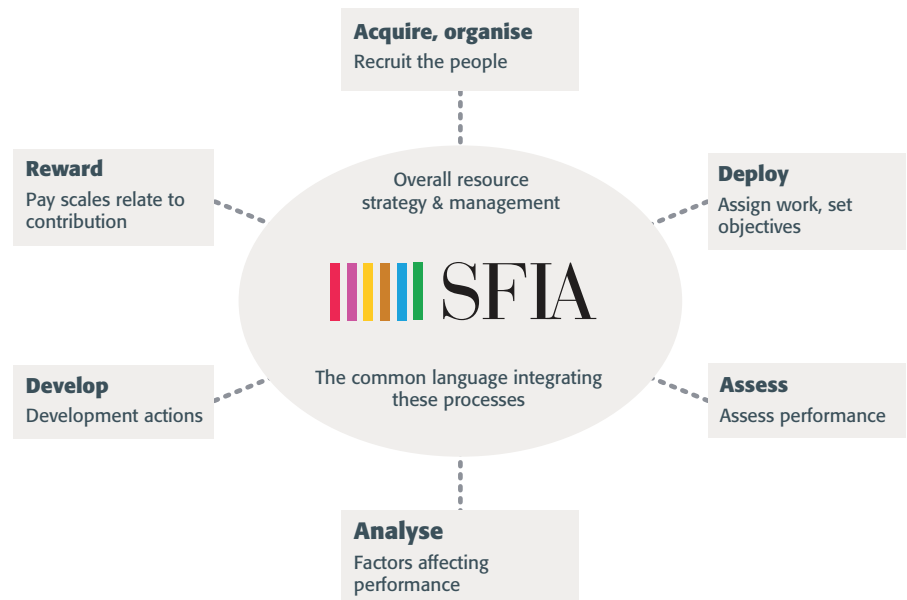
**Knowledge.** Technologies, products, internal systems, services, processes, methods and even legislation are all examples of areas where IT professionals are required to have knowledge.

**Experience and qualifications.** These validate the individual's capability. Qualifications certify elements of skill or knowledge; experience gives practical demonstration of capability. The right sort of experience also acts as a powerful force for learning, thereby enhancing capability.

## The skills management cycle

The processes and activities that contribute to the management of skills and capability can be presented as a cycle. The cycle shows these phases: recruit, deploy, assess, analyse, develop, reward and overall resource management.





SFIA helps integrate these processes by ensuring that consistent criteria are used when recruiting, assigning, assessing, analysing and developing skills. It is also a valuable influence when deciding how salary scales map on to the various levels of IT jobs or professional profiles.

### How SFIA supports these processes

- In overall resource management, SFIA is the tool for measuring current capability and planning for future demand, using the same capability criteria used throughout the skills management processes.
- In the acquiring/divesting of resources, typically by recruitment/separation, but also as a result of mergers, SFIA helps set recruitment criteria that make sure that the right candidates are attracted and selected for interview, and that accurate criteria can be used in criteria-based interviewing
- In the case of out-sourcing and off-shoring, SFIA can play a crucial role for both client and supplier by providing a clear and transparent basis for describing the capability being sought or provided
- Project risk is reduced by assigning the right skilled people, based on their actual capability, not just their technical knowledge
- Performance is assessed against business objectives and, in the case of development objectives, by reference to SFIA skills
- SFIA's definitions enable performance to be analysed in order to reveal the individual's strengths and development needs; proficiency in SFIA skills is a key part of this analysis
- The development of individual capability in line with the organisation's needs is based on SFIA's unambiguous statements of competence
- The individual's defined development needs can also be fed into the process by which individuals are assigned to tasks.
- SFIA helps you ensure that remuneration relates coherently to the individual's competence and contribution.

# Approaches to integrating SFIA

A strength of SFIA is its flexibility. SFIA fits in with the way you manage. Whatever approach you use, there are many situations where you need to describe the capability that is required or is available. SFIA provides the common language for these definitions.

## Job descriptions and role profiles

SFIA enables precise descriptions of the skills required in jobs and roles. So, a job description for a competent IT service technician might state the requirement for these skills at level 3:

CHMG Change management

USUP User support

CFMG Configuration management

SYSP System software

ITOP IT Operations

SFIA's consistent levels help you be clear about how a job description fits into your grading system. Of particular value is the clear differentiation between the requirements at one level and those at the next level up. The greater precision is also helpful when deciding and communicating decisions on people's level.

Some organisations streamline this process by recognising standard combinations of skills, sometimes known as Role Profiles or Professional Profiles. So the combination shown above might be recognised as "Service Technician Level 3" which can then be referred to in a number of job descriptions where that basic combination is required. A specific case might call for something additional, such as "Service Technician Level 3 with the additional skill of Security administration at Level 3".

This approach can help the big picture of capability to emerge in situations where there are many job descriptions. It can also reduce the amount of effort required to maintain job descriptions when changes are needed.

## Availability

For internal use in the management of IT staff, SFIA is available free of charge from the SFIA Foundation's web site.

The use of SFIA is supported by partners, consultants and training providers with experience in skills management and the use of SFIA. Their details can be found on the SFIA web site.

# Levels of responsibility

This section describes the standard levels of responsibility and accountability used in the framework. The underlying structure of the framework ensures that the definitions of professional skills are defined in a way that makes their different levels recognisably distinct.

## Core competencies

The nature of these generic definitions makes them suitable for use as the basis of core competencies.

An organisation that already has a set of core competencies may wish to use them in combination with SFIA's professional skills. The organisation will still benefit from the sensible spacing of levels that the framework provides.

## Existing levels

It may be required to map SFIA's professional skills on to an established structure of levels within an organisation. In that case, the generic levels can be used as a transition aid in order to establish the basis of the mapping.

### Level 7

#### Autonomy

Has authority and responsibility for all aspects of a significant area of work, including policy formation and application. Is fully accountable for actions taken and decisions made, both by self and subordinates.

#### Influence

Makes decisions critical to organisational success. Influences developments within the IT industry at the highest levels. Advances the knowledge and/or exploitation of IT within one or more organisations. Develops long-term strategic relationships with customers, partners, industry leaders and government.

#### Complexity

Leads on the formulation and implementation of strategy. Applies the highest level of management and leadership skills. Has a deep understanding of the IT industry and the implications of emerging technologies for the wider business environment.

#### Business skills

Has a full range of strategic management and leadership skills. Understands, explains and presents complex technical ideas to both technical and non-technical audiences at all levels up to the highest in a persuasive and convincing manner. Has a broad and deep IT knowledge coupled with equivalent knowledge of the activities of those businesses and other organisations that employ IT. Communicates the potential impact of emerging technologies on organisations and individuals and assesses the risks of using or not using such technologies. Assesses the impact of legislation, and actively promotes compliance. Takes the initiative to keep both own and subordinates' skills up to date and to maintain an awareness of developments in IT.

### Level 6

#### Autonomy

Has defined authority and responsibility for a significant area of work, including technical, financial and quality aspects. Establishes organisational objectives and delegates responsibilities. Is accountable for actions and decisions taken by self and subordinates.

#### Influence

Influences policy formation on the contribution of own specialism to business objectives. Influences a significant part of own organisation. Develops influential relationships with internal and external customers/suppliers/partners at senior management level, including industry leaders. Makes decisions which impact the work of employing organisations, achievement of organisational objectives and financial performance.

#### Complexity

Performs highly complex work activities covering technical, financial and quality aspects. Contributes to the formulation and implementation of IT strategy. Creatively applies a wide range of technical and/or management principles.

#### Business skills

Absorbs complex technical information and communicates effectively at all levels to both technical and non-technical audiences. Assesses and evaluates risk. Understands the implications of new technologies. Demonstrates clear leadership and the ability to influence and persuade. Has a broad understanding of all aspects of IT and deep understanding of own specialism(s). Understands and communicates the role and impact of IT in the employing organisation and promotes compliance with relevant legislation. Takes the initiative to keep both own and subordinates' skills up to date and to maintain an awareness of developments in the IT industry.

### Level 5

#### Autonomy

Works under broad direction. Work is often self-initiated. Is fully accountable for meeting allocated technical and/or project/supervisory objectives. Establishes milestones and has a significant role in the delegation of responsibilities.

#### Influence

Influences organisation, customers, suppliers, partners and peers on the contribution of own specialism. Builds appropriate and effective business relationships. Makes decisions which impact the success of assigned projects i.e. results, deadlines and budget. Has significant influence over the allocation and management of resources appropriate to given assignments.

#### Complexity

Performs an extensive range and variety of complex technical and/or professional work activities. Undertakes work which requires the application of fundamental principles in a wide and often unpredictable range of contexts. Understands the relationship between own specialism and wider customer/organisational requirements.

#### Business skills

Advises on the available standards, methods, tools and applications relevant to own specialism and can make appropriate choices from alternatives. Analyses, designs, plans, executes and evaluates work to time, cost and quality targets. Assesses and evaluates risk. Communicates effectively, both formally and informally. Demonstrates leadership. Facilitates collaboration between stakeholders who have diverse objectives. Understands the relevance of own area of responsibility/specialism to the employing organisation. Takes customer requirements into account when making proposals. Takes initiative to keep skills up to date. Mentors colleagues. Maintains an awareness of developments in the industry. Analyses requirements and advises on scope and options for continuous operational improvement. Demonstrates creativity and innovation in applying solutions for the benefit of the customer/stakeholder. Takes account of relevant legislation.

## Level 4

### Autonomy

Works under general direction within a clear framework of accountability. Exercises substantial personal responsibility and autonomy. Plans own work to meet given objectives and processes.

### Influence

Influences team and specialist peers internally. Influences customers at account level and suppliers. Has some responsibility for the work of others and for the allocation of resources. Participates in external activities related to own specialism. Makes decisions which influence the success of projects and team objectives.

### Complexity

Performs a broad range of complex technical or professional work activities, in a variety of contexts. Investigates, defines and resolves complex problems.

### Business skills

Selects appropriately from applicable standards, methods, tools and applications. Demonstrates an analytical and systematic approach to problem solving. Communicates fluently orally and in writing, and can present complex technical information to both technical and non-technical audiences. Facilitates collaboration between stakeholders who share common objectives. Plans, schedules and monitors work to meet time and quality targets and in accordance with relevant legislation and procedures. Rapidly absorbs new technical information and applies it effectively. Has a good appreciation of the wider field of information systems, their use in relevant employment areas and how they relate to the business activities of the employer or client. Maintains an awareness of developing technologies and their application and takes some responsibility for personal development.

## Level 3

### Autonomy

Works under general direction. Uses discretion in identifying and resolving complex problems and assignments. Usually receives specific instructions and has work reviewed at frequent milestones. Determines when issues should be escalated to a higher level.

### Influence

Interacts with and influences department/project team members. Has working level contact with customers and suppliers. In predictable and structured areas may supervise others. Makes decisions which may impact on the work assigned to individuals or phases of projects.

### Complexity

Performs a broad range of work, sometimes complex and non routine, in a variety of environments. Applies methodical approach to problem definition and resolution.

### Business skills

Understands and uses appropriate methods, tools and applications. Demonstrates an analytical and systematic approach to problem solving. Takes the initiative in identifying and negotiating appropriate personal development opportunities. Demonstrates effective communication skills. Contributes fully to the work of teams. Plans, schedules and monitors own work (and that of others where applicable) competently within limited deadlines and according to relevant legislation and procedures. Absorbs and applies technical information. Works to required standards. Appreciates the wider field of information systems, and how own role relates to other roles and to the business of the employer or client.

## Level 2

### Autonomy

Works under routine direction. Uses minor discretion in resolving problems or enquiries. Works without frequent reference to others.

### Influence

Interacts with and may influence immediate colleagues. May have some external contact with customers, suppliers and partners. May have more influence in own domain.

### Complexity

Performs a range of varied work activities in a variety of structured environments. Contributes to routine problem resolution.

### Business skills

Understands and uses appropriate methods, tools and applications. Demonstrates a rational and organised approach to work. Is aware of health and safety issues. Identifies and negotiates own development opportunities. Has sufficient communication skills for effective dialogue with customers, suppliers and partners. Is able to work in a team. Is able to plan, schedule and monitor own work within short time horizons. Absorbs technical information when it is presented systematically and applies it effectively.

## Level 1

### Autonomy

Works under supervision. Uses little discretion. Is expected to seek guidance in unexpected situations.

### Influence

Interacts with immediate colleagues.

### Complexity

Performs routine activities in a structured environment. Requires assistance in resolving unexpected problems.

### Business skills

Uses basic information systems and technology functions, applications, and processes. Demonstrates an organised approach to work. Learns new skills and applies newly acquired knowledge. Follows code of conduct and organisational standards. Has sufficient communication skills for effective dialogue with colleagues. Contributes to identifying own development opportunities.

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# Skills

This section contains details of all SFIA skills, organised into categories and sub-categories.

## Categories and subcategories

The skills in SFIA are grouped into categories and subcategories for the convenience of users.

It is not proposed that these equate to jobs or areas of personal responsibility. The grouping is intended to assist people who are incorporating SFIA skills in role profiles or job descriptions, or who are building an organisation's IT competency framework.

## Layout

The skill definitions are presented within their categories and subcategories.

Each skill definition consists of the following:

### Skill code

An abbreviated reference code. Example: *AVMT*

### Skill name

The name used for normal reference purposes. Example: *Availability management*

### Overall description

A broad definition of this skill, without any reference to the levels at which it might be practised.

Example:

*The definition, analysis, planning, measurement and improvement of all aspects of the availability of IT services. The overall control and management of service availability to ensure that the level of service delivered in all services is matched to or exceeds the current and future agreed needs of the business, in a cost effective manner.*

### Level descriptions

Definitions of the skill for each of the levels at which it is practised. However their phrasing facilitates their use as professional competencies.

Example:

**Level 6** *Sets strategy and develops plans, policies and processes for the design, monitoring, measurement, reporting and continuous improvement of service and component availability, including the development and implementation of new availability techniques and methods.*



## Strategy & architecture

### Information strategy

#### IT governance GOVN

The establishment and oversight of an organisation's approach to the use of Information and IT, including acceptance of responsibilities in respect of both supply of, and demand for IT; strategic plans for IT, which satisfy the needs of the organization's business strategy (which, in turn, takes into account the current and future capabilities of IT); transparent decision making, leading to valid reasons for IT acquisitions with appropriate balance between benefits, opportunities, costs, and risks; provision of IT services, levels of service and service quality which meet current and future business requirements; policies and practices for conformance with mandatory legislation and regulations, which demonstrate respect for the current and evolving needs of all stakeholders.

**IT governance: Level 7** Leads development and communication of the organisation's policies for corporate governance of information. Contributes to strategic plans for IT, which satisfy the current and ongoing needs of the organization's business strategy, and the current and future capabilities of IT. Promotes clear decision making, leading to valid reasons for IT acquisitions. Monitors provision of IT services, levels of service and service quality. Assures that the organisation's business processes are compliant with relevant legislation, and that the organisation operates according to the principles embedded in relevant standards. Promotes IT policies, practices and decisions which recognise the current and evolving needs of all the stakeholders..

**IT governance: Level 6** Puts in place, or confirms, staffing structures to support the work of the board and proper relationships between the organisation and external auditors. Takes responsibility for review of management processes (and decisions) and confirms that they are compliant with the organisation's strategy for corporate governance of information. Is familiar with relevant standards and the principles embedded within them. Reviews new business proposals and provides specialist advice on compliance issues. Acts as the organisation's contact for relevant regulatory authorities. Establishes policy and standards for compliance with relevant legislation, which are fit for purpose.

**IT governance: Level 5** Reviews information systems for compliance with legislation and specifies any required changes. Responsible for ensuring compliance with organisational policies and procedures and overall information management strategy.

### Information management IRMG

The overall management of the use of all types of information, structured and unstructured, whether produced internally or externally, to support decision-making and business processes. Encompasses development and promotion of the strategy and policies covering the design of information structures and taxonomies, the setting of policies for the sourcing and maintenance of the data content, and the development of policies, procedures, working practices and training to promote compliance with legislation regulating the management of records, and all aspects of holding, use and disclosure of data.

**Information management: Level 7** Specifies at a strategic level the business functions and data subjects needed to support future business, thereby enabling the development of an Information Architecture. Establishes and communicates the organisation's information management strategy, developing it as an integrated part of the business strategy. Directs information resources, to create value for the stakeholders by improving the performance of the organisation, whilst maintaining the principles of professional standards, accountability, openness, equality and diversity and clarity of purpose. Responsible for compliance with regulations, standards and codes of good practice relating to information and documentation, records management, information assurance and data protection.

**Information management: Level 6** Maintains and communicates the organisation's strategy for managing information, ensuring that uniformly recognised and accepted data definitions are developed and applied throughout the organisation. Ensures that the business processes and information required to support the organisation are accurately modelled and devises appropriate standards, processes and data architectures. Identifies the impact of any relevant statutory, internal or external regulations on the organisation's use of information and develops strategies for compliance. Coordinates information resources to meet specific business objectives whilst maintaining the principles of professional standards, accountability, openness, equality and diversity and clarity of purpose. Implements systems and IT controls to measure performance, manage risk and ensure that IT and the business work together to support the business purpose.

**Information management: Level 5** Drafts and maintains the policy, standards and procedures for compliance with relevant legislation. Understand the implications of information, both internal and external, that can be mined from business systems and elsewhere. Make business decisions based on that information, including the need to make changes to the systems. Reviews new business proposals and provides specialist advice on information management, including advice on and promotion of collabora-

tive working and assessment and management of information-related risk. Creates and maintains an inventory of information assets, which are subject to relevant legislation. Prepares and reviews the periodic notification of registration details and submits it to the relevant regulatory authorities. Ensures that formal information access requests and complaints are dealt with according to approved procedures.

**Information management: Level 4** Understands and complies with relevant organisational policies and procedures, taking responsibility for assessing and managing risks around the use of information. Ensures that information is presented effectively. Ensures that effective controls are in place for internal delegation, audit and control and that the board receives timely reports and advice that will inform their decisions.

## Information systems coordination

### ISCO

Typically within a large organisation in which the information strategy function is devolved to autonomous units, or within a collaborative enterprise of otherwise independent organisations, the coordination of information strategy matters where the adoption of a common approach (such as shared services) would benefit the organisation.

#### Information systems coordination: Level 7

Establishes, maintains and communicates the organisation's strategy for managing information and the policies, standards, procedures and methods necessary to implement the strategy. Coordinates all aspects of management of the life cycle of information systems. Represents the interests of the entire organisation to general management and external bodies on matters relating to information strategy.

#### Information systems coordination: Level 6

Maintains an awareness of the global needs of the organisation, and promotes the benefits that a common approach to IT deployment will bring to the business as a whole, among information systems and business management. Coordinates the promotion, development, acquisition and implementation of information systems and services in close liaison with those responsible for management and strategy.

## Information security SCTY

The management of, and provision of expert advice on, the selection, design, justification, implementation and operation of information security controls and management strategies to maintain the confidentiality, integrity, availability, accountability and relevant compliance of infor-

mation systems with legislation, regulation and relevant standards.

**Information security: Level 6** Provides leadership and guidelines on information assurance security expertise for the organisation, working effectively with strategic organisational functions such as legal experts and technical support to provide authoritative advice and guidance on the requirements for security controls. Provides for restoration of information systems by ensuring that protection, detection, and reaction capabilities are incorporated.

**Information security: Level 5** Obtains and acts on vulnerability information and conducts security risk assessments for business applications and computer installations; provides authoritative advice and guidance on security strategies to manage the identified risk. Investigates major breaches of security, and recommends appropriate control improvements. Interprets security policy and contributes to development of standards and guidelines that comply with this. Performs risk assessment, business impact analysis and accreditation for all major information systems within the organisation. Ensures proportionate response to vulnerability information, including appropriate use of forensics.

**Information security: Level 4** Conducts security risk and vulnerability assessments for defined business applications or IT installations in defined areas, and provides advice and guidance on the application and operation of elementary physical, procedural and technical security controls (e.g. the key controls defined in ISO27001). Performs risk and vulnerability assessments, and business impact analysis for medium size information systems. Investigates suspected attacks and manages security incidents.

**Information security: Level 3** Applies and maintains specific security controls as required by organisational policy and local risk assessments to maintain confidentiality, integrity and availability of business information systems and to enhance resilience to unauthorised access. Contributes to vulnerability assessments. Recognises when an IT network/system has been attacked internally, by a remote host, or by malicious code, such as virus, worm or Trojan etc., or when a breach of security has occurred. Takes immediate action to limit damage, according to the organization's security policy, which may include escalation to next level, and records the incident and action taken. Demonstrates effective communication of security issues to business managers and others. Performs basic risk assessments for small information systems.

## Information assurance INAS

The leadership and oversight of information assurance, setting high level strategy and policy, to ensure stakeholder confidence that risk to the

integrity of information in storage and transit is managed pragmatically, appropriately and in a cost effective manner.

**Information assurance: Level 7** Establishes and manages Information assurance strategy and policies in accordance with appropriate standards. Plans and implements processes to take forward the strategy and policies. Provides leadership and guidelines for provision of Information assurance requirements across all of the organisation's information and information systems.

**Information assurance: Level 6** Develops corporate Information security policy, standards and guidelines. Prepares and maintains organisational strategies that address the evolving business risk and information control requirements. Operates as a focus for Information assurance governance expertise for the organisation, working effectively with strategic organisational functions such as legal experts and technical support to provide authoritative advice and guidance on the requirements for security controls. Ensures architectural principles are applied during design to reduce risk, and advances assurance standards through ensuring rigorous security testing.

**Information assurance: Level 5** Provides authoritative advice and guidance on Information assurance architecture and strategies to manage identified risk. Is familiar with major legislation relevant to security of information. Interprets security and assurance policies and contributes to development of standards and guidelines that comply with these. Uses testing to support information assurance.

## Information analysis INAN

The validation and analysis of information, including the ability to discover and quantify patterns in data of any kind, including numbers, symbols, text, sound and image. The relevant techniques include statistical and data mining or machine learning methods such as rule induction, artificial neural networks, genetic algorithms and automated indexing systems.

**Information analysis: Level 7** Establishes and manages information analysis methods and techniques. Plans and implements the dissemination of methods and techniques and provides leadership and guidance for analysis of both internal and external information. Identifies and establishes the veracity of external sources of information of relevance to the operational needs of the enterprise. Establishes and manages the means to independently validate external information from multiple sources. Plans and implements processes to acquire and validate external information on a regular and consistent basis.

**Information analysis: Level 6** Is responsible for the organisation's commitment to efficient



and effective analysis of textual/numerical/visual/audio information, including processes to acquire and validate external information on a regular and consistent basis.

**Information analysis: Level 5** Independently validates external information from multiple sources. Specifies and applies appropriate analytical techniques and reports results to clients and management.

**Information analysis: Level 4** Assesses the integrity of data from various sources (including, for example, from sensors & measurement systems). Applies a variety of analytical and presentational techniques, in consultation with experts if appropriate, and with sensitivity to the limitations of the techniques.

**Information analysis: Level 3** Undertakes analytical activities and delivers analysis outputs, in accordance with customer needs and conforming to agreed standards.

## Information content publishing

### ICPM

The management and tuning of the processes that collect, assemble and publish information, including in unstructured and semi-structured forms, for delivery to the user at the point at which it is needed.

#### Information content publishing: Level 6

Develops strategies for the delivery of support information, including preferred media, rules for formatting content, and reprographics strategy if relevant. Ensures that adequate procedures, standards, tools and resources are in place to ensure the appropriate quality of material developed by information publishers within the organisation. Takes responsibility for publishing strategy, including, for example, frameworks for the overall information structure and graphical style for substantial, complex or high-profile web sites. Directs the selection of appropriate tools, templates and standards for publication in various forms, appropriate to customer expectations.

#### Information content publishing: Level 5

Develops standards and procedures to support content publishing. Designs overall support information structures. Takes responsibility for publishing assignments, including, for example, design of the overall structure and graphical style for substantial, complex or high-profile web sites. Selects appropriate tools, templates and standards for publication in various forms, appropriate to customer expectations (differentiating, for example, between needs such as optimisation and ease of modification). Sets design and coding standards, taking into account bandwidth and compatibility.

#### Information content publishing: Level 4

Defines and manages content management processes to meet the needs of users. Uses appropriate tools and techniques to provide moderately complex interfaces to new or existing platforms and applications.

#### Information content publishing: Level 3

Specifies and creates content management processes to meet the needs of users. Uses agreed tools to make finished material available on appropriate platforms.

#### Information content publishing: Level 2

Performs publications support activities such as drafting, illustrating, printing, etc. Understands technical publication concepts, tools and methods and the way in which these are implemented. Obtains and analyses usage data and presents it effectively.

#### Information content publishing: Level 1

Contributes, under instruction, to publication support activities and supports the collation of data.

## Advice and guidance

### Advice and guidance subcategory

#### Consultancy CNSL

The provision of advice and recommendations, based on expertise and experience, to address client needs. May deal with one specific aspect of IT and the business, or can be wide ranging and address strategic business issues. May also include support for the implementation of any agreed solutions.

**Consultancy: Level 7** Takes responsibility for a significant consultancy practice, including practice development, proposals/sales to internal or external clients, account management and managing the delivery of consultancy services over a wide range of IT, and IT-related topics.

**Consultancy: Level 6** Manages provision of consultancy services, and/or management of a team of consultants. In own areas of expertise, provides advice and guidance to consultants and/or the client through involvement in the delivery of consultancy services. Engages with clients and maintains client relationships. Establishes agreements/contracts and manages completion and disengagement.

**Consultancy: Level 5** Takes responsibility for understanding client requirements, collecting data, delivering analysis and problem resolution. Identifies, evaluates and recommends options, implementing if required. Collaborates with, and facilitates stakeholder groups, as part of formal or informal consultancy agreements. Seeks to fully address client needs, enhancing the capabilities and effectiveness of client personnel, by ensuring that proposed solutions are properly understood and appropriately exploited.

#### Technical specialism TECH

The development and exploitation of expertise in any specific area of technology, technique, method, product or application area.

**Technical specialism: Level 6** Provides organisational leadership and guidelines to promote the development and exploitation of technical knowledge in the organisation.

**Technical specialism: Level 5** Maintains an in-depth knowledge of specific technical specialisms, and provides expert advice regarding their application. Can supervise specialist technical consultancy. The specialism can be any aspect of information or communication technology, technique, method, product or application area.

**Technical specialism: Level 4** Maintains knowledge of specific technical specialisms, provides detailed advice regarding their application and executes specialised tasks. The specialism can be any area of information or

communication technology, technique, method, product or application area.

## Business strategy and planning

### Business strategy and planning sub-category

#### Research RSCH

The advancement of knowledge in one or more fields of IT by innovation, experimentation, evaluation and dissemination, carried out in pursuit of a predetermined set of research goals.

**Research: Level 6** Sets research goals, makes effective proposals for the investment of funds in research projects, plays a major role in the development of the employing organisation's research policy, and supervises the work of a research function. Gains an appreciation of current research work over a substantial area of IT, and takes a leading part in professional activities outside own employing organisation.

**Research: Level 5** Agrees research goals and generates original and worthwhile ideas in a specialised IT field. Develops, reviews and constructively criticises ideas, possibly leading a small research team, making necessary observations and tests and carrying them through to a full practical demonstration, wherever viable and feasible. Where necessary, designs data collection tools and techniques for both qualitative and quantitative data. Presents papers at conferences, writes papers of publication quality, and presents reports to clients.

**Research: Level 4** Contributes to research goals and builds on and refines appropriate outline ideas for the evaluation, development, demonstration and implementation of research. Uses available resources to gain an up-to-date knowledge of any relevant IT field. Reports on work carried out and may contribute significant sections of material of publication quality. Contributes to research plans and identifies appropriate opportunities for publication and dissemination of research findings.

**Research: Level 3** Within given research goals, builds on and refines appropriate outline ideas for research, i.e. evaluation, development, demonstration and implementation. Uses available resources to gain an up-to-date knowledge of any relevant IT field. Reports on work carried out and may contribute sections of material of publication quality.

#### Innovation INOV

The capability to recognise and exploit business opportunities provided by IT, (for example, the Internet), to ensure more efficient and effective performance of organisations, to explore possibilities for new ways of conducting business and organisational processes, and to establish new businesses.

**Innovation: Level 6** Recognises potential strategic application of IT, and initiates investigation

and development of innovative methods of exploiting IT assets, to the benefit of organisations and the community. Plays an active role in improving the interface between the business and IT.

**Innovation: Level 5** Actively monitors for, and seeks, opportunities, new methods and trends in IT capabilities and products to the advancement of the organisation. Clearly articulates, and formally reports their benefits.

## Business process improvement

#### BPRI

The identification of new and alternative approaches to performing business activities. The analysis of business processes, including recognition of the potential for automation of the processes, assessment of the costs and potential benefits of the new approaches considered and, where appropriate, management of change, and assistance with implementation. May include the implementation of a process management capability/discipline at the enterprise level.

#### Business process improvement: Level 7

Brings about significant improvements and measurable business benefits by identifying, proposing, initiating and leading significant programmes of improvement. Enhances existing approaches to process improvement and/or develops new approaches.

**Business process improvement: Level 6** Analyses business processes; identifies alternative solutions, assesses feasibility, and recommends new approaches, typically seeking to exploit technology components. Evaluates the financial, cultural, technological, organisational and environmental factors which must be addressed in the change programme. Establishes client requirements for the implementation of significant changes in organisational mission, business functions and process, organisational roles and responsibilities, and scope or nature of service delivery.

**Business process improvement: Level 5** Analyses business processes; identifies alternative solutions, assesses feasibility, and recommends new approaches. Contributes to evaluating the factors which must be addressed in the change programme. Helps establish requirements for the implementation of changes in the business process.

## Enterprise and business architecture development STPL

The creation, iteration, and maintenance of structures such as enterprise and business architectures embodying the key principles, methods and models that describe the organisation's future state, and that enable its evolution. This

typically involves the interpretation of business goals and drivers; the translation of business strategy and objectives into an "operating model"; the strategic assessment of current capabilities; the identification of required changes in capabilities; and the description of inter-relationships between people, organisation, service, process, data, information, technology and the external environment.

The architecture development process supports the formation of the constraints, standards and guiding principles necessary to define, assure and govern the required evolution; this facilitates change in the organisation's structure, business processes, systems and infrastructure in order to achieve predictable transition to the intended state.

**Enterprise and business architecture development: Level 7** Directs the creation and review of an enterprise capability strategy to support the strategic requirements of the business. Identifies the business benefits of alternative strategies.

Directs development of enterprise-wide architecture and processes which ensure that the strategic application of change is embedded in the management of the organisation. Ensures compliance between business strategies, enterprise transformation activities and technology directions, setting strategies, policies, standards and practices.

**Enterprise and business architecture development: Level 6** Captures and prioritises market and environmental trends, business strategies and objectives, and identifies the business benefits of alternative strategies. Establishes the contribution that technology can make to business objectives, conducting feasibility studies, producing high-level business models, and preparing business cases.

Leads the creation and review of a systems capability strategy that meets the strategic requirements of the business. Develops enterprise-wide architecture and processes that ensure that the strategic application of change is embedded in the management of the organisation, ensuring the buy-in of all stakeholders.

Develops and presents business cases, for high-level initiatives, for approval, funding and prioritisation. Ensures compliance between business strategies, enterprise transformation activities and technology directions, setting strategies, policies, standards and practices.

**Enterprise and business architecture development: Level 5** Contributes to the creation and review of a systems capability strategy which meets the strategic requirements of the business. Develops models and plans to drive forward the strategy, taking advantage of opportunities to improve business performance. Takes responsibility for investigative work to determine requirements and specify effective business processes, through improvements in information systems,

data management, practices, procedures, organisation and equipment.

### Business risk management BURM

The planning and implementation of organisation-wide processes and procedures for the management of risk to the success or integrity of the business, especially those arising from the use of information technology, reduction or non-availability of energy supply or inappropriate disposal of materials, hardware or data.

**Business risk management: Level 7** Establishes strategy for addressing business risk arising from IT operations and IT-enabled change. Provides resources to implement the strategy, and delegates authority for detailed planning and execution of risk management activities.

**Business risk management: Level 6** Plans and manages the implementation of organisation-wide processes and procedures, tools and techniques for the identification, assessment, and management of risk inherent in the operation of business processes and of potential risks arising from planned IT-enabled change.

**Business risk management: Level 5** Carries out risk assessment within a defined functional or technical area of business. Uses consistent processes for identifying potential risk events, quantifying and documenting the probability of occurrence and the impact on the business. Refers to domain experts for guidance on specialised areas of risk, such as architecture and environment. Co-ordinates the development of countermeasures and contingency plans.

**Business risk management: Level 4** Investigates and reports on hazards and potential risk events within a specific function or business area.

### Sustainability strategy SUST

The preparation of a sustainability strategy for IT, taking into account any established corporate strategy, to be used as a basis for policies and planning, and covering both consumption and sources of supply of energy and materials. Evaluation and inclusion, as appropriate, of political, legislative, economic, social and technological factors. Identification of major external standards, practices or schemes to be adopted. Consultation with identified relevant parties, either internal or external. Obtaining agreement to the strategy and the commitment to act upon it.

**Sustainability strategy: Level 6** Provides leadership and guidelines on sustainability; leads in the development of a sustainability strategy for IT, encompassing sources of supply, control and measurement of in-house utilisation, procurement of resource-efficient products and services, and legislative factors.

**Sustainability strategy: Level 5** Contributes to strategy formation by providing in-depth analysis of one or more broad aspects of the organisation's use of energy and materials, and by recommending elements of the strategy; provides in-depth advice in own area of expertise. Provides analysis of risks arising in the areas covered.



## Technical strategy and planning

### Technical strategy and planning sub-category

#### Emerging technology monitoring

##### EMRG

The identification of new and emerging hardware, software and communication technologies and products, services, methods and techniques and the assessment of their relevance and potential value as business enablers, improvements in cost/performance or sustainability. The promotion of emerging technology awareness among staff and business management.

**Emerging technology monitoring: Level 6** Coordinates the identification and assessment of new and emerging hardware, software and communication technologies, products, methods and techniques. Evaluates likely relevance of these for the organisation. Provides regular briefings to staff and management.

##### Emerging technology monitoring: Level 5

Monitors the market to gain knowledge and understanding of currently emerging technologies. Identifies new and emerging hardware and software technologies and products based on own area of expertise, assesses their relevance and potential value to the organisation, contributes to briefings of staff and management.

##### Emerging technology monitoring: Level 4

Maintains awareness of opportunities provided by new technology to address challenges or to enable new ways of working. Within own sphere of influence, works to further organisational goals, by the use of emerging technologies and products. Contributes to briefings and presentations about their relevance and potential value to the organisation.

#### Continuity management COPL

The provision of service continuity planning and support. This includes the identification of information systems which support critical business processes, the assessment of risks to those systems' availability, integrity and confidentiality and the co-ordination of planning, designing, testing and maintenance procedures and contingency plans to address exposures and maintain agreed levels of continuity. This function should be performed as part of, or in close cooperation with, the function which plans business continuity for the whole organisation.

**Continuity management: Level 5** Owns the service continuity planning process and leads the implementation of resulting plans. Coordinates the identification by specialists across the organisation of information and communication systems which support the critical business processes,

and the assessment of risks to the availability, integrity, and confidentiality of those systems. Evaluates the critical risks associated with these systems and identifies priority areas for improvement. Coordinates the planning, designing, testing of maintenance procedures and contingency plans to address exposure to risk and ensure that agreed levels of continuity are maintained.

**Continuity management: Level 4** Provides input to the service continuity planning process and implements resulting plans.

#### Software development process improvement SPIM

The provision of advice, assistance and leadership in improving the quality of software development, by focusing on process definition, management, repeatability and measurement. The facilitation of improvements by changing approaches and working practices, typically using recognised models such as the Capability Maturity Model Integration (CMMI), the Software Process Improvement and Capability dEtermination Model (SPICE), Test Process Improvement (TPI) and Test Maturity Model (TMM).

**Software development process improvement: Level 7** Liaises with client functions to establish business requirements and identifies, proposes, initiates and leads significant improvement programmes. Manages the quality and appropriateness of the work performed and delivers measurable business benefits. Modifies existing software process improvement approaches and/or develops new approaches to achieving improvement.

**Software development process improvement: Level 6** Plans and manages the evaluation of software processes. Identifies, proposes, and initiates software process improvement activities within the organisation, devising solutions. Takes action to exploit opportunities that will have a measurable effect on operational effectiveness, with associated benefits to the business. Promotes the benefits of addressing security during system development and applies secure development improvement practices.

**Software development process improvement: Level 5** Develops and maintains a detailed knowledge of software process improvement. Contributes effectively to identifying new areas of software process improvement within the organisation. Carries out software process improvement assignments, justified by measurable business benefits.

## Sustainability management for IT

### SUMI

The specification, planning and management of changes to IT assets, systems, processes or practices intended to reduce or constrain consumption and/or disposal of energy or materials, within the context of company strategy and policy, and regulatory and contractual requirements. The evaluation of changes to ensure that planned benefits have been obtained. The specification of remedial and process improvement actions in cases where planned benefits have not been obtained. The identification and planning of alternative sources of supply.

#### Sustainability management for IT: Level 6

Establishes the overall approach to the incorporation of sustainability requirements and factors into the specification and design of systems and services; determines relevant methods and tools to be used to address energy efficiency issues in specification, design and operation.

#### Sustainability management for IT: Level 5

Plans and implements new practices that ensure that sustainability matters are appropriately addressed in specification, design and operation of systems and services. Recommends methods, tools and practices to be used. Establishes organisation-wide practices for the disposal of materials. Sets standards for the conformance of components and services to efficient use of energy and materials.

#### Network planning NTPL

The creation and maintenance of overall network plans, encompassing the communication of data, voice, text and image, in the support of an organisation's business strategy. This includes participation in the creation of service level agreements and the planning of all aspects of infrastructure necessary to ensure provision of network services to meet such agreements. Physical implementation may include copper wire, fibre-optic, wireless, or any other technology.

**Network planning: Level 6** Creates and maintains overall network plans to support the organisation's business strategy, agrees service level agreements with customers and plans all aspects of the infrastructure necessary to ensure provision of network services to meet such agreements.

**Network planning: Level 5** Creates and maintains network plans for own area of responsibility, contributes to setting service level agreements, and plans the infrastructure necessary to provide the network services to meet such agreements.

## Solution architecture ARCH

The design and communication of high-level structures to enable and guide the design and development of integrated solutions that meet current and future business needs.

Changes to service, process, organisation, operating model and other aspects may be required in addition to technology components, and solutions must demonstrate how agreed requirements (such as automation of business processes) are met, any requirements which are not fully met or, and any options or considerations which require a business decision.

The provision of comprehensive guidance on the development of, and modifications to, solution components to ensure that they take account of relevant architectures, strategies, policies, standards and practices and that existing and planned solution components remain compatible.

**Solution architecture: Level 6** Leads the development of architectures for complex systems, ensuring consistency with specified requirements agreed with both external, and internal customers. Takes full responsibility for the balance between functional, service quality and systems management requirements within a significant area of the organisation. Establishes policy and strategy for the selection of systems architecture components, and co-ordinates design activities, promoting the discipline to ensure consistency. Ensures that appropriate standards (corporate, industry, national and international) are adhered to. Within a business change programme, manages the target design, policies and standards, working proactively to maintain a stable, viable architecture and ensure consistency of design across projects within the programme.

**Solution architecture: Level 5** Uses appropriate tools, including logical models of components and interfaces, to contribute to the development of systems architectures in specific business or functional areas. Produces detailed component specifications and translates these into detailed designs for implementation using selected products. Within a business change programme, assists in the preparation of technical plans and cooperates with business assurance and project staff to ensure that appropriate technical resources are made available. Provides advice on technical aspects of system development and integration (including requests for changes, deviations from specifications, etc.) and ensures that relevant technical strategies, policies, standards and practices are applied correctly.

## Data management DATM

The management of practices and processes to ensure the integrity, safety and availability of all forms of data and data structures that make up

the organisation's information. The management of data and information in all its forms and the analysis of information structure (including logical analysis of taxonomies, data and metadata). The development of innovative ways of managing the information asset of the organisation.

**Data Management Level 6** From an understanding of current and future business, derives an overall strategy of data management, within an established Information Architecture, that supports the business model. Identifies information structures and detail to enable the development and secure operation of new information services. Takes overall responsibility for planning effective information storage, sharing and publishing within the organisation.

**Data Management Level 5** Plans effective information storage, sharing and publishing within the organisation. Assesses issues (such as 'Islands of Information') which might prevent the organisation from making maximum use of its information assets. Derives data management structures to ensure consistency of information retrieval, combination, analysis, pattern recognition and interpretation, throughout the organisation. Devises and implements document and record systems, including classification, security, retrieval and retention processes.

**Data Management Level 4** Takes responsibility for the accessibility, retrievability and security of specific subsets of information. Provides advice on the transformation of information from one format/medium to another, where appropriate. Maintains and implements information handling procedures. Enables the availability, integrity and searchability of information through the application of formal data structures and protection measures. Manipulates specific data from information services, to satisfy local or specific information needs.

## Methods & tools METL

Ensuring that appropriate methods and tools for the planning, development, testing, operation, management and maintenance of systems are adopted and used effectively throughout the organisation.

**Methods & tools: Level 6** Sets direction and leads in the introduction and use of techniques, methodologies and tools, to match overall business requirements (both current and future), ensuring consistency across all user groups.

**Methods & tools: Level 5** Promotes and ensures use of appropriate techniques, methodologies and tools.

**Methods & tools: Level 4** Provides expertise and support on use of methods and tools.

## Business change

### Business change category

## Business change implementation

### Portfolio management POMG

The development and application of a systematic management framework to define and deliver a portfolio of programmes, projects and ongoing services, in support of specific business strategies and objectives. Includes the implementation of a strategic investment appraisal and decision making process based on a clear understanding of cost, risk, inter-dependencies, and impact on existing business activities, enabling measurement and objective evaluation of potential changes and the benefits to be realised. The prioritisation of resource utilisation and changes to be implemented. The regular review of portfolios.

**Portfolio management: Level 7** Leads the definition, implementation and review of the organisation's portfolio management framework. Authorises the structure of portfolios and is responsible for alignment with business strategy & business objectives. Makes decisions on the prioritisation of resources and the changes to be implemented. Recommends and implements corrective action by engaging and influencing senior management. Leads the on-going monitoring and review of the portfolio for cost, risk, inter-dependencies, impact on current business activities and the strategic benefits to be realised. Is responsible for implementing effective portfolio governance arrangements supported by effective reporting.

**Portfolio management: Level 6** Leads the definition of a portfolio of change and the portfolio roadmap. Engages and influences senior managers to ensure the portfolio will deliver the agreed business objectives. Plans, schedules, monitors and reports on activities related to the portfolio to ensure that each part of the portfolio contributes to the overall achievement of the portfolio. Identifies issues with portfolio structure, cost, risk, inter-dependencies, impact on current business activities and the strategic benefits to be realised. Notifies projects / programmes / change initiatives of issues and recommends and monitors corrective action. Reports on portfolio status as appropriate.

**Portfolio management: Level 5** Ensures that programme and project leads adhere to the agreed portfolio management approach and timetable and that they provide the appropriate information to agreed targets of timelines and accuracy. Produces reports as appropriate for portfolio governance, including making recommendations for changes to the portfolio.

### Programme management PGMG

The identification, planning and coordination of a set of related projects within a programme of business change, to manage their interdependencies in support of specific business strategies and objectives. The maintenance of a strategic view over the set of projects, providing the framework for implementing business initiatives, or large-scale change, by conceiving, maintaining and communicating a vision of the outcome of the programme. (The vision, and the means of achieving it, may change as the programme progresses). Agreement of business requirements, and translation of requirements into operational plans. Determination, monitoring, and review of programme costs, operational budgets, staffing requirements, programme resources, inter-dependencies and programme risk.

**Programme management: Level 7** Sets organisational strategy governing the direction and conduct of programme management, including application of appropriate methodologies. Plans, directs, and co-ordinates activities to manage and implement complex programmes from contract / proposal initiation to final operational stage. Aligns the programme objectives with business objectives, and authorises the selection and planning of all related projects and activities. Plans, schedules, monitors, and reports on activities related to the programme, ensuring that there are appropriate and effective governance arrangements, supported by comprehensive reporting.

**Programme management: Level 6** Plans, directs, and co-ordinates activities to manage and implement a programme from contract / proposal initiation to final operational stage; plans, schedules, monitors, and reports on activities related to the programme. Ensures that programmes are managed to realise business benefits and that programme management is informed by an awareness of current technical developments.

### Project management PRMG

The management of projects, typically (but not exclusively) involving the development and implementation of business processes to meet identified business needs, acquiring and utilising the necessary resources and skills, within agreed parameters of cost, timescales, and quality.

**Project management: Level 7** Sets organisational strategy governing the direction and conduct of project management, including application of appropriate methodologies. Authorises the management of large scale projects. Leads project planning, scheduling, controlling and reporting activities for strategic, high impact, high risk projects. Manages risk and ensures that solutions to problems are implemented in line with change control processes.



**Project management: Level 6** Takes full responsibility for the definition, documentation and successful completion of complex projects (typically greater than 12 months, with significant business, political, or high-profile impact, and high-risk dependencies), ensuring that realistic project, quality, change control and risk management processes are maintained. Monitors and controls resources, revenue and capital costs against the project budget and manages expectations of all project stakeholders.

**Project management: Level 5** Takes full responsibility for the definition, documentation and satisfactory completion of medium-scale projects (typically lasting 6-12 months, with direct business impact, teams of 3-5 and firm deadlines). Identifies, assesses and manages risks to the success of the project. Ensures that realistic project and quality plans are prepared and maintained and provides regular and accurate reports to stakeholders as appropriate. Ensures Quality reviews occur on schedule and according to procedure. Manages the change control procedure, and ensures that project deliverables are completed within planned cost, timescale and resource budgets, and are signed off. Provides effective leadership to the project team, and takes appropriate action where team performance deviates from agreed tolerances.

**Project management: Level 4** Defines, documents and carries out small projects or sub-projects (typically less than six months, with limited budget, limited interdependency with other projects, and no significant strategic impact), alone or with a small team, actively participating in all phases. Identifies, assesses and manages risks to the success of the project. Prepares realistic plans (including quality, risk and communications plans) and tracks activities against the project schedule, providing regular and accurate reports to stakeholders as appropriate. Monitors costs, timescales and resources used, and takes action where these deviate from agreed tolerances. Ensures that own projects are formally closed and, where appropriate, subsequently reviewed, and that lessons learned are recorded.

### Portfolio, programme and project support PROF

The provision of support and guidance on portfolio, programme and project management processes, procedures, tools and techniques. Support includes definition of portfolios, programmes, and projects; advice on the development, production and maintenance of business cases; time, resource, cost and exception plans, and the use of related software tools. Tracking and reporting of programme/project progress and performance are also covered, as is the capability to facilitate all aspects of portfolio/ programme/

project meetings, workshops and documentation.

**Portfolio, programme and project support: Level 5** Takes responsibility for the provision of portfolio, programme and project office services, either to a large project or to a number of projects within an organisation. Advises on the available standards, procedures, methods, tools and techniques. Evaluates project and/or programme performance and recommends changes where necessary. Contributes to reviews and audits of project and programme management to ensure conformance to standards.

**Portfolio, programme and project support: Level 4** Takes responsibility for the provision of Project support services to small/medium scale projects. Uses and recommends project control solutions for planning, scheduling and tracking projects. Sets up and provides detailed guidance on project management software, procedures, processes, tools and techniques. Supports programme or project control boards, project assurance teams and quality review meetings. Provides basic guidance on individual project proposals. May be involved in aspects of supporting a programme by providing a cross programme view on risk, change, quality, finance or configuration management.

**Portfolio, programme and project support: Level 3** Uses recommended project control solutions for planning, scheduling and tracking projects. Sets up project files, compiles and distributes reports. Provides administrative services to project boards, project assurance teams and quality review meetings. Provides guidance on project management software, procedures, processes, tools and techniques.

**Portfolio, programme and project support: Level 2** Assists with the compilation of project management reports. Maintains programme and project files from supplied actual and forecast data.

## Business change management

### Business change management sub-category

#### Business analysis BUAN

The methodical investigation, analysis, review and documentation of all or part of a business in terms of business functions and processes, the information used and the data on which the information is based. The definition of requirements for improving processes and systems, reducing their costs, enhancing their sustainability, and the quantification of potential business benefits. The creation of viable specifications and acceptance criteria in preparation for the construction of information and communication systems.

**Business analysis: Level 6** Takes full responsibility for business analysis within a significant segment of an organisation where the advice given and decisions made will have a measurable impact on the profitability or effectiveness of the organisation. Establishes the contribution that technology can make to business objectives, defining strategies, validating and justifying business needs, conducting feasibility studies, producing high-level and detailed business models, preparing business cases, overseeing development and implementation of solutions, taking into account the implications of change on the organisation and all stakeholders. Guides senior management towards accepting change brought about through process and organisational change.

**Business analysis: Level 5** Takes responsibility for investigative work to determine business requirements and specify effective business processes, through improvements in information systems, information management, practices, procedures, and organisation change. Applies and monitors the use of required modelling and analysis tools, methods and standards, giving special consideration to business perspectives. Conducts investigations at a high level for strategy studies, business requirements specifications and feasibility studies. Prepares business cases which define potential benefits, options for achieving these benefits through development of new or changed processes, and associated business risks. Identifies stakeholders and their business needs.

**Business analysis: Level 4** Investigates operational requirements, problems, and opportunities, seeking effective business solutions through improvements in automated and non-automated components of new or changed processes. Assists in the analysis of stakeholder objectives, and the underlying issues arising from investigations into business requirements and problems, and identifies options for consideration. Identifies potential benefits, and available

options for consideration. Works with clients/users in defining acceptance tests.

**Business analysis: Level 3** Investigates operational needs and problems, and opportunities, contributing to the recommendation of improvements in automated and non-automated components of new or changed processes and organisation. Assists in defining acceptance tests for these recommendations.

## Requirements definition and management REQM

The definition and management of the business goals and scope of change initiatives. The specification of business requirements to a level that enables effective delivery of agreed changes.

### Requirements definition and management: Level 6

Determines policy on discovery, analysis and documentation of requirements. Defines requirements standards and quality targets for an organisation in agreement with key stakeholders. Organises scoping and business priority setting for strategic business changes involving business policy-makers and direction setters.

### Requirements definition and management: Level 5

Facilitates scoping and business priority setting for large or complex changes, engaging senior stakeholders as required. Selects the most appropriate means of representing business requirements in the context of a specific change initiative. Drives the requirements elicitation process where necessary, identifying what stakeholder input is required. Obtains formal agreement from a large and diverse range of potentially senior stakeholders and recipients to the scope and requirements, plus the establishment of a base-line on which delivery of a solution can commence. Takes responsibility for the investigation and application of changes to programme scope. Identifies the impact on business requirements of external impacts affecting a programme or project.

### Requirements definition and management: Level 4

Facilitates scoping and business priority-setting for change initiatives of medium size and complexity. Contributes to selection of the most appropriate means of representing business requirements in the context of a specific change initiative, ensuring traceability back to source. Discovers and analyses requirements for fitness for purpose as well as adherence to business objectives and consistency, challenging positively as appropriate. Obtains formal agreement by stakeholders and recipients to scope and requirements and establishes a base-line on which delivery of a solution can commence. Manages requests for and the application of changes to base-lined requirements. Identifies the impact on business requirements of interim (e.g. migration) scenarios as well as the required end position.

### Requirements definition and management: Level 3

Defines scope and business priorities for small-scale changes and may assist in larger scale scoping exercises. Elicits and discovers requirements from operational management and other stakeholders. Selects appropriate techniques for the elicitation of detailed requirements taking into account the nature of the required changes, established practice and the characteristics and culture of those providing the requirements. Specifies and documents business requirements as directed, ensuring traceability back to source. Analyses them for adherence to business objectives and for consistency, challenging positively as appropriate. Works with stakeholders to prioritise requirements.

### Requirements definition and management: Level 2

Uses established techniques as directed to identify current problems and elicit, specify and document business functional, data and non-functional requirements for simple subject areas with clearly-defined boundaries. Assists in more complex requirements activities and with the processes for establishing agreed baselines for change and managing the assessment and application of requested changes to those requirements.

## Business process testing BPTS

The planning, design, management, execution and reporting of business process tests and usability evaluations. The application of evaluation skills to the assessment of the ergonomics, usability and fitness for purpose of defined processes. This includes the synthesis of test tasks to be performed (from statement of user needs and user interface specification), the design of an evaluation programme, the selection of user samples, the analysis of performance, and inputting results to the development team.

**Business process testing: Level 6** Is responsible for organisational commitment to high standards in human factors. Specifies ergonomics standards and methods to meet organisational objectives. Sets the policy and standards for business process testing. Manages the design and execution of business process tests, usability evaluations, network and business trials, confidence tests. Maintains an overview of the business environment, required outcomes and potential exposures.

**Business process testing: Level 5** Designs and manages tests of new/updated processes. Specifies test environment for whole life-cycle testing (e.g. using model office concept). Manages selection/creation of relevant scenarios for testing and ensures that tests reflect realistic operational business conditions. Ensure tests and results are documented, reported to stakeholders and are available for specification of user instructions. Highlights issues and risks identified during testing to business stakeholders. Provides

specialist guidance and advice to less experienced colleagues and users to ensure that test are conducted in an appropriate manner.

**Business process testing: Level 4** Specifies and develops test scenarios to test that new/updated processes deliver improved ways of working for the end user at the same time as delivering efficiencies and planned business benefits. Records and analyses test results, and reports any unexpected or unsatisfactory outcomes. Uses test plans and outcomes to specify user instructions.

## Change implementation planning and management CIPM

The definition and management of the process for deploying and integrating new capabilities into the business in a way that is sensitive to and fully compatible with business operations.

### Change implementation planning and management: Level 6

Ensures that there is a business perspective on how the new technical capabilities will be delivered to the business, including planning around key business cycles, selecting appropriate customers for migration, etc. Initiates the business implementation plan, including all the activities that the business needs to do to prepare for new technical components and technologies. Ensures sites deliver site implementation plans that align with the overall plan. Tracks and reports against these activities to ensure progress. Defines and manages the activities to ensure achievement of the business case after delivery. Outlines key business engagement messages that need to take place throughout the programme / project.

### Change implementation planning and management: Level 5

Creates the business readiness plan, taking into consideration IT deployment, data migration, capability deployment (training and engagement activities) and any business activities required to integrate new processes or jobs into the "business as usual" environment. Determines the readiness levels of business users with regard to upcoming changes; uncovers readiness gaps and creates and implements action plans to close the gaps prior to going live. Assists the user community in the provision of transition support and change planning, and liaises with the project team. Monitors and reports progress on business readiness targets, business engagement activity, training design and deployment activities, key operational metrics and return to productivity measures. Defines the series and sequence of activities to bring stakeholders to the required level of commitment, prior to going live.



## Organisation design and implementation ORDI

The design and implementation of an integrated organisation structure, role profiles, culture, performance measurements, competencies and skills, to facilitate strategies for change and for training to enable the change. The identification of key attributes of the culture and the key principles and factors for addressing location strategy.

### Organisation design and implementation:

**Level 6** Anticipates major changes affecting the organisation, and mobilises resources to implement changes. Advises business managers about the implications of planned IT-enabled change on the business, on processes and on customers. Initiates the definition of new organisation boundaries, and creates future organisation design, including location strategy and the number of locations required. Outlines performance measurement objectives and the high level implementation approach.

### Organisation design and implementation:

**Level 5** Conducts business impact assessment to identify how the changes from the "as-is" processes, systems, and structures to the "to-be" processes, systems and structures impact specific organisations and roles. Outlines how the organisation structure, jobs, teams and roles need to change to enable the future business processes. Aligns existing jobs/organisational structures to new processes.

## Benefits management BENM

Monitoring for the emergence of anticipated benefits (typically specified as part of the business case for a change programme or project). Action (typically by the programme management team) to optimise the business impact of individual and combined benefits.

**Benefits management: Level 6** Promotes the change programme vision to staff at all levels of the business operation, brings order to complex situations, and keeps a focus on business objectives. Works with senior people responsible for the line business operation, to ensure maximum improvements are made in the business operations as groups of projects deliver their products into operational use. Maintains the business case for funding the programme and confirms continuing business viability of the programme at regular intervals.

**Benefits management: Level 5** Identifies specific measures and mechanisms by which benefits can be measured, and plans to activate these mechanisms at the required time. Monitors benefits against what was predicted in the business case and ensures that all participants are informed and involved throughout the change programme and fully prepared to exploit the new operational business environment once it is in place. Supports senior management to ensure

that all plans, work packages and deliverables are aligned to the expected benefits and leads activities required in the realisation of the benefits of each part of the change programme.

## Business modelling BSMO

The production of abstract or distilled representations of real world, business or gaming situations in traditional or trans-media applications, to aid the communication and understanding of existing, conceptual or proposed scenarios. Predominantly focused around the representation of processes, roles, data, organisation and time. Models may be used to represent a subject at varying levels of detail and decomposition.

**Business modelling: Level 6** Defines modelling standards and quality targets for an organisation. Has continuing responsibility for the maintenance of models for a designated function. Initiates organisation-wide modelling improvement activities and obtains customer buy-in to general changes. May represent own organisation as a modelling expert in industry initiatives.

**Business modelling: Level 5** Produces models in support of business strategy. Has in-depth knowledge of a broad range of industry-wide modelling techniques. Advises on the choice of techniques and approach and influences customers accordingly. Capable of developing bespoke models for unusual contexts. Responsible for planning and co-ordinating team modelling activities and for ensuring the quality of their work.

**Business modelling: Level 4** Conducts advanced modelling activities for significant change programmes and across multiple business functions. Has an in-depth knowledge of organisation-standard techniques. Plans own modelling activities, selecting appropriate techniques and the correct level of detail for meeting assigned objectives. May contribute to discussions about the choice of the modelling approach to be used. Obtains input from and communicates modelling results to senior managers for agreement.

**Business modelling: Level 3** Conversant with techniques covering full range of modelling situations. Models current and desired scenarios as directed. Selects appropriate modelling techniques for meeting assigned objectives. Gains agreement from subject matter experts to models produced. Reviews resulting models with stakeholders and gains resolution to resultant issues.

**Business modelling: Level 2** Understands the purpose and benefits of modelling. Uses established techniques as directed to model simple subject areas with clearly-defined boundaries. May assist in more complex modelling activities. Develops models with input from subject matter

experts and communicates the results back to them for review and confirmation.

## Sustainability assessment SUAS

The evaluation of the sustainability of operational or planned IT services, devices and day-to-day operations such as travel. The establishment of a model or scheme to track changes in consumption over time and to generate feedback to enable improvements in energy or resource efficiency. The identification of areas requiring attention, and the initiation of actions to change or control the procurement of energy or other resources, so as to improve sustainability.

**Sustainability assessment: Level 6** Determines the organisation's approach to the assessment of sustainability and to the monitoring of the effectiveness of activities intended to cause improvements. Provides overall leadership in assessment activity around the organisation.

**Sustainability assessment: Level 5** Leads the introduction and management of measures to assess and report on sustainability and the impact of conservation activities. Ensures that the effectiveness and accuracy of the monitoring actions is kept under review, and that appropriate improvements are made.

**Sustainability assessment: Level 4** Assesses, records and reports on utilisation of energy and other resources, showing expertise in a given area such as a class of computing devices, or business travel. Provides advice on the improvement of sustainability in that area of expertise.

## Relationship management

### Relationship management subcategory

#### Stakeholder relationship management RLMT

During the design, management and implementation of business change and throughout the service lifecycle, the analysis and coordination of relationships with and between stakeholders, taking account of the services they use.

##### Stakeholder relationship management:

**Level 7** Is responsible for defining the strategic approach to understanding the needs of the business (demand management) and works with suppliers to meet these needs. Establishes and promotes the overall vision for how IT can support the business. Defines, and gains agreement on, the principles for establishing effective relationships between stakeholders, including responsibility for the relationship between IT functions and end users.

##### Stakeholder relationship management:

**Level 6** Supports business change, acting as a single point of contact for senior stakeholders, facilitating relationships between them. Ensures that stakeholders understand available IT services, and promotes financial and commercial awareness in order to deliver value-for-money. Conducts analysis of demand for services and influences stakeholders to ensure that the necessary investments are made to deliver required services. Negotiates at senior level on technical and commercial issues, to ensure that customers, suppliers and other stakeholders understand and agree what will meet their needs, and that appropriate service level agreements are defined. Oversees monitoring of relationships including lessons learned and appropriate feedback. Initiates improvement in services, products and systems.

##### Stakeholder relationship management:

**Level 5** Develops and maintains one or more defined communication channels and/or stakeholder groups, acting as a single point of contact. Gathers information from the customer to understand their needs (demand management) and detailed requirements. Facilitates open communication and discussion between stakeholders, using feedback to assess and promote understanding of need for future changes in services, products and systems. Agrees changes to be made and the planning and implementation of change. Maintains contact with the customer and stakeholders throughout to ensure satisfaction. Captures and disseminates technical and business information.

##### Stakeholder relationship management:

**Level 4** Collects and uses feedback from customers and stakeholders to help measure effectiveness of stakeholder management. Helps

develop and enhance customer and stakeholder relationships. Implements a communications strategy, including, for example; handling of complaints; problems and issues; managing resolutions; corrective actions and lessons learned; collection and dissemination of relevant information appropriately.

## Skills management

### Skills management subcategory

#### Learning and development management ETMG

The provision of learning and development processes (including learning management systems) in order to develop the professional, business and/or technical skills required by the organisation.

##### Learning and development management:

**Level 7** Develops and controls the learning & development strategy for the organisation, ensuring the needs of the organisation are met, both at strategic and tactical level.

##### Learning and development management:

**Level 6** Determines the learning and development programme and delivery mechanisms needed to grow staff skills in line with business needs. Identifies appropriate accreditation and qualification paths, applicable to individuals within the organisation. Evaluates learning outcomes. Manages the development and provision of all learning, taking account of the strategic aims of the employing organisation.

##### Learning and development management:

**Level 5** Manages the provision of learning and development, ensuring optimum use of resources. Maintains, publicises and promotes catalogue of learning and development activities. Arranges facilities and schedules with learning and development providers as appropriate.

##### Learning and development management:

**Level 4** Contributes to the development and maintenance of a catalogue of learning and development resources. Books and organises training courses. Updates and controls training records, including attainment of accreditations.

##### Learning and development management:

**Level 3** Contributes to the maintenance and updates of training records and training catalogue.

#### Learning and development assessment LEDA

The assessment and evaluation of knowledge and skills acquired by any means whether formal or informal against capability and qualification frameworks such as SFIA.

##### Learning and development assessment:

**Level 6** Specifies methods and standards for assessing knowledge and experience.

##### Learning and development assessment:

**Level 5** Administers and ensures the accuracy of knowledge and experience assessments based on specified methods and according to specified standards.

**Learning and development assessment:**

**Level 4** Performs routine and non-routine assessments of knowledge and experience using specified methods and according to specified standards.

**Learning and development assessment:**

**Level 3** Performs routine assessments of knowledge and experience using specified methods and according to specified standards.

**Learning design and development****TMCR**

The design, creation, packaging and maintenance of materials and resources for use in learning and development. Typically involves the assimilation of information from existing sources, selection and re-presentation in a form suitable to the intended purpose and audience. Includes design, configuration and testing of learning environments, and use of appropriate current technologies.

**Learning design and development: Level 5**

Specifies the content and structure of learning and development packages. Takes responsibility for design, creation, packaging and maintenance and manages development to deliver agreed outcomes. Where required, designs, configures and tests learning environments, including population of simulated databases, and replication of external systems and interfaces.

**Learning design and development: Level 4**

Designs, creates, develops, customises and maintains learning solution content and resources to deliver agreed outcomes. Assists with design, configuration and testing of learning environments, including creation of simulated data, and replication of external systems and interfaces.

**Learning delivery ETDL**

The transfer of business and/or technical skills and knowledge and the promotion of professional attitudes in order to facilitate learning and development. Uses a range of techniques, resources and media (which might include eLearning, virtual classrooms, self-assessment, peer-assisted learning, simulation, and other current methods).

**Learning delivery: Level 5** Plans and schedules the delivery of learning activities, based on learning objectives. Manages the delivery of programmes of learning. Customises formal and informal learning activities, incorporating relevant business scenarios and case studies. Designs appropriate environments, and delivers learning activities to specialist audiences. Advises/coaches others in learning delivery techniques and options.

**Learning delivery: Level 4** Prepares or customises and delivers learning activities to a variety of audiences.

**Learning delivery: Level 3** Delivers learning activities to a variety of audiences.

**Teaching and subject formation****TEAC**

The design, development, delivery and assessment of curricula for computing and for information technology (including electronic communication), at any level of the education system from primary through to tertiary (all age ranges). The topics addressed are those of the fundamental and more advanced areas of computing and the common skills needed to make productive use of computers and IT systems for both computing professionals and competent users of IT based systems including the ideas of computational thinking and the application of computational concepts to everyday and professional life. Special attention is paid to the methods, techniques and pedagogy (the study of being a teacher or the process of teaching) of computing & IT education.

**Teaching and subject formation: Level 6**

Leads development and delivery of computing and IT curricula in a formal educational context, from primary through to tertiary level. Specialises in the advanced aspects of delivering Computing and IT education at the relevant educational level. Uses current techniques and methods to evaluate and critique research in computing and IT education.

**Teaching and subject formation: Level 5**

Delivers computing and IT curricula in a formal educational context from primary through to tertiary level. Specialises in delivering Computing and IT education at the relevant educational level. Is aware of the techniques and methods used to evaluate and critique research in computing and IT education.

**Resourcing RESC**

The overall resource management of the IT workforce to enable effective service delivery. Provision of advice on any aspect of acquiring IT resources - employees, consultants or contractors.

**Resourcing: Level 6** Takes responsibility for the overall workforce planning strategy across the IT service ensuring that there is adequate skilled resource to meet planned service delivery. Ensures integration with strategic human resource plans. Takes responsibility for meeting the recruitment, re-skilling and demand forecasts for IT practitioners, advising on the approach and relevant policies. Ensures that expert support is provided as and when required, including inter-

viewing of applicants for senior posts. Audits and assesses the ongoing success and effectiveness of the process, including retention analysis, media and supplier assessment, customer satisfaction and selection methods validation.

**Resourcing: Level 5** Conducts job analyses, prepares job descriptions and person specifications, and prepares selection and evaluation criteria for candidates. Manages recruitment campaigns. Locates and selects possible agencies and other suppliers, negotiating terms and conditions, and placing orders with them, ensuring that all obligations are met in accordance with the agreed terms and timescales. Reviews candidate details, manages selection processes, and ensures that account is taken of relevant statutory or external regulations, standards and codes of good practice. Ensures that all relevant parties are informed of the results of interviews and other decisions, and assists in the negotiation of terms and conditions of service.

**Professional development PDSV**

The facilitation of the professional development of IT practitioners, including initiation, monitoring, review and validation of individual learning and development plans in line with organisational or business requirements. The counselling of participants in all relevant aspects of their professional development. The identification of appropriate learning/development resources. Liaison with external training providers. The evaluation of the benefits of professional development activities.

**Professional development: Level 6** Determines organisational development needs in line with business needs and strategic direction. Generates development strategies to achieve required change. Develops and leads communities of practice. Monitors progress and evaluates business benefits achieved.

**Professional development: Level 5** Determines the required outcomes for learning or development, from organisational development needs and the training strategy. Mentors assigned practitioners, ensuring alignment with predetermined statements of required development outcomes. Assists each practitioner with the creation of development plans based on the outcome statements. Ensures that each practitioner records evidence of progress. Validates practitioners' records at the end of each cycle of planned development, to ensure that achievements and enhanced capabilities are recorded and referenced to the outcome statements. May contribute to practitioners' performance appraisals.

**Professional development: Level 4** Maintains skills framework, or information about access to standard frameworks. Advises on required outcomes for learning or development, from knowledge of skills frameworks and organisa-

tional development needs. Assists practitioners with the process of creating development plans based on outcome statements. Monitors practitioners' progress records, ensuring that achievements and enhanced capabilities are recorded and referenced to the outcome statements.



## Solution development and implementation

Solution development and implementation category

## Systems development

### Systems development subcategory

### Systems development management DLMG

The management of resources in order to plan, estimate and carry out programmes of systems development work to time, budget and quality targets and in accordance with appropriate standards.

#### Systems development management: Level 7

Sets strategy for resource management within systems development, authorises the allocation of resources for programmes of system development projects, and maintains an overview of the contribution of the programme to organisational success.

#### Systems development management: Level 6

Identifies and manages the resources necessary for all stages (planning, estimation, execution) of individual systems development projects to ensure technical, financial and quality targets are met.

#### Systems development management: Level 5

Agrees, with business management, systems development projects which support the organisation's objectives and plans. Ensures that management is both aware of and able to provide the required resources, and that available resources are properly utilised and accounted for. Monitors and reports on the progress of systems development projects, using appropriate quality assurance processes to ensure that projects are carried out in accordance with agreed standards, methods and procedures.

### Data analysis DTAN

The investigation, evaluation, interpretation and classification of data, in order to define and clarify information structures which describe the relationships between real world entities. Such structures facilitate the development of software systems, links between systems or retrieval activities.

**Data analysis: Level 5** Sets standards for data analysis tools and techniques, advises on their application, and ensures compliance. Manages the investigation of corporate data requirements, and co-ordinates the application of data analysis and data modelling techniques, based upon a detailed understanding of the corporate information requirements, in order to establish, modify or maintain data structures and their associated components (entity descriptions, relationship descriptions, attribute definitions).

**Data analysis: Level 4** Investigates corporate data requirements, and applies data analysis, data modelling and quality assurance tech-

niques, to establish, modify or maintain data structures and their associated components (entity descriptions, relationship descriptions, attribute definitions). Provides advice and guidance to database designers and others using the data structures and associated components.

**Data analysis: Level 3** Applies data analysis, data modelling, and quality assurance techniques, based upon a detailed understanding of business processes, to establish, modify or maintain data structures and associated components (entity descriptions, relationship descriptions, attribute definitions). Advises database designers and other application development team members on the details of data structures and associated components.

**Data analysis: Level 2** Applies data analysis and data modelling techniques to establish, modify or maintain a data structure and its associated components (entity descriptions, relationship descriptions, attribute definitions).

### Systems design DESN

The specification and design of information systems to meet defined business needs in any public or private context, including commercial, industrial, scientific, gaming and entertainment. The identification of concepts and their translation into implementable design. The design or selection of components. The retention of compatibility with enterprise and solution architectures, and the adherence to corporate standards within constraints of cost, security and sustainability.

**Systems design: Level 6** Controls system design practice within an enterprise or industry architecture. Influences industry-based models for the development of new technology applications. Develops effective implementation and procurement strategies, consistent with business needs.

**Systems design: Level 5** Specifies and designs large or complex systems. Selects appropriate design standards, methods and tools, consistent with agreed enterprise and solution architectures and ensures they are applied effectively. Reviews others' systems designs to ensure selection of appropriate technology, efficient use of resources, and integration of multiple systems and technology. Contributes to policy for selection of architecture components. Evaluates and undertakes impact analysis on major design options and assesses and manages associated risks. Ensures that the system design balances functional, service quality and systems management requirements.

**Systems design: Level 4** Recommends/ designs structures and tools for systems which meet business needs. Delivers technical visualisation of proposed applications for approval by customer and execution by system developers.

Translates logical designs into physical designs, and produces detailed design documentation. Maps work to user specification and removes errors and deviations from specification to achieve user-friendly processes.

**Systems design: Level 3** Specifies user/system interfaces, and translates logical designs into physical designs taking account of target environment, performance requirements and existing systems. Produces detailed designs and documents all work using required standards, methods and tools, including prototyping tools where appropriate.

**Systems design: Level 2** Undertakes complete design of simple applications using simple templates and tools. Assists as part of a team on design of components of larger systems. Produces detailed designs including for example: physical data flows, file layouts, common routines and utilities, program specifications or prototypes, and backup, recovery and restart procedures.

## Network design NTDS

The production of network designs and design policies, strategies, architectures and documentation, covering voice, data, text, e-mail, facsimile and image, to support business requirements and strategy. This may incorporate all aspects of the communications infrastructure, internal and external, mobile, public and private, Internet, Intranet and call centres.

**Network design: Level 6** Takes responsibility for major aspects of network specification and design within the organisation. Produces network design policies, philosophies and criteria covering connectivity, capacity, interfacing, security, resilience, recovery, access and remote access.

**Network design: Level 5** Produces outline system designs and specifications, and overall architectures, topologies, configuration databases and design documentation of networks and networking technology within the organisation. Specifies user/system interfaces, including validation and error correction procedures, processing rules, access, security and audit controls. Assesses associated risks, and specifies recovery routines and contingency procedures. Translates logical designs into physical designs.

## Database/repository design DBDS

The specification, design and maintenance of mechanisms for storage and access to both structured and unstructured information, in support of business information needs.

**Database/repository design: Level 6** Sets strategies for effective use of database technology taking account of the complex interrelations between hardware/software. Provides specialist

expertise in the development, use or operation of database management system tools and facilities. Provides expert knowledge in the selection, provision and use of database architectures, software and facilities, typically taking responsibility for a team of technical staff.

**Database/repository design: Level 5** Maintains and applies up to date, specialist knowledge of database concepts, object and data modelling techniques and design principles, and a detailed knowledge of the full range of database architectures, software and facilities available. Analyses data requirements, to establish, modify or maintain a data model. Takes account of specialist requirements (e.g. geocoding, for geographic information systems). Interprets the model into an appropriate database schema within set policies. Demonstrates, installs and commissions selected products.

**Database/repository design: Level 4** Develops and maintains specialist knowledge of database concepts, object and data modelling techniques and design principles and a detailed knowledge of database architectures, software and facilities. Analyses data requirements to establish, modify or maintain object/data models. Evaluates potential solutions, demonstrating, installing and commissioning selected products.

**Database/repository design: Level 3** Develops specialist knowledge of database concepts, object and data modelling techniques and design principles. Translates object and data models into appropriate database schemas within design constraints. Interprets installation standards to meet project needs and produces database components as required. Evaluates potential solutions, demonstrating, installing and commissioning selected products.

**Database/repository design: Level 2** Translates and implements simple development project requirements into physical database structures. Assesses proposed changes to object and data structures and implements these changes in physical databases. Assists in database management system support activities for operational database systems.

## Programming/software development PROG

The design, creation, testing and documenting of new and amended programs from supplied specifications in accordance with agreed standards.

**Programming/software development: Level 5** Sets local or team-based standards for programming tools and techniques, advises on their application and ensures compliance. Takes technical responsibility for all stages in the software development process. Prepares project and quality plans and advises systems development

teams. Assigns work packages to technical staff, monitors performance and reports progress. Provides advice, guidance and assistance to less experienced colleagues as required.

### Programming/software development: Level 4

Designs, codes, tests, corrects and documents large and/or complex programs and program modifications from supplied specifications using agreed standards and tools, to achieve a well engineered result. Takes part in reviews of own work and leads reviews of colleagues' work.

### Programming/software development: Level 3

Designs, codes, tests, corrects, and documents moderately complex programs and program modifications from supplied specifications, using agreed standards and tools. Conducts reviews of supplied specifications, with others as appropriate.

### Programming/software development: Level 2

Designs, codes, tests, corrects, and documents simple programs, and assists in the implementation of software which forms part of a properly engineered information or communications system.

## Animation development ADEV

The architecture, design and development of animated and interactive systems such as games and simulations.

**Animation development Level 6** Provides overall creative direction in the conception and design of animation products such as games and simulations.

**Animation development Level 5** Develops conceptual structures into design blueprints, typically using tools such as interaction diagrams and wireframes, to create high-level structures and runtime architectures for websites. Manages iterations of level design and storytelling, documenting overall flow and architecture of a game or similar system.

**Animation development Level 4** Uses design tools (such as wireframes) to evolve rapid prototypes of web pages, and assess the viability of design concepts. Using complex visual design tools, employs organic modelling techniques, such as boned rigs to create and animate virtual characters within the context of a game (or similar system) design. Builds visual and audio components and integrates them into the system structure, typically using a games engine.

**Animation development Level 3** Uses design tools (such as wireframes) to evolve prototypes of web pages. Using complex visual design tools, employs organic modelling techniques, such as boned rigs to create and animate virtual characters within the context of a game (or similar system) design. Builds visual and audio components.

## Safety engineering SFEN

The application of appropriate methods to assure safety during all lifecycle phases of safety-related systems developments, including maintenance and re-use. These include safety hazard and risk analysis, safety requirements specification, safety-related system architectural design, formal method design, safety validation and verification, and safety case preparation.

**Safety engineering: Level 6** Takes full responsibility for hazard analysis and risk assessment, safety-related system architectural design, safety assurance planning and compliance and safety case preparation on systems up to the highest safety integrity levels. Takes responsibility for the safety-related aspects of multiple complex or high safety integrity level projects, providing effective leadership to team members.

**Safety engineering: Level 5** Identifies and analyses hazards and contributes to the identification and evaluation of risk reduction measures, ensuring these are adequately documented. Specifies safety-related systems architectures up to the highest safety integrity levels. Develops and maintains project safety assurance plans, monitors compliance and ensures that safety assurance evidence is gathered for safety case preparation.

**Safety engineering: Level 4** Contributes to the identification, analysis and documentation of hazards, and to the capture, evaluation and specification of safety requirements. Analyses and documents safety validation results. Contributes to the development and maintenance of project safety assurance plans, and gathers safety assurance evidence for safety case preparation.

**Safety engineering: Level 3** Assists with the collection of safety assurance evidence, undertaking all work in accordance with agreed safety, technical and quality standards, using appropriate methods and tools. Documents the results of hazard and risk analysis activities.

## Sustainability engineering SUEN

The application of appropriate methods to assure sustainability in all phases of the life cycle of energy- or materials-consuming systems and services, including maintenance and re-use. These include such things as energy supply risk analysis, specification of materials procurement guidelines, factors influencing system design, and the verification of energy efficiency.

**Sustainability engineering: Level 6** Creates models to ensure that new systems and services are designed to achieve specified levels of sustainability and to optimise the consumption and recycling of materials. Defines and promotes best practices in sustainability.

**Sustainability engineering: Level 5** Designs systems, services and components that meet

required levels of sustainability and specific profiles of materials consumption.

**Sustainability engineering: Level 4** Investigates and recommends components and subsystems that meet sustainability criteria.

## Information content authoring INCA

The planning, design and creation of textual information, supported where necessary by graphical content. This material may be delivered electronically (for example, as collections of web pages) or otherwise. This skill includes managing the quality assurance and authoring processes for the material being produced.

### Information content authoring: Level 6

Manages documentation projects, ensuring that adequate procedures, standards, tools and resources are in place and implemented to ensure the appropriate quality of material developed by document content creators within the organisation. Manages relationships with stakeholders, ensuring that they receive the information that they need. Manages reviews of draft material.

### Information content authoring: Level 5

Designs overall support information package plans. Manages small teams of authors, ensuring that they are aware of and work to relevant standards. Advises on appropriate documentation formats and documentation systems to satisfy requirements. Organises reviews of draft material.

### Information content authoring: Level 4

Determines the documentation needs of users. Designs individual documentation plans. Creates drafts for review of information format and content. Organises the production and distribution of approved documentation items. Designs the content and appearance of complex information deliverables (e.g. web pages) in collaboration with clients/users. Creates and tests complex, well-engineered deliverables with specified content and layout. Manages the configuration of documentation items and files, within own area of responsibility.

### Information content authoring: Level 3

Liaises with clients/users to clarify details of requirements. Designs, creates and tests moderately complex, well-engineered information deliverables with specified content and layout. Manages the configuration of documentation items and files, within own area of responsibility.

### Information content authoring: Level 2

Develops a broad understanding of technical publication concepts, tools and methods and the way in which these are implemented. Develops an understanding of publication development support activities, such as information gathering, user task analysis, creating draft documentation,

and illustration, and printing and publishing. Works with colleagues and clients to create new sections of technical documentation through all stages of the publication process as support literature.

### Information content authoring: Level 1

Contributes, under instruction, to the production and distribution of documentation items, to testing the content and layout of specific deliverables, and to the configuration of documentation items and files.

## Testing TEST

Testing embraces the planning, design, management, execution and reporting of tests, using appropriate testing tools and techniques and conforming to agreed process standards and industry specific regulations. The purpose of testing is to ensure that new and amended systems, configurations, packages, or services, together with any interfaces, perform as specified, and that the risks associated with deployment are adequately understood and documented. Testing includes the process of engineering, using and maintaining testware (test cases, test scripts, test reports, test plans, etc) to measure and improve the quality of the software being tested.

**Testing: Level 6** Determines testing policy, and owns the supporting processes. Takes responsibility for the management of all testing activities within a development or integration project or programme. Manages all risks associated with the testing and takes preventative action when any risks become unacceptable. Assesses and advises on the practicality of testing process alternatives. Initiates improvements to test processes and directs their implementation. Assesses suppliers' development and testing capabilities. Determines project testing standards for all phases, influencing all parties to conform to those standards. Manages client relationships with respect to all testing matters.

**Testing: Level 5** Coordinates and manages planning of the system and/or acceptance tests within a development or integration project or programme. Takes responsibility for integrity of testing and acceptance activities and coordinates the execution of these activities. Provides authoritative advice and guidance on any aspect of test planning and execution. Defines and communicates the test strategy for the project. Manages all test processes, including test plans, resources, costs, timescales, test deliverables and traceability. Manages client relationships with respect to testing matters. Identifies process improvements, and contributes to corporate testing standards and definition of best practice.

**Testing: Level 4** Accepts responsibility for creation of test cases using own in-depth technical analysis of both functional and non-functional specifications (such as reliability, efficiency,



usability, maintainability and portability). Creates traceability records, from test cases back to requirements. Produces test scripts, materials and regression test packs to test new and amended software or services. Specifies requirements for environment, data, resources and tools. Interprets, executes and documents complex test scripts using agreed methods and standards. Records and analyses actions and results, and maintains a defect register. Reviews test results and modifies tests if necessary. Provides reports on progress, anomalies, risks and issues associated with the overall project. Reports on system quality and collects metrics on test cases. Provides specialist advice to support others.

**Testing: Level 3** Reviews requirements and specifications, and defines test conditions. Designs test cases and test scripts under own direction, mapping back to pre-determined criteria, recording and reporting outcomes. Analyses and reports test activities and results. Identifies and reports issues and risks associated with own work.

**Testing: Level 2** Defines test conditions for given requirements. Designs test cases and creates test scripts and supporting data, working to the specifications provided. Interprets, executes and records test cases in accordance with project test plans. Analyses and reports test activities and results. Identifies and reports issues and risks.

**Testing: Level 1** Executes given test scripts under supervision. Records results and reports issues. Develops an understanding of the role of testing within system development, as a tool for design improvement as well as a validation process.

## Human factors

### Human factors subcategory

#### User experience analysis UNAN

The establishment, clarification and communication of the user's perceptions and responses that result from the use and/or anticipated use of a product, system or service. The analysis of user experience, the characteristics of users and their tasks, and the technical, organisational and physical environment in which products or systems will operate.

**User experience analysis: Level 5** Advises on tools and methods to be used and clarifies and communicates the user experience, users' characteristics and tasks, and the technical, organisational and physical environment in which products or systems will operate.

**User experience analysis: Level 4** Selects and uses tools and methods to establish, clarify and communicate the user experience, users' characteristics and tasks, and identifies the technical, organisational and physical environment in which complex products or systems will operate.

**User experience analysis: Level 3** Applies tools and methods to identify the user experience, users characteristics and tasks, and the technical, organisational and physical environment in which the product or system will operate.

#### Ergonomic design HCEV

The iterative development of user tasks, interaction and interfaces to meet user requirements, considering the whole user experience. Refining the design solutions in response to user-centred evaluation and feedback and communicating the design to those responsible for implementation.

**Ergonomic design: Level 6** Is responsible for organisational commitment to high standards in human factors. Specifies ergonomics standards and methods to meet organisational objectives.

**Ergonomic design: Level 5** Advises which ergonomics tools and methods to use in order to develop users' tasks, interaction and interfaces to meet the users' requirements. In some cases this includes design of the working environment and users' jobs.

**Ergonomic design: Level 4** Specifies how to use ergonomics tools and methods to develop users' tasks, interaction and interfaces to meet the users' requirements.

**Ergonomic design: Level 3** Applies ergonomics tools and methods to develop users' tasks, interaction and interfaces to meet users' requirements.

#### User experience evaluation USEV

Assessment of effectiveness, efficiency, user satisfaction, health and safety, and accessibility to measure or improve the usability of new or existing products or services (including prototypes). Methods include user trials, expert review, survey, and analysis.

**User experience evaluation: Level 5** Advises on what to evaluate and type of evaluation. Ensures that the results of evaluations are understood by system developers.

**User experience evaluation: Level 4** Plans and performs all types of evaluation. Interprets and presents the results of evaluations.

**User experience evaluation: Level 3** Performs, analyses and documents evaluations according to a plan, excluding expert reviews.

**User experience evaluation: Level 2** Assists in the preparations for evaluations and in the operation of the test environment. Maintains the test environment.

#### Human factors integration HFIN

Achievement of optimum levels of product or service usability, by ensuring that project and enterprise activities take account of the user experience.

**Human factors integration: Level 7** Acts to influence the perception of the organisation, in relation to ergonomics, and the user experience of deployed IT products and systems, and to ensure that this is addressed in future design.

**Human factors integration: Level 6** Is responsible for organisational commitment to high standards in all aspects of the interaction between users and deployed technology - the user experience. Specifies ergonomics standards and methods to meet organisational objectives.

**Human factors integration: Level 5** Advises on achievement of usability (including health and safety and accessibility) for IT products and services.



## Installation and integration

### Installation and integration subcategory

#### Systems integration SINT

The incremental and logical integration and testing of components and/or subsystems and their interfaces in order to create operational services.

**Systems integration: Level 6** Establishes standards and procedures across the IT service lifecycle (including the development lifecycle) in the areas of systems integration and testing and ensures that practitioners adhere to them. Manages resources to ensure that the systems integration function operates effectively.

**Systems integration: Level 5** Designs and builds integration components and interfaces. Leads practical integration work under the technical direction of the system /service designer. May contribute to the overall design of the service. May define the technical criteria for product/component selection. Contributes to decisions about tools, methods and approaches.

**Systems integration: Level 4** Defines the integration build, accepts software modules from software developers, and produces software builds for loading onto the target environment. Configures the hardware environment, produces integration test specifications, and conducts tests, recording details of any failures and carrying out fault diagnosis.

**Systems integration: Level 3** Defines the integration build and produces a build definition for generation of the software. Accepts software modules from software developers, and produces software builds for loading onto the target hardware from software source code. Configures the hardware environment, produces integration test specifications, conducts tests and records the details of any failures. Carries out and reports fault diagnosis relating to moderately complex problems.

**Systems integration: Level 2** Produces software builds from software source code. Conducts tests as defined in an integration test specification, records the details of any failures, and carries out fault diagnosis relating to simple failures, reporting the results of the diagnosis in a clear and concise manner.

#### Porting/software integration PORT

The integration of software products into existing software environments to produce new platform-specific versions of the software products.

##### Porting/software integration: Level 6

Ensures the availability of hardware, software, and resources for the systems testing of platform-specific versions of one or more software products. Defines configurations required for

testing with reference to agreed testing standards. Evaluates new developments in the organisation and the industry and advises senior management on potential growth, problem areas and resourcing needs. Ensures adherence to agreed standards and good practice.

**Porting/software integration: Level 5** Leads a team, providing expert technical knowledge in the systems testing of platform-specific versions of the software products, on varying platforms. Provides specialist guidance information to support, systems testing and quality assurance functions to assist in improving procedures.

**Porting/software integration: Level 4** Configures software and equipment and tests platform-specific versions of one or more software products. Reports the outcome of testing and identifies potential improvements to the process and to the software products according to agreed designs and standards.

**Porting/software integration: Level 3** Assists in the configuration of software and equipment and the systems testing of platform-specific versions of one or more software products. Documents faults, implements resolutions and retests to agreed standards.

#### Systems installation/decommissioning HSIN

The installation, testing, implementation or decommissioning and removal of cabling, wiring, equipment, hardware and appropriate software, following plans and instructions and in accordance with agreed standards. The testing of hardware and software components, resolving malfunctions found and recording the results. The reporting of details of hardware and software installed so that configuration management records can be updated.

**Systems installation/decommissioning: Level 5** Takes responsibility for installation projects, providing effective team leadership, including information flow to and from the customer during project work. Develops and implements quality plans and method statements. Monitors the effectiveness of installations and ensures that appropriate recommendations for change are made.

**Systems installation/decommissioning: Level 4** Undertakes routine installations and de-installations of items of hardware and/or software. Takes action to ensure targets are met within established safety and quality procedures, including, where appropriate, handover to the client. Conducts tests of hardware and/or software using supplied test procedures and diagnostic tools. Corrects malfunctions, calling on other experienced colleagues and external resources if required. Documents details of all hardware/software items that have been installed and removed so that configuration

management records can be updated. Develops installation procedures and standards, and schedules installation work. Provides specialist guidance and advice to less experienced colleagues to ensure best use is made of available assets, and to maintain or improve the installation service.

##### Systems installation/decommissioning: Level 3

Installs or removes hardware and/or software, using supplied installation instructions and tools including, where appropriate, handover to the client. Conducts tests, corrects malfunctions, and documents results in accordance with agreed procedures. Reports details of all hardware/software items that have been installed and removed so that configuration management records can be updated. Provides assistance to users in a professional manner following agreed procedures for further help or escalation. Maintains accurate records of user requests, contact details and outcomes. Contributes to the development of installation procedures and standards.

##### Systems installation/decommissioning: Level 2

Installs or removes hardware and/or software, and associated connections, using supplied installation instructions and tools. Conducts tests and corrects malfunctions, calling on help from more experienced colleagues if required. Documents results in accordance with agreed procedures. Assists with the evaluation of change requests. Contributes, as required, to investigations of problems and faults concerning the installation of hardware and/or software and confirms the correct working of installations.

##### Systems installation/decommissioning: Level 1

Following agreed procedures, performs simple installations, replaces consumable items, checks correct working of installations, and documents and reports on work done.

## Service management

### Service management category

## Service strategy

### Service strategy subcategory

#### IT management ITMG

The management of the IT infrastructure and resources required to plan for, develop, deliver and support IT services and products to meet the needs of a business. The preparation for new or changed services, management of the change process and the maintenance of regulatory, legal and professional standards. The management of performance of systems and services in terms of their contribution to business performance and their financial costs and sustainability. The management of bought-in services. The development of continual service improvement plans to ensure the IT infrastructure adequately supports business needs.

**IT management: Level 7** Sets strategy for management of resources, including corporate telecommunications functions, and promotes the opportunities that technology presents to the employing organisation, including the feasibility of change and its likely impact upon the business. Authorises allocation of resources for the planning, development and delivery of all information systems services and products. Responsible for IT governance. Authorises organisational policies governing the conduct of management of change initiatives and standards of professional conduct. Maintains an overview of the contribution of programmes to organisational success. Inspires creativity and flexibility in the management and application of IT. Sets strategy for monitoring and managing the performance of IT-related systems and services, in respect of their contribution to business performance and benefits to the business.

**IT management: Level 6** Identifies and manages resources needed for the planning, development and delivery of specified information and communications systems services (including data, voice, text, audio and images). Influences senior level customers and project teams through change management initiatives, ensuring that the infrastructure is managed to provide agreed levels of service and data integrity. Takes full responsibility for budgeting, estimating, planning and objective setting. Plans and manages implementation of processes and procedures, tools and techniques for monitoring and managing the performance of automated systems and services, in respect of their contribution to business performance and benefits to the business, where the measure of success depends on achieving clearly stated business/financial goals and performance targets. Monitors performance and takes corrective action where necessary.

**IT management: Level 5** Takes responsibility for the design, procurement, installation, upgrading, operation, control, maintenance (including

storage and communication of data, voice, text, audio and images) and effective use of IT infrastructure components and monitors their performance. Provides technical management of an IT operation, ensuring that agreed service levels are met and all relevant procedures are adhered to. Schedules and supervises all maintenance and installation work. Ensures that operational problems are identified and resolved. Provides appropriate status and other reports to specialists, users and managers. Ensures that operational procedures and working practices are fit for purpose and current.

#### Financial management for IT FMIT

The overall financial management, control and stewardship of the IT assets and resources used in the provision of IT services, including the identification of materials and energy costs, ensuring compliance with all governance, legal and regulatory requirements.

**Financial management for IT: Level 6** Sets strategy and develops plans, policies and processes for the accounting, budgeting and, where applicable, charging of IT resources and services, including the definition of cost models and charging models. Sets, negotiates, agrees and manages all financial budgets and targets, ensuring that there is adequate funding for all IT targets and plans, especially to meet development and capacity needs.

**Financial management for IT: Level 5** Monitors and manages IT expenditure, ensuring that all IT financial targets are met, and examining any areas where budgets and expenditure exceed their agreed tolerances. Assists with the definition and operation of effective financial control and decision making, especially in the areas of service, projects and component cost models and the allocation and apportionment of all incurred IT costs.

**Financial management for IT: Level 4** Monitors and maintains all required financial records for compliance and audit to all agreed requirements. Assists all other areas of IT with their financial tasks, especially in the areas of identification of process, service, project and component costs and the calculation and subsequent reduction of all IT service, project, component and process failures.

## Service design

### Service design subcategory

#### Capacity management CPMG

The management of the capability, functionality and sustainability of service components (including hardware, software and network) to meet current and forecast needs in a cost effective manner. This includes dealing with both long-term changes and short-term variations in the level of demand, and deployment, where appropriate, of techniques to modify demand for a particular resource or service.

**Capacity management: Level 6** Develops strategies to ensure all the performance measures of all IT services meet the needs of the business and of any service requirements or service level agreements which may be in place. Ensures that the policy and standards for capacity management are fit for purpose, current and are correctly implemented. Reviews new business proposals and provides specialist advice on capacity and demand issues.

**Capacity management: Level 5** Drafts and maintains policy, standards and procedures for service component capacity management. Ensures the correct implementation of standards and procedures. Reviews information in conjunction with service level agreements to identify any capacity issues and specifies any required changes. Works with business users to agree and implement short and medium term modifications to demand

**Capacity management: Level 4** Monitors service component capacity and initiates actions to resolve any shortfalls according to agreed procedures. Applies techniques to modify demand for a particular resource or service.

#### Availability management AVMT

The definition, analysis, planning, measurement and improvement of all aspects of the availability of IT services, including the availability of power. The overall control and management of service availability to ensure that the level of service delivered in all services is matched to or exceeds the current and future agreed needs of the business, in a cost effective manner.

**Availability management: Level 6** Sets strategy and develops plans, policies and processes for the design, monitoring, measurement, reporting and continuous improvement of service and component availability, including the development and implementation of new availability techniques and methods.

**Availability management: Level 5** Provides advice, assistance and leadership associated with the planning, design and improvement of service and component availability, including the investigation of all breaches of availability targets

and service non-availability, with the instigation of remedial activities. Plans arrangements for disaster recovery together with supporting processes and manages the testing of such plans.

**Availability management: Level 4** Contributes to the availability management process and its operation and performs defined availability management tasks. Analyses service and component availability, reliability, maintainability and serviceability. Ensures that services and components meet and continue to meet all of their agreed performance targets and service levels. Implements arrangements for disaster recovery and documents recovery procedures. Conducts testing of recovery procedures.

#### Service level management SLMO

The planning, implementation, control, review and audit of service provision, to meet customer business requirements. This includes negotiation, implementation and monitoring of service level agreements, and the ongoing management of operational facilities to provide the agreed levels of service, seeking continually and proactively to improve service delivery and sustainability targets.

**Service level management: Level 7** Sets strategies for service delivery that support the strategic needs of the client organisation. Authorises allocation of resources for monitoring service delivery arrangements. Provides leadership within the industry on the identification of future trends (e.g. technical, market, industrial, socio-economic, legislative). Develops relationships with customers at the highest level to identify potential areas of mutual commercial interest for future development, maintains an overview of the contribution of service delivery arrangements to organisational success.

**Service level management: Level 6** Ensures that a catalogue of available services is created and maintained and that service level agreements are complete and cost effective. Ensures that service delivery is monitored effectively and that identified actions to maintain or improve levels of service are implemented. Ensures that operational methods, procedures, facilities and tools are established, reviewed and maintained. Negotiates with relevant parties in respect of disruptions and major amendments to the provision of services. Reviews service delivery to ensure that agreed targets are met and prepares proposals to meet forecast changes in the level or type of service.

**Service level management: Level 5** Ensures that service delivery meets agreed service levels. Creates and maintains a catalogue of available services. In consultation with the customer negotiates service level requirements and agrees service levels. Diagnoses service delivery problems and initiates actions to maintain or improve levels of service. Establishes and maintains oper-

ational methods, procedures and facilities in assigned area of responsibility and reviews them regularly for effectiveness and efficiency.

**Service level management: Level 4** Performs defined tasks to monitor service delivery against service level agreements and maintains records of relevant information. Analyses service records against agreed service levels regularly to identify actions required to maintain or improve levels of service, and initiates or reports these actions.

**Service level management: Level 3** Monitors service delivery performance metrics and liaises with managers and customers to ensure that service level agreements are not breached without the stakeholders being given the opportunity of planning for a deterioration in service.

**Service level management: Level 2** Monitors and logs the actual service provided, compared to that required by service level agreements.



## Service transition

### Service transition subcategory

#### Service acceptance SEAC

The achievement of formal confirmation that acceptance criteria have been met, and that the service provider is ready to operate the new service when it has been deployed. (Acceptance criteria are used to ensure that a service meets the defined requirements, including functionality, operational support and quality requirements).

**Service acceptance - Level 6** Owns the transition process, develops the organisation's approach and defines the acceptance criteria for service transition. Promotes and monitors project quality outputs to ensure they are fit for purpose and fit for use within operational service.

Actively engages with technical design and project managers to promote awareness and compliance with service transition quality plans and processes. Agrees the service acceptance criteria with project/programme managers.

**Service acceptance - Level 5** Engages with technical design and project managers or Project Management Office, to ensure correct products are produced, in a timely fashion. Evaluates the quality of project outputs against agreed acceptance criteria.

**Service acceptance - Level 4** Engages with project management to confirm that products developed meet the acceptance criteria and are to the required standard. Feeds into change management processes.

#### Configuration management CFMG

The lifecycle planning, control and management of the assets of an organisation (such as documentation, software and service assets, including information relating to those assets and their relationships. This involves identification, classification and specification of all configuration items (CIs) and the interfaces to other processes and data. Required information relates to storage, access, service relationships, versions, problem reporting and change control of CIs. The application of status accounting and auditing, often in line with acknowledged external criteria such as ISO 9000 and ISO/IEC 20000, throughout all stages of the CI lifecycle, including the early stages of system development.

**Configuration management: Level 6** Manages the organisation's configuration management system and champions the business value and company policies for the configuration management system. Ensures that processes are in place for consistent classification and management of CIs, and for verification and audit of configuration records. Contributes strongly to the business

service knowledge management system.

Manages the research and development of tools, processes and techniques.

**Configuration management: Level 5** Manages configuration items (CIs) and related information. Investigates and implements tools, techniques and processes for managing CIs and verifies that related information is complete, current and accurate.

**Configuration management: Level 4** Manages configuration items (CIs) and related information. Applies and maintains tools, techniques and processes for identification, classification and control of CIs and ensuring related information is complete, current and accurate.

**Configuration management: Level 3** Administers configuration items (CIs) and related information. Applies tools, techniques and processes for administering CIs and related information, ensuring protection of assets and components from unauthorised change, diversion and inappropriate use.

**Configuration management: Level 2** Applies tools, techniques and processes for administering information (such as the tracking and logging of components and changes) related to configuration items.

#### Asset management ASMG

The management of the lifecycle for service assets (hardware, software, intellectual property, licences, warranties etc) including inventory, compliance, usage and disposal, aiming to optimise the total cost of ownership and sustainability by minimising operating costs, improving investment decisions and capitalising on potential opportunities. Knowledge and use of international standards for software asset management and close integration with change and configuration management are examples of enhanced asset management development.

**Asset management: Level 6** Promotes the continuing economic and effective provision of services, ensuring that all changes to assets and services are appropriately and accurately controlled and recorded. Provides information and advice on issues such as maintenance of hardware assets, licensing of software, protection of intellectual property, and legal obligations. Promotes awareness of and commitment to asset control, ensuring that consequences of decisions to obtain, change or continue the possession or use of an asset, system or service are appropriately understood.

**Asset management: Level 5** Manages and maintains the service compliance of all IT and service assets in line with business and regulatory requirements involving knowledge of financial and technical processes, tools and techniques thereby ensuring asset controllers, infrastructure teams and the business co-ordi-

nate and maximise value, maintain control and ensure any necessary legal compliance.

**Asset management: Level 4** Controls IT assets in one or more significant areas, ensuring that administration of the acquisition, storage, distribution, movement and disposal of assets is carried out. Produces and analyses registers and histories of authorised assets (including secure master copies of software, documentation, data, licenses and agreements for supply, warranty and maintenance), and verifies that all these assets are in a known state and location. Ensures that there are no unauthorised assets such as unlicensed copies of software.

#### Change management CHMG

The management of change to the service infrastructure including service assets, configuration items and associated documentation, be it via request for change (RFC), emergency changes, incidents or problems, providing effective control and treatment of risk to the availability, performance, security and compliance of the business services impacted.

**Change management: Level 6** Sets the organisation's policy for the management of change in live services and test environments, and ensures that the policy is reflected in practice.

**Change management: Level 5** Develops implementation plans for dealing with more complex requests for change, evaluates risks to integrity of infrastructure inherent in proposed implementations, seeks authority for those activities, reviews the effectiveness of change implementation, suggests improvement to organisational procedures governing change management. Leads the assessment, analysis, development, documentation and implementation of changes based on requests for change.

**Change management: Level 4** Assesses, analyses, develops, documents and implements changes based on requests for change.

**Change management: Level 3** Develops, documents and implements changes based on requests for change. Applies change control procedures.

**Change management: Level 2**

Documents changes based on requests for change. Applies change control procedures.

#### Release and deployment RELM

The management of the processes, systems and functions to package, build, test and deploy changes and updates (which are bounded as "releases") into a live environment, establishing or continuing the specified Service, to enable controlled and effective handover to Operations and the user community.

**Release and deployment: Level 6** Sets the release policy for the organisation in the context of both development and production/operations. Ensures that management processes, tools, techniques and personnel are in place to ensure that the transition of services, service components and packages are planned and compliant and that test and validation and configuration management are partnered in all release and deployment activities. Provides authorisation for critical release activity and point of escalation.

**Release and deployment: Level 5** Leads the assessment, analysis, planning and design of release packages, including assessment of risk. Liaises with business and IT partners on release scheduling and communication of progress. Conducts post release reviews. Ensures release processes and procedures are applied.

**Release and deployment: Level 4** Assesses and analyses release components. Provides input to scheduling. Carries out the builds and tests in coordination with testers and component specialists maintaining and administering the tools and methods – manual or automatic – and ensuring, where possible, information exchange with configuration management. Ensures release processes and procedures are maintained.

**Release and deployment: Level 3** Uses the tools and techniques for specific areas of release and deployment activities. Administers the recording of activities, logging of results and documents technical activity undertaken. May carry out early life support activities such as providing support advice to initial users.

## Service operation

### Service operation subcategory

#### System software SYSP

The provision of specialist expertise to facilitate and execute the installation and maintenance of system software such as operating systems, data management products, office automation products and other utility software.

**System software: Level 5** Evaluates new system software, reviews system software updates and identifies those that merit action. Ensures that system software is tailored to facilitate the achievement of service objectives. Plans the installation and testing of new versions of system software. Investigates and coordinates the resolution of potential and actual service problems. Ensures that operational documentation for system software is fit for purpose and current. Advises on the correct and effective use of system software.

**System software: Level 4** Reviews system software updates and identifies those that merit action. Tailors system software to maximise hardware functionality. Installs and tests new versions of system software. Investigates and coordinates the resolution of potential and actual service problems. Prepares and maintains operational documentation for system software. Advises on the correct and effective use of system software.

**System software: Level 3** Uses system management software and tools to collect agreed performance statistics. Carries out agreed system software maintenance tasks.

#### Security administration SCAD

The authorisation and monitoring of access to IT facilities or infrastructure in accordance with established organisational policy. Includes investigation of unauthorised access, compliance with relevant legislation and the performance of other administrative duties relating to security management.

**Security administration: Level 6** Develops strategies for ensuring both the physical and electronic security of automated systems. Ensures that the policy and standards for security are fit for purpose, current and are correctly implemented. Reviews new business proposals and provides specialist advice on security issues and implications.

**Security administration: Level 5** Drafts and maintains the policy, standards, procedures and documentation for security. Monitors the application and compliance of security operations procedures and reviews information systems for actual or potential breaches in security. Ensures that all identified breaches in security are promptly and thoroughly investigated. Ensures that any system changes required to maintain

security are implemented. Ensures that security records are accurate and complete.

**Security administration: Level 4** Investigates identified security breaches in accordance with established procedures and recommends any required actions. Assists users in defining their access rights and privileges, and administers logical access controls and security systems. Maintains security records and documentation.

**Security administration: Level 3** Investigates minor security breaches in accordance with established procedures. Assists users in defining their access rights and privileges, and operates agreed logical access controls and security systems. Maintains agreed security records and documentation.

#### Radio frequency engineering RFEN

The deployment, integration, calibration, tuning and maintenance of radio frequency (RF) and analogue elements of IT systems.

**Radio frequency engineering: Level 6** Specifies radio frequency equipment performance requirements and sets maintenance policy.

**Radio frequency engineering: Level 5** Develops maintenance schedules and procedures. Approves equipment upgrades and modifications. Monitors system performance, recommends equipment modifications and changes to operating procedures, servicing methods and schedules.

**Radio frequency engineering: Level 4** Investigates and resolves system-wide fault conditions using a wide range of diagnostic tools and techniques. Reconfigures equipment to circumvent temporary outages.

#### Radio frequency engineering: Level 3

Deploys, sets up, tunes and calibrates radio frequency/analogue elements following maintenance schedules and using appropriate tools and test equipment. Incorporates hardware/firmware modifications. Interprets automatic fault/performance indications and resolves faults down to discrete component level or escalates according to given procedures.

**Radio frequency engineering: Level 2** Assists with setting up, tuning and functional checks of radio frequency/analogue elements. Resolves faults down to line replaceable unit (LRU) level or escalates according to given procedures. Carries out user confidence checks and escalates faults according to given procedures.

#### Application support ASUP

The provision of application maintenance and support services, either directly to users of the systems or to service delivery functions. Support typically includes investigation and resolution of issues and may also include performance



monitoring. Issues may be resolved by providing advice or training to users, by devising corrections (permanent or temporary) for faults, making general or site-specific modifications, updating documentation, manipulating data, or defining enhancements. Support often involves close collaboration with the system's developers and/or with colleagues specialising in different areas, such as Database administration or Network support.

**Application support: Level 5** Drafts and maintains procedures and documentation for applications support. Manages application enhancements to improve business performance. Ensures that all requests for support are dealt with according to set standards and procedures.

**Application support: Level 4** Maintains application support processes, and checks that all requests for support are dealt with according to agreed procedures. Uses application management software and tools to investigate issues, collect performance statistics and create reports.

**Application support: Level 3** Identifies and resolves issues with applications, following agreed procedures. Uses application management software and tools to collect agreed performance statistics. Carries out agreed applications maintenance tasks.

**Application support: Level 2** Assists in the investigation and resolution of issues relating to applications. Assists with specified maintenance procedures.

## IT Operations ITOP

The operation and control of the IT infrastructure (typically hardware, software, data stored on various media, and all equipment within wide and local area networks) required to deliver and support IT services and products to meet the needs of a business. Includes preparation for new or changed services, operation of the change process, the maintenance of regulatory, legal and professional standards, and the monitoring of performance of systems and services in relation to their contribution to business performance, their security and their sustainability.

**IT Operations: Level 4** Provides technical expertise to enable the correct application of operational procedures. Uses network management tools to determine network load and performance statistics. Contributes to the planning and implementation of maintenance and installation work. Implements agreed network changes and maintenance routines. Identifies operational problems and contributes to their resolution, checking that they are managed in accordance with agreed standards and procedures. Provides reports and proposals for improvement to specialists, users and managers.

**IT Operations: Level 3** Carries out agreed operational procedures, including network configuration, installation and maintenance. Uses network management tools to collect and report on network load and performance statistics. Contributes to the implementation of maintenance and installation work. Uses standard procedures and tools to carry out defined system backups, restoring data where necessary. Identifies operational problems and contributes to their resolution.

**IT Operations: Level 2** Carries out agreed operational procedures of a routine nature. Contributes to maintenance, installation and problem resolution.

**IT Operations: Level 1** Contributes, under instruction, to system operation.

## Database administration DBAD

The installation, configuration, upgrade, administration, monitoring and maintenance of physical databases.

**Database administration: Level 5** Drafts and maintains procedures and documentation for databases. Manages database configuration including installing and upgrading software and maintaining relevant documentation. Contributes to the setting of standards for database objects and ensures conformance to these standards. Monitors database activity and resource usage. Optimises database performance and plans for forecast resource needs.

**Database administration: Level 4** Uses database management system software and tools to investigate problems and collect performance statistics and create reports. Carries out routine configuration/installation and reconfiguration of database and related products.

**Database administration: Level 3** Uses database management system software and tools to collect agreed performance statistics. Carries out agreed database maintenance and administration tasks.

**Database administration: Level 2** Assists in database support activities.

## Storage management STMG

The planning, implementation, configuration and tuning of storage hardware and software, covering online storage (Storage Area network, Networked-Attached Storage, Direct Attached Storage), offline storage (backup, archiving), remote and offsite data storage (disaster recovery). Also incorporates storage techniques such as tiered or hierarchical storage, data de-duplication, storage virtualisation, optimisation, quota management, future capacity planning, and compliance with data retention and data protection regulations.

**Storage management Level 6** Develops strategies for managing storage and data based on level of criticality of information, managing compliance with regulatory and security requirements. Drafts and maintains policies and standards for the corporate data management practice and align storage investments and data management policies to meet the business goals based on the information value, classification of data the Recovery Point Objective and Recovery Time Objective.

**Storage management Level 5** Manages the storage and backup systems to provide agreed service levels. Responsible for creating, improving, and supporting quality IT services with optimal utilisation of storage resources, ensuring Data Security, Availability and integrity of business data. Drafts standards, procedures & guidelines for implementing data protection and disaster recovery functionality for all business applications and business data using different online and offline storage devices.

**Storage management Level 4** Reviews capacity, performance, availability and other operational metrics and take appropriate action to ensure corrective and proactive maintenance of storage and backup systems to support the requirement to protect business information. Creates reports and proposals for improvement and contributes to the planning and implementation of new installations and scheduled maintenance and changes within the system. Prepares and maintains operational procedures and provides technical expertise and appropriate information to the management.

**Storage management Level 3** Performs regular high-performance, scalable backups and restores on a schedule and tracks offsite storage. Carries out documented configuration for allocation of storage, installation & maintenance of storage system as per the agreed operational procedure. Identifies operational problems and contributes to their resolution. Uses standard management and reporting tools to collect and report on storage utilisation, performance and backup statistics.

## Network support NTAS

The provision of network maintenance and support services. Support may be provided both to users of the systems and to service delivery functions. Support typically takes the form of investigating and resolving problems and providing information about the systems. It may also include monitoring their performance. Problems may be resolved by providing advice or training to users about the network's functionality, correct operation or constraints, by devising work-arounds, correcting faults, or making general or site-specific modifications.

**Network support: Level 5** Drafts and maintains procedures and documentation for network

support. Makes a significant contribution to the investigation, diagnosis and resolution of network problems. Ensures that all requests for support are dealt with according to set standards and procedures.

**Network support: Level 4** Maintains the network support process and checks that all requests for support are dealt with according to agreed procedures. Uses network management software and tools to investigate and diagnose network problems, collect performance statistics and create reports, working with users, other staff and suppliers as appropriate.

**Network support: Level 3** Identifies and resolves network problems following agreed procedures. Uses network management software and tools to collect agreed performance statistics. Carries out agreed network maintenance tasks.

**Network support: Level 2** Assists in investigation and resolution of network problems. Assists with specified maintenance procedures.

## Problem management PBMG

The resolution (both reactive and proactive) of problems throughout the information system lifecycle, including classification, prioritisation and initiation of action, documentation of root causes and implementation of remedies to prevent future incidents.

**Problem management: Level 5** Ensures that appropriate action is taken to anticipate, investigate and resolve problems in systems and services. Ensures that such problems are fully documented within the relevant reporting system(s). Coordinates the implementation of agreed remedies and preventative measures. Analyses patterns and trends.

**Problem management: Level 4** Initiates and monitors actions to investigate and resolve problems in systems and services. Assists with the implementation of agreed remedies and preventative measures.

**Problem management: Level 3** Investigates problems in systems and services. Assists with the implementation of agreed remedies and preventative measures.

## Service desk and incident management USUP

The processing and coordination of appropriate and timely responses to incident reports, including channelling requests for help to appropriate functions for resolution, monitoring resolution activity, and keeping clients apprised of progress towards service restoration.

**Service desk and incident management:**

**Level 5** Ensures that the inventory of components to be supported is complete and current.

Drafts and maintains policy, standards and procedures for the service desk and incident management. Schedules the work of service desk staff to meet agreed service levels.

**Service desk and incident management:**

**Level 4** Ensures that incidents and requests are handled according to agreed procedures.

Ensures that documentation of the supported components is available and in an appropriate form for those providing support. Creates and maintains support documentation.

**Service desk and incident management:**

**Level 3** Receives and handles requests for support following agreed procedures. Responds to requests for support by providing information to enable incident resolution and promptly allocates unresolved calls as appropriate. Maintains records and advises relevant persons of actions taken.

**Service desk and incident management:**

**Level 2** Receives and handles requests for support following agreed procedures. Responds to common requests for support by providing information to enable resolution and promptly allocates unresolved calls as appropriate. Maintains records and advises relevant persons of actions taken.

**Service desk and incident management:**

**Level 1** Receives and handles requests for support following agreed procedures. Promptly allocates calls as appropriate. Maintains relevant records.

## IT estate management DCMA

The planning, control and management of all the facilities which, collectively, make up the IT estate. This involves provision and management of the physical environment, including space and power allocation, and environmental monitoring to provide statistics on energy usage. Encompasses physical access control, and adherence to all mandatory policies and regulations concerning health and safety at work.

**IT estate management - Level 6** Sets the organisational policy for the management of the IT estate and ensures that policy is reflected using best practice. Develops strategies to ensure future requirements for data centre space can be forecast and fulfilled. Takes overall responsibility for adherence to health & safety regulations and electrical safety policy. Seeks out and ensures use of industry best practice to ensure future plans are aligned to meet corporate sustainability targets.

**IT estate management - Level 5** Develops and maintains the standards, processes and documentation for data centres. Optimises efficiency in population of data centre space. Ensures adherence to all relevant policies and processes. Uses data centre management tools to plan, record and manage the types of infrastructure

installed and the associated power, space and cooling capabilities, usage and actions to meet corporate sustainability targets.

**IT estate management - Level 4** Uses data centre management tools to produce management information on power, cooling and space and investigate issues where necessary. Carries out routine audit and checks to ensure adherence to policies and procedures. Facilitates the implementation of mandatory electrical safety testing.

**IT estate management - Level 3**

Monitors compliance against agreed processes and investigates, assesses and resolves incidents of non-compliance, escalating where necessary. Grants users required physical accesses and monitors and reports on overall access control.

## Procurement & management support

Procurement & management support category

## Supply management

### Supply management subcategory

#### Procurement PROC

The management of, and the provision of policies, internal standards and advice on the procurement of goods and services.

**Procurement: Level 7** Determines procurement policies for the organisation, including "build or buy" criteria. Determines organisation's policy and procedures covering the selection of suppliers, tendering and procurement. Is responsible for deployment and review of acquisition processes and for negotiating major contracts.

**Procurement: Level 6** Establishes procurement strategy, standards, methods, processes and management practices that ensure compliance with legislation and regulation. Puts in place services that support the business by providing for cost-effective procurement of products and services. Reviews and influences terms and conditions to ensure alignment with current legislation and policies. Leads the procurement process, from clarifying requirements through to placing, monitoring and terminating contracts. Identifies and implements opportunities for business improvement.

**Procurement: Level 5** Undertakes strategic analysis, including research into suppliers, markets and product and service categories, to inform and develop commercial strategy and sourcing plans. Advises on policy and procedures covering the selection of suppliers, tendering, and procurement. Leads procurements, managing cross-functional teams as required. Clarifies specifications for key products and services. Ensures that suppliers are approved in accordance with organisation's procedures. Typically as part of a wider commercial and legal team, applies commercial strategy and relevant procurement and intellectual property law and assists with negotiations with preferred suppliers, drafting contracts and technical schedules, and developing acceptance procedures and criteria. Manages the tender, evaluation and acquisition process with expert assistance as required and places contracts.

**Procurement: Level 4** Organises requirements into appropriate categories. Advises on different procurement routes to acquire services and products. Gathers information and uses appropriate techniques to assess benefits and options and make decisions about the most appropriate route of procurement e.g., open market or collaborative framework. Uses knowledge of supplier markets to inform specifications. Evaluates and selects suppliers based on the specification and evaluation criteria. Adapts terms and conditions to reflect the scale of the requirement and encourage good performance. Collects and collates data to support collaboration.

## Supplier relationship management

### SURE

On behalf of a client organisation, the identification and management of external suppliers to ensure successful delivery of products and services required by the business.

#### Supplier relationship management: Level 7

Determines overall supplier management strategy, embracing effective management and operational relationships at all levels. Establishes a framework to monitor the service provided and ensure value for money over the lifetime of the contract. Puts in place and has overall responsibility for conformance to legislation; supply chain management; commercial governance; policies for selection of suppliers and benchmarking their performance. Represents the company in any serious disputes involving suppliers.

#### Supplier relationship management: Level 6

Influences policy and procedures covering the selection of suppliers, tendering and procurement, promoting good practice in third party management with respect to information security. Deploys highly developed commercial skills to identify external partners, engaging with professionals in other related disciplines (e.g. procurement specialists, lawyers) as appropriate. Is responsible for defining commercial communications, and the management and maintenance of the relationship between the organisation and the supplier. Measures the perception about how services are delivered, how this influences the performance of the supplier and their perception of own organisation's performance. Ensures that processes and tools are in place to conduct benchmarking. Conducts supplier analysis and assesses effectiveness across the supply chain. Promotes good practice with regard to third party information security.

#### Supplier relationship management: Level 5

Maintains a broad understanding of the commercial IT environment, how the organisation sources, deploys and manages external partners and when it is appropriate to use in-house resources. Develops and manages contracts with suppliers to meet key performance indicators and agreed targets, taking account of information security of third parties. Is responsible for the liaison between the organisation and designated supplier(s). Carries out benchmarking and makes use of supplier performance data to ensure that supplier performance is properly monitored and regularly reviewed. Is responsible for the management and implementation of supplier service improvement actions and programmes. May be responsible for managing a discrete IT function or service in a multi-supplier environment.



**Supplier relationship management: Level 4**

Collects performance data and investigates problems. Monitors and reports on supplier performance, customer satisfaction, and market intelligence. Resolves or escalates problems. Implements supplier service improvement actions and programmes. Monitors performance.

**Supplier relationship management: Level 3**

Acts as the routine contact point between organisation and supplier. Collects and reports on supplier performance data.

**Supplier relationship management: Level 2**

Assists in the collection and reporting on supplier performance data. Assists with the routine day to day communication between the organisation and suppliers.

**Contract management ITCM**

The overall management and control of the operation of formal contracts between own organisation and suppliers, for supply of products and services.

**Contract management Level 6** Negotiates and resolves contractual issues, including failure to meet contractual obligations. Promotes change control processes and leads variation negotiations when necessary. Champions continuous improvement programmes with suppliers, jointly developing strategies and incentives to enhance performance. Undertakes comprehensive financial evaluations. Ensures non-discriminatory behaviour and legal compliance. Ensures that lessons learned from reviews are documented and promoted with colleagues, stakeholders, and the organisation. Develops broad industry/category credentials as 'best practice' champion.

**Contract management Level 5** Oversees and measures the fulfillment of contractual obligations. Uses key performance indicators (KPIs) to monitor and challenge supplier performance and identify opportunities for continuous improvement. Develops strategies to address under-performance and compliance failures, including application of contract terms. Identifies where changes are required, evaluates the impact, and advises stakeholders about the implications and consequences for the business and/or the procurement element of programmes/projects. Negotiates variations and seeks appropriate authorisation. Actively supports and engages with experts and stakeholders to ensure continuous improvements are identified through review and benchmarking processes. Develops and implements change management protocols.

**Contract management Level 4** Sources and collects contract performance data (such as pricing and supply chain costs), and monitors performance against KPIs. Identifies and reports under-performance and develops opportunities for improvement. Monitors compliance with

Terms and Conditions and take appropriate steps to address non-compliance. Pro-actively manages risk and reward mechanisms in the contract. Monitors progress against business objectives specified in the business case. Identifies where change is required, and plans for variations. In consultation with team members, suppliers and customers, ensures that change management protocols are implemented.

**Quality and conformance****Quality management QUMG**

The application of techniques for monitoring and improvement of quality to any aspect of a function or process. The achievement of, and maintenance of compliance to, national and international standards, as appropriate, and to internal policies, including those relating to sustainability and security.

**Quality management: Level 7** Sets the quality strategy for approval and adoption by business management. Measures the extent to which the quality policy meets the organisation's needs and objectives and reviews it as necessary. Plans, resources (either directly or indirectly) and monitors the internal quality audit schedule. Defines and reviews quality and environmental systems. Ensures that adequate technology, procedures and resources are in place to support the quality system.

**Quality management: Level 6** Prioritises areas for quality and/or environmental improvement in light of the strategy, wider business objectives, results from internal and external audits, and advice from colleagues. Initiates the application of appropriate quality management techniques in these areas. Initiates improvements to processes by changing approaches and working practices, typically using recognised models. Achieves and maintains compliance against national and international standards, as appropriate. Identifies and plans systematic corrective action to reduce errors and improve the quality of the systems and services, by examination of the root causes of problems.

**Quality management: Level 5** Advises on the application of appropriate quality and/or environmental management techniques. Facilitates improvements to processes by changing approaches and working practices, typically using recognised models.

**Quality assurance QUAS**

The process of ensuring that the agreed quality standards within an organisation are adhered to and that best practice is promulgated throughout the organisation.

**Quality assurance: Level 6** Develops organisational commitment to ongoing quality and environmental improvement by ensuring that the quality assurance process is robust and is based on the best industry practice. Considers implications of emerging technological developments, economic and social trends, etc. Plans and resources periodic quality assurance audits. Conducts and/or manages audits of quality requirements, and analyses audit results, to ensure appropriate quality standards and opera-

tional definitions are in place. Prepares and delivers formal audit reports.

**Quality assurance: Level 5** Uses quality standards to review past performance and plan future activities. Conducts audits of quality requirements and produces audit reports. Monitors and reports on the outputs from the quality assurance and audit processes.

**Quality assurance: Level 4** Investigates and documents the internal control of specified aspects of automated or partly automated processes, and assesses compliance with the relevant standard.

**Quality assurance: Level 3** Uses appropriate methods and tools in the development, maintenance, control and distribution of quality and environmental standards. Makes technical changes to quality and environmental standards according to documented procedures. Distributes new and revised standards.

## Quality standards QUST

The development, maintenance, control and distribution of quality standards.

**Quality standards: Level 5** Takes responsibility for the control, update and distribution of quality standards, and advice on their use.

**Quality standards: Level 4** Controls, updates and distributes new and revised quality standards, including technical changes.

**Quality standards: Level 3** Controls, updates and distributes new and revised quality standards.

**Quality standards: Level 2** Distributes new and revised quality standards and maintains department and quality group documentation.

## Conformance review CORE

The independent assessment of the conformity of any activity, process, deliverable, product or service to the criteria of specified standards, such as ISO 27001, local standards, best practice, or other documented requirements. May relate to, for example, asset management, network security tools, firewalls and internet security, sustainability, real-time systems and application design.

**Conformance review: Level 6** Specifies organisational procedures for the internal or third-party assessment of an activity, process, product or service, against recognised criteria, such as BS EN ISO 9000/14000. Develops plans for review of technology systems, including the review of implementation and use of standards and the effectiveness of operational and process controls. May manage the review, conduct the review or manage third party reviewers. Identifies areas of risk and specifies interrogation programs. Recommends improvements in processes and control procedures. Provides advice

and guidance. Authorises the issue of formal reports to management on the extent of compliance of systems with standards, regulations and/or legislation.

**Conformance review: Level 5** Evaluates and independently appraises the internal control of automated business processes, based on investigative evidence and assessments undertaken by self or team. Ensures that independent appraisals follow agreed procedure and advises others on the review process. Provides advice to management on ways of improving the effectiveness and efficiency of their control mechanisms. Identifies and evaluates associated risks and how they can be reduced.

**Conformance review: Level 4** Plans programmes to review activities, processes, products or services. Collects, collates and examines records as part of specified testing strategies for evidence of compliance with management directives, or the identification of abnormal occurrences. Analyses evidence collated and drafts part or all of formal reports commenting on the conformance found to exist in the reviewed part of an information systems environment.

**Conformance review: Level 3** Collects and collates evidence as part of a formally conducted and planned review of activities, processes, products or services. Examines records as part of specified testing strategies for evidence of compliance with management directives, or the identification of abnormal occurrences.

## Safety assessment SFAS

The assessment of safety-related software systems to determine compliance with standards and required levels of safety integrity. This involves making professional judgements on software engineering approaches, including the suitability of design, testing, and validation and verification methods, as well as the identification and evaluation of risks and the means by which they can be reduced. The establishment, maintenance and management of an assessment framework and practices.

**Safety assessment: Level 6** Leads assessments up to IEC 61508 Safety Integrity level 4 (or equivalent standard) or participates in any level of assessment. Determines assessment methods, techniques and tools that are to be used as appropriate to the integrity levels of the assessments undertaken.

**Safety assessment: Level 5** Participates in assessments up to IEC 61508 Safety Integrity level 3 (or equivalent standard), and undertakes safety analyses on initial designs using HAZOPS, FMEA or similar methods.

## Technology audit TAUD

The independent, risk-based assessment of the adequacy and integrity of controls in information processing systems, including hardware, software solutions, information management systems, security systems and tools, and communications technologies - both web-based and physical. The structured analysis of the risks to achievement of business objectives, including the risk that the organisation fails to make effective use of new technology to improve delivery and internal effectiveness. Assessment of the extent to which effective use has been made of techniques and tools to achieve sustainability and business continuity.

**Technology audit: Level 7** Ensures that there is planned audit coverage across the organisation, and liaises with executives to ensure that this coverage is relevant and understood. Directs use of risk analysis to identify areas for in-depth review. Evaluates the effectiveness of corporate IT strategy and governance and makes recommendations for development. Agrees terms of reference for audits with clients. Plans audit cycle, and leads and manages audit function. Determines the need for and manages the effective use of additional IT experts. Reports at the most senior level on the findings, relevance and recommendations for improvement. Represents the audit function at the Audit Committee of the organisation.

**Technology audit: Level 6** Specifies organisational procedures for the assessment of an activity, process, product or service, against recognised criteria, such as ISO 27001. Develops plans for risk-based audit coverage of technology systems for inclusion in audit planning and uses experience to ensure audit coverage is sufficient to provide the business with assurance of adequacy and integrity. Leads and manages complex technical audits, managing specialists contracted to contribute highly specialised technical knowledge and experience. Identifies areas of risk and specifies interrogation programs. Recommends changes in processes and control procedures based on audit findings, including, where appropriate, the assessment of safety-related software systems to determine compliance with standards and required levels of safety integrity. Provides general and specific advice, and authorises the issue of formal reports to management on the effectiveness and efficiency of control mechanisms.

**Technology audit: Level 5** Manages risk-based audit of existing and planned technology systems. Identifies areas of risk and evaluates adequacy and effectiveness of organisation's approach to risk in use of IT. Assesses and communicates associated risks of a complex nature to middle and senior managers. Recommends changes in processes and control procedures based on audit findings. Provides general and specific advice. Collates conclusions and



recommendations, and presents audit findings to management regarding the effectiveness and efficiency of control mechanisms in information systems. Engages with providers of other IT assurance such as compliance audits, quality assurance functions and other technical specialists.

**Technology audit: Level 4** Contributes to risk-based audit of existing and planned technology systems. Identifies IT risk in detail, assesses and tests the effectiveness of control measures and prepares formal reports in order to provide independent assurance on an organisation's information security, integrity and resilience.

## Client interface

### Client interface category

## Sales and marketing

### Sales and marketing subcategory

#### Marketing MKTG

The research, analysis and stimulation of potential or existing markets for IT and related products and services, both to provide a sound basis for business development and to generate a satisfactory flow of sales enquiries.

**Marketing: Level 6** Makes strategic decisions regarding marketing plans and the planning process. Determines and oversees the overall marketing strategy for the organisation to meet its business objectives. This includes strategies for market segmentation and to attract and retain customers.

**Marketing: Level 5** Manages marketing campaigns within specified budgets to meet specified objectives. Develops and maintains successful internal and external business relationships. Manages and monitors market research, analysis and the marketing planning process. Takes overall responsibility for the production of marketing materials and staging of events. Finds innovative solutions to marketing problems. Uses experience to make informed recommendations to senior management. This includes focusing on market segmentation and initiatives to attract and retain customers.

**Marketing: Level 4** Maintains effective internal and external business relationships. Plans and conducts market research. Investigates and analyses customer dynamics and uses research to inform marketing plans, including planning for customer loyalty. Creates unique selling points, and key messages for marketing material. Drafts marketing support materials such as brochures and mailshots. Organises and participates actively in marketing events.

**Marketing: Level 3** Works with technical and non-technical customer representatives or from reports, to identify industry trends, needs and sales opportunities. Selects from and uses marketing tools appropriate to a project. Maintains a database of marketing information, including lessons learned from previous projects. Conducts market research. Contributes to marketing plans. Creates unique selling points and key messages for marketing material. Presents and communicates at marketing events.

#### Selling SALE

The identification of sales prospects and their qualification, the development of customer interest and the preparation (including managing the bid process), execution and monitoring of the sale of any IT or related product or service into an external or internal market.

**Selling: Level 6** Oversees the organisation's sales activities to ensure they are aligned with

corporate marketing objectives. Approves sales proposals and targets. Negotiates with customer representatives at the most senior level on both technical and commercial issues. Develops and implements organisational sales policy and strategy, and contributes significantly to the development of marketing strategy. Initiates development and change in services, products and systems.

**Selling: Level 5** Designs and implements sales strategies and works with senior management to implement sales plans. Plans, monitors and controls the work of sales teams. Develops and maintains effective customer relationships at executive levels and qualifies new sales leads. Leads the bid process within organisation, maintaining customer contact during and after the selling process to ensure customer satisfaction. Contributes to the development and training of sales teams and product/service development.

**Selling: Level 4** Collects and uses market information in order to achieve sales objectives. Responds to existing sales leads and identifies and qualifies new leads and prospects with a view to developing a pipeline of potential opportunities. Develops and enhances customer relationships, before, during and after the conclusion of sales agreements. Key tasks may also include bid management, negotiation and presentation. Monitors and reports on performance, customer satisfaction, market intelligence and competitors.

## Client support

### Client support subcategory

#### Account management ACMG

On behalf of an organisation supplying IT-related products or services, including commercial, industrial, scientific, entertainment and gaming systems, the coordination of all promotional activities to one or more clients to achieve satisfaction for the client and an acceptable return for the supplier; assistance to the client to ensure that maximum benefit is gained from the products and services supplied.

**Account management: Level 6** Builds long-term, strategic relationships with the largest client organisations (internal or external). Maintains a strong understanding of the clients' industry and strategy. Encourages and assists clients in the formation of IT strategies, providing them with access to senior management and subject experts in the supplier organisation and elsewhere.

Acts to ensure that clients are offered products and services in line with the strategy. Manages colleagues in their dealings with clients; initiates procedures to improve service to and relationships with clients. Oversees the management and planning of business opportunities. Influences the development and enhancement of services, products and systems.

**Account management: Level 5** Oversees the organisation's promotional/selling activities to one or more clients, to ensure that such activities are aligned with corporate marketing objectives. Approves medium-scale proposals to clients. Negotiates with client representatives at senior levels on both technical and commercial issues. Ensures that organisational policy and strategy is adhered to. Provides informed feedback that contributes to promotional strategy and to product development.

#### Sales support SSUP

The provision of technical advice and assistance to the sales force, sales agents, reseller/distributor staff and existing or prospective customers, either in support of customer development or sales activity or in fulfilment of sales obligations.

**Sales support: Level 6** Leads the organisation's customer service activities to ensure that they are aligned with corporate objectives and policy. Approves proposals and initiates the implementation of development activity in customer services and systems.

**Sales support: Level 5** Works closely with the sales team to ensure that customers are assisted and advised properly. Ensures that reliable cost, effort and risk estimates and project plans are produced. Manages all sales support activities, taking full responsibility for the technical content

of bids and sales proposals. Establishes metrics to provide data on performance and help with the continuous improvement of sales support activities.

**Sales support: Level 4** Works closely with the sales team to help prospects to clarify their needs and requirements; devises solutions and assesses their feasibility and practicality. Demonstrates technical feasibility using physical or simulation models. Produces estimates of cost and risk and initial project plans to inform sales proposals. Resolves technical problems.

**Sales support: Level 3** Provides customer service, including technical advice and guidance on all matters bearing on the successful use of complex products and services. Helps customers to clarify their requirements; documents the conclusions reached, and contributes to preparing and supporting bids and sales proposals

**Sales support: Level 2** Communicates effectively with customers by telephone and in person. Assists in the provision of customer service, including technical advice and guidance on matters bearing on the successful use of products and services. Assists in devising solutions to customer requirements and solves straightforward problems.

**Sales support: Level 1** Able to communicate effectively with customers by telephone and provide information about products and services. Seeks assistance from colleagues for the resolution of more complex customer service queries and complaints. Can use databases to retrieve and enter data.

#### Client services management CSMG

The management and control of one or more client service functions, including strategy, support for business development, quality of service and operations.

**Client services management: Level 6** Sets the strategic direction and takes responsibility for the full range of client service functions, including organisational frameworks for complaints, service standards and operational agreements. Defines service levels, standards and the monitoring process for client service staff. Gives technical leadership to operational staff, and takes responsibility for business continuity and legal compliance.

**Client services management: Level 5** Carries out day-to-day management of the client services function. Defines service levels for client services staff and monitors performance. Takes responsibility for specification, agreement and application of client services standards and for the resolution of clients' service problems.

**Client services management: Level 4** Monitors client services function and collects performance data. Assists with the specification, development, research and evaluation of client

services standards. Applies these standards to resolve or escalate clients' service problems and gives technical briefings to staff members.

**Client services management: Level 3** Acts as the routine contact point. Assists with the development of and applies client services standards to resolve or escalate clients' service problems.







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Published by SFIA Foundation

Publication title: SFIA 5 framework reference (English)

Reference: sfia\_ref\_en\_5.0