LEVELLED NICE ROLES

Using SFIA's levels of responsibility and NICE
to support cybersecurity role and job levelling

The long track record of cybersecurity in SFIA

SFIA FOUNDATION

		SFIA updates
2000	First iteration of SFIA addressed information security with 3 skills	2000 SFIA v1
2000-2011	Refinement of the 3 information security skills via regular SFIA framework updates	2000-11 SFIA v2 - v5
2015	Extended cyber/information security coverage to 5 skills	2015 SFIA v6
2018	A complete review of coverage. Updates for the 5 cyber/information security skills. Security	2018 SFIA v7

Supporting cybersecurity in industry for 20+ years on the SFIA framework and its ecosystem

2021	Coverage extended – now 9 cyber/information security specialist skills and Security responsibilities explicitly included in 41 other (non-specialist) skills. SFIA generic attributes for security updated.	2021 SFIA v8
2021	Refreshed mapping of NICE and NIST for SFIA v8. Published illustrative skills profiles for employers covering cyber/information security roles alongside 18 other industry role families	
2023	Developed levelled cyber/information roles based on the 53 NICE Work roles and separately for the 11 European Cybersecurity Skills Framework (ECSF) roles	
2023-24	Review industry requirements cyber/information security in SFIA to prepare for SFIA 9. Open and transparent consultation with global SFIA users and taking account of industry developments and updates to industry frameworks.	SFIA v9 Planned for Q3/Q4 2024

NICE roles and SFIA for employers

NICE workforce roles

- a common lexicon that describes cybersecurity work and workers regardless of where or for whom the work is performed.
- cybersecurity workforce assessment and planning,
- identification of critical gaps in cybersecurity staffing and capabilities;
- determining position responsibilities and creating job descriptions when hiring
- providing staff training and career development

SFIA builds on these by adding…

SFIA levels

➢ a proven (over 20+ years) framework for employers to designing jobs and organizational structures in a variety of professional disciplines.
➢ A clear and structured approach to defining and differentiating roles, responsibilities, and skill sets across an organization.

Cyber security as 'part of everybody's job'

➢ Cyber security specialists (in their role) need non-cyber-specialist skills too …
➢ Non-cyber-specialists need sufficient and appropriate cyber knowledge to perform their roles …

One framework for all

➢ a broader set of skill and competency definitions to support all your organization's digital, data and technology roles
➢ enabling internal mobility to help fill cybersecurity vacancies

The NICE work roles reference 71 of SFIA's professional skills.
In total there are 121 professional skills in SFIA 8.

SFIA – designed for flexibility

Tailor to your organization design

Support for flexible career paths and role definitions– common language for all roles

Integrates professional skills and behaviours/soft skills

Mapping to a broad range of industry frameworks

Tailoring the NICE roles to SFIA levels

SFIA – designed for flexibility

Tailor to your organization design

- Your functions, your teams and your job design
- Your job titles and pre-fixes for career pathing
- Your sourcing strategy / your mix of in-house and third-party cybersecurity capabilities
- Design a new operating model and/or align to current roles and teams
- Align SFIA defined skills and competencies to your own technical architecture and toolset

Support for flexible career paths and role definitions– common language for all roles

- specialist cybersecurity roles,
- roles where cybersecurity is part of their overall responsibilities
- one framework for all of your digital, data and technology roles – enabling internal mobility to help fill cybersecurity vacancies

Integrate professional skills and behaviours/soft skills

- SFIA supports the need for individuals and organizations to embed secure working practices into everything they do.
- This means that everyone needs to be aware of security and make it an accepted part of every-day working and management practices.

Mapping to a broad range of industry frameworks such as:

- NIST CSF, NICE, ITIL, COBIT,
- Role frameworks – Australian Public Service roles, NICE, UK DDaT, EU ICT roles, ECSF
- SWEBOK, BABOK

Tailoring the NICE roles to SFIA levels

- The spreadsheet provides guidance on the likely levels of roles for each NICE Work Role
- Use the spreadsheet as an input to help you refine and adjust existing roles or change role and skill levels to fit your own organization design and career paths
- The NICE Work Roles and SFIA frameworks offer flexibility and serve as a starting point for creating job profiles

Navigating the levelled roles

Levels based on SFIA's 7 levels

➢ We extracted short succinct descriptions from SFIA's comprehensive level descriptions.

We describe SFIA levels using 5 generic attributes

➢ Autonomy, influence, complexity, business skills and knowledge

The yellow bars demonstrate indicative levels for the NICE roles

Blue bars are indicative SFIA professional skills at each role level

Names and descriptions of work roles are from NICE.

➢ There are 53 NICE work roles

➢ A full definition of the SFIA professional skills is available at every level.
➢ Each skill has a succinct description and guidance notes to help users navigate the framework.

The NICE work roles reference 71 of SFIA's professional skills.
In total there are 121 professional skills in SFIA 8.

Leverage the benefits of SFIA levels

→ → → **Increasing responsibility, accountability and impact** → → →

| 1. Follow	2. Assist	3. Apply	4. Enable	5. Ensure, advise	6. Initiate, influence	7. Set strategy, inspire, mobilise
Performs routine tasks under close supervision, follows instructions, and requires guidance to complete their work.	Provides assistance to others, works under general supervision, and uses their discretion to address routine problems.	Performs varied tasks, sometimes complex and non-routine, using methodical approaches. Works under general direction, exercises discretion, and manages own work within deadlines.	Performs diverse complex activities, supports and supervises others, works autonomously under general direction, and contributes expertise to deliver team objectives.	Provides expert guidance in their specialty and works under broad direction. Accountable for achieving workgroup objectives and managing work from analysis to execution and evaluation.	Has significant organizational influence, makes high-level decisions, shapes policies, demonstrates leadership, and accepts accountability in key areas..	Operates at the highest organizational level, determines overall policy and strategy, and assumes accountability for overall success.

- ❑ SFIA levels offer a practical tool for designing jobs and organizational structures and career pathways

- ❑ They provide a clear and structured approach to defining roles, responsibilities, and skill sets.

- ❑ SFIA levels show incremental differences, allowing for career progression and individual growth within roles.

- ❑ Each SFIA level focuses on responsibility, accountability, and impact required in a role.

- ❑ Understanding SFIA levels helps identify necessary competencies.

- ❑ Ensuring the right people are in the right roles contributes to overall organizational success.

We have mapped each NICE role to SFIA levels

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→ → → **Increasing responsibility, accountability and impact** → → →

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An organization selects the applicable roles and levels based on their own organization design and context.

Role	1	2	3	4	5	6	7
Executive Cyber Leadership							7
IS Security Manager					5	6	
Security control assessor			3	4	5		
Software developer		2	3	4	5		
Secure software assessor			3	4	5		
Security architect				4	5	6	
System Administrator	1	2	3	4			

The SFIA levels reflect the expected impact of the roles

We also mapped each NICE role to SFIA skills and levels

SFIA FOUNDATION

→ → → **Increasing responsibility, accountability and impact** → → →

1. Follow	2. Assist	3. Apply	4. Enable	5. Ensure, advise	6. Initiate, influence	7. Set strategy, inspire, mobilise
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Illustrative job family	NICE Work role	1	2	3	4	5	6	7
Infosec/Cybersecurity	**Security control assessor**			**3**	**4**	**5**		
NICE role definition	**Analyzes the security of new or existing computer applications, software, or specialized utility programs and provides actionable results.**							
Indicative SFIA skills	Vulnerability assessment VUAS			**2**	**3**	**4**		
	Penetration testing PENT			**2**	**3**	**4**		

Blue bars are indicative SFIA professional skills at each role level

➤ A full definition of the SFIA professional skills is available at every level.
➤ Each skill has a succinct description and guidance notes to help users navigate the framework.

Tailoring - Map NICE roles to your real-world jobs

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Organizations should tailor jobs to meet their specific needs.

Understanding your organization's needs

➢ includes an understanding of the organization's structure, the industry it operates within, and the specific cybersecurity challenges it faces.

Reviewing the NICE framework

➢ Understand the various roles and their definitions. This involves mapping the organization's needs to the roles defined within the framework.

Identifying relevant roles

➢ Identify roles needed to handle the cybersecurity challenges faced by your organization.

Combining roles to form jobs

➢ In many cases, a single job might require an employee to handle tasks associated with multiple NICE roles.

➢ This combination is based on the similarities in the roles, the interconnectedness of the tasks, and the organization's preferences.

Refining and reviewing

➢ Review to ensure that they meet the organization's needs and do not leave any cybersecurity challenges unattended.
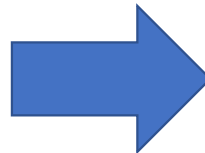
These are illustrative examples.

The specific jobs/roles within an organization could vary based on the organization's specific needs and structure.

The NICE framework is flexible and adaptable to a wide range of organizational needs.

Your organization's jobs	Associated NICE roles
Cybersecurity Risk Analyst	Cyber Defense Analyst, Vulnerability Assessment Analyst, Systems Security Analyst, Threat/Warning Analyst
Cybersecurity Software Engineer	Software Developer, Systems Developer, Secure Software Assessor, Systems Security Analyst
Cybersecurity Database Administrator	Database Administrator, Data Analyst
CISO/Cybersecurity Manager	Cyber Policy and Strategy Planner, Information Systems Security Manager, Executive Cyber Leadership
Cybersecurity Systems Administrator	System Administrator, Network Operations Specialist, Systems Security Analyst, Technical Support Specialist

Tailoring - Use SFIA levels to create a job architecture

As before, jobs vary from organization to organization and should be tailored to meet your specific needs.

Understand the SFIA Levels
➢ Start by understanding the SFIA levels and what they represent. This includes the responsibilities, abilities, and accountability associated with each level.

Analyse the roles/jobs
➢ Consider their responsibilities, the complexity of their tasks, their level of independence, and their impact on the organization.

Map the jobs/roles to SFIA Levels
➢ Map each role to an appropriate SFIA level.
➢ The same job/role might be performed at different levels depending on the complexity of the tasks and the level of responsibility.

Consider career progression
➢ Consider the potential for career progression. This might involve creating multiple levels of the same job, each associated with a different SFIA level.

Use descriptive prefixes
➢ Typically used to distinguish between different levels of the same job. These prefixes should provide an indication of the level of responsibility and complexity associated with the job.

Review and adjust
➢ Continually review and adjust the job architecture as needed. This could be in response to changes within the organization or updates to the SFIA framework.

The SFIA levels and prefixes are suggestions and should be adapted to fit the specific needs and structure of your organization.

The same job might be associated with different SFIA levels in different organizations based on factors like the complexity of the tasks and the level of responsibility.

Jobs	SFIA Levels	Your organization's prefixes
Risk Analyst	3-5	Entry-level, Analyst, Senior
Software Engineer	2-5	Entry-level, Engineer, Senior, Lead
Database Administrator	2-5	Entry-level, Administrator, Senior, Lead
IS Security Manager	5-7	Manager, Head of, CISO
Systems Administrator	1-5	Entry-level, Administrator, Senior, Lead, Manager

Tailoring – NICE-based jobs in your job architecture

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→ → → **Increasing responsibility, accountability and impact** → → →

Map jobs based on your own organization design and context.

1. Follow	2. Assist	3. Apply	4. Enable	5. Ensure, advise	6. Initiate, influence	7. Set strategy, inspire, mobilise
Performs routine tasks under close supervision, follows instructions, and requires guidance to complete their work.	Provides assistance to others, works under general supervision, and uses their discretion to address routine problems.	Performs varied tasks, sometimes complex and non-routine, using methodical approaches. Works under general direction, exercises discretion, and manages own work within...	Performs diverse complex activities, supports and supervises others, works autonomously under general direction, and contributes expertise to...	Provides expert guidance in their specialty and works under broad direction. Accountable for achieving workgroup objectives and managing work from analysis to...	Has significant organizational influence, makes high-level decisions, shapes policies, demonstrates leadership, and accepts accountability in key areas..	Operates at the highest organizational level, determines overall policy and strategy, and assumes accountability for overall success.

The SFIA levels reflect the required impact of the roles.

Job family	Generic Job	1	2	3	4	5	6	7
Cybersecurity	CISO							CISO
	IS Security Manager						Manager	Head of
	Risk analysts			Entry level	Analyst	Senior analyst		
Software engineering	Software engineer		Entry level	Engineer	Senior	Lead		
Data and analytics	Database administrator		Entry level	Administrator	Senior	Lead		
Infrastructure & operations	System Administrator	Entry level	Administrator	Senior	Lead	Manager		

Tailoring – extend the job architecture for all your roles

Prototype

→ → → Increasing responsibility, accountability and impact → → →

Cybersecurity career paths are integrated with other digital, data, and technology

The SFIA levels reflect the required impact of the roles.

Illustrative SFIA levels support all of your digital, data and technology roles
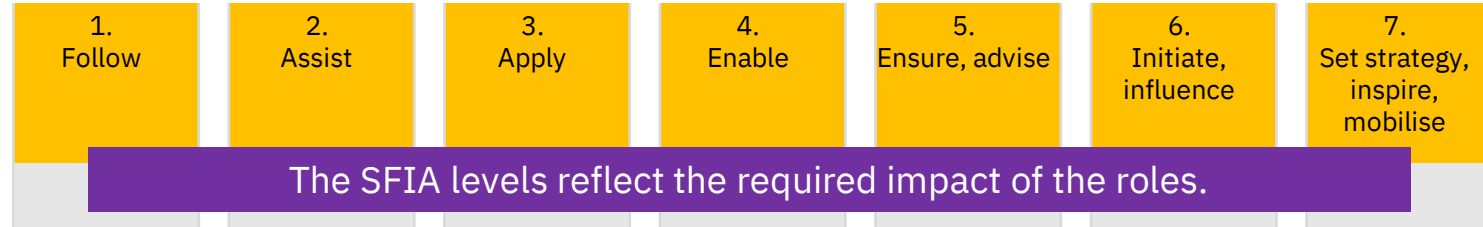
Job family	Generic Job	1. Follow	2. Assist	3. Apply	4. Enable	5. Ensure, advise	6. Initiate, influence	7. Set strategy, inspire, mobilise
Cybersecurity	CISO							CISO
	IS Security Manager					Manager	Head of	
	Risk analysts			Entry level	Analyst	Senior analyst		
Software engineering	Software engineer		Entry level	Engineer	Senior	Lead		
	Test analyst	Entry level	Junior	Analyst	Senior	Manager		
Data an...								
Infrast... ope...								
Business analysis	Business analyst			Analyst	Senior	Lead	Principal	
Architecture	Enterprise architecture					Architect	Principal	Chief
	Solution architecture				Architect	Lead	Principal	
	Project management				Associate	Project Mgr	Senior	
Project delivery	Portfolio management					Portfolio Mgr	Lead	Director
	Program management					Program Mgr	Senior	Director

SFIA - one framework for all

Tailoring – fine tune SFIA skills and skill levels

Use the generic mapping to get you started

Network Operations Specialist				
NICE Role definition	Plans, implements, and operates network services/systems, to include hardware and virtual environments.			
		2	3	4
Indicative SFIA skills and levels	System software SYSP		3	4
	Network support NTAS	2	3	4
	Systems installation and removal HSIN	2	3	4
	Testing TEST	2	3	4

Tailor SFIA skills and/or SFIA levels to your job design

Your job name

Your job definition and your career steps

Entry-level	Network engineer	Senior
2	3	4
2	3	4
1	2	3

The SFIA framework provides...
detailed industry-proven descriptions of skills & competencies which are needed for your jobs and roles

Employers are best placed to...
design & name jobs/roles, provide career pathways, create job descriptions

SFIA – designed for flexibility

Tailor to your organization design

Support for flexible career paths and role definitions– common language for all roles

Integrates professional skills and behaviours/soft skills

Mapping to a broad range of industry frameworks

Tailoring the NICE roles to SFIA levels

APPENDIX

How SFIA works

SFIA's skills and generic attributes work together
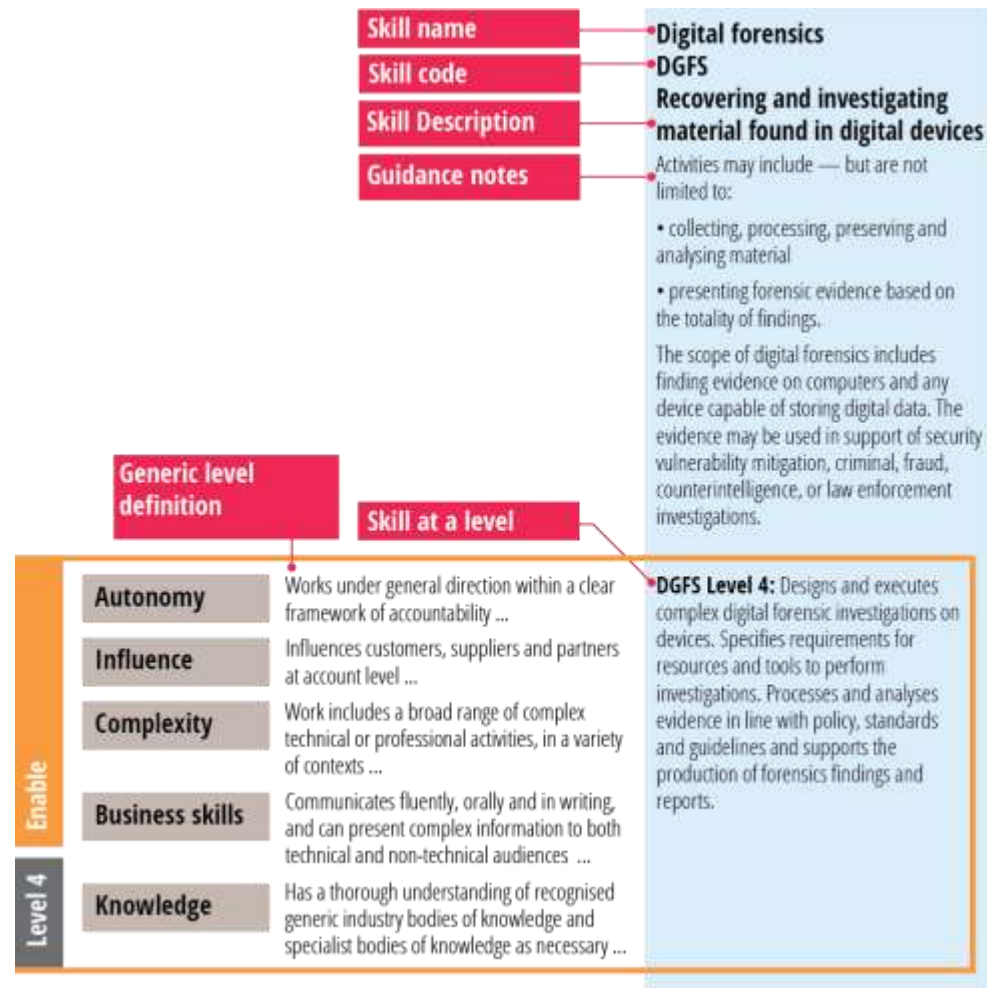
The levels of responsibility, and specifically their generic attributes, are used together with the professional skills to describe overall competence.

Each skill description comprises
- an overall definition of the skill,
- some guidance notes and
- a description of the skill at each of up to seven levels at which the skill might be exercised.

These descriptions provide a detailed definition of what it means to practice the skill at each level of responsibility.

Sample of one of the 121 SFIA skill/competency descriptions

Vulnerability assessment VUAS

- Identifying and classifying security vulnerabilities in networks, systems and applications and mitigating or eliminating their impact.

Guidance notes

Activities may include — but are not limited to:

- cataloguing and classifying information and technology resources (assets and capabilities) to support vulnerability assessment
- assigning quantifiable value, rank order and importance to information and technology resources
- identifying and analysing the vulnerabilities of each resource — manually or using automated tools and information sources
- prioritising, scoring and ranking the risk associated with vulnerabilities
- business impact assessment
- mitigating or eliminating the vulnerabilities.
- Vulnerability assessment tools include web application scanners, protocol scanners and network scanners.

Vulnerability assessment: Level 2

Undertakes low-complexity routine vulnerability assessments using automated and semi-automated tools.
Escalates issues where appropriate.
Contributes to documenting the scope and evaluating the results of vulnerability assessments.

Vulnerability assessment: Level 3

Follows standard approaches to perform basic vulnerability assessments for small information systems.
Supports creation of catalogues of information and technology assets for vulnerability assessment.

Vulnerability assessment: Level 4

Collates and analyses catalogues of information and technology assets for vulnerability assessment.
Performs vulnerability assessments and business impact analysis for medium complexity information systems.
Contributes to selection and deployment of vulnerability assessment tools and techniques.

Vulnerability assessment: Level 5

Plans and manages vulnerability assessment activities within the organization.
Evaluates and selects, reviews vulnerability assessment tools and techniques.
Provides expert advice and guidance to support the adoption of agreed approaches.
Obtains and acts on vulnerability information and conducts security risk assessments, business impact analysis and accreditation on complex information systems.

Illustration of alignment to SFIA generic attributes

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Skill name, description guidance notes

Vulnerability assessment VUAS
- Identifying and classifying security vulnerabilities in networks, systems and applications and mitigating or eliminating their impact.

Guidance notes
Activities may include — but are not limited to:

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Specific level descriptions

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Generic SFIA level description

Level 2: Assist
Provides assistance to others, works under general supervision, and uses their discretion to address routine problems.

Level 3: Apply
Performs varied tasks, sometimes complex and non-routine, using methodical approaches. Works under general direction, exercises discretion, and manages own work within deadlines.

Level 4 Enable
Performs diverse complex activities, supports and supervises others, works autonomously under general direction, and contributes expertise to deliver team objectives.

Level 5 Ensure, advise
Provides expert guidance in their specialty and works under broad direction. Accountable for achieving workgroup objectives and managing work from analysis to execution and evaluation.

The 5 generic attributes describe …

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Autonomy	• your responsibility for planning your own work and the work of others • the amount of discretion you have in how you do your work • the scope and remit of your decision-making • the level of direction you receive to achieve expected results • tasks/goals delegated to you or by you to others
Influence	• who you work with and the impact of your influence in achieving work outcomes • the impact of decisions you are responsible or accountable for making or advising on
Complexity	• the complexity of tasks and activities you perform • the scope and level of complexity in problem solving and creativity • the context and characteristics of the situation in which you work
Business skills	• communication, leadership, execution performance, creativity, planning, learning and professional development
Knowledge	• the development and application of knowledge you apply to deliver work • the scope and context of the knowledge you apply • developing your own knowledge and supporting others to develop knowledge • your role and expected impact in sharing knowledge

We describe the 5 generic attributes at 7 different levels

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Increasing responsibility, accountability and impact

SFIA levels	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7
Guiding phrase	Follow	Assist	Apply	Enable	Ensure, advise	Initiate, influence	Set strategy, inspire, mobilise

Generic attributes

AUTONOMY	Demonstrating increasing levels of **autonomy** – the level of ownership and accountability for results in the workplace
INFLUENCE	Demonstrating increasing levels of **influence** – the level of positive impact with colleagues, clients, suppliers, partners, managers, leaders and the industry as a whole
COMPLEXITY	Demonstrating the ability to perform work of increasing **complexity** – the scale and impact of the issues, opportunities, tasks and processes addressed in the workplace
BUSINESS SKILLS	Demonstrating increasing **business skills** and **positive behaviours** – operating effectively with the required level of impact in the workplace
KNOWLEDGE	Demonstrating increased responsibility for developing and applying **knowledge** to achieve individual and organizational objectives in the workplace

Generic attributes

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Increasing responsibility, accountability and impact

Level 1 – Follow

Autonomy
Works under close direction. Uses little... expected to seek guidance in unexpec...

Influence
Minimal influence. May work alone or...

Complexity
Performs routine activities in a structu... resolving unexpected problems. Parti...

Business skills
Has sufficient oral and written commu... with immediate colleagues.
Uses basic systems and tools, applica...
Demonstrates an organised approach... and use applications and tools for the...
Learning and professional developme... development opportunities.
Security, privacy and ethics — underst... standards.

Knowledge
Has a basic generic knowledge approp... acquired knowledge to develop new s...

Level 2 - Assist

Autonomy
Works under routine direction. Uses li... enquiries. Determines when to seek g...

Influence
Interacts with and may influence imm... external contact with customers, sup...

Complexity
Performs a range of work activities in... routine issue resolution. May apply cr...

Business skills
Has sufficient oral and written commu... with colleagues and internal users/cu...
Understands and uses appropriate m...
Demonstrates a rational and organise...
Has sufficient digital skills for their ro...
Learning and professional developme... development opportunities.
Security, privacy and ethics — is fully ...

Knowledge
Has gained a basic domain knowledge... generic knowledge typically found in i...

Level 3 – Apply

Autonomy
Works under general direction. Receiv... and has work reviewed at agreed mile...

Influence
Interacts with and influences colleagu... decisions which impact routine work a...

Complexity
Performs a range of work, sometimes... environments. Applies a methodical a...

Business skills
Demonstrates effective oral and writt... on issues with colleagues, users/cust...
Understands and effectively applies a... and processes.
Demonstrates judgement and a syste...
Effectively applies digital skills and ex...
Learning and professional developme... knowledge and skills

Knowledge
Has sound generic, domain and speci... effectively in the organization typicall...

Level 4 - Enable

Autonomy
Works under general direction within... Exercises substantial personal respor...

Influence
Influences customers, suppliers and p... which influence the success of projec...

Complexity
Work includes a broad range of comp... a variety of contexts. Investigates, de...

Business skills
Communicates fluently, orally and in ... information to both technical and non... colleagues, users/customers, supplier...
Selects appropriately from, and asses... standards, methods, tools, application...
Demonstrates judgement and a syste... specialism.
Demonstrates an awareness of risk ar...
Maximises the capabilities of applicat...

Knowledge
Has a thorough understanding of reco... knowledge and specialist bodies of kr...

Level 5 – Ensure, adv...

Autonomy
Works under broad direction. Work is ... for meeting allocated technical and/o...

Influence
Influences organization, customers, s... contribution of own specialism. Make...

Complexity
Implements and executes policies ali... extensive range and variety of comple...

Business skills
Demonstrates leadership in operation...
Analyses requirements and advises o... operational improvement.
Assesses and evaluates risk.
Takes all requirements into account v...
Shares own knowledge and experienc...
Advises on available standards, meth... relevant to group specialism(s) and ca... alternatives.
Understands...

Knowledge
Is fully familiar with recognised indus... specific, and knowledge of the busine...

Level 6 – Initiate, inf...

Autonomy
Has defined authority and accountabi... significant area of work, including tec...

Influence
Influences policy and strategy format... internal and external customers, supp...

Complexity
Contributes to the development and i...
Performs highly complex work activiti...

Business skills
Demonstrates leadership in organizat...
Understands and communicates indu... impact of technology.
Manages and mitigates organizational...
Balances the requirements of propos...
Promotes a learning and growth cult... organization.
Leads on compliance with relevant leg... products and working practices to pro...

Knowledge
Has developed business knowledge o... organization and those of suppliers, p...

Level 7 – Set strategy, inspire, mobilise

Autonomy
At the highest organizational level, has authority over all aspects of a significant area of work, including policy formation and app...

Influence
Inspires the organization, and influences developments within the industry at the highest levels. Makes decisions critical to organization...

Complexity
Applies the highest level of leadership to the formulation and implementation of strategy. Performs extensive strategic leadership in...

Business skills
Has a full range of strategic management and leadership skills.
Communicates the potential impact of emerging practices and technologies on organizations and individuals and assesses the risks of using or not using such practices and technologies.
Establishes governance to address business risk.
Ensures proposals align with the strategic direction of the organization.
Fosters a learning and growth culture across the organization.
Assess the impact of legislation and ac...

Knowledge
Has established a broad and deep business knowledge including the activities and practices of own organization and a broad knowledge

Illustration of SFIA levels in the workplace

Increasing responsibility, accountability and impact

SFIA levels	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7
Guiding phrase	Follow	Assist	Apply	Enable	Ensure, advise	Initiate, influence	Set strategy, inspire, mobilise

Delivery

Service delivery and operational support
Task execution

Process/practice management

Sets policy
Leads execution

Individual contribution (typically requiring mastery of a professional field/area of expertise)

Learning your profession

Practicing your profession

Mastering your profession
Subject matter expert

For people managers

Supervisor /Team lead

First-line management

Senior management

Leadership

Personal leadership

Operational leadership and advice

Strategic leadership and advice

organizational leadership

SFIA Level progression

Increasing responsibility, accountability and impact

SFIA levels	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7
Guiding phrase	Follow	Assist	Apply	Enable	Ensure, advise	Initiate, influence	Set strategy, inspire, mobilise

❑ Careers don't follow a straight path from level 1 to 7

❑ People gain experience by applying knowledge & skills in the workplace

❑ Higher SFIA levels represent different responsibilities, not "better"

❑ Demonstrating SFIA skills & competencies depends on work offered by employers

❑ Professional development & career paths are determined by personal goals, potential, and more

❑ Managers & organizations play a role in enabling learning & development

Career paths and professional development

❑ The opportunity to demonstrate SFIA skills & competencies at a particular level is determined by the type and level of work offered by employers.

❑ Individual professional development and career paths are determined by factors such as...

➢ personal life goals and interests, potential, learning mindset, consistent delivery of work objectives.

❑ Professional development and career paths at work are enabled by managers and organizations providing opportunities and encouraging learning and development.

SFIA skills cover a wide – and evolving – range of professional activities

Strategy and architecture	Change and transformation	Development and implementation	Delivery and operation	People and skills	Relationships and engagement
Strategy and planning	Change implementation	Systems development	Technology management	People management	Stakeholder management
Security and privacy	Change analysis	Data and analytics	Service management	Skills management	Sales and marketing
Governance, risk and compliance	Change planning	User experience	Security services		
Advice and guidance		Content management			
		Computational science			

SFIA professional skills

SFIA professional skills

SFIA 8 Summary Chart — The global skills and competency framework for the digital world
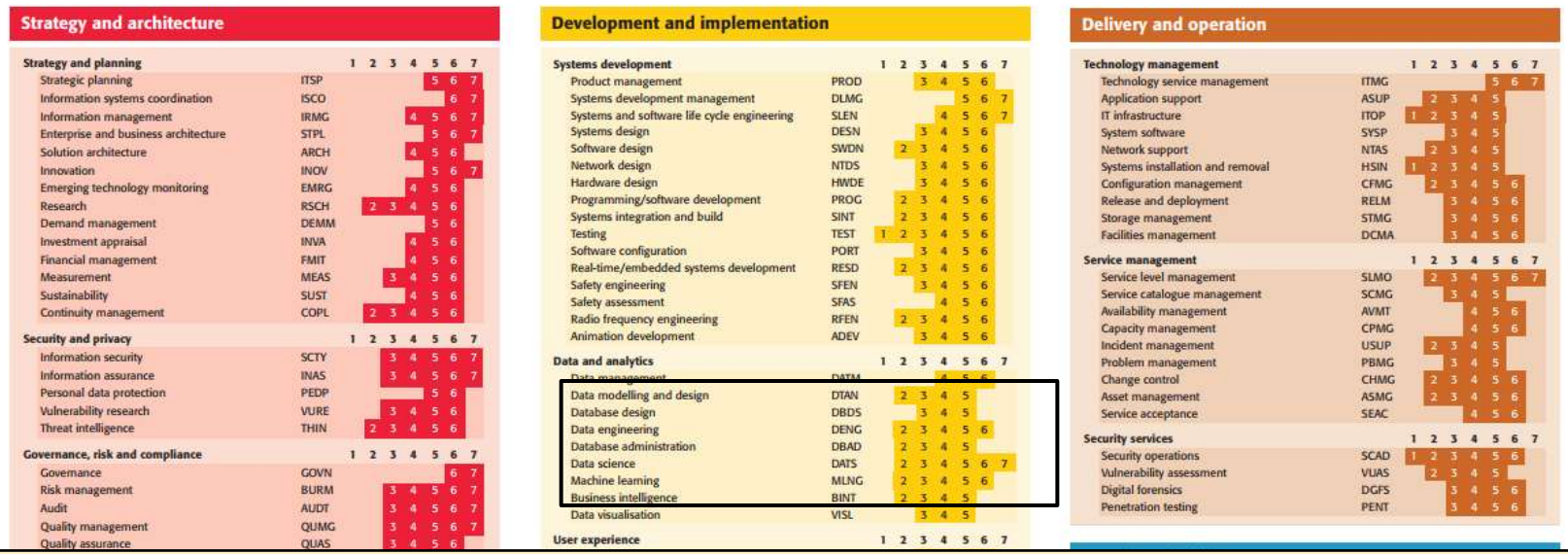
Skill	Description	1	2	3	4	5	6	7
Data management	Developing and implementing plans, policies, and practices that control, protect and optimise the value of data assets.				4	5	6	
Data modelling and design	Developing models and diagrams to represent and communicate data requirements and data assets.		2	3	4	5		
Database design	Specifying, designing and maintaining mechanisms for storing and accessing data.			3	4	5		
Data engineering	Designing, building, operationalising, securing and monitoring data pipelines and data stores.		2	3	4	5	6	
Database administration	Installing, configuring, monitoring, maintaining and improving the performance of databases and data stores.		2	3	4	5	6	
Data science	Applying mathematics, statistics, data mining and predictive modelling techniques to gain insights, predict behaviours and generate value from data.		2	3	4	5	6	7
Machine learning	Developing systems that learn through experience and by the use of data.		2	3	4	5	6	

The full professional skills definition

Each skill description comprises an overall definition of the skill, some guidance notes and a description of the skill at each of up to seven levels at which the skill might be exercised.

These descriptions provide a detailed definition of what it means to practise the skill at each level of responsibility.

Professional skills and generic attributes work together.

SFIA FOUNDATION

Increasing responsibility, accountability and impact in Data science

Data science: Applying mathematics, statistics, data mining and predictive modelling techniques to gain insights, predict behaviours and generate value from data.

Level 1 – Follow	Level 2 - Assist	Level 3 – Apply	Level 4 - Enable	Level 5 – Ensure,	Level 6 – Initiate,	Level 7 – Set strategy, inspire, mobilise
Generic attributes (sum	**Generic attributes** Works under routine di immediate colleagues.	**Generic attributes** Works under general d monitors own work. In	**Generic attributes** Has substantial person decisions which impac objectives.	**Generic attributes** Responsible for deliver objectives under broad influential advice in sp	**Generic attributes** Accountable for action significant area of work strategy formation.	**Generic attributes (summarized)** Accountable at the highest organizational level, Makes decisions critical to organizational success.
Works under close dire discretion and influenc						
Data science is not defined at Level 1	**Data science: Leve** Under guidance, applie techniques to data.	**Data science: Leve** Applies existing data s problems and datasets programming techniqu	**Data science: Leve** Investigates the descri to assess the usefulnes analytics solutions.	**Data science: Leve** Plans and drives all sta of data science and an	**Data science: Leve** Leads the introduction and analytics to drive i value.	**Data science: Level 7** Directs the creation and review of a cross-functional, enterprise-wide approach and culture for generating value from data science and analytics.
	Analyses and reports fi simple issues, using alg standard software fram	Selects from existing d prepares data to be us models.	Applies a range of data uses specialised progra Understands and appli specific to the industry and other implications	Provides expert advice problems to be solved science solutions. Ider to use or acquire.	Develops organizationa and guidelines for data	Drives the identification, evaluation and adoption of data science and analytics capabilities to transform organizational performance. Leads the provision of the organization's data science and analytics capabilities.
		Evaluates the outcome data science models. I opportunities to train a the data they use.	Selects, acquires and i analysis. Develops data methods and evaluates Advises on the effectiv techniques based on p comprehensive researc	Specifies and applies a techniques and specia languages.	Sets direction and lead use of data science and methodologies and too development of organi data science and analy	Ensures that the strategic application of data science and analytics is embedded in the governance and leadership of the organization.
		Publishes and reports meet customer needs agreed standards.	Contributes to the dev monitoring and deploy solutions.	Reviews the benefits a techniques and tools a improvements. Contrib policy, standards and g evaluating, monitoring science solutions.	Plans and leads strateg data science initiatives create value and drive	Aligns business strategies, enterprise transformation and data science and analytics strategies.

SFIA describes skills – not roles or jobs

❑ SFIA defines individuals' skills and job requirements.

❑ organizations decide what their own roles/jobs are called and what responsibilities and skills they need.

➢ This provides the flexibility demanded by industry and business

❑ It is common for a job/role to specify SFIA skills that are not all at the same level.

❑ Individuals may possess SFIA skills at varying levels, reflecting their experience.

SFIA describes skills – not roles or jobs

People	The work people do
The SFIA framework provides… A common language to describe the skills and competencies of individuals.	The SFIA framework provides… Detailed descriptions of skills & competencies which are needed for jobs and roles
Employers… • support assessment and development of skills and competencies	Employers… • design & name jobs/roles, provide career pathways, create job descriptions
Individuals… • assess their own skills and competencies & plan and execute their personal development	Individuals… • use their skills & competencies to deliver their work objectives

SFIA Describes skills – not roles or jobs

SFIA skills for a Solution developer (example)

Definitions of SFIA skills and levels

Level 3 – Apply

Generic attributes (summarized)

Performs varied tasks, sometimes complex and non-routine, using methodical approaches. Works under general direction, exercises discretion, and manages own work within deadlines.

Level 4 - Enable

Generic attributes (summarized)

Performs diverse complex activities, supports and supervises others, works autonomously under general direction, and contributes expertise to deliver team objectives.

Programming/software development → Programming/software development: level 4

System design → System design: level 3

Database design → Database design: level 3