This sub discipline covers the competencies required to integrate a range of system elements together operationally in order to form a coherent set of capabilities that meets the business needs. These elements or components will already have been subject to systems development activity to ensure that they can interface with each other in order to produce a holistic 'end to end' IT/technology system. It also covers the competencies required to integrate larger IT/technology systems, system components and subsystems, each providing unique and discrete services, in order to support processes which typically span either across business units and functions within an organisation and/or across organisational boundaries.

**Level 3 competencies**

**Perform systems integration activities as directed**  5043.01

**Performance Criteria**  5043.01C

a) Correctly use specified systems integration procedures tools and techniques

b) Follow organisational plans and standards for the systems development lifecycle as appropriate to systems integration activities

c) Comply with any relevant legislation regulations and external standards relating to systems integration activities

d) Assist with the provision of information to update systems architectures and systems designs as a result of systems integration activities

e) Contribute to the accurate and clear documentation of systems integration deliverables so that they can be used by implementation and support personnel

**Knowledge**  5043.01K

a) how to apply the systems development lifecycle as appropriate to systems integration activities

b) how to gather information for business analysis and other design development and testing activities to inform systems integration activities

c) how to use systems integration and documentation procedures tools and techniques

d) how to document:
   - systems integration deliverables so that they can be used by implementation and support personnel
   - information gathered to conduct systems integration activities

e) how to operate with reference to:
   - standards from all relevant organisations that are involved in systems integration activities
   - professional and ethical standards relating to systems integration activities
   - integrity and confidentiality during systems integration activities

f) how to comply with all relevant and applicable legislation regulations and external standards relating to systems integration activities

g) how to provide updated information for systems architectures and systems designs as a result of systems integration activities

**Understanding**  5043.01U

a) what is meant by systems integration and the stages of activity that constitute it

b) The procedures tools and techniques that can be used to conduct and document systems integration activities

c) the systems development lifecycle as it relates to systems integration and the relationship between systems integration and systems installation implementation and handover

d) systems integration occurring as a result of business activities such as merger and acquisition or the need to create business processes or 'value chains' that
span multiple organisations
e) the impact of effective integration of systems components and subsystems on the successful operation of an organisation and/or organisations
f) systems integration as a complex activity involving a wide range of diverse components subsystems infrastructure business processes roles and responsibilities across one or more organisations
g) professional and ethical standards relating to systems integration activities within an organisation and across organisations
h) the importance of systems integration deliverables supporting the business needs
i) the importance and relevance of systems integration activities on the full life cycle of information within an organisation and/or organisations
j) The importance of documenting the deliverables from systems integration work in a clear and understandable manner

Level 4 competencies

Contribute to the management of systems integration activities 5044.01

Performance Criteria 5044.01C

a) Use and apply the systems development lifecycle as it applies to systems integration in line with organisational standards
b) Correctly select and apply systems integration procedures tools and techniques in line with organisational standards
c) Gather collate and correctly use specified information from all applicable organisations in architecture models system subsystem and component designs to inform and direct systems integration activities

Knowledge 5044.01K

a) how to apply systems integration standards
b) how to select and apply procedures tools and techniques to monitor the alignment of systems integration activities with all relevant legislation regulations and external standards
c) how to identify the potential implications for organisations that are involved in systems integration activities
d) how to gather collate and use information to inform and direct systems integration activities:
   ◦ contained within architecture models
   ◦ relating to the individual systems system components and subsystems
e) how to document budgets plans and schedules to manage systems integration activities
f) how to document how systems integration activities need to support business processes that span multiple organisations
g) how to interpret how individual systems system components and subsystems need to integrate in order to support business processes and/or value chains either within an organisation or across multiple organisations
h) how to ensure the availability of the IT/technology systems services and assets that need to be used during systems integration activities.

Understanding 5044.01U

a) the relationships between systems architectures systems design deliverables systems development and systems integration activities
b) the fact that differing system components and subsystems may have diverse characteristics and these must be considered during systems integration activities
c) the importance of:
   ◦ verifying the accuracy currency completeness and relevance of data and information used by systems integration activities
   ◦ systems integration accurately reflecting systems architecture and systems design
   ◦ ensuring co-ordination between systems integration development testing installation implementation and handover
d) the importance and role of systems integration in:
- business merger demerger and acquisition activities
- the development and support of co-operative business processes that span multiple organisations
- delivering an ‘end to end’ IT/technology solution to meet business needs

e) the fact that systems integration activities frequently involve a high degree of disruption and risk to one or more organisations

Perform systems integration activities 5044.02

Performance Criteria 5044.02C

a) Correctly use systems integration procedures tools and techniques in line with organisational standards
b) Accurately identify redundant systems system components or subsystems and ensure that they are correctly decommissioned
c) Document clearly and accurately specified information gathered for system integration activities
d) Communicate effectively with sponsors and stakeholders during systems integration activities as directed
e) Provide and exchange accurate and appropriate information within the organisation and across multiple organisations as directed

Knowledge 5044.02K

a) how to apply systems integration standards
b) how to identify potentially redundant system components or subsystems
c) how to ensure that redundant systems system components or subsystems are decommissioned
d) how to ensure that the rules and controls required to ensure the integrity and security of the proposed IT/technology system are applied and integrated effectively across systems system components and subsystems
e) how to take actions:
   - to incorporate the full range of design specifications in order to integrate all relevant systems system components and subsystems into the “end to end” IT/technology system(s)
   - to explain discuss and agree how any proposed IT/technology system(s) will function with sponsors and stakeholders
   - as a result of decisions made by sponsors stakeholders and external bodies
f) how to communicate with a wide range of individuals within and across organisations to design plan execute and manage systems integration activities.

Understanding 5044.02U

a) the importance of:
   - systems integration accurately reflecting systems architecture and systems design
   - service level requirements being incorporated within systems integration activities
   - systems integrity and security needs being met during systems integration activity
b) optimising the use of system resources in systems integration work including reuse and decommissioning of components where appropriate
c) who are the internal and external sponsors of and stakeholders for any systems integration activities
d) the importance of:
   - effective communications with sponsors stakeholders and external bodies during systems integration activities
   - effective communications with other individuals from within the organisation or other organisations involved in systems integration activities
   - ensuring that appropriate documentation and support materials associated with any IT/technology system are produced and/or supplied during systems integration activities
e) presenting information produced by systems integration activities particularly information relating to how the proposed IT/technology solution(s) will function in an understandable form to a wide range of sponsors stakeholders and other individuals in order to confirm understanding and ensure needs are being met
Control systems integration activities 5044.03

Performance Criteria 5044.03C

a) Correctly use the procedures tools and techniques to monitor the quality and effectiveness of system integration activities
b) Correctly use the procedures tools and techniques to monitor the alignment of systems integration activities with all relevant legislation regulations and internal and external standards
c) Contribute to the co-ordination of systems integration with systems development testing installation implementation and handover
d) Assist with the analysis of all information gathered during systems integration activities in order to inform decision making and action as directed

Knowledge 5044.03K

a) gather collate and use information from monitoring systems integration activities
b) interpret information gathered during systems integration activities in order to inform decision making and action
c) document:
   - decisions made during systems integration activities
   - the progress being made against systems integration budgets plans and schedules

Understanding 5044.03U

a) the importance of:
   - systems integration accurately reflecting systems architecture and systems design
   - ensuring that service level requirements are incorporated considered within systems integration activities
   - ensuring systems integrity and security needs are met during systems integration activity
   - ensuring co-ordination between systems integration development testing installation implementation and handover
   - managing changes to business requirements through change control mechanisms during systems integration activities
   - securing sign off of the physical systems integration deliverables prior to handover to the business
b) the potential implications:
   - of any relevant legislation regulations and internal and external standards
   - of systems integration deliverables being incorrect incomplete inadequate and/or inappropriate
   - to an organisation or organisations of systems integration deliverables not meeting the business needs
   - of failings of integrity confidentiality and information security both within individual organisations and across them during systems integration activities
c) the need to monitor the:
   - quality and effectiveness of systems integration activities within and across impacted organisations
   - alignment of systems integration work with systems design work
   - alignment of systems integration activities with all relevant legislation regulations and internal and external standards

Level 5 competencies

Plan and prepare for systems integration 5045.01

Performance Criteria 5045.01C

a) Develop and maintain policies and standards relating to system integration
b) Correctly implement and maintain systems integration procedures tools and techniques in line with organisational standards

c) Correctly identify all internal and external sponsors of and stakeholders for systems integration activities

d) Correctly identify which organisations and individuals may need to be involved in systems integration activities

e) Prepare accurate budgets and plans for systems integration activities

f) Apply best practice and lessons learned to system integration activities.

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**Knowledge 5045.01K**

a) how to design and develop policies and standards relating to systems integration activities

b) how to implement the procedures tools and techniques that may be used to conduct systems integration activities

c) how to implement the procedures tools and techniques to monitor the alignment of systems integration activities with:
   - the business needs of any organisations impacted by them
   - all relevant legislation regulations and external standards
   - relevant systems architectures

d) how to the procedures tools and techniques to monitor the progress of systems integration activities against budgets and plans

e) how to identify and select:
   - who should be involved in systems integration activities
   - who should be involved in the sign off of systems integration activities
   - who are the internal and external sponsors of and stakeholders for any systems integration activities
   - which organisations may need to be involved in systems integration activities
   - what systems system components subsystems infrastructure business processes and individuals across one or more organisations need to be involved in systems integration activities

f) how to identify external factors and their implications on systems integration activities

g) how to use and apply:
   - the most appropriate approaches to undertake systems integration activities
   - best practice in systems integration activities
   - lessons learned from prior experience and/or others’ experiences in systems integration activities

h) how to prepare budgets and plans for systems integration activities

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**Understanding 5045.01U**

a) the range of approaches that may be used to undertake systems integration and their appropriateness in a range of business and organisational contexts

b) the range of issues associated with systems integration activities

c) who:
   - needs to be involved in the planning scheduling and execution of any systems integration activities
   - needs to sign off any systems integration activities
   - are the individuals from a range of organisations who need to engage in systems integration assignments that span multiple organisations

d) the challenges involved in combining systems system components and/or subsystems into working solutions that support business processes for one or many organisations

e) the external factors which may impact on systems integration work

f) the systems services and assets and associated business processes that may need to be integrated as part of the systems integration activities
Manage systems integration activities 5045.02

Performance Criteria 5045.02C

a) Identify source and use all relevant information required to support systems integration activities.
b) Verify the accuracy, currency, completeness and relevance of information collected, used, produced, and documented as part of systems integration activities.
c) Take appropriate and timely action in the event of the deliverables of systems integration being incorrect, incomplete, or inadequate or failing to meet the business needs.
d) Monitor the operation of systems integration activities to ensure quality and compliance with all legislation, regulations, and standards.
e) Manage effectively the processes, procedures, methods, tools, and techniques to monitor the alignment and progress of systems integration activities with any relevant systems architectures.
f) Identify and manage effectively the budgets, plans, and schedules for any systems integration assignment.
g) Evaluate all information gathered during systems integration activities in order to identify lessons for future activities.

Knowledge 5045.02K

a) how to identify and select:
   - how systems integration activities need to work in order to support business processes that span multiple organisations
   - how the target ""end to end"" IT/technology system(s) needs to operate and which system components and subsystems need to be integrated into it
   - which technologies are available and may be required to support the integration of systems, system components and/or subsystems into an IT/technology system supporting an organisation and/or organisations
   - service level and other operational requirements that need to be incorporated within systems integration deliverables
b) how to identify, select, and use information to inform systems integration activities:
   - from business analysis and other design, development, and testing activities
   - contained within architecture models
   - relating to the organisations that may need to be involved in systems integration activities
   - relating to how systems integration activities need to support business processes that span multiple organisations
c) how to verify the accuracy, currency, completeness, and relevance of information collected, used, produced, and documented as part of systems integration activities.
d) how to use and apply the procedures, tools, and techniques to monitor:
   - the alignment of systems integration activities with any relevant systems architectures
   - the progress of systems integration activities against budgets, plans, and schedules

Knowledge 5045.02K

e) how to ensure the alignment of systems integration activities with all relevant legislation, regulations, and external standards.
f) how to use and apply information from monitoring the progress of systems integration activities against budgets and plans.
g) how to monitor:
   - the involvement and engagement of all relevant organisations in systems integration assignments that span multiple organisations
   - the quality and effectiveness of systems integration activities within individual organisations that are impacted and across them
   - the progress of systems integration activities against budgets, plans, and schedules
   - the alignment of systems integration activities with the business needs of any organisations impacted by them
   - the alignment of systems integration activities with the systems architectures relevant to any organisations impacted by or involving them
   - compliance with all relevant legislation, regulations, and external standards relating to systems integration activities
   - compliance with all professional and ethical standards relating to systems integration activities
   - the quality and effectiveness of external providers of systems integration services
h) how to manage:
- the integration of the individual systems components and subsystems to align with systems architectures systems design and development deliverables and service level requirements
- changes to business requirements through change control mechanisms during systems design integration activities
- the alignment of systems integration activities with all relevant legislation regulations and external standards
- the execution and progress of systems integration activities
- the alignment of systems integration activities with any related organisational design/redesign process design/redesign and/or business change
- issues arising as a result of systems integration activities
- external factors affecting systems integration activities

i) how to take actions:
- to incorporate all relevant systems system components subsystems infrastructure business processes and individuals across one or more organisations during in systems integration activities
- to integrate individual systems systems components and subsystems to align with systems architectures systems design and development deliverables and service level requirements
- to secure sign off to the systems integration deliverables by sponsors and stakeholders
- to take account of factors external to the organisation in systems integration activities
- in the event of breaches of security and integrity during systems integration activities
- in the event of systems integration activities not supporting the business needs of any organisation involved in or impacted by them
- in the event of systems integration deliverables being inaccurate incomplete and/or inadequate
- in the event of systems integration activities being out of alignment with systems architecture data and business analysis and systems design and development deliverables
- in the event of external providers not providing the appropriate quality of systems integration services

j) how to take actions to ensure:
- the integrity confidentiality and information security both within organisations and across them during systems integration activities
- the integrity and security of individual systems and how they inter-operate during systems integration activities
- co-ordination between systems integration development testing installation implementation and handover activities
- systems integration activities are integrated/incorporated into and support where appropriate wider business programmes
- that systems integration activities are kept on schedule and align with budgets and plans

k) how to design and develop systems integration deliverables aligned to systems architectures and other systems design and development deliverables from one or more organisations

Understanding 5045.02U

a) the importance of maintaining the integrity and security of individual systems and how they inter-operate during systems integration activities

b) the importance of ensuring that information is made available to update the systems architectures of any relevant organisations as a result of systems integration activities

c) the need for monitoring the alignment of systems integration activities with:
- the business needs of any organisations impacted by them
- relevant systems architectures

d) the need for monitoring:
- the quality and effectiveness of systems integration activities
- the progress of systems integration activities against budgets and plans
Manage relationships during system integration activities 5045.03

Performance Criteria 5045.03C

a) Ensure effective constructive relationships are maintained with sponsors stakeholders and external bodies during systems integration activities
b) Ensure co-ordination between systems integration development testing installation implementation and handover activities
c) Manage and monitor the quality and effectiveness of systems integration activities within individual organisations that are impacted and across them
d) Effectively manage relationships with external providers of systems integration services
e) Monitor and report on the effectiveness of external providers of systems integration services
f) Clearly and accurately present and report findings and issues arising from system integration activities within own area of accountability
g) Communicate effectively and in a timely manner with sponsors stakeholders and external bodies on all aspects of system integration activities

Knowledge 5045.03K

a) how to report:
   - the potential implications for the organisation of failures during systems integration activities
   - issues arising from monitoring systems integration activities against budgets plans and schedules
   - findings from monitoring the quality and effectiveness of systems integration activities
   - the progress of systems integration activities to sponsors stakeholders and other individuals
b) how to manage:
   - relationships with sponsors stakeholders and external bodies during systems integration activities
   - relationships with external providers offering systems integration services
c) how to analyse and interpret the results gained from monitoring systems integration activities
d) how to present information produced by systems integration activities particularly relating to how the proposed IT/technology system(s) will function in an understandable form to a wide range of sponsors stakeholders and other individuals in order to confirm understanding and ensure business needs are being met
e) how to present the results gained from monitoring systems integration activities across individual organisations and across all organisations that may be impacted by them
f) how to review and report on the quality and effectiveness of:
   - systems integration activities
   - external providers of systems integration services
g) how to take actions to establish effective relationships with external providers of systems integration services
h) how to communicate effectively and in a timely manner:
   - with sponsors stakeholders and external bodies on all aspects of systems integration activities and how the target IT/technology system(s) will function
   - the progress of systems integration activities against budgets and plans individuals involved in and impacted by them

Understanding 5045.03U

a) the importance of:
   - incorporating systems integration activities into wider business programmes
   - managing relationships with sponsors stakeholders and external bodies on matters relating to systems integration
b) the need of to monitor:
   - the effectiveness and quality of external providers of systems integration services
   - the involvement and engagement of all relevant organisations in systems integration assignments that span multiple organisations

c) who are the external providers of systems integration services

Level 6 competencies

Manage the systems integration infrastructure 5046.01

Performance Criteria 5046.01C

a) Design and develop effective systems integration strategy and policies
b) Design and develop effective standards procedures tools and techniques for the conduct of activities
c) Design and develop effective policies procedures tools and techniques to ensure the alignment of systems integration activities with all relevant legislation regulations and external standards
d) Select appropriate approaches to undertake systems integration activities in a range of business IT and other technology contexts
e) Advise and guide others on all aspects of systems integration activities including best practice
f) Identify when and how it is appropriate to use external providers of systems integration services and which will be the most effective providers to use based on the business technical and organisational issues involved
g) Communicate and negotiate effectively and tactfully with external providers of system integration services
h) Participate effectively in the negotiation and agreement of contracts and the authorisation of decisions actions and approaches in system integration assignments.

Knowledge 5046.01K

a) how to Implement and maintain:
   - systems integration strategy and policies including those to ensure the alignment of systems integration activities with all relevant legislation regulations and external standards
   - the processes procedures methods tools and techniques that may be used to conduct systems integration activities
   - the processes procedures methods tools and techniques to monitor the alignment of systems integration activities with the business needs of any organisations impacted by them
   - the processes procedures methods tools and techniques to monitor the alignment of systems integration activities with all relevant legislation regulations and external standards
   - the processes procedures methods tools and techniques to monitor the alignment of systems integration activities with the systems architectures relevant to any organisations impacted by or involving them
   - the processes procedures methods tools and techniques to monitor the progress of systems integration activities against budgets plans and schedules
b) how to identify and select:
   - the approaches that can be taken to undertake systems integration activities and their appropriateness in a range of business IT and other technology contexts
   - the issues associated with systems integration activities
   - when and how to use external providers of systems integration services
   - which providers of systems integration services to use
c) how to advice and guide others:
   - all aspects of systems integration activities
   - best practice in systems integration activities
d) how to negotiate and make contractual arrangements with on external providers of systems integration services
e) how to agree and authorise
   - system integration decision actions and approaches
Manage systems integration 5046.02

Performance Criteria 5046.02C

a) Identify and recommend opportunities to improve the quality and effectiveness of systems integration activities

b) Take action to improve the quality and effectiveness of system integration activities

c) Verify that the deliverables of systems integration activities meet the business needs of any impacted organisation

d) Make timely and appropriate decisions on the actions that may be taken in the event of systems integration activities not meeting the business need so or being incomplete inaccurate or inadequate

e) Review the quality and effectiveness of any external providers of systems integration activities drawing meaningful conclusions.

Knowledge 5046.02K

a) how to identify select and advise on:
   - what actions may be taken in the event of systems integration activities not supporting the business needs
   - what actions may be taken in the event of systems integration deliverables being inaccurate incomplete and/or inadequate
   - what actions may be taken in the event of systems integration activities being out of alignment with systems architecture data and business analysis and systems design and development deliverables
   - opportunities to improve the quality and effectiveness of systems integration activities

b) how to verify that the deliverables of systems integration activities meet the business needs of any impacted organisation

c) how to review the quality and effectiveness of:
   - systems integration activities
   - external providers of systems integration services

d) how to make decisions:
   - on the results provided by monitoring systems integration activities
   - on the actions that may be taken in the event of systems integration activities not meeting the business need
   - to improve the quality and effectiveness of systems integration activities within an organisation.