



Australian Government

Department of Education, Employment and Workplace Relations

CPPSIS6005A Apply quality control measures to spatial information services industry

Release: 1

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Modification History

Not Applicable

Unit Descriptor

Unit descriptor

This unit of competency specifies the outcomes required to apply OHS standards, statutory requirements, relevant Australian standards, codes of practice, manufacturer specifications, environmental requirements and enterprise procedures through spatial information services (SIS) work procedures that support product development and services. It requires the ability to demonstrate a broad and specialised spatial knowledge base and to incorporate technical and creative skills to plan and execute activity to meet deliverables. Functions will entail complying with and developing or amending organisational guidelines.

Application of the Unit

Application of the unit

This unit of competency supports high-level project management activity in the SIS industry sector. It requires the application of initiative and enterprise, planning, organisational and high level communication, negotiation and problem-solving skills, and an understanding of technology. The skills and knowledge acquired upon completion of this unit would support the needs of employees in SIS, surveying, cartography, town planning, mapping and geographic information systems (GIS).

While no licensing, legislative, regulatory or certification requirements apply holistically to this unit at the time of publication, relevant federal, and state or territory legislation, regulations and codes of practice impact upon this unit (see unit performance criteria and range statement).

Licensing/Regulatory Information

Refer to Application of the Unit

Pre-Requisites

Prerequisite units Nil

Employability Skills Information

Employability skills The required outcomes described in this unit of competency contain applicable facets of employability skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged, will assist in identifying employability skills requirements.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency. Performance criteria describe the required performance needed to demonstrate achievement of the element. Where ***bold italicised*** text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Prepare for examination and assessment of product or service quality.	1.1 Organisational guidelines are analysed to determine specific needs, spatial data requirements and project specification details. 1.2 Product and service sampling, and examination and assessment criteria are discussed with relevant personnel and applied. 1.3 Information on identified risks and contingencies, resources, technology details and techniques is identified and used throughout the quality control process. 1.4 Pertinent legal and statutory standards, and OHS and legislative requirements are incorporated into the quality control process. 1.5 Team skills and knowledge are updated to accommodate design methods and error analysis.
2 Examine and assess product or service quality.	2.1 Product or service is examined and assessed against quality control standard according to organisational procedures. 2.2 Existing information and spatial data are checked to identify appropriate quality control measures. 2.3 Appropriate documentation is developed according to organisational procedures. 2.4 Data is analysed and relevant information is used to identify quality variations. 2.5 Knowledge of process techniques is used to facilitate work groups and assist in the identification and resolution of quality variances. 2.6 Error analysis takes place and fault is isolated and rectified. 2.7 Independent inspection, tests and audits are conducted. 2.8 Spatial product or service sampling, and examination and assessment criteria are applied according to organisational control requirements.
3 Monitor quality control process.	3.1 Quality improvement is monitored and maintained according to organisational requirements. 3.2 Quality awareness is reiterated amongst immediate work team. 3.3 Records of quality control analysis reports are accurate and relevant and maintained according to organisational requirements.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the essential skills and knowledge and their level, required for this unit.

Required skills:

- ability to relate to people from a range of social, cultural and ethnic backgrounds and with a range of physical and mental abilities
- business negotiation
- computer skills (high technical user level) to develop business documentation and use relevant software, hardware and equipment
- contractual management
- delegation
- design
- information management
- literacy skills to:
 - assess and use workplace information
 - conduct web-based searches and use digital techniques
 - locate and interpret legislation and other written documentation
 - prepare and manage documentation and information flow
 - read and write key performance reports, including technical reports
 - research and evaluate (high level) in order to source SIS educational information
 - search databases and catalogues
 - write complex flow chart in order to identify and distil information
 - write detailed text identifying specific course of action and detailing alternatives after defining the needs of the audience and the purpose of the information
- numeracy skills to:
 - accurately record and collate
 - analyse errors
 - conduct image analysis
 - estimate costs
 - interpret and analyse statistics
 - perform mental calculations
 - undertake complex computations
- organisational skills to plan and prioritise activities to meet contractual requirements
- presentation
- problem-solving skills to select appropriate course of action from a wide variety of options

REQUIRED SKILLS AND KNOWLEDGE

- proofreading and editing
- quality assurance
- research and analytical skills to:
 - assemble evidence and evaluate for accuracy and relevance
 - use and follow academic procedure for research techniques and copyright requirements
 - use a variety of strategies for planning
- spatial skills to:
 - exercise precision and accuracy in relation to all aspects spatial and aspatial data design
 - perform spatial data archival and retrieval and train others in this task
 - perform spatial data management and manipulation and train others in this task
 - perform file management and train others in this task
 - solve complex problems relating to height, depth, breadth, dimension, direction and position in actual operational activity and virtual representation
 - train others in spatial precision techniques
 - understand implications of height, depth, breadth, dimension and position to actual operational activity and virtual representation
- verbal and written communication skills to:
 - build on others' ideas to advance discussion and question others to clarify ideas
 - encourage feedback
 - explore ideas in discussion
 - listen and question to clarify and elicit information
 - participate effectively in verbal interactions
 - provide clear sequenced oral instruction to others.

Required knowledge and understanding:

- copyright and other relevant legislation
- data presentation techniques
- design methods
- enterprise policies and procedures across the range of tasks required
- enterprise report formats
- guideline development
- information management
- legislation as it applies to spatial deliverables
- measurement techniques
- methods of assessing existing spatial datasets and dataset sources
- OHS
- organisational policies and guidelines
- project management tools, techniques and methodologies

REQUIRED SKILLS AND KNOWLEDGE

- performance evaluation procedures
- presentation methods
- research techniques
- risk management principles
- safe work practices
- spatial data capture methodologies
- spatial information principles and their application
- SIS project contingencies
- spatial referencing systems
- spatial technologies
- sources of data relevant to the research
- standard and enterprise preferred referencing techniques
- use of metadata
- use of relevant equipment
- use of relevant software packages.

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, the range statement and the Assessment Guidelines for this Training Package.

Overview of assessment

This unit of competency could be assessed on its own or in combination with other units relevant to the job function, for example units CPPSIS6001A Conduct open mine pit surveying, CPPSIS6002A Create mine drawings, CPPSIS6004A Design a spatial project plan, CPPSIS6008A Conduct design and set out survey, CPPSIS6011A Carry out basic mine design, CPPSIS6012A Conduct an advanced GPS control survey, CPPSIS6013A Conduct underground mine surveying, CPPSIS6014A Conduct mining geology operations, CPPSIS6015A Conduct complex engineering set out surveys, CPPSIS6016A Monitor complex engineering surveying structures, CPPSIS6017A Conduct advanced remote sensing analysis, CPPSIS6018A Design spatial networks and geocoding, CPPSIS6019A Develop distributed mapping applications, and CPPSIS6020A Develop 2-D and 3-D terrain visualisations.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

A person who demonstrates competency in this unit must be able to provide evidence of:

- applying cost considerations
- applying quality control procedures, processes and techniques
- applying relevant sections of OHS legislation, statutory legislation, enterprise/site safety procedures, enterprise/site emergency procedures and assessing contingencies
- communication and negotiation skills
- designing computations
- determining precise data requirements
- developing new products
- documenting risks and contingencies
- understanding spatial project deliverables.

Specific resources for assessment

Resource implications for assessment include access to:

- assessment instruments, including personal planner and assessment record book
- assignment instructions, work plans and schedules, policy documents and duty statements
- registered training provider of assessment services
- relevant guidelines, regulations and codes of practice
- suitable venue and equipment.

Access must be provided to appropriate learning and assessment support when required.

Where applicable, physical resources should include equipment modified for people with disabilities.

Context of assessment

Holistic: based on the performance criteria, evidence guide, range statement, and required skills and knowledge.

Method of assessment

Demonstrated over a period of time and observed by the assessor (or assessment team working together to conduct the assessment).

Demonstrated competency in a range of situations, that may include customer/workplace interruptions and involvement in related activities normally experienced in the workplace.

Obtained by observing activities in the field and reviewing induction information. If this is not practicable, observation in realistic simulated environments may be substituted.

Guidance information for

Assessment requires that the clients' objectives and

assessment

industry expectations are met. If the clients' objectives are narrowly defined or not representative of industry needs, it may be necessary to refer to portfolio case studies of a variety of SIS requirements to assess competency.

Oral questioning or written assessment and hypothetical situations (scenarios) may be used to assess underpinning knowledge (in assessment situations where the candidate is offered a preference between oral questioning or written assessment, questions are to be identical).

Supplementary evidence may be obtained from relevant authenticated correspondence from existing supervisors, team leaders or specialist training staff.

All practical demonstration must adhere to the safety and environmental regulations relevant to each State or Territory.

Where assessment is for the purpose of recognition (recognition of current competencies [RCC] or recognition of prior learning [RPL]), the evidence provided will need to be authenticated and show that it represents competency demonstrated over a period of time.

In all cases where practical assessment is used it will be combined with targeted questioning to assess the underpinning knowledge.

Assessment processes will be appropriate to the language and literacy levels of the candidate and any cultural issues that may affect responses to the questions, and will reflect the requirements of the competency and the work being performed.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. ***Bold italicised*** wording in the performance criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Organisational guidelines may include:

- code of ethics
- company policy
- legislation relevant to the work or service function
- manuals
- OHS policy and procedures
- personnel practices and guidelines outlining work roles, responsibilities and delegations.

Spatial data requirements may include:

- administration (postcodes, suburbs, and federal and state electoral counties)
- analysis of environmental, land and geographic information
- asset management
- cartographic services
- civil engineering
- digital imagery
- electricity
- emergency services management
- environmental datasets
- GIS
- integrated services - environmental, land and geographic related datasets
- land ownership tenure system
- local government
- location-based services
- global positioning
- mapping facilities
- site analysis
- survey marks
- sewerage
- telecommunications
- town planning
- utility services such as water.

Project specification details may include:

- appendices
- bibliography
- introduction
- computations
- design details
- executive summary
- financial figures
- footnotes and endnotes
- graphs
- graphics
- illustrations
- index
- research findings
- recommendations
- sales figures and reports
- spatial data components
- spatial requirements
- statistics
- summaries
- table of contents.

Relevant personnel may include:

- colleagues
- registered surveyors
- site personnel
- staff or employee representatives
- supervisors or line managers
- suppliers
- users.

Contingencies may include:

- equipment failure
- injury
- movement
- observation errors
- obstructions
- weather.

Legal and statutory may include:

- confidentiality
- copyright law
- local government requirements
- national standards
- plagiarism
- privacy
- security
- slander
- state statutes and regulations.

OHS may include:

- Australian standards
- development of site safety plan
- identification of potential hazards
- inspection of work sites
- training staff in OHS requirements
- use of equipment and signage.

Legislative requirements may include:

- Australian Computer Society code of ethics
- Australian standards
- award and enterprise agreements
- certification requirements
- codes of practice
- equal employment opportunities (EEO)
- national industry standards
- quality assurance requirements.

Information may include:

- design
- digital or hard copy
- illustrations
- maps
- metadata
- spatial data components
- text.

Spatial data may:

- include data from:
 - echo sounder
 - global positioning system unit
 - level
 - photogrammetry
 - remote sensing
 - total station
- may relate to:
 - depth
 - dimension
 - direction
 - height
 - position.

Error analysis may include:

- equipment usage which may relate to:
 - computer-aided design (CAD)
 - digital gauge
 - dimensional gauge
 - tapes
 - templates

- Quality control analysis reports*** may include:
- inspection against project specifications
 - measurements
 - organisation's quality assurance and management procedures
 - visual inspection.
 - detailed technical description of the spatial data and its qualifiers
 - error control records
 - examination records
 - sampling records.
- Accurate and relevant*** may include:
- consistent meaning and layout
 - correct computations
 - correct spelling, grammar and punctuation
 - intended meaning is clear
 - no omissions or oversights
 - reliable data
 - timely, up-to-date information.

Unit Sector(s)

Unit sector Spatial information services