



Australian Government

Department of Education, Employment and Workplace Relations

CPPSIS5001A Plan spatial data collection and validation

Release: 1

CPPSIS5001A Plan spatial data collection and validation

Modification History

Not Applicable

Unit Descriptor

Unit descriptor

This unit of competency specifies the outcomes required to develop data collection and validation plans for new data. It requires the ability to evaluate spatial information to apply knowledge to plan future collection requirements. Functions would be carried out within organisational guidelines.

Application of the Unit

Application of the unit

This unit of competency supports the application of organisational, sound communication, negotiation and problem-solving skills, the ability to demonstrate initiative and enterprise, and an understanding of technology. The skills and knowledge acquired upon completion of this unit would support the needs of employees in surveying, cartography, town planning, mapping or geographic information systems (GIS).

Licensing, legislative, regulatory and certification requirements may impact on this unit. Incorporate these requirements according to state, territory and federal legislation.

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 Scope spatial data acquisition requirements.	1.1 <i>Client instructions</i> are analysed to determine specific needs and <i>spatial data requirements</i>. 1.2 Spatial data requirements and <i>constraints</i> are identified through consultation with <i>client</i> and outcomes are recorded according to <i>organisational guidelines</i>. 1.3 A site assessment is conducted when necessary to clarify the acquisition requirements, and outcomes are recorded according to organisational guidelines. 1.4 Skills and knowledge are updated to accommodate changes in spatial data acquisition requirements.
2 Evaluate available collection options.	2.1 Assessment of technical, financial, legal and resource implications of each available <i>collection option</i> is conducted to ensure preferred option meets written data specifications. 2.2 Preferred option is selected on the basis of client needs and organisational capability and priorities. 2.3 <i>OHS</i> issues are considered at all times. 2.4 Assessment process is documented according to organisational guidelines.
3 Develop spatial data collection and validation plan.	3.1 <i>Project objectives</i>, deliverables, constraints and <i>principal work activities</i> are defined and documented according to the <i>written specifications</i>. 3.2 Identified risks, contingencies and resources, as well as full details of technology and <i>techniques</i> to be used to collect the spatial data in the specified format, are included in the plan. 3.3 Spatial data <i>validation process</i> is specified in the plan to verify the <i>integrity</i> of the required spatial data. 3.4 Where necessary, the plan is presented to client for confirmation and approval.
4 Communicate data acquisition requirements to relevant personnel.	4.1 Written specifications of data to be acquired are communicated with <i>relevant personnel</i>, according to organisational guidelines.

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
- analytical skills
- business negotiation
- communication skills to:
 - consult effectively with clients and colleagues
 - impart knowledge and ideas through oral, written and visual means
- computer skills (high technical user level) to complete business documentation
- day-to-day human resource management
- delegation of duties
- literacy skills to:
 - assess and use workplace information
 - locate and interpret legislation and other written documentation
 - prepare and manage documentation
 - read and write technical reports
 - research and evaluate
- numeracy skills to:
 - analyse errors
 - conduct image analysis
 - perform mental calculations
 - interpret and analyse statistics
 - record with accuracy and precision
 - undertake computations
- organisational skills to:
 - coordinate technical and human resource inputs to research activities
 - prioritise activities to meet contractual requirements
- quality assurance
- spatial skills to:
 - display proficiency in the operation of spatial data capture equipment
 - exercise precision and accuracy in relation to spatial and aspatial data acquisition and the use of electronic equipment
 - 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 problems relating to height, depth, breadth, dimension, direction and

REQUIRED SKILLS AND KNOWLEDGE

position in actual operational activity and virtual representation

- understand implications of height, depth, breadth, dimension and position to actual operational activity and virtual representation
- time management skills.

Required knowledge and understanding:

- information management
- legislation as it applies to the spatial industry sector
- methods of assessing existing spatial datasets and dataset sources
- organisational policies and guidelines, such as pricing policies
- project management tools, techniques and methodologies
- quality assurance principles
- performance evaluation procedures
- project review procedures
- safe work practices
- spatial data capture methodologies
- spatial information principles and their application
- spatial information services (SIS) project contingencies
- spatial referencing systems
- spatial technologies
- working within budgetary constraints.

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 CPPSIS5002A Capture new spatial data, CPPSIS5005A Obtain and validate existing spatial data, CPPSIS5006A Integrate spatial datasets, CPPSIS5007A Maintain complex spatial data systems, and CPPSIS5008A Develop a complex spatial and aspatial database.

Critical aspects for assessment and evidence required to demonstrate

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

- applying cost consideration

competency in this unit

- applying qualitative and quantitative measurements for a project
- assessing and acting upon contingencies
- communication and negotiation skills
- determining a collection and validation process based on thorough assessment of all relevant considerations
- managing risks and contingencies
- working towards set targets
- 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

Assessment requires that the clients' objectives and 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.

Client instructions refer to description of outputs and may be contained in:

- contracts
- memos
- tender briefs
- verbal instructions
- written instructions.

Spatial data requirements may include:

- administration (e.g. 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.

Constraints may include:

- contractual arrangements
- resource availability

- Client** may include:
- time.
 - customers with routine or special requests
 - external to organisation
 - internal to organisation
 - regular and new customers, including:
 - business enterprises
 - government agencies
 - members of the public
 - suppliers.
- Organisational guidelines** may include:
- code of ethics
 - company policy
 - legislation relevant to the work or service function, including equal employment opportunity (EEO)
 - manuals
 - OHS policies and procedures
 - personnel practices and guidelines outlining work roles and responsibilities.
- Collection options** may include:
- data logging
 - digitising theodolite
 - global position system
 - photogrammetry
 - remote sensing
 - scanning
 - sonar
 - survey
 - total station.
- 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.
- Project objectives** may include:
- agreed client requirements
 - written specifications.
- Principal work** activities refer to:
- activity and sequence of activity determined to be appropriate in order to meet project objectives.
- Written specifications** refer to:
- detailed technical description of the spatial data and its qualifiers.
- Techniques** may include:
- field collection
 - data interrogation and manipulation.

Validation process means reflecting the true state of a test result, including tests for systematic distortions such as:

- confounding bias
- information/data bias
- observational bias
- recall bias
- selection bias.

Integrity may include:

- authenticity
- relevance to the project.

Relevant personnel may include:

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

Unit Sector(s)

Unit sector

Spatial information services