



Australian Government

CPPSIS5031A Plan spatial data collection and validation

Release 1

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Modification History

Unit revised and not equivalent to CPPSIS5001A Plan spatial data collection and validation
Element structure, performance criteria, and critical aspects reviewed to reflect workplace requirements

Skills and knowledge requirements and the range statement updated

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

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/Regulatory Information

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

Pre-Requisites

Nil

Employability Skills Information

This unit contains employability skills.

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

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|---|--|-----|---|
| 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. |
| 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 | 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 ***validation process*** is specified in the plan to verify the ***integrity*** of the required spatial data.
- 3.4 Where necessary, the plan is presented to client for confirmation and approval.

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|---|--|-----|--|
| 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. |
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Required Skills and Knowledge

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

Required skills

- communication skills to:
 - consult effectively with clients and colleagues
 - impart knowledge and ideas through oral, written and visual means
- computer skills to complete business documentation
- day-to-day human resource management
- initiative and enterprise skills to delegate duties
- literacy skills to:
 - assess and use workplace information
 - 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:
 - research activities
 - prioritise activities to meet contractual requirements
- 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
 - archive and retrieve spatial data
 - manage and manipulate spatial data

- manage files

Required knowledge

- information management
- methods of assessing existing spatial datasets and dataset sources
- organisational policies and guidelines applied to spatial services, such as pricing policies
- project management tools, techniques and methodologies
- quality assurance principles relating to the collection of spatial data
- project review procedures
- spatial data capture methodologies
- spatial information principles and their application
- spatial referencing systems
- surveying and spatial information services (SSIS) project contingencies

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 CPPSIS5032A Capture new spatial data, CPPSIS5035A Obtain and validate spatial data, CPPSIS5036A Integrate spatial datasets, CPPSIS5037A Maintain complex spatial data systems, and CPPSIS5038A Develop a complex spatial and aspatial database.

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 qualitative and quantitative measurements for a project
- assessing and acting upon contingencies
- determining a collection and validation process based on thorough assessment of all relevant considerations
- knowledge of spatial data applied to collection options.

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

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
- time.

Client may include:

- 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
- 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.
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)

Surveying and spatial information services

Custom Content Section

Not applicable.