



Australian Government

CPPSIS5052A Integrate surveying datasets

Release 1

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Modification History

Unit revised and not equivalent to CPPSIS5022A Integrate surveying datasets
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 integrate different surveying datasets and to manipulate the combined data in a processing package. It requires the ability to interpret and analyse information and apply technical skills. Functions would be carried out within organisational guidelines.

Application of the Unit

This unit of competency supports the application of accuracy, planning, organisational, communication and problem-solving skills; interpreting technical documentation; and high-level understanding of technology. The skills and knowledge acquired upon completion of this unit would support the needs of employees in surveying.

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 | Integrate different datasets into a processing package. | 1.1 | <i>Objectives</i> , deliverables, constraints and principal work activities are defined and documented according to <i>project specifications</i> and <i>legislative requirements</i> . |
| | | 1.2 | <i>Measured datasets</i> are imported or downloaded into a <i>processing package</i> . |
| | | 1.3 | <i>Measurements</i> are checked, validated and recorded according to project specifications. |
| | | 1.4 | Data is edited according to <i>organisational guidelines</i> . |
| 2 | Process integrated data using a processing package. | 2.1 | Objectives and principal work activities are defined. |
| | | 2.2 | Measured survey data is processed for comparison with dataset <i>design</i> . |
| | | 2.3 | Measurements are <i>validated</i> and recorded according to project specifications. |
| | | 2.4 | Checks on integrated data are completed according to requirements. |
| | | 2.5 | Pertinent standards are considered and adhered to. |
| | | 2.6 | Impact of <i>contingencies</i> and problems is effectively managed. |

- 3 Conduct follow-up activity.
- 3.1 **Required documentation** is completed promptly, accurately and according to organisational guidelines.
- 3.2 **Relevant personnel** are informed of the results according to organisational guidelines.
- 3.3 Spatial data is archived according to project specifications.

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
- interpersonal skills to direct teams
- literacy skills to:
 - assess and use workplace information
 - read and write technical reports
 - research and evaluate
- numeracy skills to:
 - analyse errors
 - conduct image analysis
 - interpret and analyse statistics
 - perform mental calculations
 - record with accuracy and precision
 - undertake high level computations
- organisational skills to:
 - coordinate technical and human resource inputs to research activities
 - prioritise activities to meet contractual requirements
- spatial skills to:
 - exercise precision and accuracy in the use of datasets
 - archive and retrieve spatial data
 - manage and manipulate spatial data
 - manage files
- technology skills to:
 - use computers to complete dataset documentation
 - use instruments when integrating surveying datasets

Required knowledge

- accuracy and precision requirements
- data format
- data reduction
- limitations of equipment

- organisational policies and guidelines
- planning and control processes
- relevant industry requirements and standards
- safe work practices
- software application for spatial data processing and general data handling
- spatial reference systems
- surveying equipment for survey data capture
- surveying data capture methodologies

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 CPPSIS5047A Conduct an advanced GNSS data collection and set out survey.
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: • performing measurements • reducing and manipulating survey data • integrating datasets into a processing package • knowledge of mathematical concepts and techniques.
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 surveying and spatial information services 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.

Objectives may include:

- client requirements
- written survey data specifications.

Project specifications refer to:

- detailed technical descriptions of the survey data and its requirements.

Legislative requirements may include:

- relevant state, territory and federal legislation affecting organisational operations, including:
 - anti-discrimination and diversity

- industrial relations.

Measured data may relate to:

- depth
- dimension
- direction
- height
- position.

Processing package refers to:

- computations of measured datasets.

Measurements may include:

- current meter
- echo sounder
- global navigation satellite system (GNSS)
- level
- photogrammetry
- remote sensing
- tape
- tide gauge
- total station.

Organisational guidelines may include:

- appropriate timelines
- final product formats
- format design parameters
- guidelines for working with teams
- particular requirements for data processing.

Design may include:

- digital information
- hard copy plans
- maps.

Validated 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.

Contingencies may include:

- equipment failure
- injury to personnel
- personnel turnover
- observation errors
- obstructions to project plan
- weather.

Required documentation may include:

- field records
- final product reports
- survey plots.

Relevant personnel may include:

- managers
- site personnel such as field hands

- supervisors
- surveyors.

Unit Sector(s)

Surveying and spatial information services

Custom Content Section

Not applicable.