



Australian Government

CPPSIS4029A Collect and set out basic surveying data

Release 1

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Modification History

Unit revised and not equivalent to CPPSIS4009A Collect and set out basic surveying data
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 collect and set out basic surveying data. It requires the ability to plan and execute the collection and set out operation, in a team environment, often in the lead role. Functions would be carried out under limited supervision and within organisational guidelines.

Application of the Unit

This unit of competency supports the application of organisational, communication and problem-solving skills, and a sound understanding of technology. The skills and knowledge acquired upon completion of this unit would apply to the needs of employees in supporting positions for surveying and mapping.

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

- | | | |
|---|----------------------------------|--|
| 1 | Gather basic surveying data. | <p>1.1 <i>Equipment</i> is operated according to <i>manufacturer specifications</i> and <i>organisational guidelines</i>.</p> <p>1.2 <i>Data</i> and <i>attributes</i> are collected according to the provided <i>data collection plan</i>.</p> <p>1.3 Discrepancies between specifications and actual activities are identified, recorded and reported.</p> <p>1.4 Administrative and industry requirements for data collection are complied with and recorded.</p> <p>1.5 <i>OHS</i> requirements are adhered to.</p> |
| 2 | Finalise the collection process. | <p>2.1 <i>Required documentation</i> is completed according to the organisational requirements.</p> <p>2.2 Data collection is completed according to organisational requirements.</p> <p>2.3 <i>Measurements</i> are validated and recorded according to the <i>project specifications</i>.</p> |
| 3 | Set out basic surveying data. | <p>3.1 Basic engineering surveying data is set out according to data collection plans.</p> <p>3.2 Discrepancies between the data collection plan and the actual activities are identified, recorded and reported to <i>relevant personnel</i>.</p> |

Required Skills and Knowledge

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

Required skills

- analytical skills to determine the data requirements of the survey project
- communication skills to:
 - discuss vocational issues effectively with colleagues
 - impart knowledge and ideas through oral, written and visual means
- computer skills to complete business documentation
- literacy skills to:
 - assess and use workplace information
 - read and interpret datums and projections
 - read and record data and write technical reports
 - research and access routine sources of spatial data
- numeracy skills to:
 - analyse errors
 - record and interpret statistics
 - record with accuracy and precision
 - undertake computations
- organisational skills to:
 - prepare and administer documentation
 - prioritise activities to meet contractual requirements
- self-management skills
- spatial skills to:
 - collect and set out basic survey data accurately
 - archive and retrieve spatial data
 - solve basic problems relating to height, depth, breadth, dimension, direction and position in actual operational activity and virtual representation
- work effectively as part of a team

Required knowledge

- accuracy and precision requirements
- data recording and reduction
- limitations of equipment
- organisational policies and guidelines
- safe work practices

- range of basic surveying data capture and data set out methodologies
- spatial reference systems
- survey control requirements
- surveying equipment for data capture and data set out
- surveying computations
- surveying data handling
- surveying reference systems

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 CPPSIS4030A Operate surveying equipment, and CPPSIS4031A Perform surveying computations.
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: • accuracy in: • basic measurements • reducing and manipulating survey data • interpreting design information to identify the components to be measured • matching objectives with resources.
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.

Equipment may include:

- global navigation satellite system (GNSS)
- level
- tape.

Manufacturer specifications may include:

- equipment specifications
- operator manuals.

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.

Data may:

- include data from:
 - echo sounder
 - GNSS
 - level
 - photogrammetry
 - remote sensing
 - theodolite
 - total station
- relate to:
 - depth
 - dimension
 - direction
 - height
 - position.

Attributes are properties associated with an entity and may include:

- colour
- layer
- level
- line type
- line width
- text.

Data collection plans may include:

- computer-based data
- field recordings.

OHS may include:

- Australian standards
- development of site safety plan
- identification of potential hazards
- inspection of work sites
- use of personal protective clothing
- use of safety equipment and signage.

Required documentation may include:

- electronic or paper-based correspondence with client
- field records
- final report
- records of conversation
- survey plots

- organisational work activity sheets.
- Measurements** may include use of:
- current meter
 - echo sounder
 - GNSS
 - level
 - photogrammetry
 - remote sensing
 - tape
 - theodolite
 - tide gauge
 - total station.
- Project specifications** refer to:
- detailed technical descriptions of the survey data and its requirements.
- 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.