



Australian Government

Department of Education, Employment and Workplace Relations

CPPSIS4004A Collect and set out basic spatial data

Release: 1

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Modification History

Not Applicable

Unit Descriptor

Unit descriptor

This unit of competency specifies the outcomes required to collect and set out basic spatial 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

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, town planning, cartography, mapping and geographic information systems.

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 Source basic spatial data to prepare for data set out.	1.1 Extent, content, intended use, accuracy, precision and format of required spatial data are clearly identified from the specifications. 1.2 A search is undertaken via a range of media to identify sources of information. 1.3 Metadata for potential spatial data, datasets and attributes are obtained to assist in determining the most appropriate data source. 1.4 All potential sources of spatial data are listed according to organisational guidelines.
2 Assess spatial data availability and suitability.	2.1 Spatial data and datasets are assessed for suitability against the specifications. 2.2 Availability of suitable data is verified with the potential suppliers of spatial data, taking into account any copyright and ownership constraints. 2.3 Constraints on use of spatial data are assessed against the specifications. 2.4 Where required, sample data is obtained and assessed to further ensure its suitability. 2.5 Spatial data indexing, backup and archiving requirements are determined to ensure currency.
3 Collect suitable spatial data for set out purposes.	3.1 Administrative and industry requirements for data collection are complied with and recorded. 3.2 OHS requirements are adhered to. 3.3 Spatial data is collected and set out in line with organisational guidelines. 3.4 Skills and knowledge are updated to accommodate changes in data requirements.
4 Document spatial data collection and set out process.	4.1 A written assessment of data availability, including cost, licensing conditions and constraints on use is completed according to organisational guidelines. 4.2 A written assessment of the suitability of available data, including comparisons with quality, accuracy, standards and format requirements is completed according to organisational guidelines. 4.3 All remaining documentation requirements are completed 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
- analytical skills to determine the data requirements of a survey project
- communication skills to:
 - discuss vocational issues effectively with colleagues
 - impart knowledge and ideas through oral, written and visual means
- computer skills (technical user level) to complete business documentation
- interpret surveying task requirements
- literacy skills to:
 - assess and use workplace information
 - interpret and understand legal, financial and procedural requirements
 - process workplace documentation
 - read, record data and write technical reports
 - research and access routine sources of spatial data
- numeracy skills to:
 - record and interpret statistics
 - record with accuracy and precision
 - undertake basic computations
- organisational skills to:
 - prepare and administer documentation
 - prioritise activities to meet contractual requirements
- self-management skills
- spatial skills to:
 - perform spatial data archival and retrieval
 - perform spatial data management and manipulation
 - perform file management
 - solve basic problems relating to height, depth, breadth, dimension, direction and position in actual operational activity and virtual representation
 - understand implications of height, depth, breadth, dimension and position to actual operational activity and virtual representation
- work effectively as part of a team.

Required knowledge and understanding:

- accuracy and precision requirements (basic)

REQUIRED SKILLS AND KNOWLEDGE

- data license agreements
- data quality and integrity
- data recording and reduction (basic)
- existing spatial datasets and dataset sources
- organisational policies and guidelines
- safe work practices
- range of basic spatial data capture and data set out methodologies
- relevant legislation and requirements
- spatial control requirements
- spatial data formats, handling and structure
- spatial equipment for data capture and data set out
- spatial reference systems.

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 CPPSIS4001A Maintain spatial systems, CPPSIS4002A Store and retrieve spatial data, and CPPSIS4005A Collect basic GPS data.
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: • ensuring that accuracy has been attempted in: • basic measurements • basic reporting and documentation • basic spatial data reduction and manipulation • basic resource planning • interpretation of basic design information to identify the components to be measured • identifying sources of data and evaluating the suitability of available data against project specifications • matching objectives with resources.
Specific resources for	Resource implications for assessment include access to:

assessment

- 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 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

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.

Format may include:

- electronic information and data management systems, where system refers to computer software
- hardware
- users and other elements.

Spatial data:

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

Specifications refer to:

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

Range of media may include:

- computer-based storage
- internet spatial data directories
- services authorities indexes
- supplier catalogues.

Metadata may include:

- summarised information about a spatial dataset that describes the characteristics of the dataset, including:
 - availability
 - conditions of use
 - coordinate system
 - currency
 - date of acquisition
 - quality

- source
 - spatial data acquisition methodologies
 - version control.
- Datasets** may include:
- collection of data arranged in a digital geographic information exchange standard (DIGEST) compliant format used for the bulk exchange of data between producers
 - collection of data that has a specification which pre-defines the content and the DIGEST encapsulation.
- Attributes** are properties associated with an entity and may include:
- colour
 - layer
 - level
 - line type
 - line width
 - text.
- 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.
- Suitability:**
- assessment of whether the spatial data will meet:
 - accuracy
 - completeness
 - coverage
 - density
 - logical consistency
 - specifications.
- Availability** includes:
- assessment of whether the spatial data can be obtained and used for client requirements.
- Suppliers of spatial data** may include:
- brokers
 - government agencies
 - internal
 - private.
- Constraints** may include:
- contractual arrangements
 - resource availability
 - time.
- OHS** may include:
- Australian standards
 - development of site safety plan

Documentation required
may include:

- identification of potential hazards
- inspection of work sites
- training staff in OHS requirements
- use of personal protective clothing
- use of safety equipment and signage.
- electronic or paper-based correspondence with client
- field records
- final reports
- records of conversation
- survey plots
- organisational work activity sheets.

Unit Sector(s)

Unit sector

Spatial information services