



Australian Government

CPPSIS5032 Capture new spatial data

Release: 1

CPPSIS5032 Capture new spatial data

Modification History

Release 1.

Replaces superseded equivalent CPPSIS5032A Capture new spatial data.

This version first released with CPP Property Services Training Package Version 3.

Application

This unit of competency specifies the outcomes required to capture new spatial data to meet client specifications using a variety of data capture methodologies. The unit covers analysing project specifications, as well as organisational, administrative and legal requirements, to coordinate human resources, equipment and supplies. The unit also covers setting up and using specialist surveying equipment and technologies to capture and manipulate spatial data, including entities, attributes, topological features and metadata; and checking and validating the integrity and accuracy of results. In addition, the unit covers performing the operational maintenance of equipment to ensure its sound working order, and identifying faults and organising repairs as required. The unit requires the ability to use project management techniques to schedule, monitor and report on project activities, and supervisory skills to designate work and provide guidance to staff.

The unit supports those who work in a lead role in a surveying or spatial information services team in areas such as surveying, cartography, town planning, mapping or geographic information systems (GIS).

No licensing, legislative, regulatory, or certification requirements apply to this unit of competency at the time of endorsement.

Pre-requisite Unit

Nil

Unit Sector

Surveying and spatial information services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions.

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|---------------------|---|
| 1. Prepare for data | 1.1. Project and client specifications, organisational requirements, and available resources are identified and |
|---------------------|---|

- collection.
- key activities and timeline scheduled accordingly.
- 1.2. **Administrative and legal requirements** for data collection are complied with and recorded according to organisational requirements.
 - 1.3. **Appropriate persons** are informed about the project according to organisational requirements.
 - 1.4. Equipment, supplies and technologies are selected according to project specifications.
 - 1.5. Designated responsibilities are communicated to staff to ensure understanding of work tasks according to organisational requirements.
2. Gather spatial data.
- 2.1. Equipment is set up and operated according to manufacturer specifications and organisational requirements.
 - 2.2. Entities are related to a reference system, and data and attributes are collected according to project specifications.
 - 2.3. **Metadata** is documented according to industry-accepted standards and organisational requirements.
 - 2.4. Discrepancies between specifications and actual activities are identified, recorded and reported.
 - 2.5. Guidance is given to staff assisting in the data collection process as required and according to organisational requirements.
3. Maintain equipment.
- 3.1. **Operational maintenance** of equipment is undertaken according to manufacturer specifications and organisational requirements.
 - 3.2. Contingencies that may affect equipment use are identified and reported.
 - 3.3. Unsafe or faulty equipment is identified, and reported and referred for repair according to organisational requirements.
 - 3.4. Tools and equipment are stored safely according to

manufacturer specifications and organisational requirements.

- | | |
|---------------------------------|--|
| 4. Finalise collection process. | 4.1. Attributes and topological structures are added to spatial data according to project specifications. |
| | 4.2. Data is recorded correctly and documentation completed according to project specifications and organisational requirements. |
| | 4.3. Data integrity and accuracy are checked and validated according to project specifications. |
| | 4.4. Data and documentation are stored according to organisational requirements. |

Foundation Skills

This section describes the language, literacy, numeracy and employment skills essential to performance in this unit but not explicit in the performance criteria.

Skill	Performance feature
Planning and organising skills to:	• prioritise activities to meet contractual requirements.
Numeracy skills to:	• apply budget constraints to project specifications • conduct precise measurements and computations relating to length, angle, elevation, area and volume.
Oral communication skills to:	• ask questions to clarify client requirements • explain procedures to staff.
Reading skills to:	• interpret technical information detailed in manufacturer specifications and legislation.
Writing skills to:	• record technical information in organisational documentation.

- Technology skills to:
- calibrate specialised surveying equipment
 - use equipment software to manipulate spatial data.
- Problem-solving skills to:
- apply contingency measures in the event of adverse weather or equipment failure.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

- Administrative and legal requirements*** must include at least one of the following:
- Indigenous considerations
 - licensing arrangements
 - relevant state, territory and federal legislation and regulations relating to data access, use and storage, including data privacy and information copyright
 - royalty obligations
 - title search processes.

- Appropriate persons*** must include at least two of the following:
- administrative staff
 - colleague
 - contractor
 - field survey staff
 - land occupier
 - land owner
 - manager
 - technician.

- Metadata*** must include at least four of the following:
- availability
 - conditions of use
 - coordinate system
 - currency
 - custodian
 - data accuracy
 - data description

- date of acquisition
- licence
- quality
- source
- spatial data acquisition methodologies
- version control.

Operational

maintenance must

include at least three of
the following:

- adjusting
- calibrating
- cleaning
- lubricating
- maintaining battery
- tightening
- undertaking simple repairs.

Unit Mapping Information

CPPSIS5032A Capture new spatial data

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=6f3f9672-30e8-4835-b348-205dfcf13d9b>

Assessment Requirements for CPPSIS5032 Capture new spatial data

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Performance Evidence

A person demonstrating competency in this unit must satisfy the requirements of the elements, performance criteria, foundation skills and range of conditions of this unit. The person must also capture new spatial data that meets client specifications for two different projects, with each project using two of the following pieces of equipment:

- data logger or other mobile computing device
- global navigation satellite system (GNSS)
- laser scanner
- level
- sonar
- total station
- unmanned aerial vehicle.

While capturing the above new spatial data, the person must:

- coordinate technical and human resources to undertake scheduled work activities, designate work and provide guidance to staff
- accurately record metadata
- apply contingency measures and risk management strategies to ensure data is collected safely and within project timeframes
- comply with legal, administrative and organisational requirements for:
 - communicating with clients
 - copyright
 - recording and reporting information, and completing documentation
 - using, maintaining and storing tools and equipment
 - working safely and using personal protective equipment (PPE) when collecting data and operating equipment
- apply industry-accepted methods for assessing the validity and integrity of spatial data
- conduct operational maintenance on equipment to ensure good working order
- exercise accuracy and precision when collecting and recording spatial data using two of the following data capture methodologies:
 - aerial

- conversion or translation from existing information, including hard copy or digital
- data logging, including GNSS
- photogrammetry
- remote sensing
- scanning
- sonar
- manage and manipulate spatial data, including entities and attributes and topological structures, using surveying technologies
- plan and organise equipment and supplies required to capture spatial data
- set up, calibrate and use surveying equipment
- use two of the following tools to assist in capturing new spatial data:
 - compass
 - clinometer
 - digital imagery
 - distance measuring wheel
 - tape
 - ultra-high frequency radio.

Knowledge Evidence

A person demonstrating competency in this unit must demonstrate knowledge of:

- legal requirements for accessing and storing spatial data, including copyright
- methods for conducting operational maintenance on surveying equipment
- methods for validating the integrity of spatial data
- organisational policies and procedures relating to:
 - budget and resource constraints
 - client service and communication
 - completing records and documentation
 - using and maintaining equipment
 - work health and safety
- principles of risk management relating to data capture operations
- purpose and uses of various data capture technologies and equipment
- spatial data capture methodologies
- spatial data formats and structures
- key features of spatial reference systems
- supervisory processes required to delegate work tasks and communicate with staff.

Assessment Conditions

The following must be present and available to learners during assessment activities:

- equipment and tools:

- as specified in the performance and knowledge evidence
- PPE
- specifications:
 - organisational policies and procedures relating to:
 - work health and safety
 - data privacy and information copyright
- relationships with team members and supervisor:
 - working in a team.

Timeframe:

- as specified by client and project requirements.

Assessor requirements

As a minimum, assessors must satisfy the assessor requirements in the Standards for Registered Training Organisations (RTOs) current at the time of assessment.

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