

**Draft 0.1**

This is a draft update to CPPSIS5038 Develop spatial databases:  
<https://training.gov.au/Training/Details/CPPSIS5038>

Changed PCs to active voice.

Changed 'person' to 'candidate' in PE.

Range of conditions

Appropriate persons must include at least two of the following:

- client
- end user
- manager
- network storage provider
- qualified surveyor
- spatial data supplier
- staff.

Administrative and legal requirements must include at least two 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.

Contingencies must include at least four of the following:

- duplicates
- fireproof storage
- insurance
- media malfunction
- media and formats becoming outdated
- off-site storage
- storage in different media.

## Unit of Competency

### CPPSUR5038 Develop spatial databases

#### Modification history

Release	Comments
1	Replaces superseded equivalent CPPSIS5038A Develop a complex spatial and aspatial database. This version first released with CPP Property Services Training Package Version 3
	Supersedes and is equivalent to CPPSIS5038 Develop spatial databases

#### Application

This unit specifies the skills and knowledge required to develop spatial databases using a range of storage media, including digital and hard copy storage. The unit covers analysing and evaluating storage requirements, specifications and constraints, to identify data components to be maintained and appropriate storage solutions.

The unit also covers arranging to create data indexes to assist in data retrieval and storage; using indexes to record and retrieve data; and accessing and retrieving data. It requires the ability to translate data into the required format to meet task requirements. The unit also requires the ability to negotiate with data suppliers and network storage providers, and to implement project management techniques to manage risks and contingencies relating to data security, and use supervisory techniques to allocate tasks and achieve planned outcomes.

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

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

#### Prerequisite Unit

None

#### Unit Sector

Surveying and spatial information services

#### Elements and Performance Criteria

1. Prepare for storage of spatial data.	<ul style="list-style-type: none"><li>1.1. Identify and document data storage objectives and constraints in consultation with appropriate persons.</li><li>1.2. Analyse data design to determine components to be maintained according to task requirements.</li><li>1.3. Determine and evaluate storage techniques to be used according to organisational requirements.</li><li>1.4. Comply with and record administrative and legal requirements for data storage according to organisational requirements.</li><li>1.5. Allocate work to appropriate persons and supervisory processes are implemented to ensure work is completed within time available.</li></ul>
2. Store spatial data.	<ul style="list-style-type: none"><li>2.1 Put arrangements in place to create data indexes to assist in data retrieval and storage according to task requirements.</li></ul>

	2.2. Record spatial data in an index according to organisational requirements. 2.3. Select method of spatial data storage according to organisational requirements. 2.4. Back up spatial data according to organisational requirements. 2.5. Determine distribution method to ensure that current data is available according to task and organisational requirements.
3. Access and retrieve spatial data.	3.1. Put arrangements in place to use the indexing system to locate spatial data source. 3.2. Access spatial data and translate if necessary into required format according to task requirements.
4. Manage contingencies.	4.1. Develop a risk management plan to identify risks, contingencies and possible solutions to anticipated spatial data storage and retrieval problems. 4.2. communicate risk and contingency plans to appropriate persons and, if necessary, implemented according to organisational requirements.

### Foundation Skills

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

- learning skills to research and access sources of spatial data
- numeracy skills to conduct image analysis and identify budgetary constraints relating to cost of storage systems
- oral communication skills to negotiate distribution methods and network access with data storage providers
- reading skills to interpret graphical information obtained from global navigation satellite systems (GNSS) and GIS
- writing skills to write technical reports detailing problems and solutions relating to data storage and retrieval
- technology skills to use a range of software applications to access and store data and to use querying commands to obtain information from a database
- problem-solving skills to analyse storage solutions appropriate to different types of spatial data and identify contingency procedures in the event of unforeseen risk to data security.

### Unit Mapping Information

Supersedes and is equivalent to CPPSIS5038 Develop spatial databases

### Links

Companion Volume Implementation Guide:

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

## Assessment Requirements for CPPSUR5038 Develop spatial databases

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### Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by:

- developing two different spatial databases to meet specifications.

While developing the above spatial databases, the candidate must:

- analyse written spatial data storage specifications to identify storage requirements and constraints
- arrange data indexes that allow for several notations for cross-referencing data
- access spatial data and translate it into required format
- arrange to create, access and use an indexing system for spatial data
- assess feasibility of data storage options based on available budget, resources and priorities
- comply with administrative and legal requirements for storing, using and retrieving spatial data
- comply with organisational requirements for:
  - recording data
  - completing documentation
  - health and safety when using screen-based equipment
- develop risk and contingency management plans to ensure security of stored spatial data
- negotiate with clients, data suppliers and data network storage providers to achieve required outcomes
- plan system design, including assessing available formats and storage requirements
- read and write technical reports detailing storage solutions for spatial data
- research and evaluate sources of spatial data
- supervise and coordinate staff to assist with research activities
- use project management techniques to coordinate database requirements
- use software, hardware and networking applications to access, store and retrieve data.

### Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- administrative and legal requirements for storing, using and retrieving digital and hard copy spatial data, including copyright
- spatial data storage and retrieval methods
- key features of current indexing systems
- data retrieval methods, including querying and browsing techniques for obtaining information from databases
- industry metadata standards relating to:

- availability
- conditions of use
- coordinate system
- currency
- custodian
- data accuracy
- data description
- date of acquisition
- licence
- quality
- source
- spatial data acquisition methodologies
- version control
- network and security guidelines relating to spatial data
- organisational policies and procedures relating to:
  - accessing, recording, storing and retrieving spatial data
  - communicating with clients, end users and network storage providers
  - completing records and documentation
  - working within budget and resource constraints and priorities
- spatial data formats, classification and indexing systems
- spatial data input technologies, including digitising, scanning, remote sensing and satellite imagery
- spatial data maintenance and management systems
- key features of spatial reference systems
- types of storage media for a range of spatial data.

### Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

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

- equipment:
  - computer with software appropriate for spatial data storage and retrieval
  - ancillary hardware
- specifications:
  - organisational policies and procedures relating to:
  - work health and safety
  - data privacy and information copyright
- physical conditions:
  - access to equipped work station
- relationships with team members and supervisor:
  - working in a team.

Timeframe:

- as specified by task and organisational requirements

## Links

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