



Australian Government

CPPSSI5047 Conduct GNSS surveys

Release: 1

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Modification History

Release 1 This version first released with CPP Property Services Training Package Release 12.0.

This unit supersedes and is equivalent to CPPSIS5047 Conduct GNSS surveys.

Application

This unit specifies the skills and knowledge required to conduct surveys using global navigation satellite system (GNSS) equipment and software suitable for communicating with GNSS receivers for data collection and engineering set-outs. It includes managing data collection and validation activities.

This unit is suitable for skilled surveying technicians and skilled spatial information system (SIS) technicians who use a broad range of cognitive, technical and communication skills to select and apply methods and technologies to analyse information and provide solutions to sometimes complex surveying/spatial information problems.

Surveying and spatial information skills are applied in a range of industry contexts, including town planning, civil construction, mining, engineering, health, agriculture and defence.

All work must be carried out to comply with workplace procedures, in accordance with relevant state/territory regulations that govern surveying work, as well as work health and safety (WHS) legislation and regulations that apply to the workplace.

Cadastral surveying must be undertaken under the supervision of a registered surveyor. Users must check with the relevant regulatory state/territory authority before delivery.

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

Pre-requisite Unit

Nil.

Unit Sector

Surveying and Spatial Information Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

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|-----------------------------------|---|
| 1 Prepare for GNSS survey. | <ul style="list-style-type: none">1.1 Identify and analyse GNSS survey specifications, plans and technical descriptions of surveying data and their requirements.1.2 Schedule key activities and timelines according to available resources and organisational requirements.1.3 Prepare equipment according to survey and organisational requirements.1.4 Plan survey methodology to meet survey specifications, environmental and organisational requirements.1.5 Conduct site reconnaissance and validate existing control data for GNSS observation according to organisational requirements.1.6 Validate positional accuracy of GNSS equipment.1.7 Collate, validate and manipulate set-out data and upload into GNSS receiver. |
| 2 Carry out GNSS surveying tasks. | <ul style="list-style-type: none">2.1 Apply work health and safety requirements for tasks.2.2 Operate GNSS equipment according to manufacturer specifications.2.3 Relate GNSS instruments to a reference system based on survey specifications.2.4 Collect GNSS data using planned methodology according to survey specifications and organisational requirements.2.5 Record GNSS measurements on the reference system according to specifications. |
| 3 Finalise GNSS survey. | <ul style="list-style-type: none">3.1 Process data according to survey specifications.3.2 Test accuracy of data and identify errors and discrepancies using industry-accepted validation methods.3.3 Identify and address discrepancies between specifications and actual data according to survey |

specifications and organisational requirements.

- 3.4 Finalise survey and complete documentation according to organisational requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPPSIS5047 Conduct GNSS surveys.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=6f3f9672-30e8-4835-b348-205dfcf13d9b>

Assessment Requirements for CPPSSI5047 Conduct GNSS surveys

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Performance Evidence

To demonstrate competency a candidate must meet the elements and performance criteria of this unit by planning and conducting a global navigation satellite system (GNSS) survey for data collection and engineering set-outs for two different projects:

- one project must use a reference system such as Map Grid of Australia 2020
- one project must use a localisation system.

For each GNSS survey, the candidate must:

- document data collection
- use industry- accepted survey marks
- position survey marks to meet project specifications
- collect GNSS positional data using differential/real-time kinematic (RTK) techniques
- apply projection and datum parameters when using GNSS equipment and software.

Knowledge Evidence

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

- graphical and technical information in maps, engineering drawings, field records and survey plots
- types of GNSS equipment, their categories and accuracies
- different GNSS data collection techniques, accuracies and applications
- GNSS data collection methods
- reference systems for GNSS data

projection and datum parameters required for GNSS equipment and processing software

- precision requirements for GNSS data
- methods for accessing, manipulating, retrieving and archiving GNSS data
- GNSS communication methods and protocols for interfacing with ancillary equipment
- industry-accepted standards and methods for validating accuracy of GNSS data
- industry-accepted methods for identifying errors and discrepancies

- legislative requirements for use of communication devices, including ultra-high frequency (UHF) devices
- organisational procedures relating to:
 - working safely and using personal protective equipment (PPE)
 - reporting and documentation
 - using and allocating resources
 - using GNSS equipment and software.

Assessment Conditions

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

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting where these skills and knowledge would be performed.

Candidates must have access to:

- geodetic GNSS receiver
- GNSS equipment, including equipment capable of differential and real-time modes of operation
- PPE
- survey specifications.

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