



Australian Government

CPPSSI6032 Conduct advanced GNSS control 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 CPPSIS6032 Conduct advanced GNSS control surveys.

Application

This unit specifies the skills and knowledge required to conduct advanced global navigation satellite system (GNSS) control surveys using GNSS equipment and suitable software to communicate with GNSS receivers. It includes programming and operation of GNSS equipment, relating surveying data to a reference system, and identifying and resolving discrepancies with the reference system.

This unit is suitable for surveyors who use broad theoretical and technical knowledge to analyse information as well as interpret and provide solutions to unpredictable and sometimes complex surveying/spatial information problems. The unit supports those who work in a technical management role in a surveying team.

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.

- 1 Prepare for advanced GNSS control survey.
 - 1.1 Analyse survey specifications and plan key activities required.
 - 1.2 Identify potential situations impacting on effectiveness of GNSS technologies and plan contingencies.
 - 1.3 Set up and check GNSS equipment according to survey and organisational requirements.
 - 1.4 Apply projection and datum parameters when using GNSS equipment and software.
 - 1.5 Obtain, validate and record existing survey control data and determine need for additional controls based on identified non-conformities.
 - 1.6 Collate, validate and manipulate data into the GNSS receiver.
- 2 Carry out GNSS control surveying tasks.
 - 2.1 Work safely, using personal protective equipment (PPE) when conducting field work.
 - 2.2 Program and operate GNSS equipment to analyse and manipulate data according to survey and organisational requirements.
 - 2.3 Relate GNSS survey to a reference system according to survey specifications.
 - 2.4 Identify and resolve problems relating to discrepancies in the reference system or manage contingencies.
 - 2.5 Collect GNSS data using planned methodologies according to survey requirements.
 - 2.6 Analyse existing control networks and establish horizontal and vertical control positions according to project specifications.
 - 2.7 Identify non-conformances in control networks and the need for additional controls.
 - 2.8 Validate and record GNSS measurements on the reference system according to specifications.

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| 3 | Finalise advanced GNSS control survey. | 3.1 | Use GNSS software to process data according to survey and organisational requirements. |
| | | 3.2 | Complete validation checks according to project specifications, industry-accepted standards and organisational requirements. |
| | | 3.3 | Identify and address discrepancies between survey specifications and actual data according to survey and organisational requirements. |
| | | 3.4 | Finalise and complete survey and 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 CPPSIS6032 Conduct advanced GNSS control 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 CPPSSI6032 Conduct advanced GNSS control 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 an advanced global navigation satellite system (GNSS) control survey for two different projects using the following pieces of equipment in both projects:

- geodetic GNSS receiver
- associated equipment capable of differential and real-time modes of operations.

Knowledge Evidence

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

- reference and coordinate systems for surveying data, including Australian Height Datum and Map Grid of Australia
- graphical and technical information in aerial photographs, maps, drawings, field records and survey plots
- technical terminology in specifications and contracts
- types of GNSS data collection techniques, accuracies and applications
- projection and datum parameters required for GNSS equipment and processing software
- GNSS availability, structures, capabilities and limitations
- GNSS control surveying techniques
- methods for accessing, manipulating, retrieving and archiving GNSS data
- accuracy and precision requirements for GNSS control networks
- GNSS accuracy enhancement techniques.

Assessment Conditions

Assessors must meet 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:

- GNSS equipment and relevant software
- personal protective equipment (PPE)
- survey specifications, plans, maps and photographs.

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