



Australian Government

CPPSIS6041 Compile mine survey plans

Release: 1

CPPSIS6041 Compile mine survey plans

Modification History

Release 1.

Replaces superseded equivalent CPPSIS6041A Compile mine survey plan.

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

Application

This unit of competency specifies the outcomes required to compile a mine survey plan using computer-aided design (CAD) programs to produce mine drawings. The unit covers identifying and planning project deliverables and liaising with clients and others to present project specifications and report on outcomes. The unit also covers organising work processes by implementing project management mechanisms; checking and validating essential surveying information; planning for risks and contingencies; and creating a survey database, file structures and conventions and metadata. The unit requires the ability to use specialist surveying tools and techniques to measure, reduce and validate spatial data and create mine plans, cross-sections and plots.

The unit supports those who work in a technical management role in a mining environment and take responsibility for liaising with clients and end users to meet project requirements.

Licensing, legislative, regulatory or certification requirements apply to this unit in some States where mining surveying must be undertaken under the supervision of a registered surveyor. Relevant state and territory regulatory authorities should be consulted to confirm those requirements.

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.

- | | |
|-----------------------------|---|
| 1. Organise work processes. | 1.1. Client requirements and project specifications are determined in consultation with <i>appropriate persons</i> . |
|-----------------------------|---|

- 1.2. Design information is accessed and interpreted to identify spatial data requirements and components to be measured and monitored.
 - 1.3. Essential surveying information is checked for currency and validity.
 - 1.4. Survey database, file structures and conventions, and **metadata** are created according to project specifications.
 - 1.5. Project management mechanisms are implemented to schedule, measure, record and report progress of activities in relation to agreed timeframes and plans.
 - 1.6. Risk management and contingency strategies are followed to ensure project complies with legal, statutory and organisational requirements.
 - 1.7. Agreed communication processes between client and other appropriate persons are implemented and maintained.
2. Standardise mine survey plan requirements.
 - 2.1. Requirements for lodging plan are identified according to organisational requirements.
 - 2.2. Mine plan drawing and plotting requirements are researched and summarised to meet project specifications.
 - 2.3. Contingencies and constraints are managed and problems resolved to ensure plans meet specifications.
3. Produce mine survey plans.
 - 3.1. Measured spatial data is reduced to project reference system.
 - 3.2. Mine plans are created according to project specifications and organisational requirements.
 - 3.3. Measurements are validated and recorded according to project specifications.
4. Finalise mine
 - 4.1. Mine survey plans are finalised and relevant personnel notified of results according to organisational

survey plans.

requirements.

- 4.2. Documentation is completed and spatial data archived 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
Initiative and enterprise skills to:	• translate specifications into drawing designs.
Numeracy skills to:	• apply coordinate system to measured spatial data • apply understanding of height, depth, dimension and position to actual operational activity and virtual representation.
Oral communication skills to:	• liaise with clients to identify plotting detail.
Reading skills to:	• interpret graphical information in cross-sections and plans • interpret technical drawing standards.
Writing skills to:	• record measurements in a format that can be interpreted by a third party.
Technology skills to:	• calibrate specialist surveying equipment to take measurements • operate hardware, including computers and plotters • use CAD software to create plans.
Problem-solving skills to:	• identify legal non-compliance issues.

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.

Appropriate persons must include at least two of the following:

- client
- colleague
- end user
- registered or qualified surveyor
- site personnel
- supplier.

Metadata must include at least eight 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.

Unit Mapping Information

CPPSIS6041A Compile mine survey plan

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 CPPSIS6041 Compile mine survey plans

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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 use a computer and computer-aided design (CAD) software to compile a mine survey plan that meets technical specifications for two projects.

While compiling the above mine survey plans, the person must:

- define and document project deliverables, constraints and activities
- prepare for work by checking the following essential surveying information for currency and validity:
 - mine grid coordinate systems
 - requirements for data processing
- communicate clearly with clients and stakeholders to clarify and report project requirements and plot details
- comply with statutory, legal and organisational requirements relating to:
 - completing records and reporting
 - mine drawings
 - protocols for saving and formatting drawing files
- comply with drawing standards and specifications to create mine plans, views and plots at required scale, which incorporate:
 - grid convergence
 - long and cross-section plot requirements
 - map legends
 - plot symbols
 - sheet surround
- create metadata, database, file structures and conventions as the basis for design work
- exercise precision and accuracy in relation to measurements, tolerances and design
- follow project management techniques to schedule, measure, record and report progress of project activities
- prepare the CAD environment by setting up the hardware and software systems and drawing defaults, and customising menus

- identify and comply with plan lodgement requirements, standard drawing requirements and plotting specifications.

Knowledge Evidence

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

- Australian drawing standards, data formats and precision and accuracy requirements for preparing mine drawings using CAD
- CAD principles, capabilities and uses in relation to mine design
- data reduction and manipulation techniques
- industry-accepted standards for mine survey plans
- statutory, legal and organisational requirements for mine survey plans
- methods for validating measurements to identify errors
- key features of mine grid coordinate systems
- organisational requirements relating to:
 - completing records
 - reporting
 - saving and formatting drawing files
 - working safely
- standard engineering and mining plan design and presentation conventions
- types of mine plans, including:
 - accident plans
 - emergency plans
 - open cut mine plans
 - surface infrastructure plans
 - underground level plans
 - ventilation plans.

Assessment Conditions

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

- equipment:
 - computer and CAD software
- specifications:
 - organisational policies, procedures and documentation relating to data privacy and information copyright for plan content
- physical conditions:
 - access to equipped work station
- relationships with team members and supervisor:
 - lead role in a team
- relationships with client:

- client consultation required.

Timeframe:

- as specified by the client and project requirements.

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