Australian Government

CPPSIS6040 Develop 2-D and 3-D terrain visualisations

Release: 1

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Modification History

Release 1.

Replaces superseded equivalent CPPSIS6040A Develop 2-D and 3-D terrain visualisations.

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

Application

This unit of competency specifies the outcomes required to develop two-dimensional (2-D) and three-dimensional (3-D) visualisations in a geographic information system (GIS) or computer-aided design (CAD) context. It requires the ability to apply wide-ranging specialised technical, creative and conceptual skills and a broad knowledge of spatial datasets. The unit requires the development of technical documentation incorporating mapping and scientific techniques, as well as the ability to communicate graphically. It also requires an understanding of the latest technologies that are available to remotely capture raw elevation data.

The unit supports those who work in a technical management role in a spatial information services team in areas such as cartography, town planning, mapping and 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.
1.	Prepare 2-D or 3-D digital elevation model (DEM).	1.1. GIS or CAD environment or surface elevation is designed according to project specifications and organisational requirements.
		1.2. Current remote sensing technologies for capturing raw elevation data are investigated.

		1.3. Views and layouts are established according to job specifications.
		1.4. Spatial computing platforms and software systems are selected and set up for suitability against job specifications according to organisational requirements.
2.	Create 2-D drawings.	2.1. Availability of suitable data is verified with potential suppliers and constraints are assessed according to job specifications.
		2.2. Detailed views and layouts are created using various scales according to job specifications.
		2.3. 2-D drawings are finalised and existing 2-D model is modified as necessary to meet job specifications.
3.	Create 3-D model or DEM.	3.1. Surface elevation is modelled by mathematically defined surfaces and by point or line data according to job specifications.
		3.2. Products that can be derived from a DEM are determined according to job specifications.
		3.3. Entities are created and manipulated in 3-D space according to job specifications.
		3.4. DEM is developed with a range of thematic data and profiles generated and draped over model according to project specifications.
		3.5. Contour map of area is created by employing procedures appropriate to data format and software according to job specifications.
		3.6. Slope map of area is created from gradient and aspect components according to job specifications.
		3.7. Shaded relief map of area is created from gradient and relief map representations according to job specifications.
		3.8. 3-D model is finalised and existing 3-D model modified as necessary to meet job specifications.

4.	Produce output.	4.1. 2-D and 3-D outputs are documented according to project specifications and organisational requirements.
		4.2. Drawing files and elevation data outputs are saved in appropriate format according to job specifications and organisational requirements.
		4.3. Physical properties are extracted to job specifications and slope map of area is used for analytical purposes.

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:	• extract and output information from engineering and environmental plans • translate specifications into drawing and analysis design • understand how raw elevation data is captured and assigned quality measures.
Numeracy skills to:	• apply quality and accuracy measures on modelled 2-D and 3-D outputs • apply understanding of height, depth, breadth, dimension and position to actual operational activity and virtual representation • use appropriate interpolation techniques to convert from point to raster data.
Oral communication skills to:	• liaise with clients and end users to identify project requirements and drawing detail.
Reading skills to:	• interpret graphical information, including rasters • interpret technical drawing standards • interpret engineering and environmental plans.

Technology skills to:
- conduct web-based searches and use digital techniques
- operate hardware, including computers and plotters.

Unit Mapping Information

CPPSIS6040A Develop 2-D and 3-D terrain visualisations

Links

Companion Volume implementation guides are found in VETNet - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=6f3f9672-30e8-4835-b348-205dfcf13d9b