Draft 0.2

This is a draft update to CPPSIS6037 Conduct advanced remote sensing analysis: https://training.gov.au/Training/Details/CPPSIS6037.

Changed code to CPPSSI6037

Changed PCs to active voice.

Element 1 reworded. Additional Pcs 1.5 and 1.6 added

Removed Element 2 Select computing platforms and software systems for image processing

Removed Element 5 Conduct data merger and GIS integration

Changed ‘person’ to ‘candidate’ in PE for consistency

Unit of Competency

CPPSSI6037 Conduct advanced remote sensing analysis

Modification history

Release	Comments
~~1~~	~~Replaces superseded equivalent CPPSIS6037A Conduct advanced remote sensing analysis.~~ ~~This version first released with CPP Property Services Training Package Version 3.~~

Application

This unit specifies the skills and knowledge required to use computing platforms, software systems and image processing techniques to conduct advanced remote sensing analysis on digital imagery. The unit covers using software and image processing systems to perform the required image enhancements and manipulations. The unit also includes performing supervised and unsupervised classifications on datasets and conducting related error analysis.

This unit is suitable for surveyors and skilled spatial information system (SIS) technicians operating at this level who will use broad theoretical and technical knowledge to analyse information as well as interpret and transmit solutions to unpredictable and sometimes complex surveying/spatial information problems. 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.

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, regulations and legislation 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, 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. Plan remote sensing analysis.	1.1 Analyse project specifications according to enterprise requirements. 1.2 Assess constraints on use of remote sensing data against project specifications and plan contingencies according to enterprise requirements. 1.3 Determine appropriate remote sensing analysis techniques according to project specifications. 1.4 Select suitable image sources according to project specifications. 1.4 Identify suitable images and examine metadata to meet project specifications. 1.5 Obtain image data required to meet project specification.

	1.6 Apply enterprise and legal requirements for accessing and using spatial data, including copyright, intellectual property and licensing.
2. Analyse spectral indices.	2.1 Perform radiometric correction on image. 3.3 Perform remote sensing indices on image. 3.4 Interpret and report on results according to project specifications.
3. Analyse image classification	3.1 Determine information classes required according to project specifications. 3.2 Create training samples for required information classes. 3.3 Evaluate training areas and create spectral signature file. 3.4 Apply supervised classification algorithms to signature file. 3.5 Conduct error analysis to calculate approximate accuracy of classification. 3.6 Interpret and report on results according to project specifications.

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 CPPSIS6037 Conduct advanced remote sensing analysis

Links

The Companion Volume Implementation Guide for the CPP Property Services Training Package is available at https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=6f3f9672-30e8-4835-b348-205dfcf13d9b

Assessment Requirements for CPPSSI6037 Conduct advanced remote sensing analysis

Modification history

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Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by using a computer and remote sensing software system to conduct advanced remote sensing analysis for two different projects.

- One project must analyse remote sensing data to identify and describe metadata and characteristics including, soil, vegetation bodies and water.
- One project should focus on performing classifications on datasets using supervised and unsupervised classification algorithms and training samples.

Knowledge Evidence

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

- metadata relating to remote sensing data
- characteristics and statistics available in image processing systems:
    - band selections
    - histogram plots
    - univariate and multivariate statistics.
- remote sensing indices:
    - common vegetation
    - common water indices
    - common burn indices
    - greenness ratios
    - greenness ratios plus dark value
    - normalised difference vegetation index (NDVI)
- industry-accepted techniques for applying supervised and unsupervised classification algorithms to remote sensing data
- copyright, licensing and ownership constraints relating to spatial data
- digital image data formats, processing and enhancement techniques
- sources for spatial datasets
- image enhancement and manipulation techniques
- methods for analysing metadata
- methods for validating spatial data sources and constraints on use
- key features of spatial referencing and coordinate systems.

Assessment Conditions

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

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to:

- hardware, including printer, scanner, plotter and multimedia devices and peripherals
- computer-aided design (CAD) applications and software appropriate for developing two-dimensional (2-D) and three-dimensional (3-D) terrain visualisations.

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