



Australian Government

FWPFRM5001 Interpret and use image data in forestry planning and management

Release: 1

FWPFRM5001 Interpret and use image data in forestry planning and management

Modification History

Release	Comments
Release 1	This version released with FWP Forest and Wood Products Training Package Version 7.0.

Application

This unit of competency specifies the skills and knowledge required to select and interpret image data, including satellite images, aerial photographs, LiDAR images and other remotely sensed or scanned data used in forestry planning and management. The unit covers accessing image data, querying and interpreting image data from different sources, collating image data and archiving image data. The unit requires the ability to use geographic information system (GIS) software to access, manipulate, archive, retrieve and validate image data.

The unit applies to individuals who work as GIS officers, harvest managers, forestry planners, forestry supervisors and field foresters in a forest or plantation setting.

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

Pre-requisite Unit

Nil

Unit Sector

Forest Resource Management (FRM)

Elements and Performance Criteria

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Select image data for use in forestry planning and management	1.1 Identify and document image data requirements in consultation with appropriate persons 1.2 Retrieve image data from data storage and other sources according to task and workplace requirements

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	1.3 Assess image data for suitability to meet task requirements 1.4 Transfer image data from the supplied format into format required to meet task requirements 1.5 Identify and review image metadata for accuracy and completeness
2. Interpret image data	2.1 View image data using appropriate equipment and software application to complete task requirements 2.2 Identify forest attributes and required forest management information from different forms of image data 2.3 Verify integrity and relevance of image data using standard industry and workplace procedures 2.4 Identify, resolve and document irregularities in image data according to workplace procedures
3. Collate and store image data	3.1 Collate image data according to workplace procedures 3.2 Select appropriate format and database for image data according to workplace requirements 3.3 Archive image data according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential for performance in this unit of competency but are not explicit in the performance criteria.

Skill	Description
Reading	Read complex text in print and electronic format, including instructional manuals for GIS software packages
Writing	Use technical terms to describe forestry information extracted from image data
Oral communication	Ask questions to clarify instructions, feedback or information related to using and interpreting image data
Numeracy	- Recognise metric units of measurement - Perform routine mathematical calculations related to scale, area and distance

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
FWPFRM5001 Interpret and use image data in forestry planning and management	FWPFGM4209 Interpret and use aerial photographs for forest management	Update unit title Updated Application Updated Elements and Performance Criteria Updated Performance Evidence and Knowledge Evidence Updated Foundation Skills and Assessment Conditions	Not equivalent

Links

Companion Volumes, including Implementation Guides, are available at VETNet: -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=0d96fe23-5747-4c01-9d6f-3509ff8d3d47>

Assessment Requirements for FWPFRM5001 Interpret and use image data in forestry planning and management

Modification History

Release	Comments
Release 1	This version released with FWP Forest and Wood Products Training Package Version 7.0.

Performance Evidence

An individual demonstrating competency must satisfy all of the elements and performance criteria in this unit.

There must be evidence that the individual has selected and interpreted one satellite image, one aerial photograph and one LiDAR image in order to complete a workplace task related to a forestry planning or management issue.

In undertaking these activities, the individual has:

- accessed and validated different types of image data
- manipulated and interpreted image data
- identified forest attributes, such as vegetation characteristics and disease symptoms in trees and forest areas, using image data
- used GIS software
- reported and maintained information on details of forest attributes and topographic information
- archived and retrieved image data.

Knowledge Evidence

An individual must be able to demonstrate the knowledge required to perform the tasks outlined in the elements and performance criteria of this unit. This includes knowledge of:

- types, uses and benefits and limitations of image data:
 - satellite images
 - aerial photographs
 - LiDAR images
 - other remotely sensed or scanned data
- sources of image data used in forestry planning and management
- principles of remote sensing
- principles of satellite remote sensing
- techniques for working with LiDAR data

- aerial photograph interpretation techniques
- common data transfer formats, including:
 - Australian Spatial Data Transfer Standard (SDTS)
 - Drawing Exchange Format (DXF) files
 - JPEG files
 - Vector Product Format (VPF) data
- forest types and structures and type of information, including:
 - area
 - height
 - species
 - crown cover
 - crown form
 - disturbance
 - aspects to be considered as part of the environmental management process
- applications of image data in forestry planning and management:
 - terrain analysis
 - forest management
 - recultivation
 - updating of existing forest inventories
 - forest cover type discrimination
 - the delineation of burned areas
 - identification of cleared areas
 - forest fire extent and damage
 - assessment of impact of natural events on forests
- procedures for collating image data
- procedures for archiving image data
- procedures for transferring image data from supplied format into format required for work task
- purpose and use of image metadata, including:
 - availability
 - conditions of use
 - coordinate system
 - currency
 - custodian
 - data accuracy
 - data description
 - date of acquisition
 - licence
 - quality
 - source

- spatial data acquisition methodologies
- version control
- techniques for operating, querying and browsing image databases
- geographic information system (GIS) software
- methods for assessing, verifying and validating image data and image data sources
- legal requirements for accessing, storing, retrieving and archiving image data, including data privacy and information copyright.

Assessment Conditions

Assessment of the skills in this unit of competency must take place under the following conditions:

- physical conditions:
 - skills must be demonstrated in a forest work environment or an environment that accurately represents workplace conditions
- resources, equipment and materials:
 - image data, including satellite images, aerial photographs, LiDAR images and other remotely sensed or scanned data used in forestry planning and management
 - computer hardware required to run GIS software package
 - GIS software package
 - internet access
- specifications:
 - access to workplace policies and procedures applicable to operating computer software and hardware
 - access to manufacturer manual for computing equipment and technical instructions for use of GIS software package.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

Companion Volumes, including Implementation Guides, are available at VETNet: -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=0d96fe23-5747-4c01-9d6f-3509ff8d3d47>