



Australian Government

Assessment Requirements for FWPFRM5010 Plan unmanned aerial vehicle (UAV) collection of forestry data

Release: 1

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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 planned and developed a written data collection plan for two different unmanned aerial vehicle (UAV) forestry data collection tasks.

In undertaking this activity, the individual has:

- reviewed work order, workplace health and safety, environmental protection and emergency procedures associated with work task
- selected type and payload of UAV platform best suited to data collection task
- planned UAV forestry data collection to comply with legislative, regulatory and workplace requirements
- identified contingency measures for minimising delays in UAV forestry data collection
- planned workflow for managing UAV forestry data collection
- prepared written forestry data collection plan.

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:

- benefits of using UAVs in forestry related spatial and environmental data collection
- types of forestry data collected by UAVs:
 - plantation forestry
 - inventory management
 - tree height mapping
 - tree survival counts
 - identification and mapping of cutover areas
 - mapping of wind damage

- plantation health and disease
- communication of forest change
- post-planting stocking and survival
- weed mapping and classifying species
- analysis of regeneration
- monitoring fire and its impact
- quantifying gaps
- post-harvest waste assessment and soil displacement estimation
- types, designs, components and capabilities of UAVs:
 - fixed-wing
 - single-rotor
 - multi-rotor
 - hybrid systems
- UAV payloads:
 - active
 - passive
- types and capabilities of UAV sensors used in forestry:
 - LiDAR
 - multispectral
 - hyperspectral
 - RGB
- UAV ground control station (GCS):
 - basic GCS capabilities
 - peripheral components
 - support equipment
 - mission software tools
 - GCS configuration
- integration of unmanned aerial vehicle and sensors
- file formats
- procedures for workflow planning
- factors impacting on UAV data collection
- regulatory restrictions on UAV use and data collection
- types and ways of overcoming potential delays and setbacks in UAV data collection.

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:
 - computer hardware and software
 - internet access
- specifications:
 - work order or instruction detailing requirements for forestry-related spatial and environmental data collection
 - workplace policies and procedures that cover current Work Health and Safety Acts or Occupation Health and Safety Acts, regulations and related industry standards and codes of practice applicable to UAV operations
 - workplace policies and procedures that cover current Environment Protection Acts, regulations and related industry standards and codes of practice applicable to UAV operations
 - workplace safety and environmental protection plans
 - user manual and technical instructions for UAV equipment and related software.

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>