



Australian Government

Assessment Requirements for NWPHYS006 Use remote sensing for hydrographic surveying

Release: 1

Assessment Requirements for NWP HYS006 Use remote sensing for hydrographic surveying

Modification History

Release 1. This is the first release of this unit of competency in the NWP National Water Training Package.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all the requirements of the elements and performance criteria on at least one occasion and includes:

- analysing the different methods of bottom detection
- analysing the differences in remote sensing techniques
- determining the level of turbidity
- extracting high and low water lines from bathymetric and topographic LiDAR data sets, combining with other spatial data and using computer aided design to represent graphically
- scanning frequency and pattern in relation to power, coverage and spatial density
- using and selecting appropriate hydrographic equipment
- using LiDAR to collect and analyse data

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all the requirements of the elements and performance criteria and includes knowledge of:

- characteristics of hydrographic equipment including:
 - echo sounders
 - satellite bathymetry
- combined bathymetric and topographic LiDAR systems
- floor optical characteristics and bottom detection
- influence of geometry and waveform on feature detection
- influence of water surface roughness and water column turbidity on the beam pattern and penetration
- integration of components including:
 - attitude compensation
 - networking
 - sensor offsets
 - time stamping
- multispectral imagery including:
 - reflectance in relation to wavelength

- terrain characteristics
- optical characteristics of coastal terrain
- principles, capabilities and limitations of LiDAR systems
- principles of wavelength, water penetration and ground detection
- remote sensing techniques including:
 - hyperspectral
 - multispectral
- satellite derived bathymetry (SDB) techniques and procedures
- spatial resolution and accuracy with relation to multi spectral imagery and satellite derived bathymetry
- Secchi disc and Secchi depth
- techniques for LiDAR systems including:
 - bathymetric
 - topographic
- wavelength performance with different interfaces including water and ground

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must occur in suitable workplace operational situations. Where this is not appropriate, assessment must occur in suitable simulated workplace operational situations reflecting actual workplace conditions.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Resources for assessment must include access to:

- relevant and appropriate materials, tools, facilities, equipment and personal protective equipment currently used in industry
- applicable relevant documentation including workplace procedures, industry standards, equipment specifications, regulations, codes of practice, and operation manuals.

Links

Companion Volume Implementation Guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=26336bc0-04e5-49d9-8c31-46c49b6a0037>