



**Australian Government**

# **NWPHYS005 Use alternate positioning systems to gather data**

**Release: 1**

# NWPHYS005 Use alternate positioning systems to gather data

## Modification History

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

## Application

This unit involves the skills and knowledge required to use alternate positioning systems to gather data.

It includes using the principles of cartography, applying acoustic positioning systems and understanding the difference between inertial motion units (IMU) and inertial navigation systems (INS).

This unit supports the attainment of skills and knowledge required for leaders with responsibility for performing hydrographic surveying and may lead to certification as a hydrographic surveyor.

## Pre-requisite Unit

Not applicable.

## Competency Field

Hydrographic Surveyor

## Unit Sector

Not applicable.

## Elements and Performance Criteria

### ELEMENTS

Elements describe the essential outcomes.

**1 Use the principles of cartography from positioning systems to gather data**

### PERFORMANCE CRITERIA

Performance criteria describe the performance needed to demonstrate achievement of the element.

**1.1** Analyse the data properties and distortions in projections used in map and chart positioning systems

- 1.2 Analyse the selection of projection types for data gathering and product generation
  - 1.3 Identify, interpret and synthesise historical surveys compared to legacy positioning systems
  - 1.4 Select and apply projection formulae to provide an appropriate graphic representation
  - 1.5 Identify and interpret relevant documentation and product including plans, reports, geographic information system (GIS) and charts, according to workplace procedures
- 2 Apply acoustic positioning systems**
- 2.1 Plan, monitor, review and assess the deployment, calibration, signal structure and performance of acoustic positioning devices
  - 2.2 Identify and analyse the principles of integrated underwater positioning systems
  - 2.3 Use underwater positioning systems in the use of remote survey platforms according to workplace procedures
  - 2.4 Apply appropriate statistical formulae to obtain accurately calculated values and represent graphically
- 3 Use IMU and INS**
- 3.1 Use inertial motion units and calculate measures to analyse positioning data
  - 3.2 Analyse the concepts of aided inertial navigation systems
  - 3.3 Describe and analyse the sources and magnitude of uncertainties associated with positioning methods and positioning systems

## Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

## Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

## Unit Mapping Information

This is a new unit. No equivalent unit.

## Links

Companion Volume Implementation Guides are found in VETNet -

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