



Australian Government

**Assessment Requirements for AURRTR108
Diagnose and repair marine network
electronic control systems**

Release: 1

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Modification History

Release	Comments
Release 1	This version first released with AUR Automotive Retail, Service and Repair Training Package Version 6.0

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- diagnose and repair a fault in three different network electronic control circuits that set network communication diagnostic trouble codes (DTCs), including at least one of each of the following:
 - a single wire circuit (LIN-bus)
 - a two-wire circuit (CAN-bus).

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- methods to locate and interpret information required to diagnose and repair network electronic control systems including:
 - information provided by customers and supervisors
 - manufacturer specifications and procedures or equivalent documentation
- workplace procedures required to diagnose and repair network electronic control systems including:
 - establishing serviceability of tools and equipment
 - documentation procedures
 - housekeeping procedures including:
 - examination of tools and equipment
 - storage of equipment
 - identification, tagging and isolation of faulty equipment
 - disposal of excess materials
 - recycling procedures

- workplace health and safety (WHS) requirements relating to diagnosing and repairing network electronic control systems, including procedures for identifying hazards and controlling risks associated with:
 - working on vehicle high voltage ignition systems
 - wearing jewellery while working around high current wiring systems
- environmental procedures relating to diagnosing and repairing network electronic control systems
- diagnostic testing procedures for network electronic control systems, including:
 - using diagnostic flow charts
 - accessing and interpreting scan tool system data, including:
 - DTCs, including ‘U’ type communication codes
 - live data
 - waveforms
 - testing electrical systems, including procedures for:
 - accessing electrical terminals and using test probes without damaging connectors, fuse holders or wiring
 - determining damage to system wiring and connectors
- repair procedures for network electronic control systems, including:
 - connector removal and replacement procedures
 - removal and replacement procedures for vehicle network electronic control system components
- post-repair testing procedures for network electronic control systems, including:
 - confirming fault rectification DTC clearing procedures
 - checking for electrical connector mating.
- operating principles of network electronic control systems and associated components, including:
 - assurance of message delivery, non-conflicting messages, minimum time of delivery, and electromagnetic field (EMF) noise resilience
 - network topographies
 - network protocols, including characteristics and data speeds
- purpose and operation of network electronic control systems and components, including:
 - controlled area network (CAN), including:
 - nodes: host processor, CAN controller, and transceiver
 - gateway modules
 - terminating resistors
 - data transmission
 - vehicle data logic connector (DLC)
 - local interconnect network (LIN), including:
 - master and slaves
 - data transmission.

Assessment Conditions

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Assessment must include direct observation of tasks.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the electronic control systems in marine vessels that they have worked on, e.g. repair orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- marine repair workplace or simulated workplace
- workplace instructions
- manufacturer transmission specifications
- two different network electronic control circuits
- diagnostic equipment for marine network electronic control systems
- tools, equipment and materials appropriate for diagnosing, testing, repairing, and adjusting marine network electronic control systems.

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

Links

Companion Volume Implementation Guide is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>