Australian Government

AURETR033 Develop and apply network electronic control system modifications

Release: 1

AURETR033 Develop and apply network electronic control system modifications

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to develop, apply and validate significant modifications to existing network electronic control systems in order to vary or enhance performance. These systems include two-wire high and low speed (CAN-bus) and single wire low speed (LIN-bus) network circuits. The unit involves identifying the modification requirement, developing the modification specifications, applying and testing the modification, and completing workplace processes and documentation.

Significant and non-routine modifications are those that require compliance with Australian Design Rules and Vehicle Safety Bulletins.

It applies to those working in the automotive service and repair industry. The network electronic control systems include those of agricultural machinery, heavy commercial vehicles, light vehicles, marine vessels, mobile plant machinery, motorcycles or outdoor power equipment.

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

Competency Field

Electrical

Unit Sector

Technical - Electrical and Electronic

Elements and Performance Criteria

Elements Elements describe the essential outcomes.	**Performance Criteria** Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
1. Identify and confirm the modification requirement	1.1 Job requirements are determined from workplace instructions 1.2 Reasons for the modification are identified and confirmed with appropriate persons 1.3 Modification options are identified and reported to appropriate persons according to workplace procedures 1.4 Hazards associated with the work are identified and risks are managed 1.5 Legal and safety impacts of the modification are considered, as required, according to regulatory requirements
2. Develop and validate the modification specification	2.1 Manufacturer specifications for the existing network electronic control systems are sourced and interpreted 2.2 Criteria for selecting the modification method and evaluating the outcomes are identified and documented 2.3 Proposed modification method is identified, selected and evaluated from available options 2.4 Selected option, including material choices and processes, is developed in detail and progressively assessed against established criteria 2.5 Modification specification is documented according to workplace procedures
3. Apply and test the modification specification	3.1 Tools, test equipment and materials required to support the modification procedure are identified, selected and prepared for use 3.2 Selected modification method is carried out according to workplace procedures and ***safety requirements*** 3.3 Post-modification testing is carried out according to workplace procedures to confirm modification outcomes are as intended, and any problems detected as having been introduced during the modification process are rectified 3.4 Test results and other diagnostic findings are verified, as required, by using reliable alternative or optional processes 3.5 Variations needed during the modification process or as a result of testing are incorporated into the modification specification 3.6 Information and detail relating to the modification are documented and provided to the appropriate parties according to regulatory and commercial obligations

Elements Elements describe the essential outcomes.	**Performance Criteria** Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
4. Complete work processes	4.1 Final inspection is made to ensure work is to workplace expectations 4.2 Work area is cleaned, waste and non-recyclable materials are disposed of, and recyclable material is collected 4.3 Tools and equipment are checked and stored, and any faulty electrical equipment is identified, tagged and isolated according to workplace procedures 4.4 Workplace documentation is processed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance and are not explicit in the performance criteria.

Skills	**Description**
Learning skills to:	• locate and evaluate appropriate sources of information.
Reading skills to:	• interpret the operating and testing procedures for network electronic control system testing equipment from workplace and manufacturer literature • research, organise and interpret technical information from manufacturer and workshop literature when seeking network electronic control system specifications and procedures.
Writing skills to:	• legibly and accurately fill out workplace documentation when reporting modification findings and recording parts and material used.
Oral communication skills to:	• clarify instructions, gain information from supervisors, and report modification outcomes.
Numeracy skills to:	• measure network electronic control system components and use basic mathematical operations, including addition and subtraction, to calculate tolerances and deviations from manufacturer specifications • interpret precision measuring equipment and test equipment units and scales.
Planning and organising	• plan own work requirements and prioritise and sequence actions

Skills	Description
skills to:	to achieve required outcomes and ensure tasks are completed within workplace timeframes.
Technology skills to:	• use specialised diagnostic equipment, including scan tools and oscilloscopes.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

Safety requirements must include:	• work health and safety (WHS) and occupational health and safety (OHS) requirements, including procedures for: • identifying hazards and controlling risks associated with wearing jewellery while working around high current wiring systems • using personal protective equipment (PPE) and hand tools.

Unit Mapping Information

Equivalent to AURETR5033 Develop and apply electronic systems modification

Links

Companion Volume implementation guides are found in VETNet - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1