Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Analyse the vehicle test result and evaluate the performance
Code	111773L6
Range	This unit of competency is applicable to the senior engineering staff of the vehicle service and inspection departments. Practitioners should be able to master the standards of various vehicle specifications and performance, analyse data, evaluate the performance of vehicle systems and suggest optimisation to enhance vehicle performance.
Level	6
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Testing standards and vehicle specifications) • Master the methods of handling testing data, such as the reliability assessment, data integration, quantification and presentation. • Fully master the standard parameters of various vehicle specifications and performance tests (e.g., manufacturer standard, approved international standard and respective regulations).

	2. Performance (Analyse results, evaluate performance and make optimisation suggestions)
	• Integrate, quantify and ascertain the reliability of data obtained from various testing items, and analyse the causes for discrepancies according to standard parameters.
	• Evaluate the performance and make optimisation suggestions, such as:
	  ○ The effect of chassis stability control affected by the braking, suspension, steering, tyres and traction control systems
	  ○ The effect of various adaptive systems, including but not limited to emergency braking, lane changing alert, cruise control and lighting
	  ○ The anti-roll ability affected by factors of system layout and vehicle body design
	  ○ The accuracy of illumination and aim alignment of the lighting system
	  ○ The impact of the performance of the engine and its subsystems on power output and fuel consumption
	  ○ The impact of the performance of:
	  ▪ the emission control and after-treatment systems as well as the engine and its subsystems on the emission of pollutant concentration of combustion engine vehicles, or
	  ▪ the driving range and charging efficiency of the traction battery of a given energy storage capacity for electric and hybrid electric vehicles, or
	  ▪ the fuel cell system on the hydrogen consumption for a given driving range of the fuel cell electric vehicle
	  ○ The impact on the performance of the thermal management system of the traction battery, control modules and the traction motor in the optimisation of the normal energy transfer efficiencies of electrified vehicles
	  ○ The suppression effect of working noise
	  ○ The smoothness and accuracy of automatic shift
	• Review the effectiveness of respective analysis and evaluation, and be able to make adjustments or improvements to the shortfalls.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of mastering the techniques of testing data handling and analysing, comparing the data with the standard parameters to ascertain the performance of the testing items, and analysing the causes of discrepancies; and • Capable of accurately evaluating the performance of vehicle systems and suggesting optimisation to the shortfalls for enhancing vehicle performance.
Remark	The credit value of this competency unit assumes that the practitioner has possessed a certain understanding of the structure of various types of vehicles, the working principles and testing of each system. (This UoC replaced 108746L6)