

1. Title	Formulate maintenance instructions for railway signal and control systems
2. Code	EMRAMA506A
3. Range	Formulate maintenance instructions and frequency for railway signal and control systems by referring to their design and considering their overall operational performance and repair history.
4. Level	5
5. Credits	9
6. Competency	<p style="text-align: center;"><u>Performance Requirements</u></p> <p>6.1 Design, structure and working principles of railway signal and control systems</p> <ul style="list-style-type: none"> ◆ Be familiar with the design, structure and working principles of railway signal and control systems ◆ Apply the repairing instructions provided by the manufacturer ◆ Master the techniques in calculating the standard and frequency for maintaining railway signal and control systems ◆ Master the applications of instrument and tools commonly used for repairing and checking railway signal and control systems <p>6.2 Method and procedures of formulating maintenance instructions and frequency for railway signal and control systems</p> <ul style="list-style-type: none"> ◆ By referring to the design of transportation management system and the overall design of signal and control systems, capable to draft maintenance instructions for the computer control program system and network system of transportation management system including: <ul style="list-style-type: none"> • Maintenance procedures • Maintenance standards • Tests and standard setting • Back up of operation data record • Points to note during maintenance ◆ Capable to test the draft maintenance instructions ◆ Capable to analyze data, amend and formulate maintenance instructions for transportation management system ◆ Capable to draft, test and formulate maintenance instructions for railway signal interlock systems including processor unit, PLC unit, solid state interlock and relay interlock circuit and equipment, and signal transmission equipment ◆ Capable to draft, test and formulate maintenance instructions for the trackside equipment of railway signal and control systems including PLC and control unit, train detection device, platform screen door control device, railway signal display and electronic interface

	<ul style="list-style-type: none"> ◆ Capable to draft, test and formulate maintenance instructions for railway point machines including motors, mechanical devices, and control and protection circuits ◆ Capable to draft, test and formulate maintenance instructions for SCADA systems ◆ Capable to draft, test and formulate maintenance instructions for ATC system equipment on the train including electronic control equipment, interface equipment, antenna and electronic equipment ◆ Capable to identify the critical factors for system maintenance cycles and calculate the suitable frequency for performing maintenance for different systems <p>6.3 Professionalism in formulating maintenance instructions for railway signal and control systems</p> <ul style="list-style-type: none"> ◆ Capable to formulate maintenance instructions and standards for railway signal and control systems according to the standards and requirements for work safety, health, environmental protection and quality management of railway works ◆ Understand the safety guidelines as required by the law and codes of practice in formulating maintenance instructions for railway signal and control systems
<p>7. Assessment Criteria</p>	<p>The integrated outcome requirement of this unit of competency is:</p> <ul style="list-style-type: none"> (i) Capable to draft maintenance instructions for railway signal and control systems in the entire signal area in compliance with the maintenance requirements for railway signal and control systems; and (ii) Capable to test the effectiveness of the draft maintenance instructions, analyze data and make amendments.
<p>8. Remarks</p>	<p>The credit value of this unit of competency is set on the presumption that the person already possesses professional knowledge of railway signal and control system engineering.</p>