

**SKILLS FRAMEWORK FOR PUBLIC TRANSPORT  
TECHNICAL SKILLS & COMPETENCIES (TSC) REFERENCE DOCUMENT**

<b>TSC Category</b>	Rail Systems Maintenance					
<b>TSC</b>	Communication Auxiliary Systems Maintenance					
<b>TSC Description</b>	Implement preventive and corrective maintenance activities of communication auxiliary systems					
<b>TSC Proficiency Description</b>	<b>Level 1</b>	<b>Level 2</b>	<b>Level 3</b>	<b>Level 4</b>	<b>Level 5</b>	<b>Level 6</b>
	<b>PTP-RSM-1005-1.1</b>	<b>PTP-RSM-2005-1.1</b>	<b>PTP-RSM-3005-1.1</b>	<b>PTP-RSM-4005-1.1</b>		
	Carry out scheduled maintenance work on communication auxiliary systems maintenance	Conduct corrective maintenance on communication auxiliary systems maintenance	Troubleshoot and locate faults in communication auxiliary systems to recommend rectification methods	Diagnose root causes of communication auxiliary systems failure and review maintenance plans to prevent fault recurrence		
<b>Knowledge</b>	<ul style="list-style-type: none"> <li>Operating principles and functions of communication auxiliary systems</li> <li>Types of communication auxiliary systems</li> <li>Procedures for servicing communication auxiliary systems preventive maintenance in accordance to organisational procedures, Work Instructions (WI) and/or Original Equipment Manufacturer (OEM) technical manuals</li> <li>Types of tools and equipment for carrying out preventive maintenance on communication auxiliary systems</li> <li>Safety guidelines and precautions on use of tools and equipment for preventive maintenance on communication auxiliary systems</li> <li>Organisational maintenance documentation and fault reporting procedures</li> </ul>	<ul style="list-style-type: none"> <li>Types of communication auxiliary systems</li> <li>Common failures of communication auxiliary systems and its components</li> <li>Procedures of dismantle, repair, replace, and re-assemble communication auxiliary systems equipment and its components</li> <li>Types of communication auxiliary systems status and alarm</li> <li>Procedures to normalise software faults on communication auxiliary systems</li> <li>Operating procedures for maintenance of master time centre (MTC) software</li> <li>Types of tools and equipment for carrying out corrective maintenance on communication auxiliary systems</li> <li>Safety guidelines and precautions on use of tools and equipment for</li> </ul>	<ul style="list-style-type: none"> <li>Fundamentals of electrical and electronic circuit</li> <li>Fundamentals of telecommunication principles</li> <li>Common fault symptoms in communication auxiliary systems</li> <li>Methods of locating and rectifying faults</li> <li>Types of troubleshooting techniques, equipment and tools</li> <li>Safety guidelines for usage of devices to execute troubleshooting on communication auxiliary systems</li> <li>Procedures to normalise software faults on communication auxiliary systems</li> </ul>	<ul style="list-style-type: none"> <li>Factors affecting equipment and system performance</li> <li>Electromagnetic Interference (EMI) and electromagnetic compatibility (EMC)</li> <li>Failure investigation and prevention methods</li> <li>Methods and tools for diagnostic analysis</li> <li>Organisational maintenance procedures, Work Instructions (WI) and/or Original Equipment Manufacturer (OEM) technical recommendations</li> <li>Types and methods of system performance checks on communication auxiliary systems</li> <li>Functional relationships between communication auxiliary systems, other communication systems and the overall rail systems</li> </ul>		

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		<p>corrective maintenance on communication auxiliary systems</p> <ul style="list-style-type: none"> <li>Organisational maintenance documentation and fault reporting procedures</li> </ul>				
<ul style="list-style-type: none"> <li>Abilities</li> </ul>	<ul style="list-style-type: none"> <li>Perform preparation work to conduct preventive maintenance on communication auxiliary systems</li> <li>Follow organisational procedures, WI and/or OEM technical manuals to carry out preventive maintenance on communication auxiliary systems</li> <li>Perform system serviceability checks</li> <li>Adhere to safety guidelines and operating instructions for tools and equipment during maintenance activities</li> <li>Record communication auxiliary systems maintenance activities and report occurrences of faults identified</li> </ul>	<ul style="list-style-type: none"> <li>Interpret work orders and prepare for corrective maintenance</li> <li>Normalise software faults on communication auxiliary systems</li> <li>Dismantle faulty components in communication auxiliary systems equipment for corrective maintenance</li> <li>Carry out repair and/or replacement of faulty components</li> <li>Reassemble and reinstate communication auxiliary systems</li> <li>Perform functional tests on communication auxiliary systems equipment</li> <li>Apply operating and safety measures in operating tools and equipment during maintenance work</li> <li>Record and collate documentation of communication auxiliary systems maintenance work</li> </ul>	<ul style="list-style-type: none"> <li>Use troubleshooting tools, equipment and methods to locate and analyse causes of communication auxiliary systems faults</li> <li>Apply fault identification procedures to determine causes of faults</li> <li>Perform system software reconfiguration and/or upgrade</li> <li>Recommend corrective actions for identified faults on communication auxiliary systems</li> <li>Implement safety and operating procedures on tools and equipment usage during maintenance work</li> <li>Analyse maintenance work documented for communication auxiliary systems to identify possible workflow improvements</li> </ul>	<ul style="list-style-type: none"> <li>Establish structured failure investigation and specify functional testing requirements</li> <li>Perform fault tree analyses to diagnose root cause failure on communication auxiliary systems</li> <li>Review organisational communication auxiliary systems maintenance procedures and/or WI</li> <li>Propose new and/or enhanced maintenance procedures and/or WI in reference to OEM technical recommendations</li> <li>Coordinate communication auxiliary system maintenance with other rail systems maintenance needs</li> <li>Monitor overall maintenance progress of communication auxiliary systems to ascertain effectiveness of maintenance plan</li> <li>Develop solutions by analysing diagnostic data to prevent faults and failures recurrence</li> <li>Develop troubleshooting, rectification and fault analysis methods</li> </ul>		

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				<ul style="list-style-type: none"><li>• Develop test procedures for system performance checks</li><li>• Coordinate communication auxiliary system maintenance with other RTS maintenance needs</li></ul>		
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