<table>
<thead>
<tr>
<th>TSC Category</th>
<th>Rail Systems Maintenance</th>
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<tbody>
<tr>
<td>TSC</td>
<td>Trackside Automatic Train Control Equipment Maintenance</td>
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<tr>
<td>TSC Description</td>
<td>Implement preventive and corrective maintenance activities of Trackside Automatic Train Control equipment</td>
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<thead>
<tr>
<th>TSC Proficiency Description</th>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
<th>Level 4</th>
<th>Level 5</th>
<th>Level 6</th>
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<tbody>
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<td>PTP-RSM-1040-1.1</td>
<td>PTP-RSM-2040-1.1</td>
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<tr>
<td>Carry out scheduled maintenance work on trackside Automatic Train Control (ATC) equipment</td>
<td>Conduct corrective maintenance on trackside Automatic Train Control (ATC) equipment</td>
<td>Troubleshoot faulty trackside Automatic Train Control (ATC) equipment to locate faults and recommend rectification methods</td>
<td>Diagnose root causes of trackside Automatic Train Control (ATC) equipment failure and review maintenance plans to prevent fault recurrence</td>
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### Knowledge

- Operating principles and functions of trackside ATC equipment
- Fundamentals of Programmable Logic Controllers (PLC)
- Concepts of fixed and moving block
- Components of trackside ATC equipment
- Procedures for servicing trackside ATC equipment in accordance to organisational maintenance procedures, Work Instructions (WI) and/or Original Equipment Manufacturer (OEM) technical manuals
- Types of tools and equipment for carrying out preventive maintenance on trackside ATC equipment
- Safety guidelines on use of tools and equipment for maintenance on Trackside ATC equipment
- Types and usage of Personal Protective Equipment (PPE) for
| trackside ATC equipment maintenance | • Safety guidelines on use of tools and equipment for maintenance on Trackside ATC equipment  
• Types and usage of Personal Protective Equipment (PPE) for trackside ATC equipment maintenance |
| Abilities | • Perform preparation work to conduct maintenance on trackside ATC equipment  
• Follow organisational procedures, WI and/or OEM technical manuals to carry out preventive maintenance on trackside ATC equipment  
• Perform serviceability checks on trackside ATC equipment  
• Adhere to safety guidelines and operating instructions for tools and equipment during maintenance work  
• Record trackside ATC equipment maintenance activities and report occurrences of faults identified |
| | • Interpret work orders and prepare for corrective maintenance  
• Apply power isolation procedures during trackside ATC equipment maintenance  
• Identify track circuit and its relevant frequency  
• Dismantle faulty components in trackside ATC equipment for corrective maintenance  
• Carry out repair and/or replacement of faulty components  
• Reassemble and reinstate trackside ATC systems  
• Conduct functional tests on trackside ATC equipment and components  
• Apply operating and safety measures in operating tools and equipment during maintenance work  
• Record and collate documentation of trackside ATC equipment maintenance activities |
| | • Use troubleshooting tools, equipment and methods to locate and analyse causes of trackside ATC equipment faults  
• Apply fault identification procedures to determine causes of trackside ATC equipment  
• Recommend corrective actions for identified faults on trackside ATC equipment  
• Implement procedures on safe usage of tools and equipment during maintenance work  
• Analyse maintenance work documented for trackside ATC equipment to identify possible workflow improvements  
• Establish structured failure investigation and specify functional testing requirements  
• Perform fault tree analyses to diagnose root cause failure on trackside ATC equipment  
• Review organisational trackside ATC equipment maintenance procedures and/or WI  
• Propose new and/or enhanced maintenance procedures and/or WI in reference to OEM technical recommendations  
• Monitor overall maintenance progress for trackside ATC equipment to determine system performance reliability and effectiveness  
• Develop solutions by analysing diagnostic data to prevent faults and failures recurrence  
• Develop test procedures for system performance checks  
• Coordinate trackside ATC equipment maintenance with other rail systems maintenance needs |