

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

TSC Category	Rail Systems Maintenance					
TSC	Automatic Fare Collection Auxiliary Systems Maintenance					
TSC Description	Implement preventive and corrective maintenance activities of Automatic Fare Collection (AFC) auxiliary systems					
TSC Proficiency Description	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
	PTP-RSM-1001-1.1	PTP-RSM-2001-1.1	PTP-RSM-3001-1.1	PTP-RSM-4001-1.1		
	Carry out scheduled maintenance work on Automatic Fare Collection (AFC) auxiliary systems	Conduct corrective maintenance on Automatic Fare Collection (AFC) auxiliary systems	Troubleshoot faulty Automatic Fare Collection (AFC) auxiliary systems to locate faults and recommend rectification methods	Diagnose root causes of Automatic Fare Collection (AFC) auxiliary systems failure and review maintenance plans to prevent fault recurrence		
Knowledge	<ul style="list-style-type: none"> Functional relationships between AFC auxiliary systems Operating principles, and functions of AFC auxiliary systems Types of hardware relating to AFC auxiliary systems that includes: <ul style="list-style-type: none"> Station Computer Network Equipment Monitoring and Control Workstation Power Distribution Board Procedures for servicing AFC auxiliary systems in accordance to organisational procedures, Work Instructions (WI) and/or Original Equipment Manufacturer (OEM) technical manuals Types of tools and equipment for carrying out preventive maintenance on AFC auxiliary systems Safety guidelines on use of tools and equipment 	<ul style="list-style-type: none"> Functional relationships between AFC auxiliary systems Operating principles, schematic diagrams and functions of AFC auxiliary systems Types of hardware relating to AFC auxiliary systems that includes: <ul style="list-style-type: none"> Station Computer Network Equipment Monitoring and Control Workstation Power Distribution Board Common failures of hardware and components in AFC auxiliary systems Fundamentals of network systems Procedures to dismantle, repair, replace, and re-assemble hardware in AFC auxiliary systems Types of software, tools and equipment for carrying out corrective maintenance on AFC auxiliary systems 	<ul style="list-style-type: none"> Common fault symptoms in AFC auxiliary systems Fundamentals of network systems Fundamentals of routing and subnets Methods of locating and rectifying faults Types of troubleshooting techniques, equipment and tools Procedure for system software configuration and/or upgrade Safety guidelines on use of tools and equipment in troubleshooting AFC auxiliary systems 	<ul style="list-style-type: none"> Factors affecting the performance of AFC auxiliary systems Network configurations and management Failure investigation and prevention methods Methods and tools for diagnostic analysis Organisational maintenance procedures, Work Instructions (WI) and Original Equipment Manufacturer (OEM) technical recommendations Types and methods of functional tests on AFC auxiliary systems Functional relationships between AFC systems and the overall rail system 		

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	<p>for preventive maintenance on AFC auxiliary systems</p> <ul style="list-style-type: none"> Types and usage of Personal Protective Equipment (PPE) for AFC auxiliary systems maintenance 	<ul style="list-style-type: none"> Types of errors and warning logs of AFC auxiliary systems Procedures for conducting system performance checks on AFC auxiliary systems Safety guidelines on use of tools and equipment for corrective maintenance on AFC auxiliary systems Types and usage of Personal Protective Equipment (PPE) for AFC auxiliary systems maintenance 				
Abilities	<ul style="list-style-type: none"> Perform preparation work to conduct preventive maintenance on AFC auxiliary systems Follow organisational procedures, WI and/or OEM technical manuals to carry out preventive maintenance on AFC auxiliary systems Perform serviceability checks on AFC auxiliary systems Adhere to safety guidelines and operating instructions for tools and equipment during maintenance work Record AFC auxiliary systems maintenance activities and report occurrences of potential faults identified 	<ul style="list-style-type: none"> Interpret work orders and prepare for corrective maintenance Apply fault identification procedures to determine causes of AFC auxiliary systems failures Apply power isolation procedures Dismantle AFC auxiliary systems for corrective maintenance Carry out repair and/or replacement of faulty components Reassemble and reinstate AFC auxiliary systems Conduct functional test to determine operability of AFC auxiliary systems Apply operating and safety measures in operating tools and equipment during maintenance work Record and collate documentation of AFC 	<ul style="list-style-type: none"> Use troubleshooting software, tools and equipment and methods to locate and analyse causes of AFC auxiliary systems and hardware faults Recommend corrective actions for identified faults on AFC auxiliary systems Implement procedures and Work Instructions for system reconfiguration or software upgrades Implement safety and operating procedures on tools and equipment usage during maintenance work Analyse maintenance work documented for AFC auxiliary systems to identify possible workflow improvements to prevent fault recurrence 	<ul style="list-style-type: none"> Establish structured failure investigation and specify functional testing requirements Perform fault tree analyses to diagnose root cause failure of AFC auxiliary systems Review organisational AFC auxiliary systems maintenance procedures Propose new and/or enhanced maintenance WI in reference to OEM technical recommendations Monitor overall maintenance progress of AFC auxiliary systems to ascertain effectiveness of maintenance plan Develop long-term solutions by analysing diagnostics data to prevent faults and failures recurrence 		

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		auxiliary systems maintenance work		<ul style="list-style-type: none"> • Develop troubleshooting, rectification and fault analysis methods • Develop test procedures for system performance checks • Coordinate AFC auxiliary systems maintenance with other rail system maintenance needs 		
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