

**SKILLS FRAMEWORK FOR ENVIRONMENTAL SERVICES
TECHNICAL SKILLS & COMPETENCIES (TSC) REFERENCE DOCUMENT**

TSC Category	Technology Management					
TSC	Internet of Things Management					
TSC Description	Integrate physical devices, equipment and buildings in a connected environment via network to communicate, collect and exchange data					
TSC Proficiency Description	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
		EVS-TEM-2002-1.1	EVS-TEM-3002-1.1	EVS-TEM-4002-1.1	EVS-TEM-5002-1.1	
		Apply interfacing techniques in computer system for networking and usage of dashboard information	Analyse the information provided by the network and/or dashboard in order to apply and sustain the operational needs	Manage operation execution using Internet of Things (IoT) solutions for process improvement	Formulate Internet of Things (IoT) platforms for storing and managing information provided by the network and/or dashboard to drive operational efficiency and effectiveness	
Knowledge		<ul style="list-style-type: none"> Knowledge basic virtual and/or digital database works Internet of Things (IoT) system interface Data analytics for operating the robotics through system connection Big data dashboard for task optimisation Relevant industry standards in using IoT 	<ul style="list-style-type: none"> Knowledge of how basic virtual and/or digital database works Internet of Things (IoT) system interface Data analytics for operating the robotics through system connection Big data dashboard for task optimisation Knowledge of documentation through IoT Knowledge of scheduling tools integration with network 	<ul style="list-style-type: none"> IoT concept and technical knowledge of IoT implementation Connectivity in devices using sensors, smart devices and other technologies for data collection and communication Equipment automation Building and/or Environment automation Advanced process control Security and privacy applications for IoT IoT guidelines and communication standards 	<ul style="list-style-type: none"> IoT and the Architecture Reference Model (ARM) Smart Automation Applications and Technologies Large-scale monitoring and analytics applications and technologies Data modelling, collection and management 	
Abilities		<ul style="list-style-type: none"> Operate the automated tools and information Utilise the system information integration Interpret the control room and dashboard information Interpret robotics and network information to dispatch the task Perform task to interact with the IoT on the device, equipment or building 	<ul style="list-style-type: none"> Perform the troubleshooting and analyse the automated tools and information Perform system information integration to analysis the big data Understand the control models, process control algorithms, strategies behind the automated system Interpret robotics & network information to performance and/or schedule maintenance work with IoT 	<ul style="list-style-type: none"> Analyse relevant data to recommend control actions Identify areas for implementing IoT solutions for process improvement Use relevant tool to analyse and record performance Monitor the effectiveness of IoT solutions 	<ul style="list-style-type: none"> Design and develop an IoT application in a team-based environment Conceptualise and articulate a solution making use of IoT Manage data in IoT applications Design application and automation using smart devices Synthesise data visualization and exploration business intelligence tools 	

			<ul style="list-style-type: none">• Perform task to interact with the IoT in an automated equipment			
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