

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

<b>TSC Category</b>	Network Technology Management					
<b>TSC</b>	Internet of Things Management					
<b>TSC Description</b>	Interrelate computing devices, equipment and machines' data in a networked environment to provide specific solutions					
<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>ELE-SYS-2001-1.1</b>	<b>ELE-SYS-3001-1.1</b>	<b>ELE-SYS-4001-1.1</b>	<b>ELE-SYS-5001-1.1</b>	
<b>Knowledge</b>		<ul style="list-style-type: none"> <li>Apply interfacing techniques in computer systems for networking and usage of dashboard information</li> </ul>	<ul style="list-style-type: none"> <li>Analyse the information provided by the network and/or dashboard in order to apply and sustain the operational needs</li> </ul>	<ul style="list-style-type: none"> <li>Manage manufacturing operations execution using Internet of Things (IoT) solutions for manufacturing improvement</li> </ul>	<ul style="list-style-type: none"> <li>Formulate Internet of Things (IoT) platforms for storing and managing information provided by the network and/or dashboard to drive operational efficiency and effectiveness</li> </ul>	
<b>Abilities</b>		<ul style="list-style-type: none"> <li>Knowledge basic virtual and/or digital database works</li> <li>Internet of Things (IoT) systems interface</li> <li>Data analytics for operating the robotics through system connections</li> <li>Big data dashboard for task optimisation</li> <li>Industry 5S approach in integration using IoT</li> </ul>	<ul style="list-style-type: none"> <li>Knowledge of how basic virtual and/or digital database works</li> <li>Internet of Things (IoT) system interface</li> <li>Data analytics for operating robotics through system connections</li> <li>Big data dashboard for task optimisation</li> <li>Industry 5S approach in integration using IoT</li> <li>Knowledge of documentation through IoT</li> <li>Knowledge of scheduling tools integration with network</li> </ul>	<ul style="list-style-type: none"> <li>IoT concepts and technical knowledge of IoT implementation in manufacturing</li> <li>Connectivity in manufacturing using sensors, smart devices and other technologies for data collection and manufacturing control</li> <li>Equipment automation</li> <li>Factory automation</li> <li>Advanced process control</li> <li>Manufacturing Execution System (MES)</li> <li>Security and privacy applications for IoT</li> <li>IoT guidelines and communication standards</li> </ul>	<ul style="list-style-type: none"> <li>IoT and the Architecture Reference Model (ARM)</li> <li>Smart Automation Applications and Technologies</li> <li>Large-scale Monitoring and Analytics Applications and Technologies</li> <li>Data modelling, collection and management</li> </ul>	
		<ul style="list-style-type: none"> <li>Operate the automated tools and information</li> <li>Utilise the system information integration</li> <li>Interpret the control room and dashboard information</li> <li>Interpret robotics and network information to despatch the task</li> <li>Perform tasks to interact with the IoT in an automated plant</li> </ul>	<ul style="list-style-type: none"> <li>Perform the troubleshooting</li> <li>Analyse the automated tools and information</li> <li>Perform systems information integration to analyse the Big Data</li> <li>Interpret the Control Models, Process Control algorithms, Strategies behind the automated system</li> <li>Interpret robotics and network information to perform and/or schedule maintenance work</li> <li>Perform task to interact with the IoT in an automated plant</li> </ul>	<ul style="list-style-type: none"> <li>Analyse Big Data to correlate multiple data from different sources to devise control actions</li> <li>Identify applicable areas for implementing IoT solutions for manufacturing improvement</li> <li>Use simulation tool to analyse and predict the performance improvement</li> <li>Implement dashboard, reporting for manufacturing KPI management</li> <li>Monitor the effectiveness of IoT solutions</li> </ul>	<ul style="list-style-type: none"> <li>Design and develop an IoT application in a team-based environment</li> <li>Conceptualise and articulate a solution making use of IoT</li> <li>Manage data in IoT Applications</li> <li>Design application and automation using smart device</li> <li>Synthesise Data Visualization and Exploration Business Intelligence tool</li> </ul>	