

# SKILLS FRAMEWORK FOR INFOCOMM TECHNOLOGY TECHNICAL SKILLS & COMPETENCIES (TSC) REFERENCE DOCUMENT

TSC Category	Technology Management					
TSC Title	Artificial Intelligence Application in Product Development					
TSC Description	Apply algorithmic and statistical knowledge to integrate Artificial Intelligence into the design and development of a product as well as in maintenance processes					
TSC Proficiency Description	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
			Deploy Artificial Intelligence (AI) workflows for enhancing the efficiency of product development and maintenance processes	Evaluate the effectiveness and sustainability of Artificial Intelligence (AI) workflows for process improvements	Formulate new Artificial Intelligence (AI) workflows to streamline project execution, product development and maintenance processes in line with organisational strategy	Explore wider applications of Artificial Intelligence (AI) methods in the organisation by using expertise within the field to transform product development, project execution and maintenance workflows
Knowledge			<ul style="list-style-type: none"> <li>Background and basics of AI</li> <li>Fundamental concepts and methods of statistics and programming for data science</li> <li>Mathematics and computing theories</li> <li>Machine learning techniques and applications</li> <li>Principles of data management</li> <li>Software development methodologies</li> <li>Types of AI applications</li> <li>AI implementation procedures</li> <li>Interoperability of data</li> <li>Data cleaning techniques</li> <li>Principles of clean data sets</li> </ul>	<ul style="list-style-type: none"> <li>Range of AI applications</li> <li>Concepts pertaining to performance effectiveness and analysis</li> <li>Methods of evaluating effectiveness of AI applications in products</li> <li>Algorithm design and implementation</li> <li>Methods of evaluating process improvements to product management</li> <li>Applicability of AI in the Product Development track</li> </ul>	<ul style="list-style-type: none"> <li>Organisation's strategy and processes</li> <li>Methods of developing detailed operating and troubleshooting procedures for AI applications</li> <li>Methods to influence adoption of new AI applications in products</li> <li>Impact of AI on product development processes and maintenance</li> <li>Impact of AI in products based on its' results from product launches</li> <li>AI design and implementation processes</li> <li>Principles of change management</li> </ul>	<ul style="list-style-type: none"> <li>Applications of emerging AI technologies in the Product Development track</li> <li>Industry best practices and applications of new AI technologies adopted</li> <li>Impact of AI to product development and maintenance operations</li> <li>Benefits and trade-offs of AI</li> <li>Financial costs of introducing AI to product development, maintenance processes and trade-offs</li> <li>Cost benefits analysis methods</li> <li>Methodology of return-on-investment (ROI) analysis</li> <li>Methods of conducting research and development in AI</li> <li>AI legislative requirements</li> </ul>

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Abilities			<ul style="list-style-type: none"><li>• Implement AI applications in collaboration with technology service providers</li><li>• Deploy AI workflows according to plan</li><li>• Identify and report any issues with the AI applications and data collected</li><li>• Maintain data interoperability during the development of AI</li><li>• Perform data cleaning techniques</li></ul>	<ul style="list-style-type: none"><li>• Analyse algorithms in the AI applications</li><li>• Establish the correlation between design of algorithms and efficiency</li><li>• Identify strengths and limitations of the AI applications</li><li>• Evaluate various AI applications to compare strengths and limitations of the AI applications</li><li>• Assess feasibility of AI applications to each product and its' maintenance processes</li><li>• Assess improvements of AI in product</li></ul>	<ul style="list-style-type: none"><li>• Formulate AI workflows for products and maintenance processes</li><li>• Determine potential areas where AI can be applied</li><li>• Determine range of resources, skills requirements and implementation feasibility for AI applications</li><li>• Develop technical frameworks for AI applications</li><li>• Initiate adoption of AI applications in day-to-day operations</li><li>• Refine parameters of AI applications to improve the usage of AI applications in products</li><li>• Determine troubleshooting or debugging procedures for AI applications</li><li>• Validate implementation of AI through change management process</li></ul>	<ul style="list-style-type: none"><li>• Identify macro trends and applicability of AI for the organisation's adoption</li><li>• Evaluate the benefits and trade-offs of implementing AI to products</li><li>• Assess the cost and return on investment of implementing AI</li><li>• Develop a business case analysis on the cost-benefits of implementing AI</li><li>• Develop AI application strategies</li><li>• Analyse alternative approaches to AI to improve performance in products and maintenance processes</li><li>• Establish potential opportunities to initiate AI implementation in the organisation</li><li>• Develop a business case for implementing AI to satisfy project and legislative requirements</li><li>• Drive data interoperability in the organisation</li></ul>
Range of Application	N/A					