

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

TSC Category	Product Development and Testing					
TSC	Research and Development					
TSC Description	Optimising manufacturing processes, material developments and development of new product line					
TSC Proficiency Description	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
					ELE-NPD-5004-1.1	ELE-NPD-6004-1.1
TSC Proficiency Description					Formulate research methodology for engineering team to achieve the research aims by overcoming potential constraints or critical requirements	Synergise Research and Development (R&D) to drive business strategy and manage product innovation
Knowledge					<ul style="list-style-type: none"> • Areas in which research can be undertaken by the organisation • Factors that may have a critical effect on the methodology • Types of constraints that may affect the research • Regulations, directives and guidelines that may affect research • Contingency plans • Various research methods that may be used and where to obtain specialist knowledge or expertise • Statistical analysis techniques used in processes or data • Factors in determining the most effective research methods • Time scales required for research • Resources required for research 	<ul style="list-style-type: none"> • Organisational innovativeness and idea creation • Innovation strategy and how it is executed by the new product portfolio • Methods for managing capacity and prioritising the new product portfolio in the R&D pipeline • Measurement of project performance and overall innovation performance • Methods for managing a portfolio of processes for different types of innovations (from incremental to radical) • Co-ordination and effective organisational structures for product innovation • Architectures, platforms and cost management in R&D • R&D partnerships and alliances: strategies and processes • Transferring knowledge pertaining to R&D • Innovation culture and managing professionals

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Abilities					<ul style="list-style-type: none"> • Confirm the aims and objectives of the research • Identify factors that may have an impact on the research methodology • Assess potential constraints on research and develop contingency plans to overcome them • Select research methods which best achieve the aims and objectives • Prioritise and schedule research activities that are necessary • Calculate the resources and time scales required to implement the methodology • Produce detailed plans of research and record them in organisation information systems • Establish benefits and opportunities of collaborating with others in conducting research 	<ul style="list-style-type: none"> • Build tools to translate business strategy into a portfolio of innovation initiatives • Measure the performance of uncertain and long-term initiatives • Build processes and structures to enhance the capability of the organisation to generate creative ideas for different purposes and with different degrees of value proposition
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