

**SKILLS FRAMEWORK FOR PRECISION ENGINEERING
TECHNICAL SKILLS AND COMPETENCIES (TSC) REFERENCE DOCUMENT**

TSC Category	Value Engineering					
TSC	Value Analysis					
TSC Description	Establish the organisational value stream, enhance value-add and reduce costs					
TSC Proficiency Description	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
			PRE-VMA-3001-1.1	PRE-VMA-4001-1.1	PRE-VMA-5001-1.1	PRE-VMA-6001-1.1
			Review production cost data, analyse value-adding and non-value adding activities to identify cost reduction opportunities	Analyse costs of products and/or services with a view to reducing costs	Establish the organisation's position within, and its contribution to, the value stream	Lead organisational value management activities on selected products and/or processes
Knowledge			<ul style="list-style-type: none"> • Purpose and methods for value analysis and value stream mapping • Concept of waste and value in terms of customer benefits • Types of waste and methods to reduce it • Production costs • Customer requirements • Performance standards • Production processes • Cost reduction methods • Cost components • Workplace safety and health (WSH) regulations 	<ul style="list-style-type: none"> • Cost components of products • Major costs that are controllable and strategies to control them • Concept and types of waste • Relationship between cost components and benefits • Methods of estimating costs and benefits • Acceptable cost-benefit ratios • Workplace safety and health (WSH) regulations 	<ul style="list-style-type: none"> • Purpose of value analyses • Methods for value analysis and value stream mapping • Methods to identify the organisation's place in the value stream • Flow of materials along value streams • Classification of steps and processes into value-adding and non-value-adding methods to measure value-add • Concept of waste and value in terms of customer benefit • Types of waste and methods of reducing it • Processes and operations to make products or deliver services to internal and external customers • Processes used by other members of the value stream • Workplace safety and health (WSH) regulations 	<ul style="list-style-type: none"> • Considerations and criteria for selecting products and/or processes to carry out value management activities on • Procedures to structure and run value management activities • Methods for setting quantifiable objectives and targets for the value management activities • Methods for carrying out function analyses • Performance-related tools for qualifying customer wants and needs • Calculation of 'cost of function' • Function analysis system technique (FAST) diagramming and value trees • Relationship between value management and overall business strategies and competitive positioning

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						<ul style="list-style-type: none"> • Methods to produce total cost models and supply chain maps for products and/or processes • Components of value-adding and non-value-adding activities
Abilities			<ul style="list-style-type: none"> • Map value streams of the products and/or processes • Determine the features and/or benefits obtained by customers from products • Identify value-added by each internal and external step • Identify opportunities to reduce waste and component costs • Identify opportunities to reduce production cycles • Monitor cost reduction strategies to determine their effectiveness 	<ul style="list-style-type: none"> • Identify relevant cost component categories for organisation, products and processes • Identify customers and final product features and/or benefits valued by these customers • Express product features and/or benefits in cost terms • Determine methods of increasing cost-benefit ratios • Infer interactions between cost components • Determine sources of waste and suitable methods to reduce or eliminate waste costs • Develop cost optimisation plans • Implement and monitor cost optimisation efforts 	<ul style="list-style-type: none"> • Map the organisation's value streams, taking into account the organisation's ultimate supplier, ultimate customer, and all organisations in between • Determine features and/or benefits obtained by customers from the organisation's products or processes • Identify data sources to measure contribution to features and/or benefits • Determine the value-added to the organisation's products or processes by each internal step • Identify activities on value stream maps which do not add to customer features and/or benefits 	<ul style="list-style-type: none"> • Lead the application of principles and processes of value management to chosen products and/or processes • Lead analyses of products' and/or processes' functions • Confirm customer requirements against products and/or processes • Establish non-value-adding activities within products and/or processes • Develop alternatives to improve the value of the products and/or processes • Approve quantifiable objectives and targets for value management activities