

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

<b>TSC Category</b>	Big Data Analytics					
<b>TSC</b>	Data Analytics System Design					
<b>TSC Description</b>	Integrate the use of data analytics in the production environment for the identification of bottlenecks and system improvements					
<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>PRE-DAT-3005-1.1</b>	<b>PRE-DAT-4005-1.1</b>	<b>PRE-DAT-5005-1.1</b>	
			Ingest and prepare the data for big data analytics by reviewing the data requirements and cleansing the data required for the analytics	Review the requirements of the statistical model to ensure it stays aligned with business needs and deploy the model to the production environment for user's operational use	Define the hypotheses for the business problem, select the big data technologies and tools to be implemented in an organisation based on the data requirements	
<b>Knowledge</b>			<ul style="list-style-type: none"> <li>Tools and/or programming languages for ingesting and/or transforming and/or cleansing big data</li> <li>Nature of data and data sources of the data to be prepared</li> <li>Organisation's data collection process</li> <li>Concepts of data quality</li> <li>Data modelling</li> </ul>	<ul style="list-style-type: none"> <li>Considerations of the analytics architecture</li> <li>Analytics architecture</li> <li>Analytical tools or data warehouse</li> </ul>	<ul style="list-style-type: none"> <li>Tools and techniques for hypothesis formulation</li> <li>Components of different big data technologies and tools</li> <li>Pros and cons of different big data technologies and tools</li> <li>Types of big data frameworks</li> <li>Data requirements required for analytics</li> <li>Data analytics plan</li> </ul>	
<b>Abilities</b>			<ul style="list-style-type: none"> <li>Review the data requirements required for the analytics project</li> <li>Ingest data from different data sources into the analytics platform using the tools and/or programming language</li> <li>Cleanse and transform the data according to the data requirements to support the analytics project</li> <li>Resolve and follow up with any issues arising</li> </ul>	<ul style="list-style-type: none"> <li>Select the runtime environment for the statistical model to be deployed and user requirements with the relevant stakeholders</li> <li>Define the analytics architecture requirements with the IT team to deploy the statistical model</li> <li>Develop the process to support the operations of the model with relevant stakeholders</li> <li>Monitor and tune the deployed model to ensure</li> </ul>	<ul style="list-style-type: none"> <li>Define the business problem with the business stakeholders</li> <li>Formulate the hypotheses based on the business problem</li> <li>Evaluate and select the appropriate the Big Data technologies and tools</li> <li>Design and drive the solution based on the business problem and hypotheses</li> </ul>	

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			during the data preparation	that it delivers the expected outcomes and aligns with the business changes		
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