



# Technology Readiness Level

TRL 0	TRL 1	TRL 2	TRL 3	TRL 4	TRL 5	TRL 6	TRL 7	TRL 8	TRL 9	
<b>Idea</b> Unproven concept, no testing has been performed.	<b>Problem Solving</b> Core principles are explored and observed but no experimental proof available.	<b>Concept Generation</b> Concept and application have been explored.	<b>Concept Feasibility</b> Feasibility tests ran providing a proof of concept.	<b>Proof of concept Prototype</b> Testing done on core mechanisms and function.	<b>Rough Working Prototype</b> Tested in intended environment.	<b>Prototype Field Trials</b> Tested in intended environment close to expected performance.	<b>Pre-Production Prototype</b> Operating in operational environment at pre-commercial scale.	<b>First Production Runs</b> Manufacturing issues solved.	<b>Full Commercial Production</b> Technology available for consumers.	
	<ul style="list-style-type: none"> <li>- Concepts identified</li> <li>- Research carried out and refined</li> <li>- Technology development</li> <li>- Identify material concerns</li> </ul>			<ul style="list-style-type: none"> <li>- Early indications of materials identified</li> <li>- Manufacturing feasibility determined</li> <li>- Manufacturing processes identified</li> </ul>	<ul style="list-style-type: none"> <li>- Characteristics identified</li> <li>- Early supply chain assessment</li> </ul>	<ul style="list-style-type: none"> <li>- Initial trade studies</li> <li>- Quality thresholds established</li> </ul>	<ul style="list-style-type: none"> <li>- Assessed supply chain</li> <li>- BOM in development</li> <li>- Materials being tested</li> <li>- Demonstrate supply chain</li> <li>- BOM Draft</li> </ul>	<ul style="list-style-type: none"> <li>- Establish multiple sources</li> <li>- Pilot line builds validated</li> <li>- Materials Proven</li> <li>- Quality characteristics validated</li> <li>- BOM Finalised</li> </ul>	<ul style="list-style-type: none"> <li>- Continuous process improvements</li> <li>- Materials in control</li> <li>- Quality validated with LRIP articles</li> <li>- Make / buy supports</li> </ul>	<ul style="list-style-type: none"> <li>- Monitor and manage all key characteristics at a Six Sigma level</li> </ul>
	<b>Prior Consultancy Knowledge</b> As a consultancy, having worked on successful solutions for many industries, the first 3 manufacturing readiness levels are tackled and kept in mind by our early stage product development stages.			<b>Small Scale Prototype</b> Crude prototypes to test technologies.	<b>Refine Manufacturing Strategy</b> Identification of enabling technologies and components.	<b>Prototype Development</b> Manufacturing processes have been defined but requires design for manufacturing.	<b>Design for Manufacturing</b> Manufacturing detailing is underway.	<b>Pilot Line Demonstration</b> Manufacturing processes are proved	<b>Manufacturing Production</b> Getting the quality, costs and performance on target.	<b>Manufacturing Management</b> Applying Six Sigma to the production.
	MRL 1	MRL 2	MRL 3	MRL 4	MRL 5	MRL 6	MRL 7	MRL 8	MRL 9	MRL 10

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