



Titomic Limited

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About Titomic

Titomic (ASX: TTT) is an Australian public company specialising in Digital Manufacturing Solutions for industrial scale metal additive manufacturing using its patented Titomic Kinetic Fusion[®] (TKF) technology. TKF technology provides unique capabilities for producing commercially viable additively manufactured metal products, competing directly with traditional manufacturing methods. Titomic provides OEM production and R&D services from its TKF Smart Production Bureaus to the global Aerospace, Defence, Shipbuilding, Oil & Gas, Mining and Automotive industries. Titomic also provides an extensive range of metal powders for 3D Printing, especially titanium and super alloys, and provides sales and support services for their TKF production systems.

Technology – Titomic Kinetic Fusion[®]


Co-developed with the CSIRO, Titomic has exclusively licenced the patented technology Titomic Kinetic Fusion[®]. Titomic Kinetic Fusion[®] deposits solid metal powders 5-75 micrometres in diameter, accelerating them in a supersonic gas jet. During impact, particles undergo plastic deformation and fuse to each other. Multiple metals, including titanium, ceramics and metal composite materials can be deposited using Titomic Kinetic Fusion[®].

Titomic Kinetic Fusion[®] is the only additive manufacturing method capable of fusing dissimilar metals into one seamless part, as well as engineered high-performance coatings to enhance corrosion and erosion resistance and mechanical properties. The Titomic process can also create hybrid materials such as composite ceramic metal matrices, anti-corrosion and ballistics coatings. This capability is especially suited for marine applications, allowing weight savings and high corrosion resistance.

Unlike many other additive manufacturing methods, Titomic Kinetic Fusion[®] does not melt metals. This allows Titomic to create large, industrial scale, seamless metal structures larger and faster, rivalling all other manufacturing methodologies.

Case Study

Titomic Kinetic Fusion® is used to improve the lifespan and manufacturing process of tooling used in the production of defence componentry.

	Traditional Manufacturing	Titomic Kinetic Fusion™
Challenge Titomic solution	<p>Tooling manufacture may experience lead times longer than 12 months.</p> <p>Parts may last for less than 2 years before replacement or is required.</p>	<p>TKF allows tooling to be made significantly faster, reducing lead time by up to 50%.</p> <p>TKF tooling allows for tool design optimisation.</p>
Process	Machined invar, welded to size	Sprayed as a single, near net piece
Comparison	<ul style="list-style-type: none"> • Weld porosity • Weld cracking • Hard to repair 	<ul style="list-style-type: none"> • No welding • Low porosity • Repairable
Manufacturing Factors	<ul style="list-style-type: none"> • Labour intensive • May take months to manufacture • Significant capacity constraints 	<ul style="list-style-type: none"> • Largely unattended production • Weeks to manufacture • Minimal capacity constraints