



ASX ANNOUNCEMENT

Titomic Signs Partnership with US Ascent Aerospace

- **Titomic partners with Ascent Aerospace to disrupt global tooling supply using TKF metal additive manufacturing to increase productivity to meet industry demand.**
- **Ascent Aerospace has supported several composite based aircraft programs by producing some of the world's largest aerospace mold tools for fuselage and wing skins.**
- **\$200.8 billion global tooling market (2018) to grow at CAGR 8% to \$368.5 billion by 2026¹**

Melbourne, Australia 12th March 2020: Australian industrial scale metal additive manufacturing company Titomic (ASX:TTT) is pleased to announce that it has signed a partnership agreement with US-based Ascent Aerospace (Ascent) specifically for the execution of commercial opportunities to deliver the unique capabilities of Titomic's Kinetic Fusion (TKF) for Ascent's associated aerospace customer base.

Ascent is the leading provider of aerospace tooling systems, assembly automation and factory integration for the aerospace, defense and space industries globally. Ascent employs more than 900 industry professionals, across 11 locations globally, delivering a variety of products and solutions to resolve challenging aerostructure assembly requirements, from wing components and fuselage structures to final assembly lines. As the industry's largest tooling and automation group, Ascent produces a full suite of composite tooling, layup molds, mandrels, bond tools, and trim and drill fixtures, including the largest Invar molds ever made for aerospace. Ascent also offers automated, high-precision drilling and fastening systems, having installed more than 2,200 systems globally.

As an assembly line integrator, Ascent works with airframers to develop their project and see it through from process design and engineering to build and installation, to ensure it is an efficient and cost-effective solution. This strategy has allowed Ascent Aerospace to develop long-term, strategic alliances with the world's foremost manufacturers in the commercial aerospace, business aviation, defense, space launch and satellite markets.

The partnership will consist of two phases:

- *Phase 1 – Validation Phase*
Titomic to deliver an Ascent customer approved Invar36 tool produced using the TKF9000 metal additive manufacturing system to perform a test and production feasibility trial.

- **Phase 2 – Adoption Phase**

Establish joint-sales strategy for the supply of aerospace tooling, using TKF's metal additive manufacturing process, to reduce the current lengthy lead-times to meet the growing global demand.

Titomic has conducted extensive research and development of metal tooling for the aerospace and defence industries, and has now reached an inflection point to provide the industry with a new tooling option using TKF industrial scale metal additive manufacturing, improving tool performance, part production and reduced lead times.

This partnership will build on the current development activities of Titomic in order to produce metal tooling with reduced porosity, with improving tool wear resistance and deliver a more sustainable green production process by reducing material waste.

Mr. Jeff Lang, Titomic Managing Director, said:

“The significant increase in the global tooling market is being driven by the aerospace and defence industries’ compounding need for higher production rates of carbon fiber parts. The increased use of carbon fiber parts in commercial aircraft has created a backlog in the supply of tooling that is not being resolved. Titomic’s partnership with Ascent Aerospace makes strategic sense to further validate the commercial opportunities for industrial scale metal additive manufacturing using Titomic’s TKF systems to resolve this current, and ongoing, backlog for tooling.”

Ascent Aerospace’s notable achievements in producing the largest Invar molds ever made, and as one of the largest composite tooling manufacturers in the world, provides both companies with an inflection point to disrupt the traditional tooling industry by providing a more efficient manufacturing using Titomic’s TKF systems to deliver more sustainable tooling supply to meet increasing global demand.

Mr. Michael Mahfet, CEO of Ascent Aerospace, states:

“Our focused research & development activities in additive manufacturing technologies aligns with Ascent’s multi-year technology roadmap and realization of expansive efforts studying the benefits of these technologies within the aerospace tooling market. Staying at the forefront of additive manufacturing positions us to remain the leader in new and innovative tooling solutions, supporting strong collaboration with our customers and supplementing our in-house, vertically integrated design and fabrication capabilities. We look forward to working with Titomic in the advancement of metallic 3D printing for the aerospace tooling industry.”

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¹ Allied Market Research - Tooling Market Outlook - <https://www.alliedmarketresearch.com/tooling-molds-market>
The global tooling market size is expected to reach \$368.5 billion in 2026, from \$200.8 billion in 2018, growing at a CAGR of 8.0% from 2019 to 2026

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**About Titomic Limited:**

Titomic Limited (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. The 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 their 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 whilst providing sales and support services for their TKF production systems.

For more information please visit: www.titomic.com



Ascent Aerospace is a world renowned, single-source provider of production and automated assembly systems for the aerospace and defense industry. As the largest tooling group in the industry, Ascent produces a full suite of both mold and assembly tooling required for the aerospace manufacturing market, including the largest Invar molds ever made for aerospace. As an automation provider and production system integrator, Ascent works with customers to develop their project and see it through from process engineering, to build and installation to ensure it is an efficient and cost-effective solution.

For more information please visit: www.ascentaerospace.com

Forward-looking statements:

Certain statements made in this release are forward-looking statements and are based on Titomic's current expectations, estimates and projections. Words such as "anticipates," "expects," "intends," "plans," "believes," "seeks," "estimates," "guidance" and similar expressions are intended to identify forward-looking statements. Although Titomic believes the forward-looking statements are based on reasonable assumptions, they are subject to certain risks and uncertainties, some of which are beyond Titomic's control, including those risks or uncertainties inherent in the process of both developing and commercialising technology. As a result, actual results could materially differ from those expressed or forecasted in the forward-looking statements. The forward-looking statements made in this release relate only to events as of the date on which the statements are made. Titomic will not undertake any obligation to release publicly any revisions or updates to these forward-looking statements to reflect events, circumstances or unanticipated events occurring after the date of this release except as required by law or by any appropriate regulatory authority.