**OUR MARKETS** CONTINUED

## AEROSPACE & DEFENCE

We provide solutions for high-reliability applications across a broad range of platforms operating on land, air and sea. Growth for TT is driven by increasing electrification of these platforms, which supports fuel efficiency and safety.

Megatrends impacting this market are the climate crisis, global power shift, rapid urbanisation, demographic changes, innovative technological change and global connectedness. All these factors are driving a multi-year up cycle in the aerospace and defence sectors.

Being challenging industries to decarbonise, aerospace and defence players have been at the forefront of adopting new and advanced manufacturing technologies, which can help address the sustainability challenge. The industry is likely to move towards using sustainable aviation fuels ("SAF") at scale and new propulsion technologies such as electric, hydrogen and hybrid. In its efforts to advance decarbonisation, the sector will likely establish multiple partnerships comprising technology investors, energy companies, airlines and government agencies.

Via our innovative solutions and systems with proven mission-critical, high-reliability characteristics aimed at commercial and military aircraft, defence products and space programmes, we expect to grow in these markets.

## Aerospace

Air travel is rebounding strongly to pre-COVID levels with continuing tailwinds given a growing, global middle-class population which exhibits a greater propensity to travel. Robust activity levels span both aftermarket and, increasingly, original equipment (narrow body predominantly) as supply chains continue to show signs, albeit slowly, of steady improvement.

Fundamentally, the need for safer, more efficient and more environmentally friendly aircraft remains. Moves to "conscious" or digital aircraft will require a large increase in interconnected control systems with an increased focus on cyber security. Growth in new technologies such as advanced air mobility ("AAM") and evolving business models in the space sector are also at the forefront of industry development. This drives demand for increasingly advanced electronic systems and applications, all of which are supported by TT technologies. We are growing capabilities in electrical power conversion and related sub-systems and collaborating with aerospace companies in the development of high efficiency. high power density converters as well as technologies for the next generation of higher voltage platforms.

The pace of growth continues in the space sector too, both non-commercial, which is driving developments in technology and capabilities, and commercial space with NASA, SpaceX, Blue Origin and Virgin Galactic all targeting lunar orbits. TT provides components for satellites, space vehicles, and for power management.

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## Defence

With the focus of global growth shifting, creating more powerful national economies in different regions, there will be greater resources to protect, and greater resources available to invest in security and defence. This rising tide looks set to support strong, sustainable compound growth over the next decade, with priorities shifting to intelligence and multi-domain integration. Active conflict and geopolitical tensions have increased weapons demand and replenishment of stores. This is compounded by elevated security concerns in several regions.

Aerospace guidance production, particularly in the imaging, signal processing and smart weapons categories, will continue to expand as military budgets increase, with a large percentage of funding being directed to modern electronics technology. Hypersonic missile developments are gaining pace with significant investment expected.

In 2023 the global defence electronics manufacturing market is expected to have expanded by around 2.5%. This is a pace reflective of the past seven years, all of which have seen consistent, moderate expansion, as governments invest to maintain state-of-the-art capabilities, with a high level of upgrades on existing platforms to meet the pace of demand. It is likely that there will be a pickup in growth from here, with estimates suggesting an additional \$1 trillion in global defence spending over the next decade, and further investment in R&D, mostly in the US and Europe.

In defence, we are focused on next-generation requirements for high-density power electronics and electrical machines through the development of technologies that reduce size, weight, power and cost ("SWaP-C"), while simultaneously enhancing command, control, communications, computing, intelligence, surveillance and reconnaissance ("C4ISR") capabilities. Integrated sensing is a key growth area in global defence spending with combat vehicle platforms representing the highest upside.

ESTIMATED ADDITIONAL GLOBAL DEFENCE SPENDING OVER NEXT 5 YEARS

\$1.5TN

## **REVENUE BY DIVISION**

