

ASX/MEDIA RELEASE

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## **VECTOR COMPOSITES AND QUICKSTEP AWARDED U.S. AIR FORCE CONTRACT TO VALIDATE PROCESS FOR JSF PRODUCTION**

- A Vector Composites and Quickstep team has been awarded Phase II Small Business Innovation Research (SBIR) contract by U.S. Air Force for materials used in the F-35 Joint Strike Fighter (JSF).
- The contract is to validate Quickstep's patented manufacturing technology – the “Quickstep Process” – for use in the manufacture of JSF components.
- Follows on the successful completion of a Vector/Quickstep SBIR Phase I effort in 2009 to demonstrate proof of concept in the curing of high temperature carbon fibre/bismaleimide (BMI) materials.
- Represents key step in Quickstep's two-pronged strategy to win JSF contract manufacturing business and introduce the “Quickstep Process” as a viable new manufacturing technology.

**Dayton, Ohio** –The team of Vector Composites, Inc., a wholly owned subsidiary of DR Technologies, Inc. with International advanced composites group Quickstep Holdings Limited (**ASX: QHL – “Quickstep”**) have been awarded a SBIR Phase II program. This award provides Vector and Quickstep a further boost in its bid to become a process supplier to the global aerospace and defence industries. Today the team announces that the U.S Air Force has committed to a Phase II research and development program aimed at assessing the use of Quickstep's patented out-of-autoclave curing technology to manufacture composite materials used in the international F-35 Joint Strike Fighter (JSF) program.

The Air Force award of the US\$2.6 million base contract and potential US\$1.4 million follow-on option (US\$4 million total program authorization) to the **Vector Composites** (Vector), a Dayton, Ohio based advanced composites fabricator and Quickstep partner, has been deemed critical and, therefore, been awarded one of the highest levels of funding available under the U.S DOD Small Business Innovation Research (SBIR) program to encourage successful transition and implementation. Material handling, preparation and fabrication of all test articles and prototypes will be conducted at the Vector facility and will be subsequently cured at Quickstep's U.S. subsidiary, Quickstep Composites LLC, located in an adjacent facility in Dayton.

The research will focus on process qualification of bismaleimide (BMI) and epoxy resin composite materials using the Quickstep process. These two materials constitute the majority of the advanced structural composites used in the Joint Strike Fighter and have an extensive design database. The contract, planned for 27 months, will develop extensive mechanical properties data for comparison to the baseline autoclave results, as well as fabricate and test representative components based on the JSF design. Industrial partners supporting the contract include Lockheed Martin, BAE Systems and ITT Integrated Structures. At the conclusion of the contract, any or all of these companies can elect to pursue full qualification of the process for use in production.

Chief Executive of Quickstep, Mr Philippe Odouard, said the Air Force's decision to proceed with the Phase II award and the high level of funding awarded represented an important step in Quickstep's two-pronged strategy to win manufacturing contracts for JSF.

“Quickstep has been actively working on two fronts to secure JSF manufacturing business,” Mr Odouard said. “This grant supports our founding strategy, which is to promote the patented Quickstep Process as a viable new

technology for the manufacture of high performance composites such as those required for JSF components. Our parallel and complementary strategy targets specialist manufacturing contracts that can be completed at our manufacturing facility near Fremantle using traditional composites manufacturing techniques such as autoclave.”

“Quickstep has already enjoyed some success in targeting traditional manufacturing contracts for JSF – as demonstrated by the recent Memorandums of Understanding signed with Lockheed Martin, Northrop Grumman and Marand, and this significant teaming with Vector under the Air Force contract now indicates that we are also proceeding well with promoting our proprietary technology,” Mr Odouard continued.

Vector’s Vice President and General Manager Tim Brocklehurst said “The SBIR Phase II award to Vector launches Vector down the path to become a key supplier for advance composite applications for aerospace applications. We are pleased to be working with Quickstep and its “rapid cure” technology on this program. Through the demonstrated success of Vector’s Phase I SBIR contract we worked with Quickstep to demonstrate the viability of this technology. The potential for cost reduction has been realized in our previous work with Quickstep. The outcome of the Phase II SBIR offers great potential to position both companies for growth while providing a means for low cost manufacturing of advanced materials. The program efforts for the Air Force Phase II program will push Vector toward becoming a certified supplier for the F35 program and will open the doors to other emerging markets.

“Our efforts to target key applications for the Quickstep Process – particularly in the aerospace and defence sectors – remains a key priority for the Company,” Mr Odouard commented. “This ongoing work with our partner Vector Composites on behalf of the DOD represents an exciting opportunity for Quickstep to promote our proprietary technology to a very large and very important target market.”

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### **Vector Composites / Quickstep SBIR Program Background**

Quickstep was awarded a subcontract from **Vector Composites**, a Dayton-based advanced composites fabricator in March 2009 to support, Vector’s Phase I SBIR contract from the Air Force Research Laboratory, located in Dayton, OH.

The research focused on the development of an out-of-autoclave processing cycle on a qualified high temperature bismaleimide/carbon fibre prepreg system used by the U.S. Air Force on the JSF Program, which was successfully completed using Quickstep’s curing technology.

Following the success of Phase I, which was completed in late 2009, the Air Force has now confirmed its commitment to proceed with Phase II of the research, which will focus on the manufacture of JSF components pairing Vector’s fabrication capabilities and Quickstep’s out-of-autoclave manufacturing process, as well as testing and validation of the manufactured parts.

The US\$2.6 million Phase 2 award represents the third contract issued by the U.S. Government specifically focused on evaluating Quickstep’s patented composites manufacturing process for military aircraft. Bismaleimide (“BMI”) resins are used in high performance structural composites that demand elevated temperature use and increased toughness. In addition to the Phase I program outlined above, Vector Composites was awarded an earlier contract in 2008 by the U.S. Navy to evaluate production qualified epoxy prepreg resin systems, which was also successfully completed using Quickstep’s curing technology.

**Background on Vector Composites Inc.** - [www.vectorcomposites.com](http://www.vectorcomposites.com)

Vector Composites (VCI) is a rapidly growing company located in Dayton OH, specializing in the design and fabrication of engineered composite structures for the aerospace industry. Vector Composites is a wholly owned subsidiary of DR Technologies of San Diego CA, and was spun off from the National Composite Center (NCC) in 2006 in a sale to DR Technologies. Vector's state-of-the-art fabrication facility includes the latest fabrication equipment and technologies including molding presses, autoclaves, and RTM capabilities. VCI is an industry leader in the application of Resin Transfer Molding (RTM) and Vacuum Assisted RTM (VARTM). VCI's ability to offer vertically integrated design and fabrication solutions to industry customers has placed us in a unique and coveted position.

Vector Composites, has its operations located adjacent to the North American Quickstep Center of Excellence (NAQCE) in Dayton, which was established by Quickstep in October 2006. The NAQCE and Vector operations are located in facilities managed by the National Composite Center (NCC) under a joint operating agreement, and the NAQCE houses a QS20 composites production machine.

**Background on Quickstep Holdings Limited** - [www.quickstep.com.au](http://www.quickstep.com.au)

Quickstep is an Australian-based company which is at the forefront of advanced materials manufacturing and technology transfer for the global aerospace and defence industries.

The use of advanced composites is rapidly growing with carbon material usage planned to increase at an average rate of 20% per annum for the next 10 years, underwritten by the emergence of high-use carbon fibre commercial aircraft such as the Boeing 787 and Airbus A350. Light weighting of vehicles is the prime driver with commercial aircraft and military equipment leading the charge.

Quickstep has significant capabilities and expertise in the production of aerospace-grade composite components using both conventional autoclave-based manufacturing and leading edge out-of-autoclave production technologies, including its proprietary Quickstep Process.

In early 2009 the Company commissioned a A\$10 million manufacturing facility located in North Coogee, Western Australia giving it the second largest production capacity in the nation.

Quickstep has established strong working relationships with several major aerospace groups and Tier One Original Equipment Manufacturers (OEM's) to the aerospace and defence sectors, and is also pursuing a range of commercial opportunities through its global network of subsidiaries (located in Dayton, Ohio; and Munich, Germany), as well as through Alliances with Universities (Manchester, UK and Geelong, Victoria, Australia) and a number of Teaming Arrangements.

Quickstep signed two Memorandums of Understanding (MOU's) in 2009 in relation to manufacturing contracts for the JSF program. The first was signed with global aerospace companies, Lockheed Martin and Northrop Grumman, for around \$700 million of potential contracts, with Quickstep expecting to sign a Long Term Agreement on these contracts in May. The second MOU was signed with Melbourne-based Marand Precision Engineering for up to \$50 million of contracts to manufacture Vertical Tail skins for the JSF.

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