Another important milestone for the Company's Comparative Vacuum Monitoring (CVMTM) technology was recently achieved with the first trial installation of a production CVM system on a Boeing commercial aircraft structure.

On 8 March 2007 the Company announced the "World’s First" agreement by The Boeing Company to include its CVM structural health monitoring technology into the Boeing Common Non-Destructive Inspection (NDI) manual. Since that time a number of US airlines have formally requested Boeing to consider approving the use of CVM technology as an alternative means of compliance (AMOC) for existing service bulletin (SB) inspections.

As a first step, two of these airlines and a cargo operator are supporting the use of CVM sensors on their aircraft as an alternative to frequent inspections that incur significant maintenance costs and impact on operating aircraft’s availability. In return Boeing has recognised the potential benefit to its customers of using CVM technology and is providing a high level of technical support for the approval process.

The intensive market campaign which started in 2007 has resulted in an increasing level of order intake during the last quarter. It is anticipated that sales volumes and resultant revenues will continue to increase now that CVM’s approval for use in larger aircraft is in place and the CVM technology is exposed to an ever wider range of customers.
Welcome to our April newsletter for 2008.

During the first quarter of 2008 the Company has concentrated on the development of specific applications of the Comparative Vacuum Monitoring (CVM) technology to address customer requirements to reduce in-service civil and military aircraft maintenance costs and down-time. The primary objective of these activities is to have CVM systems approved as an alternative means of compliance for traditional manual structural integrity inspections for various aircraft fleets. To this end the Company is working closely with:

- the world’s four largest civil aircraft manufacturers - Airbus, Boeing, Embraer and Bombardier; and
- major air forces around the world including the USA, UK, Australia, Europe, Singapore and China.

In the last twelve months the Company has received accreditations from The Boeing Company and the Australian Defence Force (ADF) endorsing CVM sensors and the PM200 handheld monitoring instrument as a suitable means of performing structural integrity inspections on aircraft on the ground. It is the first time in the civil and military aerospace sectors that the significant milestone of having an in-situ sensor monitoring system replace manual inspections has been achieved and represents a fundamental change in the philosophy of conducting aircraft structural integrity inspections. The acceptance of this major change in the critical area of airworthiness inspections, in what is a highly conservative and heavily regulated industry, is due to the support that has been provided by our Shareholders and the Australian Government via a Commercial Ready grant.

The Company has recently achieved another major milestone with Airbus acknowledging CVM as being "Technology Ready" to be included in its commercial aircraft maintenance programs to replace traditional manual Non-Destructive Inspections (NDI).

The growing interest in CVM technology has been accepted as an industry standard, a long term market exists for its use and barriers to entry for competing technologies are high, both in terms of the time required for accreditation and the cost.

In preparation for the next growth phase (commercial sales) the Company has been investing by employing experienced aerospace industry staff upgrading of our enterprise management IT systems, and transitioning from our existing ISO9000:2000 quality management system to the much more demanding and mandatory aerospace industry AS9100 standard. The Company has also invested in the production of CVM instrumentation and new connector systems to aerospace industry compliance standards. These activities have been necessary to enable the production of CVM products that comply with the stringent requirements for use on aircraft.

Some of the advancements in commercialising the CVM technology in the past quarter include:

- Trial installation of a CVM sensor system on a commercial aircraft in the US as an important part of a Boeing approval process (front page article);
- Airbus agreeing to demonstrate CVM technology to a number of airline operators of their aircraft, and discuss the improvements in maintenance practices that the use of CVM systems will deliver with the aim of entering into a program of phased in-service introduction of CVM technology (back page article);
- Orders for CVM systems, sensors and training from for a large trial installation by the South American regional aircraft manufacturer Embraer;
- Order for CVM systems and sensors by the Canadian regional aircraft manufacturer Bombardier Aerospace for evaluating aircraft maintenance cost reduction applications;
- On-going successful progress by the US and other Air Forces in their evaluation of CVM sensors for use on military aircraft fleets;
- Preparation of a quote to a European Air Force for the installation of CVM sensors on a fleet of one of their aircraft types;
- Sales of CVM Switch and sensors to new automotive customer Bosch in the USA and a large component manufacturer in Germany; and
- Repeat orders of CVM sensors and equipment from Airbus for their on-going test and qualification programs for new aircraft and materials.

Following the collapse of a large bridge in Minneapolis a presentation and demonstration of the new CVM Switch bridge monitoring unit was given to the US Federal Highway Administration (FHWA) at their Turner-Fairbank Highway Research Center (TFHRC) near Washington DC. The staff of the TFHRC were impressed by the ability of CVM to detect a crack in real-time and transmit a text message alert to a mobile phone. The Company is now working with a potential partner company in the US, with a well established bridge monitoring business, to facilitate the FHWA’s evaluation of CVM technology.

In conclusion, commercial interest in CVM has continued to increase during the last quarter with sales to new customers in both the aerospace and automotive sectors. The marketing activities commenced in 2007 are showing good results and the Company is well positioned to generate significant revenue from sales from its existing range of qualified CVM products.
All On-Board CVM

The Company’s product development strategy is to initially commercialise CVM technology with off-board hand-held monitoring instrumentation such as the PM200, followed by the introduction of on-board monitoring instrumentation systems capable of being integrated in the design and manufacture of future aircraft as a part of a Structural Health Monitoring (SHM) system. The incorporation of CVM systems on-board existing and new-build aircraft is therefore an important step in building long term customer confidence in CVM technology. The process also provides valuable data for the ‘type qualification’ of sensor installations for specific fleet-wide civil and military aircraft applications.

The Company is expecting to see continuing growth in sales of laboratory equipment during 2008 and will be visiting research centres and design institutes in China during this quarter to discuss the opportunities for including CVM products in upcoming fatigue test programs for aircraft operated by the Peoples Liberation Army Air Force.

The Company has also seen growing interest from the Automotive Test sector in its low cost CVM Switch products. A number of CVM Switches and associated Pump Units have been sold to Bosch in the USA to enable them to evaluate the system after a referral from their Australian subsidiary PBR - for whom the CVM Switch was originally developed. An order for another CVM Switch system has been received from a large German company supplying brakes to the European automotive industry also following an introductory demonstration.

The global market for test and evaluation instrumentation and sensors is estimated to be worth US$4.5 Billion by 2010. CVM laboratory and test instrumentation products are steadily establishing a new niche market for monitoring of aircraft, materials and automotive fatigue test programs. Overall this is an important market sector for the CVM technology, due to the opportunities for sales, the building of customer confidence, and the type qualification of specific applications for use on aircraft fleets.

Recent sales of the Company’s CVM laboratory products - the KVAC and SIM8C - for fatigue and materials testing programs, are a clear indication of increasing interest in CVM technology. In the last quarter the Company has received orders of laboratory equipment for two aircraft manufacturers test programs. In addition to the orders for laboratory equipment and training, the customers have also ordered large quantities of sensors.

In materials testing, sensors are consumables. The supply of sensors is repeat business once a laboratory test kit is sold. The Company now regularly receives repeat sensor orders from customers such as Airbus for their various programs and expects to be notified soon of a military customer’s intention to place a contract for installing laboratory equipment and sensors on a wing fatigue test program.

Although the revenues of these programs are not necessarily large, they provide repetitive income and are an important step in building long term customer confidence in CVM technology. The process also provides valuable data for the ‘type qualification’ of sensor installations for specific fleet-wide civil and military aircraft applications.

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The major European commercial aircraft manufacturer, Airbus, has acknowledged that the Company’s leading edge CVM is “Technology Ready” for inclusion in its commercial aircraft maintenance programs. This marks the achievement of another major milestone for the Company, as it opens up the large worldwide fleet of Airbus aircraft to a range of CVM technology, and marks the end of the testing and evaluation process. The primary objective of this program is to enter into a program of phased in-service introduction of CVM products with these airlines.

Airbus is preparing to demonstrate CVM products to a number of airlines operating their aircraft, and discuss with them the improvements in maintenance practices that CVM technology can deliver. The primary objective of this meeting is to enter into a program of phased in-service introduction of CVM products with these airlines.

The Company and Airbus have had a mutually beneficial technology development partnership since 2000. In June 2005 the Company entered into a Joint Development Agreement with Airbus to develop CVM technology to a level that it could be installed in commercial aircraft. This milestone that has now been achieved. The next generation of CVM systems for on-board aircraft application is already in development for Airbus.

Airbus has been using the Company’s CVM technology for seven years in material and structural test programs, and is currently using over 150 CVM sensors in the full-scale fatigue testing program for the new A380 aircraft. The Company’s CVM sensors enabled Airbus to make a breakthrough in material testing associated with the A380 qualification, and provided vital information on the performance characteristics of the advanced lightweight aluminium epoxy laminate material, GLARE®. A large proportion of the A380 is constructed in the GLARE® material, which is difficult to inspect using traditional non-destructive inspection methods.

Development of an on-board CVM system to a prototype level; and

Testing the prototype on-board CVM system on a Full Scale Fatigue Test.

The initial prototype of the next generation CVM on-board system was recently demonstrated to Airbus. If the Full Scale Fatigue Test tests of the on-board system prove successful, Airbus expects to be able to install this next generation of the CVM system on operating aircraft for flight trials in the near future.

Structural Health Monitoring (SHM) is viewed in the aerospace industry as the “Final Frontier” in airframe design, providing the potential to achieve the highest degree of design optimisation of airframes. Airbus’ goal is to be able to use SHM technologies, such as CVM, to achieve more efficient aircraft maintenance practices and to improve the structural design process of new-build aircraft to allow for weight reduction.

Airbus is also considering the inclusion of CVM sensors during manufacture as a means for inspecting hard to access areas of structure in a new aircraft program, and evaluating the use of CVM sensors for detecting and monitoring damage in structures made in composite materials such as carbon fibre as distinct from metal structures which has been the focus of development to date.

The innovative use of CVM technology to detect damage in composite materials is a significant new development. CVM technology is viewed by Airbus as a prime candidate for incorporation into new-build aircraft structures to optimise structural design in composite materials and minimise inspection requirements. Testing of CVM on composite materials is being conducted jointly by the Cooperative Research Centre – Advanced Composite Structures in Australia and by Airbus in Germany to verify that the inclusion of CVM technology in composite materials is acceptable. Airbus also plans to include CVM sensors in a composite material fuselage barrel-test and demonstrator program during 2008.

The use of CVM technology on non-metallic structures opens up new areas of opportunity for Structural Monitoring Systems, as new aircraft and many other structures are increasingly being constructed in composite materials.

The achievement of CVM being acknowledged as “Technology Ready” for inclusion in commercial aircraft maintenance programs is a major milestone for both Airbus and Structural Monitoring Systems. It is the first time that any SHM technology has reached this level of maturity with Airbus, and is testament to all the hard work undertaken and investment in time and resources that both companies have made to get to this stage. The Company looks forward to a long and productive partnership with Airbus introducing CVM technology into their existing aircraft fleets for improvements in maintenance practices, and into new Airbus aircraft to enable structural design optimisation and reduced life-cycle costs.