

Structural Monitoring Systems

Investor Newsletter

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**STRUCTURAL
MONITORING
SYSTEMS**



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MD's Report

Welcome to the second quarterly newsletter to investors.

SMS has achieved a number of significant milestones since the issue of our first newsletter in March.

An agreement was signed with Airbus for the development of CVM™ for an in-flight Structural Health Monitoring system to be ready for Airbus aircraft by the end of 2007. This marks a significant step in acceptance of CVM™ technology by the major aircraft manufacturers.

The agreement is also significant as it commits Airbus to a licence agreement for the use of CVM™ on terms that are yet to be agreed between the two companies.

SMS was awarded a contract by the Pakistan Air Force to deliver a full range of structural integrity analysis, monitoring and testing services for their FT5 Trainer, Mirage Fighter and C-130 transport fleet of aircraft. It is a major development in SMS' capability to structure defence contracts that go beyond the supply of CVM™ technology, as this contract provides for the supply of a range of sophisticated engineering services.

SMS also received two contracts for the trial of CVM™ on UK Royal Navy Sea King and Royal Air Force Harrier aircraft. It is anticipated that success in these trials will influence other UK military aircraft operators to adopt CVM™ technology.

Negotiations continue towards a commercial licence with Boeing. It will establish the commercial terms and Boeing proprietary information access rights to enable CVM™ systems to be manufactured, certified, sold and distributed by SMS to the operators of Boeing commercial aircraft.

Colin McDonald joined SMS in May as Chief Financial Officer and Company Secretary. Colin is a Chartered Accountant with extensive corporate experience from senior executive positions. He has gained over twenty years experience in various sectors such as technology and mining. His appointment brings valuable expertise to SMS.

During the last quarter, SMS has made strong progress towards achieving its strategic objective of CVM™ being universally adopted as the leading structural health monitoring sensor technology for civil and military aircraft, and implementing the commercial arrangements to support the commercialisation of CVM™.

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MILITARY ADVANCES



A French Air Force Mirage on takeoff

SMS in association with Aerostructures Pty Ltd of Melbourne was awarded a significant contract by the Pakistan Air Force in May.

The contract is for the supply of structural engineering services and CVM™ design solutions for their FT5 jet trainers, Mirage-3 fighters and Hercules C-130 transport aircraft and a proposal to equip the Defence Aeronautical Research Centre (DARC) with laboratory testing systems.

SMS will act as the prime contractor to the Pakistan Air Force. This is a major development as SMS will be delivering a comprehensive engineering service in aircraft structural integrity analysis and management.

The contract value is approximately A\$830,000 for a short Stage 1 program that provides for the Company and Aerostructures to analyse and develop an airframe life extension and structural test proposal for the FT5. It will also produce structural integrity plans using CVM™ technology for the Mirage-3 and C-130 to monitor specific areas on the airframes to detect the initiation and propagation of cracks at periodic intervals.

The contract is significant as it is aimed to lead into recommendations for PAF fleet installations of CVM™ systems as well as assisting the DARC to develop its structural testing capability in a larger Stage 2 program due to commence in late 2005.

During the establishment of this contract SMS has been able to capitalise on the expertise and contacts that it has built up during the development of the CVM™ technology.

SMS is also in discussion with another Air Force regarding the adoption of this full service approach to aircraft structural integrity analysis and management.

SMS completed installations of CVM™ systems on three Australian Defence Force Black Hawk helicopters in April and is in discussion with the office of the Director General Technical Airworthiness in association with Aerostructures regarding the certification of CVM™ technology to enable its use across ADF aircraft fleets.

Contracts were also won during April for trial installations of CVM™ sensors on the Royal Navy Sea King helicopter and the Royal Air Force Harrier fatigue test rig. If successful, these trials could potentially lead to fleet wide installation of CVM™ sensors and the wider adoption of CVM™ technology by UK military aircraft operators.



Hercules C-130

Ageing Aircraft Program

The program that SMS is working on with Boeing, the Federal Aviation Administration (FAA), and two US airlines to have CVM™ sensors approved for use on ageing commercial aircraft continues to make good progress, and is on schedule to be completed during the second-half of 2006.

22 CVM™ sensors have now been installed on four large commercial aircraft and have been placed in areas that are representative of the environment that they experience in-service. The aim of this element of the program is to demonstrate that the sensors are capable of working under a range of operating environment conditions.

The FAA funded laboratory trial to demonstrate the crack detection reliability of CVM™ sensors is also making progress and to date the presence of all 15 cracks grown in three riveted lap joint specimens have been detected.

SMS continues to receive a high level of support from Boeing and the FAA, and in particular from airline operators who are keen to have CVM™ sensors solutions available for high frequency and costly structural integrity inspections.



Automotive Market

The recent sale of a CVM™ laboratory kit to PBR Australia to trial the cost and time benefits of testing the structural design of their new brake systems shows the significant benefits and value that can be obtained from the use of CVM™ technology on components and structural testing in real-time in a laboratory environment.

PBR is a leading automotive brake developer and manufacturer and supplier of vehicle brake products to major automotive makers around the world such as Ford, GM and Toyota. PBR's testing laboratories are based in Melbourne with extensive test facilities for R&D on brake products for fatigue induced by vibration, deflection and torque.

PBR specialise in the development of braking systems for OEMs in Australia, North America, Europe and Asia and the global supply of aftermarket replacement brake components and innovative brake service solutions.

CVM™ has a broad application across many industries where structural testing of critical components and equipment is required. Experience shows that fully automated real-time monitoring of testing reduces costs and delivers enhanced quality of data.

The unique characteristics of CVM™ make it widely applicable to a wide range of materials and structural testing requirements.

SMS is looking to grow its presence in the structural test market, and is holding discussions with a growing number of interested parties. Experience gained in the very demanding aviation sector can be readily transferred to these new areas of opportunity. The success of CVM™ technology used in testing for aviation provides SMS with strong credentials and credibility in addressing these new markets.

SMS In The Media

SMS has received significant media coverage in the last quarter. Print articles can be found on the SMS website:

Janes Defence Weekly (2/3/2005) - Structural monitoring system earmarked for new aircraft

Southern Cross Radio (6PR Perth 28/3/2005) - Our chairman, Sir John Walker, was a guest on radio 6PR discussing SMS technology and his views on international security

The West Australian (21/5/2005) - Pakistan Air Force deal

Janes Defence Weekly (1/6/2005) - Pakistan signs for aircraft monitoring deal

The Australian (3/6/2005) - Aussies clean up as Airbus drawn in to vacuum technology deal



The executed Airbus Joint Development Agreement is handed over.
(Left to Right: Joern Bolten and Heiner Stehmeier from Airbus with Mark Vellacott and Peter Schoonens from SMS.)



AIRBUS AGREEMENT

Meet the CFO and Company Secretary

Colin McDonald

The recently appointed Company Secretary and Chief Financial Officer, Colin McDonald, is a Chartered Accountant with a Bachelor of Commerce degree from University of Western Australia. He has gained extensive corporate experience from senior executive positions, most recently as Company Secretary and Chief Financial Officer at the ASX listed Visiomed Group Limited.

Colin has worked on mergers and acquisitions, debt and equity raisings, financial and management reporting and treasury management. His experience in the financial management of foreign subsidiaries will be of value to the Company, as will his exposure to the research and development grant application process.

"I'm delighted to be part of the team and I'm confident we have an exciting future at SMS," he said.

"The technology is quite amazing and its range of applications appears to be vast. As someone with a background in chartered accounting I appreciate the ability to be able to identify cost savings and I can see the potential for long-term licensing of our products across the aviation and other sectors."

Away from the office Colin enjoys tennis, yoga and swimming.

The commercialisation of the Company's CVM™ technology has taken a significant step forward with SMS signing a Joint Development Agreement (JDA) with Airbus.

The objective of the JDA is for the "Development of CVM™ for an in-flight Structural Health Monitoring system."

At the conclusion of the JDA SMS's patented CVM™ technology will be ready for introduction on new and existing Airbus aircraft. This places CVM™ at the forefront of Structural Health Monitoring (SHM) system development for civil aircraft.

Importantly, the JDA commits Airbus and SMS to entering into a licencing agreement for the use of CVM™ technology during the JDA program.

SMS is now positioned for entry into the developing civil aircraft SHM market sector that could be worth tens of millions of dollars annually.

Airbus plans to develop the technology to initially reduce maintenance costs and increase aircraft availability for existing and new aircraft. They are also considering

introducing new design concepts and manufacturing techniques that can reduce aircraft weight and manufacturing costs, resulting in greater efficiency and productivity.

"We've had a relationship with Airbus going back to 2001 and this is the culmination of a lot of hard work and investment on both sides to get CVM™ technology to the point where it can be developed for in-service use," said SMS managing director Mark Vellacott.

The potential value and benefits of SHM for aircraft manufacturers and operators is discussed on page four of this newsletter.

SMS's technology has been successfully used by Airbus to provide critical material performance-related information during the development of the A380 aircraft, and more than 120 CVM™ sensors are in the process of being manufactured and installed onto the A380 full scale fatigue test rig in Germany. This makes CVM™ the world leader in SHM sensors installed on a full-scale fatigue test rig.

Airbus engineers have visited SMS in Perth during June to commence the JDA program.

An Airbus spokesperson said, "We are pleased to have entered into this joint development agreement with SMS which will see CVM™ systems developed to meet Airbus requirements for on-aircraft applications on both existing and new aircraft. We look forward to a long and mutually beneficial relationship with SMS."

This further development of CVM™ technology opens up a range of opportunities for SMS in both the civil and military aircraft SHM sectors and thus this agreement is a cornerstone for the future development of the company.



Structural Health Monitoring

A frequently asked question is, "What is Structural Health Monitoring or SHM?"

SHM is seen as the "Final Frontier" in airframe design. No matter what material the airframe is made of, SHM will permit the highest degree of optimisation leading to reductions in structural weight. SHM also provides other advantages for an aircraft operator in areas of maintenance and aircraft availability in a highly competitive environment.

SHM is rapidly being accepted by the world's aircraft manufacturers as the next step in aircraft development, where the SHM system will manage the monitoring of aircraft structural integrity and maintenance requirements. SHM will be an integral part of the aircraft structure - a good analogy being the nerve system of a body that can detect damage.

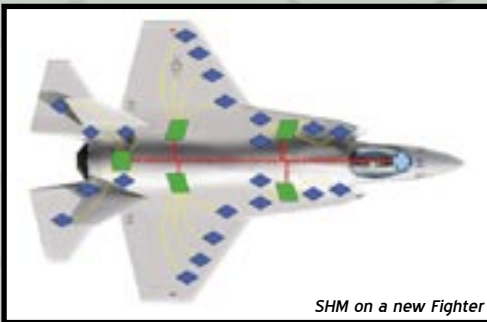
The world's largest aircraft manufacturers, Airbus and Boeing, spend billions of dollars to design, manufacture and market their aircraft. Competition is fierce and because the stakes are high, maximum efforts are made to produce the best products possible through the latest materials, manufacturing processes and other technologies.

Aircraft efficiency, productivity and performance are constantly improving. Twin engine wide body aircraft have replaced many three or four engine aircraft. Two man digital cockpits have replaced three, four or five man analogue ones. Some metal structures have been replaced by lighter composite structures. This has all been made possible through advances in technology.

The concept of SHM is not new. The benefits have been recognised for quite some time by visionary aerospace engineers, but until recently the sensing elements of the system were not available.

SHM damage detection technologies, such as CVM™, have now reached a stage of development where they are influencing thinking on structural design and maintenance philosophies, leading to structural optimisation, both from a weight point of view and maintenance requirements, enabling improvements in the overall performance and life-cycle costs of an aircraft.

These are the primary factors that airline operators are seeking: improved performance, lower operating costs, higher availability and reduction in personnel required to keep an aircraft in the air.



SHM on a new Fighter

Large aircraft are expensive. There are not many products on the market that have a higher per-unit cost. For an aircraft manufacturer, selling aircraft to an airline means long term relationships and follow up orders. Once that customer has been won over, it is difficult for the opposition to sell them a similar product. For that to happen might take many years, and then only if a much better product is offered. So the stakes are very high.

Hence, if new technology appears that will assist in winning a new customer, the aircraft manufacturers will take it very seriously. That is now happening and CVM™ is taking a leading role in the development of future SHM systems.

In the near term, the main benefits from SHM are decreasing maintenance costs and increasing aircraft availability. In the future it offers structural weight saving in new aircraft.

An Airbus study has shown that the application of SHM in fuselage areas that are designed according to fatigue criteria may allow a reduction in panel weight of up to 15%. This can represent a structural weight saving, enabling an increase in performance capability of additional passengers or extended range for long haul flights.

The lower the weight of an aircraft the more efficient and productive it becomes, and manufacturing costs

are reduced. Less metal equals less cost. Hence the manufacturer can build an aircraft that performs better, has lower operating costs and is cheaper to produce. It is an unbeatable combination. We get a much better appreciation of the value of SHM when considering the benefits through the eyes of the aircraft manufacturer looking to obtain competitive advantage.

The potential value of SHM technology

If, for example, the technology permits the saving of 1000kg of structural weight, the manufacturer could save about US\$1,000,000 in material and manufacturing costs. You then add the value of the additional payload which the aircraft can carry, or the additional range, plus an increase in aircraft availability, plus lower inspection costs.

Then there is the value to a manufacturer of winning or losing a contract, which is mainly subject to price / performance / operating costs.

It is estimated that in the future Airbus will deliver more than 300 aircraft a year.

A new large aircraft, designed and manufactured with a fully integrated SHM system, may bring benefits in the order of many millions of dollars to the manufacturer and operator over the life of the aircraft.

SHM is a high value technology. Imagine savings of a million dollars per aircraft. Multiplied by the number of large aircraft manufactured each year, the potential return to a SHM technology supplier is significant.

CVM™ is regarded by Airbus as a leading SHM technology, hence the reason that they have entered into a Joint Development Agreement to further the development for use on their aircraft, both new and used. The A380 full scale fatigue test in Dresden, Germany will use more than 120 CVM™ integral and surface sensors. The integral sensors have already been installed and the surface sensors are scheduled to be installed this July.

The near term opportunities for CVM™ are in retrofit SHM systems for aging commercial aircraft. As an aircraft ages the inspection requirements increase. In simple terms, the value of the asset declines and the cost of ownership increases.

Mandatory integrity inspections of airframes frequently require invasive work to access a location to check for fatigue cracking and corrosion. In some cases 90% of the total labour time involved is dismantling and reassembly of surrounding components. Typically, no damage is found and the whole process is repeated at regular intervals prescribed by the regulators.

SHM for airframe inspections is desirable for aging commercial and military aircraft operators as it offers:

- Reduced labour costs of mandatory inspections.
- Efficient and electronic reporting on airframe structural integrity.
- Improved inspection reliability.
- Removal of invasive inspection damage risk and replacement material costs.
- Reduced down time and ground support costs.
- Optimised scheduling of all other maintenance.
- Increase revenue or operational flight availability.

NASA has estimated the cost savings for a SHM system to be 35% (NASA SHM Cost Benefits Analysis, January 2000).

The world's airline industry spends US\$12.9 billion annually on airframe structural maintenance. A typical ageing narrow body airliner will incur costs of approximately US\$750,000 per annum in airframe structural maintenance. Assuming a comprehensive installation of SHM throughout such an aircraft enabling a 35% reduction in airframe maintenance and inspection, this has the potential to yield about US\$250,000 in labour and materials cost savings per year.

These figures do not include the daily "down-time" cost for the aircraft operator which typically for a small airliner is US\$50,000 - of which leasing charges alone can be US\$10,000 a day.

There are about 8,000 commercial aircraft in the world today, of which more than 40% are older than 15 years, and greater than 30% are over 20 years old.

Assuming that the addressable market for the retrofit application of SHM sensor technology is 50% of the more than 3,200 commercial aircraft over 15 years old, and that SHM technology is worth 20% to aircraft operators of the potential US\$250,000 in savings in labour and material costs, this could make the value of the SHM technology market for ageing commercial aircraft in excess of US\$80 million per year.



SHM... in-flight monitoring

In summary the cost benefits to aircraft operators of airframe SHM are:

- Simpler, less expensive maintenance programs.
- Increased flight availability.
- Improved scheduling of event driven maintenance.
- Reduced maintenance related labour costs.
- Fuel/payload ratio and performance improvements.

The benefits of SHM to the manufacturer of airframes are:

- Competitive "Total Cost of Ownership" compared with non-SHM aircraft.
- Better warranty management.
- Better re-sale value of the aircraft.

SMS considers that sale and licensing of CVM™ sensor and system technologies on a cost-benefit basis will be a significant source of revenue in the SHM retrofit of aging aircraft and integration into new SHM enabled airframes.



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