

Speculative Buy 22.0c

**Market Cap** AUS\$52.29m  
**Shares in Issue** 237.66m  
**NAV** 2.0c  
**Gearing** Net cash  
**Interest Cover** N/A

**Last Results** Interims Mar-07  
**Next Results** Prelims Sept-07  
**Next Event** Prelims Sept-07

**Market** Australian: ASX  
**Reuters** ASX:SMN

**Change in Recommendation** No

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## Structural Monitoring Systems\*

### Ready for take-off

**Structural Monitoring Systems PLC (SMS) is engaged in the development and commercialisation of Comparative Vacuum Monitoring (CVM) products used in testing and monitoring the structural integrity of materials that are subject to operational stress and fatigue, particularly aircraft. Alternative techniques are labour intensive and require the aircraft to be grounded and frequently partially disassembled while the inspection takes place. With SMS's patented CVM technology, sensors are permanently installed in critical areas of the structure, some in inaccessible areas of the aircraft, and monitored remotely. This approach reduces the cost of inspection and enables operators of military and civilian aircraft fleets to get more flying hours from their fleets, improving their return on assets.**

Given the critical nature of the checks which CVM is required for, the regulatory bodies governing aircraft airworthiness have mandated extensive testing of this novel technology before allowing it to replace traditional forms of inspection. SMS has recently successfully completed a qualification programme with Boeing and the US Federal Aviation Administration (FAA), putting SMS in a position where it can begin to make volume sales to fleet operators. It is also engaged in qualification programs with Airbus and military aircraft operators in Australia and the UK.

Recent results reflect the costs of supporting these intensive evaluation programmes, but as CVM is increasingly adopted, revenues from the aerospace sector are expected to increase, reaching an estimated AUS\$98m by 2016. The company is expected to realise its first small operating profit next year and to be increasingly profitable thereafter, generating an estimated AUS\$67.9m EBIT in 2016. These estimates exclude any contribution from other sectors where materials are subject to stress and fatigue and may suffer catastrophic failure.

Assuming that SMS is successful in winning contracts to supply CVM technology, the level of profits which it is expected to generate would justify a valuation several times higher than the current market capitalisation. With the caveat that it is still too early to determine whether contracts will be secured in the volumes required, we initiate research coverage with a recommendation of Speculative BUY.

Y/e Jun (AUS\$m)	2006A	2007E	2008E	2009E
T/O	1.13	0.58	6.50	13.00
EBITDA	(3.77)	(3.52)	0.35	4.57
PBT	(3.77)	(3.52)	0.40	4.77
EPS (c)	(1.9)	(1.6)	0.2	2.0
P/E (x)	(11.8)	(13.9)	130.7	11.0
EV/EBITDA (x)	(13.12)	(14.05)	140.30	9.76
DIV (c)	0.0	0.0	0.0	0.0
Yield (%)	-	-	-	-
Net funds	2.76	2.84	3.18	7.66
Net Assets	2.68	2.76	3.16	7.93

Source: Company data and WH Ireland estimates

\*W H Ireland has a research mandate from Structural Monitoring Systems plc. Any research on this company should not be relied on as independent or objective.

This note is intended for institutional investors only and is not for distribution to private clients.

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## Technology

### **CVM based on proprietary technology**

CVM is based around proprietary sensors which have two sets of tiny channels on their underneath surface. The sensors are usually produced as a polymer pad or sheet with a pressure sensitive adhesive on the under surface that bonds and seals the sensor to surface of the material being monitored. The sensor is connected up to an instrumentation system via fine tubing which creates a vacuum in one of each pair of channels, whilst the other is held at atmospheric pressure. If any part of a vacuum channel intercepts a crack, a flow of air will leak into the vacuum channel, causing a change in pressure which is detected by the CVM monitor.

The sensors are small and light enough to be placed on structures throughout the aircraft and left in position during flight. They can be located either on or within structures, for example at fastened joints where the overlapping panels forming the metal skin of an aircraft are riveted together. Undetected cracks in this area were responsible for the Aloha Airlines disaster in 1988 when part of the top fuselage of a nineteen year old Boeing 737 blew open at 24,000 feet. This incident motivated the FAA to establish an aging aircraft program and introduce US government legislation to ensure the structural integrity of civil aircraft. European legislation followed suit with the result that all aircraft flying into US and European airspace have to perform routine checks which can involve several days down-time for more elderly aircraft.

### **Sensors small enough to be left in place during flight**

The sensors can also be incorporated into fibre resin composite materials, allowing problems related to impact damage or delamination to be detected from both inside and outside the material. Most conventional non-destructive testing techniques are not compatible with composite materials.

The benefits of this approach are:

- CVM can provide either periodic or constant monitoring of a structure while it is in use, avoiding the cost of stopping equipment for inspection
- CVM can detect the start of a crack and measure its growth up to a predetermined level when an alarm is raised or the structure shut down automatically
- CVM sensors can be made in materials suitable for deployment inside chemical and nuclear reactors
- CVM sensors do not interfere with electronic equipment on airborne aircraft
- CVM does not require a highly skilled technician to operate the equipment or interpret results
- CVM can be integrated with existing equipment management systems and computer monitoring systems
- CVM provides significant cost savings to an owner of equipment while at the same time allowing optimum use of that equipment

### **CVM based inspections require much less aircraft down-time**

Manual non-destructive test techniques include eddy current, ultrasound and radiography which typically require significant down-time while the aircraft or plant is taken out of operation and partly disassembled in order to access certain parts. These techniques also require specialist technical expertise to apply the test and interpret the results.

SMS actively protects its intellectual property with patents and patent applications. The original 1994 “Monitoring Apparatus” patent is granted in 24 jurisdictions including the USA. Patents regarding “Measurement of Flaws”, “Measurement of Permeability” and “Integrity of Fasteners” were filed in 2000 and are granted in the USA and filed in several other jurisdictions. Patent application “Integrity of Components” was also lodged in 2000, is pending in several jurisdictions and was refiled in the USA in 2006. 7 additional patent applications were lodged in 2006 to further protect developments of the technology. Effectively these later patents extend the life of the original patent.

## Applications

### **CVM substantially reduces the actual cost of aircraft inspection**

CVM was invented by Ken Davey, a former commercial airline pilot, who filed a patent in 1994 for a system to identify small cracks in aircraft before they caused an accident. The primary application area for the technology continues to be the routine inspection of aircraft for cracks in metal and composite structures. The sensors can be retrofitted to existing aircraft, applying the sensors to inaccessible parts while the aircraft is grounded during a major maintenance period and connecting the sensors to easily accessed external test points. The CVM system can then be monitored at specified intervals very quickly by a technician with a portable monitor taking a reading at the test point. This simple test replaces inspections that could otherwise take several days while components surrounding the part under test are dismantled for access and then reassembled, thus greatly reducing the cost of maintaining an aircraft. Moreover the conventional process of dismantling and reassembling structures may find no problem with the part under test while becoming a potential source of secondary structural damage. As an alternative to retrofitting, the CVM system can be built in during the manufacture of new aircraft.

There are over 90 thousand military aircraft worldwide, which is a substantially larger number than the number of larger commercial aircraft flying, so historically SMS has focused on this sector, conducting its first trials with the Australian Department of Defence in 1996. Moreover, military aircraft are generally subjected to higher stresses than civilian aircraft, resulting in greater fatigue of the airframes yet are generally required to have a very high level of availability. This means that there is a large demand for airframe inspection and testing to ensure the airworthiness of operational aircraft. In order to maintain their fleet, armed forces normally undertake service life extension programmes, making structural modifications to an aircraft to maintain its capabilities beyond the expected lifetime of the aircraft. In fact companies such as Qantas Defense, Marshall and BAE Systems are increasingly awarded maintenance contracts based on aircraft availability targets, promoting inspection techniques such as CVM.

### **CVM also increases the number of available hours for flying, increasing an operator's return on assets**

Aircraft maintenance costs increase over an aircraft's life. This is particularly serious for USA airlines which tend to have a significant number of aircraft above the age of 15 years. A typical aging narrow body airline incurs costs of around US\$750k per annum in airframe structural maintenance. This excludes the down-time cost for the aircraft operator of an estimated US\$50k per day. It is not uncommon for a mandatory inspection to be introduced which takes 2 days to complete with traditional non-destructive test techniques.

In the civilian retrofit market SMS is working closely with Boeing, Airbus and others to develop and qualify specific CVM inspection applications to deal with known and costly structural integrity inspections. The status of these programs is reviewed on page 6.

CVM is sought after for new aircraft not just because of reduced maintenance and inspection costs but because the drive to reduce weight means that there is continual pressure to reduce any over-engineering of load bearing components. Studies by aircraft manufacturers have shown that the application of CVM in fuselage areas may allow a reduction in panel weight of up to 15%, which equates to about 1% of the total operational empty mass of the aircraft. For a large wide body commercial aircraft with an empty weight of more than 120,000 kg, this represents a weight saving of approximately 1,200 kg. This enables an increase in payload of up to 12 additional passengers or an extra 1,400 kg of freight per flight or additional range for long haul flights. Also, because 100kg of excess operational weight can lead to an additional 5,000 kg of fuel being consumed each year, this 1,200 kg weight reduction arising from CVM installation could reduce fuel consumption by 60,000 kg per year, worth US\$30,000 annually.

**CVM already used by Airbus to certify new laminate material for the A380**

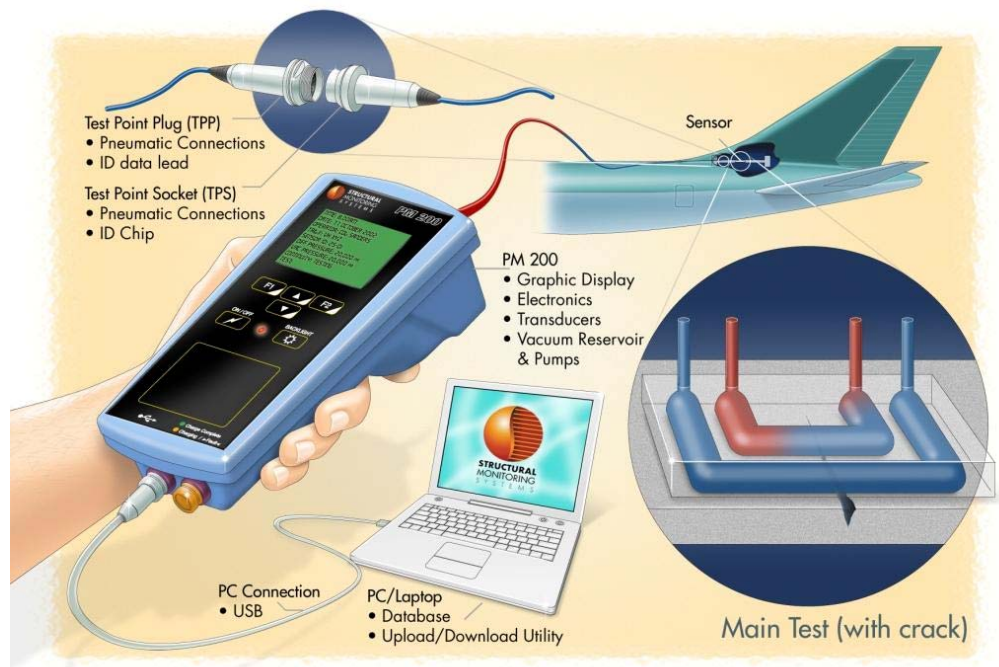
Airbus has signed a joint development agreement with SMS with the objective of incorporating CVM into the manufacture of new aircraft from 2008, particularly the new A380 and, in future, the A350. This agreement requires SMS to productionise CVM for in-flight use while Airbus validates the technology for incorporation into its aircraft. (SMS retains the IPR for this development.) Airbus has already been using CVM in materials and structural testing for five years. For example CVM was used to certify a lightweight, aluminium epoxy laminate, GLARE<sup>®</sup>, which forms a substantial proportion of the fuselage surface area of the A380. CVM is also being used in the ongoing full-scale testing of the A380.

As well as a portable system for aircraft inspection, SMS has developed a system suitable for laboratory testing. This allows a large number of CVM sensors to be accessed simultaneously to monitor large areas in real time. This is particularly useful in materials testing and has been adopted by an Australian automotive parts manufacturer for testing brakes. SMS is also working with General Motors in Brazil to incorporate CVM into its test activities.

**Diversification into other sectors longer term**

SMS's reputation in the aerospace market has opened opportunities in other markets where the structural integrity of plant is critical and mandatory inspection requirements both laborious and expensive. While this represents a significant opportunity longer term for SMS, management intend to build a strong business in aerospace over the next three to five years before pursuing a diversification strategy.

**Diagram 1: CVM technology in action**



Source: WH Ireland research / Company data

## Market Opportunity

SMS has adopted a pricing system for its technology which is based on the value of savings made by customers rather than a simple cost-plus approach, so assessing the potential market opportunity is a helpful preliminary in assessing the Company's prospects.

**Total addressable market in aerospace sector estimated as up to US\$120m**

With regard to the civilian aircraft retrofit market, the first sales are likely to be to operators of older generation Boeing 737s which is a very popular but aging aircraft requiring an increasing number of mandatory inspections. There are around 8,000 commercial aircraft flying at present, of which more than 40% are older than 15 years. SMS assumes that the addressable market for the retrofit application of CVM is 50% of the 3,200 or more aircraft over 15 years old. Indicative pricing discussions with airline operators suggest that CVM technology is worth 20% to aircraft operators of the potential US\$250k savings in labour and materials costs, giving a value for the CVM market for aging commercial aircraft of over US\$80m per year.

With regard to the civilian new build market, SMS anticipate that aircraft manufacturers will use CVM as a way of protecting pricing in what is a very competitive market. It expects to generate revenues through the sale or licensing of the CVM system, which will be a percentage of the value manufacturers generate. Assuming that Airbus build-rates are in excess of one aircraft per day, SMS estimate long-term annual revenues from this source of over US\$30-40m.

In the military sector, SMS is engaged in a programme targeted at obtaining military endorsement for RAAF military platforms before addressing the wider military market. Its current focus is on the C130 "Hercules" with a world-wide fleet of 1,100 and an increasingly onerous inspection regime. It has also begun a programme with a helicopter manufacturer. SMS estimate that the addressable military market has up to 15,000 aircraft, representing revenues of US\$40-60m annually.

## Location

SMS is headquartered in Perth, Western Australia. It employs 26 staff, 3 of which are employed in the UK where they are developing SMS's relationships with European military operators.

## Program status

Given the critical nature of the checks which CVM is required for, it is not surprising that the regulatory bodies governing aircraft airworthiness are insisting on extensive testing of this novel technology before allowing it to replace traditional forms of inspection. It is perhaps a vivid demonstration of the savings which can be realised from the CVM approach that aircraft fleet operators and manufacturers are prepared to invest in the lengthy qualification programs required. The most significant of these programmes are summarised in the table below.

PROGRAM	PARTNERS	START/END	STATUS	DESCRIPTION
BOEING NDI STANDARD PRACTICES MANUAL	BOEING, FAA, US AIRLINES, UNIVERSITY OF ARIZONA, SANDIA NAT LAB.	Q3 2004 to Q1 2007	Multi-Year Durability testing on 5 US airline aircraft completed.	Comprehensive laboratory and on-aircraft system environmental durability program to approve CVM as a retrofit structural integrity inspection method for use on Boeing civil aircraft.
			Laboratory based Probability of Detection Trials Completed	
			SPM Manual Procedure approved by Boeing	
MILITARY AIRCRAFT QUALIFICATION	RAAF - DIRECTOR GENERAL TECHNICAL AIRWORTHINESS; RAF / RN AIRCRAFT STRUCTURAL INTEGRITY; DEFENCE SCIENCE TECHNOLOGY ORGANISATION; AEROSTRUCTURES.	Q2 2003 to Q2 2007	Multi-Year durability and capability testing on 3 RAAF P3C and RAF NIMROD aircraft and 3 RN Sea King helicopters.	Comprehensive laboratory and on-aircraft system environmental durability and capability demonstration program to approve CVM as a retrofit structural integrity inspection method for use on military aircraft. Qualification status will be capable of being read across multiple military Airforce operators
			Laboratory based Probability of Detection Trials Completed.	
			Multi-Year field laboratory environmental durability testing.	
			Ground and Aircraft Equipment / Sensor compliance testing.	
AIRBUS JOINT DEVELOPMENT AGREEMENT	AIRBUS, EUROPEAN AIRLINE.	Q4 2005 to Q4 2007	Ground based periodic monitoring system in-service installation and experience trial commenced.	Comprehensive laboratory and on-aircraft system environmental durability program to approve CVM for use as a retrofit structural integrity inspection method for Airbus aircraft. Also to enable CVM systems to be incorporated into new build aircraft and capable of monitoring aircraft in-flight.
			Laboratory based Probability of Detection Trials Completed	
			Full Scale Fatigue Test Program on A380 in Progress.	
			Airborne monitoring system development and trial - due to commence Q1 2007.	

The Boeing/FAA qualification programme completed successfully recently. This represents a major milestone for SMS, as inclusion in the Boeing Common Methods – NDT (non-destructive testing) manual was a mandatory step before operators of Boeing aircraft could be allowed to use CVM to monitor airframe structures. SMS must also complete a validation of their QA procedures by Boeing but this is a minor hurdle compared with the two year validation of the technology itself and is expected to be completed successfully in six months time. Various major military programmes and the Airbus programme are expected to conclude during calendar 2007. Management is confident of a successful outcome to these other programmes.

**Boeing/FAA qualification completed successfully – others expected to follow**

In addition to the programs shown, SMS is scheduled to start a development program for airborne monitoring with the Brazilian regional aircraft manufacturer Embraer in January 2007 and is in discussions with Lockheed Martin regarding the use of CVM technology on C-130 Hercules aircraft. As Embraer is one of the top three exporting companies in Brazil, the Brazilian government has approved funding to the Brazilian University of Uberlandia for the three year programme. SMS will provide CVM instrumentation, sensors and consultancy services to the programme. The total value of the programme to SMS will be AUS\$1.2m, AUS\$0.3m in the first year (FY07).

The next stage in the commercialisation of the technology is selling it to airline operators. SMS has already established links and confirmed pricing with several of these, some of which participated in the FAA/Boeing qualification programme. We do not expect SMS to receive orders from fleet operators until H108. Given that each fleet will be equipped with sensors over a period of several years as the time for each aircraft's structural inspection arrives, the revenue from each contract will be realised over a period of several years for larger fleets, so it is important that SMS secure contracts with several airlines in parallel to achieve the level of retrofit sales shown in our forecasts.

There is no equivalent to FAA/Boeing approval in the military sector, where each national air-force takes its own decisions on test and inspections regimes, though clearly a successful outcome of a qualification programme by one airforce will be regarded favourably by others. Our model assumes that the various qualification programmes which have been proving that the technology works will result in orders towards the end of calendar 2007. The sales team in the UK has recently been strengthened with the objective of achieving this.

## Trading history

### Profit and loss summary

Year ending 30 June AS\$m	2005	H106	2006	H107
	<b>restated</b>			
<b>Sale of goods</b>	<b>0.54</b>	<b>0.98</b>	<b>1.13</b>	<b>0.28</b>
Cost of sales	(0.07)	(0.28)	(0.47)	(0.05)
Gross profit	0.48	0.70	0.66	0.23
<i>Gross margin</i>	<i>87.6%</i>	<i>71.0%</i>	<i>58.3%</i>	<i>82.0%</i>
Administrative costs	(4.66)	(2.41)	(5.43)	(2.67)
Other income	0.05	0.28	1.00	0.86
<b>EBITDA</b>	<b>(4.14)</b>	<b>(1.43)</b>	<b>(3.77)</b>	<b>(1.58)</b>
Depreciation	(0.14)	(0.07)	(0.14)	(0.08)
EBITA	(4.27)	(1.50)	(3.92)	(1.66)
Interest	0.16	0.08	0.15	0.05
<i>Interest cover (times)</i>	<i>Net cash</i>	<i>Net cash</i>	<i>Net cash</i>	<i>Net cash</i>
<b>Pre-exceptional PBT</b>	<b>(4.11)</b>	<b>(1.42)</b>	<b>(3.77)</b>	<b>(1.61)</b>
Exceptional item	(19.67)	0.00	0.00	0.00
Reported PBT	(23.78)	(1.42)	(3.77)	(1.61)
Tax	0.00	0.00	0.00	0.00
Reported PAT	(23.78)	(1.42)	(3.77)	(1.61)
<b>Normalised EPS (cents)</b>	<b>(2.3)</b>	<b>(0.7)</b>	<b>(1.9)</b>	<b>(0.8)</b>
Number of shares (million)	176.5	196.9	202.2	209.5

Source: Company data

#### SMS still in development phase and investing heavily in R&D

As SMS has until recently been bearing the costs of supporting intensive evaluation programmes which must be completed before SMS can start to sell its sensor technology to the world's military and civilian aircraft operators, sales have been relatively low compared with administrative costs. 58% of operating costs related to R&D expenses in H107, 30% to administrative costs and 11% to sales and marketing costs as the Group continued to make fleet operators aware of its technology.

Losses were distorted in FY05 by the Board's decision to write-off the goodwill created when the Group restructured in June 2004 and the value associated with technology licences and patents. This move will make it easier for the Board to issue dividends when the Group begins to generate profits. We have treated this write-off as an exceptional to give a better view of the underlying level of losses.

#### SMS benefits from Australian Government "Commercial Ready" grant

FY06 and H107 results benefit from the receipt of a grants of AUS\$0.97m and AUS\$0.83m respectively under the Australian government's Commercial Ready programme. This is assisting SMS to complete the various qualification phase activities and the development of ground based and airborne instrumentation systems.

Cash flow summary

Year ended 30 June AS\$m	2005	H106	2006	H107
Operating profit	(4.27)	(1.50)	(3.92)	(1.66)
Depreciation	0.14	0.07	0.14	0.08
Amortisation	0.15	0.00	0.00	0.00
Increase in working capital	(0.26)	(0.81)*	(0.01)	(0.22)*
Exchange differences and other	(0.54)	0.00*	0.43	0.00*
<b>Net cash flow from operating activities</b>	<b>(4.78)</b>	<b>(2.24)</b>	<b>(3.35)</b>	<b>(1.80)</b>
Interest	0.16	0.08	0.15	0.05
Taxation	0.00	0.00	0.00	0.00
Capex (net)	(0.11)	(0.06)	(0.10)	(0.03)
<b>Free cash flow</b>	<b>(4.73)</b>	<b>(2.22)</b>	<b>(3.30)</b>	<b>(1.79)</b>
<i>Free-cash-flow/share</i>	<i>(2.68)</i>	<i>(1.13)</i>	<i>(1.63)</i>	<i>(0.85)</i>
Acquisitions and disposals	0.00	0.00	0.00	0.00
Equity dividends paid	0.00	0.00	0.00	0.00
<b>Net cash inflow/(outflow) before financing</b>	<b>(4.73)</b>	<b>(2.22)</b>	<b>(3.30)</b>	<b>(1.79)</b>
Issue of share capital	4.55	3.45	3.45	3.60
Exchange rate changes	0.05	0.00	0.03	(0.00)
<b>Movement in net debt</b>	<b>(0.13)</b>	<b>1.22</b>	<b>0.17</b>	<b>1.81</b>
Opening (debt)/funds	2.72	2.59	2.59	2.76
<b>Closing (debt)/funds</b>	<b>2.59</b>	<b>3.82</b>	<b>2.76</b>	<b>4.57</b>
<b>Closing net assets</b>	<b>2.54</b>	<b>4.57</b>	<b>2.68</b>	<b>4.64</b>
<i>NAV/share (cents)</i>	<i>1.4</i>	<i>2.2</i>	<i>1.3</i>	<i>2.0</i>
<i>Gearing</i>	<i>Net cash</i>	<i>Net cash</i>	<i>Net cash</i>	<i>Net cash</i>

Source: Company data \*WH Ireland estimates

At its current stage of development, SMS's working capital and capex requirements are modest. Cash flow is dominated by the balance between operating losses and funding in the form of grants and the issue of shares.

**Management have completed several successful fund raisings to support SMS through its development phase**

In preparation for its admission to the Official List of the ASX, SMS raised AUS\$5.0m (gross) through a Prospectus and Open Offer, issuing 20.0m shares at 25 cents each. On 16 December 2004, SMS issued 0.14m shares at 18 cents each to Equilateral Limited as consideration for pre-IPO costs.

On 2nd September 2005, the Company issued 19.8m ordinary shares at 12 cents each to Orbis Capital Ltd, raising AUS\$2.38m. On the same day a further 1.03m shares were issued at 12 cents each to another sophisticated investor to raise a further AUS\$0.12m. On 8th September 2005, the Company issued 5.83m shares at 12 cents to institutional investors, raising AUS\$0.7m. On 15 September 2005 the Company initiated a share purchase plan whereby existing shareholders were given the opportunity to subscribe for up to AUS\$5,000 worth of shares at 12 cents each and issued 2.71m shares raising a total of AUS\$0.33m.

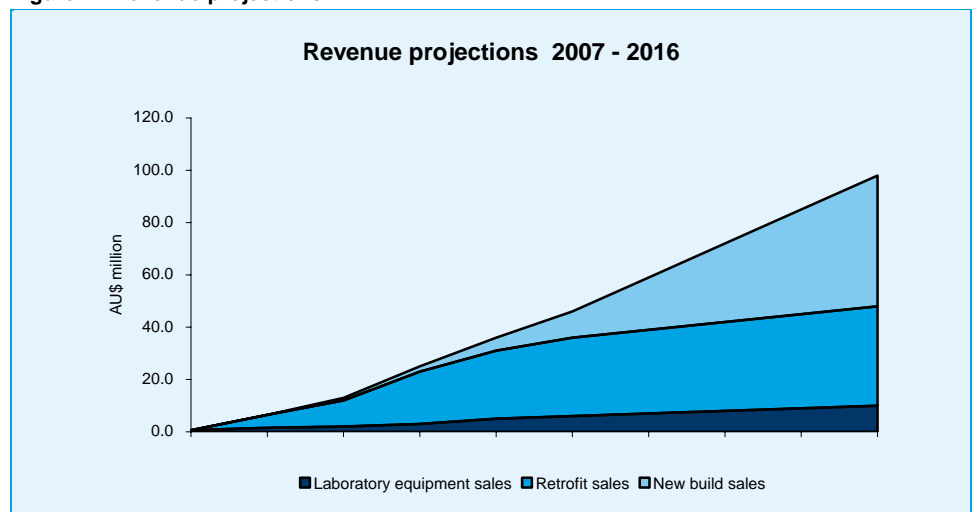
On 20<sup>th</sup> December 2006, SMS raised AUS\$3.75m (gross) through the placement of 30.0m shares at 12.5 cents per share. The funds are being used to continue the commercialisation and development of CVM and are expected to provide sufficient funding through to 2008.

## Prospects

SMS stands at a key transitional point in its history. The recent announcement that CVM has now been approved by Boeing as a retrofit structural integrity inspection method for use on Boeing civil aircraft enables SMS to press forward and complete sales contracts with operators of Boeing aircraft. Our estimates show revenues from this source growing from FY08 onwards. Revenues from the sale of CVM for new aircraft however do not commence until FY09.

Sales expected to reach **AUS\$98m** by 2016 as number of aircraft with CVM increases

Figure 1 : Revenue projections



Source: WH Ireland estimates

Our estimates assume a relatively slow take-up of the technique as it gains acceptance with operators of military and civilian aircraft fleets. This is a conservative view, resulting in an estimated 5% of commercial and military aircraft world-wide retrofitted with CVM. Our estimates for new build aircraft are also conservative, rising to a maximum of one hundred aircraft in 2016, which is small compared with Airbus' run-rate of 430 aircraft completed in calendar 2006. SMS' preliminary discussions with fleet operators and Airbus indicate that it will receive AUS\$0.04m revenue from each aircraft partially retrofitted with CVM and AUS\$0.5m from each new aircraft equipped with CVM.

Year ended June	2007E	2008E	2009E	2010E	2011E	2012E	2013E	2014E	2015E	2016E
Number of aircraft retrofitted with CVM during year	0	125	250	500	650	750	800	850	900	950
Number of new aircraft fitted with CVM during year	0	0	2	4	10	20	40	60	80	100
Laboratory equipment sales	0.6	1.5	2.0	3.0	5.0	6.0	7.0	8.0	9.0	10.0
Retrofit sales	0.0	5.0	10.0	20.0	26.0	30.0	32.0	34.0	36.0	38.0
New build sales	0.0	0.0	1.0	2.0	5.0	10.0	20.0	30.0	40.0	50.0
<b>Total sales</b>	<b>0.6</b>	<b>6.5</b>	<b>13.0</b>	<b>25.0</b>	<b>36.0</b>	<b>46.0</b>	<b>59.0</b>	<b>72.0</b>	<b>85.0</b>	<b>98.0</b>
Cost of sales	(0.1)	(0.9)	(2.6)	(5.0)	(7.2)	(9.2)	(11.8)	(14.4)	(17.0)	(19.6)
Gross profit	0.5	5.6	10.4	20.0	28.8	36.8	47.2	57.6	68.0	78.4
Grant income	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Operating costs	(5.4)	(5.4)	(6.0)	(6.5)	(8.5)	(8.5)	(10.0)	(10.0)	(10.5)	(10.5)
EBIT	(3.7)	0.2	4.4	13.5	20.3	28.3	37.2	47.6	57.5	67.9

Source: WH Ireland estimates

Our estimates assume that R&D costs will remain at around FY06 levels for the next four years, then increase. This level of expenditure will be needed to develop sensors of differing topology sensors for specific airframe structures and to update the associated instrumentation. Administrative expenses are expected to remain at around FY06 levels, as the current management structure is sufficient to support the proposed expansion. Marketing costs are expected to increase significantly from FY06 levels as the company progresses from a development phase to actively selling the technology to aircraft fleet operators world-wide. Our estimates assume that the Group will receive in total AUS\$1.2m grant from the Australian government in FY07 but none in FY08.

**Operating profit expected to reach  
AUS\$67.9m by FY16**

Our estimates show SMS making its first small operating profit next year, rising to AUS\$4.4m in FY09 and reaching \$67.9m in 2016. We assume that the cash raised during the recent Placing will be sufficient to fund SMS as CVM is introduced to the world's fleet operators, so that the company will be cash positive throughout the forecast period, with increasing amounts of interest payable each year. We also assume that there are sufficient tax losses to bring forward to delay paying tax until FY10. On this basis, EPS is expected to increase to 21.0 cents by 2016.

## Profit and loss summary

Year ending 30 June AS\$m	2007E	2008E	2009E	2010E	2011E	2012E	2013E	2014E	2015E	2016E
<b>Sale of goods</b>	<b>0.6</b>	<b>6.5</b>	<b>13.0</b>	<b>25.0</b>	<b>36.0</b>	<b>46.0</b>	<b>59.0</b>	<b>72.0</b>	<b>85.0</b>	<b>98.0</b>
EBITDA	(3.5)	0.4	4.6	13.7	20.5	28.5	37.4	47.8	57.7	68.1
Depreciation	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)
EBITA	(3.7)	0.2	4.4	13.5	20.3	28.3	37.2	47.6	57.5	67.9
Interest	0.2	0.2	0.4	0.7	1.0	1.4	1.9	2.4	2.9	3.4
<b>Pre-exceptional PBT</b>	<b>(3.5)</b>	<b>0.4</b>	<b>4.8</b>	<b>14.2</b>	<b>21.3</b>	<b>29.7</b>	<b>39.1</b>	<b>50.0</b>	<b>60.4</b>	<b>71.3</b>
Tax	0.0	0.0	0.0	(4.3)	(6.4)	(8.9)	(11.7)	(15.0)	(18.1)	(21.4)
Reported PAT	(3.5)	0.4	4.8	9.9	14.9	20.8	27.3	35.0	42.3	49.9
<b>Normalised EPS (cents)</b>	<b>(1.6)</b>	<b>0.2</b>	<b>2.0</b>	<b>4.2</b>	<b>6.3</b>	<b>8.8</b>	<b>11.5</b>	<b>14.7</b>	<b>17.8</b>	<b>21.0</b>
Number of shares (million)	222.7	237.7	237.7	237.7	237.7	237.7	237.7	237.7	237.7	237.7

Source: WH Ireland estimates

We expect that levels of capital expenditure will continue to be modest as the company outsources actual production of the CVM sensors and monitoring equipment, an approach which requires relatively small levels of outlay for tooling. Working capital requirements are expected to increase substantially as the revenues generated grow quite rapidly. As the business model shows high levels of operational gearing, this working capital requirement is met by the associated improvement in operating profit. Assuming that SMS is able to ramp up revenues as indicated in the next couple of years, there appears to be sufficient head-room for SMS to grow without recourse to additional funding, which could potentially be earnings dilutive.

### Cash flow summary

Year ended 30 June AS\$m	2007E	2008E	2009E	2010E	2011E	2012E	2013E	2014E	2015E	2016E
Operating profit	(3.7)	0.2	4.4	13.5	20.3	28.3	37.2	47.6	57.5	67.9
Depreciation	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
(Increase)/decrease in working capital	(0.1)	(0.1)	(0.4)	(0.8)	(0.6)	(0.7)	(0.7)	(0.9)	(0.8)	(0.9)
<b>Net cash flow from operating activities</b>	<b>(3.6)</b>	<b>0.2</b>	<b>4.2</b>	<b>12.9</b>	<b>19.9</b>	<b>27.8</b>	<b>36.7</b>	<b>47.0</b>	<b>56.9</b>	<b>67.3</b>
Interest	0.2	0.2	0.4	0.7	1.0	1.4	1.9	2.4	2.9	3.4
Taxation	0.0	0.0	0.0	(3.2)	(5.9)	(8.3)	(11.0)	(14.2)	(17.3)	(20.6)
Capex (net)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)
<b>Free cash flow</b>	<b>(3.5)</b>	<b>0.3</b>	<b>4.5</b>	<b>10.3</b>	<b>15.0</b>	<b>20.8</b>	<b>27.4</b>	<b>35.0</b>	<b>42.3</b>	<b>49.9</b>
Free-cash-flow/share	(1.6)	0.1	1.9	4.3	6.3	8.8	11.5	14.7	17.8	21.0
Acquisitions and disposals	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Equity dividends paid	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Net cash inflow/(outflow) before financing</b>	<b>(3.5)</b>	<b>0.3</b>	<b>4.5</b>	<b>10.3</b>	<b>15.0</b>	<b>20.8</b>	<b>27.4</b>	<b>35.0</b>	<b>42.3</b>	<b>49.9</b>
Issue of share capital	3.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Movement in net debt</b>	<b>0.1</b>	<b>0.3</b>	<b>4.5</b>	<b>10.3</b>	<b>15.0</b>	<b>20.8</b>	<b>27.4</b>	<b>35.0</b>	<b>42.3</b>	<b>49.9</b>
Opening (debt)/funds	2.8	2.8	3.2	7.7	18.0	32.9	53.8	81.1	116.1	158.4
<b>Closing (debt)/funds</b>	<b>2.8</b>	<b>3.2</b>	<b>7.7</b>	<b>18.0</b>	<b>32.9</b>	<b>53.8</b>	<b>81.1</b>	<b>116.1</b>	<b>158.4</b>	<b>208.4</b>
<b>Closing net assets</b>	<b>2.8</b>	<b>3.2</b>	<b>7.9</b>	<b>17.8</b>	<b>32.8</b>	<b>53.6</b>	<b>80.9</b>	<b>115.9</b>	<b>158.1</b>	<b>208.0</b>
NAV/share (cents)	1.2	1.3	3.3	7.5	13.8	22.5	34.0	48.8	66.5	87.5
<i>Gearing</i>	<i>Net cash</i>	<i>Net cash</i>	<i>Net cash</i>	<i>Net cash</i>	<i>Net cash</i>	<i>Net cash</i>	<i>Net cash</i>	<i>Net cash</i>	<i>Net cash</i>	<i>Net cash</i>

Source: WH Ireland estimates

## Valuation

For the purposes of valuation, we have adopted a DCF based approach as this takes into account the long-term future earnings potential.

	2006A	2007E	2008E	2009E	2010E	2011E	2012E	2013E	2014E	2015E	2016E
Revenue (AUS\$m)	1.1	0.6	6.5	13.0	25.0	36.0	46.0	59.0	72.0	85.0	98.0
Growth rate (%)	-	-	1020.7%	100.0%	92.3%	44.0%	27.8%	28.3%	22.0%	18.1%	15.3%
EBITA (AUS\$m)	(3.9)	(3.7)	0.2	4.4	13.5	20.3	28.3	37.2	47.6	57.5	67.9
EBITA margin (%)	N/A	N/A	3.1%	33.8%	54.0%	56.4%	61.5%	63.1%	66.1%	67.6%	69.3%
Working capital	(0.0)	(0.1)	(0.1)	(0.4)	(0.8)	(0.6)	(0.7)	(0.7)	(0.9)	(0.8)	(0.9)
Depreciation	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Capex	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)
Tax	0.0	0.0	0.0	0.0	(3.2)	(5.9)	(8.3)	(11.0)	(14.2)	(17.3)	(20.6)
<b>Free Cash Flow</b>	<b>(3.9)</b>	<b>(3.7)</b>	<b>0.1</b>	<b>4.1</b>	<b>9.6</b>	<b>14.0</b>	<b>19.4</b>	<b>25.5</b>	<b>32.6</b>	<b>39.4</b>	<b>46.6</b>
<b>PV (AUS\$m)</b>	<b>(3.9)</b>	<b>(3.2)</b>	<b>0.1</b>	<b>2.8</b>	<b>5.7</b>	<b>7.3</b>	<b>8.8</b>	<b>10.2</b>	<b>11.4</b>	<b>12.1</b>	<b>12.6</b>

Total PV FCF	AUS\$m	63.9									
Terminal value	AUS\$m	97.6									
<b>Enterprise Value</b>	AUS\$m	<b>161.5</b>									
Net Cash	AUS\$m	2.8									
<b>Equity Value</b>	AUS\$m	<b>164.2</b>									
<b>Target shareprice</b>	AUSc	<b>69.1</b>									
			Risk Free Rate				6.0%	Cost of equity			14.0%
			Equity Risk Premium				5.0%	Cost of debt			5.3%
								WACC			14.0%

EV/Sales FY07E	283.2x
EV/Sales FY08E	25.3x
EV/Sales FY09E	12.6x
EV/EBITDA FY07E	-
EV/EBITDA FY08E	469.2x
EV/EBITDA FY09E	35.9x

Discount Rate	Terminal Growth Rate				
	0.0%	0.5%	1.0%	1.5%	2.0%
10.0%	112.5	116.9	121.7	127.2	133.3
12.0%	84.7	87.3	90.1	93.1	96.5
14.0%	65.8	67.4	69.1	70.9	73.0
16.0%	52.3	53.3	54.4	55.6	56.9
18.0%	42.3	43.0	43.7	44.5	45.4
20.0%	34.7	35.2	35.7	36.3	36.8

Source: Company data and WH Ireland estimates

This approach gives a range of valuations between 37 cents and 113 cents per share depending on the discount for risk and terminal growth rate applied.

Clearly this valuation range is only valid if SMS is successful in developing the aerospace market as indicated in our estimates. If sales growth is less rapid than shown, for examples with sales reaching only AUS\$56.0m by FY16, generating free cash-flow of AUS\$23.9m, CAGR of sales from 2008 to 2016 would fall from 35% to 29%, and our target share price (on an equity risk premium of 3.0% and WACC of 12.0%) would fall to 46 cents.

Potential investors also need to note the potentially dilutive impact of 60.0m share options which are exercisable at 20 cents by the end of April 2007. Were all of these options to be exercised, our target share price range would change slightly, giving a range of valuations from 28 cents to 106 cents.

In addition, if sales do not develop as rapidly as estimated in the first two years, SMS will need to seek additional funding, which will be earnings dilutive. The difference between the current market capitalisation and future market capitalisations is of a magnitude to make this a very interesting investment proposition. However, as SMS has yet to demonstrate that it is able to win commercial contracts to equip civilian and military aircraft fleets, rather than generating revenues from pilot projects as it has done until now. With this caveat in mind, we initiate research coverage with a recommendation of **Speculative BUY**.

## Directors and Senior Management

### **Air Marshall Sir John Walker KCB, CBE, AFC, FRAeS: Non-executive Chairman**

Sir John is a former Air Marshal who retired after a distinguished 41 year career with the Royal Air Force in the UK during which he held a number of commands both in the UK and overseas. Prior to retirement he was Chief of Defence Intelligence and Deputy Chairman of the national Joint Intelligence Committee. He was appointed Knight Commander of the Bath early in 1992 and was selected to be a fellow of the Royal Aeronautical Society later that year. More recently he was Special Advisor to the House of Commons Defence Committee. He provides Structural Monitoring Systems with important expertise in relation to the development of the military applications of the Company's technology.

### **Mark Vellacott MBA MSc CEng FRAeS: Chief Executive Officer and Managing Director**

Mark joined British Aerospace Military Aircraft in 1980 and completed a BSc in Aeronautical Engineering in 1986, an MSc in Systems Engineering in 1988 and an MBA in 1998. The same year he worked for British Aerospace PLC Head Office Engineering in the UK on strategic investment and planning issues before becoming Head of BAE Systems' Engineering Technology, Corporate Development base in Adelaide later that year, a post he held until 2001. His most recent position before joining Structural Monitoring was Technical Director of the Asia Pacific Space Centre in Sydney. In November 2004 he joined SMS as Chief Executive Officer, becoming Managing Director in June 2005.

### **Professor Malcolm Richmond BSc (Hons), BCom: Non-executive Director**

Malcom is Professorial Fellow at the University of Western Australia, jointly to the Business School and the Faculty of Engineering, Computing and Mathematics. Prior to this appointment, he spent 30 years with the Rio Tinto and CRA Groups where, amongst other roles, he held the position of Managing Director of Research and Development and Vice President Strategy and Acquisitions. Immediately prior to his retirement he was Managing Director of Hamersley Iron Pty Limited, Deputy Chairman of the Australian Minerals Industry Research Council, Vice President of the WA Chamber of Minerals and Energy, Non-Executive Director of Amdel Limited and Non-Executive Director of Hismelt Corporation.

Malcolm is currently Non-Executive director of Magnesium International Ltd and Safe Effect Pty. He was formerly Chairman of both The Resources Institute of Western Australia and Territory Iron Pty Ltd. He is a Fellow of the Australian Academy of Technology, Science and Engineering and the Australian Institute of Company Directors.

### **Robin Dean B.Ec. : Non-executive Director**

Robin has extensive experience of management, corporate and investment banking having held the post of Head of Project Finance at Bankwest from 1989 to 1995 after which he was Chief Executive of St Barbara Mines until 1997. At the time the company was a successful Australian gold miner with a market capitalisation of in excess of AUS\$250m with 300 employees. He has also held corporate finance positions with Westchester Corporate Finance and Westpac Banking Corporation.

### **Andrew Chilcott M I Mech E, CEng: VP Sales & Marketing**

A mechanical engineering graduate and Chartered Engineer, Andrew began his career in aerospace with Rolls-Royce Aero-Engines in the UK where he worked in the area of stress analysis, specialising in the design of composites. With an increasing involvement in product marketing, Andrew moved from Rolls-Royce to Airbus to Toulouse, France, in 2000 where he joined the aircraft sales team. After five years as Regional Sales Director in Africa and the Asia Pacific regions for Airbus, Andrew joined SMS in Australia, attracted by the prospects of the simple but effective CVM technology, joining in January 2006.

### **Mike Southern BE : Chief Operating Officer**

Mike is an engineer and member of IEEE with extensive experience in the automotive and related industries. He worked with the high technology engine developer Orbital Engine Corporation for nearly 20 years in senior technical and managerial roles. He was also the Technical Director of a Siemens VDO–Orbital joint venture company and the Chief Operating Officer of a world leading computer vision company, Seeing Machines Ltd.

### **Colin McDonald B.Com CA: Company Secretary and Chief Financial Officer**

Colin is a Chartered Accountant with over 20 years experience in finance and accounting roles. He was Company Secretary and Chief Financial Officer of Visiomed Group Ltd., an ASX listed biomedical company. In this role Mr McDonald worked on the successful merger with a German firm and was involved in frequent capital raising activities. Prior to this Mr McDonald was Financial Controller and Company Secretary of Mount Edon Gold Mines, a gold mining company listed on ASX. His major achievements in this role include involvement in creating successful feasibility studies, successful management of risk strategies and implementation of management reporting systems.

## Disclosures

### WH Ireland Recommendation Definitions

#### Buy

Expected to outperform the FTSE All Share by 15% or more over the next 12 months.

#### Outperform

Expected to outperform the FTSE All Share by 5/15% over the next 12 months.

#### Market Perform

Expected to perform in line with the FTSE All Share over the next 12 months.

#### Underperform

Expected to underperform the FTSE All Share by 5/15% or more over the next 12 months.

#### Sell

Expected to underperform the FTSE All Share by 15% or more over the next 12 months.

#### Speculative Buy

The stock has considerable level of upside but there is a higher than average degree of risk.

### Disclaimer

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### Share Price Target

The share price target is the level the stock should currently trade at if the market were to accept the analyst's view of the stock and if the necessary catalysts were in place to effect this change in perception within the performance horizon.

### Stock Rating Distribution\*

Recommendation	Total Stocks	Percentage
Buy	10	20%
Speculative Buy	3	6%
Outperform	18	35%
Market Perform	19	37%
Underperform	0	0%
Sell	1	2%
Total	51	100%

\* At 31<sup>st</sup> December 2007

This table demonstrates the distribution of WH Ireland's recommendations. The first column illustrates the distribution in absolute terms with the second showing the percentages.

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The research analyst or analysts attest that the views expressed in this research report accurately reflect his or her personal views about the subject security and issuer. Furthermore, no part of his or her compensation was, is, or will be directly or indirectly related to the specific recommendation or views expressed in this research report.

### Companies Mentioned

Company	Recommendation	Price	Date/Time
Structural Monitoring Systems	Speculative BUY	22.0	27/03/2007 08:16

### Summary of Company Notes

*Initiating research*

### Summary of Security Recommendations

*Initiating research*

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