

# ASX LISTED POOLED DEVELOPMENT FUND

Backing Australian SME owned  
projects in technology and  
resources....



AGM 2020



**Strategic Elements operates as a ‘venture builder’ where it generates ventures and projects from combining teams of leading scientists or innovators in the technology and resources sectors.**

- ▶ The Australian Federal Government has registered Strategic Elements as a Pooled Development Fund with a mandate to back **Australian innovation**.
- ▶ Due to the Pooled Development Fund program that Strategic Elements operates under, most shareholders **pay no tax on capital gains or dividends**. The Company is listed on the ASX under the code “SOR”.

- ▶ **Covid-19 has created a significant opportunity to partner with leading scientists who are seeking funding and other support to retain their researchers and advance their discoveries.**

*“Universities are facing a \$16bn funding blackhole by 2023 due to Covid-19 and the loss of international student revenue, which is expected to wipe out 21,000 jobs in the sector” – The Guardian<sup>1</sup>*

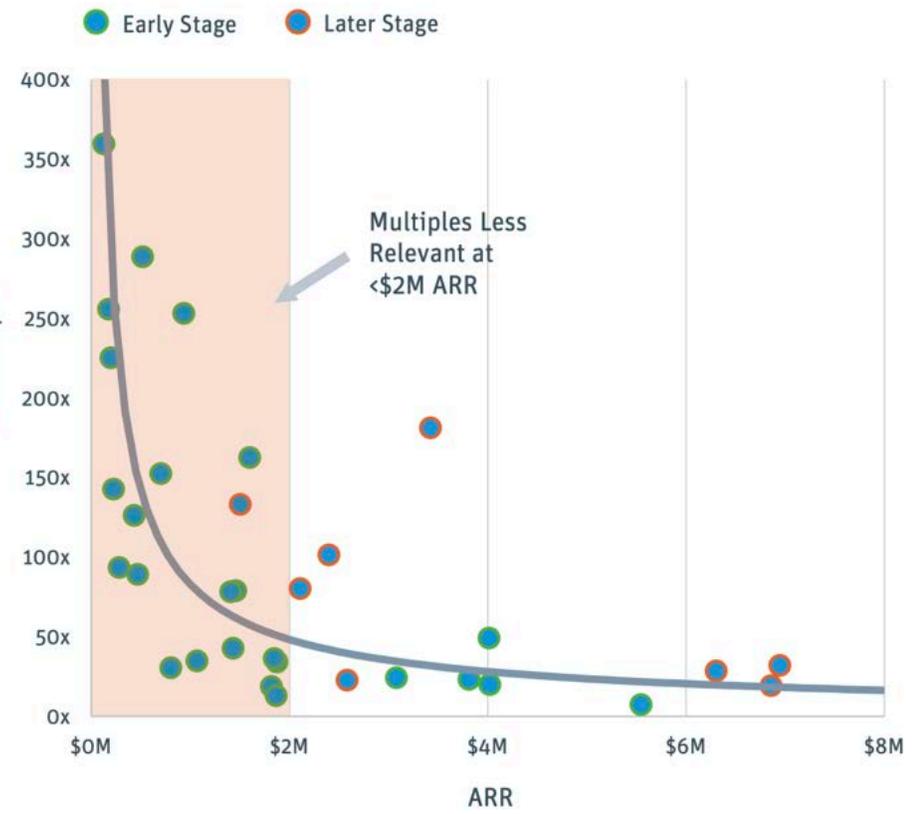
*“The coronavirus pandemic and the looming collapse in international students has exposed serious structural issues universities are now grappling with” – AFR<sup>2</sup>*



**High risk – high reward resources and technology innovation**

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In 2019 the Company added the Robotics Sector to its focus due to the increasing real-world applications, very large domestic and global markets and high valuations achieved by startups.



*“By 2025, the global non-industrial robotics market size is slated to exceed 230 billion U.S. dollars. Non-industrial robots, such as personal assistant robots, customer service robots, autonomous vehicles, and unmanned aerial vehicles (UAVs)” - Statistica<sup>3</sup>*

*“Expectations, Not Sales, Drive Early Post-Seed Valuations. At lower levels of revenue, ARR multiples of post-seed robotics companies vary significantly and can be strikingly high. There appears to be significance in the \$2M annual revenue mark, after which valuations come down as a multiple of revenue and companies grow into their earlier expectations”. Source: Silicon Valley Bank Proprietary Data and PitchBook”.*

Source: The Future of Robotics An Inside View on Innovation in Robotics



In July 2019 100% owned Stealth Technologies commenced development of an automated robotics software and hardware platform adaptable to various sizes of vehicles and physical tasks

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The Autonomous Robotic Vehicle Platform (AxV) **combines the capabilities of autonomous driving, computer vision, purpose built robotics and artificial intelligence into an integrated hardware and software platform.**

From the ground up, the AxV platform has been built to operate in outdoor environments, that are often subjected to harsh and variable weather conditions.

**Security - Defence -  
Transport - Resources -  
Agriculture.**

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# Stealth Technologies AxV Platform

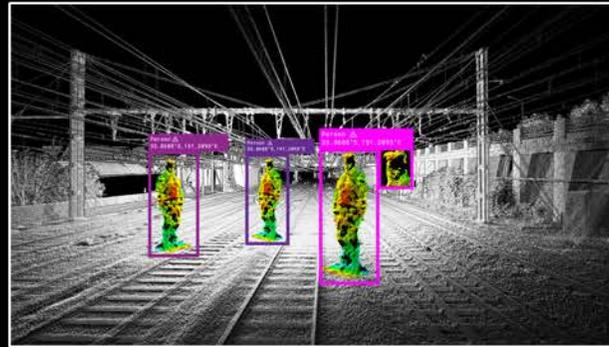
”Purpose built for outdoor environments and all weather conditions”

“Scalable to any size”



## STEALTH AUTODRIVE HARDWARE

Autonomous vehicle technology  
scalable to multiple vehicle sizes



## STEALTH OS SOFTWARE

Sensor Fusion  
Computer Vision  
AI and Neural Networks

“Adaptable to any physical task”



## STEALTH CUSTOM ROBOTICS

Purpose built robotics adaptable to meet  
industry specific use cases

► The first release from the AxV Platform is an autonomous robotic security vehicle (ASV) for Perimeter Security.

*“The security industry is ripe for disruption by way of robotics. The industry itself is quite mature yet has remained reliant upon manual efforts. Innovation in the field of robotics is leading the effort to evolve the security industry” – Security Industry Association*

### 1. Perimeter Intrusion Detection Systems

Perimeter intrusion detection systems (PIDS) are used to detect the presence of an intruder attempting to breach a perimeter. Examples include sophisticated sensors on fences and beams above/below ground. Tens of thousands of facilities globally use PIDS to secure a perimeter.

### 2. The Problem

Perimeter Intrusion Detection Systems (PIDS) testing is a **manual** process required to be completed regularly to ensure PIDS are functioning properly and will detect intrusion attempts. It is a **mundane and repetitive task that can use significant human resources** leaving facilities with untested potentially faulty perimeter security systems. It can also cause significant damage and creates issues with testing accuracy and quality.

### 3. The Solution - Automating Testing of PIDS

Stealth developed **custom robotics** built on top of its platform to solve these problems, enabling fully automated PIDS testing 365 days a year, 24 hours a day including at night. This enables the testing of multiple sophisticated technologies used in PIDS.

### 4. Very Large Global Opportunity

Government regulations as well as pandemic and terrorist activities are providing **lucrative growth opportunities**. PIDS are an important part of an overall security solution, especially for **critical locations**. The Global Perimeter Security Market is forecast to be growing quickly reaching **USD 282.26 Billion** by 2025 – Dataintel<sup>4</sup>.

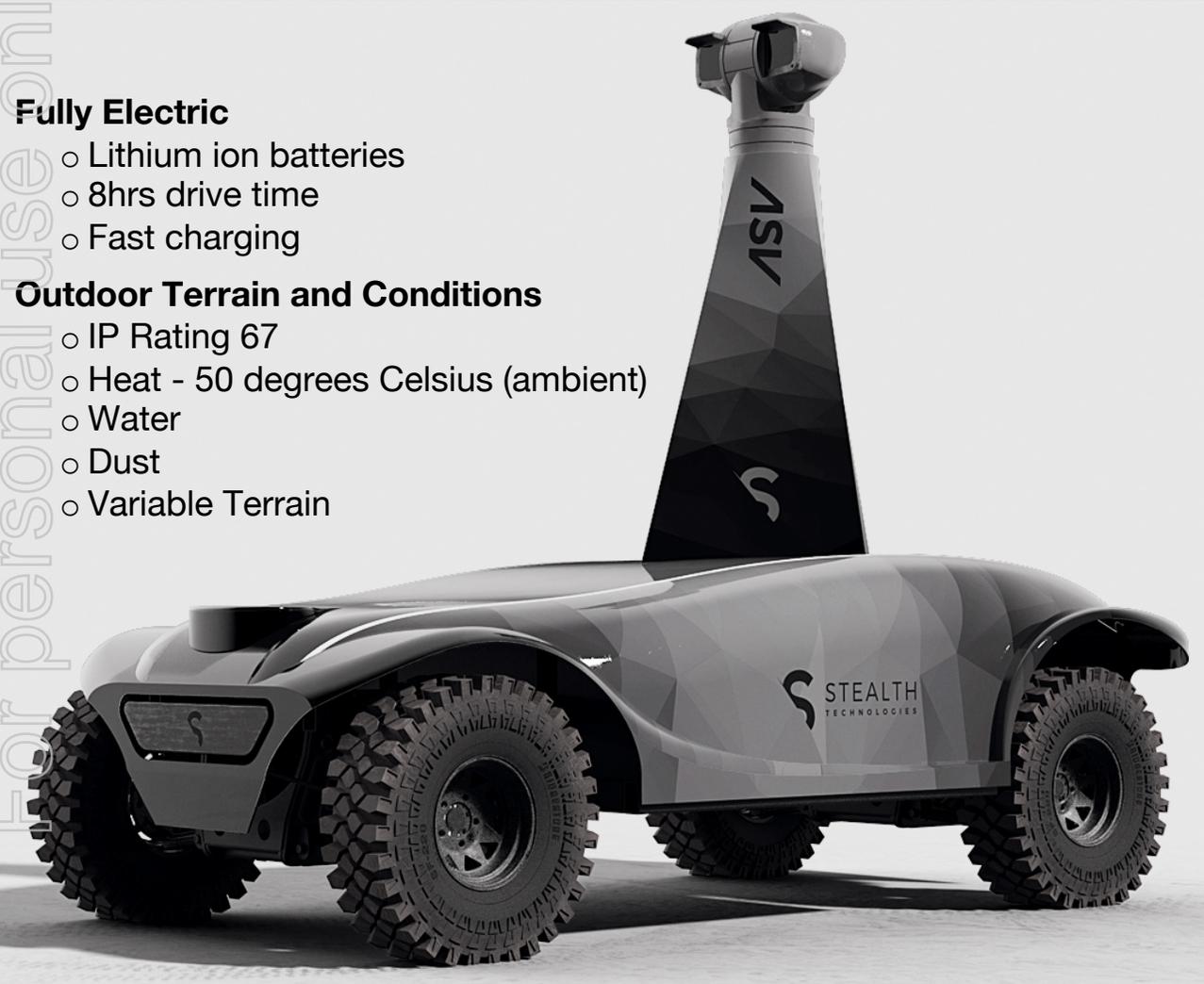
► The first release from the AxV Platform is an autonomous robotic security vehicle (ASV) for Perimeter Security.

### Fully Electric

- Lithium ion batteries
- 8hrs drive time
- Fast charging

### Outdoor Terrain and Conditions

- IP Rating 67
- Heat - 50 degrees Celsius (ambient)
- Water
- Dust
- Variable Terrain



### 1. Autonomous Perimeter Security Patrol & Surveillance

- 24\*7 365 Day Operational Capability - Day and Night Vision
- Collision Avoidance System
- Autonomous Navigation Between Map Points
- Emergency Braking System
- Imposing Physical Presence

### 2. Autonomous Perimeter Intrusion Detection System Testing

- Perimeter fence sensor testing - Microphonic and Fibre Optic (Purpose Built Robotic Actuators)
- Microwave sensor testing
- Photo electric sensor testing (PE)
- Electro magnetic sensor testing (EM)

### 3. On Board Surveillance Features

- Autonomous Object Tracking System
- Incident Alert Lighting
- Live Military Grade Video Feed
- High Definition 30x Camera Zoom
- Day and Night Vision Surveillance Distance: 400m
- Two-Way Intercom

### 4. System Integration

- Fully Integrated Into Honeywell's EBI Platform (DVM)
- Capable of Operating within Secure Isolated Networks
- Capable of Advanced Computer Vision – Facial and Number Plate Recognition

► The first release from the AxV Platform is an autonomous robotic security vehicle (ASV) for Perimeter Security.

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**1. Increased Perimeter Security Levels**

- 24\*7\*365 continuous operational capability
- Achieve 100% accuracy of surveillance and incident reporting
- Vision and sensor capabilities far superior than human capabilities

**2. Reduced Cost To Deliver Perimeter Security**

- Annual cost to operate the ASV is less than the annual cost to engage a security guard over a 24hr shift cycle

**3. Redeployment Of Human Resources To Higher Value Work**

- Deploy security resources to higher value tasks
- Offload repetitive, routine and mundane work

**4. Automate Critical Testing Of Perimeter Security Systems**

- Offload a highly repetitive and routine human task to robotic automation
- Achieve 100% accuracy of perimeter intrusion detection system testing

## ▶ The Company is collaborating with USD 100 Billion Company Honeywell to build Autonomous Security Vehicles for corrections.

### ▶ Honeywell Autonomous Security Vehicle Collaboration

Stealth has formed a collaboration with US Company 'Honeywell' to build experimental autonomous robotic vehicles for the Correctional Justice sector (primarily prisons).\*

Honeywell is a Fortune 100 technology company that delivers industry specific solutions that include aerospace products and services; control technologies for buildings and industry; and performance materials globally. Honeywell operates total asset and facility management operations globally across a range of market segments including Justice, Commercial, Health, Defence and Hospitality.

### ▶ Honeywell EBI Integration

Through the year development was conducted to enable real-time integration with Honeywell Enterprise Buildings Integrator. The EBI helps connect, monitor and manage core building functions and is a solution with thousands of EBI systems deployed globally. Honeywell Building Technologies is a global business with more than 23,000 employees and creates products, software and technologies found in more than 10 million buildings worldwide.

### ▶ Autonomous Perimeter Security and Surveillance – Outside Honeywell Collaboration

Under the collaboration Stealth has provided Honeywell with exclusivity for the correctional justice sector. Stealth however can market independently to sectors such as transport, energy, defence, government and utilities providing critical services. Opportunities for Stealth include **PIDS testing and patrol and surveillance**. The Global Perimeter Security Market is forecast to be growing quickly over the forecast period 2020-2026 (reaching USD 282.26 Billion by 2025) –DataIntel<sup>4</sup>.

\*Announced 12/09/2019

Stealth is also collaborating to build a fully autonomous security vehicle with Honeywell and the WA Department of Justice for the Eastern Goldfields Regional Prison.

1. Completes 3x fully autonomous missions a day around the perimeter of the facility
2. Complete automated testing of the facilities inner and outer perimeter security systems (zone by zone)
  - Microphonics Sensor testing
  - Microwave Beam testing
  - Photo Electric Beam testing (PE)
  - Electro Magnetic Field testing (EM)
3. Report back to in real time to the Honeywell Security Manager System via Enterprise Buildings Integrator (EBI). Testing outcomes. Status of mission. ASV diagnostics
4. Undertake surveillance to via live military grade video feed.
5. Administer the ASV via Patrol Control Centre



## Autonomous Robotics Opportunity

- Forty percent of respondents in non-manufacturing industries said they use or plan to use robots for security - IDC .
- The Global Perimeter Security Market is forecast to be growing quickly reaching **USD 282.26 Billion** by 2025 - Dataintel<sup>4</sup>
- The AxV Autonomous Robotics Platform has applications across many other sectors including, defence, transport, resources and agriculture.
- The global autonomous mobile robots' market is expected to reach **USD 220.6 billion** in 2030. The market is predicted to witness rapid progress during the forecast period 2020-2030 - Prescient & Strategic Intelligence Private Limited<sup>5</sup>

## Roadmap for next 6 months

- Extend collaboration with Honeywell for development of Automated Security Vehicles for the correctional justice sector.
- Complete validation/ testing phase of initial WA Department of Justice Automated Security Vehicle.
- Sign agreements with additional correctional justice facilities for the Automated Security Vehicle.
- Complete prototype of drone software integration into AxV Platform.
- Enhance Patrol and Surveillance capabilities of ASV with additional artificial intelligence and computer vision.
- Sign agreements with non-correctional facilities for Patrol and Surveillance and PIDS testing.
- Form agreements with leading technology groups to incorporate advanced technologies into the AxV Platform.
- File patent applications on technology advancements.

➤ **100% owned Australian Advanced Materials is developing a revolutionary new printable memory ink.**

➤ **The Company is also developing a world leading transparent printable memory with an international team of world leading development partners: The University of New South Wales, CSIRO Manufacturing in Melbourne and VTT in Finland.**

## ➤ **What is printed electronics?**

Printed electronics has the potential to transform the electronics industry whereby electronic devices are printed onto surfaces such as plastic and glass using traditional printing methods and advanced functional inks rather than on rigid silicon.

## **Thin, lightweight, flexible**

Printed electronics is based on the combination of new materials and cost-effective, large-area production processes to enable new applications which are not possible to create with (only) conventional silicon electronics. A key advantage of printed electronics is the ability to make thin, lightweight, flexible, and robust electronic products.

## ➤ **Markets for Printed – Flexible – Transparent - Sensors**

Printed, flexible and organic electronics will grow from **\$31.7 Billion in 2018 to \$77.3 billion in 2029**. Printed and flexible sensors constitute the largest printed electronics market. The market for fully printed sensors will reach **\$4.5 billion** by 2030 – IDTechEX<sup>6,7</sup>



➤ **More advanced printed memory can provide the ‘brain’ for even more sophisticated smarter Printed Electronics.**

➤ **Even though Printed Electronics is experiencing significant growth, it is being held back by ongoing development of printed memory.**

➤ **Memory is largest traditional sector**

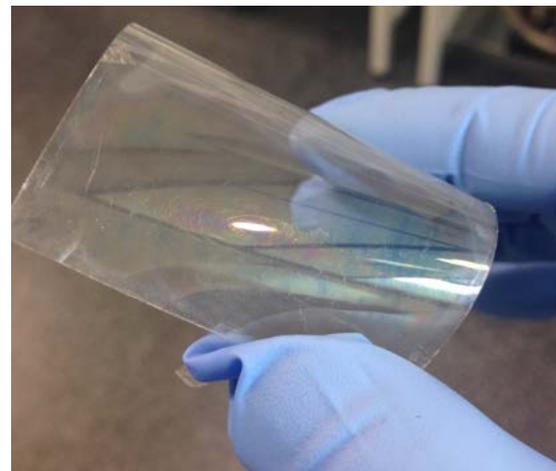
The **memory** component is the heart of all electronics and is the largest sector of traditional silicon semiconductor sector. Every electronic system is comprised of numerous individual components, for which many of them can be realized with printed electronics.

*“A limiting factor thus far for printed electronics has been that many components such as logic and memory are either non-existing or don't come close to matching the cost and performance of non-printed technologies” - IDTechX*

➤ **What is the Nanocube Memory Ink?**

The **Nanocube Memory Ink** is a transparent ink containing billions of nanometre scale particles. When printed onto a surface and assembled with electrodes they operate as computer memory.

The Nanocube technology is based on a new type of resistive random-access memory (RRAM) using tiny metal oxide Nanocubes developed by the University of New South Wales.



**Demonstrated the capabilities of Printed Electronics materials by bringing together touch, display and data storage onto glass.**

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➤ **The Nanocube technology was hand-picked to be one of only approx. 20 technologies to demonstrate at the world's premier Printed Electronics event 'IDtechEX' in Berlin May 2020.**

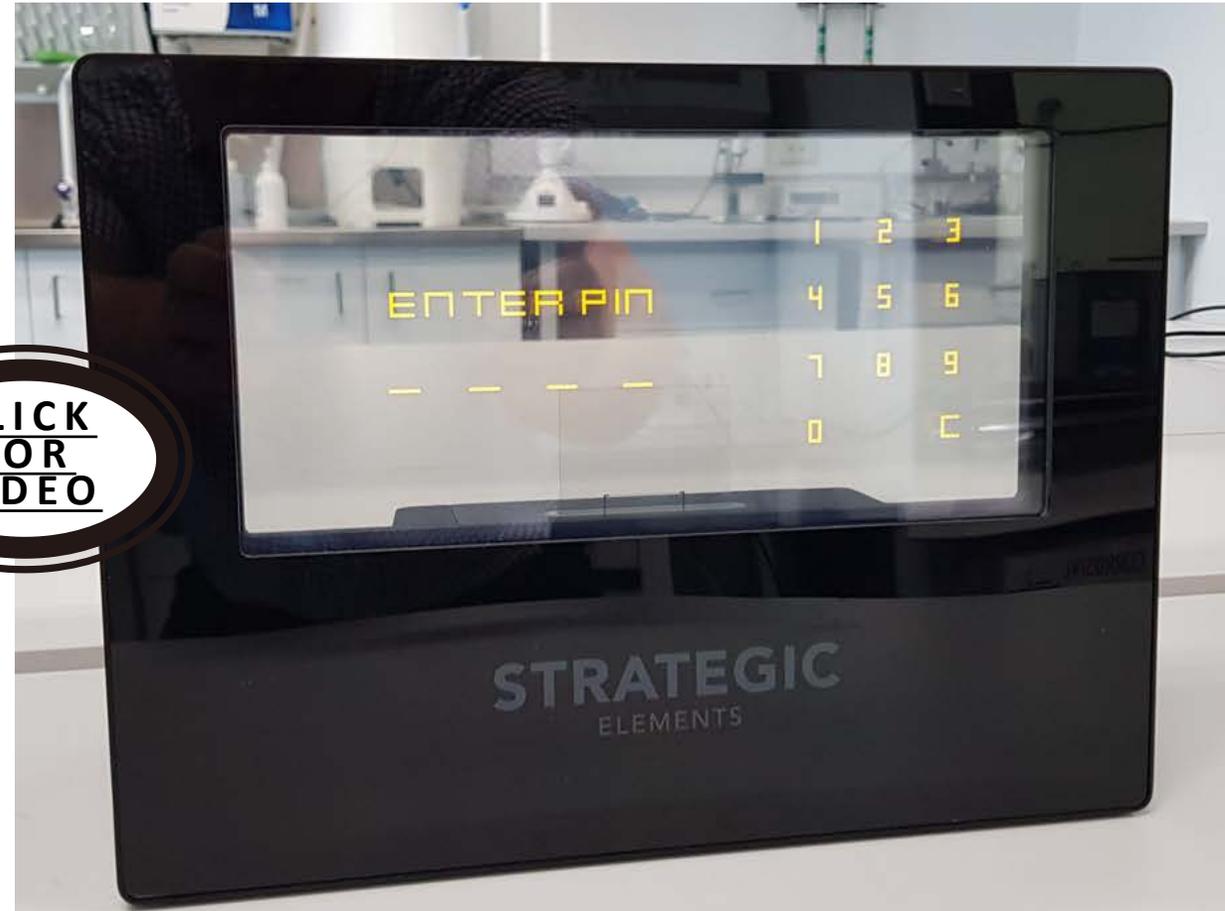
➤ Fabricated with UNSW and VTT Finland to highlight the unique transparent benefits of the Nanocube Printable Memory Ink in a control system.

➤ Transparent display and touch sensor component with the transparent Nanocube Memory Ink and custom application logic developed by the team.

➤ Is a fully printed storage technology for transparent surfaces. Physically deployed on glass and not hosted by a silicon storage technology

➤ The initial version showcases the transparent nature of the Nanocube Memory and the ability to print functional memory onto glass.

➤ Future versions with different functions to security. Could store a range of information or images directly on glass. Could be combined with sensors and other computer vision technologies.



➤ **Collaboration formed to develop new electronic materials for a wide range of uses in flexible electronics.**

➤ **An electronic materials Project has been formed with approx. \$750,000 in cash and support from the Australian Research Council and University of New South Wales\***

## ➤ **Collaboration with UNSW and CSIRO**

With partners at the University of New South Wales and CSIRO, AAM formed a significant collaboration into **new electronic materials** for a wide range of uses in flexible electronics and significant advances in energy efficient data storage devices. **These can include memory, all types of sensors, batteries and other flexible electronics.**

## ➤ **Programmable Memory Arrays**

Using previous work in printed electronic devices, the team will also focus on how to optimally assemble memory ink layers, selecting elements, and electrodes into memory arrays. The team will also utilize advanced characterization techniques to rationalize electrical and mechanical performance.

## ➤ **Improved Printability**

The team will further develop scale up printing technologies for A4 size resistive switching materials on various substrates with improved uniformity and mechanical flexibility.

The key elements of printed electronics are conductive, semi-conductive or dielectric **inks** and pastes. It is thereby **crucial, that these materials can be processed using printing** and coating techniques.

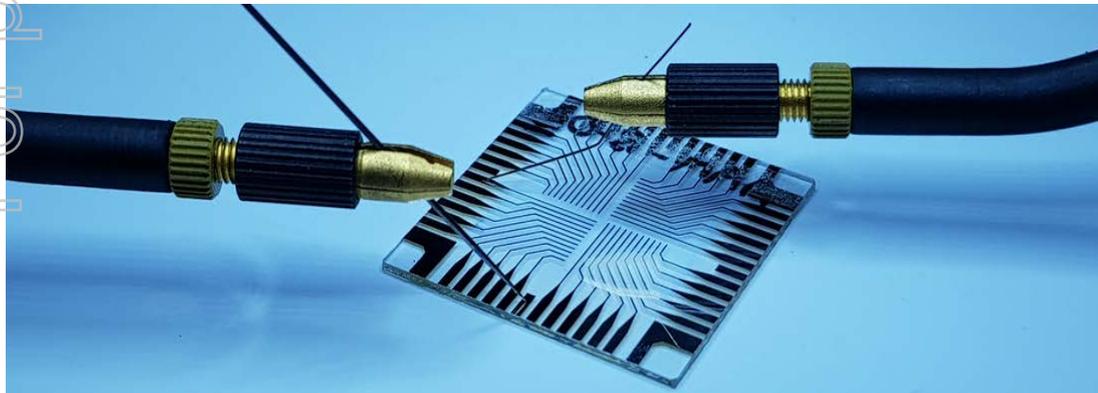
## ➤ **Project Budget and Funding**

Total budget for the collaborative project is **\$1,069,000** and all importantly **IP and commercialisation rights remain with AAM**. Funding was successfully secured including \$320,000 in cash from the Australian Research Council Linkage and \$414,000 in-kind from UNSW

## ➤ Opportunity and roadmap for Nanocube Memory and other electronic materials technologies for the Company.

### ➤ Opportunity

- Expanding Printed Electronics applications.
- Edge applications requiring compute and data storage as a result of more processing at the edge. Enhanced Security.
- Delivering storage on glass and plastic for transparent, structural and/or flexible electronics (freedom of design forces a re-think of new product applications and categories).



### ➤ Roadmap for next 6 months

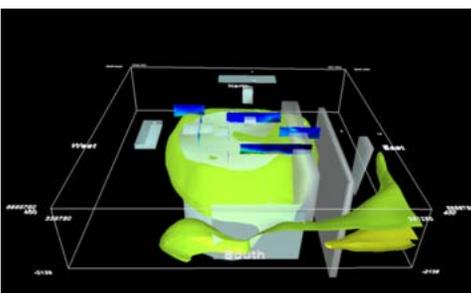
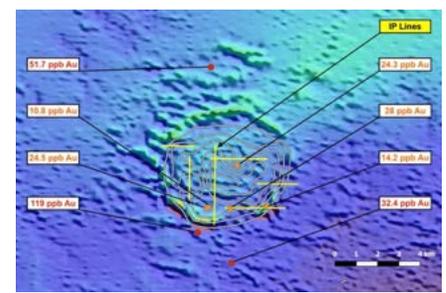
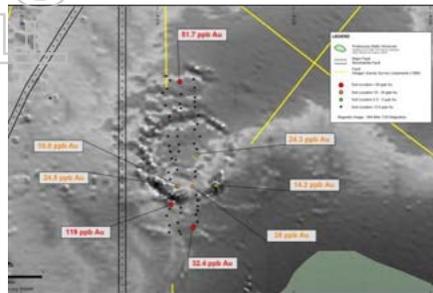
- Expand Nanocube Memory development on plastic and deformable substrates.
- Fabricate a Nanocube Memory demonstrator device with 2D storage array.
- Lodge patent filings over technology advancements.
- Acquire licenses over new electronic materials technologies.
- Form partnerships with advanced manufacturing companies.
- Seek potential licensing partner or strategic funding partner for the Nanocube Nanomaterial.
- Secure an additional funding grant from the Australian Government.

➤ **Analysis of the drill cores and subsequent modelling indicated the anomalies were deeper than previously modelled.**

➤ During the year two holes were drilled by 100% owned Maria Resources at the Behemoth Project targeting a buried 7km diameter circular gravity anomaly in the Officer Basin of Western Australia. The origin of the regional magnetics and local gravity anomaly is unknown. A range of origins can be hypothesized, including meteorite impact crater, an igneous intrusion, or a salt dome.

➤ An Induced Polarization (IP) survey analysed by Southern Geoscience Consultants indicated a broad sub-horizontal layering at **300 to 400m** with chargeabilities increasing with depth. Possible geological explanations of the broad chargeable zones include widespread sub horizontal weakly to moderately sulphidic ± graphitic sediments or large scale intrusive or alteration systems containing widespread sulphides (2-5%).

- Two diamond holes were drilled into the the circular feature in December 2019 with BH01 and BH02 drilled to 561.6m and 615.2m respectively. These were the first drill holes in an adjacent area of over 100,000 square kilometres since the 1980's. **Analysis of the drill cores and subsequent modelling indicated the potential anomalies were deeper than previously modelled\***
- The Behemoth drilling was conducted in the most economic manner feasible majority funded through \$150,000 from a WA government grant, \$150,000 from the sale of project and the 43% of remaining costs refunded under the research and development rebate. **No significant further expenditure required until December 2021.**



Maria Resources is also the recipient of an WA Govt. Exploration Incentive Scheme (EIS) for the **Leviathan Project**. Maria Resources has applied for an alternative grant with an extended time period. *\*Announced 07/04/2020* 17

► Applying modern technology to a 100 year old unexplored goldfield that has never been drilled.

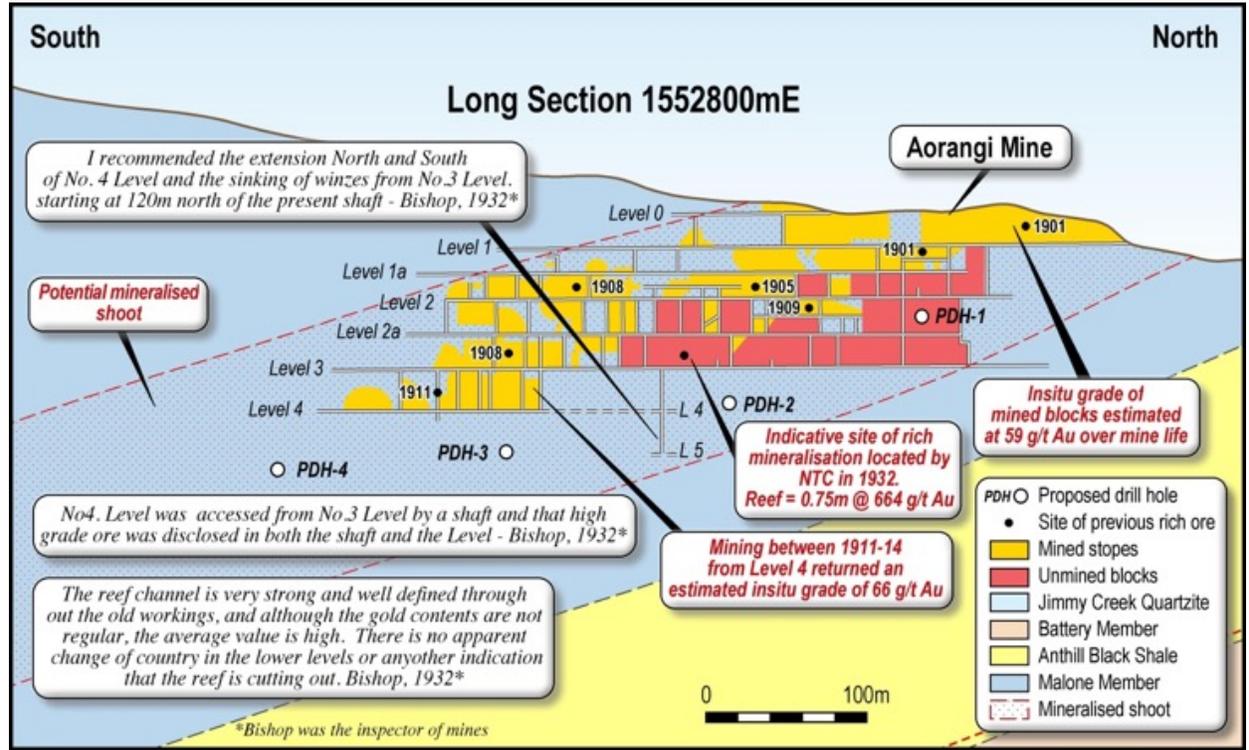
► Current work on the Golden Blocks goldfield in NZ consists of negotiations with regulatory and other parties for access into the area to continue the highly successful exploration programs.

► Strategic Materials holds permits over the entire historic Golden Blocks Mines permit in New Zealand. Technical papers show the structural similarities of the Golden Blocks goldfield and Victorian goldfields.

► Strategic Materials has been developing an **environmental footprint** of future exploration, principally around drilling within Golden Blocks. **This evaluation will be formally completed in 2020.**

► One of the mines (Aorangi) produced 26,000oz of gold at a recovered grade of 36g/t and an estimated insitu grade of 59g/t, making it one of the highest-grade producing gold mines in New Zealand.

► Mining within the Golden Blocks goldfield prematurely ceased in 1914 due to the war, water containment challenges and labour shortages. Unlike other goldfields which had substantial development after the war, the goldfield remained privately owned and completely untouched until the Company re-invigorated exploration conducting numerous exploration programs.



## **Forward Looking Statements**

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