



## SOR Transparent Printable Memory Demonstrator

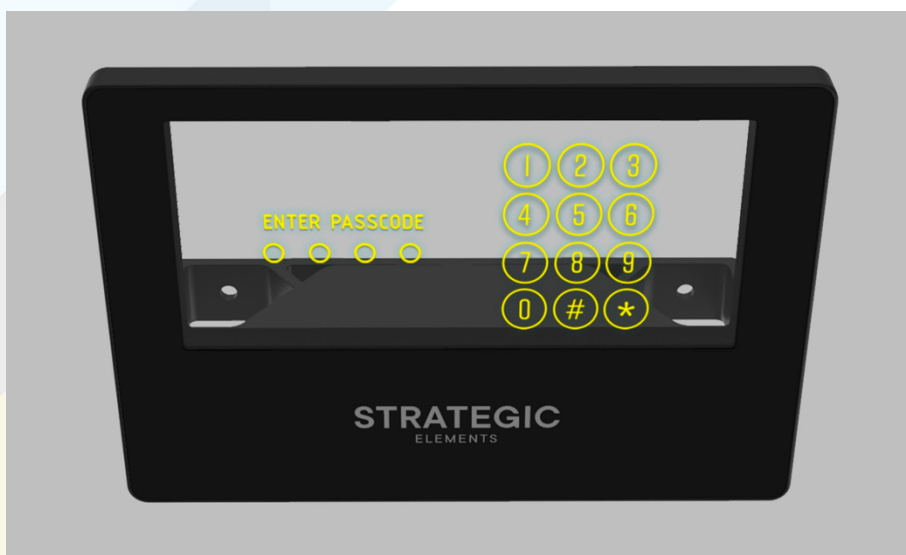
WESTERN AUSTRALIA, Perth, Sept. 25<sup>th</sup>, 2019 – **Strategic Elements Ltd** (ASX: SOR) is pleased to announce that a Transparent Security Access System is being fabricated to highlight the unique transparent benefits of the Nanocube Printable Memory Ink which 100% owned Australian Advanced Materials has been developing with UNSW, CSIRO and VTT group in Finland. Completion is expected in the fourth quarter of 2019.

### Transparent Printable Memory Demonstrator

The Demonstrator is being fabricated with an Australian electronic engineering firm and integrates leading edge technologies such as a transparent display and touch sensor component with the transparent Nanocube Memory Ink and custom application logic developed by the team. The role of the Nanocube Memory is to store authentication data for use as part of a Transparent Security Access System. The Demonstrator highlights the material benefits of the Nanocube Memory by authenticating users directly on a transparent glass surface instead of requiring silicon.

### Unique Differences of the Nanocube Memory Demonstrator:

- 1) Is a fully printed storage technology for transparent surfaces,
- 2) Physically deployed on glass and not hosted by a silicon storage technology,
- 3) Provides critical design freedom as storage can be printed anywhere on a glass surface and is not constrained by restrictions of silicon semi-conductor chips.

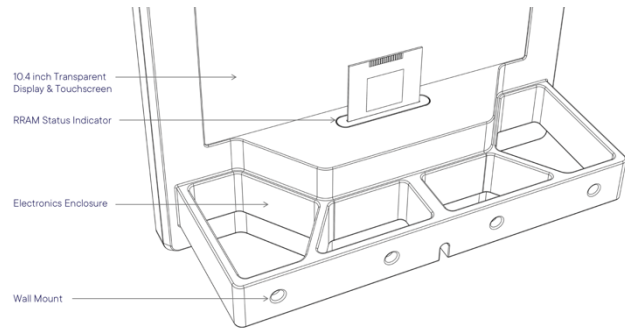


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### Demonstrator Operation

Initially, the display of the Demonstrator is transparent and sleeps until the user touches the screen to activate the display. After waking, the Demonstrator will challenge the user to enter authentication data. The user enters a code directly on the display and the application authenticates the user with the Nanocube Memory stored on a glass transparent memory module behind the display.

**Due to VTT scheduling and sourcing of the transparent display the transparent demonstrator is due in the fourth quarter of 2019.**



### Version 1.0 Demonstrator

The initial version of the Demonstrator showcases the transparent nature of the Nanocube Memory and the ability to print functional memory onto glass. Subsequent transparent demonstrator versions could perform different functions to Security Access and store a range of information or images directly on glass or a transparent display and be combined with sensors and other computer vision technologies.

The Company looks forward to promoting the capability of the Nanocube Memory Ink component to potential partners for integration into commercial transparent prototypes post completion of the Demonstrator. Development of the Nanocube Memory Ink for plastic surfaces is being conducted concurrently.

### PrintoCent

AAM is also a member of PrintoCent, a consortium of large global companies and a select group of international start-ups with the objective to create new components, products and solutions based on printed electronics. In PrintoCent, companies receive access to new business development and pilot manufacturing resources for the introduction of printed intelligence components, systems and products, from pilot production to early market trials.

Larger members of PrintoCent: NSG Group - one of the world's largest **glass manufacturers** for the architectural, automotive and technical glass sectors. Asahi Kasei - a **chemical and materials** science Company with approx. US\$ 17 Billion in revenues. Plastic Omnium- an **automotive** supplier specialised in the manufacturing and commercialisation of plastics with approx. US\$ 9 Billion in revenues. Nokia - a telecommunications, information technology, and consumer electronics company with US\$ 25 Billion in revenues.

### Transparent Electronics

See-through electronic devices, such as transparent displays, smart windows and concealed circuits require completely translucent components (such as memory) if users are to digitally interact with their perceived surroundings and manipulate this information in real time. On the basis of applications, the market has been segregated into consumer electronics, **automotive, construction, healthcare, defence and security systems**. Currently, consumer electronics represent the biggest application segment, accounting for the majority of the global share.

Transparent electronics currently have a diverse range of applications in commercial use today and reached a value of US\$ 797 Million in 2018. However, the market is set to grow exponentially to reach US\$ 3.8 Billion by 2024. Emerging applications of transparent electronics along with the introduction of innovative products (such as memory and circuitry) by manufacturers will grow this market even further.

### Memory Ink Technology

The Nanocube Memory Ink is an advanced nanotechnology material to be coated onto non-silicon transparent or flexible surfaces, such as glass or plastic, to store and retrieve data (memory cells). When printed on a surface and assembled with electrodes, the liquid transparent ink containing billions of tiny nanometre scale cube-shaped particles operates as computer memory. The technology was invented at University of New South Wales and is being developed by a global team of leading printed electronics experts. Memory is at the heart of transparent and flexible electronics and the development of a printed, transparent memory component could dramatically increase the ability for new applications to be developed globally.

Recent development also included work funded by the Australian Federal Government (Research Connections Program). The team consisted of scientists from the Commonwealth Scientific and Industrial Research Organisation (CSIRO) at the Flexible Electronics Laboratory in Victoria and researchers from the University of New South Wales (UNSW). The Company is collaborating with world leading Printed Electronics developers at VTT (Finland) to fabricate the optimised Nanocube Memory Ink onto glass and plastic materials.

### Strategic Elements Ltd

The Australian Federal Government has registered Strategic Elements as a Pooled Development Fund with a mandate to back Australian innovation. Strategic Elements operates as a 'venture builder' where it generates ventures and projects **from combining teams of leading scientists or innovators** in the technology or resources sectors. 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".

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