

MRFF FUNDING AWARD FOR AUSTRALIAN STROKE ALLIANCE

Micro-X funded \$8M to develop lightweight brain CT scanner

Investor Call at 0830 AEDT on Tuesday, 2nd March 2021

Adelaide, Australia, 1st March 2021: Australian hi-tech company Micro-X Ltd (ASX:MX1) (**Micro-X** or the **Company**), a leader in cold cathode x-ray technology for health and security markets globally, is pleased to announce that the Australian Stroke Alliance, of which Micro-X is a member, has been advised of an award of funding under the Federal Government's Medical Research Future Fund 'Frontier Health Program' for the development of lightweight stroke diagnostic imaging technology targeted at pre-hospital stroke diagnosis in air and land ambulances.

Key Points

- **Australian Stroke Alliance (ASA) awarded MRFF grant – subject to formal contract**
- **ASA project objective is for patient imaging testing of lightweight brain CT scanner for pre-hospital stroke diagnosis in air and land ambulances**
- **Micro-X is the ASA x-ray imaging partner and will receive \$8.0M over the life of the project**
- **Early work to focus on development of the 'Ring Scanner' brain CT imager to collect patient image data**
- **Refinement of image processing algorithms with the Melbourne Brain Centre planned to validate diagnostic capabilities and form basis for product regulatory approvals**
- **Addressable global market of \$25 billion**

Overview of MRFF Frontier Health Grant

On Friday 26th February the Federal Health Minister, The Honourable Greg Hunt, announced \$100M from the Federal Government's Medical Research Future Fund (MRFF) 'Frontier Health Program' across three projects for the development of new technologies to improve diagnosis and treatment of stroke, epilepsy and lung disease.

Of these three, the MRFF has awarded \$40M to the Australian Stroke Alliance for its 'Stroke Golden Hour' project proposal to transform pre-hospital stroke care in road and air ambulances. The award, believed to be amongst the largest medical research grants ever to be awarded in Australia, is subject to formal contracting requirements which are expected to be completed in the coming months.

Micro-X was selected to join the Australian Stroke Alliance because its unique cold-cathode x-ray technology offered the potential to miniaturise diagnostic brain CT imaging so that a scanner could become small enough and affordable enough to allow widespread pre-hospital stroke diagnosis and treatment in road ambulances with air ambulances offering unprecedented stroke care in rural and remote regions.

Micro-X's Role in the 'Stroke Golden Hour' programme

In Stage One of the ASA Frontier Health programme, Micro-X successfully completed imaging trials on cadavers with the Melbourne Brain Centre and then started developing cone beam tomographic image reconstruction algorithms. This early work yielded early and promising imaging performance that, with further clinical and technical input, has the potential to approach the current diagnostic standard of care, a conventional x-ray 8-slice helical CT.

Micro-X's work in this second stage of collaboration with the ASA will focus on four areas:

1. The engineering development and prototype construction of the scanner equipment to meet the operational requirements of the patient, operator and tele-health interfaces in the road and air vehicle environment.
2. Continuing algorithm development and refinement of image processing so that the image quality exceeds the current diagnostic standard of care, initially using cadaver imaging and then using patient image data gathered using the prototype scanner.
3. Vehicle integration and data communications designs based on research of workflows in mobile, point-of-care stroke diagnosis and treatment.
4. The validation of the diagnostic imaging performance of the 'ring scanner' against the current imaging standard of care as a pre-cursor to preparing regulatory submissions.

In this program Micro-X plans to build on established relationships and formally subcontract with Fujifilm in Japan, the Johns Hopkins University in Baltimore and the MADA Health Collab Team in Melbourne for key elements of the above project streams. A close collaboration with other ASA members is also planned, particularly the Melbourne Brain Centre at Royal Melbourne Hospital, the Australian Stroke Foundation, ambulance designers and operators and the Royal Flying Doctor Service to ensure the best inputs to every aspect of the design process.

Micro-X's design work in-house is based on common-use technologies in development for other Micro-X products, particularly the new mini-tube array, image reconstruction software, and compact, fast-switching high voltage generator used on the airport checkpoint security portal. Funding of \$8.0M receivable by Micro-X from the ASA will be planned for the first three years of the programme, based on the final contractual arrangements once those have been put in place.

The Micro-X collaboration with the ASA in this MRFF program will position the company for mature pilot systems that can be formally verified and submitted for future regulatory approvals and then rapid commercialisation. The global market for such an in-ambulance CT scanner is estimated at \$25B and there is strong incentive for investment in this area; if stroke diagnosis and treatment is delayed patients are at risk of increasing levels of permanent disability which can easily cost healthcare systems up to \$150k per patient per year.



Illustration of Micro-X's concept design for a stroke imaging Brain CT fitted in an ambulance

Background on the 'Stroke Golden Hour' project : "Time is Brain"

Nearly 2 million brain cells can die per minute during an ischemic stroke. Thus the elapsed time before diagnosis and treatment of stroke is a critical determinant of patient survival and the extent of recovery or permanent disability. An accurate diagnosis to identify the nature of the stroke is only possible by a CT brain scan and treatment cannot begin without this diagnosis since incorrect treatment could kill a patient. The Royal Melbourne Hospital has pioneered the relocation of this CT scan, and thus the commencement of treatment, to a patient point-of-care situation using a CT scanner mounted in a mobile stroke unit, thus saving vital time and providing greatly improved clinical outcomes. However conventional CT scanners are very expensive and very large, filling an entire van, and the complexity of high-speed rotating x-ray components in a gantry is not well suited to the mechanical environment of road transportation. Micro-X's vision is to use its unique technology to create a low-cost CT scanner of equivalent performance with no moving parts, compact enough to be mounted in any ambulance.

Program co-chief investigators at the Melbourne Brain Centre, Prof Geoffrey Donnan AO and Prof Stephen Davis AM, have welcomed the funding. Professor Donnan said *"We are excited to be commencing this ground-breaking research program. Lightweight, portable and affordable brain CT imaging is the next frontier in stroke care. The tyranny of distance is a huge barrier - if you have a stroke in rural or remote parts of Australia, you are up to twice as likely as city stroke survivors to be left with a serious, lifelong disability."*

Prof Stephen Davis added, *"Our partnership with Micro-X brings together clinical and technical expertise to integrate next-generation brain CT imaging into road and air ambulances to treat stroke quickly no matter where a patient is located. This funding will unlock the potential to deliver innovative new Australian technology and transform stroke care in Australia and globally."*

Micro-X's Managing Director, Peter Rowland, commented:

"The Melbourne Brain Centre is among the world's most respected neurological and stroke research institutions. The compact, rugged, low-cost CT scanner which Micro-X will develop under this program will be a global first never before imagined. Together, this unique collaboration puts Australia and the Australian Stroke Alliance at the very forefront of global best practice in stroke care. We are very pleased to be part of this exciting project, to be transforming stroke care for all Australians, particularly those in rural remote areas. We are proud that our technology, pioneered here in Adelaide, can bring this about."

Once completed, this brain CT product will become the fourth pillar of our commercialisation strategy for our Australian developed, proprietary, cold cathode X-ray technology"

Investor Conference Call

The Company will hold a conference call at **8.30am AEDT on Tuesday 2nd March 2021**. Micro-X's Managing Director, Peter Rowland, will host the call and will be joined by Professors Geoffrey Donnan AO and Stephen Davis AM from the Melbourne Brain Centre, Co-Chief Investigators for 'The Stroke Golden Hour' project. There will be an opportunity for listeners to ask questions.

To pre-register for the call, please follow the link below. A unique PIN will be provided for use when dialling into the call, which will bypass the operator and provide immediate access to the event. A recording of the call will be available on the Investor Centre section of the Company's website for 60 days after the call.

<https://s1.c-conf.com/diamondpass/10012883-6uci9e.html>

If participants choose to dial into the call directly, please allow additional time and dial in 10 to 15 minutes prior to the call time and enter the **Conference ID: 10012883**. Dial in numbers are as follows:

Australian Toll Free: 1800 908 299
New Zealand callers: 0800 452 795
Other callers: +61 2 9007 8048

This ASX Announcement is authorised by the Board of Micro-X.

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About Micro-X

Micro-X Limited (the **Company**) is an ASX listed hi-tech company developing and commercialising a range of innovative products for global health and security markets, based on proprietary cold cathode, carbon nanotube (CNT) emitter technology. The electronic control of emitters with this technology enables X-ray products with significant reduction in size, weight and power requirements, enabling greater mobility and ease of use in existing X-ray markets and a range of new and unique security and defence applications. Micro-X has two mobile digital medical X-ray systems being sold commercially for diagnostic healthcare applications and Micro-X medical products are now in operation in 14 countries around the world.

Micro-X has a portfolio of innovative products in development, including the MBI for imaging Improvised Explosive Devices in security, defence and counter-terrorism applications; a next-generation self-service X-Ray Airport Checkpoint Portal with an integrated body scanner; and a lightweight brain CT imager for early stroke diagnosis in ambulances. Micro-X has its core R&D, engineering and production capability in Adelaide, Australia with a fully in-sourced CNT tube manufacturing line and approximately 95% Australian locally manufactured content.

CONTACTS

Micro-X Limited	Investor Enquiries
Peter Rowland Managing Director Tel: +61 8 7099 3966 E: admin@micro-x.com	David Allen / John Granger Hawkesbury Partners Tel: +61 2 9103 9494 E: dallen@hawkesburypartners.com jgranger@hawkesburypartners.com