

# 5 December 2025

# DorsaVi RRAM Development Progress Towards 22nm Technology Node Integration

Advanced Memory Development Aligned With Next Generation Neuromorphic and Edge-Al Hardware Platforms

# Key Highlights:

- RRAM scaling tuned to neuromorphic portfolio: The RRAM scaling program is being
  modified to serve as a compatible memory fabric for the Company's newly acquired
  neuromorphic Processing-in-Memory and Adaptive Interface IP, including the Reflex
  Engine and intelligent interface layers.
- **RRAM optimisation directly unlocks**: DorsaVi's strategy to unify sensing, memory, and neuromorphic computation within a single advanced-node platform.
- Optimised RRAM resistance window for scaling: Artemis Labs continues to optimise RRAM material stack and resistance ranges required to unlock effective integration at the 22nm technology node.
- High switching contrast validated: Early testing of new proprietary materials for the RRAM stack has validated a strong On/Off switching window, supporting robust- dataretention at advanced-node.
- Strengthened Path to Integrated Edge-Al Silicon: The convergence of RRAM optimisation and the neuromorphic portfolio underpin dorsaVi's plan to deliver future edge-Al silicon and modules that can be licensed to big tech, or integrated into next generation wearables, robotics and industrial safety products.
- The global edge AI market is projected to grow from ~\$15 billion in 2023 to over \$100 billion by 2030 (per Grand View Research), driven by wearables, robotics, and IoT¹.

**Melbourne, Australia, 5 December 2025 –** DorsaVi Limited (ASX: DVL) is pleased to provide an update on the continued progress of its RRAM development program with Artemis Labs. RRAM (Resistive RAM) is a next-gen memory tech that's faster and more energy-efficient than traditional chips. This work forms a critical foundation for the next generation of dorsaVi's biosensing and edge-intelligent systems, where sensing, memory and computation are tightly integrated in

<sup>&</sup>lt;sup>1</sup> https://www.grandviewresearch.com/industry-analysis/edge-ai-market-report

compact, low-power silicon. It builds on the neuromorphic Processing-In-Memory and Adaptive Interface technology recently acquired<sup>2</sup>.

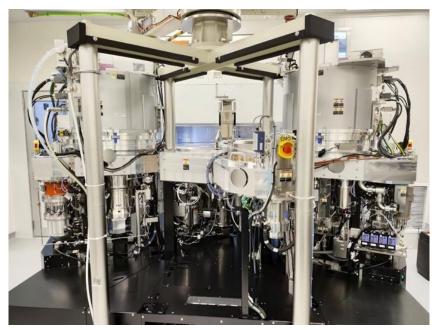


Figure 1: RRAM deposition tool used by Artemis Labs to build and refine the thin-film memory layers for DorsaVi's next-generation RRAM devices, supporting the Company's transition toward advanced 22 nm technology nodes.

# **Steady Progress in RRAM Scaling and Resistance Optimisation**

Artemis Labs is refining the RRAM material stack and resistance characteristics required for reliable operation at the 22 nm node. As device geometries shrink, subtle changes in electrical behaviour can impact memory performance, and the team is systematically mapping and tuning these effects to maintain stable switching and long term reliability.

# Current work is focused on:

- Engineering an optimal resistance window compatible with 22 nm operation.
- Maintaining a clear separation between low-resistance ("on") and high-resistance ("off") states to ensure accurate reads
- Validating behaviour under 22 nm-class electrical conditions, including narrower interconnects and tighter device geometries.
- **Tuning materials and processes** to unlock low voltage, low power operation with robust data = retention.

The material and resistance tuning undertaken in this phase is designed to support high-speed switching at extremely low operating voltages, aligning the RRAM platform with the requirements of energy-efficient in-memory computation at the edge. Early results indicate that the resistance ranges achieved through material and process optimisation are progressing in line with the requirements for future 22 nm integration.

<sup>&</sup>lt;sup>2</sup> Refer to ASX announcement dated 12 November 2025

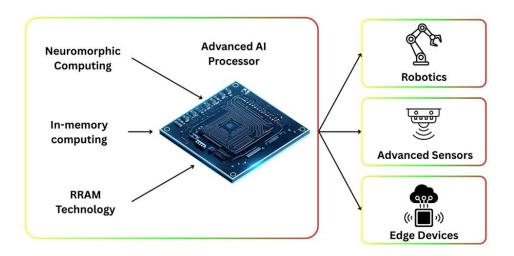


Figure 2: Conceptual illustration of how RRAM memory, in-memory computing and neuromorphic (brain-inspired) circuits are combined in a single advanced AI processor. By storing data, learning patterns and running AI models directly on the chip, this architecture enables robots, sensors and other edge devices to respond faster, use less power and become progressively smarter over time.

# High Switching Contrast and Strategic Alignment With Neuromorphic Computing

Initial testing of new proprietary RRAM materials has delivered a **strong On/Off switching ratio**, providing a clear memory window suitable for advanced-node scaling. This high switching contrast is particularly important for in-memory computing architectures, where memory cells are used not just to store data but also to perform computation.

This RRAM work also aligns closely with dorsaVi's neuromorphic computing and adaptive interface IP. Together, these programs target:

- Predictable, low-voltage RRAM behaviour suitable for in-memory computing and neuromorphic learning.
- Compact and efficient memory architectures that support dense networks of "artificial synapses" for adaptive algorithms.

**Energy-efficient edge intelligence**, enabling local pattern recognition and decision-making in wearables, robotics and industrial sensing systems.

By tuning RRAM for 22 nm integration, the Company is positioning its memory technology on the same node class used for modern edge-AI processors, paving the path toward manufacturable neuromorphic silicon that can be deployed in real-world devices.

# Staking Out dorsaVi's Edge Al Position



### Personalised rehab & performance coaching

Real-time gait and movement feedback delivered locally on the device – no cloud link required.

### Workplace ergonomics & safety alerts

Event-driven detection of hazardous postures and loads, issuing reflexspeed warnings

# Prosthetics, exosuits & robotics control

Low-latency, intent-aligned motion control using neuromorphic inference at the edge.

Figure 3: Example edge applications enabled by dorsaVi's RRAM + Reflex Engine processing-in-memory platform, spanning on-device rehab coaching, workplace ergonomics and safety alerts, and low-latency prosthetics and robotics control.

By combining advanced RRAM devices with neuromorphic architectures, dorsaVi is laying the groundwork for future hardware modules where sensors do more than record data but also begin to interpret, learn and adapt at the edge. In this architecture, RRAM provides the physical "synapses" and memory fabric, while the neuromorphic engine organises large arrays of these cells into brain-inspired networks that can learn and run inference in or near memory. The Adaptive Interface layer then cleans and conditions sensor signals so they can be processed reliably on-chip.

These attributes directly support edge-computing markets, where devices must sense, interpret and act with minimal power, latency and cloud dependency. This RRAM update represents a key step in turning the neuromorphic IP portfolio into a manufacturable, advanced-node silicon platform and helps stake out dorsaVi's position as a provider of next-generation edge-intelligent processors for wearables, robotics and industrial sensing.

The Company will continue to update the market as the RRAM scaling program advances through further characterisation milestones and integration steps along the 22 nm development roadmap.

This release has been authorised for lodgement to the ASX by the Board.

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# About dorsaVi

dorsaVi Ltd (ASX: DVL) is an ASX company focused on developing innovative motion analysis device technologies for use in clinical applications, elite sports, and occupational health and safety. dorsaVi believes its wearable sensor technology enables, for the first time, many aspects of detailed human movement and position to be accurately captured, quantified, and assessed outside a biomechanics lab, in both real-time and real situations for up to 24 hours. dorsaVi's focus is on two major markets:

- Workplace: dorsaVi enables employers to assess risk of injury for employees as well as test the effectiveness of proposed changes to OHS workplace design, equipment or methods based on objective evidence. dorsaVi works either directly with major corporations, or through an insurance company's customer base with the aim of reducing workplace compensation and claims. dorsaVi has been used by major corporations including London Underground, Vinci Construction, Crown Resorts, Caterpillar (US), Boeing, Monash Health, Coles, Woolworths, Toll, Toyota, Orora, Mineral Resources and BHP Billiton.
- Clinical: dorsaVi is transforming the management of patients with its clinical solutions (ViMove+) which provide objective assessment, monitoring outside the clinic and immediate biofeedback. The clinical market is broken down into physical therapy (physiotherapists), hospital in the home and elite sports. Hospital in the home refers to the remote management of patients by clinicians outside of physical therapy (i.e. for orthopaedic conditions). Elite sports refer to the management and optimisation of athletes through objective evidence for decisions on return to play, measurement of biomechanics and immediate biofeedback to enable peak performance.

Further information is available at www.dorsaVi.com