4 June 2026

RRAM and Neuromorphic Evaluation Indicates Up To at least 2x Battery Improvement for Exoskeletons and Robotics

Performance improvements driven by lab evaluation of gait sensor configuration and dorsaVi's RRAM-neuromorphic in-sensor computing

Key Highlights:

- **Performance gains driven by RRAM and neuromorphic synergy:** dorsaVi's RRAM and neuromorphic roadmap is projected to reduce sensor count by 25–50%, cut wireless data volume by 10–100×, and improve battery life by more than 2×, as sensors shift from raw-data streaming to in-sensor decision-making.
- **Smarter sensors with computing built in:** By moving decision-making into each sensor, dorsaVi's smart sensors do more with fewer nodes, delivering projected sensor-node decision latency below 10–30 ms and real-time classification accuracy above 90%, enabling direct integration into exoskeleton control loops without cloud dependency.
- **Expanding into the Exoskeleton Intelligence Layer:** dorsaVi is progressing the application of its EMG and movement sensor platform into lower-limb exoskeleton systems, targeting the high-value sensing and decision-intelligence layer rather than the robotic hardware itself.
- **Existing Sensors Already Support Gait Intent & Fatigue Monitoring:** Current dorsaVi EMG and movement sensors can support gait intent detection, gait-phase recognition, fatigue monitoring, assist-as-needed tuning and exoskeleton validation using supervisory control architectures.
- **dorsaVi serves as the sensor-intelligence layer in next-generation exoskeleton systems:** providing the intelligence that tells the exoskeleton what the user intends to do before movement occurs, a commercially distinct and strategically valuable position in the human-robot collaboration ecosystem.
- **Near-term deployment path defined:** dorsaVi's technical analysis defines a staged near-term deployment path, beginning with 8 sensors for full bilateral lower-limb mapping, converging to 4–6 sensors for real-time supervisory control, and simplifying to 4 EMG sensors plus 1 motion sensor for field validation.
- **Aligned with dorsaVi's broader Ultra-Edge strategy:** The initiative maps directly onto the Company's Sense → Decide → Act → Memory architecture and extends the commercial relevance of the existing sensor platform across rehabilitation, aged care, defence, industrial assistive systems, and prosthetics.
- **Exoskeleton market projected to reach US$1.79 billion by 2033[1]:** The global exoskeleton market is growing, driven by demand across healthcare, rehabilitation, defence, and industrial applications.

Melbourne, Australia, 4 June 2026 – dorsaVi Limited (ASX: DVL) ("dorsaVi" or the "Company") is pleased to announce the completion of a strategic analysis confirming of its existing EMG (electromyography) and movement sensing technologies within lower-limb exoskeleton systems and

[1] https://www.grandviewresearch.com/industry-analysis/exoskeleton-market

wearable robotics marking a substantive commercial extension of the Company's broader Ultra-Edge Intelligence strategy.

The initiative positions dorsaVi at the sensing and intelligence layer of exoskeleton systems, where real-time detection of human movement intent is one of the most important unsolved challenges in wearable robotics. The Company has completed a technical analysis mapping its sensor capabilities to five practical exoskeleton applications, defining optimal sensor counts and performance benchmarks for each, and identifying the RRAM–neuromorphic upgrade as the strategic milestone that converts dorsaVi's sensors from wearable measurement devices into low-power, real-time control nodes.

THE EXOSKELETON OPPORTUNITY: HARDWARE WITH INTELLIGENCE

A powered exoskeleton is a wearable robotic frame that works with the wearer's body to augment movement, reduce physical strain, or restore lost mobility. The technology is moving rapidly from research environments into commercial deployment across four primary verticals:

- **Medical and rehabilitation:** Helping patients recovering from stroke, spinal cord injury, or surgery to walk again. The World Health Organisation estimates over 12 million[2] stroke patients annually worldwide, each a potential rehabilitation robotics user.
- **Industrial and occupational health:** Reducing workplace injury and worker fatigue in manufacturing, construction, logistics, and warehousing.
- **Defence:** Helping soldiers carry heavy loads with reduced fatigue and lower injury rates, supported by significant programs funded by the United States Department of Defence and other defence ministries.
- **Aged care and consumer mobility:** Supporting older adults to maintain mobility, reduce fall risk, and extend independent living, a vertical accelerated by global population ageing.

The technology gap holding the market back is not mechanical but is in the intelligence. Current exoskeleton systems react to movement after it has begun. Next-generation systems need to anticipate what the user intends to do before the movement is fully executed. This is precisely what dorsaVi's EMG sensors measure, the electrical activity generated by muscles, which precedes physical movement and reveals user intent such walking, leg swing, push-off, sit-to-stand, stair climbing, and the onset of fatigue.

dorsaVi’s strategic position in this market is as the sensor-intelligence layer, rather than as a builder of the exoskeleton robot itself. This is a commercially distinct and strategically valuable position. It makes the Company a partner to exoskeleton manufacturers rather than a competitor, and opens multiple revenue paths:

- Sensor sales and OEM integration into exoskeleton products;
- Licensing of dorsaVi's sensor intelligence and, in future, on-sensor algorithms;
- Validation and supervisory-control services for exoskeleton manufacturers conducting clinical, industrial, and defence trials;
- Recurring software and data services once smart sensors are deployed at scale.

[2] World Stroke Organization: Global Stroke Fact Sheet 2025 - Valery L Feigin, Michael Brainin, Bo Norrving, Sheila O Martins, Jeyaraj Pandian, Patrice Lindsay, Maria F Grupper, Ilari Rautalin, 2025

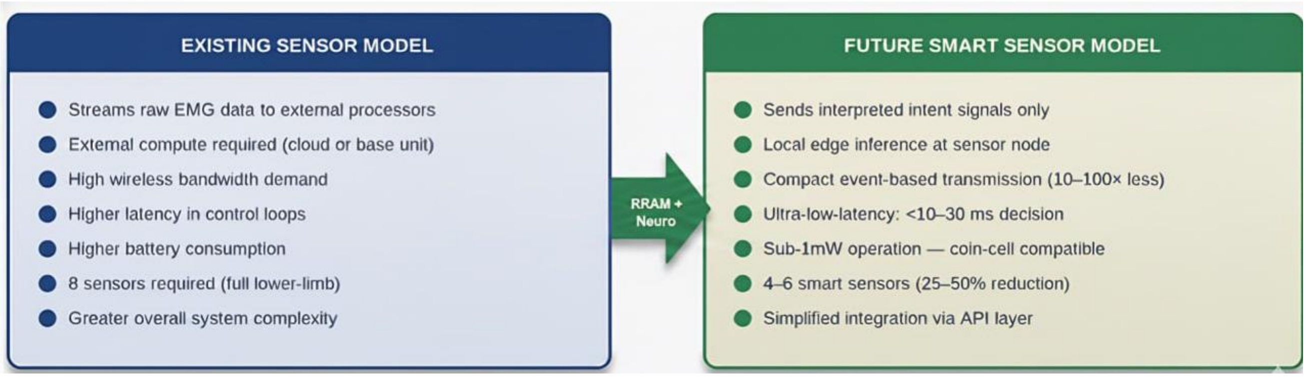

***Figure 1**: Transition from Raw Data Streaming to Local Edge Intelligence (Existing vs Future Smart Sensor)*

What Existing Sensors Can Do Today

With its current FDA-cleared EMG and movement sensor platform, dorsaVi can support five realistic exoskeleton use cases today. In this near-term configuration, dorsaVi's sensors function as an external or semi-integrated sensing layer for exoskeleton validation and supervisory control. The sensors measure muscle activity and limb movement; software or an external controller interprets gait intent, gait phase, user effort, and fatigue. The exoskeleton's own encoders, torque limits, foot-pressure sensors, motor current sensing, and emergency stop remain the safety-critical control layer.

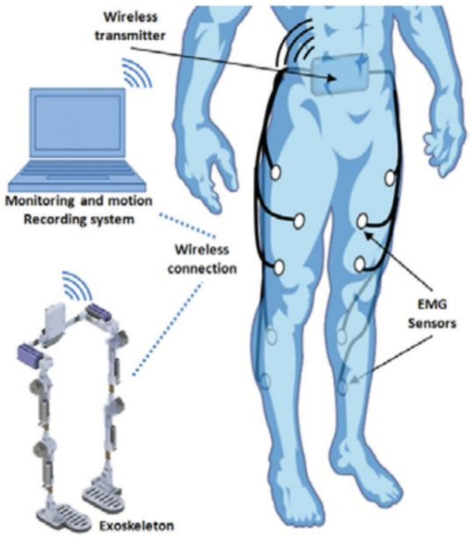

***Figure 2:** Example of a Wireless EMG-based control architecture for a lower-limb robotic exoskeleton.*

The table below defines the recommended sensor configuration and target performance benchmark for each application.

Application / Function	Existing Sensor Count	Target Performance
Gait intent detection	4–8 sensors	>85–90% real-time classification accuracy
Gait phase recognition	4–6 sensors	<30–50 ms timing error
Assist-as-needed tuning	6–8 sensors	±10% torque-assist variation

Application / Function	Existing Sensor Count	Target Performance
Fatigue monitoring	4–8 sensors	≥10–20% EMG change sensitivity
Exoskeleton validation	4 EMG + 1 motion sensor	≥10–20% EMG reduction detectable (assisted vs unassisted)

***Table 1**: dorsaVi existing EMG sensor configurations mapped to exoskeleton use cases*

Near-Term Deployment Path

The analysis identifies a staged configuration pathway that balances signal coverage, practical deployment complexity, and commercial readiness:

- **Stage 1 — Full bilateral mapping (8 sensors):** Beginning with eight sensors across the major lower-limb muscle groups; tibialis anterior, gastrocnemius/soleus, quadriceps, and hamstrings. This provides sufficient signal coverage to build robust gait-intent and fatigue models and to identify the most useful muscle locations for each specific application.
- **Stage 2 — Real-time supervisory control (4–6 sensors):** Once the highest-value muscle locations are confirmed, reducing the configuration to four to six sensors for real-time supervisory control. This configuration supports gait intent, phase recognition, and fatigue monitoring in a commercially deployable form factor.
- **Stage 3 — Field validation (4 EMG + 1 motion sensor):** For commercial demonstrations and clinical or industrial field validation, simplifying further to four EMG sensors plus one motion sensor. This configuration is sufficient to demonstrate assisted-versus-unassisted muscle unloading and document exoskeleton performance in real-world conditions.

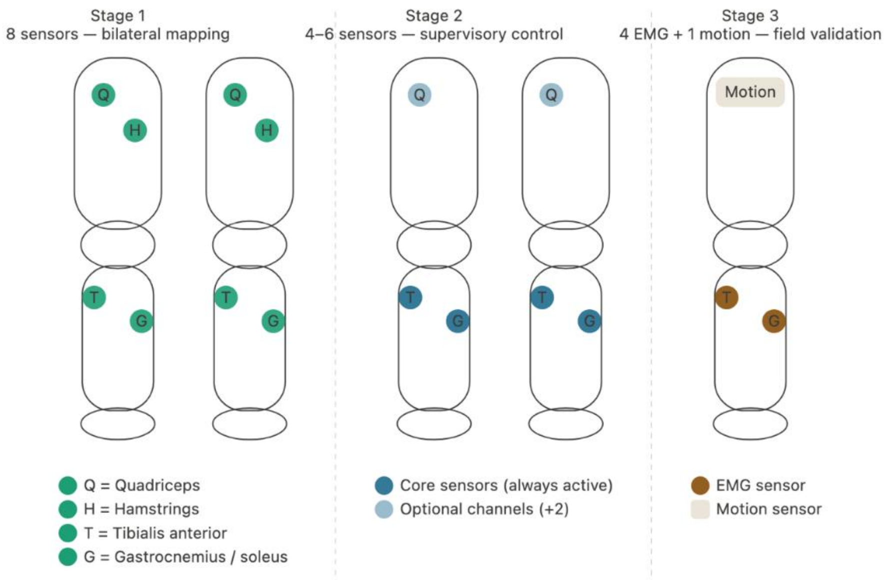

***Figure 3**: Full Bilateral Mapping of the Three Stages*

The RRAM Neuromorphic Inflection Point: From Streaming to Smart

The strategic limitation of dorsaVi's current sensor platform is that the devices primarily measure and transmit data. This is valuable for analytics, validation, and supervisory control, but continuous raw EMG streaming increases wireless bandwidth demand, processing overhead, latency, and battery consumption, making it less suited to the low-latency, closed-loop control that next-generation exoskeletons require.

This is where dorsaVi's RRAM–neuromorphic roadmap becomes the defining strategic advantage. RRAM, or resistive random-access memory, is fast, low-power non-volatile memory. Neuromorphic processing is brain-inspired local computing. Together, they enable **in-sensor computing**, where the EMG sensor itself performs local filtering, feature extraction, event detection, and confidence scoring without sending raw data to an external processor or the cloud.

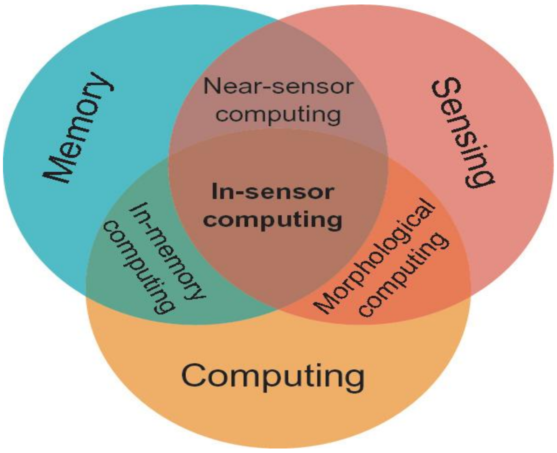

Figure 4: *The intersection of Memory, Sensing and Computing*

With RRAM–neuromorphic integration, dorsaVi sensors would shift from streaming raw EMG data to transmitting compact, actionable decisions: swing intent probability, push off readiness, sit-to-stand intent, fatigue index, co-contraction warning, signal quality score, and gait phase confidence. The exoskeleton controller receives interpreted intent signals rather than large volumes of raw biosignal data, making the entire system faster, simpler, and more power-efficient.

Smart Sensor Configurations and Performance Targets

The table below maps each application from existing sensor configurations to the projected future RRAM–neuromorphic smart sensor equivalents, with the rationale for the expected reduction in sensor count.

Application	Existing Sensors	Future Smart Sensors	Basis for Reduction
Basic gait-phase detection	4 sensors	2–4 smart sensors	Local feature extraction and event detection reduces need for multiple raw channels
Swing / toe-clearance intent	4 sensors	2 smart sensors	Bilateral smart EMG nodes detect swing intent locally with embedded processing and confidence scoring
Sit-to-stand detection	4–6 sensors	2–4 smart sensors	Local onset detection and stored user-specific baselines reduce channel need
Full lower-limb intent detection	8 sensors	4–6 smart sensors	Local filtering, feature extraction, event detection, and confidence scoring reduce redundant channels

Table 2: *Existing vs future RRAM–neuromorphic smart sensor configurations by application*

Future target performance for the RRAM–neuromorphic smart sensor platform includes:

- Sensor-node decision latency below 10–30 milliseconds;
- Real-time classification accuracy above 90%;
- A 25–50% reduction in sensor count;
- A 10–100× reduction in wireless data volume;
- A battery-life improvement of more than 2× compared with continuous raw EMG streaming.

Commercial Pathway and Next Steps

dorsaVi intends to use this sensor configuration analysis to guide the next phase of technical and commercial development across its exoskeleton and robotics roadmap. The Company is progressing validation work within its existing FDA-cleared and TGA-certified sensor hardware, consistent with the Ultra-Edge Modular Design and Build program announced on 6 May 2026, The announcement covered dorsaVi's Ultra-Edge Modular Design and Build program, translating its RRAM and neuromorphic chip IP into a physical, manufacturable hardware platform. The three-layer architecture (sensing, compute, memory) targets robotics, exoskeletons, and autonomous systems, with a sub-1mW power design for coin-cell battery-operated devices.

In parallel, the Company is continuing validation of the second group of neuromorphic IP assets, the sensing and signal interface technologies that sit at the front end of the platform, translating real-world inputs from the body and environment into data the system can act on. That work is expected to further strengthen the case for the combined RRAM–neuromorphic platform across exoskeleton, prosthetic, and wearable applications.

dorsaVi expects to update shareholders on commercial progress, partner engagements, and further validation milestones in the coming months.

Mathew Regan, Group Chief Executive Officer said:

"This analysis makes clear that we don't need to wait for next-generation hardware to participate meaningfully in the exoskeleton market. Our existing sensor platform can provide the intelligence layer that exoskeleton systems need today, for gait intent, fatigue monitoring, and validated performance measurement. What the RRAM–neuromorphic roadmap does is transform that position from valuable to decisive. Moving from streaming raw EMG data to delivering compact, real-time intent signals from the sensor itself is the performance shift that will make dorsaVi a core component of the next generation of exoskeletons, prosthetics, and rehabilitation robotics. We are building toward that deliberately, layer by layer."

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

- ENDS –

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Forward-Looking Statements

This announcement may contain certain forward-looking statements and projections. Such forward-looking statements/projections are estimates for discussion purposes only and should not be relied upon. Forward looking statements/projections are inherently uncertain and may therefore differ materially from results ultimately achieved. dorsaVi Limited does not make any representations and provides no warranties concerning the accuracy of the projections and disclaims any obligation to update or revise any forward-looking statements/projections based on new information, future events or otherwise, except to the extent required by applicable laws.

About dorsaVi

dorsaVi Ltd (ASX: DVL) is an ASX company focused on delivering intelligence at the ultra-edge. Enabling real time AI-driven decisions to be made locally, at the point of sensing, without reliance on cloud connectivity. dorsaVi's wearable sensor technology captures, quantifies, and assesses detailed human movement and position outside a biomechanics lab, in both real-time and real situations for up to 24 hours, across clinical applications, elite sports, and occupational health and safety. Underpinning this vision, dorsaVi is building the hardware foundations of the ultra-edge through strategic investments in neuromorphic computing and RRAM memory technology. dorsaVi's focus is on three major markets:

- Ultra-Edge Intelligence: dorsaVi's sensor platforms are designed to process and act on data locally, embedding AI-driven inference directly at the point of capture. By investing in neuromorphic computing and RRAM memory technology, dorsaVi enables real-time decision-making without round-tripping to the cloud, delivering lower latency, lower power consumption, and reliable operation in latency- and connectivity-constrained environments across industrial, clinical, and autonomous systems applications.

- 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.

- 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