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ASX RELEASE **1 September 2026**

ASX: NVU

US Patent Granted for ECS-DoT Object Detection Technology

US Patent No. 12,651,452 B2 covers dedicated silicon for AI object detection, exclusively licensed to EMASS and co-invented by EMASS founder Dr Mohamed Sabry

Highlights

- **US Patent No. 12,651,452 B2 granted** by the United States Patent and Trademark Office (USPTO). The patent covers dedicated accelerator circuitry for non-maximum suppression, a mandatory final stage in AI object detection.
- **Exclusively licensed to EMASS**, Nanoveu's ultra-low-power semiconductor division. The IP rights in the Patent was co-invented by Dr Mohamed Sabry, the founder of EMASS, who is employed at NTU.
- **Protects the silicon mechanism behind ECS-DoT's object detection efficiency**, implemented as a dedicated hardware module in the next-generation 16nm ECS-DoT, which entered fabrication at TSMC in January 2026.
- **Further filings planned** across voice, motion and sensor fusion workloads, alongside the patent families previously flagged covering the Company's drone energy optimisation and flight control technology.

Nanoveu Limited ("Nanoveu" or the "Company") (ASX: NVU, OTCQB: NNVUF), a technology company specialising in advanced semiconductor, visualisation and materials sciences, is pleased to advise that it has received notification from the Nanyang Technological University, Singapore ("NTU") that US Patent No. 12,651,452 B2 has been granted by the United States Patent and Trademark Office (USPTO). The patent covers dedicated accelerator circuitry for non-maximum suppression in AI object detection. The patent is assigned to NTU and exclusively licensed to EMASS, Nanoveu's ultra-low-power semiconductor division. The patented innovation was co-invented by Dr Mohamed Sabry, EMASS founder.

The Granted Patent

Non-maximum suppression is the final stage in every AI object detection pipeline. It is conventionally run in software, where it consumes a disproportionate share of inference time and energy. The patented innovation executes the same function in purpose-built silicon, removing a structural bottleneck in edge vision. In peer-reviewed research underlying the patent, a hardware implementation of the approach reported speedups of up to 75 times over a software implementation of the same algorithm and 13.4 times over the prior state-of-the-art hardware accelerator, at comparable detection accuracy and at full-HD input resolutions.

The patented mechanism is implemented as a dedicated hardware acceleration module in the BLE-enabled next-generation 16nm ECS-DoT, which entered fabrication at TSMC in January 2026. Vision is a core edge AI workload, and efficient object detection is what makes always-on operation practical for battery-powered devices. The grant supports ECS-DoT's positioning in applications including smart cameras and doorbells, wearables such as smart glasses and AR/VR headsets, drones, and automotive sensing.

Further Patent Filings

This grant protects one workload within a substantially larger surface: ECS-DoT processes vision, audio and sensor data across the Company's target verticals. Nanoveu has previously stated its intention to file multiple additional patent families covering its drone energy optimisation and flight control technology, and intends to pursue further filings across voice, motion and sensor fusion.

Founder of EMASS, Dr Mohamed Sabry, said: *"Object detection is where edge vision silicon wins or loses on power, and non-maximum suppression is the stage conventionally left to software. This patent covers executing it in dedicated hardware instead, and that module is built into our next generation 16nm silicon. The exclusive licence puts that mechanism in EMASS's hands, and we intend to follow the same path from research to protected silicon across voice, motion and sensor fusion."*

This announcement has been authorised for release by the Board of Directors.

-ENDS-

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About Nanoveu Limited

Further details on the Company can be found at https://nanoveu.com/.

EMASS is a fabless semiconductor company specialising in ultra-low-power, AI-enabled system-on-chip (SoC) solutions for always-on sensing and intelligent processing at the edge. Its ECS-DoT architecture enables real-time AI inference at milliwatt-level power, supporting next-generation applications across drones, wearables, hearables, smart devices, industrial IoT, robotics and autonomous systems.

Spinoff is a Singapore-based aerial robotics company that designs and builds proprietary drone platforms. Its two current platforms are ALICE, a tethered aerial system engineered for high-payload, extended-duration operations with resistance to GPS and radio-frequency jamming and spoofing, and METRON, a camera-based 3D measurement system delivering millimetre-level precision with AI-driven deviation detection. Both platforms have been validated in commercial deployments with Tier-1 Singaporean customers. Spinoff Robotics provides Drone and sensing capabilities complementing the Company's ECS-DoT edge-AI silicon across defence, critical-infrastructure security and industrial inspection markets.

EyeFly3D™ is a comprehensive platform solution for delivering glasses-free 3D experiences across a range of devices and industries. At its core, EyeFly3D™ combines advanced screen technology, sophisticated software for content processing, and the potential for integration with ultra-low-power SoC hardware.

Nanoshield™ includes protective and functional coating technologies designed for use across a range of applications, including solar and other industrial surfaces.

Forward Looking Statements This announcement contains 'forward-looking information' that is based on the Company's expectations, estimates and projections as of the date on which the statements were made. This forward-looking information includes, among other things, statements with respect to the Company's business strategy, plans, development, objectives, performance, outlook, growth, cash flow, projections, targets and expectations and related expenses. Generally, this forward-looking information can be identified by the use of forward-looking terminology such as 'outlook', 'ambition', 'anticipate', 'project', 'target', 'potential', 'likely', 'believe', 'estimate', 'expect', 'intend', 'may', 'mission', 'would', 'could', 'should', 'scheduled', 'will', 'plan', 'forecast', 'evolve' and similar expressions. Persons reading this announcement are cautioned that such statements are only predictions, and that the Company's actual future results or performance may be materially different. Forward-looking information is subject to known and unknown risks, uncertainties and other factors that may cause the Company's actual results, level of activity, performance, or achievements to be materially different from those expressed or implied by such forward looking information. Results described in this announcement are modelled outcomes and do not constitute physical test results.