

Weebit Nano and CEA-Leti to demonstrate brain-inspired neuromorphic demo

- Enables massively parallel, low-power and low-latency computation
- To be demonstrated at Flash Memory Summit 2019

19 July 2019 – Weebit Nano (ASX: WBT), the Israel-based semiconductor company seeking to develop and commercialize the next generation of memory technology, and CEA-Leti, a global leader in miniaturization technologies enabling smart, energy-efficient and secure solutions for industry, will demonstrate a new neuromorphic demo able to perform precise object recognition tasks in an energy-efficient manner at Flash Memory Summit 2019.

Flash Memory Summit, held annually in Silicon Valley, is the world's premiere flash memory conference and expo. It showcases the mainstream applications, technologies, vendors and innovations in the multi-billion dollar non-volatile memory and SSD markets that include demanding enterprise storage applications, smartphones, tablets, and mobile and embedded systems.

The neuromorphic demo uses the latest Weebit SiOx ReRAM technology, running inference tasks use Spiking Neural Network (SNN) algorithms developed by CEA-Leti's team. It is a powerful proof-of-concept circuit, showcasing the future where circuits will operate similarly to the human brain. In this instance a bio-inspired architecture using Weebit's ReRAM technology will implement synapses in a way which mimics human biological synapse activity. Unlike AI circuits which use standard processors and are implemented via software algorithms trying to simulate the synapse function, this demo uses a hardware topology which looks and functions very much like the neurons and synapses in the brain.

This ground-breaking technology enables greatly increased parallel connectivity compared to current circuits. This will result in extremely energy efficient, fast and dense AI computation in the future, ultimately fitting many more types of applications.

Coby Hanoach, CEO of Weebit Nano, said: "Artificial Intelligence is expanding rapidly. We are seeing applications in face recognition, autonomous vehicles, and use in medical prognosis, to name just a few domains. It is touching almost every aspect of our lives. Today's state-of-the-art applications use digital computers trying to simulate the ways the brain performs these tasks. However, using Neuromorphic techniques based on ReRAM technology has the potential to emulate the way the brain works, and making the computing process significantly more efficient. This has the potential to become the platform of choice for many researchers in the AI domain.

"While our focus as a company, and thus our partnership with CEA-Leti, is on standard uses of non-volatile memory, we are not neglecting the huge potential of AI in the future. CEA-Leti is a leading research institute in the domain of neuromorphic computing.



Jean-René Lèquepeys, CTO at CEA-Leti, said: "Combining CEA-Leti's artificial spiking neural networks (SNN) technology and Weebit's novel SiOx ReRAM technology may accelerate development of brain-inspired architectures and show the way to powerful new applications in AI and neuromorphic computing, starting with object-recognition capabilities. This demo is a first step towards that breakthrough."

Weebit and CEA-Leti will demonstrate this demo at CEA-Leti's booth at Flash Memory Summit 2019, booth #852, on 6-8 August, 2019 in Santa Clara, California.

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About CEA-Leti (France)

Leti, a technology research institute at CEA Tech, is a global leader in miniaturization technologies enabling smart, energy-efficient and secure solutions for industry. Founded in 1967, Leti pioneers micro- & nanotechnologies, tailoring differentiating applicative solutions for global companies, SMEs and startups. CEA-Leti tackles critical challenges in healthcare; Leti's multidisciplinary teams deliver solid expertise, leveraging world-class pre-industrialization facilities. With a staff of more than 1,900, a portfolio of 2,700 patents, 91,500 sq. ft. of cleanroom space and a clear IP policy, the institute is based in Grenoble, France, and has offices in Silicon Valley and Tokyo. CEA-Leti has launched 60 startups and is a member of the Carnot Institutes network. This year, the institute celebrates its 50th anniversary. Follow us on www.leti-cea.com and @CEA_Leti.

CEA Tech is the technology research branch of the French Alternative Energies and Atomic Energy Commission (CEA), a key player in innovative R&D, defence & security, nuclear energy, technological research for industry and fundamental science, identified by Thomson Reuters as the second most innovative research organization in the world. CEA Tech leverages a unique innovation-driven culture and unrivalled expertise to develop and disseminate new technologies for industry, helping to create high-end products and provide a competitive edge.

About Weebit Nano Limited

Weebit Nano is a leader in the development of next generation computer memory technology, and plans to become the new industry standard in this space. Its goal is to address the growing need for a significantly higher performance and lower power computer memory technology. Weebit Nano's ReRAM technology is based on fab-friendly Silicon Oxide, allowing the company to rapidly execute, without the need for special equipment or preparations. The company secured several patents to ensure optimal commercial and legal protection for its ground-breaking technology.

Weebit Nano's technology enables a quantum leap, allowing semiconductor memory elements to be significantly cheaper, faster, more reliable and more energy efficient than the existing Flash technology. Weebit Nano has signed an R&D agreement with Leti, an R&D institute that specialises in nanotechnologies, to further develop SiOx ReRAM technology.

For more information please visit: <http://www.weebit-nano.com/>

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