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Octonion Releases Expansion Package Dedicated to AI-Based Industrial Condition Monitoring on STMicroelectronics STM32 MCUs

The solution enables industrial-equipment vendors to quickly evaluate Octonion's embedded AI models, running on-device learning directly on STM32 [MCUs](#)

Lausanne and Geneva, Switzerland – November 18, 2020 -- [Octonion](#) SA, a deep tech software company specializing in Artificial Intelligence (AI) at the Edge for industrial-equipment diagnosis, announced an STM32Cube expansion package optimized for STM32L4+ microcontroller-based industrial-application development boards from STMicroelectronics (NYSE: STM), a global semiconductor leader serving customers across the spectrum of electronics applications.

Octonion's new software package supports ST's efforts to develop [Artificial Intelligence](#)-based applications running on STM32 microcontrollers and microprocessors in the fast-growing condition-based-monitoring and predictive-maintenance segments. The Octonion [I-CUBE-OCTMI](#) package delivers a self-care system running on STM32 ultra-low power MCUs and powered by Octonion's Edge AI engine that automatically learns, inspects, and monitors the health of industrial equipment throughout its operating life.

The expansion pack is optimized for the STM32L4+ development boards which include a range of ST's industrial-grade sensors and connectivity features, starting from the STWIN [SensorTile Wireless Industrial Node](#). It embeds Octonion's AI engine operating in an unsupervised mode, continuously analyzing data from an accelerometer to handle vibration analysis for condition monitoring and predictive maintenance. The engine does not require any prior knowledge of the equipment or existing dataset. It learns operational modes locally on the microcontroller to fine-tune the embedded Octonion Machine Intelligence algorithm. With all the computation done at the Edge, there are no data sent outside, eliminating possible privacy issues.

The [I-CUBE-OCTMI](#) expansion pack gives developers access to two ready-to-use algorithms: Instant Analyser for fast-response equipment-health analysis and Wise Analyser designed for equipment with frequent operational-mode changes. The expansion pack covers a wide range of industrial machines' behaviors allowing it to detect spike anomalies and extended dynamic state anomalies on motors of various power classes, including small BLDC, PMSM motors, or huge turbines.

"Developers can customize different parameters to adapt the embedded AI engine for their specific use case, balancing the quality of equipment-state recognition, its computational complexity, and the response speed," said Andrei Sheleh, CTO of Octonion.

“Octonion Edge AI engine coupled with ST’s STM32 MCUs allows any industrial organization to reduce its maintenance cost and downtime by easing and accelerating implementation of predictive-maintenance solutions with real-time machine-health monitoring on all STM32 build-in systems or on ultra-low power STM32 MCUs,” said Jacky Perdrigeat, EMEA Marketing & Application VP, STMicroelectronics.

The [I-CUBE-OCTMI](https://intelligence.octonion.com/st-expansion) is available under commercial license with free usage for evaluation and non-commercial purposes. For further information and the expansion package download, please visit <https://intelligence.octonion.com/st-expansion>.

ST’s solutions for embedded AI, including a customer-tailored machine-health monitoring application developed in collaboration with Octonion, will be presented at [ST Live Days](#), during the IoT&5G session on November 19, 2020.

For more information about machine learning on STM32 microcontrollers and application processors contact us at edge.ai@st.com

About Octonion

Founded in 2014, Octonion is a deep-tech software company providing an Industrial Machine Intelligence solution that continuously diagnoses and forecasts the machine lifecycle at the Edge. Octonion invested more than five years to research and development in the embedded AI domain, focused on sensor data analysis optimized for low power microcontrollers. Octonion team has deep expertise in unsupervised machine learning, AI model personalization, and industrial equipment behavior forecasting. Octonion has its headquarters in Lausanne, Switzerland, and operations offices in Paris, France (sales & marketing), and Minsk, Belarus (research and development). For more information, please visit: <https://octonion.com/>

About STMicroelectronics

At ST, we are 46,000 creators and makers of semiconductor technologies mastering the semiconductor supply chain with state-of-the-art manufacturing facilities. An independent device manufacturer, we work with our 100,000 customers and thousands of partners to design and build products, solutions, and ecosystems that address their challenges and opportunities, and the need to support a more sustainable world. Our technologies enable smarter mobility, more efficient power and energy management, and the wide-scale deployment of the Internet of Things and 5G technology. Further information can be found at www.st.com.

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