STMicroelectronics accelerates AI-enhanced motor control with machine-learning software pack

Pre-configured to identify normal, high-vibration, and unstable motor conditions

GENEVA, SWITZERLAND, March 9, 2026 /EINPresswire.com/ -- STMicroelectronics has released motor-control software to simplify enhancing drives with AI for optimization and predictive maintenance, ready to load on the EVLSPIN32G4-ACT evaluation board and start exploring.

AI function pack for motor control spots vibration issues before downtime

ST's machine-learning pack for motor control

The FP-IND-MCAI1 function pack helps designers navigate the workflow and tools for implementing smart capabilities in industrial drives and servos, home appliances, robotics, and diverse types of actuators. The software includes a sample application to drive a low-voltage three-phase brushless motor with field-oriented control (FOC), HAL and board-specific drivers, and a machine-learning (ML) solution for motor-behavior classification. The ML model is preconfigured to identify normal, high-vibration, and unstable motor conditions.

Providing a convenient hardware platform, the EVLSPIN32G4-ACT drives 3-phase brushless DC motors up to 250W and provides connections for a vibration-sensing module such as the STEVAL-C34KAT1 or STWIN.box multi-sensor kit. Users can parameterize and interact with the motor through the STM32 Motor-Control Software Development Kit (MCSDK) and customize the ML model using NanoEdge™ AI Studio to add their own classes.

As a reference design, the EVLSPIN32G4-ACT features the STSPIN32G4 motor-drive system-in-package, which integrates an Arm® Cortex®-M4 microcontroller, half-bridge gate drivers, bootstrap diodes, and protection in a 9mm x 9mm outline. Combining the STSPIN32G4 with a MOSFET power stage, current-sense amplifiers, and a temperature sensor, the EVLSPIN32G4-ACT can handle FOC or 6-step control and three-shunt or single-shunt current sensing. Inputs allow speed and position feedback using digital Hall sensors or incremental quadrature encoders.

The FP-IND-MCAI1 function pack is ready to download free of charge. The EVLSPIN32G4-ACT is available through distributors or from the eStore for $178.80.

ST is looking forward to meeting visitors and discussing motor control optimization and predictive maintenance with AI embedded in the driver at embedded world 2026 in Nuremberg, March 10-12. The ST booth is in Hall 4A, stand 148.

For more information on ST's presence at ew26, click here

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