



AROL Packs Smart Maintenance into Bottle Capping Machines

The Arduino Pro Nicla Sense ME and Portenta Machine Control upgrades high-speed production equipment by enabling data monitoring and predictive maintenance.

INDUSTRY

Manufacturing

ARDUINO PRO PRODUCT

**Arduino Nicla Sense ME +
Portenta Machine Control**

USE CASE

Smart Capping

APPLICATION STAGE

Production



CASE STUDY: AROL

AROL, a prominent capping and closure system manufacturer in Canelli, Italy, recognized the need for smart solutions to ensure speed and precision in their advanced capping lines. With machines capable of outputting up to **100,000 bottles per hour**, any downtime can be costly for their clients. To address this, AROL developed a machine monitoring system using remote wireless sensors for **diagnostic and predictive maintenance**.

Each rotating capping turret received a compact Nicla Sense ME module, equipped with onboard sensors for **vibration** and **temperature** detection, and **edge processing** capabilities. Data from the turrets are transmitted via Bluetooth® to a Portenta Machine Control unit mounted at the base of the equipment.

The Arduino ecosystem facilitated rapid development and testing of the solution, allowing AROL to streamline its time to market. With its open, modular, and cost-effective approach, the Arduino Pro range enabled scalability without extensive refactoring, empowering R&D teams to bring innovations from the lab to the factory efficiently.

AROL built their solution with Arduino Pro to:



Innovate with the ease and speed of off-the-shelf components



Leverage high computational power in one compact module



Build a cost-effective smart, Industry-4.0 solution

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