



Mi-CAP

Collaborative Automation Platform

The Collaborative Automation Platform (CAP) is a powerful, next-generation solution built to be an Autonomous Machine Enabler and Collaborative Management System. Tailored for industrial applications, CAP transforms how organisations capture, process, and act on real-time data.

Innovation
Partner



MIMOS
TECHNOLOGIES

Technology Overview

Mi-CAP is an intelligent modular system designed to automate, monitor, and manage operations across various devices and sites, from industrial equipment to field-based sensors.

Mi-CAP integrates:

- **MOMS (Mission Operations Management System)**
Centralised monitoring and management
- **AMEC (Autonomy Management Edge Controller)**
Edge analytics and control at site level
- **AC (Autonomous Controllers)**
Direct control at the motor or drive level

System Capabilities

- Industrial pumps and compressors
- HVAC fans and blowers
- Conveyor systems
- Manufacturing machinery
- Water treatment
- Oil & gas rotating equipment

Applications

- Industrial pumps and compressors
- HVAC fans and blowers
- Conveyor systems
- Manufacturing machinery
- Water treatment
- Oil & gas rotating equipment

Benefits

- Reduced downtime
 - Lower maintenance costs
 - Increased motor lifespan
 - Energy savings
 - Scalability
- Safety & compliance

Deployment

1. Machinery Condition-Based Monitoring



The deployment provides a real-time dashboard for motor performance and health monitoring. This setup enables operators to track operating hours, detect faults early, and ensure timely maintenance, reducing unexpected downtime and improving productivity. The dashboard highlights:

- **Machine running, idle, error, and completed task durations.**
- **Sensor readings** (air pressure, coolant, oil lubrication, overload, and power supply) for **fault detection.**
- **Status chart with time-stamped activity logs** to support operational analysis and maintenance planning.



2. Motor & Pump Condition-Based Monitoring



The deployment provides a real-time dashboard for motor performance and health monitoring. This setup enables operators to identify abnormal vibration patterns or electrical imbalances quickly, reducing unplanned downtime and supporting condition based maintenance (CBM).

The dashboard highlights:

- **Vibration severity condition** (Zone A–Good, Zone B–Satisfactory, etc.) for early fault detection.
- **Motor electrical parameters** (current, voltage per phase, active energy usage) for load balancing and energy tracking.
- **Time-stamped polled data** to support historical analysis and performance benchmarking.

3. Pump Condition-Based Monitoring



The deployment focuses on vibration analytics for rotating equipment (pumps). This dashboard allows maintenance teams to predict failures in pumps, optimise lubrication schedules, and ensure stable operation of critical assets.

The dashboard highlights:

- **Real-time charts track velocity across X, Y, Z axes** to assess dynamic performance.
- **Historical vibration trend graphs highlight severity zones** (green, yellow, orange, red), enabling clear visualisation of degradation over time.
- **Supports root cause analysis by comparing different pumps and monitoring patterns** (imbalance, misalignment, bearing wear).

