MOBILE ROBOTICS & AI

Intelligent poultry-house monitoring

QUANTITECH

UNLEASH MINUTE TECHNOLOGY BEYOND LIMITS, UNLOCK HUMAN POTENTIAL

NEOPOULTRY

Autonomous • Connected • Measurements at the bird's head



* NeoPoultry robot, standard exterior finish.

Developed by Quantitech

NeoPoultry is an autonomous robot that tours poultry houses every day to monitor environmental conditions, flock health and bird weight, without requiring a person inside the building.

It travels between feeder and nipple-drinker lines at a speed chosen to avoid frightening the birds, and sends measurements, photos and alerts to a mobile app and a supervision platform.

Benefits for the farmer

Regular, customisable tours

The same route and measurement points make days comparable. Farmers can add routes and select one for each tour.

Early health alerts

Automatic identification of suspicious visual signs on the litter, with a photo and location inside the building.

A detailed environmental view

Temperature, humidity, light and gases measured at bird level and mapped aisle by aisle.

Fewer entries into the building

Less stress for the birds and fewer biosecurity risks.

Remote monitoring

Video, tour history and robot status available from a phone or web interface.

The robot in the poultry house







Click to watch the video

Functions

All the robot's functions brought together for poultry-house monitoring.

Autonomous tour

Follows the route drawn on the building plan, travels along the aisles, changes aisles and stops in front of walls.
For the farmer: a full tour launched with one button and tracked live on a map.

Discovery mode

Scans every aisle in a serpentine pattern and builds a map of the building.
For the farmer: a ready-to-use building plan.

Health monitoring

Analyses floor images to identify suspicious droppings (a possible sign of coccidiosis).
For the farmer: an alert with an annotated photo, aisle and position; veterinary validation is possible.

Environmental measurements

Records temperature, humidity, light and gases throughout the route.
For the farmer: environmental maps by aisle and tour averages.

Weighing

Integrated weighing platform with display; bird temperature is measured during weighing.
For the farmer: the weight and temperature of each weighed bird are sent to the app.

Video and endoscope

Front, 360° and hot-pluggable additional USB cameras. An endoscope is inserted manually into the nipple-drinker line to view its interior.
For the farmer: live video, photos and videos saved on the phone.

Manual control

Phone-based joystick control to take over at any time.

⚠ **Health monitoring is an early-warning tool, not a diagnosis. Every alert must be confirmed by a veterinarian.**

Measurement reports

The robot automatically generates a daily report and a summary at the end of each flock cycle, available in the app and exportable as PDF.

Daily report

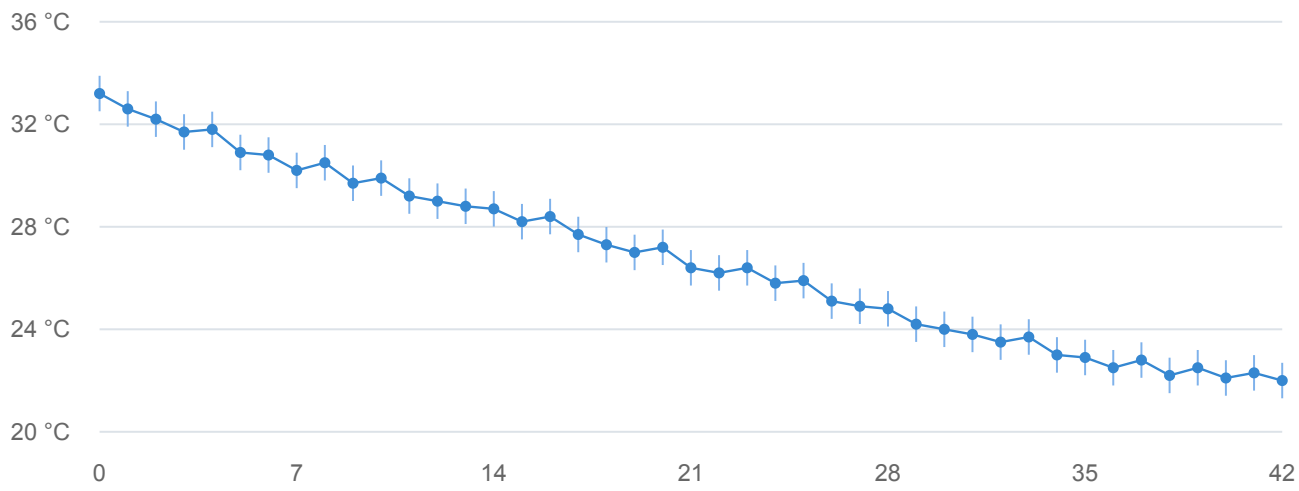
After every daily tour: all measured parameters (ambient temperature and humidity, light, gases, and the weight and temperature of weighed birds), with the mean, standard deviation, minimum and maximum for each, by aisle and for the whole building; route profiles, environmental maps and the day's health alerts with photos.

End-of-cycle report

At flock removal: day-by-day curves for the full cycle showing mean and standard deviation; comparison with target values; days and areas outside tolerance; changes in the weight and temperature of weighed birds; and a summary of health alerts.

Standard deviation shows how uniform the building is: a high value reveals areas that are too hot, too cold or poorly ventilated, even when the average is good.

Mean daily temperature and standard deviation over a cycle (example)



Illustrative simulated data • 42-day cycle • horizontal axis: flock age in days; vertical bars: standard deviation.

Technical specifications

Electric tracked platform, painted steel body and an onboard computer with AI acceleration.

8 h
Tour autonomy per charge

24 V
Battery; operating range 20.0 to 26.6 V

20 Ah / 500 Wh
Battery capacity, approximately

3 to 4 h
Recharge time, approximately

630 × 510 × 800 mm
Dimensions L × W × H

40 kg
Robot weight, approximately

120 mm
Rubber track width; turning on the spot

0,10 m/s
Default speed; adjustable from 0.06 to 0.30 m/s

0,07 m/s
Aisle-change speed

Steel • RAL 9001
Steel chassis; cream-white painted sheet-metal mast

AI + real time
AI computer and motor/sensor microcontroller

Secure Wi-Fi
Robot access point or farm network; remote access

At the bird's head
Height of the main sensors

Emergency stop
Physical control and on/off switch

360° status lighting
Status, obstacles and low battery; LED alert below 10%; robot/app battery gauge

5 kg
Weighing capacity with display

Measurements and sensors

3D perception, vision and environmental measurements at bird level.

LiDAR 3D 360°

Inertial unit, localisation and detection of walls, lines and obstacles.

Front camera

Facing the ground: health monitoring and litter video.

360° camera

On top of the robot: panoramic flock view.

USB camera / endoscope

Hot-pluggable camera displayed automatically. An endoscope is inserted by hand into the nipple-drinker line to inspect the interior and biofilm deposits.

Temperature and humidity

Environmental measurements at bird level.

Light level

Monitoring the lighting programme.

Battery voltage

Charge level and low-battery alert.

Load cell

Weighing up to 5 kg with display.

Bird temperature

Measured during weighing to identify birds with hyperthermia or fever.

Infrared lighting

Vision in low light.

Air quality

Sensitive to ammonia (NH3), carbon monoxide (CO), hydrogen (H2), formaldehyde, benzene and alcohol vapours. Also responds to smoke and certain odorous compounds. Warm-up: 3 minutes. Overall indication, without measuring each gas separately.

Ammonia option: a dedicated NH3 sensor can be installed separately, subject to a separate quotation.

All measurements are timestamped and linked to the aisle and robot position.

Safety of birds and people

The robot is designed to move among poultry without injuring or frightening them, and to stop by itself whenever conditions are uncertain.

Poultry-adapted speed

Default speeds selected from studies of chicken behaviour around robots, allowing birds to move away without collisions.

Gentle start

At the start of each aisle, the robot turns slightly from side to side to encourage birds to move away, then accelerates progressively.

Obstacle detection

Slows down, stops, then goes around a persistent obstacle; remembers low objects that have left the field of view.

Stopping before walls

Progressive slowing and stopping at an adjustable distance from the facing wall.

Dual motor shutdown

Automatic stop in less than half a second if driving commands stop, both in the computer and on the motor controller.

Emergency stop

Physical emergency stop on the robot and a stop button in the app.

Localisation checks

If the position estimate is inconsistent, the robot stops, relocalises and resumes the tour.

Status lighting

Obstacle, low battery, connection loss and error visible from a distance.

Control, supervision and remote access

The farmer controls the robot through an Android app; the manager monitors the entire robot fleet through a web platform.

Mobile app

One-button tour start and live map. Draw aisles, feeders and nipple lines on the building plan. History of measurements, weights and bird temperatures, environmental maps and alerts with photos. Live video on mobile or through the web interface; photos and videos in the phone gallery. Joystick and expert speed settings. Light or dark theme.

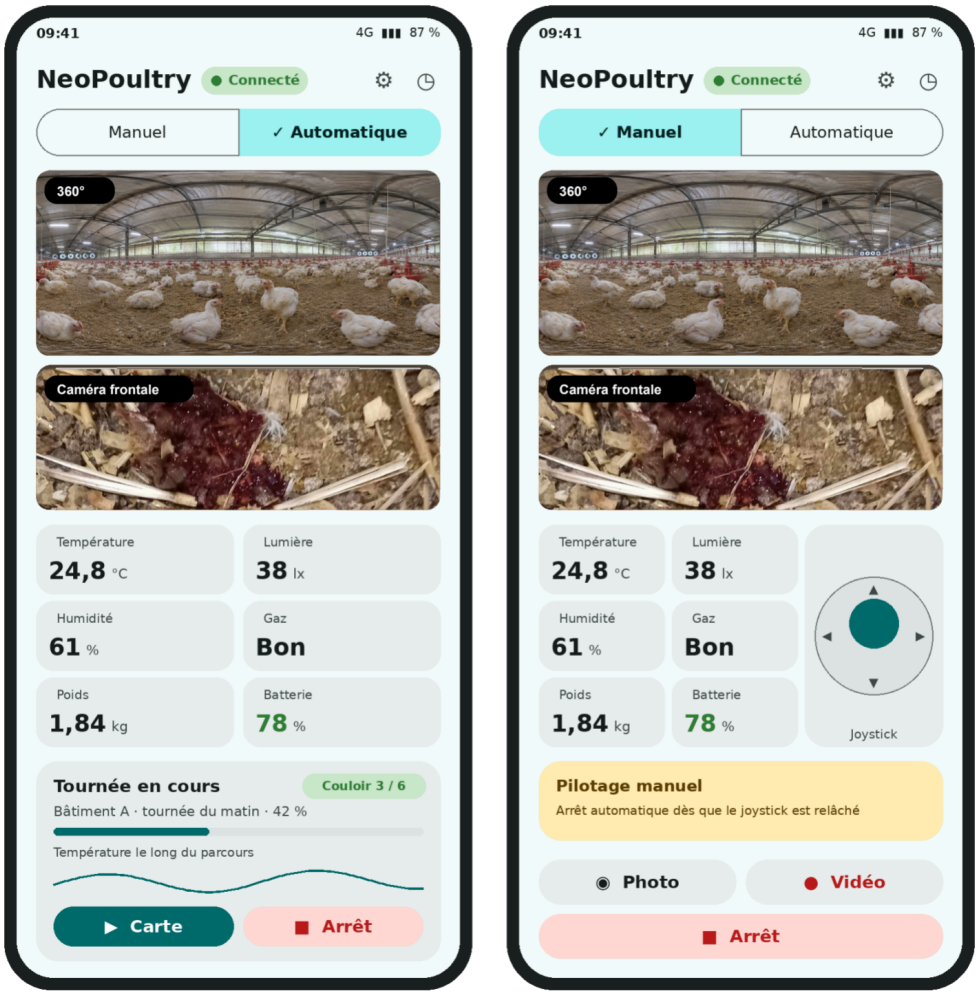
Fleet supervision

Hosted web platform with secure HTTPS access. Data synchronisation for every robot and daily backups.

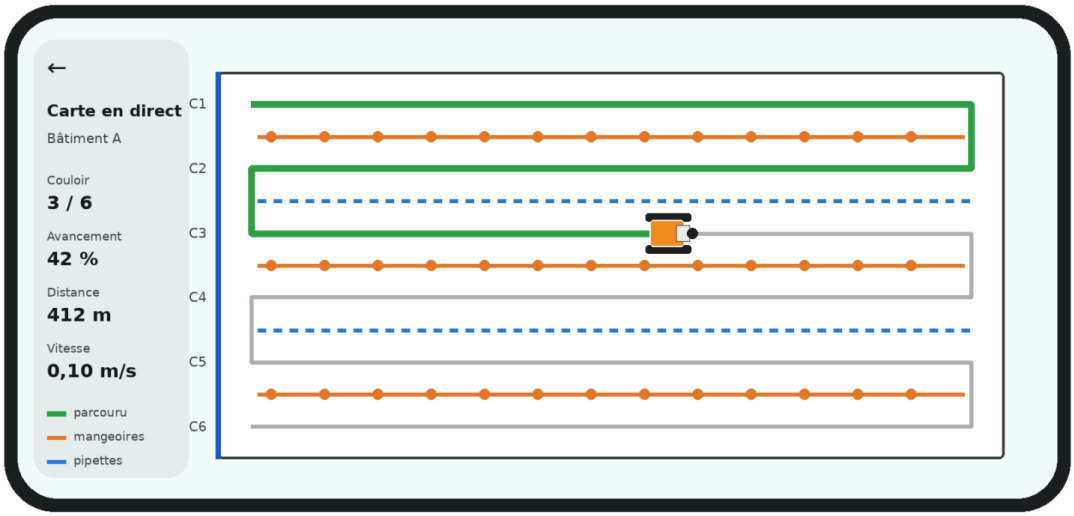
Local and remote connection

On site, the phone connects to the robot's Wi-Fi; the robot can use the phone's 4G connection for video. Remotely, an encrypted tunnel links the robot, server and phone without exposing the farm network.

Control

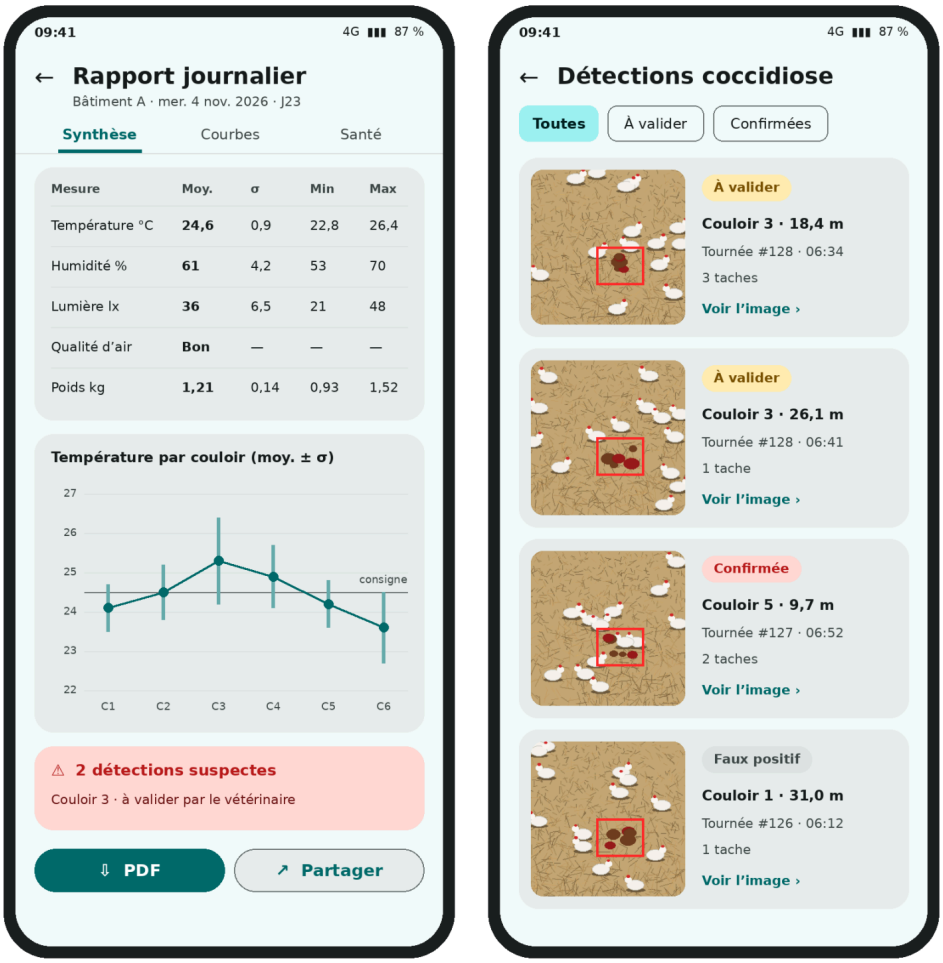


Live map



Application screens shown in French.

Daily report and health detections awaiting validation.



Application screens shown in French.

Routine maintenance

Charging

Recharge the battery between tours.

Cleaning

Clean the tracks and sensor windows.

Weighing scale

Tare from the robot; calibration offered by the NeoPoultry team.

Updates

Remote software updates without dismantling.

Technical support

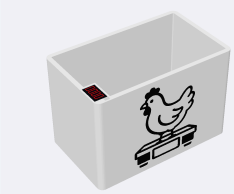
Operating log retained on the robot for 90 days for the farm team and technical support.

Options and future developments

15/11/2026

Poultry weighing enclosure

Weighing enclosure to make weight and temperature readings easier.



30/11/2026

Thermal camera, brushes and sprayer

Thermal camera: building heat mapping to identify sealing defects, leaks and cold or warm air entry.
Track brushes: automatic cleaning during tours.
Sprayer: 10 L capacity.

Continuous improvement

Health detection

A first version is already available. Improvements will be made progressively to enrich the AI model using images collected in poultry houses.

An idea?

We are ready to listen and develop it quickly.

Installation and commissioning

Commissioning is completed in one visit: building discovery, aisle mapping and the first tour.

01 • Power on

The robot starts automatically and waits for a command from the phone.

02 • Building discovery

Automatic mode or entry of an existing plan.

03 • Plan configuration

Position the feeder and nipple-drinker lines in the app.

04 • First tour

Create tours and launch the first one.

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