

M1 / URBAN



AUTONOMOUS MOBILE ROBOT
Autonomous patrol robot for the open road

-  Security
-  Highway Patrol
-  Safety
-  Open Roads

PRODUCT CATALOGUE
2026

Security

Continuous autonomous patrol of campuses, ports and industrial perimeters.

Highway Patrol

Road-legal speed and range for monitoring highways and open-road corridors.

Safety

Incident verification on site, with evidence documented as it happens.

Open Roads

Built for public streets — urban traffic rules, intersections and mixed road users.

01

THE ROBOT

M1 Urban

Autonomous patrol robot for the open road

Supports **large-scale urban security** operations, through road patrol, perimeter monitoring, incident verification, and integrated aerial surveillance.



- 01 Overview · Figures and applications
- 02 Main features · The specification, card by card
- 03 Drone Integration · Smart compartment
- 04 On patrol, around the clock · On duty

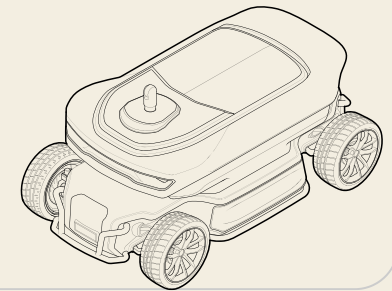


M1 / URBAN



Supports **large-scale urban security** operations, through road patrol, perimeter monitoring, incident verification, and integrated aerial surveillance.

W 2010 MM L 3620 MM H 1520 MM



Weight

1800 KG

Max Speed
Software Limited

120 KM/H

NVIDIA-powered



14h Battery
6 h Charging time



Built for the road, engineered for the mission

Every figure on these pages is the production M1 Urban's — the same specification the website carries.

L4 Autonomy

for gated communities and areas



4x In-Wheel Motors



Double Steering



Crab Steering



Supported Connection

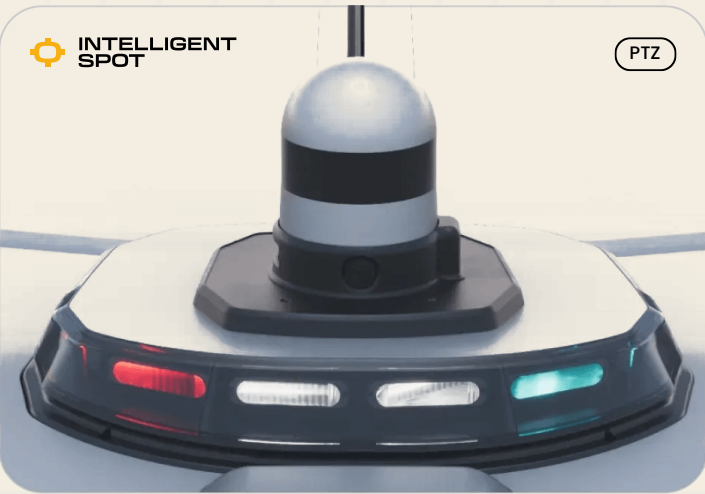


4G/5G

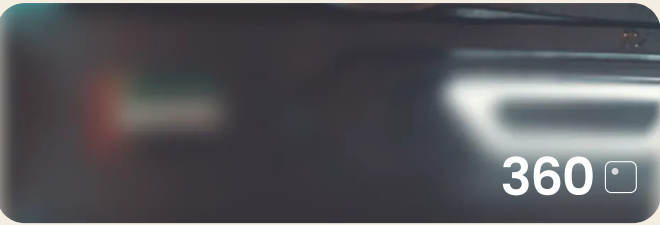
WIFI

RADIO

INTELLIGENT SPOT



PTZ



Obstacle Detection



8x Intelligent vision sensor

Payload

Up to



500_{KG}



235_{MM}

Ground Clearance



20°

Maximum Slope

Operating Temperature



-10 ~ 70_C



Drone Integration

Smart compartment

A roof compartment houses, launches and recovers a drone, so one patrol covers the ground and the air — perimeter checks from above, incident verification beyond the robot's own line of sight, and a live aerial feed into the same operator console.

 M1 URBAN

On patrol, around the clock

Fourteen hours on a charge, a 500 kg payload and a software-limited 120 km/h top speed let the M1 Urban hold a highway corridor or an industrial perimeter through a full shift — and hand over to the next robot in the fleet when it returns to charge.



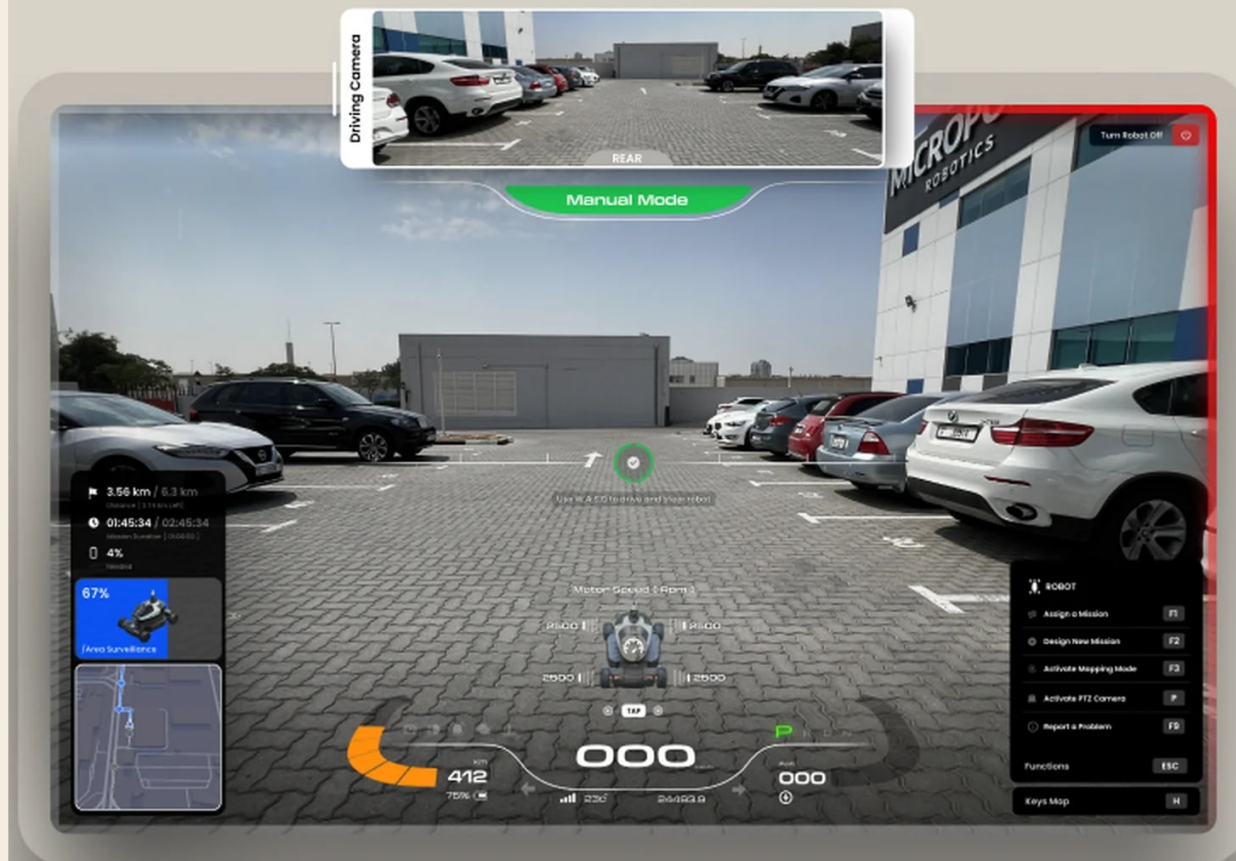
02

 CORE TECHNOLOGIES

The ecosystem behind each solution

Five platforms, one autonomy stack — developed end to end in house and shared by every Micropolis robot.

- 01** **Tele Operator** · Remote Control
- 02** **Micro Pilot** · Autonomous
- 03** **Mission Planner** · Business
- 04** **Fleet Manager** · Large Operation
- 05** **Micro OS** · Integrated HW



Tele Operator Remote Control

Command and control center that provides the operator with real-time access to the robot

TELE OPERATOR Live drive screen



Real-time telemetry



Onboard systems

Control



System Health



Live surround view



Safety warnings



Driving modes



Real-time streaming

Low latency

5G RADIO

~250ms

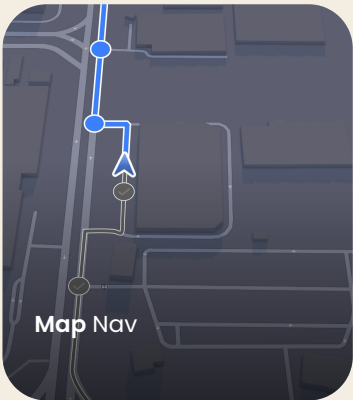
PTZ Camera control



Multi-support RC inputs

- Keyboard
- Joystick
- Customized Station

Map Nav



Diagnostics



Micro Pilot Autonomous driving

The **autonomy system** behind our robots, developed end to end in house. Sensing, localization, perception, prediction, planning and control

- 01 Sensing
- 02 Localization
- 03 Perception
- 04 Prediction
- 05 Planning
- 06 Control



Gated Stack

Autonomous

Where the constraint isn't speed, it's people. Few traffic rules apply and nobody is obliged to follow a lane. The vehicle keeps continuous close-range awareness in every direction, holds onto objects through the moments they're obscured, and treats everyone nearby as free to change direction at any time. The result is a vehicle that moves smoothly through shared space rather than hesitating at every pedestrian.



Urban Stack

Autonomous

The stack reasons about intent, predicting how road users will move and how that meets its own plan. A road understanding layer establishes the rules in force at any moment, lane structure and right of way, by checking prior map knowledge against live observation rather than trusting either alone. Planning then works within those rules the way an attentive driver does, negotiating traffic instead of merely avoiding it.



Off-road Stack

Autonomous

Off-road there are no lanes, no boundaries and no map, so the vehicle reasons about the terrain instead. It continuously judges the ground ahead: what the surface is, whether it will hold the vehicle, and what else is moving across it. Routes are chosen on that basis rather than on road structure. The result is a vehicle that works in dust, over broken ground, and across terrain nobody has surveyed.

Operations, designed and scaled

Missions are designed once, run across the fleet, and every robot boots the same in-house operating system.

MISSION PLANNER Operations, designed

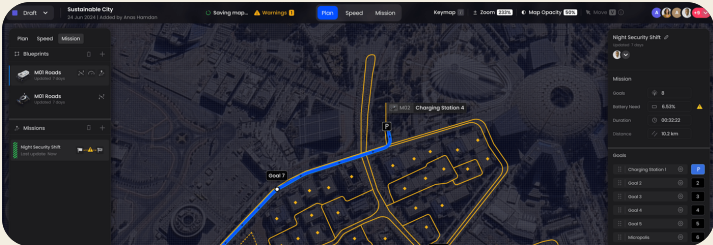
Enables operators to **design, schedule, and manage** autonomous vehicle missions

FLEET MANAGER Scale up with fleets

Centralized **visibility** and **operational oversight** across the entire robotic fleet

MICRO OS Orchestration behind the scene

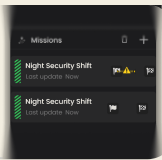
One operating system powers everything above. Our own robotics OS, shaped end to end, from the kernel to over-the-air updates



Route design



Mission schedule



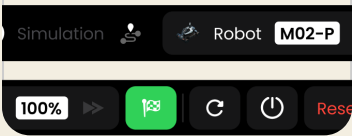
Add-ons

- Supports for different maps
- Multi-user route edit
- Customized rules per goal

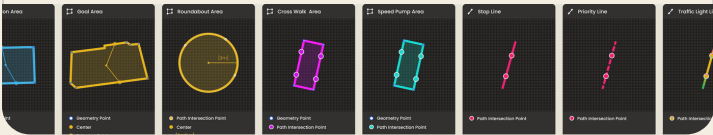
Rule-base goals



Mission simulation

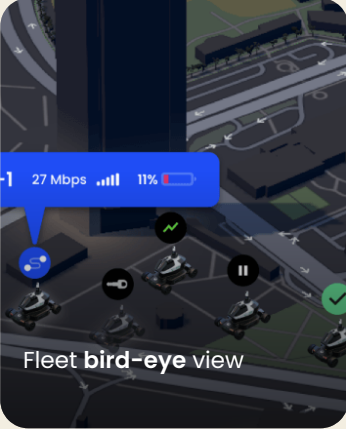


Custom traffic rules



Custom Integrations

- ERP systems
- Assets management
- Fleet management



Seamless robot onboarding



Maintenance Schedule



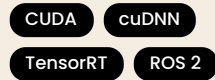
Purpose-built

Linux distribution

- One image per robot, built for its role
- Only what the application needs

Robotics at the edge

GPU accelerated



Every interface native

Kernel-level drivers

- CAN bus
- Serial & USB
- Ethernet

Fail-safe updates

Over the air



Built for developers

- SDK cross-compiled per robot
- Develop and test with no hardware in hand

03

RELATED HARDWARE PLATFORM

The platform beneath every robot

Every Micropolis robot **starts with a proven foundation** — a modular chassis engineered for its environment, payload and mission.

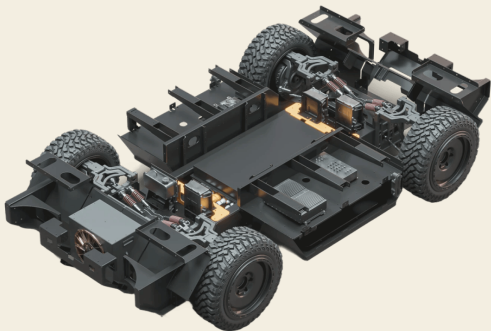


- 01 **M-Platform™** · Full Size Urban
- 02 **Mechanics** · Drive · Steer · Brake
- 03 **Electronics** · Vehicle control units
- 04 **Energy** · Battery architectures

M-Platform™ Mobility specific platforms

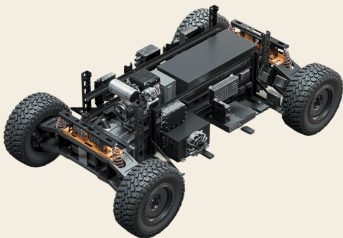
Every Micropolis robot **starts with a proven foundation** — a modular chassis engineered for its environment, payload and mission

MEGA SIZE URBAN



Maximum payload and duty cycle. A heavy-frame architecture engineered for industrial-scale loads, continuous operation, and demanding duty cycles.

FULL SIZE OFF-ROAD



Off-road and expedition-grade. A high-clearance chassis built for the harshest terrain, engineered for extended autonomous operation in unstructured environments.

FULL SIZE URBAN

Under the M1 Urban



The all-terrain workhorse. The flagship platform — balanced payload, range and agility for logistics, inspection, and security across mixed environments.

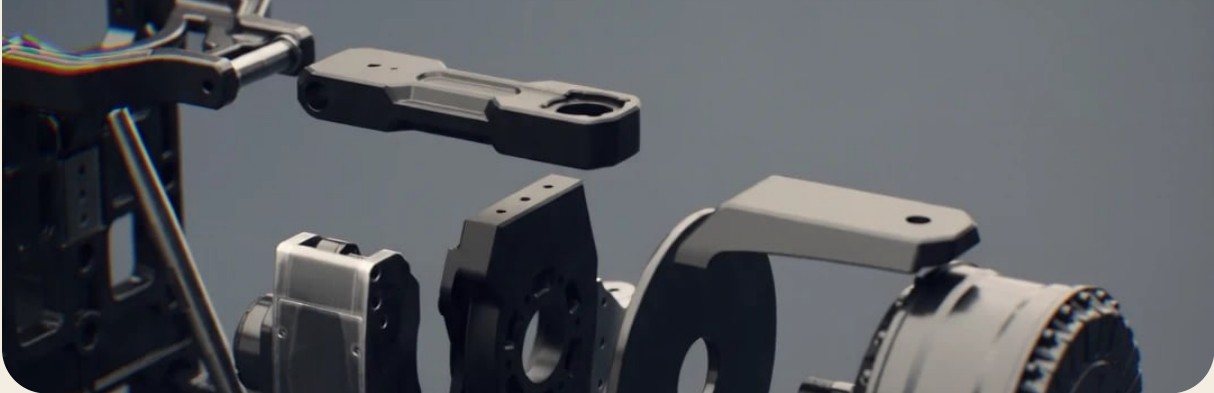
COMPACT OFF-ROAD



Speed and precision. A lower-profile chassis built for fast deployment and tight maneuvering — ideal for urban autonomy and rapid-response missions.

One chassis, your mission

Configured for your payload · Supported end to end



Drive

4x in-wheel

System voltage

400 V

Battery pack

M01 · 38.5 kWh

Payload

up to 500 kg

Mechanics Drive, steering & braking

Proprietary **electric drive, steering and braking** — one vertically integrated mobility architecture, designed and validated in house

In-wheel drive

Hub motors · 4 to 22 kW

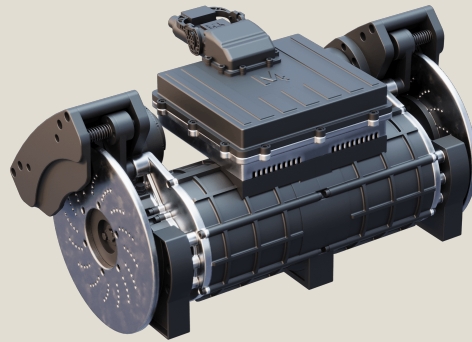
- Independent wheel control
- Torque vectoring
- Compact packaging



Mid-drive

High-torque units · 10 to 35 kW

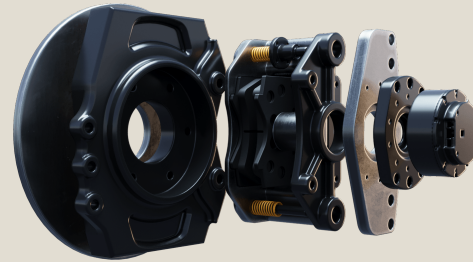
- High torque delivery
- Continuous-duty rating
- Industrial & off-road use



Brake-by-wire

Electric braking

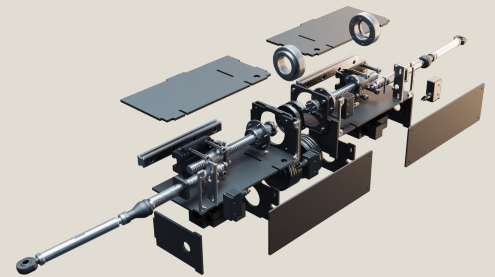
- Independent brake control
- Regenerative braking
- Fail-safe by design



Steer-by-wire

Multi-mode steering modules

- Independent wheel steering
- Multi-directional movement
- Autonomous trajectory control



Peak torque

Mid-drive, at the wheel

780 N·m

System voltages

Matched to each platform

96 V 400 V 500 V

One architecture

Full control of driving dynamics

UGV AMR OFF-ROAD

In-house, end to end

Designed, engineered, validated

DRIVE STEER BRAKE

Electronics Modularity is the architecture

Beneath every platform sits a **vertically integrated electronics stack** — power, control and compute on one deterministic CAN backbone

Master control

MCU-1.1.0®

- Real-time control algorithms
- Multi-protocol communication
- Full sensor acquisition



Auxiliary control

RCU-0.1®

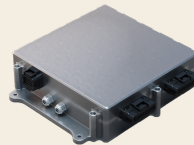
- Lights, locks & actuators
- H-bridge motor control
- Isolated I/O & CAN diagnostics



Power management

PMU-2.1®

- 24–48 V wide input
- Multi-rail regulation
- Sequencing & diagnostics



Power distribution

PDU 1.0®

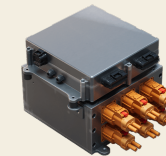
- One source, every circuit
- Integrated circuit protection
- Ruggedized connectors



HV distribution

HV-PDU 1.0®

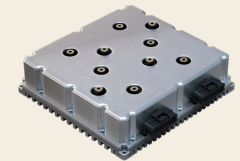
- 400–800 V DC routing
- Overcurrent protection
- Automotive-grade connectors



Motor drive

MDU 1.0®

- BLDC commutation
- Controlled three-phase output
- CAN-commanded torque



Energy Purpose-built power

Purpose-built battery architectures — LiFePO₄ chemistry, smart BMS and liquid cooling, engineered for mission-critical reliability

The battery platform

LiFePO₄ · Liquid-cooled · CAN



M2 pack

96 V system

16 kWh

M1.5 pack

96 V system

53 kWh

M01 pack

400 V high-voltage system

38.5 kWh

Inside every pack

- Smart BMS — monitor & balance
- Liquid-cooling loop
- CAN telemetry
- Multi-layer protection

Fail-safe protection

Multi-layer

OVER-CHARGE

OVER-CURRENT

SHORT-CIRCUIT

Fast charge

Maximum charging current

280 A

Range extender

EU5 & EPA certified V-twin

60 L TANK

REMOTE START

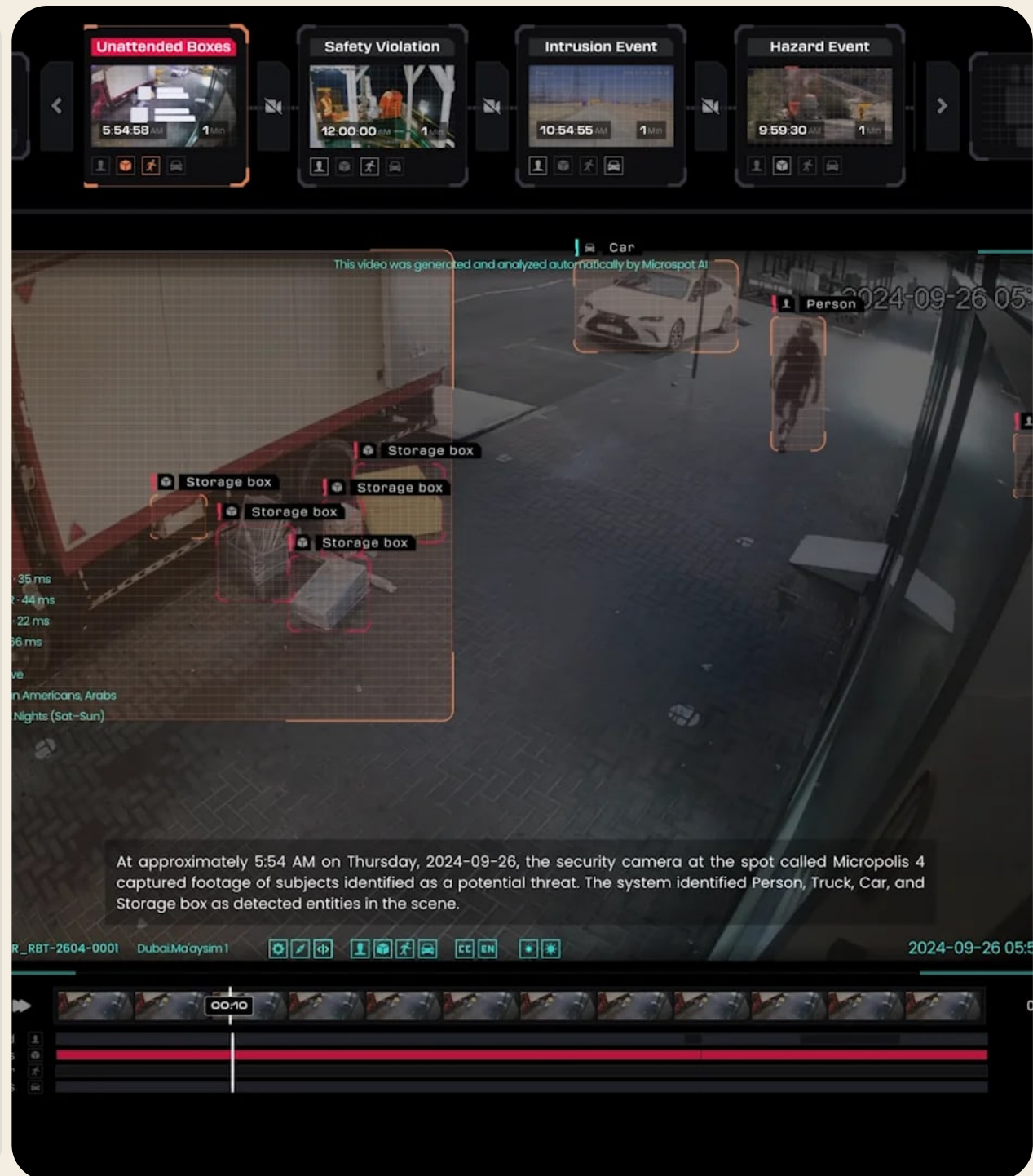
O4

INTELLIGENT SPOT

A customized AI suite for the robot's missions

AI perception and reasoning system that converts continuous video into a small number of structured, verified, and explainable events.

- 01 The platform** · What it connects and computes
- 02 Five layers** · Sixteen intelligences
- 03 In action** · Cases, and the M1 Urban's missions



AI perception and reasoning system that converts continuous video into a small number of structured, verified, and explainable events.

Observes
Identifies
Interprets
Correlates
Documents

Connect

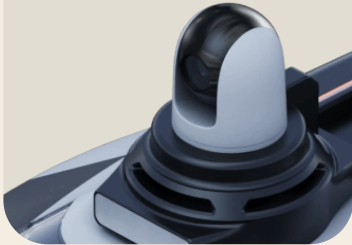


CCTV

Connect

IoT SENSORS

Micropolis Robots PTZ
Fully integrated



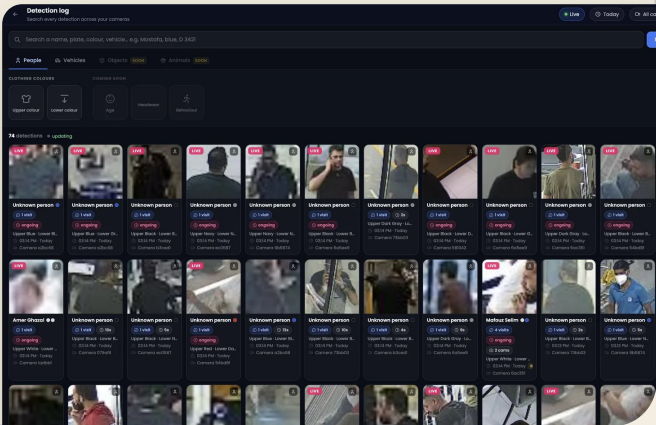
Command Support



NVIDIA-powered
EDGE Computing



Intelligent search
Historical detection logs



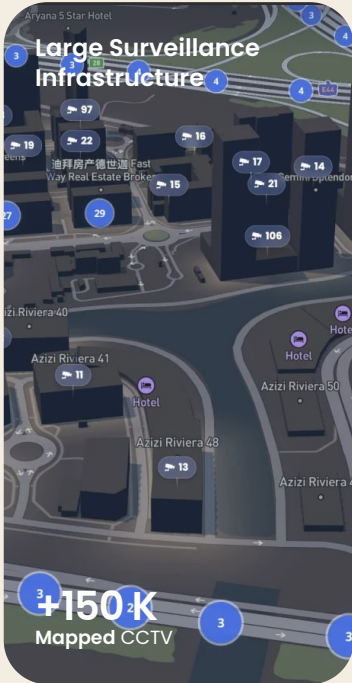
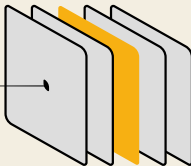
EDGE Processing



Add-ons

- + Customized event detection
- + Smart incident reporting app
- + SOP workflow builder

5 AI layers
One platform



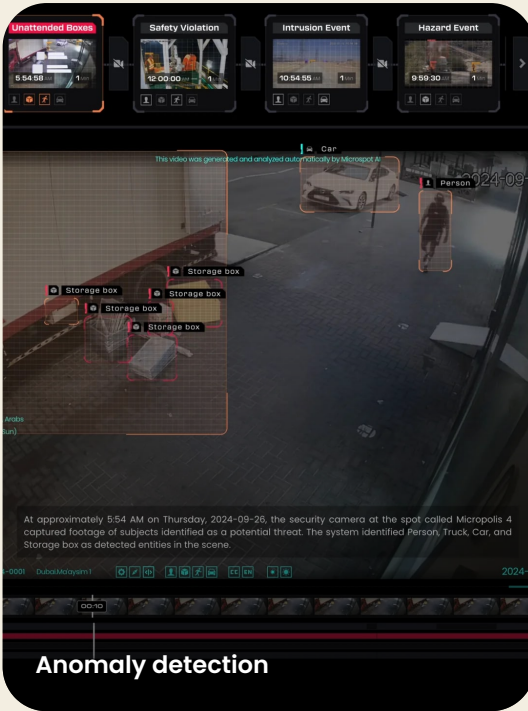
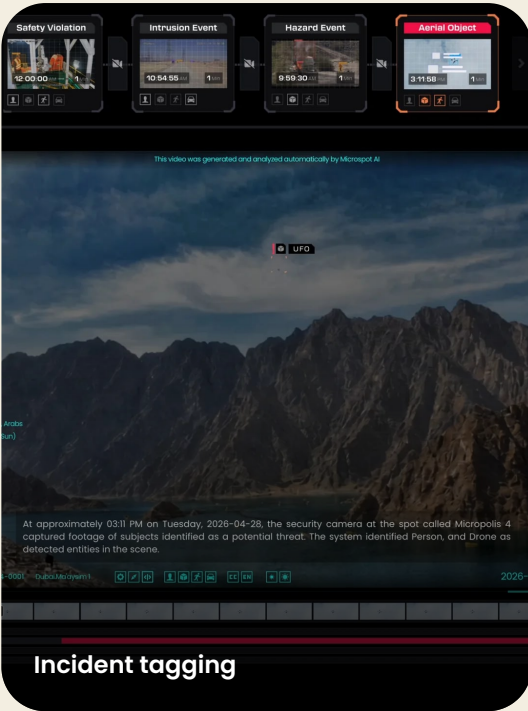
The intelligence behind the scene

Layered technology, performance focused



Intelligence in action

Some of many behavior and detection cases. Below, the layers tuned to the M1 Urban's own missions.



TUNED TO THE M1 URBAN'S MISSIONS

Mission Road patrol

- Vehicle & Access Intelligence™
- Scene Intelligence™

Every vehicle recognised, verified and accounted for along the route.

Mission Perimeter monitoring

- Intelligent Threat Assessment™
- Behavioral Intelligence™

Separating what matters from what merely moved, along the fence line.

Mission Incident verification

- Smart Event Correlation™
- AI Evidence Builder™

One incident, not four hundred alerts — documented to evidentiary standard.

Mission Aerial surveillance

- Real-Time Situational Awareness™
- Crowd & Density Intelligence™

The drone's feed read by the same layers, live, in the same console.

Connects

- CCTV
- IoT sensors
- Micropolis robots

[Inquire about your cases](#)

Turn live video, sensor data, and robotic patrol inputs into actionable operational awareness.

05

 SPECIFICATIONS

Every figure, on one page

The full specification of the M1 Urban, and how to reach us.

01 Specifications · At a glance

02 Talk to us · Contact



M1 Urban at a glance

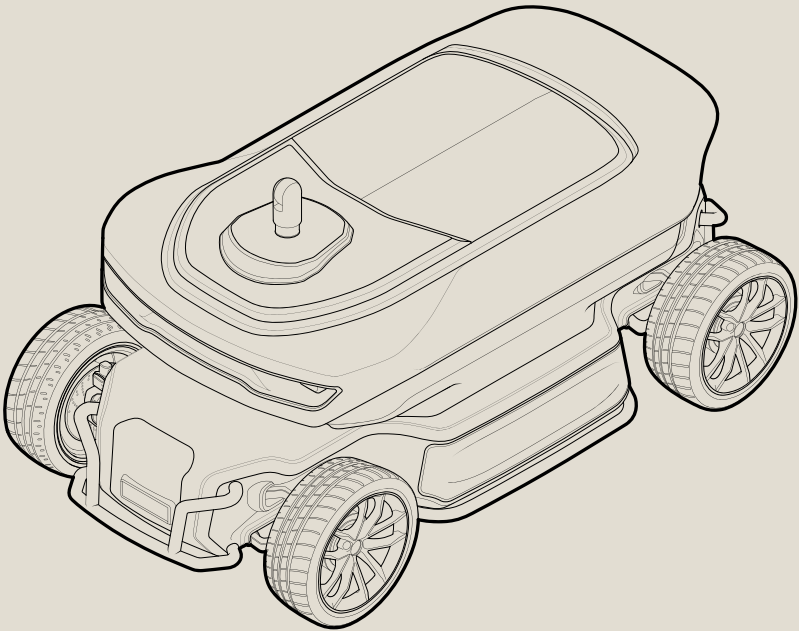
Specifications are subject to change without notice. Figures marked “software limited” are configurable per deployment.

Dimensions (W × L × H)	2010 × 3620 × 1520 mm
Weight	1800 kg
Max Speed	120 km/h, software limited
Compute	NVIDIA-powered
Battery	14h runtime · 6 h Charging time
Steering	Double & Crab steering
Obstacle Detection	360° · 8x Intelligent vision sensor

Drive	4x In-Wheel Motors
Payload	500 kg
Ground Clearance	235 mm
Maximum Slope	20°
Supported Connection	4G/5G · WIFI · RADIO
Operating Temperature	-10 ~ 70 c
Drone Integration	Smart compartment

Battery pack	M01 · 38.5 kWh · 400 V · LiFePO ₄ , liquid-cooled
Braking	Brake-by-wire, regenerative
Autonomy	L4 · Micro Pilot Urban Stack
Hardware platform	M-Platform™ Full Size Urban
Remote control	Tele Operator · 5G / radio, ~250 ms

M1 / URBAN



W 2010 MM L 3620 MM H 1520 MM



M1 / URBAN 

MICROPOLIS
ROBOTICS

Talk to us

Website
micropolis.ai

Work inquiries
info@micropolis.ai

Telephone
+971 4 276 7008

Headquarters
Dubai Production City, Dubai, UAE

NYSE American: MCRP

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