

M1 / EXPEDITION



AUTONOMOUS MOBILE ROBOT
Expedition-grade security for remote
and demanding terrain

-  Tactical
-  Defence
-  Security
-  Off-road
-  Border Control

PRODUCT CATALOGUE
2026

Tactical

Long-endurance patrol and overwatch where
crews cannot stay.

Defence

Perimeter patrol and infrastructure inspection
across large sites.

Off-road

High clearance and a hybrid drivetrain for
ground nobody has surveyed.

Border Control

Twenty hours on station, with a drone for the
ground beyond the fence.

01

THE ROBOT

M1 Expedition

Expedition-grade security for remote and demanding terrain

Supports **extended security operations across remote and demanding terrain**, combining perimeter patrol, infrastructure inspection, equipment transport, and an integrated drone system.

- 01 Overview** · Figures and applications
- 02 Main features** · The specification, card by card
- 03 Drone Integration** · Smart compartment
- 04 Twenty hours, off the grid** · On duty



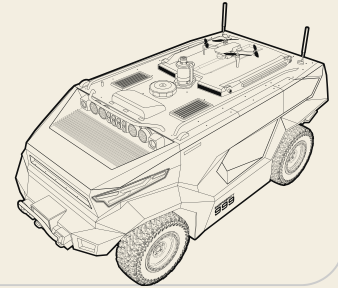


M1 / EXPEDITION



Supports **extended security operations across remote and demanding terrain**, combining perimeter patrol, infrastructure inspection, equipment transport, and an integrated drone system.

W 2280 MM L 4100 MM H 2000 MM



Weight

2000 KG

Max Speed
Software Limited

25 KM/H

NVIDIA-powered



20h Battery
2.9 h Charging time

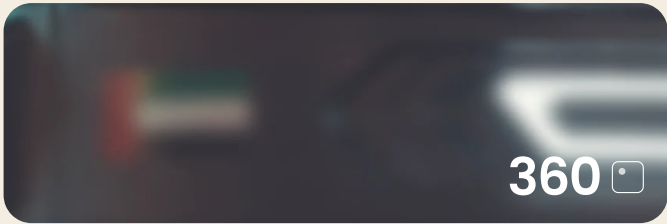


Built for the terrain, engineered to stay out

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

L4 Autonomy

for gated communities and areas



Obstacle Detection



8x Intelligent vision sensor

Hybrid System

2x Mid-drive motors + Range extender



Double Steering



Crab Steering



PTZ



Payload

Up to



750_{KG}



450_{MM}

Ground Clearance



25°

Maximum Slope

Supported Connection



4G/5G

WIFI

RADIO

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 — the perimeter from above, the far side of a ridge, and a live aerial feed into the same operator console.



M1 EXPEDITION

Twenty hours, off the grid

A hybrid system — two mid-drive motors and a range extender — carries a 750 kg payload across remote terrain for a twenty-hour shift, with 450 mm of ground clearance and 25° of slope in reserve.



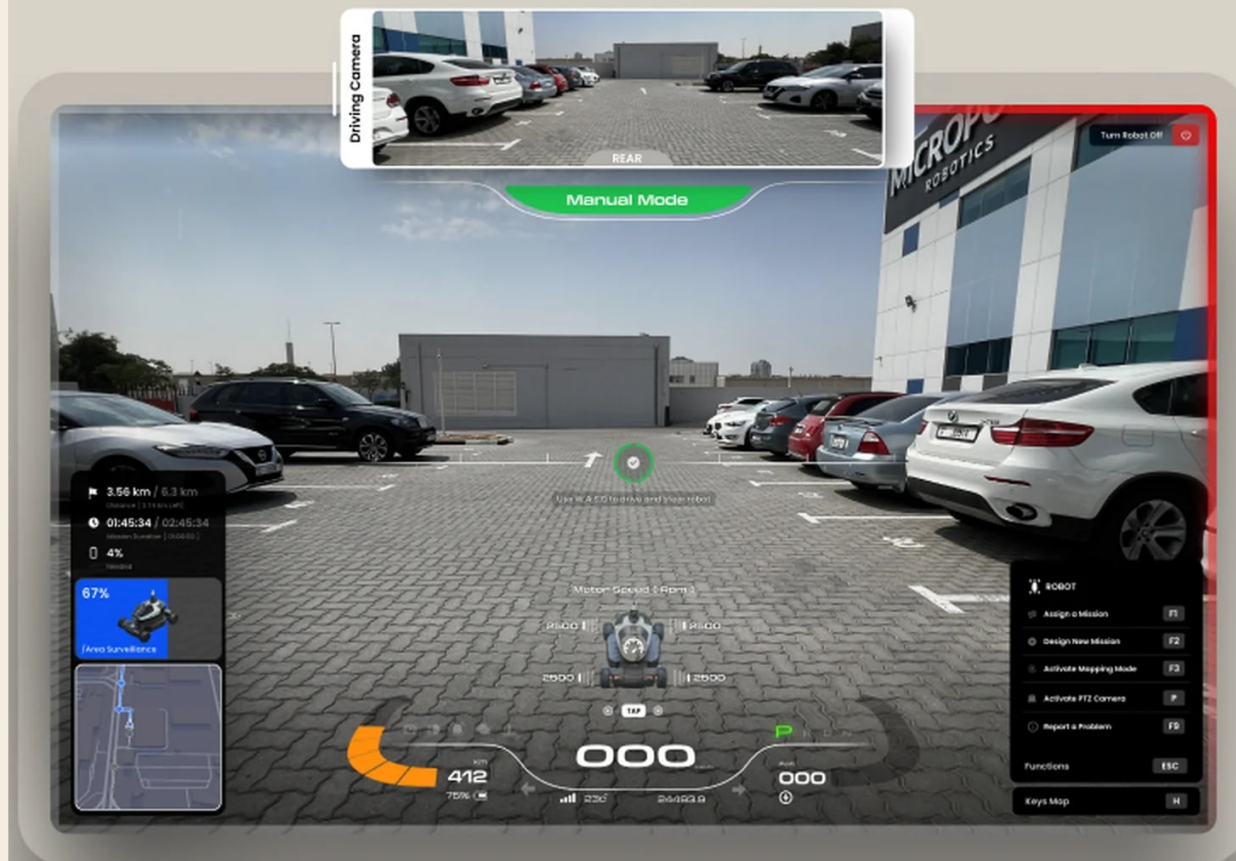
02

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

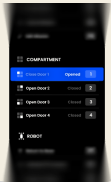


Real-time telemetry



Onboard systems

Control



System Health



Live surround view



Safety warnings



Driving modes



Real-time streaming

Low latency

5G RADIO

~250ms

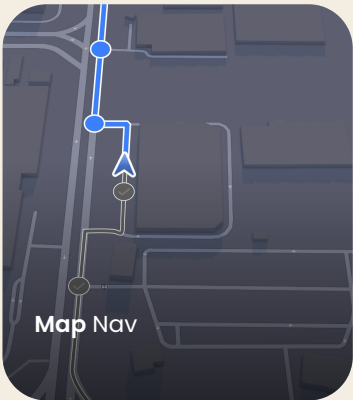
PTZ Camera control



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.



On the M1 Expedition

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

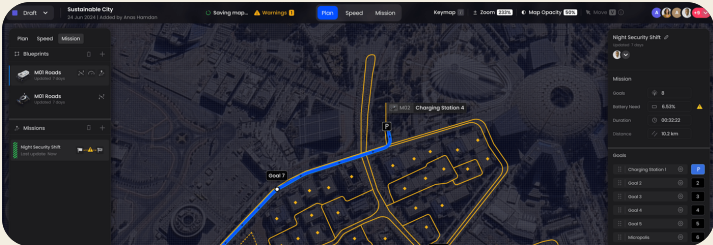
Enables operators to **design, schedule, and manage** autonomous vehicle missions

FLEET MANAGER Scale up with fleets

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

MICRO OS Orchestration behind the scene

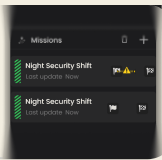
One operating system powers everything above. Our own robotics OS, shaped end to end, from the kernel to over-the-air updates



Route design



Mission schedule



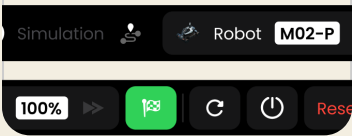
Add-ons

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

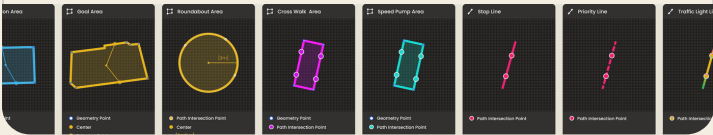
Rule-base goals



Mission simulation

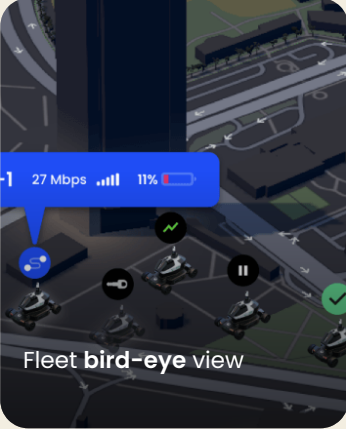


Custom traffic rules



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.

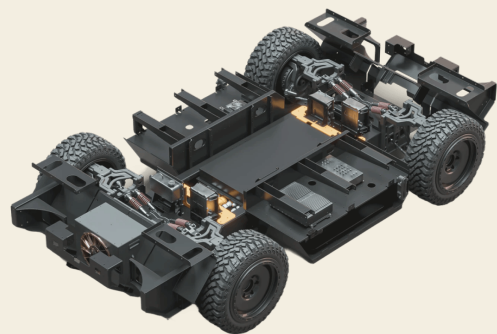


- 01 **M-Platform™** · Full Size Off-road
- 02 **Mechanics** · Drive · Steer · Brake
- 03 **Electronics** · Vehicle control units
- 04 **Energy** · Battery architectures

M-Platform™ Mobility specific platforms

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

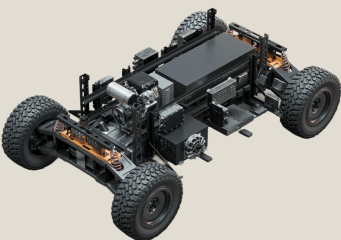
MEGA SIZE URBAN



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

FULL SIZE OFF-ROAD

Under the M1 Expedition



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



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

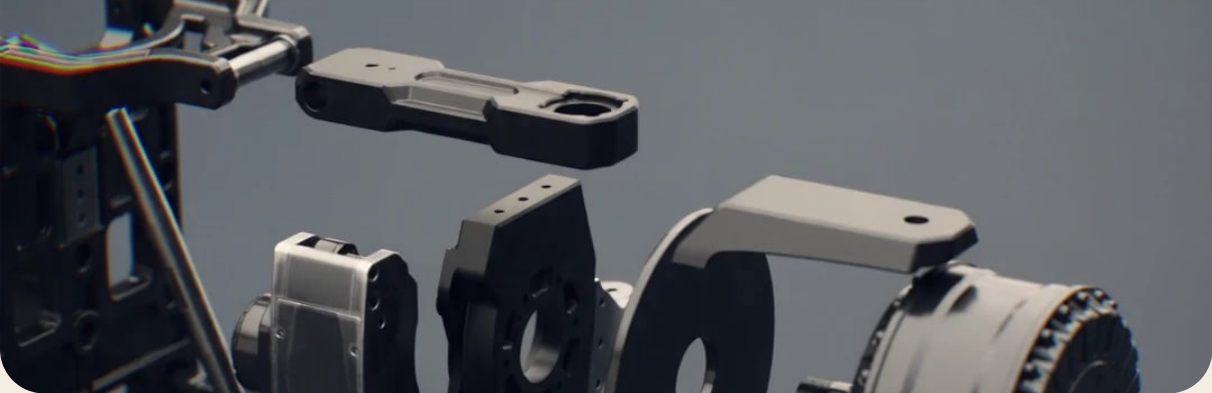
COMPACT OFF-ROAD



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

Hybrid · 2x mid-drive

Range extender

EU5 & EPA V-twin

Ground clearance

450 mm

Payload

up to 750 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

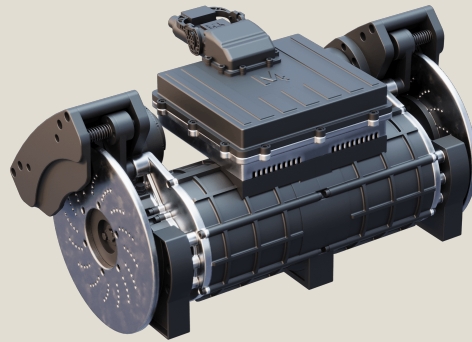
- Independent wheel control
- Torque vectoring
- Compact packaging



Mid-drive

High-torque units · 10 to 35 kW

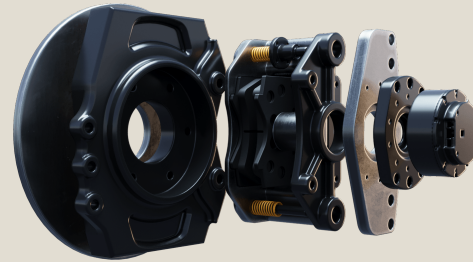
- High torque delivery
- Continuous-duty rating
- Industrial & off-road use



Brake-by-wire

Electric braking

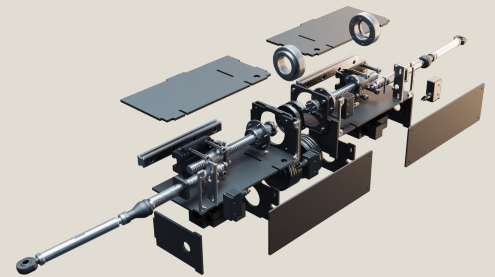
- Independent brake control
- Regenerative braking
- Fail-safe by design



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

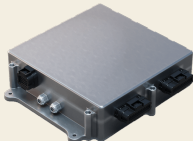
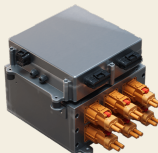
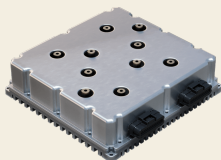
In-house, end to end

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 
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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	

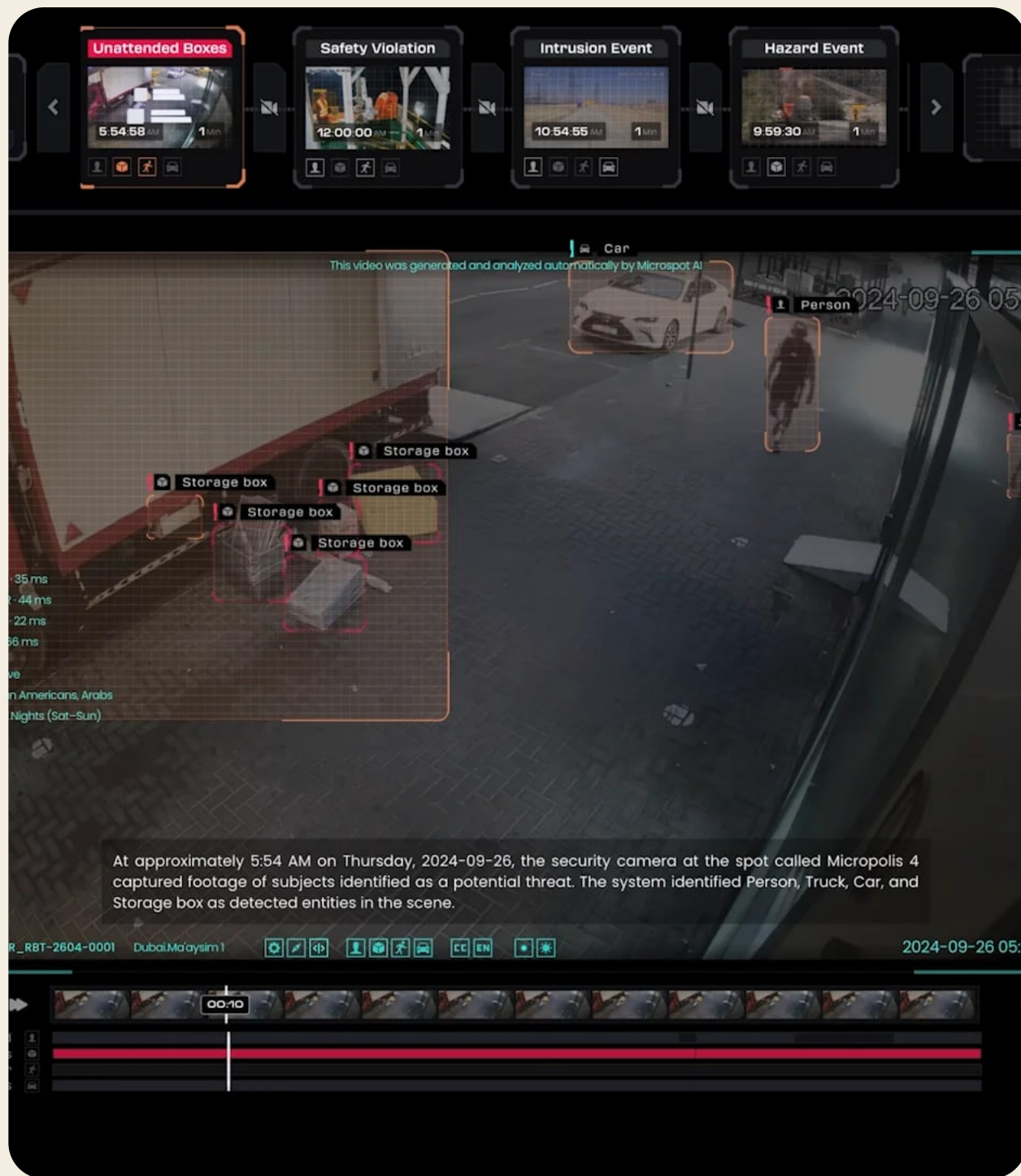
O4

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 Expedition'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

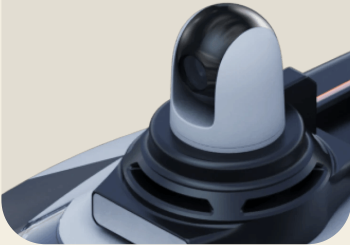


CCTV

Connect

IoT SENSORS

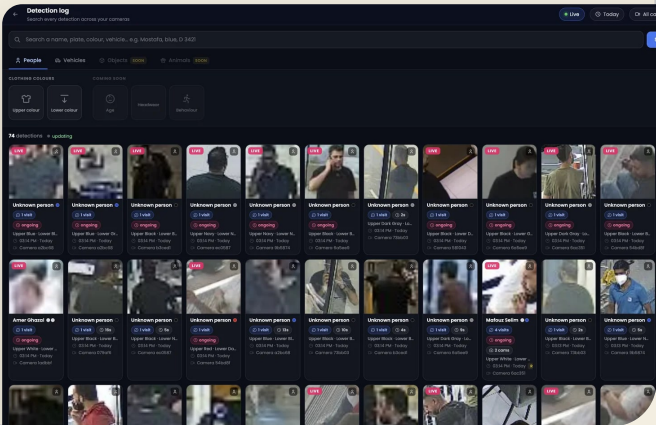
Micropolis Robots PTZ
Fully integrated



NVIDIA-powered
EDGE Computing



Intelligent search
Historical detection logs



EDGE Processing



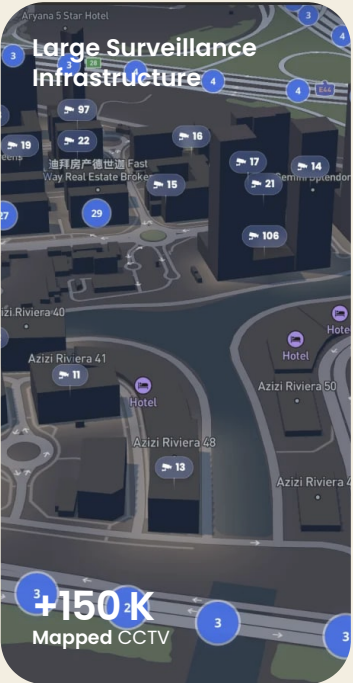
Command Support



Area tree
Folder organizer



Large Surveillance
Infrastructure



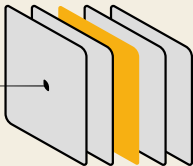
Add-ons

+ Customized event detection

+ Smart incident reporting app

+ SOP workflow builder

5 AI layers
One platform



The intelligence behind the scene

Layered technology, performance focused

Layer 01

Perception Layer

What is present in the scene?



Scene Intelligence™

Understanding the whole scene — not just the objects in it.



Behavioral Intelligence™

Recognising what people are doing, not merely that they are there.



Crowd & Density Intelligence™

Measuring crowds in metres, not pixels.



Vehicle & Access Intelligence™

Every vehicle recognised, verified, and accounted for.

Layer 02

Identity Layer

Who is present, and have we seen them before?



AI Identity Intelligence™

Knowing who is present — reliably, and with restraint.



Adaptive Face Resolution™

Recognition that knows when not to guess.



Persistent Identity Continuity™

Recognising the same person — even when you have never met them.



Identity Fabric™

One identity, consistent across every camera and every site.

Layer 03

Reasoning Layer

Does this matter, and how much?



Intelligent Threat Assessment™

Separating what matters from what merely moved.



Smart Event Correlation™

One incident. Not four hundred alerts.



Policy-Aware Sensitivity™

Security policy as configuration, not custom engineering.

Layer 04

Response Layer

What do operators see, and what can they prove?



Real-Time Situational Awareness™

See what the system sees, as it sees it.



AI Evidence Builder™

Every incident, documented to evidentiary standard — automatically.

Layer 05

Foundation Layer

How does it run affordably and sovereignly?



Adaptive AI Processing™

Run only what the mission requires.



Enterprise Edge AI™

The full platform, wherever it needs to run.

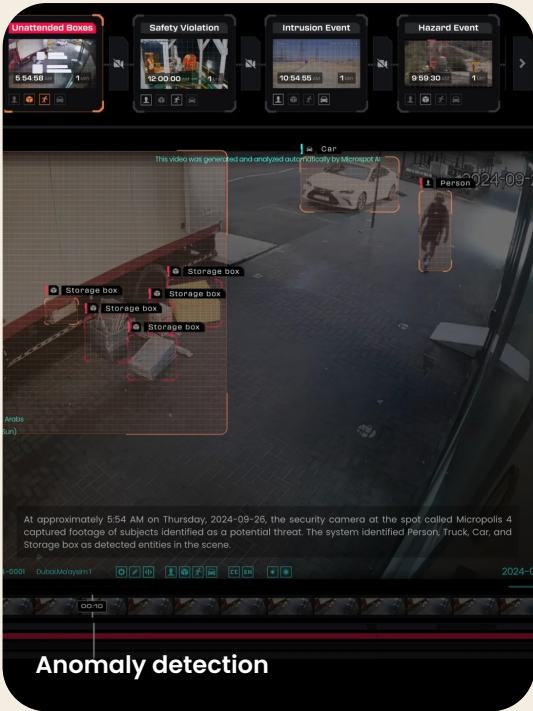
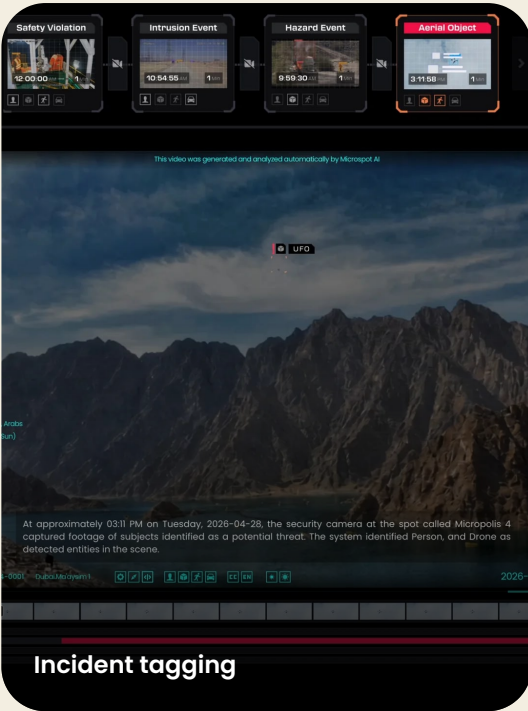


Sovereign Deployment Architecture™

Your data, your infrastructure, your jurisdiction.

Intelligence in action

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



TUNED TO THE M1 EXPEDITION'S MISSIONS

Mission

Perimeter patrol

- Intelligent Threat Assessment™
- Behavioral Intelligence™

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

Mission

Infrastructure inspection

- Scene Intelligence™
- AI Evidence Builder™

The whole scene understood, every anomaly documented to evidentiary standard.

Mission

Border control

- Vehicle & Access Intelligence™
- Persistent Identity Continuity™

Every vehicle and person recognised, and recognised again.

Mission

Equipment transport

- Real-Time Situational Awareness™
- Adaptive AI Processing™

Operators see what the robot sees, running only what the mission requires.

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 Expedition, and how to reach us.

01 Specifications · At a glance

02 Talk to us · Contact



M1 Expedition at a glance

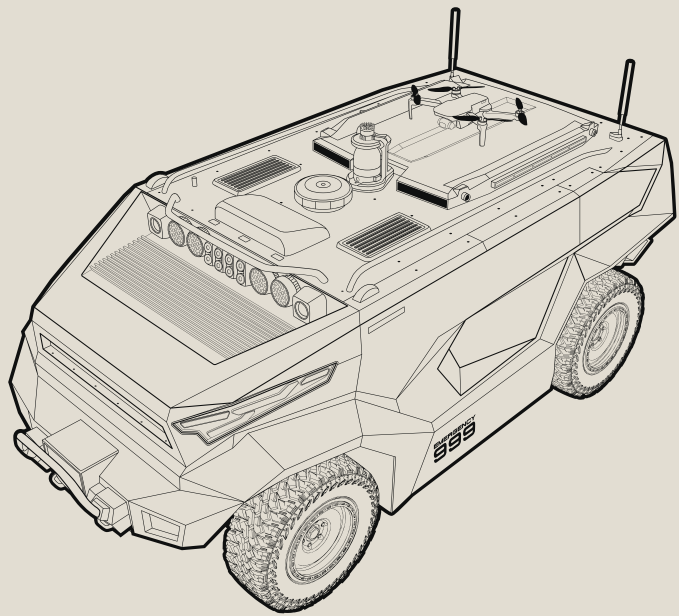
Specifications are subject to change without notice. Figures marked “software limited” are configurable per deployment.

Dimensions (W × L × H)	2280 × 4100 × 2000 mm
Weight	2000 kg
Max Speed	25 km/h, software limited
Compute	NVIDIA-powered
Battery	20h runtime · 2.9 h Charging time
Steering	Double & Crab steering
Obstacle Detection	360° · 8x Intelligent vision sensor

Hybrid System	2x Mid-drive motors + Range extender
Payload	750 kg
Ground Clearance	450 mm
Maximum Slope	25°
Supported Connection	4G/5G · WIFI · RADIO
Operating Temperature	-10 ~ 70 c
Drone Integration	Smart compartment

Drive	Hybrid system · 2x mid-drive motors + range extender
Braking	Brake-by-wire, regenerative
Autonomy	L4 · Micro Pilot Off-road Stack
Hardware platform	M-Platform™ Full Size Off-road
Remote control	Tele Operator · 5G / radio, ~250 ms

M1 / EXPEDITION



W 2280 MM L 4100 MM H 2000 MM



M1 / EXPEDITION 

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