

Autonomous Litter Collection — Robotics for Cuidem Barcelona

01 — THE CHALLENGE

Barcelona spends EUR 300 million per year on public space cleaning through the Cuidem Barcelona contract — 10% of the entire city budget. With 30 million+ tourists annually, La Rambla, the Gothic Quarter, Barceloneta beach, and 68 city parks face relentless litter pressure. The Cuidem contract itself references service robots and AI as future capabilities. BIT's budget has nearly doubled to EUR 113 million, and the EUR 435 million Pla Endreca (2025-2027) represents the largest-ever investment in public space maintenance. Meanwhile, Valencia already piloted an autonomous street cleaner in May 2025. Barcelona has the budget, the mandate, and now the competitive pressure to act.

02 — OUR SOLUTION

CleanWalker is the world's first commercial quadrupedal litter-collecting robot, engineered for Mediterranean urban conditions:

- **AI-powered detection** across 20+ litter categories (25,000+ real-world images)
- **Four-legged locomotion** navigates grass, gravel, cobblestones, sand, stairs, and ramp transitions
- **Mediterranean heat tolerance** for sustained summer operation in 35°C+ conditions
- **Sentilo/CityOS integration potential** for Barcelona's 18,000+ sensor IoT platform
- **Quiet operation** (<55 dB) suitable for residential neighbourhoods and La Rambla

Collected waste is bagged for existing collection routes — no new infrastructure required.

03 — PILOT PROPOSAL — 10 UNITS, 6 MONTHS

Deployment zones: Parc de la Ciutadella, Barceloneta beach promenade, and Gràcia district pedestrian zone

KPI	TARGET
Litter items collected per unit/day	Tracked & reported weekly
Coverage per shift	2,000-4,000 m ² /hr per unit
System uptime	>90%
Public interaction incidents	Zero
Cleanliness score improvement	Pre/post measurement in pilot zones

04 — VALUE PROPOSITION**1.5-2.5**

FTE OFFSET PER UNIT

40-60%

COST REDUCTION AT SCALE

RaaS

ROBOT-AS-A-SERVICE MODEL

Zero

HARDWARE OWNERSHIP REQUIRED

A Barcelona pilot starting in Q2 2026 produces results ready to showcase at Smart City Expo World Congress (November 3-5, 2026) — at Barcelona's own event, on Barcelona's own stage. With 850+ city delegations attending, a live CleanWalker deployment becomes the strongest possible reference for international municipal sales.

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