iOmniscient

iQ-Waste Management

Connected awareness from streets to plants



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Table Of Contents



1 Waste Overview

2 Streets, Bins and Fleet

3 Waste Plant Safety

4 Smell Detection and Analysis

5 Rodent Detection

6 Hygiene and Operations

7 Technology and System Design

8 About iOmniscient

Click a number and go to the page

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The Waste Challenge

Growing cities need connected waste operations

STREETS AND BINS

City authorities manage garbage on streets and refuse bins within facilities.

FLEET AND PLANTS

They also manage the waste removal fleet and the disposal plants.



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Waste Management Modules

Capabilities for cleaner environments and efficient operations



Overflowing Bin Detection



Illegal Dumping Detection



Bin Sorting and Collection



Waste Plant Safety



Smell Detection and Analysis



Rodent Detection



Hygiene and Operational Support



Hazardous Waste Monitoring



Smart Collection Route Optimization



Recycling Compliance

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Keep Streets Clear

Detect rubbish and illegal dumping



BIN OVERFLOW

Detect overflowing bins in real time and automatically alert waste management teams.

NEAREST AVAILABLE RESPONDER

Automatically identify and assign the nearest available waste responder. Send video of the event, an image of the garbage and its exact location directly to their smartphone.

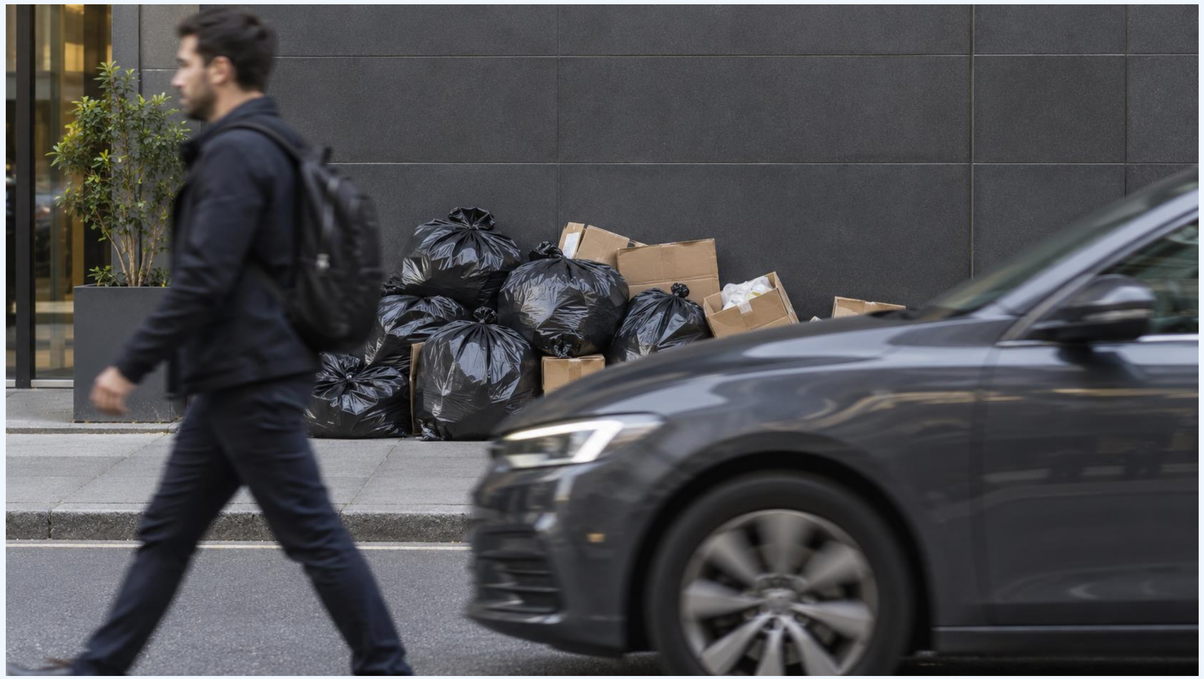
ILLEGAL DUMPING

Detect illegal dumping and identify the vehicle or person responsible.

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Garbage Detection Through Obscuration

Detect rubbish even when passing people or vehicles obscure it



INTERNATIONALLY PATENTED

iOmniscient’s garbage detection technology is internationally patented.

DETECTION DESPITE OBSCURATION

Detect garbage even when it is partially or completely obscured by passing people or vehicles for a significant period of time.

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Manage Bins and Fleet

Correct sorting, capacity and pickup

COLOURED SORTING

Ensure garbage is deposited in the appropriate coloured bags for each bin.

BIN CAPACITY

Ensure bins are not overfull and waste is not deposited outside.

FLEET

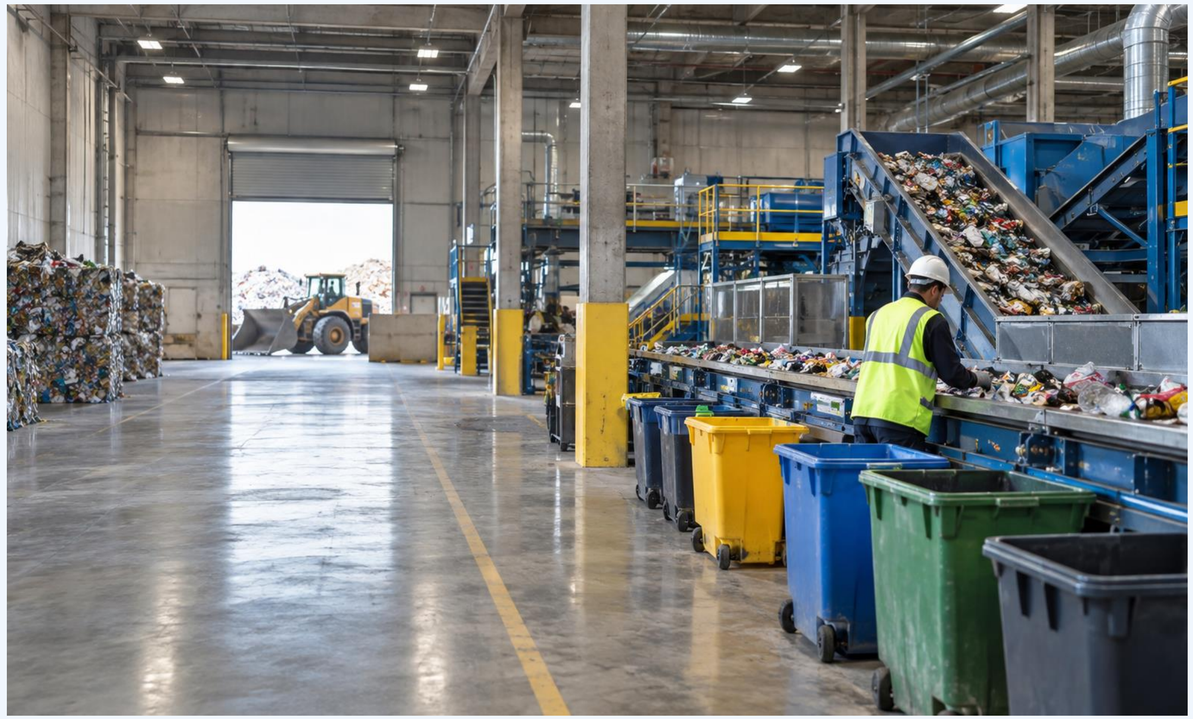
Ensure garbage vans pick up waste from the correctly coloured bins.



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Waste Plant Safety

Smell, PPE and worker safety



SMELL

Understand smells inside and on the periphery of the plant.

PPE

Ensure workers wear helmets and fluorescent vests.

SLIPS AND FALLS

Detect slips and falls inside the plant.

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Smell Detection

Real-time monitoring and early warning

CONTINUOUS MONITORING

Monitor waste disposal areas, refuse rooms and garbage dumps to detect unpleasant odors as they occur.

EARLY WARNING

Alert maintenance teams before odors become significant to help prevent community complaints and improve air quality.

CUSTOMIZABLE THRESHOLDS

Trigger automatic alerts when smell intensity exceeds configured acceptable limits.

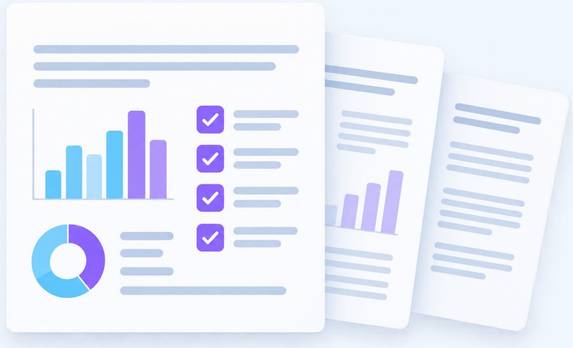


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Smell Reporting and Analysis

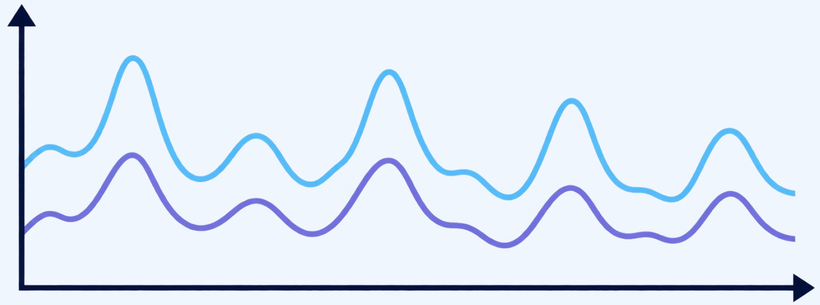
Use historical odor data to support long-term waste management decisions

AUTOMATED REPORTING



Generate odor-level reports to support compliance with local environmental regulations and odor control standards.

LONG-TERM PATTERNS



Record and analyze odor levels over time to identify recurring patterns and guide preventive measures.

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Rodent Detection

24/7 monitoring in food preparation areas



EXISTING CAMERAS

Use existing CCTV or security cameras without additional hardware installation.



INSTANT NOTIFICATIONS

Notify kitchen or maintenance staff as soon as a rodent is detected, enabling action to prevent contamination and health violations.



NON-INTRUSIVE MONITORING

Detect activity during off-hours and when kitchens are not in use.
Operate silently without disrupting daily kitchen work.



REAL-TIME DETECTION

Monitor commercial kitchens, restaurants and large food preparation areas for rodent activity.

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Hygiene and Operational Support

Maintain hygiene, review incidents and prevent disruption



PUBLIC TOILET HYGIENE

Monitor foul odors, smoking and slips in real time.
Notify cleaning staff promptly.



EVENT LOGGING AND JUMP-TO-EVENT

Record waste collection and management events for incident review. Jump-to-Event instantly retrieves the original dumping event to show who left the rubbish, even if it happened long before.



PREDICTIVE MAINTENANCE

Alert teams to potential malfunctions, including broken bins and collection vehicle problems, before they disrupt operations.

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Multi-sensory Technology

Video, sound and smell analytics with autonomous response



VIDEO

License Plate Recognition (130 countries) – including Make and Model Detection.

SOUND

Sound Analytics – 100 sounds from gunshot detection to people shouting.

SMELL

Smell Analytics – Infinite smells from gas leaks to managing toilets.

INTUITIVE AI
No Deep Learning
No GPUs, Fast Deployment

COMPREHENSIVE
Autonomous Multi-Sensory Analytics (video, sound & smell)

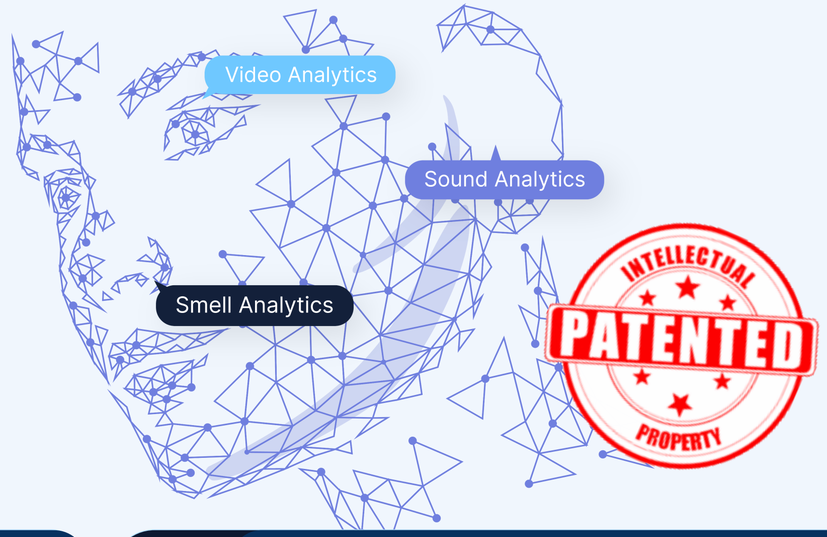
SAFETY
Privacy Protection

AUTONOMOUS RESPONSE
Reduced requirement for a control room

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System Design and Response

Advanced Multi-Sensory Analytics (Video, Sound & Smell) for Waste Management



01 COST EFFECTIVE

Uses existing
CCTV infrastructure

No GPUs
16×↓ carbon footprint

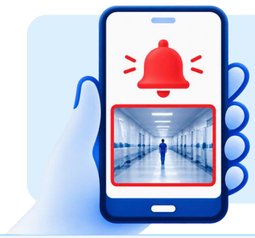
Fewer cameras
Lower-resolution cameras

90% less
Storage and network bandwidth

02 AUTONOMOUS RESPONSE

Detect › **Find** › **Respond**

When there is an event,
the system can find the appropriate responder and tell them where to go and what to do.



They do not require a large control room environment – **a smart phone becomes the control room.**

03 PRIVACY PROTECTION

All systems are privacy protected.
Privacy is never compromised even though the system is aware and can raise alerts for all issues related to safety and care.

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About iOmniscient

Partnership

All iOmniscient Products run exclusively on Intel based computing hardware using OpenVINO™

- The use of Advanced AI technology that goes beyond Deep Learning enables iOmniscient to run its systems without the need for 3rd party GPUs.
- This reduces the power required by a factor of 16 – resulting in a 16-fold reduction in the carbon footprint.
- This is just one part of a multi-faceted program to help customers to implement Sustainable Systems.

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About iOmniscient

- iOmniscient is an **Ethical AI** company.
- It offers **multi-sensory (video-sound-smell) Artificial Intelligence based analytics for Autonomous Systems.**
- It focuses on ensuring **Outcomes** for its customers.
- With **over 2 decades of experience,** iOmniscient systems have been demonstrated to be **robust,** operating with high accuracy and few false alarms specially in **complex and crowded** environments.
- By design, its systems **reduce the cost of infrastructure** required:
  - they can use existing cameras
  - they require fewer cameras with lower resolution
  - they require 90% less storage and network bandwidth
  - they are computing light and require no GPUs
  - they allow autonomous operations requiring fewer personnel to operate
- iOmniscient has implemented projects in **70 countries.**
- With over **70 international patents** many of its capabilities are unique and unavailable from any other source.





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