Application: 7137

منظومة الرصد الذكي – Eastern Province Municipality's AI-Powered Urban Monitoring – Eastern Province Municipality, Kingdom of Saudi Arabia

Page: General Information

Provide information about the company to be considered for the award. If you will be nominating an individual, specify the nominee’s employer.

Name of Organization/Company

Eastern Province Municipality

Mobile Phone Number

+966 56 371 8171

Additional Contacts

I do not wish to list additional contacts

Page: Entry Information

Entry Title

منظومة الرصد الذكي – Eastern Province Municipality's AI-Powered Urban Monitoring – Eastern Province Municipality, Kingdom of Saudi Arabia

Category

N04. Technology Breakthrough of the Year - Government Technology

Technology Breakthrough of the Year Submission Format

Written Answers

a. Briefly describe the organization that achieved the nominated technology breakthrough: its history and past performance (up to 200 words). Required

The Eastern Municipality is the local authority governing the fast-growing metropolitan area of Dammam, Dhahran and Khobar (population ≈ 2.3 million). EM’s Smart Cities & Digital Transformation Agency was formed in 2021 to translate Saudi Vision 2030 and the National Digital Government Strategy into tangible municipal outcomes. Since inception the agency has delivered more than 50 paper-to-digital public-service journeys, was ranked #1 digitally-mature municipality by the Ministry of Municipal & Rural Affairs, and won the 2024 MEA Smart City “AI in Urban Management” prize. Its newest initiative—the Smart video analytics Platform—combines computer-vision AI, drones and GIS analytics to transform how EM patrols 11,400 km of roads, 6,200 parks & public spaces and 58 critical facilities. The platform is operated by a cross-functional team of 21 municipal engineers, data scientists and enforcement officers working with innovation partners Zain KSA, Master Works and Baseer AI. Smart video analytics Platform went live city-wide in April 2025 after an eight-month agile build-test-deploy cycle and is already referenced by the National Smart Cities Unit as a replication blueprint.

b. Outline the nominated technology breakthrough. Be sure to describe it in terms that someone with limited knowledge of the technology can understand and appreciate (up to 250 words). Required

● Novel AI core. Built a low-code/no-code computer-vision pipeline that lets non-programmers drag-and-drop detection blocks—vehicles, weapons, litter, graffiti, potholes—onto live CCTV feeds, then auto-generates YOLOv8 models with transfer-learning on local datasets. Accuracy reached 93.2 mAP in only four training iterations.

● Zero-rip-and-replace. The software ingests > 11,000 existing 1080p CCTV streams through open APIs, eliminating new hardware CAPEX and cutting deployment cost by 62% versus market alternatives.

● Drone fusion. Integrated rotary drones for ad-hoc aerial audits; a single 15-min sortie maps 2 km² visual-pollution hotspots at 4 cm/px resolution, automatically pushed to the same dashboard used for fixed cameras file site turn.

● Arabic-first UX. Because 94% of field staff are Arabic speakers, the UI, alerts and analytic layers were fully localized, including right-to-left dashboards and automated Arabic SMS/escalations.

● Operational impact (pilot, Feb–Apr 2025):

○ Detected 1,324 visual-pollution incidents; average rectification time fell from 15 days to 3 days.

○ Identified morning congestion at Abdulrahman-Street roundabout; data underpinned the new adaptive-signal plan approved May 2025.

○ Flagged 14 perimeter intrusions and one theft, enabling security response within < 4 min.

● Scalable governance. A weekly technical steering committee and digital "escalation-life-cycle" were institutionalised to triage AI findings to the correct municipal departments, with KPIs surfaced on a public transparency portalfileciteturn1file5.

c. Explain why the technology breakthrough you have highlighted is unique or significant (up to 250 words). Required

Smart video analytics Platform operationalises Vision 2030's Quality-of-Life and Environment objectives, supplying quantifiable evidence for policy decisions such as dynamic traffic-signal regulations and tougher littering fines. Its cloud-on-prem hybrid respects Saudi hosting mandates and integrates with National Data Governance standards, winning rapid sign-off from the Eastern Province Digital Authority.

By leveraging sunk investment in legacy CCTV and automating 57 % of manual inspection tasks, the municipality projects annual savings of SAR 18.4 million—equivalent to the cost of resurfacing 28 km of roadway. Local startups were on-boarded via open APIs, stimulating a nascent GovTech market and creating 33 new private-sector jobs in Dammam.

Faster removal of urban eyesores, cleaner parks and safer streets have lifted resident satisfaction scores in EM's quarterly pulse survey from 3.2 to 4.1/5 (Q1 2024 → Q2 2025). Multilingual chat-bots allow residents—including 320 k expatriates—to query incident status, reinforcing trust and transparency. Accessible dashboards empower disabled employees with screen-reader compatibility.

Smart video analytics Platform sets a new GovTech paradigm by unifying fixed, mobile and aerial video into a single low-code AI fabric—previously siloed systems required separate contracts. The platform's micro-services run on Kubernetes at the edge, with automatic model

drift monitoring; retraining triggers when accuracy drops below 88 %, ensuring continuous improvement. Such architecture makes Smart video analytics Platform exportable to other Saudi municipalities in < 6 weeks.

Combined, these PEST dimensions demonstrate Smart video analytics Platform is not just an incremental upgrade but a breakthrough that redefines how governments sense, think and act in real time.

d. Reference any attachments of supporting materials throughout this nomination and how they provide evidence of the claims you have made in this nomination (up to 250 words). Optional

The nomination's claims are underpinned by a suite of supporting materials that collectively validate its impact, scalability, and community engagement:

1. Operational Impact & KPIs
Attachment (5) presents the pre- and post-deployment KPI snapshot, demonstrating a 66% reduction in non-routine behaviors, a 54% uplift in perceived safety, and a 39-to-18 minute increase in average park dwell time. These quantitative gains substantiate our assertions of improved visitor experience and operational efficiency .
2. Cost Savings & Sustainability

Attachment (5) details financial metrics showing a 68% cut in patrol costs and full ROI within nine months, confirming claims of sustainable cost-efficiency without ongoing capital investment .

3. Scalability & Technical Resilience
Attachment (5) outlines the modular architecture (Milestone + Ipsotek AI), underscoring the system's plug-and-play expansion model, minimal maintenance, and 85% reduction in camera-downtime, which supports our assertions about robust, future-proof design .
4. Enhanced Monitoring & Response

Attachment (5) contrasts intermittent human patrols with real-time AI alerts, showing response times slashed from hours to minutes and a 68% drop in operational expenditure, directly evidencing our claims of smarter, faster field interventions .

5. Community Engagement & Transparency
○ The official live-demo video (YouTube, April 2025) vividly illustrates the dashboard's real-world alert workflows.

○ The KPI snapshot & on-ground footage shared on Eastern Municipality's X account (May 29 2025) highlights immediate behavioral improvements in situ.

○ The Saudi Press Agency bulletin (May 30 2025) confirms the platform launch and early statistical successes.

○ The Instagram community reel (June 1 2025) showcases citizen interactions with AI-driven insights, reinforcing our narrative of enhanced civic trust and participatory governance.

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Would you like to add an additional supporting document?

No

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