Intelligence Briefing: Robotic Police Technology

Critical Emerging Trends

- Integration of AI, biometrics, IoT, and big data has transformed surveillance into proactive smart ecosystems capable of anticipating and responding to threats (<u>Spotter Security</u>).
- Robotic technologies including drones and swarm systems are rapidly advancing for surveillance, reconnaissance, and precision operations with reduced human risk (<u>The SVI</u>, <u>Aerotime</u>).
- Biometric tools such as facial recognition, fingerprint, and voice scanning are becoming widespread across security and payment systems, raising privacy and ethical concerns (Business Case Studies, Jurist).
- There is increasing use of internet surveillance and large-scale data collection by governments and entities, intensifying privacy challenges (Security Online).



Al in Video Surveillance Market: \$14.62B by 2029 CAGR 21.0%



Internet Surveillance & Data Collection by Governments, ISPs, Corporations increasing through 2025

Biometric Technologies (Fingerprint, Facial, Voice Recognition) widely adopted in Digital Payments by 2025



 The evolution of space-based assets, including satellite constellations, is expected to enhance surveillance and navigation, but may also introduce vulnerabilities and inter-state tensions (<u>The Economist</u>, <u>SpaceNews</u>).

Key Challenges, Opportunities, and Risks

- **Challenges:** Balancing effectiveness of robotic and AI-enabled policing with protection of civil liberties and privacy rights; mitigating ethical risks from mass biometric surveillance; managing escalating aerial threats like hostile drones.
- **Opportunities:** Leveraging advanced robotics and AI to enhance situational awareness, reduce personnel risk, and improve rapid response; deploying coordinated drone swarms for comprehensive area monitoring; utilizing big data analytics for predictive policing.
- **Risks:** Potential misuse of surveillance technology leading to wrongful investigations and mass surveillance incompatible with democratic values; vulnerability of surveillance networks to disruption by adversaries; proliferation of advanced drone and laser weapons in hostile contexts.

Scenario Development

• **Best Case:** Ethical deployment of AI-enabled robotics and biometric systems with robust governance safeguards privacy and rights while exponentially improving policing capabilities; drone networks provide comprehensive, low-risk surveillance supporting rapid threat neutralization.

- **Technologically Advanced but Contentious:** Robotic policing technologies widely adopted, improving efficiency but sparking significant public pushback over privacy; regulatory frameworks lag behind technology, causing operational and reputational risks.
- **Fragmented Landscape:** Uneven adoption of robotic policing and surveillance leading to capability gaps; adversaries exploit regulatory and technological weaknesses; elevated risk from hostile drones and space-based asset disruptions.
- **Worst Case:** Widespread misuse of biometric and robotic surveillance leads to systemic rights violations and loss of public trust; adversarial drone and laser weapon attacks degrade surveillance infrastructure; robotic technology undermined by ethical, legal, and operational failures.

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