# Arrest on Demand: Using Traffic and Vehicle Analytics to Predictably Intercept Offenders

A DXC Technology White Paper for Public Sector Officials and Police Forces

# Introduction

**The evolving landscape of public safety and traffic enforcement**

The mission of public safety agencies and police forces is undergoing a fundamental transformation. As societies become more complex and interconnected, so do the challenges of maintaining order, enforcing laws, and securing borders. Traditional reactive methods, while foundational, are increasingly strained by the volume, speed, and sophistication of modern criminal activity, traffic violations, and cross-border threats. The ability to move beyond mere response to proactive prediction and precise interception – enabling an "arrest on demand" capability – is no longer a futuristic concept but an operational imperative.

At DXC Technology, we are at the forefront of this evolution. We understand that effective enforcement in the 21st century demands intelligent, data-driven solutions that leverage cutting-edge technology to predict, rather than just react. This white paper outlines how advanced traffic and vehicle analytics, powered by Artificial Intelligence (AI) and integrated platforms, can enable public sector officials and police forces to predictably intercept offenders, significantly enhancing public safety, operational efficiency, and overall national security.

# The current market

**Fragmented Systems and Escalating Challenges**

Today's enforcement agencies grapple with a landscape often characterized by:

- **Siloed Operations**: Many agencies operate with fragmented, stand-alone systems for tasks like speed enforcement, red-light monitoring, and border control. This leads to inconsistent data, limited interoperability, and an inability to gain a holistic view of vehicle movements and potential threats.
- **Reactive Posture**: Traditional methods predominantly focus on reacting to incidents after they occur. This consumes valuable resources, often results in missed opportunities for early intervention, and can be less effective against highly mobile offenders or organized crime networks.
- **Increasing Data Volume and Complexity**: The sheer volume of vehicle traffic and associated data is overwhelming manual processes. Agencies struggle to efficiently process and extract actionable intelligence from millions of daily passages, especially with growing cross-border movements and diverse vehicle types.
- **Compliance and Privacy Concerns**: Strict regulations like GDPR and national data sovereignty requirements demand robust, auditable systems that protect personal data while enabling effective enforcement. Ensuring legal defensibility of evidence collected through automated means is also a constant challenge.
- **Resource Constraints**: Public sector agencies are under pressure to do more with less. Manual intervention in routine violations or investigations diverts critical human resources from higher-priority tasks.

These challenges highlight a clear market need for integrated, intelligent, and scalable solutions that can overcome fragmentation, automate routine tasks, and provide predictive insights.

# Market direction

**Intelligent, predictive and interconnected enforcement**

The future of enforcement is defined by several key trends:

1. **From Data Collection to Predictive Intelligence**: The market is rapidly shifting from simply collecting data to transforming raw information into actionable, predictive intelligence. This means leveraging AI and Machine Learning (ML) to identify patterns, detect anomalies, and even forecast potential threats based on geo-temporal vehicle data. This capability is central to achieving "arrest on demand," allowing agencies to anticipate where and when interventions are most likely to be effective.
2. **Integrated and Modular Platforms**: The demand for modular, yet fully integrated, solutions will only grow. Agencies seek platforms that combine various enforcement modalities (e.g., speed, red-light, ANPR, Weigh-in-Motion) into a unified system, ensuring seamless data flow and comprehensive coverage.
3. **Cloud-Native and Edge Computing Architectures**: To handle massive data volumes in real-time, the market is moving towards scalable cloud deployments and edge computing applications. Cloud-native architectures provide the flexibility and resilience needed to support fluctuating demand and ensure continuous operation (e.g., 99.9% system uptime achieved in our deployments). Edge computing will enable real-time incident detection and dynamic enforcement with ultra-low latency, pushing intelligence closer to the source of data capture.
4. **Enhanced Legal Metrology and Evidence Chains**: With increasing automation, the criticality of legally defensible evidence chains becomes paramount. The market demands systems that adhere to statutory accuracy standards, employ certified workflows, automated labelling, and rigorous verification processes. This ensures transparency, accountability, and the integrity of case processing, safeguarding both public trust and legal outcomes. Auditing capability is essential such that a third party can verify the audit trail and the validity of the evidence.
5. **Interoperability and Cross-Agency Collaboration**: Future enforcement ecosystems will be highly interconnected. API-driven modular integration and adherence to standards like DATEX II, BOF, UTMC, and NTCIP are essential for seamless communication between diverse systems and external services, fostering collaboration across police, customs, and road authorities.
6. **Sustainability and Privacy-by-Design**: Environmental consciousness and robust privacy protection will remain key market drivers. Solutions must be energy-efficient and incorporate privacy-preserving techniques from conception, ensuring GDPR compliance throughout the entire data lifecycle.
7. **Smart City Integration**: Enforcement will increasingly integrate into broader smart city infrastructures, extending beyond traditional traffic management to environmental monitoring and multimodal transport, contributing to a more holistic approach to urban safety and efficiency.

# DXC Technology

### Meeting current and future market needs

DXC Technology is excellently positioned to address the evolving demands of this market. Our deep expertise in intelligent transportation and enforcement, coupled with our strategic vision and partnerships, enables us to deliver solutions that are not only robust and reliable today but also future proof for tomorrow.

Our comprehensive Sentinel Suite and partnership with Myriade's metaBOF™ are direct responses to these market needs. They represent the culmination of years of experience in designing, implementing, and operating mission-critical ANPR systems in complex, multi-agency environments across Europe.

- **Modular and Integrated**: DXC-led integrated solutions unify disparate enforcement modalities into a single, cohesive platform, eliminating data silos and fostering a comprehensive view of traffic and vehicle data.
- **AI/ML Driven Predictive Analytics**: We leverage advanced AI and ML algorithms for superior pattern recognition, anomaly detection, and predictive capabilities, moving agencies from reactive to proactive intervention. Our system integrations boast high recognition accuracy (95-97%) even across diverse international vehicle plates.
- **Scalable and Resilient Cloud Architecture**: Cloud-native, containerized architectures support flexible scaling and high availability, ensuring continuous operation and efficient processing of millions of daily vehicle passages.
- **Robust Legal & Ethical Frameworks**: Built-in legal metrology, validated evidence chains, automated auditing, and privacy-preserving tools ensure compliance with national and international regulations, guaranteeing the legal defensibility and ethical operation of the system.
- **API-Driven Interoperability**: Adherence to industry standards and API-driven integration enable seamless data exchange and collaboration between various public sector entities, streamlining enforcement workflows and enhancing inter-agency coordination.
- **Proven Track Record**: Our successful deployments demonstrate tangible outcomes, such as reduced accident rates (up to 50%), increased traffic throughput (5%), and rapid alert generation (sub-four seconds), showcasing our ability to deliver impactful results.

# Conclusion

The future of public safety hinges on the ability to foresee and pre-empt. The market demands intelligent, integrated, and predictive enforcement solutions that empower agencies to move beyond traditional boundaries.

By combining cutting-edge technology, a deep understanding of operational requirements, and an unwavering commitment to data security and legal compliance, DXC Technology equips public sector officials and police forces with the tools necessary to achieve "arrest on demand." We empower agencies to anticipate threats, optimize resources, and ultimately, build safer, more secure communities. DXC Technology stands ready as your trusted partner to navigate this transformative journey, delivering solutions that meet and exceed the current and future market needs of intelligent enforcement.

**William Needham FBCS** • DXC ANPR Lead, UK&I

William is a senior manager in DXC's Public Sector business in the UK. His career in citizen safety includes holding responsibility for services and systems in welfare protection, border security and police.

**Pim Alders** • DXC CTO, IoT, Data & AI

Pim is CTO of DXC's Internet of Things and AI technologies based in the Netherlands. He has been responsible for DXC's ANPR implementations in Norway, Ireland, Belgium and in the Netherlands where DXC invented the world's first average speed camera system.

**Jan Meermans** • CEO Myriade NV

Jan is the CEO and owner of Myriade NV, a Belgium-based company with more than 30 years of expertise in digital asset management.

Since 2007, Myriade has been developing and operating metaBOF™, an AI-powered ANPR platform. Today, metaBOF™ has the largest customer base worldwide and is fully technology-agnostic.