

Harnessing AI for IoT Mission Readiness

Transforming Defence, Justice and Security Operations



Our Approach

Integrated: Unifying data across multiple systems and domains.

Fast to Value: Rapidly configurable through prebuilt, templated use cases.

Disciplined: Leveraging existing infrastructure, avoiding costly rip-and-replace.

Trusted: Already deployed in Critical National Infrastructure.

Compliant: GDPR, PII redaction, and sovereign-by-design assurance.



This Solution Brief Explores

The strategic drivers for AI-enabled transformation.

The challenges leaders face across defence, justice and security.

How SiYtE's capabilities directly enable these strategies.

Operational use cases, from Smart Bases to secure prisons and coalition readiness.

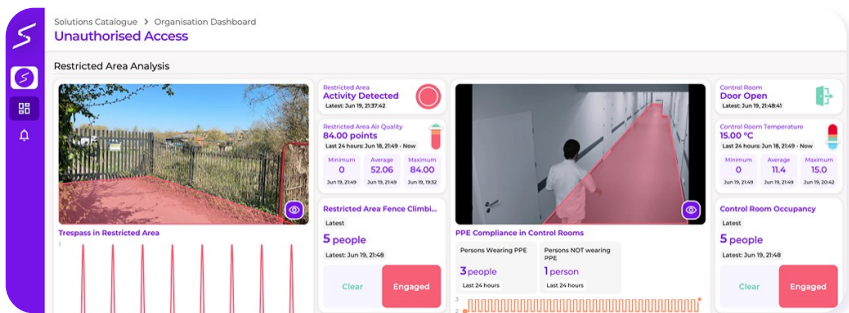
Executive Summary

Across defence, justice and national security - leaders face an urgent imperative: deliver greater readiness and resilience with fewer resources, faster adaptation to emerging threats and uphold uncompromising standards of compliance and security.

The UK's new defence strategy sets the tone for integrated, outcome-focused operations and disciplined modernisation - pressures that are equally critical for justice and security organisations.

Purple Transform began in rail safety, helping Network Rail harness AI to address trespass, rockfall and safety-critical issues. From these foundations, the company has expanded into utilities, public safety, justice and defence - becoming a trusted partner for critical infrastructure and security. Today, Purple Transform is backed by strategic alliances with Intel and Cisco and trusted by organisations such as Network Rail and the British Transport Police (BTP).

At the core is SiYtE, the secure and intelligent platform that unifies real-time data, applies AI-driven analytics and embeds compliance and sovereignty by design. SiYtE transforms fragmented systems into an integrated, mission-ready fabric for defence, justice and security.



AI can deliver significant security and operational benefits - but only if it unifies and leverages data across existing systems. It not only detects critical events but builds the intelligence to predict and prevent them.

The call to leaders is equally clear: the challenges are urgent, the solutions are proven, and the mission requires action now.



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“At Purple Transform, our mission is to help defence, justice, and government organisations operate more efficiently, effectively and securely in an increasingly complex world.

Our AI-powered SiYtE platform is the result of years of research, engineering and operational partnerships. It reflects our commitment to supporting organisations like the UK MoD, NATO, the MoJ, policing agencies and allied partners achieve real outcomes: improved readiness, greater resilience and smarter use of resources.

The new defence strategy - emphasising integration, rapid adaptation and disciplined technological leadership - aligns seamlessly with our approach. These principles are equally critical for justice and security, where integration, compliance and rapid response are paramount. By embedding interoperability, predictive insight and cyber assurance into every layer of SiYtE, Purple Transform enables practical, scalable transformation.

But transformation is not just about technology. It is about building trust, fostering integration and delivering lasting impact. Proven across critical national infrastructure - such as rail, energy, public safety and policing - SiYtE is built with compliance at its core, serving as a secure foundation for the mission needs of tomorrow.

This is just the beginning. Together, we can redefine what it means to be mission-ready in the digital age.”

A Message from Purple Transform Leadership

Why Now?

Integrated, Outcome-Focused Operations

The MoD is shifting away from rigid procurement towards outcome-led integrated services. This approach facilitates the harnessing of AI systems that can bridge silos across critical infrastructure.

Rapid Adaptation and Deterrence

The Ukraine conflict shows agility is decisive: systems must be both agile and open. The same agility is critical in justice and security, where environments shift rapidly and consequences are immediate.

Technological, Financially Disciplined Leadership

The new strategy demands innovation that is both effective and efficient:

- Enhancing existing assets with AI and IoT intelligence - avoiding rip-and-replace of existing systems.
- Demonstrating cost savings demonstrated across industries.
- Scaling modularly so investment aligns with operational needs.





The Challenges

Data Fragmentation: Undermines integration and joint outcomes.

Reactive Decision-Making: Hinders rapid adaptation and deterrence.

Workforce Pressures: Demand for more output with fewer resources.

Security and Sovereignty: Critical to resilient, sovereign operations.

Procurement Risk Aversion: Requires trusted, compliant, field-tested solutions.

SiYtE's Capabilities

SiYtE addressed these challenges in a way that is both agile and open - unifying fragmented data and integrating with existing systems.

Making “Dumb” Infrastructure Smart

SiYtE works with both legacy infrastructure (cameras, sensors, PLCs, SCADA systems), as well as the latest smart technologies. This reduces costs, accelerates deployment and maximizes return on investment - creating a truly intelligent operational fabric.

Real-Time Situational Awareness: AI-driven aggregation of CCTV, IoT, and system data into secure dashboard for “whole system” analysis

AI-Enablement of CCTV Systems: transforming any camera into a 24/7 AI sensor for security and safety monitoring.

Fast to Value: Maximising by using existing investments (cameras, sensors, and infrastructure) alongside the newest technologies for faster outcomes.

Configurable Dashboards & Workflows: Flexible UI delivers role-specific views and automated alerts.

Predictive Analytics: Foresight into incidents (violence, suicidal behaviour) asset failures, risk scenarios and mission needs.

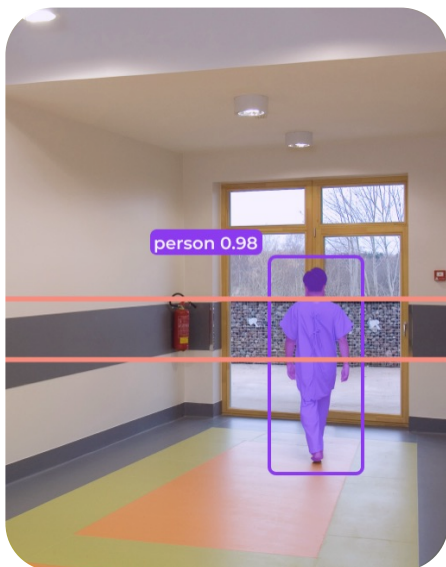
Agile Deployment: Scenario templates aligned with compliance enable rapid rollout.

False Alert Reduction: AI-driven verification minimises wasted time and resources.

Right Data, Right People, Right Time: Multi-channel alerts (SMS, email, app, API) ensuring timely, actionable insights.

Secure & Compliant: Sovereign data handling, GDPR alignment, and embedded PII redaction.





Secure Facilities Management (Justice)

Safer Environments, Stronger Compliance, More Efficient Operations

Real-time monitoring safeguards staff and detainees.

Automated compliance records reduce administrative burden.

GDPR-aligned redaction ensures lawful use of video and sensor data.

Adaptive response workflows mirror the resilience required in defence.

Examples: Detection of anomalous behaviour, people in restricted areas, drones on the perimeter.

Smart Base Operations (Defence)

Enhanced Resilience, Lower Costs, Greater Survivability

AI-driven perimeter security with 24/7 alerting.

Energy and resource optimisation to reduce carbon footprint.

Predictive maintenance for utilities and infrastructure.

Integrated monitoring enhances survivability under contested conditions.

Ensures compliance with environmental and data-handling regulations.

Examples: Overcrowding detection, PPE compliance, air quality monitoring to sustain operational readiness.



Fleet & Assets Readiness (Defence)

Outcome: Higher availability, stronger deterrence, reduced lifecycle costs

Predictive analytics prevent downtime and extend service life.

Agile combat employment enabled by faster, data-driven logistics.

Secure, compliance-ready reporting ensures integrity across the asset lifecycle.

Examples: Automated detection of anomalies in vehicles or equipment enables pre-emptive action.



Key Takeaways

Aligned with Strategy:

Directly supports UK priorities for defence, justice, and security.

Proven Technology: Already deployed across rail, utilities, energy, policing and public safety.

Integration, Not Replacement: Works with existing infrastructure to deliver immediate impact.

Mission-Ready Capabilities: AI-driven dashboards, predictive analytics, use-case builder, and edge-enhanced video.

Compliance by Design: GDPR, PII redaction, and sovereign data handling.

Trusted Delivery: Used in national critical infrastructure, built for resilience.

Fast to Value: Combines legacy and modern technologies for accelerated operational and financial benefits.

Customer Validation: Endorsed by Network Rail and British Transport Police with measurable safety and efficiency gains.

Proof of Value: Structured pathway to demonstrate outcomes and savings before scaling.

Conclusion

The future of national resilience depends on integration, agility and disciplined modernisation. Purple Transform's SiYtE platform is purpose-built for this moment: secure, adaptive, compliant and proven across critical national infrastructure.

By working with Purple Transform, leaders can achieve immediate, measurable outcomes that align with the strategic priorities of defence, justice and security. Through a structured proof-of-value engagement, organisations can:

- Validate integration with existing systems without disruption.
- Demonstrate tangible gains through predictive maintenance, anomaly detection, and compliance automation.
- Quantify cost savings in energy, maintenance, and operations.
- Provide leadership with evidence that modernisation can be both effective and fiscally disciplined.
- Achieve faster time to value by leveraging both existing technology investments and the newest solutions.

This is the low-risk, high-impact pathway from strategy to capability - and capability to readiness.

We invite senior leaders in defence, justice and security to engage directly. A structured proof-of-value engagement is the most effective way to demonstrate how SiYtE can deliver outcomes in your operational environment.

- See first-hand how existing systems can be transformed into an integrated, intelligent fabric.
- Gain rapid, evidence-based insights into readiness, compliance and efficiency improvements.
- Build executive confidence that modernisation can be delivered with fiscal discipline and minimal disruption.

Spaces are limited due to the close collaboration required. We encourage you to take the next step now.

For further information or to explore a proof of value engagement: tim@purpletransform.com



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