

Intelligent Transport Systems (ITS)

Brochure

Road to the Future of Smart Mobility

Reimagining urban movement through intelligence, connectivity, and sustainability.



SYNNECT



Overview

IMobility defines the rhythm of modern cities. With growing populations and complex transport demands, there's an urgent need for systems that are smart, secure, and sustainable.

Synnect Intelligent Transport Systems (ITS) integrate artificial intelligence, advanced sensors, data analytics, and automation to orchestrate the seamless movement of people and goods. These solutions empower municipalities, transit agencies, and logistics operators with real-time visibility, predictive control, and data-informed decision-making — all designed to improve safety, reduce congestion, and enhance quality of life.

“Smart mobility isn't just about faster journeys — it's about intelligent movement that connects people, purpose, and progress.”

Our Vision

To build connected, efficient, and inclusive transport ecosystems that serve communities first, enabling every journey to contribute to a more sustainable and prosperous world.



Synnect ITS Framework

The Synnect ITS framework is built on four guiding pillars that drive innovation and reliability:

Pillar	Focus	Impact
Cybersecurity Advisory & Governance	Risk assessments, policy frameworks, and maturity modelling aligned to ISO 27001, NIST CSF, and POPIA.	Unified governance and measurable resilience.
Identity & Access Management (IAM)	Zero Trust enforcement, MFA, SSO, and privileged access management to secure digital identities.	Reduced insider threats and unauthorised access.
Threat Intelligence & Security Operations	24x7 threat monitoring, SIEM integration, and AI-driven analytics for proactive defense.	Predictive visibility and accelerated incident detection.
Cloud & Infrastructure Security	Architecture reviews, workload hardening, and compliance validation for multi-cloud environments.	Hardened infrastructure and continuous compliance.

Core Capabilities

Synnect's framework is built on a continuous five-phase lifecycle that ensures protection, preparedness, and improvement over time:

- **Advanced Traffic Management Systems (ATMS)**

Transform traditional intersections into dynamic, intelligent corridors. ATMS utilises AI-driven signal optimisation and predictive modelling to reduce congestion, enhance safety, and lower emissions.

- **Advanced Public Transport Management Systems (APTMS)**

Deliver reliability and precision in public transport. Real-time fleet tracking, scheduling, and route optimisation ensure on-time performance and increased passenger satisfaction.

- **Advanced Traveller Information Systems (ATIS)**

Empower commuters with real-time journey information through digital displays, mobile apps, and online dashboards. With data integration across modes, travellers can plan efficiently and travel with confidence.

- **Advanced Parking Management Systems (APMS)**

Simplify urban parking through automated detection, guidance, and payment integration. Drivers are directed to available spaces, reducing city congestion and fuel waste.

- **Automated Fare Collection (AFC)**

Modernise ticketing with contactless payments, QR codes, and mobile wallets. AFC ensures unified, cashless, and transparent fare management across multiple modes of transport.

- **Commercial Vehicle Operations (CVO)**

Optimise freight movement with digital permits, real-time vehicle tracking, and compliance automation. CVO enhances logistics efficiency and road safety across corridors.

Transverge™: The Intelligence Behind ITS



At the core of Synnect's ITS lies Transverge™, an AI-powered platform that connects every system, sensor, and data stream into one operational intelligence layer.

Transverge™ serves as the orchestrator — ensuring all components of the ITS ecosystem communicate seamlessly, enabling operators to manage, monitor, and optimise the entire network in real time.

Key Features of Transverge™ include:

- Unified control centre dashboard
- Predictive analytics for congestion and incident management
- Real-time integration with IoT and sensor networks
- Automated event detection and alerting
- Multi-modal coordination (bus, taxi, rail, freight)
- Scalable architecture adaptable to regional or national rollouts

Transverge™ transforms fragmented systems into a single, intelligent mobility grid — the digital heartbeat of every smart city.

Stakeholder Value

- **City Planners** - Actionable insights for urban mobility planning and investment decisions
- **Transport Authorities** - Reliable operations through real-time monitoring and predictive control

- **Fleet Managers** – Streamlined maintenance, routing, and scheduling through data automation
- **Commuters** – Real-time information and seamless travel across modes
- **Operators** – Integrated command view for incident management and network optimisation
- **Executives** – KPI-driven dashboards for sustainability, performance, and economic outcomes

Benefits

- 30–40% reduction in traffic congestion through predictive flow management
- Lower CO2 emissions and fuel consumption
- Reduced operational costs and improved transparency
- Enhanced traveller satisfaction and safety
- Real-time situational awareness for informed decision-making
- Modular and scalable to fit city, provincial, or national transport programs

Stage	Focus	Outcome
Visibility	Data collection and monitoring	Foundational insights for better planning
Integration	Linking transport systems and stakeholders	Cohesive, collaborative network operations
Automation	Applying AI for predictive control	Efficiency and reduced human intervention
Autonomy	Self-regulating transport ecosystems	Resilient, sustainable, and human-centred cities



Real-World Applications

- **Urban Traffic Control Centres** – Integrating ATMS and CVO for real-time coordination
- **Leeto la Polokwane Integration** – Demonstrating smart mobility and open-loop payments
- **Smart Parking Networks** – Automated detection and digital payments reducing congestion
- **Public Transport Operations** – Streamlined fleet management for improved service reliability

The Road Ahead

Synnect’s Intelligent Transport Systems redefine what it means to move within a city. Through Transverge™, we are shaping transport ecosystems that think, adapt, and evolve – creating a connected future where movement serves people, not just vehicles.

From data to decision, Synnect is building the infrastructure for intelligent, inclusive, and sustainable mobility.