



transportdeck

POWERED BY
365mesh

IoT and AI solutions for smarter road
procurement, operations & maintenance.

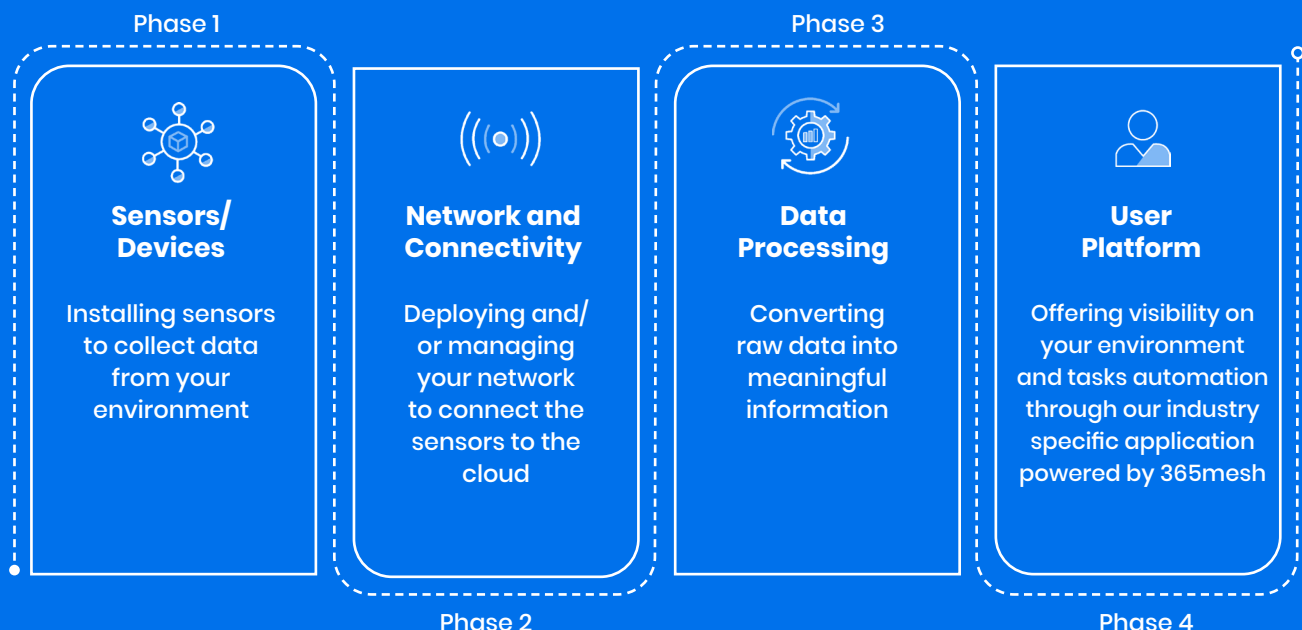
Smart IoT & AI solutions for transport, roads, logistics and chain supply sectors.

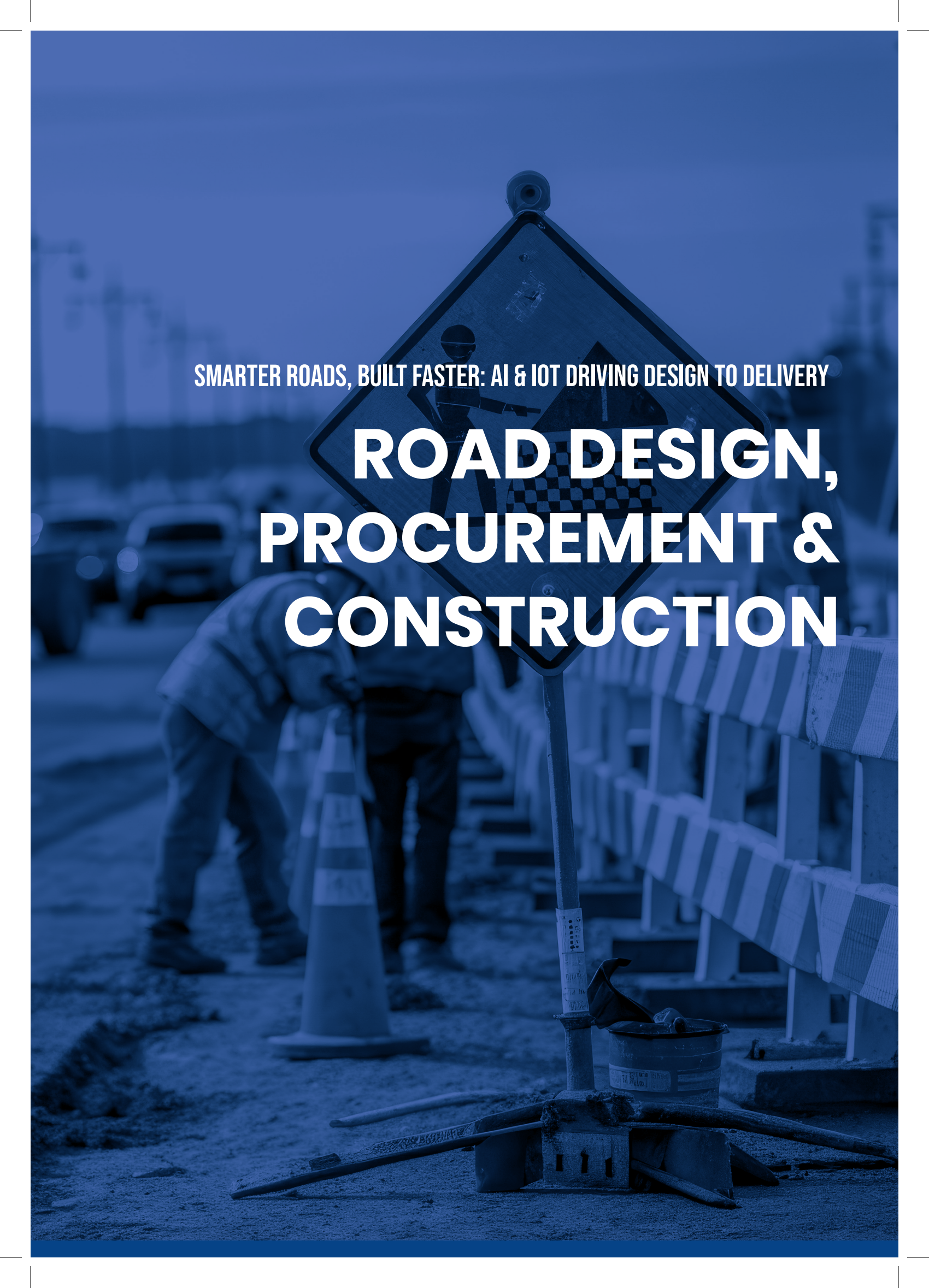
TransportDeck and its advanced data collection and real-time remote monitoring assist users such as councils and transport network providers to create visibility over road designs and construction, manage vehicle enforcements, and make educated decisions when planning for road operations and maintenance.

What makes us different

- With over a decade of experience in networking technologies and security, which form an integral part of the underlying architecture required for IoT networks. Our extensive network engineering capabilities give us a unique ability to understand and deploy every component of an IoT network.
- Our quality assurance program for the IoT sensors; analysing factors like their range, sensitivity, battery life, security, manufacturing quality, dust and water proofing, and ease of integration – ensuring our sensors are secure and follow best practice design principles.
- AI-powered analytics engine for predictive insights, anomaly detection, and early warning of equipment failure.
- Transportdeck is engineered to global standards and delivered through 365mesh and our international partner network, with local integration and support.
- Transportdeck also assists businesses with industry compliance standards and work site safety regulations.
- Transportdeck provides a secure private network, with data residency options to meet local compliance and regulatory requirements.

Secure end-to-end IoT solutions with advanced artificial intelligence capabilities





SMARTER ROADS, BUILT FASTER: AI & IOT DRIVING DESIGN TO DELIVERY

ROAD DESIGN, PROCUREMENT & CONSTRUCTION

Road Design, Procurement & Construction

The road design, procurement, and construction industry faces complex challenges that impact efficiency, cost, and safety.

Designing roads requires balancing traffic demand, environmental impacts, and long-term durability, while procurement processes are often slowed by fragmented supply chains, cost overruns, and contract complexities.

During construction, projects must contend with tight deadlines, budget pressures, labor shortages, safety risks, and disruptions from weather or unforeseen ground conditions. These challenges not only delay project delivery but also increase operational costs and reduce overall infrastructure quality.

Road construction & safety challenges



Cost Overruns & Budget Control



Delays & Inefficiency



Design Flaws & Rework



Quality Control



Equipment Downtime



Environmental & Regulatory Compliance



Traffic Disruption



AI and IoT help overcome challenges in road design, procurement, and construction by enabling smarter, data-driven decision-making across every stage. AI can optimise design models, predict material and labor needs, and reduce costly errors, while IoT sensors provide real-time insights into equipment performance, site safety, and environmental conditions.

Together, they streamline procurement through automated tracking and forecasting, improve construction efficiency by monitoring progress in real time, and enhance safety by detecting hazards early—delivering roads that are built faster, safer, and more cost-effectively.

Digital Twin

Outdated surveys or inaccurate planning cause costly redesigns and rework.

Our Digital Twin platform enables simulation, monitoring, and optimisation of physical assets and environments in real-time, delivering unprecedented insights for strategic decision-making.

AI digital twins & simulation models analyse designs before build. IoT-enabled surveying tools feed real-time geospatial data for accuracy.



Workplace Project Timelapse

Periodic satellite imagery of projects will allow companies to create a historical progression timeline of the development which is beneficial because they can look back on the progress and the development can be analysed for construction purposes. Surveying tools feed real-time geospatial data for accuracy.

Environment Monitoring

Air quality monitoring and detection of various hazardous air particles such as carbon dioxide, silica dust and other respirable dust substances.

Vibration Monitoring and alerting monitors the sites' vibration performance in real time and has the ability to set thresholds based on compliance limits and triggers immediate alerts to prevent regulatory thresholds from



Asset monitoring, maintenance and downtime

Machinery failures disrupt timelines and inflate costs.

IoT predictive maintenance sensors track equipment health. AI models forecast breakdowns before they occur, reducing downtime.



Onsite & building materials monitoring

IoT sensors in materials such as concrete curing sensors monitor quality, ensuring materials, construction standards, and workmanship meet specifications across contractors.

Keep track of building stock levels and availability of construction materials, such as soil, gravel, crushed rock concrete, etc. in silos. Send alerts to authorised personnel when materials run down to a certain threshold (weight, volume, percentage) to ensure materials stay replenished and do not run out.



AI-driven project analytics **predict risks early, optimise schedules**, and improve procurement decisions. IoT sensors track equipment/materials in real time, preventing delays.

To minimise disruption to existing road users during construction, detection cameras & AI traffic analytics adjust signal timing, reroute vehicles, and warn drivers in real time.

Worksite Health & Safety

IoT-enabled sensors and cameras can detect worker movement, equipment usage, and site hazards, while AI analyses this data to predict potential accidents and trigger instant alerts.

These technologies also enhance traffic management around construction zones by detecting congestion and adjusting signage or signals, reducing risks for both workers and drivers. By combining prevention with rapid response, AI and IoT create safer, more controlled construction environments.

Roadwork Construction Challenges



Worker safety



Accident risk
zones



fatigue &
human error



Emergency
response gaps



Visibility
issues



Intelligent AI real-time continuous Workplace Safety monitoring

Greenmesh Worksite Safety is a complete end-to-end workplace safety solution that utilises advanced AI and machine learning, as well as purpose built sensors to aid companies to reduce worksite accidents and fatalities by providing early detection and warnings of potential high risk accidents before they occur.

Greenmesh also monitors and implements the correct use of protective equipment to help companies comply with industry health and safety standards.



PPE Detection



Exclusion
zoning



virtual
boundaries



Fall & accident
detection



Facial
detection



EXTENDING THE LIFE OF ROADS, ENHANCING THE SAFETY OF TRAVEL

ROAD MAINTENANCE & OPERATIONS

Maintenance & Operations

Road Maintenance Challenges

Road maintenance and operations management face ongoing challenges that impact safety, efficiency, and costs. Aging infrastructure, heavy traffic loads, and environmental wear lead to frequent repairs and unexpected breakdowns, while limited budgets and resources make prioritization difficult.

Managing traffic flow during maintenance creates additional risks of congestion and accidents, and fragmented data across agencies often slows response times. Together, these challenges strain efficiency, increase costs, and reduce road safety and reliability for all users.

Aging infrastructure and Pothole detection



IoT road sensors detect vibrations, cracks, and wear in real time. AI predictive analytics forecast when/where maintenance is needed. Detection cameras with image recognition spot potholes and surface damage early.

Pothole and damaged road locations are marked and automatically logged into council maintenance systems for road maintenance/repair scheduling

AI predictive maintenance shifts from reactive to proactive. IoT asset tracking monitors condition of bridges, tunnels, and pavements to schedule timely fixes.

Traffic Management during maintenance

Roadworks often create congestion, delays, and safety issues.

Detection cameras + AI traffic modeling adjust signal timing and reroute vehicles. IoT-enabled signage communicates live updates to drivers.

Traffic Management Challenges



- **Congestion & Bottlenecks**

Growing urban populations and vehicle numbers strain capacity.

- **Accident Hotspots**

High-risk intersections or stretches of road remain difficult to monitor and improve.

- **Incident Response**

Detecting and responding to crashes, breakdowns, or hazards quickly enough.

- **Inefficient Traffic Signals**

Static or outdated systems cause unnecessary delays and emissions.

- **Data Fragmentation**

Traffic data often comes from siloed sources, making it hard to coordinate actions.

- **Environmental Impact**

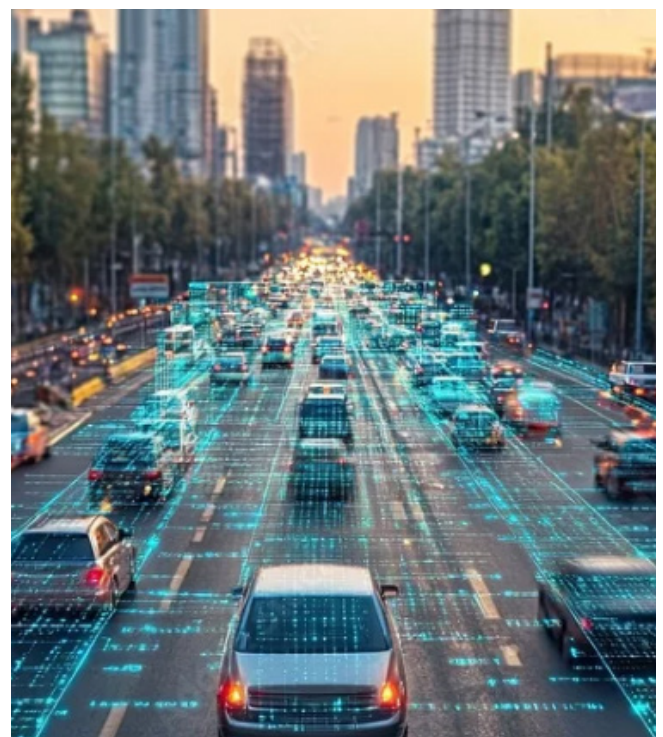
Emissions, noise, and pollution from idling vehicles during congestion.

Recognise License plates

- Angled Plates
- Reflective Plates
- Multi-line plates
- Special Characters on plates
- Low Contrast/faint-character plates
- ADR Plates

Vehicle attributes recognition

- Vehicle type
- Vehicle colour
- Vehicle make/model (brand)
- Plate colour



Traffic Monitoring

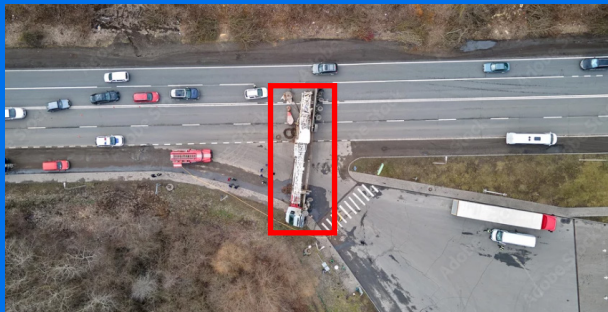
Bottlenecks and congestion detection

Increasing traffic volumes cause daily delays and emissions.

AI adaptive traffic lights use detection cameras to adjust signals based on flow. IoT sensors provide real-time vehicle counts and routing insights



Breakdown Detection and Alerts



Collisions and breakdowns cause gridlock and safety hazards.

Detection cameras with AI vision instantly detect crashes, stalled vehicles, or debris. IoT alerts notify emergency services and traffic control for rapid response.

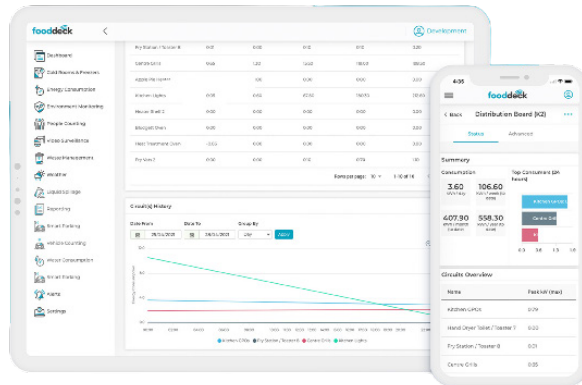
Transport Hubs

This solution provides real-time visibility into your transportation network, such as:

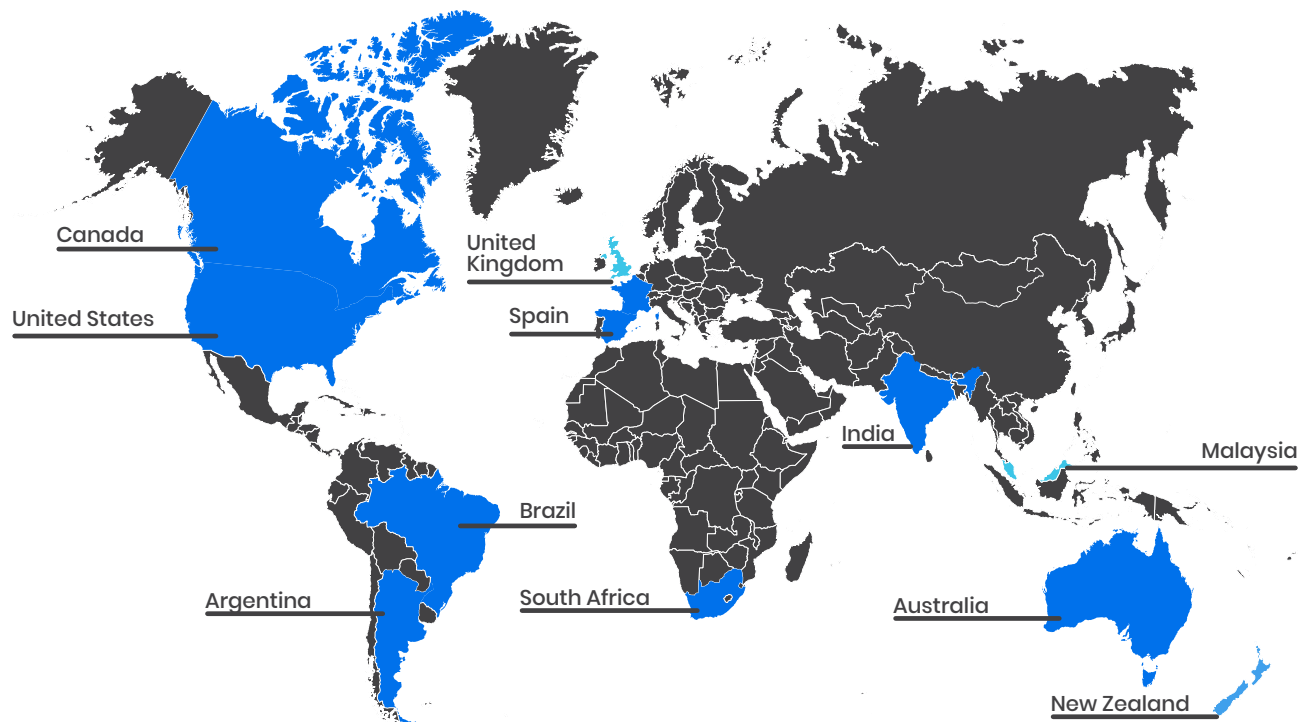
- Monitoring points of interest, including vehicle and pedestrian flows
- Managing how your assets, such as parking bays, are used in your transportation network
- Monitor the behaviour of different types of vehicles, including taxis, cars, trucks, and bikes
- Provide alerts triggered by activity in your transportation network



**Get real-time visibility, insights
and traceability of your environment and
facilities with 365mesh IoT portal.**



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Reseller Program**

Direct customer enquiries welcome
or alternatively, we will introduce you to
a relevant skilled 365mesh integration
partner in your region.