Traffic:

| **Product code** | CZK-Traffic |
| --- | --- |
| **Hardware Platform** | Edge: Nvidia Jetson Series, Sophgo Micro Servers  Central: Nvidia H100, L40, RTX 4000 Series, RTX 5000 Series Ada, A16, A30, Sophon AI server |
| **Operating System** | Ubuntu, MS Windows |
| **Management Interface** | Web-Based Management Software |
| **Database** | PostgreSQL |
| **Development Approach** | Microservice, containerized |
| **Frontend** | React |
| **Backend** | Python |
| **3rd party Integration** | 3rd Party API Integration  Camera Support: RTSP, ONVIF |
| **Keywords** |  |

**License Plate Recognition (LPR)**

* Automatically captures and recognizes vehicle license plates.
* Enables enforcement of toll collection and access control.
* Assists law enforcement in tracking stolen or wanted vehicles.

**Incident Detection**

* Stopped Vehicle Detection – Identifies vehicles stopped in no-parking zones, tunnels, or highways.
* Wrong-Way Vehicle Detection – Detects vehicles driving against traffic flow and sends alerts.
* Pedestrian Detection – Monitors and alerts authorities about pedestrians on highways or restricted zones.
* Dropped Object Detection – Identifies fallen cargo, debris, or hazardous objects on roads.
* Fire and Smoke Detection – Detects fires in tunnels, bridges, or near roadways for quick emergency response.

**Speed Corridor Enforcement**

* Monitors average vehicle speed over a defined distance.
* Issues automatic violations for speed limit breaches.
* Enhances road safety and reduces accidents.

**Illegal Parking Detection**

* Identifies vehicles parked in restricted zones, bus lanes, or emergency exits.
* Sends automatic alerts or fines to violators.
* Helps manage urban traffic congestion.

**Traffic Flow Monitoring**

* Tracks vehicle density and movement in real time.
* Provides data for optimizing traffic light timing.
* Helps reduce congestion in urban areas.

**Red Light Violation Detection**

* Identifies vehicles running red lights at intersections.
* Automates violation recording and fine processing.
* Enhances intersection safety.

**Vehicle Classification & Counting**

* Differentiates between motorcycles, cars, buses, and trucks.
* Provides analytics for city planning and road infrastructure improvement.
* Helps optimize lane usage.

**Pedestrian Crossing Monitoring**

* Ensures pedestrian safety at crosswalks.
* Detects jaywalking incidents and issues warnings.
* Optimizes pedestrian light timing based on real-time movement.

### **Key Benefits:**

* **Enhanced Road Safety – Detects incidents and violations to prevent accidents.**
* **Reduced Traffic Congestion – Monitors vehicle flow and optimizes traffic signals.**
* **Faster Emergency Response – Alerts authorities about accidents, fire, or breakdowns in real time.**
* **Automated Law Enforcement – Issues fines for violations like illegal parking and speeding.**
* **Optimized Urban Planning – Provides traffic data for infrastructure improvements.**
* **Increased Revenue Generation – Supports toll enforcement and automated fine collection.**
* **Improved Pedestrian Safety – Ensures safer crossings and reduces jaywalking risks.**