

Incident Detection Solution

Congested urban highways, increasing road incidents and the resultant delays are challenging the efficiency of existing traffic management systems. Network managers spend excessive hours reviewing intelligent systems for real time traffic updates; however, multiple data access points and unstructured data leaves them stranded. This delays the process of detecting incidents and subsequent responses that help to notify emergency services, eliminate congestion and restore normalcy on the road network.

Considering this inefficiency and the growing number of vehicles on highways, rural and city centre roads, there is an urgent need to deploy an automatic incident detection solution that has a brain of its own. This is where Cloud Amber's Incident Detection Solution takes center stage.

Cloud Amber's Incident Detection Solution takes automation to a whole new level. It seamlessly integrates and interacts with all available data sources to provide an accurate picture of the network historically, in real time and future based on predictions. The solution is further enhanced with advanced techniques such as 'Data Mining' (to examine large databases and generate new information), 'Pattern Matching' (to analyse data and identify unknown objects), and 'Artificial Neural Networks' (ANN) (to learn by observing data sets).

In a traffic management system, the Incident Detection Solution is key to providing efficient traffic flow. It helps to immediately dispatch emergency crews for medical support, obstruction removal, general safety maintenance, and provide useful information to the routing control system to maintain and optimise system-wide performance.



Key capabilities

- Identifies specific characteristics from the flow of traffic along the road network.
- Provides picture of the past, present and future road network based on predictions.
- Constantly evaluates the road network data to automatically detect and respond to incidents on the network.
- Auto-generates incident notifications for public portals and other users.
- Distinguishes between recurrent and non-recurrent road events.
- Sends incident notifications to the road network management authority.
- Automatically sends alerts to the network users such as hauliers, public transport operators, etc.
- Generates Variable Message Sign (VMS) and removes it post incident - Automatically!
- Informs bus drivers of the incident and prompts an alternate route.
- Optional functionality can seamlessly integrate with the local authority's social media accounts and inform public of delays.

A Four Step Approach

1. Data Cleansing and Preparation

- › The system scans the database to identify abnormal records.
- › Classifies records of public holidays, vacations, special days, different weekdays, weekends, etc., by building separate profiles.

2. Traffic Model Generation

- › The system identifies the nature of traffic on different day types and times of the day to prepare models.
- › Removes non – recursive data to refine the traffic models by building separate profiles.
- › Generates final traffic models after eliminating the outliers.

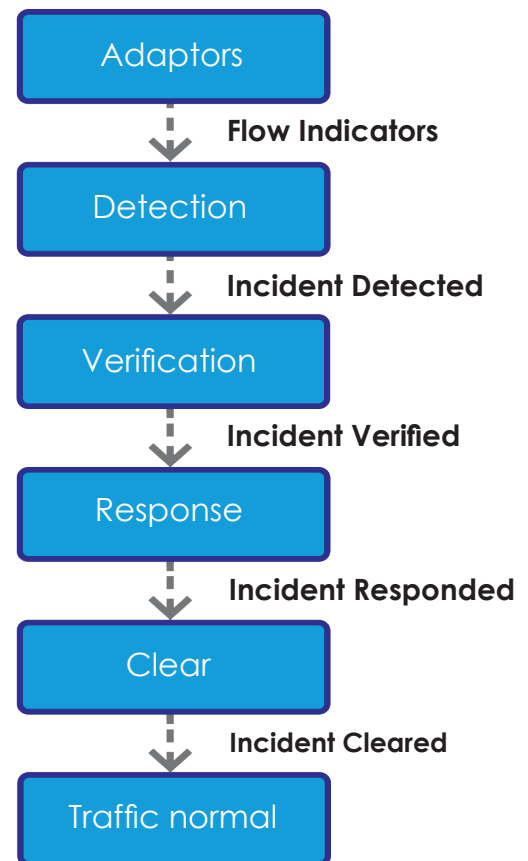
3. Detecting Incidents

- › The system executes the process in real time to discover potential incidents based on the traffic model.
- › Collects the updated data from the deployed detectors and cleans in real time.
- › Analyses current traffic behaviour against normal profiles of traffic values.
- › Notifies the traffic operators about the incident.

4. Incremental Learning Model

- › The system dynamically learns from the incoming traffic data.
- › Uses the traffic information to refine the model.
- › Updates the model on verifying the information as true.

Incident Management Process Model



About Cloud Amber

Cloud Amber, part of the Idox group, enables the efficient movement of people and goods across a diverse multi modal network.

The services and solutions provided enable total network management across all forms of transport providing more efficient and cost effective strategic and localised control. In addition, Cloud Amber provides proven fleet operations improving efficiency, operational costs and service performance as well as integrated and informed personal travel assistance across all geographical boundaries and transport modes.

Cloud Amber is also leading innovation in intelligent and deeply integrated solutions saving time and revenue for new or replacement solutions and has successfully developed and deployed new products in the market and challenged the traditionally incumbent and mature positions.

For more information or to arrange a demonstration:

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