

SMART METRO CONTROL CENTRE (SMCC)

Driving Transport Network With Analytics



A highly scalable and integrated platform for multi-modal network real-time situation monitoring and proactive incident management using advanced analytics.



SMART Metro Control Centre (SMCC) uses a combination of information from various sources such as metro lines, roads, buses, taxis, commuters and other systems to derive the situational overview and performance of the multi-modal transportation network. With such information, the stakeholders are able to optimise their transport resources and respond to situations for improved commuter travel experience.



Benefits:

- Overall Situation Awareness
- Unified Cross-Agency Collaboration Platform
- Context Proposed Incident Response Plan
- Auto Generation of Metro Performance Index
- Decision Support
- Planning and Optimisation of Transport Resources
- Scenario-Based Simulation
- Real-Time and Post-Operation Analysis

The main features of the SMCC include:

- Analytics and Prediction
- Traffic Sensing
- Commuter Sensing
- Supervisory & Control
- Event & Crisis Management
- Commuter Engagement
- Equipment Maintenance History

The SMCC, which is powered by advanced analytics systems, monitors and supervises the entire multi-modal transport network. Through an integrated Geographical Information System (GIS) map, the SMCC is able to track train movement, road traffic and commuter density. It provides an integrated situational view of the multi-modal transport network, and is effective in meeting the high expectations of commuters for seamless and smart commuting. Multiple data sets are aggregated and analysed to provide a real-time operational overview of the transport network, predict potential disruptions and incidents as well as determine the appropriate actions needed to respond to such events.

Historical data collected is used to set time-based thresholds that can track alerts outside of the normal system and commuter behaviour. Such data is also used to test network performances under simulated scenarios and validate incident management plans. Best practices can be derived and shared with transport operators and government agencies for continuous improvements across the transport network.

The SMCC features a Key Performance Indicator (KPI) dashboard which monitors information from metro lines, roads, stations, trains, station vicinity environment, and commuter travel patterns. These KPIs are aggregated from the information gathered from the various metro and road systems such as Power, Automatic Fare Collection, Signalling, Wi-Fi, Cellular, CCTV, Traffic Signal Control and Tunnel & Highway Monitoring, calibrated to reflect an accurate real-time operational overview of the transport network.

With historical data from past events, the SMCC also enables scenario simulation for the planning of major upcoming events. Authorities and operators alike are able to forecast and cater for impending transportation demands of commuters. A built-in decision support system will also enable the stakeholders to effectively manage and respond expeditiously to situations as they arise.

With the growing mobile penetration rate, the SMCC is able to harness data via cellular network to visualise and predict commuter travel patterns and congregation. Such information is useful for the planning and management of transport resources to meet commuter demands.



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