



Ghost Protocol

Safe_and_Smart_Cities_Solutions

"Ghost Protocol helps to build safer environment in smarter way for future cities."



BUSINESS BENEFITS



01 Safe city that each citizen feels.

- Increase situational awareness
- Ensure 24/7 secure operation
- Automatic response to incidents from municipalities and police without having the citizen to ask for.

02 Smart system and tools that each citizen use.

- Wifi network across the city.
- Remote control gates for traffic management.
- Smart Parking management that facilitate driver's life.



INDUSTRY DEMAND



- 01 Centralized management.
- 02 Video surveillance system with high availability and virtual visualization into multiple command centers.
- 03 Ability to respond quickly to active alarms.
- 04 Ability to integrate IoT gateway and sensors into unified platform to increase situational awareness.
- 05 Ability to use video stream to do advanced video analytics such as crowd management, traffic management for easy tracking, management and response.

OUR SOLUTION AND FEATURES



01 Video surveillance

- Live footage for streets, intersections, gardens and all public places from fixed cameras.
- Live footage from mobile cameras located on vehicle from field team to command center.

02 Software based video analytics

- Crowd management (occupancy rate, heat map, left object, face recognition).
- Traffic management (wrong direction, vehicle counting, double park, illegal u-turn, average speed, license plate recognition, traffic detection).
- Forensic analytics (face recognition, LPR, vehicle tracking).



03 Virtual command center solution

- Virtual visualization system video wall that allow sharing and collaboration between main and multiple command center across the country.

04 Barriers and bollards

- Arm barriers on parking area to control traffic.
- Hydraulic bollard to minimize police intervention.
- Fixed bollards to control vehicle and pedestrian access.



05 Smart parking management

- Monitor parking utilization and access to public parking.

OUR SOLUTION AND FEATURES

06 Wifi network

- Point to point microwave or Wifi.
- Point to multipoint solution for city mesh coverage.



07 Internet of Things sensors and gateways

- Pollution sensors, chemical detection sensors, temperature and humidity sensors, water leakage sensors, smart lighting, fire and smoke detection.

08 Infrastructure solution

- Outdoor digging, fiber pulling and termination for network connectivity of Smart city devices.
- Outdoor cabinets, industrial switches and accessories.
- Poles and smart lighting.
- Solar power sources and industrial UPS.



APPLIED SCENARIOS

◆ VIDEO SURVEILLANCE

- 01 Live and efficient monitoring for all cameras by defining motion setting and zone setting and area of interest to receive notifications of motion within specific time.
- 02 Use of the GIS maps to easily locate cameras and connect to stream to dispatch patrol to exact location based on need.



APPLIED SCENARIOS



- 03** Tracking people or vehicles in all cameras using neighboring features. User can track any person or vehicle he sees in a live view or archive by clicking neighbor cameras so it will automatically open the next cameras in which this person of interest appears on it without the need to select from a list or from a map.
- 04** Mobile live streaming using a mobile NVR and mobile cameras on a car to the command center. This scenario can be used for field operation and monitoring of services.

◆ VIDEO ANALYTICS



- 01** Get alarms to dispatch police car when traffic congestion reach certain level.
- 02** Use illegal u-turn, and double park and wrong direction along with LPR to generate traffic fine.

- 03** Search for wanted faces or wanted car plate by defining a black list and white list.
- 04** Get notified when any suspicious object is left in the street for police to investigate for potential terrorist attack.



- 05** Vehicle counting for statistical data and peak time study for better traffic management plan.
- 06** Track suspected vehicle across all city surveillance camera by defining car model, or color, or type or LPR.

◆ COMMAND CENTER

- 01** Share data between main command center and remote command center by displaying specific event or notification on different screens.



APPLIED SCENARIOS



- 02 Collaboration between command centers for emergency cases by duplicating screen displays and getting use of more monitoring personnel.
- 03 Client with multiple command center can select any location as a failover of any other location.

◆ BARRIERS AND BOLLARDS

- 01 Install fixed bollards on different city area to stop vehicle access and limit the access to pedestrian only.
- 02 Use of hydraulic bollards in different city streets to open and close routes and direct traffic based on specific schedule of the day or control these bollards in emergency situation.



- 03 Link the arm barriers located on parking entrance to parking guidance system so that it will stop allowing cars in when parking is full.

◆ SMART PARKING MANAGEMENT

- 01 Manage and monitor automated paid parking system using parking guidance system and ticketing system.



- 02 Indicate the number of parking lot available based on parking sensors and display the results on screens so that drivers can be directed efficiently to available parking lot.

- 03 Full reporting and statistics on vehicle access, LPR, parking time and force fine ticket based on threshold time exceeded.



APPLIED SCENARIOS

◆ WIFI NETWORKS



- 01 Offer free Wifi to citizens.
- 02 Offer SoS app to citizens so they can request for emergency help using one click and all information and location is transferred to the nearest ambulance or patrol police.
- 03 Implement mesh wireless network for city video surveillance or IoT sensors connectivity.

◆ LOT



- 01 Receive alarm from different sensors and automatically execute actions on some devices like opening bollards, or opening live stream from incident location.



- 02 Statistical data and reporting for future enhancement and security measure.



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