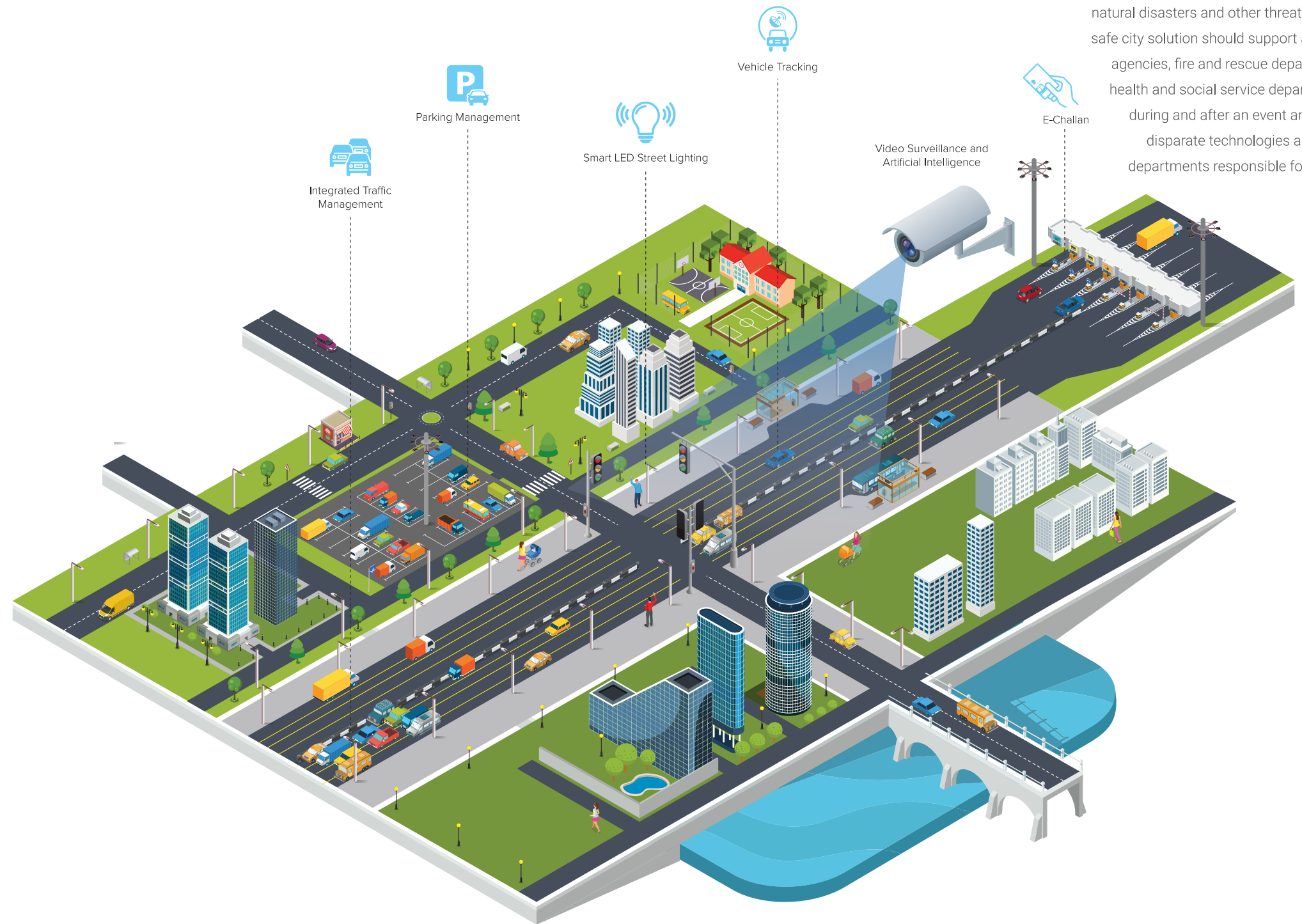


SAFE CITIES

Integrated city surveillance

The safe city concept is based on a consolidated ICT (information and communication technologies) platform which combines public-safety information of different types and from different sources, obtained through sensors and multiagency collaboration.



Safe cities are an essential pillar supporting the development of smart cities throughout the world. They provide the security and safety required to protect citizens from crime and terrorism as well as mitigate, as much as possible, the impact of natural disasters and other threats. A successful safe city solution should support a city's security agencies, fire and rescue departments, public health and social service departments before, during and after an event and integrate the disparate technologies and government departments responsible for citizen safety.

PREVENTION 

Provide reliable and comprehensive security measures to predict threats and hazardous situations. City authorities must be able to take measures to prevent threats from occurring in the first place.

Simulation and forecasting technology, based on big data mining, can help the relevant authorities to predict public threats and support police and military assets to prevent the event before it begins.

DETECTION 

Aid public-safety organizations in collecting, sharing and analyzing data more effectively to provide early warnings and raise situational awareness. Sensor systems in the city will proactively gather information. These sensors may include video surveillance cameras, CBRNE (Chemical, biological, radiological and nuclear) sensors, gunshot-detection sensors, and weather sensors.

The type of sensor used is determined by the scope of the safe city project and how much interoperability is required. Information can be used to provide early detection and alerts when events occur. Increasingly, sensors include "listening" to social media for relevant postings by netizens.

RESPONSE 

Enable the key organizations in the city to react to security threats in real time. City authorities must be able to prevent an adverse event from escalating. Safe city projects enable an effective response by using a consolidated ICT platform to provide a common operational picture to all relevant agencies, including law enforcement, public health, fire and rescue services; and to allow the critical communication systems of these agencies to interoperate.

This helps to raise the situational awareness for each of the responding agencies, and their command, control and coordination.

RECOVERY 

Provide post-event examination and analysis, identify victims and provide assistance in rescue actions. After an event, city authorities must be able to quickly examine and analyze all data received from the relevant sensor systems. This supports the subsequent search for suspects as well as the process of building a case based on incriminating evidence. Information can also be used to facilitate rescue actions, and the identification and assistance processes for both victims and survivors.



Key elements of a Safe City include:

Integrated System: A shared infrastructure with common sensors connected by a shared network. Evolved from a disparate set of sensors with no interoperability.

Multi Agency Collaboration: Moving beyond shared infrastructure to sharing intelligence, operational procedures and planning. For example, in the event of a disaster how does communication work? who takes direction from who?

Situational Awareness: Real time information, with traffic data, sensor positions, resource locations, weather and other intelligence

Video Data & Analytics: Information collated from an array of city sensors and databases combined with video analytics, LPR, face recognition, behavioural analysis

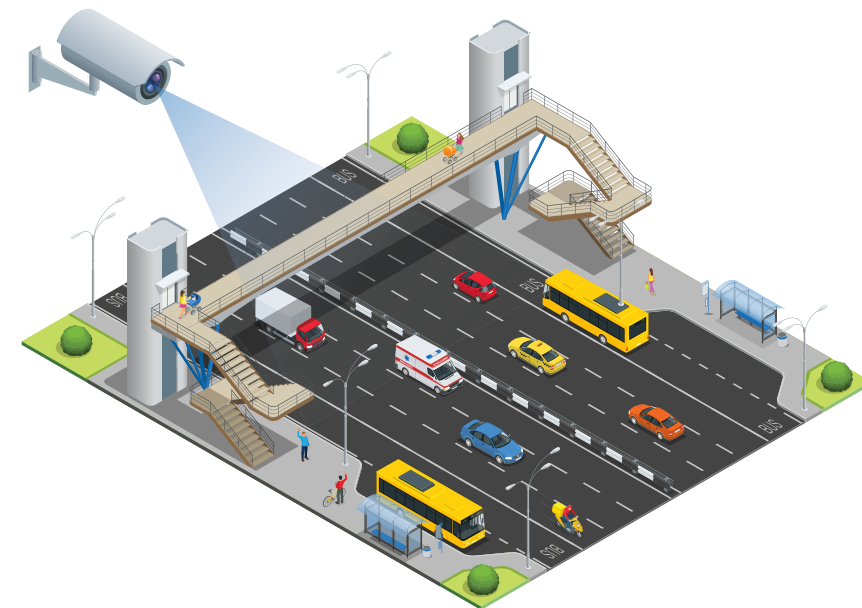
Automated Processes: All camera information is generated on one screen, alerts are registered, and the right operational procedure is generated

Video Surveillance and Artificial Intelligence

Adding vehicles to our Appearance Search technology means users can quickly search through recorded footage to determine critical information about where and when a vehicle might have been before and after an event.

An appearance search for a person can be followed up with an appearance search for the vehicle that a person gets in or out of. This allows users to complete an entire investigation that spans indoor and outdoor spaces, saving valuable time and effort during critical investigations.

As the surveillance industry has evolved, stadiums and other large venues have benefited from a greater adoption of higher resolution cameras that provide both broad coverage and excellent image detail. This shift was an evolution from the industry's previous reliance on networks of hundreds of analog or low-resolution IP cameras, which often forced security personnel to make a tradeoff between field of view and image detail.



Integrated Traffic Management & E-Challan



Smart traffic management module, which will focus on reducing traffic congestion and improve journey experience of the citizens. The projects will include implementation of traffic signalling with area-based traffic control, monitoring traffic network flow, variable signage, red light violation detection systems at major intersections and an e-challan system. To work it efficiently, the administration plans to provide access points.

The smart tracking management application will have a track and monitor mechanism and will look after functions of about public service vehicles. Citizens will also be able to get bus-related information on their mobiles through an app.

Apart from that it also calls for Emergency Management and Incident Response System will support monitoring of day to day operations of the city and supplement citizen safety.

Parking Management & Vehicle Tracking

Based on the occupancy status determined with the help of sensors, the system can guide the enforcement authorities to potentially offending vehicles with expired time limits or illegal parking. A downloadable mobile app provides users with information about available parking spaces and parking fees at any given time.

Based on this information, users can easily locate the parking space closest to their destination without having to circle around the streets to find parking space. Wireless sensors are embedded in each parking space to identify its occupancy status in real time.

The information from parking sensors is updated to a central system that keeps track of parking status across the entire street or block of that area.



Environmental Monitoring System & Smart LED Street Lighting



Today, the opportunity has fallen to us that we can try to get the necessary information on the overall situation by means of modern remote sensing methods. This information will be useful even if these remote sensing information sources do not provide as much detail as wanted.

The advantage of this kind of environmental data supply is that information is obtained worldwide by a single standard, and at regular, short intervals, applying comparable measures. The regularity and global aspect of the data supply promise enormous benefits even if the information given is not as detailed as wanted.

Using this data, we could, for instance, illustrate the effects of the expansion of the mega-cities over several years or decades by means of time-lapse comparisons, the reduction in the rain forest stand, the air pollution, desertification, desiccation of lakes, and many other environmental processes.