



## Intelligent Traffic and Transportation Solutions Infusing Intelligence into Transportation

Rapid urbanization has resulted in higher vehicle density and increased mobility woes. Traffic congestion and transportation management feature amongst top critical infrastructure challenges today. Congestion in cities and on highways is becoming more acute every day. Besides economic losses, traffic congestion is pushing up noise and environmental pollution levels.

CMS offers an intelligent, economical and sustainable solution for traffic and transportation that makes road travel predictable, safer and seamless.

Local governments and civic authorities already realize that intelligent, safe and scalable traffic management systems are worthwhile investments towards ensuring citizens' safety and better quality of life.

## Global Trends

- Convergence of physical and digital worlds
- Concerns about public safety, physical security
- Sensors talking to vehicles and individuals- V2V and V2I connectivity
- Digitization of records
- Social Media, Mobility, Analytics and Cloud transforming the way travelers interact
- Innovative tracking systems
- Integration of assets and information to improve operations

### Intelligent Products for Smarter Transportation

We are India's first manufacturer of traffic equipment and a pioneer in path-breaking technologies such as **Area Traffic Control and Management, Variable Message Signs, Solar-Powered GSM based systems and Parking Management Systems.**

CMS leverages IoT and its Intelligent Traffic Solutions and products to elevate transportation networks to the next level.

Through dedicated investments in R&D, we have developed indigenous solutions that ensure commuters have easier access to information, transportation networks are interoperable and traffic monitoring is made easier.

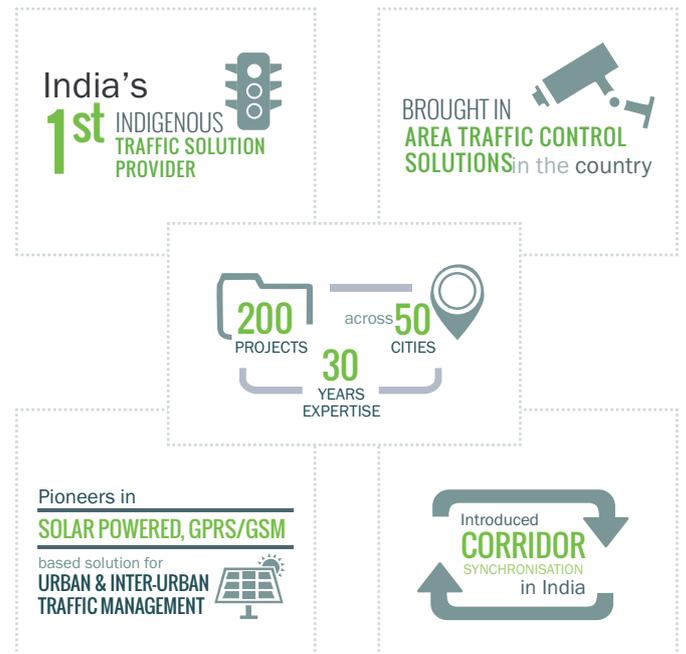
### Indigenous Traffic Solutions

We have intelligent, efficient, affordable and environmentally acceptable solutions for sustainable traffic requirements that incorporate various aspects of Sensing, Communications, Applications, Computing and User Services.

Our business is driven around the three pillars of:

- ▶ Meaningful innovation with a **Make in India** philosophy
- ▶ Indigenous products and solutions developed by a strong R&D team
- ▶ Cutting edge technology leveraging partnerships

As populations expand and city roads become congested, our products are structured to scale rapidly and address future needs taking into account future social and demographic changes.



### Intelligent Traffic and Transportation Solutions

This is an integrated suite of solutions that combines Smart Information, Intelligent Transportation Systems and Services to help people, goods and logistics move quickly and safely while being sensitive towards our environment.



Traffic Equipments and Applications



Full Scale Customized Development and Commissioning



Support and Maintenance Services



## Urban Traffic Solutions

Our solutions focus on efficient use of existing roadway capacities, synchronized traffic flows and pedestrian safety through:



Traffic Signal components



Central Control and Monitoring Systems



Area Traffic Control and Management - Predictive and Adaptive Systems



Parking Enforcement and Management Systems



Speed and Red Light Monitoring and Enforcement Systems



Junction and City Surveillance Systems



Journey Time Measurement Systems



Analytical and Mobile Applications



Traffic Control Room



City Surveillance Systems



Emergency Response Systems

## Inter-Urban and Highway Traffic Solutions

Our products and solutions for long-distance passengers and logistics providers ensure free flowing traffic, avoid accidents and congestion, reduce fuel consumption and emissions through:



Public Safety and Emergency Systems



Solar Enabled Traffic Solutions



Video Surveillance and Incident Detection Systems



Weigh-in-Motion Systems



Automated Number Plate Recognition Systems



Variable Message Signs



Meteorological Solutions



Automatic Counting and Classification Systems



Tunnel Management Systems



Ramp Metering Systems

With our extensive range of products coupled with customer support services, our customers can:

- Monitor traffic flows online
- Adjust traffic signals, message signs and other devices to optimize road network performance
- Provide road users real-time information on traffic flow including best routes to take and expected travel time needed
- Ensure public safety with emergency response solutions



Parking Enforcement and Management Systems



## Mumbai Area Traffic Control (ATC)

*How CMS leveraged IoT and Big Data to improve traffic conditions in India's financial capital*

A complex and congested city like Mumbai needs innovative solutions that leverage the power of intelligent devices and ICT technology. Using a system of centrally controlled traffic signals and real time data collected through sensors and detectors, CMS transformed the traffic landscape of the city.

The Mumbai ATC project is heralded as one of the most complex initiatives involving Electronic and Communication System, Vehicle Sensors, hardware devices and associated civil work.

Every one hundredth of a second, thousands of smart traffic controllers and detectors across the city, collect and transmit data to the Central Control Room that uses an analytics engine to determine complex attributes related to flow, occupancy time and load. This information regulates the traffic flow over numerous junction points and generates huge savings in cycle time, energy consumption and traffic speed.

CMS Smart Controllers incorporate several other innovative features like Red Lamp Monitoring, Energy Conservation through Night Time Dimming, etc.

*With over 68 km of fully ducted network, 800 video detectors, 2000 signal poles, 500 cantilever poles and scores of traffic controllers and CCTV cameras, the Mumbai ATC project is undoubtedly the best example of an Intelligent Transportation System that makes our cities smarter and more sustainable.*



### CMS –Ahead of the Technology Curve

As a pioneer of the IT movement in India since 1976, CMS Computers adds value to every industry through its products, services and solutions.

Even as the world is waking up to the benefits of big data, mobility and analytics, CMS has already innovated and implemented well over 200 Smart City elements leveraging big data and analytics for holistic city management. These have been in the areas of e-governance services, transportation and traffic solutions, energy management solutions, surveillance and workforce management, broadcasting solutions as well as software services aligning technology with client businesses across sectors.

With over 4000 employees and a pan India presence across 100+ locations, CMS has leveraged the collective power of IT and the Internet of Things (IoT) to improve and simplify the lives of citizens, corporations and the government.



### Interesting statistics

- ▶ Reduction of signal cycle time (from 180 sec to 120 sec on an average)
- ▶ 10% increase in traffic speed
- ▶ Reduction of network stoppage delay by about 17%
- ▶ Energy saving of about 30-40%



### Corporate Office

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