

# Prayagraj Smart City

**Mr. R. Srinivasan**  
EVP & Head - Smart World & Communication  
Larsen & Toubro Ltd.  
[rs@intecc.com](mailto:rs@intecc.com)

Prayagraj Smart City is an Integrated Smart City project, which leverages technology to ensure enhanced security & safety, facilitate city administrators to seamlessly manage the mega religious convergence, the largest crowd gathering of its kind across the world (Approx. 23 crore representing 83 Countries) held at the Kumbh Mela event at Prayagraj.

## Strategic objectives

The geographical coverage and strategic focus of the project has been divided in two perspectives as mentioned below:

### 1. ICCC for Pan City Area from Smart City perspective

ICCC for Pan City area to enable collation of information and collaborative monitoring, thus helping in the analysis of data for quicker decision making. Intelligent operations capability shall ensure integrated data visualization, real-time collaboration and deep analytics that can help different stakeholders prepare for exigencies, coordinate and manage response efforts, and enhance the ongoing efficiency of city operations. The interface at ICCC gives a real-time and unified view of the operations.

### 2. City Surveillance for areas impacting from Kumbh Mela 2019 perspective

ICCC for Kumbh Area has been set up to implement holistic and integrated video surveillance system for Kumbh Mela 2019 in Prayagraj City. The major objectives of the systems are: -

- Support Traffic Police to maintain peaceful Law and Order 24X7
- Act as an aid to investigation
- Improve Crowd Gathering at Triveni Sangam area (By Artificial Intelligence-video Analytics)
- Help in deterring, detecting and thus dealing with criminal activities
- Monitor select vital public places of Kumbh Mela 2019 in Prayagraj City for keeping Birds Eye on Various activities
- Regular monitoring and Incident data/IOT data storage at disaster management

## Project Highlights

### Process Efficiency

- Prayagraj Smart City features 24x7 City Operations Center with Integrated dashboard to give a Birds Eye view of various activities at Kumbh area and the City, enabling real-time, Data-Driven Decision making and actionable insights.
- Multi-domain analytics through Artificial Intelligence & Machine Learning-Video Analytics and first-of-its-kind implemented crowd management solution that proactively interprets crowd dynamics and provides timely alerts by taking into account head count and people density at mega events.
- State-of-the-art Integrated Command and Control Centres (ICCC), at the Kumbh Mela specific area and another viewing centre at Police Lines (Modern Control Room) for the overall city surveillance.

## Scope of the Project

<b>Surveillance Cameras</b>	<ul style="list-style-type: none"><li>▪ 743 Fixed box and 292 PTZ cameras</li><li>▪ 188 existing CCTV cameras to be integrated</li><li>▪ ANPR - 18 Junctions</li></ul>
<b>Variable Message Board</b>	<ul style="list-style-type: none"><li>▪ Variable message sign - 40 junctions</li></ul>

<b>Data Center &amp; Disaster Recovery centre</b>	<ul style="list-style-type: none"> <li>▪ On premises DC and DR at Cloud</li> <li>▪ Network &amp; Compute infrastructure</li> </ul>
<b>Integrated Command and Control Center (ICCC)</b>	<ul style="list-style-type: none"> <li>▪ Primary and secondary CCC with displays of 55" LED in 10*2 and 8*2 arrangement respectively</li> </ul>
<b>Last Mile Network Connectivity</b>	<ul style="list-style-type: none"> <li>▪ 350 km of the Optical Fiber Cable network connectivity</li> </ul>
<b>Smart Elements</b>	<ul style="list-style-type: none"> <li>▪ Solid Waste Management - 500 Bins</li> <li>▪ Aadhar based biometric devices – 100 nos.</li> </ul>
<b>Contact Centre</b>	<ul style="list-style-type: none"> <li>▪ 24*7 operating contact centre with 90 operators with technical trainers</li> </ul>
<b>Training, Helpdesk &amp; FMS</b>	<ul style="list-style-type: none"> <li>▪ Traffic Police personnel training (Functional/Administrative/Sr. Management)</li> <li>▪ 24/7 Helpdesk system and Maintenance of IT/Non-IT Infra for 5 Years</li> </ul>

### Implementation of Prayagraj Smart City

Prayagraj Smart City is one of India's fully Integrated Command and Control Centre which involves physical and digital convergence –

#### Command and Control Centres

- State-of-the-art Command and Control Centers, at the Kumbh Mela specific area and another for the overall city surveillance Viewing centre serve as centralized monitoring decision making hubs with state-of-the-art dashboards that provide an integrated overview of the various smart features highlighting key performance indicators, situational awareness, incident management, integrated systems monitoring, facilitating generation of user centric charts and data drill downs.
- ICCC integrated with DIAL 100 and HELP DESK solution, complement each other while taking crucial decisions.
- Data Analytics across multiple government systems for analysis to understand activity patterns and abnormal events, provide timely alerts, Actionable Insights with configurable Standard Operating Procedures (SOPs).
- KPI Monitoring, Event / Incident management through effective visualization for Decision support & quick response
- Without any interruption, the traffic Police monitored the live video feeds 24 x 7, and critical decisions were made real time.

#### Crowd Management

- Taking support from the emerging **Artificial Intelligence (AI) technology**, L&T has developed a first-of-its-kind global crowd management system that proactively interprets crowd dynamics and provides timely alerts by taking into account head count and people density at mega events like Kumbh Mela.
- **Deep Learning based Alert Generation** for identifying crowd gatherings and warn city administrators for effective decision making.
- **AI based Solid Waste Management System** for routing collection vehicles dynamically based on waste bin sensor data and traffic data to achieve route optimization and cost reduction for the municipality
- **4 viewing centres** at Kumbh Area for better monitoring and faster response

#### Infrastructure

- Prayagraj Smart City features Tier III Data centre and a Disaster Recovery Centre on Cloud.
- The culmination of more than 1100+ CCTV Cameras installations spread across 268 locations using 350 Km of Optical Fiber Cable network backbone which supports the Police to deter, detect and deal with criminal activities to ensure citizens' safety, 23 Adaptive Traffic Control Signals to facilitate alignment of traffic flow based on prevailing situations, 40 Variable Message Display boards for communicating key notices or messages with regard to any emergency or disaster apart from the routine updates, 500 GPS devices for implementation of Solid Waste Management.

- To quote an example on the benefits of these systems, an incident where the Police nabbed a serial killer, who had committed 10 murders in the past, with the help of CCTV footages at Kumbh Mela, is noteworthy.

### Current state of implementation

One of North India's Fully Integrated Smart City in India's Smart Cities Mission to be fully commissioned & Operational

- Fully operationalized Data Center and two Command Centers.
- Fully operationalized 24x7 Emergency and Civic – City Contact Center.
- Fully functional Dashboards and Analytics.
- 100 % Commissioned – Secondary Command Center and DR.
- 100 % Commissioned – CCTV, SWM, ANPR, RLVD, E-challan and VMD.

The Command and Control Center at Prayagraj was inaugurated by Honourable Prime Minister Shri. Narendra Modi and was also recently visited by Prime Minister of Mauritius Mr. Pravind Jugnauth accompanied by his wife Mrs. Kobita Jugnauth, and a 25-member delegation from Mauritius.

The project will be extended to the rest of the city and integrated to the ICCC in subsequent phases covering IOT, sensors, traffic, e-challan, smart parking, CCTV with 23 AI based special video analytics and other applications.

### Inauguration Pictures



### Project Pictures







### About the author



Mr. R. Srinivasan currently heads Smart World & Communication Business Unit, comprising Integrated Security Solutions, Communication & Telecom Infrastructure and Smart Infrastructure Segments. With more than 30 years of experience in power transmission, distribution, industrial electrification and communication projects, he has headed the Renewable Energy Business Unit and held various important positions in Power Transmission & Distribution. Mr. Srinivasan has played a vital role in establishing L&T Construction's brand name as Technology & Digital Centric Company in India.

Mr. Srinivasan started his L&T journey as Graduate Engineer Trainee. He is having an Engineering Degree in Electrical & Electronics from College of Engineering, Guindy, and is an Alumnus of Administrative Staff College of India (ASCI), Indian School of Business (ISB) and INSEAD (France). Mr. Srinivasan holds several awards and plays vital roles on various industry bodies, forums and councils. He is Member of FICCI Smart City Council & Homeland Security; Chartered member- IEEE - IAS; Vice Chairman, Industrial Applications Society of IEEE; Member - IEEMA Renewable Energy Committee. He has been identified as one of the 50 Most Impactful Smart City Leaders (Global Listing).