



Inauguration of Smart City Operations Center – Phase 1

- Presentation to Hon'ble Chief Minister of Andhra Pradesh



‘A Resilient and Healthy Metropolis for PEOPLE’

The city of destiny is envisioned to become a leader in

. sustainability .



. healthy living .



. equality .



. innovation .



Projects – Smart City Proposal

Projects addressing Health of Citizens

Area Based Development projects

1. 24 x 7 Water Supply
2. Underground Drainage
3. Recycled Water Supply ABD
4. Storm Water & Road Side Drains
5. Solid Waste Management
6. Road Side Landscaping & Retrofitting of Parks
7. Public Bike Sharing
8. Public Toilets & Community Toilets
9. Adaptive Re-use & Basement Car Park

Pan City projects

1. Pollution Monitoring Systems

Projects addressing resiliency of Vizag:

1. Disaster Management System & E-Governance
2. Underground Electric Wiring
3. Shore Protection along Beach Road

'A Resilient and Healthy Metropolis for PEOPLE'

Projects for People:

1. Smart Signalling & Traffic Surveillance
2. Modernizing GVMC Schools (comp. labs)
3. Foot Path Improvement
4. Solar Roof Top
5. Smart Metering for Electricity
6. Housing for all
7. Beach Beautification
8. Innovative use of Open Spaces - VUDA Park
9. Solar Panel enabled Street Lighting
10. Centrally Controlled Monitoring System for LED Street Lighting



Visakhapatnam Smart City – Then



Interim Command Center

- 8 Seater CCC launched on June'16

Integrations with

- Street lights
- Manual bin monitoring
- Revenue Dashboard
- Core Dashboard

Balancing citizen aspirations with administrative priorities

Citizen Aspirations

- Improved Air Quality / Environment
- Disaster and emergency management
- Public safety and security
- Public transportation
- Wi-Fi and internet connectivity
- Better Health and Wellbeing
- Better sewage and drainage systems
- Adequate and quality water supply
- 24x7 power supply
- Parks and recreation

Administrative Priorities

- Improving safety – 24x7 city Surveillance
- Reducing accidents – 100% enforcement
- Administrative efficiency - E-governance
- Enhancing citizen engagement – Citizen Contact Center
- Improving public services – Transportation, Sanitation & Pollution
- Effective Incident management
- Effective Pre-disaster communication - Disaster Management

System Integration for implementation of Greater Visakhapatnam Smart City Solution



Components of Visakhapatnam Smart City



Connecting 6200 devices

Greater Visakhapatnam Smart City Corporation Limited



Key Stakeholders

City Level

- Greater Visakhapatnam Municipal Corporation (GVMC)
- Visakhapatnam Police
- Andhra Pradesh road transport corporation (APSRTC)
- Utilities & other depts

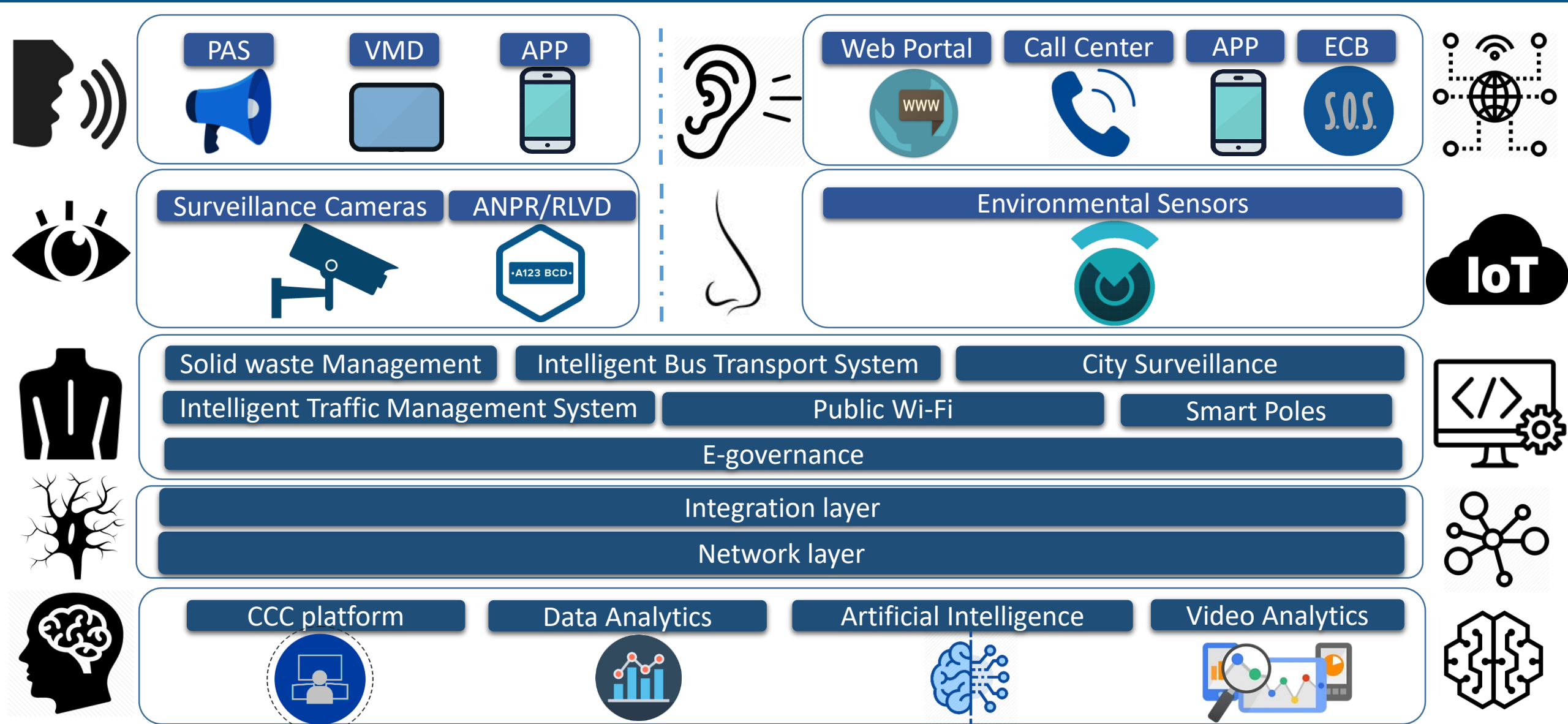


People

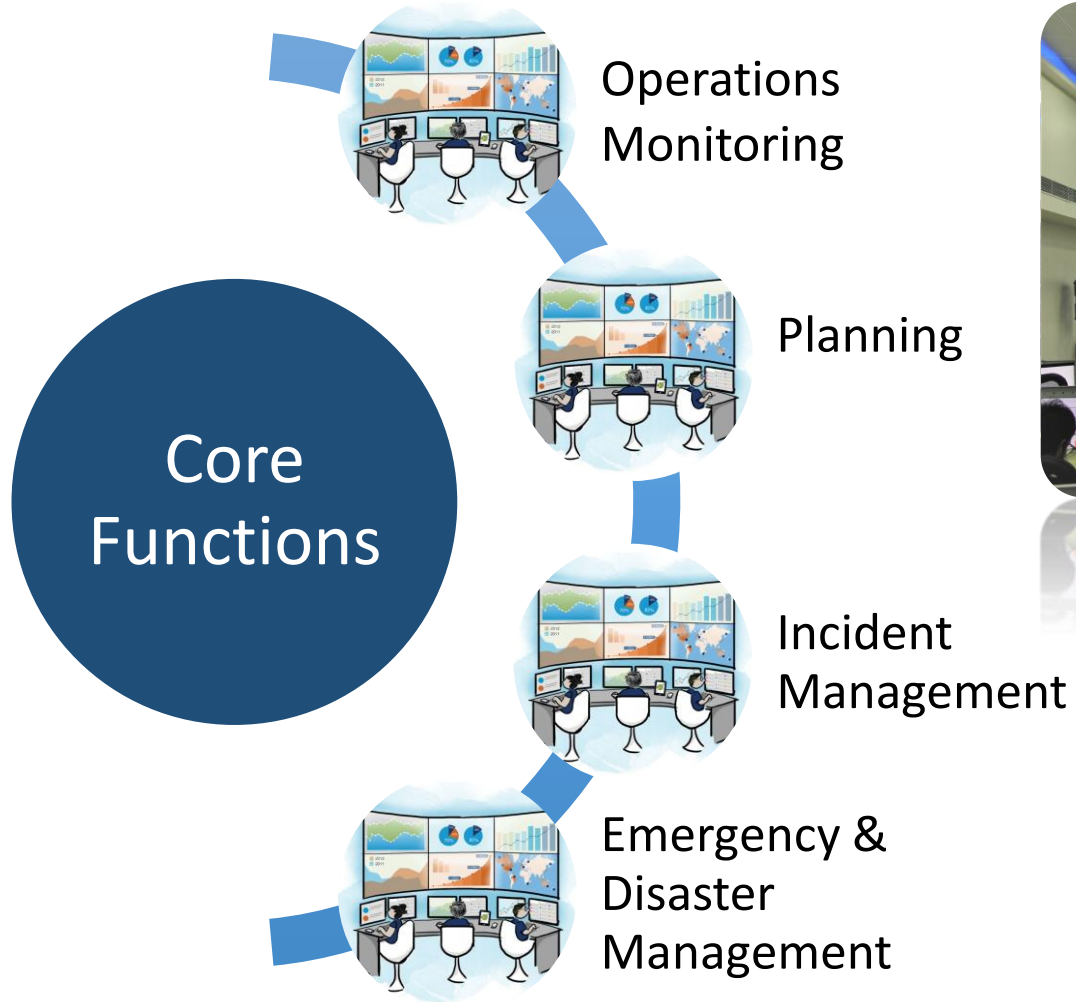
State Level

- Commissioner & Director of Municipal Administration (CDMA)
- Real time Governance (RTG)
- Andhra Pradesh state fibre limited (APSFL)
- Pollution Control board (PCB)
- State Disaster Management Authority (SDMA)

Architecture



City Operations Center



- City Operations Center: **GVMC**
- Viewing Center : **Police Commissionerate**

- Primary Data Center: **Vizag**
- Disaster Recovery Center : **Pi Data Center**



Smart Solutions

Smart poles



Smart Pole – Multi-Utility platform

SMART POLE

Telecomm Antennas

LED lights – For an energy efficient city

Wi-fi Hotspots – For a digitized city

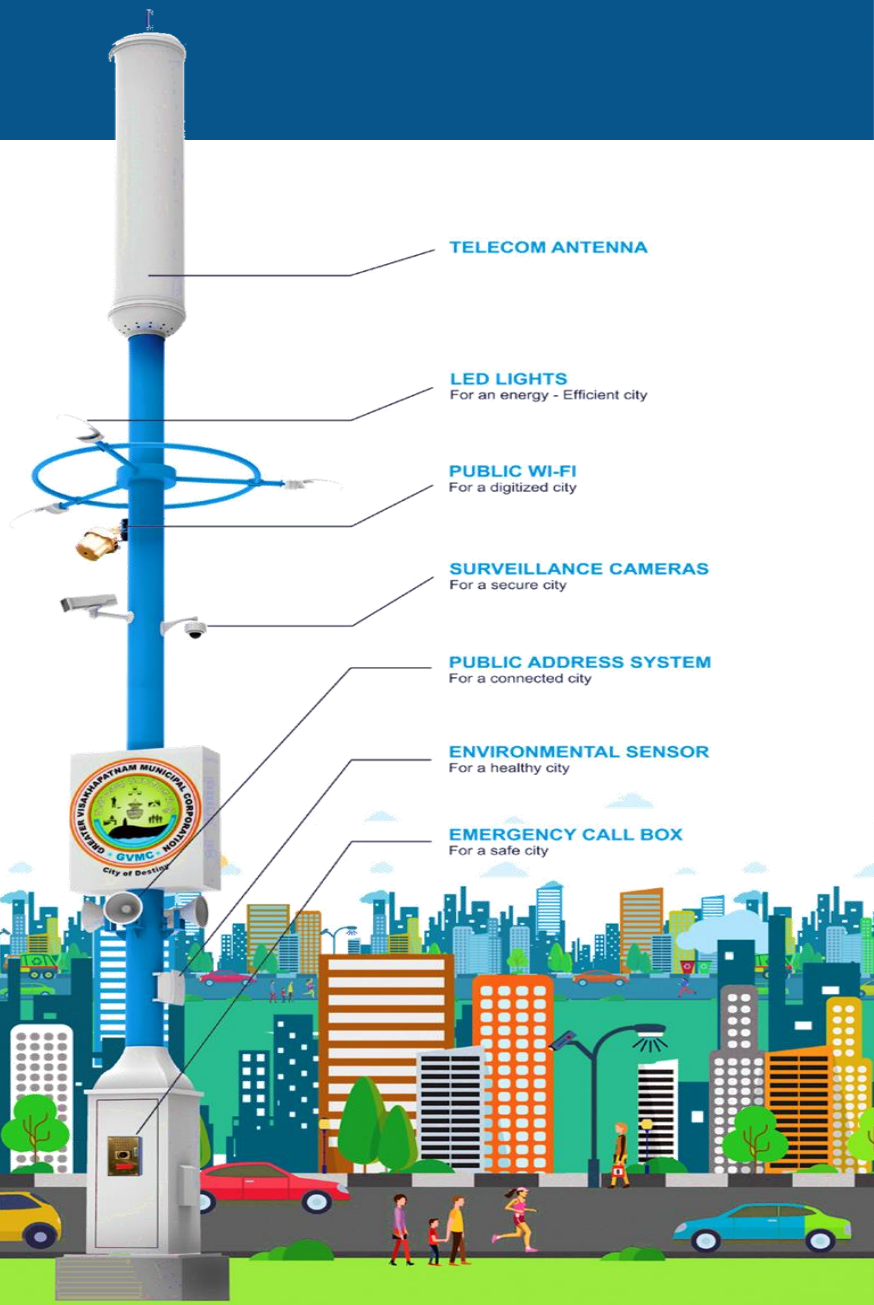
Surveillance cameras – For a secure city

Advertisement board

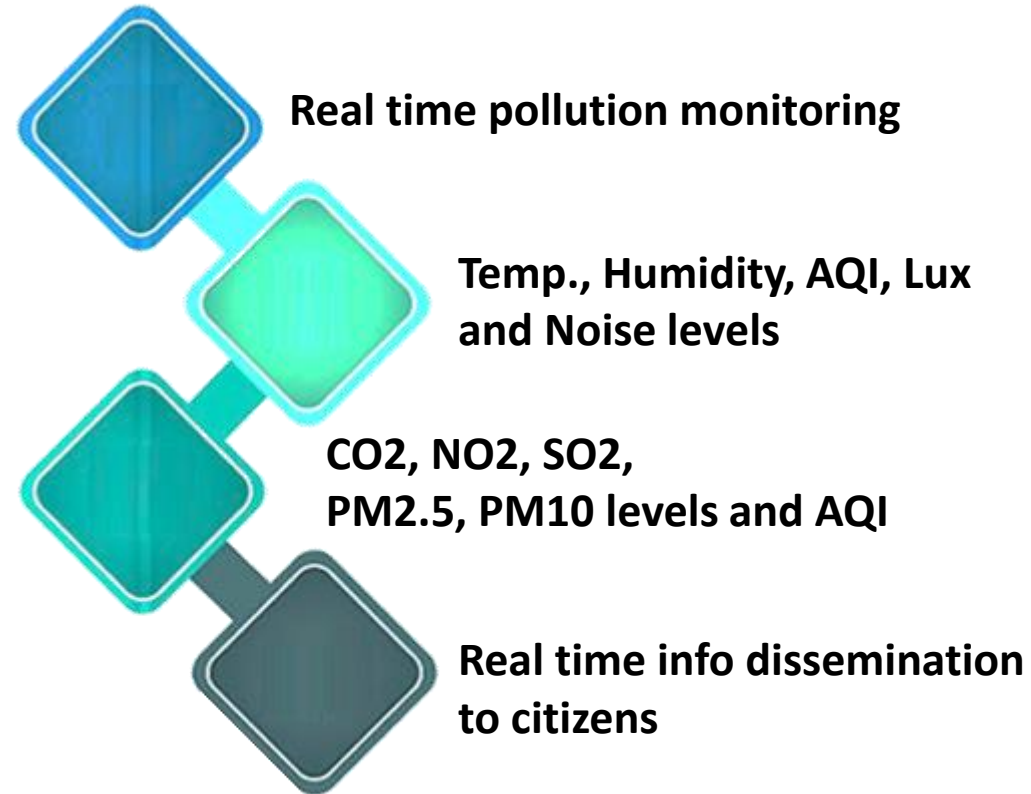
Public Address system – For a connected city

Environment Sensors – For a healthy city

Emergency Call Boxes – For a safe city



Smart Poles | Environmental Sensors



Environmental sensors at 50 strategic locations in the city



Future

- Scalability for pan-city
- Extend to water logging sensors
- Realtime correlation analytics
- Open Data platform

Smart Poles | Emergency Call Box



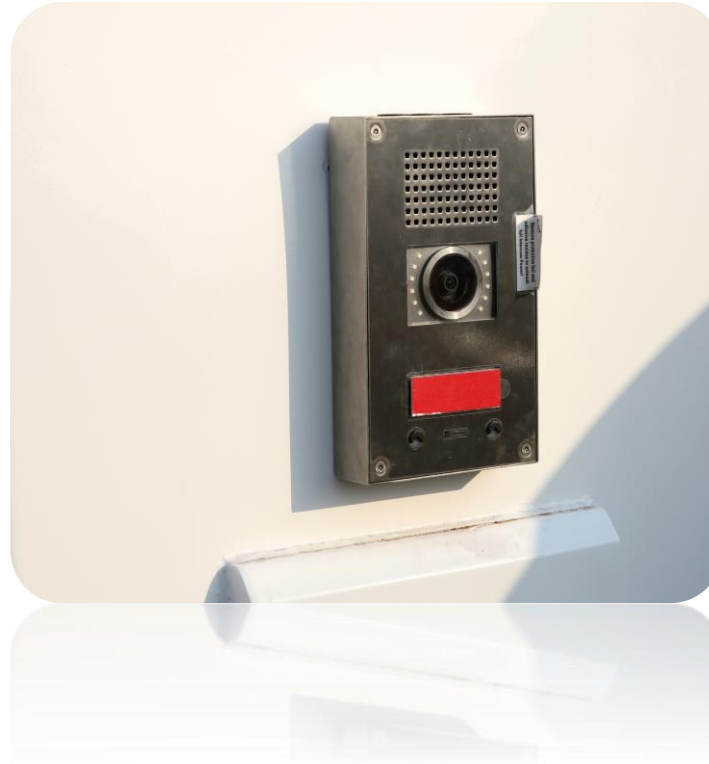
Two way audio (microphone & Speaker)

Live video stream of the caller

Accumulation of Audio evidences for Audit trails

One-press SOS channel

Strategically chosen locations



Benefits

- **Accessible and reliable SOS channel**
- **Quick response by the authority**
- **Enhanced safety and security**

Future

Scalability for pan-city

Emergency call boxes at 50 strategic locations in the city

Smart Poles | Public Address System



Address people from Central City Operations Center

Deliver pre-recorded messages

Broadcast message to all locations or multi-cast messages to specified locations

Facilitate multiple MIC inputs and audio inputs



Benefits

- **Communication to public during Disasters and normal situations**
- **Communicate info related to Traffic, Pollution, or any other general announcements**

Future plan

Scale the deployment of PAS at vulnerable locations like multiple beach locations

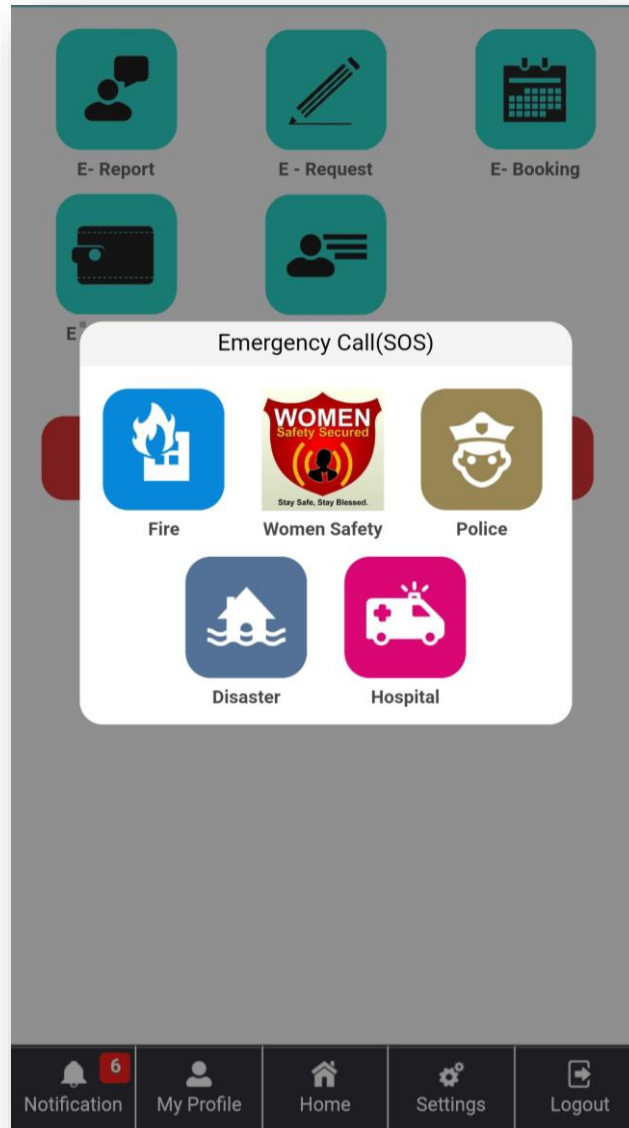
Public announcement systems at 50 locations in the city

Citizen Services

24*7 Contact Center

Citizen grievances/
Service requests

Citizen mobile app
(integrated with puraseva)



Benefits

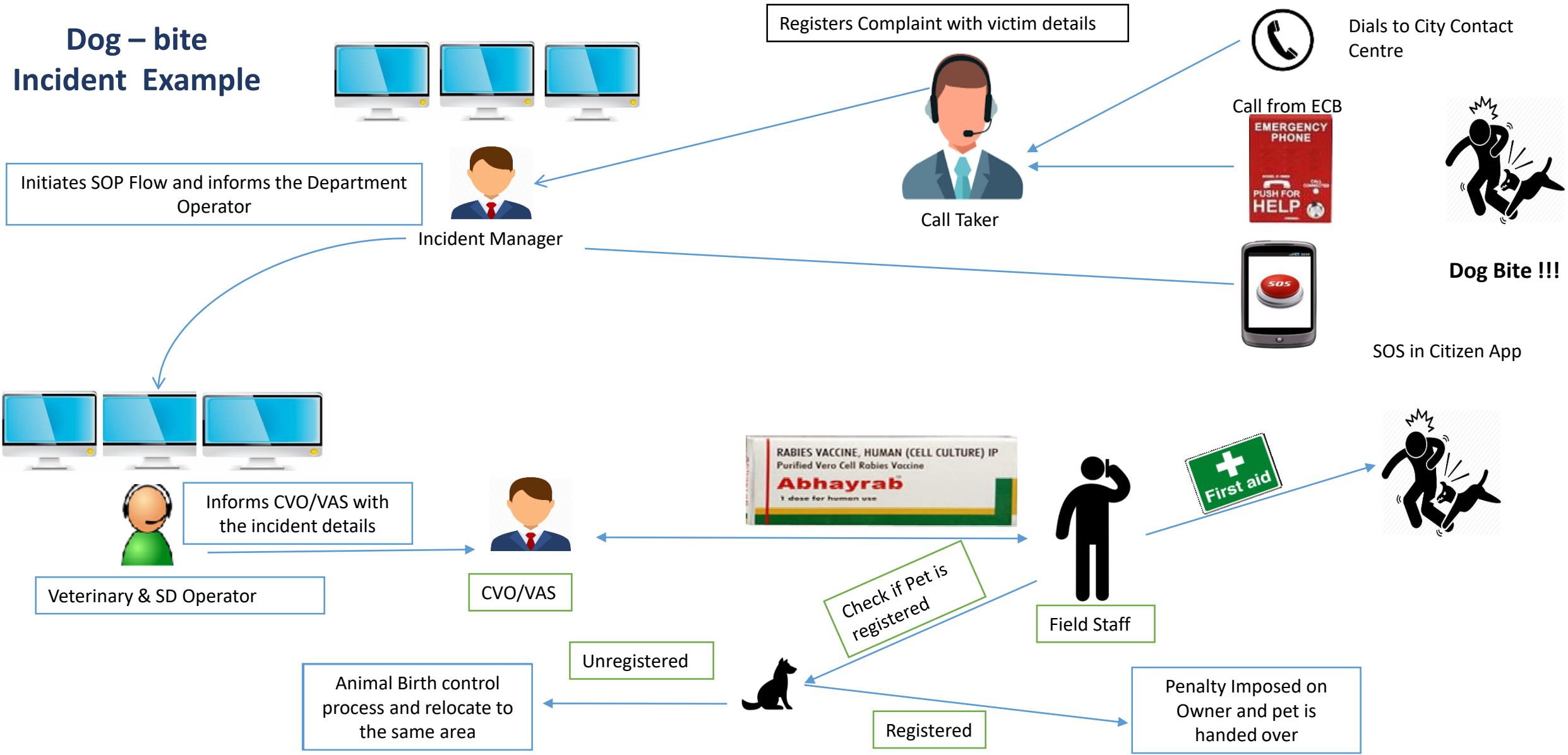
- Real time grievance tracking

Future plan

- Integration with dial 1100 (People First)
- Citizen portal

Sample use case for Emergency/Incident Management

Dog – bite Incident Example



Swachh Initiative | Solid Waste Management

IOT based semi-underground bins

Automated and on demand bin servicing - volumetric

Proactive tracking, planning and Dynamic vehicle route allocation

Real time weight recording – transfer stations

**IRIS based attendance
CCTV based cleanliness monitoring**



Benefits

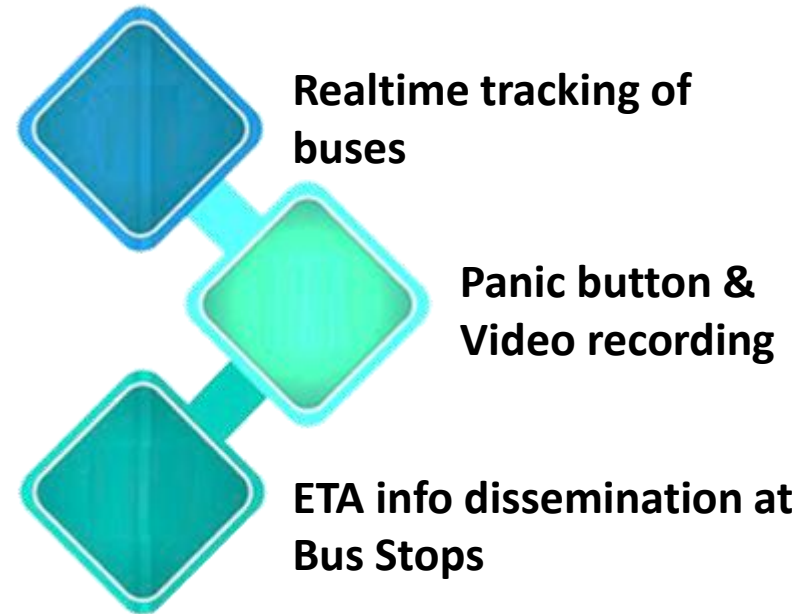
- **Effective monitoring of workforce**
- **Garbage clearing on need basis**
- **Faster grievance resolution**

Future plan

- **Automated road cleanliness monitoring**
- **More underground bins and compactor bins to be set up based on future requirement**

50 IOT based semi-underground bins

[Video](#)



Benefits

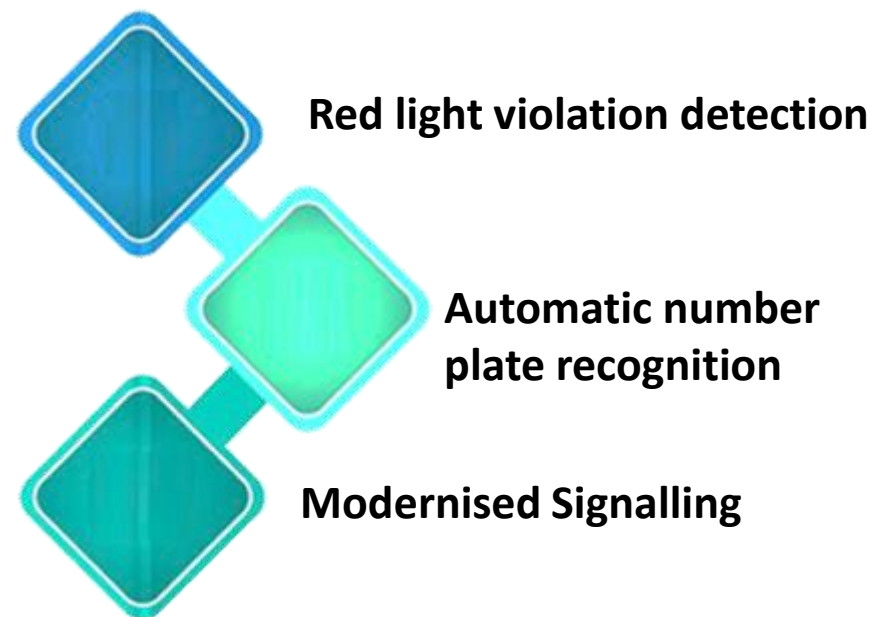
- Improved Woman Safety
- Reduction in waiting time at bus stops

Future plan

- Integration of APSRTC Real time Tracking
- Integration with Police App
- Scale for all the city buses

100 GPS enabled public buses, 50 Intelligent Bus stops and 5 Bus Terminals

Traffic Management | Intelligent Traffic Management System



10 RLVD and ANPR junctions
50 Modern signalling enabled junctions

Benefits

- Travel Time reduction
- Reduction in Accident rate by enforcement
- Effective tracking of hot-listed or stolen vehicles

Future plan

- IoT based Adaptive traffic Signalling
- Cover all the junctions of the city



Realtime information dissemination to people



10 Variable messaging displays at strategic locations

Benefits

- Traffic and Environment updates
- Administrative messages
- Communication to public during Disasters and normal situation

Future plan

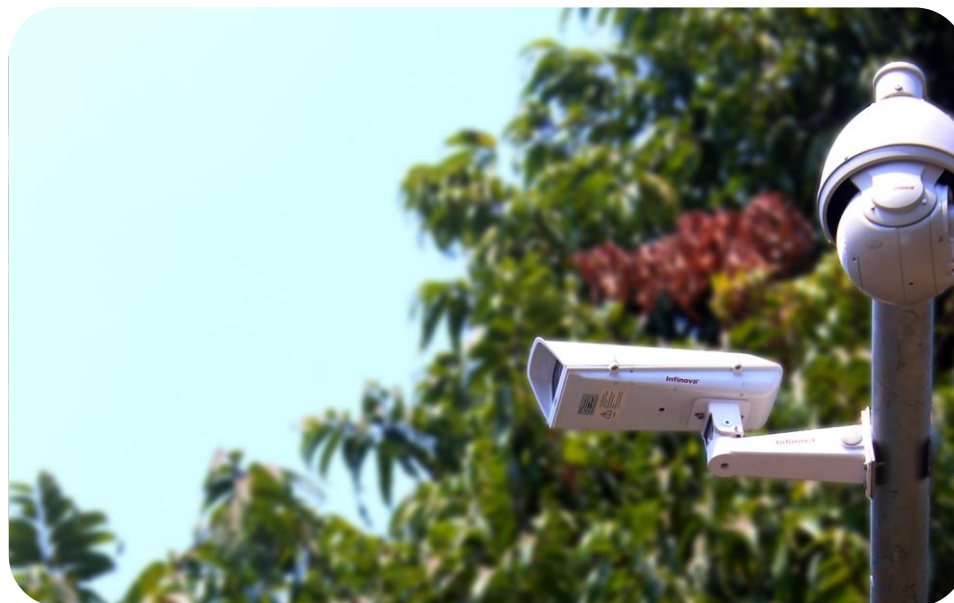
- Scale to pan city
- Advertisement



**24*7 surveillance
(Fixed & PTZ)**

**Viewing of Live
and recorded
feeds**

**Video analytics on
crowd gathering,
unattended
baggage, counterflow etc.**



Benefits

- Force multiplier - investigation
- Reduced crime rate
- Improved public safety esp. woman & tourists

Future plan

- Increase coverage for pan city
- Community cameras integration
- RTG integration

500 cameras: 400 – fixed and 100 – PTZ cameras city wide

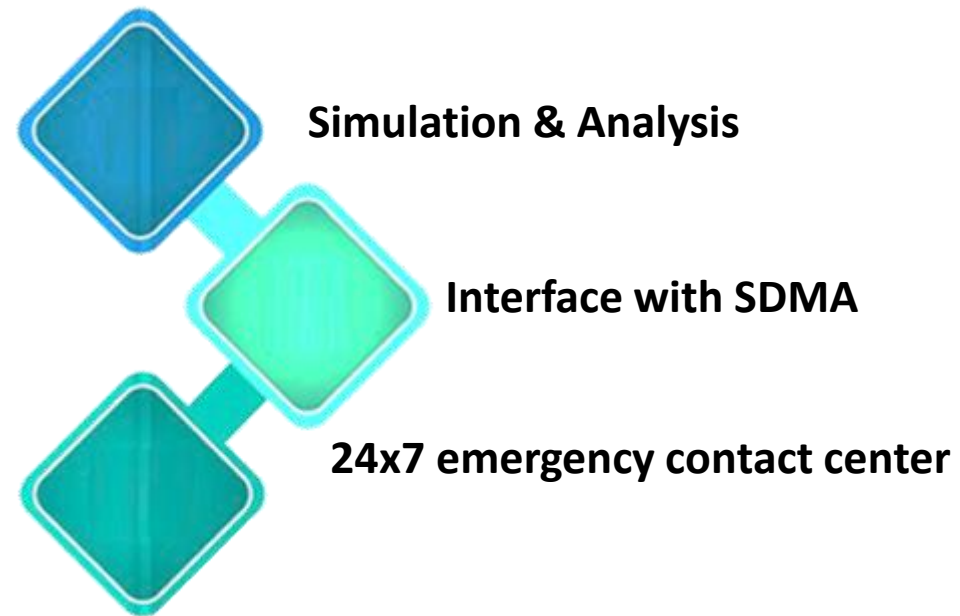
MA & UD ERP

- City Civic Center Module
- Document & Workflow Management System
- Property Tax Department
- License Module (Shops / Food / Market)
- Building Permission Module
- Accounts Module
- Audit Module
- Procurement Module
- Human Resource Management System
- Water Connection Module
- Legal Module
- Project Systems (Engineering) Module
- Hospital Management System
- Municipal Secretary Module
- Asset Management
- Materials Management
- Web Portal



OTHER E- GOVERNANCE MODULES

Disaster Management



Benefits

- **Pre-disaster planning & communication**
- **Multi-agency co-ordination**

Future plan

- **Integration with SDMA**
- **RTG integration**
- **Real time citizen updates**

Current Correlations



- ❖ Rainfall impact on Sanitation: Prediction of diseases spread areas by considering Poor Sanitation areas (Uncleaned Bins, Complaints on Open Manholes & Drainage Blocks) and forecasted rainfall.

Future Correlations



- ❖ Power conservation of Streetlights: Recommendation of Streetlights ON/OFF time for existing semi automated street lighting by considering Lux Levels based on the Astronomical Timings.



- ❖ Identifying Technical and Commercial Losses Water Supply: The deviation between Demand raised for the Water tax from the Revenue department and water supplied through Smart Water Metering.



- ❖ Seasonal diseases vs environment data : Correlation of seasonal diseases data with environment sensor data for prevention and prescription.

Telecom Antennas on smart poles

Surveillance as a service

Open data monetization

Revenue generation through Wi-Fi & Mobile app

Advertisement on Smart poles

24x7 Contact Center (10)

- (3 per shift : 3 shifts)

E-governance Support (8)

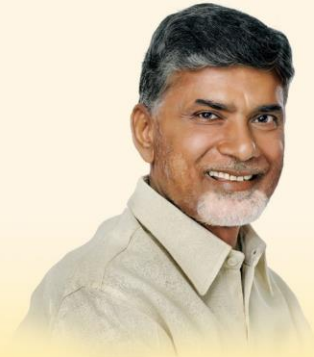
- one per zone per shift - 8

Operators (19)

- Operations Head (1 per shift : 1 shift)
- Street Light (1 per shift : 2 shifts)
- SWM (2 per shift : 1 shift)
- Revenue (2 per shift :1 shift)
- Citizen Services (2 per shift : 1 shift)
- Education (1 per shift : 1 shift)
- Veterinary & Seasonal diseases (1 per shift :1 shift)
- Town Planning (1 per shift :1 shift)
- Engineering & Works (1 per shift :1 shift)
- 24x7 Emergency & Incident Management (2 per shift : 3 shifts)

Connect to Google Future Classrooms – A Smart City Initiative





**Our Sincere thanks to
Honorable Chief Minister of Andhra Pradesh**