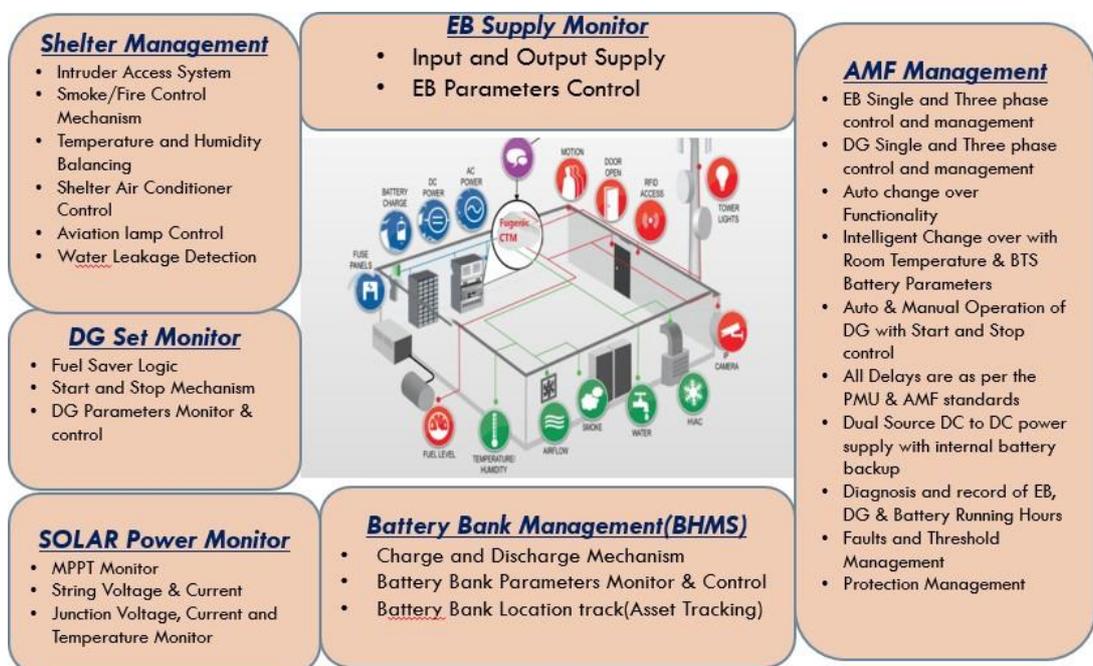# BATTERY HEALTH MANAGEMENT

The advent of mobile and mobile data has brought a paradigm shift in the lives of the populace. There exponential rise the mobile and mobile data usage. It would not be an exaggeration to say that mobile network has become major contributor the economy of the country and is defining the quality of life of citizens.

BTS stations (Cell Towers) are the fundamental infrastructure on which the mobile networks function. Smooth functioning of these BTS stations ensures the seamless functioning of mobile networks. The BTS stations are spread across the nook and corner of the landscape and maintaining and managing them manually is a tedious and challenging task.

Our Cellular Tower Manager Solution monitors manages and controls various components and parameters of a BTS station remotely resulting in efficient functioning of BTS stations with a reduced operating cost. It is a web-based solution and mobile App based access for remotely monitoring, managing, and controlling of the parameters. The solution also provides predictive analysis on parameters wherever applicable. Alarm reporting through mail, SMS, Whatsapp and other social media as required are offered in the solution.

Shelter Management
- Intruder Access System
- Smoke/Fire Control Mechanism
- Temperature and Humidity Balancing
- Shelter Air Conditioner Control
- Aviation lamp Control
- Water Leakage Detection

EB Supply Monitor
- Input and Output Supply
- EB Parameters Control

AMF Management
- EB Single and Three phase control and management
- DG Single and Three phase control and management
- Auto change over Functionality
- Intelligent Change over with Room Temperature & BTS Battery Parameters
- Auto & Manual Operation of DG with Start and Stop control
- All Delays are as per the PMU & AMF standards
- Dual Source DC to DC power supply with internal battery backup
- Diagnosis and record of EB, DG & Battery Running Hours
- Faults and Threshold Management
- Protection Management

DG Set Monitor
- Fuel Saver Logic
- Start and Stop Mechanism
- DG Parameters Monitor & control

SOLAR Power Monitor
- MPPT Monitor
- String Voltage & Current
- Junction Voltage, Current and Temperature Monitor

Battery Bank Management(BHMS)
- Charge and Discharge Mechanism
- Battery Bank Parameters Monitor & Control
- Battery Bank Location track(Asset Tracking)

Electricity Board Measurements

- Input Voltage (R/Y/B)
- Mains Accumulated Hour
- Current
- Frequency
- KW & Max demand
- Mains energy (KWH)

SVR/SMPS/UPS Measurements

- Voltage
- Current

Battery Bank Measurements

- Bank Voltage & Current
- Battery Voltages
- Battery Temperature's
- Bank Location

DC Energy Measurements

- 4 Channel Metering

DG Set Measurements

- DG Voltage
- DG Current
- DG Frequency
- DG KW Max demand
- DG accumulated run hours
- DG energy (KWH)
- Fuel Level

Shelter Parameters

- Shelter Temperature
- Air Conditioner Status
- Door Tamper
- Smoke

Solar Power

- String Voltage & Current
- Ambient Temperature
- MPPT Measurements

Alarms/Indicators

- Mains UV/OV
- DG UV/OV
- Mains Fail
- SMR/SMPS Fail
- Power Plant Battery Low
- DG Over load
- DG Fuel Low
- DG LLOP
- DG Battery Low
- Alternator-Fault
- DG HCT
- Smoke/Fire Alarm
- Shelter temperature High
- Fuel Level
- Intruder Detection
- Battery Bank Voltage Low
- Battery Drained
- Solar Short Circuit Current
- Solar Open Circuit Voltage

OUR SMART CITY SOLUTIONS
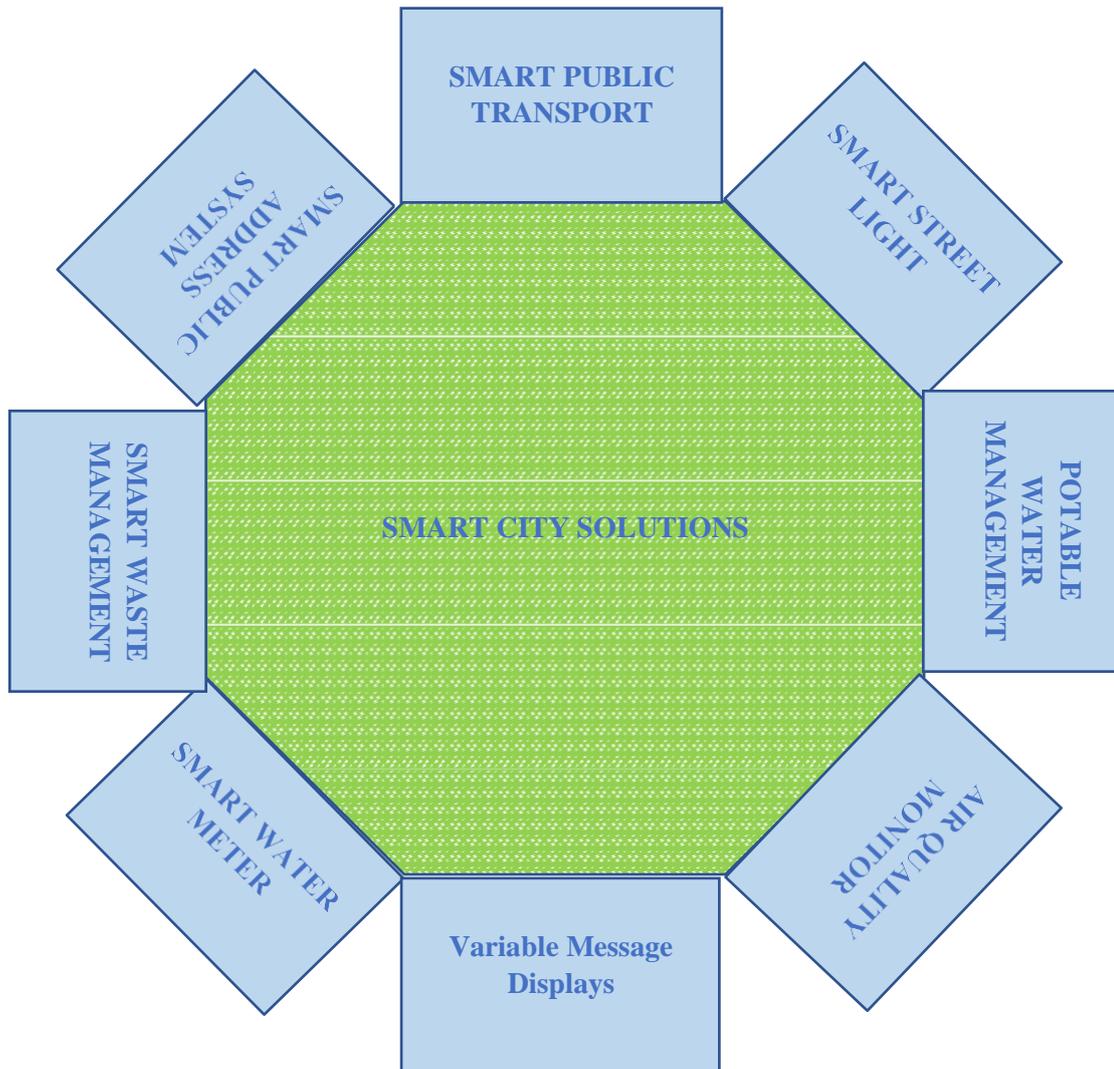
- **Smart Street Lighting**: - Smart Street Lighting solution uses RF/GSM/GPRS/LTE communication technologies in monitoring and controlling of streetlights from a centralized server. This solution helps in identifying and rectifying faulty lamps, energy saving by dimming, helps in identifying any power thefts and also gives alerts of any faulty conditions like MCB failures/Shorts/Over Voltage/Under Voltage etc.,

- **Potable Water Management: -** Quality of drinking water plays a major role in maintaining the health of a village. As part of Smart Village Potable Water Management is key solution. Battery Operated water sensor nodes are installed at the various drinking ware sources like water tanks, lakes, reservoirs. The sensor nodes collect data of various parameters like pH, dissolved oxygen (DO), oxidation-reduction potential (ORP), conductivity (salinity), turbidity, temperature and dissolved ions.

- **Smart Weather & Pollution monitor: -** This solution continuously monitors the weather parameters like temperature, humidity, wind speed etc., and pollution parameters like PM2.5, PM10, CO2, CO, NO2, SO2 etc.,

- **Smart Water Meters: -** Water meters with wireless (4G/RF etc., technologies) connected to central server with automated billing and usage notifications.

- **Variable Message Displays: -** Variable Message Displays are installed at various places like traffic junctions, important roads, community centers etc.., to display important messages and updates for the citizens. The Variable Message Displays are connected to a central server through wireless technologies wherein the message to be displayed can be updated in real-time.

- **SMART WASTE MANAGEMENT: -** Smart Waste Management is a combination of Smart Bins which send a notification once the bin is filled. Smart Vehicle which on getting a notification collects the waste and is tracked for waste collection till the waste is disposed.

- **Smart Public Address System: -** Smart Public Address systems are community installed at important locations like traffic junctions, community centres etc., to play important messages, alerts, warnings for citizens. The public address systems are connected to a central server and message to be played can be updated in real-time.

- **Smart Public Transport System: -** Smart Public Transport System is a system wherein all the public transport systems are geo tagged and can be monitored from a central location. The citizens get live updates of the approaching station, waiting period for the next transport vehicles etc..,