Telecom Tower Monitoring Solution

Technical Team

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Introduction

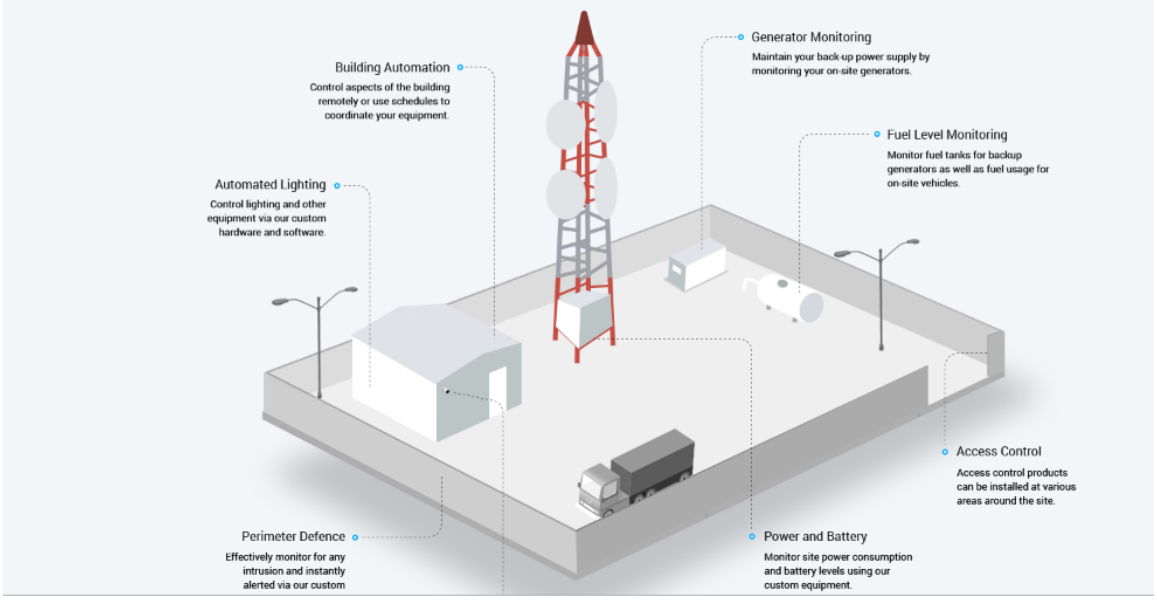
The core solutions is for the Telecom Tower Tower companies which needs to be monitored for all the passive infrastructure data like alarms ,energy,parametes,fuel gauging and temperature and humidity sensing etc of all the Tower site in distributed environment. All the monitoring activity will be controlled by the IOT hardware eqipments and using the IOT software platform stack all the datas will be logged into centralized cloud server(Tower of Centre) simultaneously from different tower networks located remotely. These collected datas will be further processed and computed by providing lots of usefule informations to take corrective actions to see the entire health of the towers are completely safe and secured.

Industry Challenges

The Telecom operators are facing the current challenges in optimizing on the capital investments involved in cell site roll-out by entering into sharing arrangements for the passive infrastructure and certain active infrastructure elements. This has led to interesting corporate spin-outs managing and holding the infrastructure assets. The infrastructure companies are competing for business from the operators, and uptime of the tower is a critical differentiator for them.

However in the near course future, all the infrastructure companies are supposed to participate on the basis of added value supplementary services like planning ,controlling and managing the end to end Tower infrastructure. To drill down now the current biggest challenge that the infrastructure companies are facing is the energy situation at a tower site like how effectively Energy can be utilized and saved during the operational timings of the cell tower site. The activities in terms of effective energy management of various energy assets like the DG sets,the EB powetr, the battery backup, intruders inside the cell fencing and this needs to be catred within the key SLA defined by the company and the vendor.

The Life9 SYS Tower Monitoring Solution is designed to address these challenges. Our unique approach is to deploy intelligent analytics for predicting downtime and triggering O&M actions to address the same. The solution offers significant leverage on the remotely collected data for intelligent operator-wise analysis at various hierarchies.



Our Methodology

Resolution of Cell Monitoring

Todays scenario the monitoring of cell tower sites from a centralized location has been increasingly difficult with expanding networks which results in the increased increasing OPEX and other constant threats from the tower system.Also due to the poor maintenance of assets and non-visibility on energy consumption only add to the complexity of the system due to inadequate techniques to safeguard the assets. Profits are getting leaner and SLAs tighter. An end-to-end site monitoring solution built on an unified IoT platform could be the solution for tower operators' problems.

Energy Management

- Our solution will swap between multiple power sources comprising the power grid,DGand battery backup to ensure system continuous up-time and efficient utilisation

- Our solutions will deploy and energy meter which measures various energy consumption paramerters and the solution delivered will have facility to pull multiple reports based on the consumption pattern

- Our Solutions will also emphasise on the cut down cost of the energy consumption and the total outages with effective planning based on the consumption reports.

- Our Solution is also intelligent to monitor the battery charging the cycle thorugh the advanced sensors.

- Our Solution also uses the Temperature and the huminity to measure the ambient humidity and temperature to help in optimizing the energy and consumed by the colling system.

Remote Security and Surveillance

- Our solution will monitor the site 24*7 authorise personnel and alerts on intrusions and hazards.

- Installation of door contact sensors to indicate if a door is open or closed and raising alerts if a critical door is opened for a long time.

SLA Management

- Setting up the SLA and follow the patterns with minimal downtime via predictive maintenance and immediate response

Diesel generator monitoring

Our solution will help in the key parameters measure power output and power and prevent pilferageand efficient fuel savings system.

Asset Management

Our solution will help in the key parameters to proactively monitor the assets health and perform predictive maintenance and these datas are available in the customized dashboards for the management like assets reports performance ,its evaluations and predictive maintenance on assets to provent expensive breakdowns.

Our Monitoring System overall benefits

- ✓ Building Automation
- ✓ Generator monitoring
- ✓ Automated lighting
- ✓ Fuel level monitoring
- ✓ Perimeter defence
- ✓ Power and battery management
- ✓ Acess control
- ✓ CCTv Survelliance

Overall Summary

- Wireless communication enabled IoT sensors-nodes meters to be installed at each Tower premises with a standars specifications
- IoT enabled wireless communication gateways to be installed in appropriate locations of the Cell tower premises
- AWS/Azure is chosen as the cloud platform to implement centralized data processing and analytics.
- MQTT is the chosen IoT protocol for communication of data gathered from the Towering system to the cloud and vice verse.
- The towers shall be read remotely in12 hour intervals or depending upon the customer frequency.
- The meters shall also have alert message facility to enable monitoring of meter tampering ,DG fuel theft,intruder alarms system etc
- Graphic user interfaces, dashboards and mobile applications will be created to help the utility service companies, monitor the Tower situation supply system in real-time and take appropriate actions.

CONCLUSION

IoT enabled water meter presents a low cost IoT based solution using LPRF/UBW/ LoRa/Sigfox for monitoring the cell and tower. Thesenodes show good coverage, energy efficiency and reliability while reducing deployment and maintenance costs and can be easily modified to add pressure and flow sensor readings.

The solution also provides how end users can access their cell tower data by simply accessing a mobile application which is integrated with their platform. With this application, the end user is able to see all the cell tower details on a daily, weekly, or monthly basis. By building this IoT enabled cell tower we aim to implement smart which will provide high data analyzing capability at lower cost. This system will not only provide significant industrial benefits but also many social benefits in terms of ecological sustainability.

Thank You

For more information, contact: Murthy BM
murthy@life9sys.com