



# IoT Applications

With the increase in smart technologies, ubiquitous connectivity, and the massive development of apps., the ecosystem is becoming more complex and evolving to encompass diverse industries. To support the vision of the “Internet of Things,” scalability of new technologies, development of system interfaces, network architectures, and implementation platforms are essential drivers. In addition to providing operators with the requisite backbone for their operations, Giza Systems has also developed in-house applications that cater to the IoT technology. The end-to-end IoT solutions cater to the various industries including Telecom, Utilities, Smart Cities, Hospitality, and Transportation.

## The applications cover:

- Home Automation
- Environmental Monitoring
- Smart Metering
- Street Light Management
- Emergency Center Management and Deployment

## Our Projects

### Home Automation

This application caters to the residential sector providing it with various benefits leading to enhancing safety and security, saving time and money and increasing convenience through the control of:

- Lighting
- Climate
- Privacy and security
- Appliances

Users have the ability to monitor the current status, usage, and preferences through a graphical interface, as well as receive email and mobile notifications alerting users of an identified risk. The application will also notify users in the case of fire or gas leakage.

### Smart Cities

**Giza Systems has developed integrated applications to cater to smart cities from various angles:**

**A) Environmental Monitoring:** this application measures emission of gases and monitors pollutants in air, gas and soil. It detects fluctuations in around 120 variables such as PH, conductivity, gas, temperature, air pressure, humidity, and

carbon monoxide (CO), ozone (O3), sulphur dioxide (SO2) and ammonium (NH4) levels in the area surrounding pollution sources.

The Environmental Monitoring application enables users from both the governmental and non-governmental sectors to:

- monitor and track compliance to regulations
- enable pollution management
- allow for environmental surveying and management programs

**B) Smart Metering:** this application enables the creation of various commands and events to track the status of smart meters, such as connect/disconnect loads, shading, remote control of meters and alert in the case of illegal tampering.

With the help of this application, utilities managing entities will be able to enjoy the benefits of reduced expenses and improved forecasting and customer service.

The benefits of this application include:

- allowing detection of both leakage and energy theft
- simplifying the micro-generation monitoring and tracking of power, both generated and consumed
- managing directly customers' energy consumption and benefiting from different pricing models

**C) Street Light Management:** the application interface enables the user to select specific street lights and have them pinpointed on the map to show their location and their status. The user can control the street lights and obtain data parameters such as the supply voltage power, supply current, run time, cycle count, temperature, energy power, level, etc.

This application can be leveraged by governmental entities to achieve:

- energy savings
- operational cost reductions and
- efficient and predictive maintenance through the utilization of new smart city applications

**D) Emergency Centers:** this application enables the tracking and monitoring of events that are sent to emergency centers. Alerts are disseminated to police fire stations and ambulances are deployed in case of emergencies.

The various applications for smart cities are integrated to enable authorities and citizens to:

- optimally manage their resources and save time, money, and energy
- obtain accurate reporting and analytics and hence improve workforce management for mobilization.