OwlEye

Telecom Energy Application Release 2

Power • People

OwlEye

About 3Tech

3Tech Corporate Limited was established in 2002, formerly known as 3Tech (Hong Kong) Corporate Limited, established in 1998. In the early stage of its establishment, 3Tech mainly engaged in the supply and after-sales service of diesel generator sets in the Greater China region. In 2002, 3Tech began to establish a local electrical and mechanical engineering team in Hong Kong, and participated in electrical and mechanical engineering projects of the Hong Kong SAR Government, public institutions and various major private institutions. Since 2003, 3Tech has actively developed its business in the overseas telecommunications industry. It has its own product brand LionRock and intelligent management platform OwlEye.LionRock's products have developed from diesel generator set products to energy solutions for communication base stations, actively participated in the booming 5G communication infrastructure construction, and extended from energy products to edge computing infrastructure products. OwlEye is the basic platform of the future Internet of Things (IoT), and its products have been widely used by different multinational operators in the world.

Our Mission

Digitize energy use for all industries.

Our Vision

To become a comprehensive and innovative world-class supplier of Telecom Energy Solution.

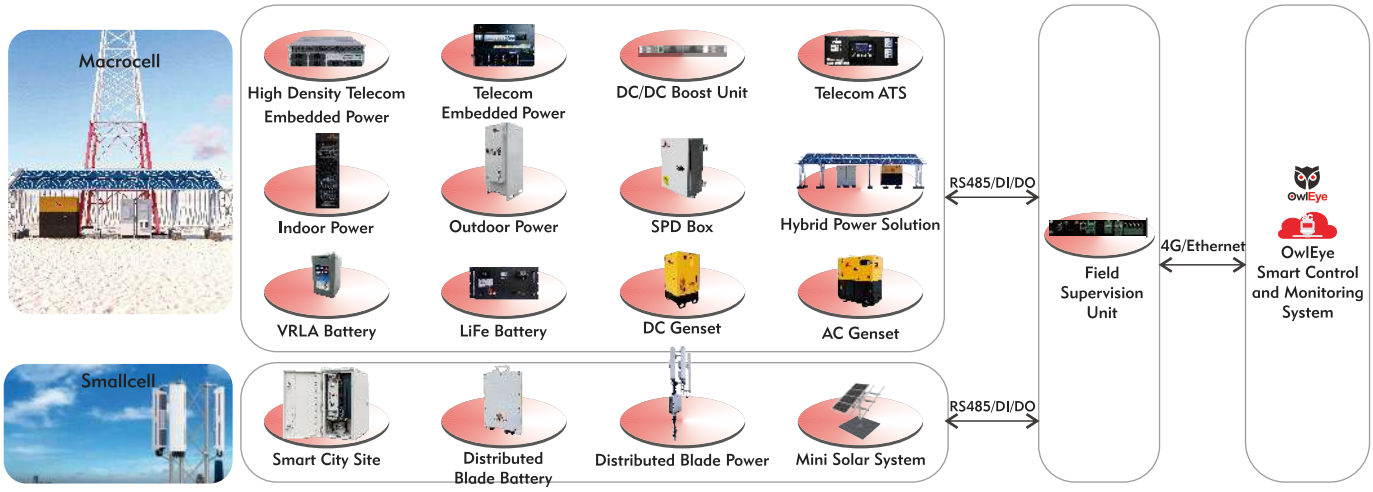
Manufacturing Facilities

3Tech Power (Dongguan) Corporation Limited

Located in Dongguan, the most developed manufacture and industrial area in China. Certified as High-Tech Enterprise, with a plant area of 12,000m^2, over 150 employees. Annual output over 5000 units.

Overview

The OwlEye Application Release 2 is an IOT platform that is applied in various scenarios like Telecom Energy, Green Energy and Data Cage etc can significantly lower the risks of site shutdown and equipment shutdown, drive down the operational cost, and improve the energy efficiency by Hybrid Solution of Solar, Mains, Battery and Diesel Generator combined. Apart from supervision of real-time parameters and alarms, the OwlEye solution provides users with Proactive Maintenance, Energy Network KPI Monitoring, Energy Statistics and Analysis, Reporting, Data Analysis, Data Visualization by Graphics, Remote Control, Modification and Reset to name a few. It can help to reduce the unnecessary site visits and ensure continuous power supply, extend asset lifetime and allow users to be aware of site energy usage.



Benefits

Energy Statistics
to analyze energy proportion and usage, optimize the energy usage by adjusting the ratio and reduce carbon emission.

Highly Efficient Operation and Maintenance
able to conduct O&M with Trouble Ticket, Proactive Maintenance to improve efficiency.

Lower Operating Expense
Less site visits and patrolling by remote control and modification in the platform, shorten maintenance time.

Prolong asset lifespan
extend assets lifespan and reduce the possibility of site down by corrective actions.

Improve Site Power Reliability
Real-time monitoring power source operation status with proactive maintenance, remote control, PAV and so forth to minimize the downtime.

Product Highlights

Rapid deployment:

Support both on premises and on cloud solutions. Able to support batch sites copy and site location quick modification in the platform, device configuration data modification;

Better User Interface:

With updated user interface that incorporates data visualization, it provides users with better data interpretation with charts, dashboards, tables and so forth;

Proactive Maintenance:

The proactive maintenance can increase asset reliability, extend asset lifetime and reduce the risk of downtime by functions in the platform like generator filter maintenance alarm, abnormal fuel level alarm, battery remaining backup time, lithium-ion remaining cycles, generator remaining runtime and next refuel date;

Report Management:

The platform offers types of reports including Energy Reports, Component Level Reports and Comprehensive Reports with the form of table, bar chart and line chart. By drilling down from root, to region and to sites, users can be aware of the KPI status. Meanwhile, custom reports can be generated to cater to users' demands.

Security Management:

By means of a range of functions in the platform such as CCTV monitoring, door alarm, E-lock monitoring physically and online user monitoring, login time management, IP address management, password policy management, the solution can monitor and ensure the site and assets security, as well as the platform security.

Product Highlights

Centralized Management:

The OwlEye platform groups by the same type of asset of overall network sites for better management and KPIs monitoring, such as Generator Management, Battery Management and ATS Management.

Generator Management: Generator KPIs monitoring, SOH detection, Refueling Logs, Low Fuel Level Top10, Generator mode and operation status statistics;

Battery Management: Battery KPIs monitoring, SOH monitoring, Low Battery SOC, Battery operation status statistics;

ATS Management: ATS KPIs monitoring, Failure to Load Statistics, ATS mode and power supply statistics;

Fuel Management:

Fuel Management is employed to allow users to monitor the current fuel level and track the historical fuel trend for analysis, calculate average fuel consumption. Moreover, estimated next refuel date and generator estimated runtime, abnormal fuel level alarm can substantially avoid generator power failure when it needs to start, and extend its service life.

PAV Monitoring:

Monitoring power availability of power equipment to minimize the possibility of site down.

Energy Statistics:

Statistics and analysis on energy generation and consumption. Optimize and save energy by adjusting the energy

System integration:

System integration is needed by users. The OwlEye platform provides North Bound Interface for system integration with third party system such as SNMP and Web Service for further analysis;

Compatible with devices from multiple manufacturers:

With flexible structure, the OwlEye platform is compatible with devices from multiple manufacturers and they can be quickly integrated, which can shorten the time and enable users to quicker monitor the devices operation status

OwlEye FSU (Field Supervision Unit)

To employ the OwlEye Solution, the FSU shall be wired with devices so as to fetch data from them and pass data to the OwlEye platform by either Ethernet cable or 4G. Below are the FSU selections:

FSU Lite Version

Features

- Built-in 4G wireless communication module
- Support Ethernet transmission
- Self-Protocol Conversion: able to convert various protocols into the Modbus / BACnet standard protocols
- Built-in web based configuration page
- Configure alarms based on data points
- Power Supply: DC 9 - 36V

FSU Standard Version

Features

- Support 4G wireless communication module
- Support Ethernet transmission
- Multiple RS485 ports, integrate protocols including switching power, air cons, BMS with different brands
- Multiple AI/DI/DO ports
- Self-Protocol Conversion: able to convert various protocols into the Modbus/BACnet standard protocols
- Built-in web based for configuration
- EMI, EMC, Lightning Surge Protection
- Power Supply: DC48V
- DC 12V Output
- 1U Size

Technical Parameters

Name	FSU Lite Version	FSU Standard Version
Serial Ports	2 * Rs485 1 * Rs232	4 * Rs485 1 * Rs232
Ethernet Port	100/1000M, self adaptive	10/100/1000M, self adaptive
USB	2 * USB ports	2 * USB ports
4G	Support 4G module	Support 4G module
SD Card	TF	TF
GPS	Support GPS module	Support GPS module
Power Supply	9 - 36VDC	36 - 72VDC
DI port	1 * DI port	8 * DI ports
DO port	1 * DO port	8 * DO port
AI	/	6 * AI ports
Relative Humidity	5%～95% no condensation, no freezing	5%～95%
Operating Temperature	-40°C - +85°C	-40°C - +85°C
Dimensions	145*115*45(mm)	482.6×44.5×230 (mm)
LED lamps	Lamps for Power, Net, RUN, Warn	Lamps for Status, Power, Network and Alarm etc
Shock Resistance	10～25Hz	10～25Hz（X Y Z Direction 2G 30 Minutes）

Functions and Features List

Items	OwlEye Functions and Features / Specifications
Deployment Solution	Support both 'On Cloud Solution' (Amazon) and 'On Premises Solution'
Supported Operating System	AlmaLinux 8 Intel/AMD (x86_64), VMware vSphere, Windows server hyper-V.
Compatibility	Compatible with devices from multiple manufacturers;
Alarm Management	Real-time Alarm Monitoring Alarm Thresholds Self-defined; Alarm Template; Alarm Auto Clearance; Alarm Notifications by Email & SMS & Telegram; Alarms Query and Classifications;Masked Alarms; Alarm Statistics; Acknowledge/Clear Alarms in Batch; Alarm Filtering Template; Alarm Expert Advise; Archived Alarms Historical Alarms Query & Download;
Real-time Monitoring	**Overall Energy Network KPI Monitoring and Guarding:** • GIS Map with Site Location and Assets Filtering; • Alarm Statistics by All Regions; • Energy Statistics; • Disconnected Site Statistics; • Fuel Consumption Statistics; • Mains Stability Analysis; • Battery SOC Distribution. **Single Site Overview Monitoring:** • Dynamic Energy Flow; • Energy Statistics and Proportion Analysis; • Alarm Statistics; • Aset Real-time Parameters Monitoring. **Navigation Tree Monitoring:** • Site Online Status and Power Source; • Site Quick Filtering and Location. **Real-time Alarm Monitoring**
History and Report Management	**History:** Performance Data Query to make important strategic decisions about the present and predictions about the future trends. **Report Management:** • Daily, Weekly and Monthly Reports; • Customized Reports; • Export and Download Reports; • Display with Bar Chart, Line Chart and Pie Chart; • Report Subscription by Email Manually and Automatically. Support Energy Reports, Component Level Reports and Comprehensive Reports.
Health and Lifespan Management	**Generator:** • DG SOH monitoring; • DG Maintenance Alarm Reminder; • Refueling Reminder. **Battery:** • Battery backup time monitoring; • Lithium-ion Battery Remaining Cycle; • Lithium-ion Battery SOH monitoring.

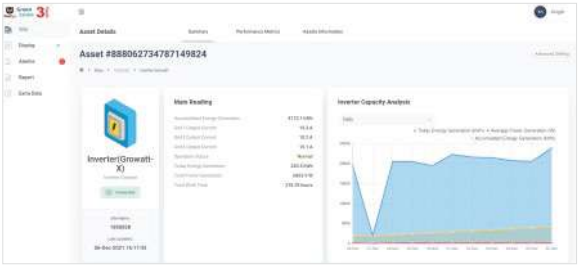
Highly efficient and meticulous O&M	**Telecom Energy Mobile App (support both iOS and Android);** **Alarm Management** • Alarm Location, Alarm Expert Advice, Alarm Co-relation, • Alarm Notification by Email and SMS and Telegram. **Equipment Delicacy Management** • Overall Network Generator Management; • Overall Network Battery Management; • Overall Network ATS Management; • Overall Network Energy Meter Management. **Proactive Maintenance** • Generator Remaining Runtime; • Generator Next Refuel Date; • Battery Remaining Backup Time; • Lithium-ion Battery Remaining Cycles. **Site Analysis** • Site Energy Analysis. **Work Order** • Trouble Ticket; • Preventive Maintenance. **Remote Control, Modification and Reset**
Energy Management	Energy Generation and Consumption by Regions; Energy Proportion and Analysis with self-defined time period; Site Energy Efficiency Tracking and Analysis; Energy KPI Report;
User Management	User Management; Role Management; Region Management.
Site Management	Batch Sites copy and modification; Signal/Asset/Alarm Names Self-defined; Sites Able to Transfer Various Regions and Provinces; Configuration of Network Layers of Entire Region/Province/Site.
Site and System Security Management	• Access Control; • Electronic Lock Monitoring; • CCTV management with motion detection and video surveillance; • Online Users Monitoring and Statistics; • Login Time Management; • Password Policy Management; • IP Address Management; • Software Management.
Backup Management	Database Backup/Restore Solution (Full Backup and Partial Backup);
Log Management	• Equipment Operation Logs; • System Logs; • Security Logs.
Inventory Management	To browse, export, import, and search inventory data.
Data Synchronization Management	Manual and auto data synchronization.
Integration with 3rd Party System	North Bound Interface: SNMP and Web Service.

More Applications and Functions

Green Energy

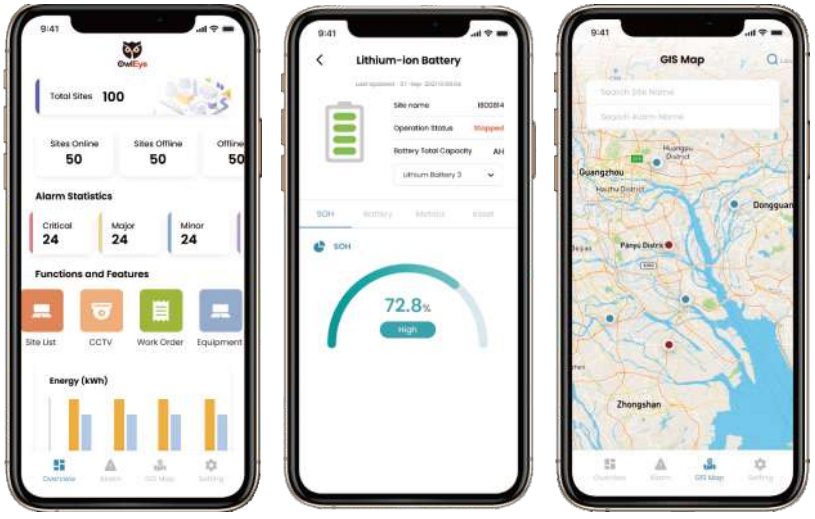
As a derived version of OwlEye, Green Energy is specially designed for the on grid solar only system in Hong Kong. However, it can also be used in similar application of other countries. Green Energy allows user to visualize the instant and cumulative solar energy production, system operating status and parameters. Both real time and historical data are available as well as alarm and report statistic.

(Green Energy APP is also available to download in APP Store.)

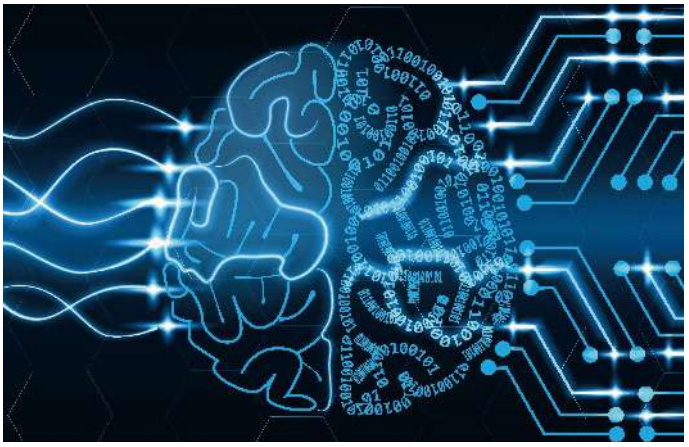


OwlEye Mobile APP

OwlEye mobile app that makes O&M whenever and wherever enhances productivity of field workforce by making remote site data available at their fingertips and also empowering them with facilities to remotely control assets, receive work order, alarms and so forth. It helps O&M personnel quickly solve the issues.



Future of OwlEye



Big Data and Artificial Intelligence technologies open up many possibilities by using data collected by the OwlEye system. By capturing and analyzing data from various sources, AI is able to find relationship between random data and obtain valuable information for work and development planning. Such technology is able to predict fault and allow preventive action to be planned before actual occurrence.

Project Case

Algérie Télécom Mobilis (Algeria)

Customer has multiple of devices without centralized monitoring and management, and needs frequent on-site visits for troubleshooting, which spikes the OPEX.

- 700 sites monitoring with on premises solution
- DG + VRLA battery + Solar + Grid

The OwlEye helps to lower the OPEX by providing remote control function and alarm expert advise, as well as centralized management of devices, reducing around 20% unnecessary site visits and improving operation and maintenance efficiency 40%.

SkyRay - Middle East Country

Customer has 110 sites with hybrid energy cabinets with OwlEye, customer reduces his cost on site visit and achieves and solves part of the issues in the platform without travelling to site, saving 32% energy.

Micronesia Project

- Customer has multiple sites to be monitored and managed;
- DG + Smart Lithium-ion battery + Solar + Grid;
- By using OwlEye solution, the system makes full use of Solar energy to generate as much energy as possible to save 40% energy.

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