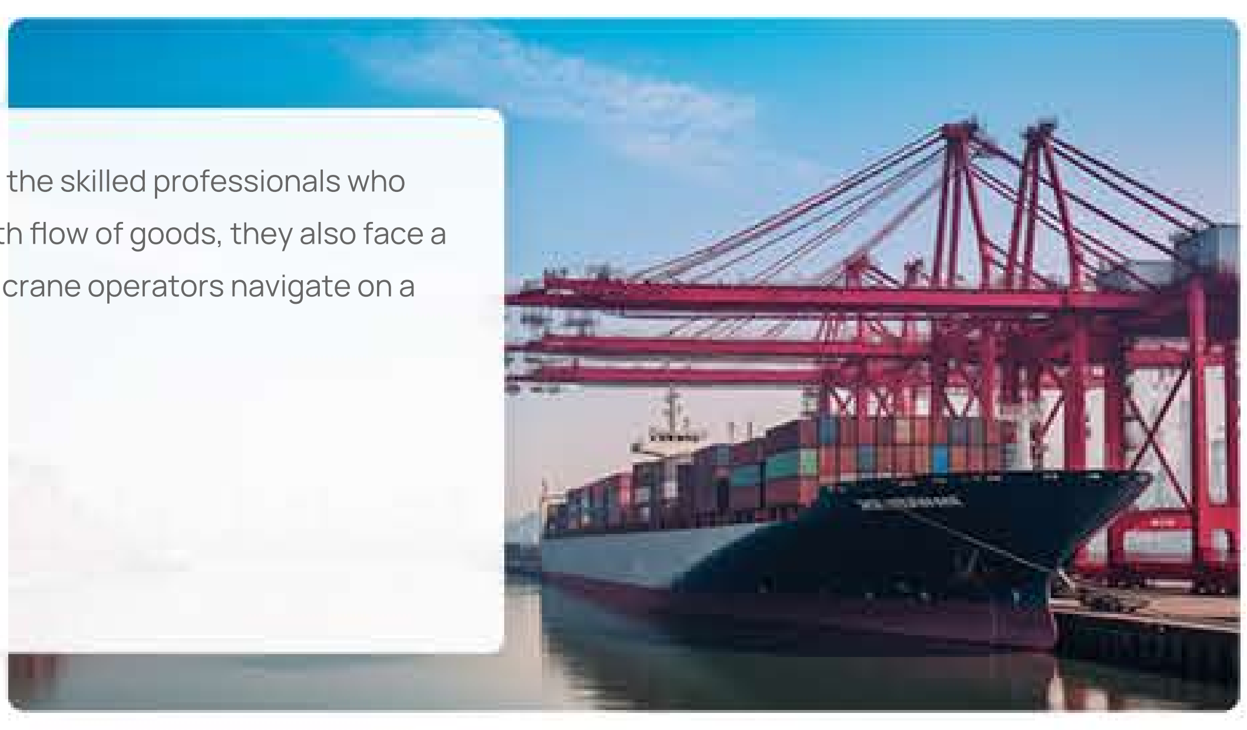
# The Evolution of Crane Operations in the Smart IoT Era

Milesight helps to enhance efficiency, safety, and overall performance of Smart Port, Smart Crane Operator and Smart Energy Monitoring.

in Turkey

| Milesight Partner | Location | Applications | Number of Devices Deployed |
|---|---|---|---|
| Basari Engineering | Turkey | Smart Port / Smart Crane Operator<br>Smart Energy Monitoring | UC100*20 & UG67*1 |

## Background



The maritime industry is the lifeblood of global trade, and at the heart of this bustling network are the skilled professionals who operate the towering cranes at ports. While these crane operators play a pivotal role in the smooth flow of goods, they also face a unique set of challenges in their daily operations. Let's explore the complexities and hurdles that crane operators navigate on a regular basis.

### Applications

☑ Smart Port
☑ Smart Crane Operator
☑ Smart Energy Monitoring

## Challenges

### Traffic and Congestion

Ports are often a hive of activity, with ships arriving and departing, trucks loading and unloading, and various equipment maneuvering in confined spaces. Crane operators must contend with heavy traffic and congestion, making precise movements crucial to avoid collisions and delays.

### Adverse Weather Conditions

Crane operators must work in diverse weather conditions, from heavy rain and strong winds to extreme temperatures. Adverse weather not only poses risks to the operators but also affects the stability and safety of lifting operations.

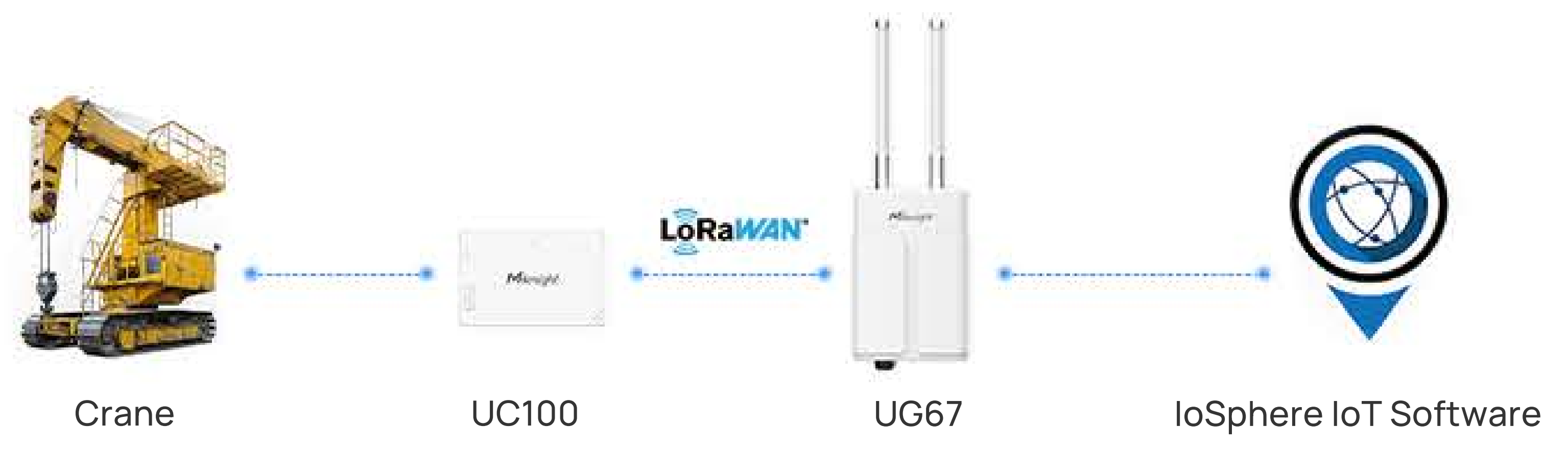
### Complex Load Handling

Crane operators are tasked with lifting and moving a wide array of cargo, each with its own weight, size, and handling requirements. This complexity demands a high level of skill and precision to ensure the safety of both the cargo and the workers.

### Equipment Maintenance and Downtime

Regular maintenance is essential for the smooth operation of cranes, but scheduling maintenance in a busy port environment without causing significant downtime can be challenging.

## Solution



In the rapidly evolving landscape of maritime industries, the traditional model of port operations is undergoing a revolutionary transformation. Smart ports, driven by innovative technologies, are emerging as key players in enhancing efficiency, sustainability, and security. At the heart of this digital revolution lies LoRaWAN® technology, a wireless communication protocol that is reshaping the way ports operate.

A port operator chose IoSphere to effectively manage and monitor energy consumption.

Increasing energy costs and sustainability targets have led port managers to seek innovative solutions. To overcome this challenge and provide more efficient energy management, a smart energy monitoring system was installed in the port. Steps taken by IoSphere :

- Step 1: Integration of Milesight UC100 Control Module
  IoSphere uses the Milesight UC100 control module to instantly monitor and analyze energy consumption. UC100 offers advanced features to precisely collect energy measurements, analyze the data, and share it through convenient integration. Energy analyzers placed at different points of the port process the data collected through the UC100 module in digital format.
- Step 2: Wireless Remote Data Transmission with LoRaWAN® Gateway
  Milesight uses LoRaWAN® technology to collect and monitor energy data obtained from the UC100 control module in a central location. Positioned to cover the wide area of the port, LoRaWAN gateways collect data wirelessly and transmit it securely to the central IoT platform. In this way, energy consumption data is transmitted to a central panel in real time.
- Step 3: Data Analysis and Optimization (IoSphere IoT Software)
  The IoSphere IoT platform offers advanced analytics tools to analyze and process incoming energy consumption data. Port managers have begun using data to understand trends and fluctuations in energy consumption through real-time monitoring. These analyzes provided the basis for increasing efficiency and identifying unnecessary energy expenditures. In addition, we can receive instant warnings about energy consumption that exceeds predetermined thresholds and intervene when necessary.

## Results

### Real-Time Monitoring and Insights

The solution provides real-time data on various parameters such as load weight, crane stability, and equipment health. Crane operators can make informed decisions based on live data, optimizing operations and ensuring safety.

### Load Monitoring and Management

IoT controllers provide accurate load monitoring, ensuring that cranes operate within safe weight limits. It enhanced safety, reduced risk of accidents, and compliance with load regulations.

### Energy Efficiency

The Milesight UC100 controller helps optimize energy consumption by monitoring and adjusting crane operations based on demand. Reduced energy costs, minimized environmental impact, and more sustainable operations.

### Data Analytics for Performance Improvement

Collecting and analyzing data from IoT devices provides insights into crane performance over time. Continuous improvement strategies, identification of operational bottlenecks, and optimization of processes.

### Integration with Other Systems

IoT-enabled cranes can seamlessly integrate with other port systems, such as inventory management and logistics.
Streamlined operations, improved communication across systems, and a more cohesive and interconnected port ecosystem.

## Partner

Başarı mühendislik

Basari Engineering, which has been operating since 2007, offers turnkey solutions in energy automation, power automation, telecommunication systems and industrial IoT with its expert and experienced professional engineering team. With these activities, it provides appropriate, high-quality and fast project solutions for system needs in industrial newwork areas.

Our company, which stands out with the principle of investing in technology and people and aims to be a leader in the market, has proven this with the references it has completed so far. With the projects it has carried out since its establishment, it has many project references at home and abroad in energy production plants, industrial facilities, rail systems, organized industrial zones, airports and building projects.

Basari Engineering has shown sustainable growth since its establishment. and has managed to become a well-known company in the market. The first priority of their work is always customer satisfaction. All employees of our company are trained in line with this priority and this idea.best-in-class end-to-end solutions to our clients.

Milesight

Tel: +86-592-5085280
Email: iot.sales@milesight.com
Web: www.milesight.com
Address: Building C09, Software Park Phase III Xiamen, Fujian, China