

IoT Solution Empowering Smart City Upgrade in Turkey

Ensuring precise monitoring and improved operational efficiency

Location: Turkey

milesight solution partner Aktif Elektroteknik A.Ş	Location Turkey	Applications smart city	Number of Devices Deployed UG67*20/WTS506*20/EM500-UDL*5/ EM500-CO ₂ *40
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Background

The evolution of digital & smart city is becoming especially crucial in today's era. For municipal projects, effective preventive maintenance can ensure better management, and help to obtain precise data, respond promptly to potential emergencies. To achieve this predictive maintenance and better empower the development of smart cities, the application of IoT solutions is becoming significantly important.

The main consideration of this project is to achieve precise environmental monitoring and preventive maintenance through advanced sensor integration in the IoT (Internet of Things) environment, in order to achieve the goal of building smart city and respond rapidly to Forest Fire and Flood.

Applications:

- Forest Fire Prevention
- Flood warning & Prevention
- Weather Monitoring



Challenges



Connectivity Challenges in Short-Range Communication

In expansive areas, particularly outdoor environments, ensuring a stable and long-lasting communication between devices is a common obstacle when attempting to deploy new technologies.



Environmental Limitation and Complicated Installation

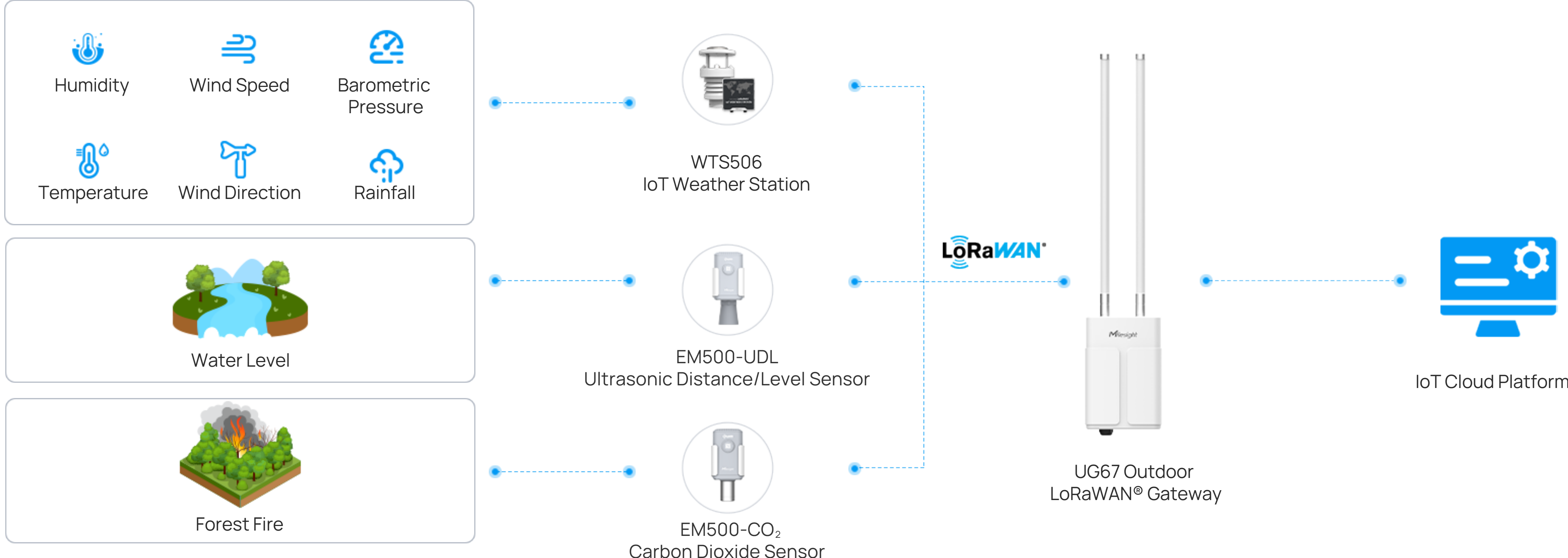
The changing weather and temperature in outdoor places will lead to a problem of device deployment and maintenance. And since the project was installed at base stations, transportation problems were encountered during implementation. This complexity also lead to increased operational costs.



Delayed Alert and Late Response

Natural disasters (like forest fire and flood) often comes fast and spread widely. However, due to inadequate protection and information transmission methods, the resulting delays can have severe negative impacts on both the economy and the environment.

Solution



Under the Digital City initiative, the local municipality decided to utilize the LoRaWAN® infrastructure in the fields of disaster prevention, urban design, and weather condition monitoring. This approach aims to identify urban risks and implement necessary preventive measures.



For Forest Fire Prevention, installed on radio towers throughout the city, the Milesight EM500-CO₂ sensors can provide accurate environmental data by continuously monitoring temperature and humidity in real time, detecting the critical parameters that indicates the happening of fire.

For Flood warning & Prevention, with the help of Milesight EM500-UDL sensors, flood warnings are transmitted to the center, alerting municipal employees in advance when critical levels are reached.

By deploying Milesight WTS506 IoT Weather Station, critical weather data (temperature, humidity, wind speed, wind direction, barometric pressure and precipitation parameters) can be collected, allowing municipal employees to achieve better decision-making.



Results

Data-Driven Insights

With timely warnings, natural disasters such as forest fires and floods are prevented, protecting environmental resources and ecological safety. And through real-time monitoring and data transmission, decision-makers can effectively understand the trends and changes in key data, ensuring better data-driven decisions and insights.

Improved Operational Efficiency

By deploying this project, ensured real-time monitoring and management of remote equipment allow Municipality to quickly identify outages, anticipate maintenance needs, and enhance worker safety and efficiency

Enhanced Network Resilience

LoRaWAN® connectivity solutions are designed for durability, the deployment of LoRaWAN® solutions allows for rapid network expansion without sacrificing service quality while also reducing operating costs.

Why Choose Milesight

"Quality of products and global awareness of the brand, availability of product diversity."
——Aktif Elektroteknik

(The client) stated that they were happy with the keystone project transfer, that they were satisfied with the quality of the devices used and that they were able to make the right decisions in the light of accurate data. The relevant municipality has now requested expansion.



Milesight Solution Partner About Aktif Elektroteknik A.Ş



Our Journey: Past to Present

Founded in 1981 in Ankara, Aktif Elektroteknik A.Ş. began its journey producing Compact Substations. Over the years, it expanded into Medium Voltage Switchgears (1988) and Mobile Substations (2004), laying the groundwork for future innovation.

In 1996, Aktif Engineering was established in Istanbul, specializing in measurement, protection, and power quality. This was followed by Aktif Power Quality in 2008, offering advanced engineering services focused on power quality solutions.

The expansion continued in 2009 with Aktif Power Elements in Sakarya, manufacturing braking resistors, panel heaters, and later, load banks, neutral grounding resistors, LV capacitor banks, and panels – strengthening the group's position in the power sector.

In 2022, after acquiring all international shares of Aktif Elektroteknik, the four Aktif companies merged under a single name, forming a powerful entity dedicated to innovation and global-quality production.

Today, Aktif Elektroteknik operates in three facilities: 6,000 m² in Ankara for MV products, 6,000 m² in Sakarya for LV solutions, and a 2,800 m² combined HQ and R&D center in Istanbul. With over 40 years of experience and exports to more than 85 countries, we deliver high-quality, cost-effective, and customer-centric solutions through a global network of over 25 distributors.

Our strength lies in listening to our customers, understanding their needs, and developing tailored projects – backed by R&D and 24/7 service. With a focus on sustainability and innovation, we are proud to be "Switching Life to Infinity."