

## Client



## Location

King Khalid International Airport,  
Riyadh (Saudi Arabia)

## Application

Airport Emission Monitoring,  
Smart Airports

## Problem

Riyadh King Khalid International Airport is the second largest airport in Saudi Arabia. A huge number of travelers transit through the airport each year increasing the air traffic at KKIA. One of the major issues in the aviation industry is the assessment, control and reduction of air emissions. The airplane's engine produces pollutants like CO<sub>2</sub>, CO, SO<sub>x</sub>, and NO<sub>x</sub>. Apart from this, activities like loading-unloading of goods, refueling the engines, etc also contribute to pollution generation.

At KKIA, dust storms are very frequent, which causes Particulate Matter (PM) generation. PM<sub>2.5</sub> and PM<sub>10</sub> are the prime pollutants due to these dust storms which are the main reason for acute asthma in the citizens. Thus, to solve the pollution problem at the airport and to curb its impact on the peoples' health, the authorities needed to monitor the real-time pollution. Based on real-time data, they can take corrective measures and generate alerts.

## Oizom Solution

Oizom was granted the project and deployed 8 Polludrones to monitor the Air Quality at KKIA. Polludrone was installed in the airport vicinity to estimate the contribution of each pollution source. The Polludrone monitored all major pollutants like PM<sub>1</sub>, PM<sub>2.5</sub>, PM<sub>10</sub>, NO, NO<sub>2</sub>, SO<sub>2</sub>, O<sub>3</sub>, H<sub>2</sub>S, CO, CO<sub>2</sub>, Noise, Temp, Humidity and Wind speed, and direction.

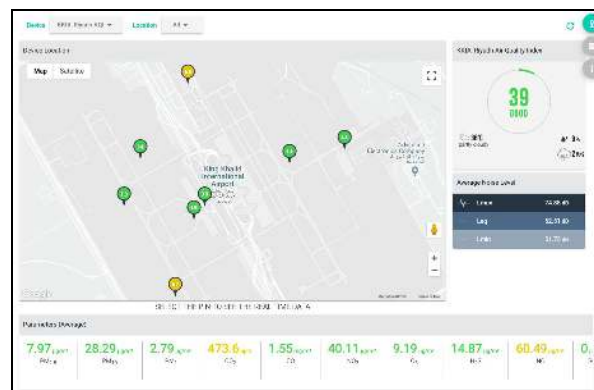
The monitored data is shown in real-time to the authorities on the Oizom Terminal which offers them analytics to take suggestive actions. In addition, the data-driven actions can increase the safety of flights while taking-off and landing, especially during heavy dust storms.

The objective of this project was to analyze the pollution trend at the airport region and then create awareness about the air quality data to the travelers.



## Impact

Capturing real-time dust particulate data from the KKIA helped Envisa and the airport authorities to understand the pollution trend. With this trend analysis, the root cause of the air traffic can be identified, and the



solution can provide actionable insights to bring improvement in the system. Also, the historical data can help to predict any upcoming dust storm and can suggest preventive actions beforehand to mitigate the after-effects.

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