

Urban Flood Monitoring and Early Warning with LoRaWAN®

Integrated rainfall and water level data enables earlier warnings and faster emergency response.

Lahore, Pakistan

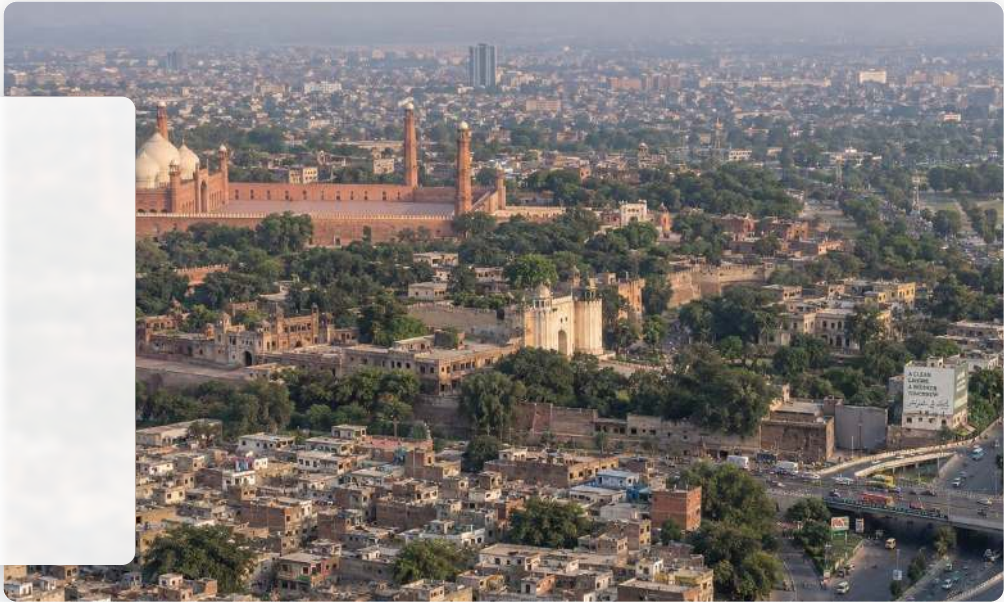
Milesight Partner DynaSys Networks	Location Lahore, Pakistan	Applications Water Management	Related Product 20x EM410-RDL Radar Distance/ Level Sensors 16 x UC502 Multi-Interface Controllers 25 x UG67 Outdoor LoRaWAN® Gateways
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Background

Lahore faces recurring urban flooding during the monsoon season. Heavy rainfall can quickly overwhelm urban drainage systems, causing road closures, property damage, traffic disruption and economic losses.

Without real-time rainfall and water level data from flood-prone locations, authorities had limited visibility into developing risks and less time to respond before conditions became critical.

To strengthen its early warning capabilities, DynaSys Networks worked with the Water and Sanitation Agency Lahore to establish real-time monitoring across critical flood-prone locations in the city.



Challenges

Limited Real-Time Monitoring

Flood conditions can change rapidly during monsoon storms, while flood-prone locations are distributed across the city. Authorities needed continuous data from these locations to track rising water levels as conditions developed.

Incomplete Flood Risk Data

Rainfall data alone could not show how drainage channels, underpasses and other vulnerable locations were responding. WASA needed rainfall and water level data together for more accurate risk assessment and flood prediction.

Delayed Emergency Response

Without timely alerts, response teams had less time to deploy personnel and other resources before flooding became severe, increasing disruption and recovery costs.

Solution

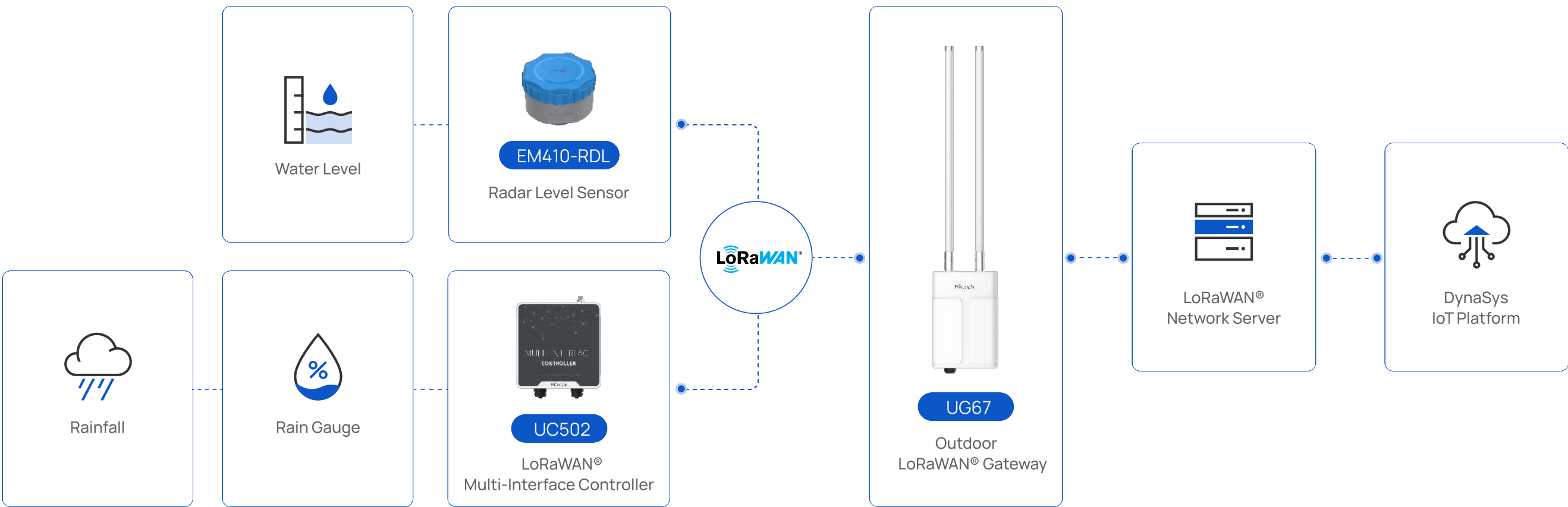
DynaSys Networks deployed a LoRaWAN®-based monitoring system using Milesight water level sensors, controllers and outdoor gateways.

Milesight EM410-RDL Radar Distance/ Level sensors were installed at critical nullahs, bridges and flood-prone underpasses. The sensors continuously monitor water levels and transmit readings over the LoRaWAN® network at the configured reporting interval.

Rain gauges connected to Milesight UC502 Multi-Interface Controllers monitor accumulated rainfall. The UC502 collects data from the rain gauges and transmits it through the LoRaWAN® network.

Milesight UG67 Outdoor LoRaWAN® Gateways, installed at telecom tower locations, provide wireless coverage for the distributed sensors and controllers. Data is forwarded to the network server and then displayed on the DynaSys IoT dashboard.

The dashboard brings rainfall and water level data together, allowing operators to monitor current conditions and receive alerts when water rises above configured thresholds.



Results

Continuous Flood Monitoring

WASA can view rainfall and water level conditions remotely through a centralized dashboard instead of relying only on periodic field inspections.

More Accurate Flood Assessment

Combining accumulated rainfall with water level data provides a clearer picture of how different locations respond during heavy rain, improving flood prediction.

Earlier Warning and Response

Threshold-based alerts help emergency teams identify rising water before conditions become critical. This provides more time to deploy personnel and response resources.

Reduced Recovery Costs

Earlier warnings support proactive action before severe flooding, helping reduce post-flood recovery costs, economic losses and disruption to the public.

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For the first time, we are able to see both rainfall and rising water levels live on the DynaSys dashboard. This helps us take action before the situation turns critical. The system will greatly support our flood response efforts.

Representative of WASA Lahore

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Discover More about Milesight Products

EM410-RDL
Radar Distance/ Level sensors

UC502
Multi-Interface Controllers

UG67
Outdoor LoRaWAN® Gateways

Why Choose Milesight



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DynaSys Networks selected Milesight for the accuracy and outdoor durability of its devices, reliable LoRaWAN® connectivity and competitive pricing. The products also integrated easily with the existing IoT platform, backed by responsive technical and after-sales support.

Together, the EM410-RDL, UC502 and UG67 connect distributed monitoring locations to a centralized platform through one LoRaWAN® architecture.

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Partner

About DynaSys Networks

DynaSys Networks is an IoT solution provider based in Pakistan. For this project, the company designed and deployed the monitoring architecture, integrated Milesight devices with its IoT platform and delivered real-time visualization and alert capabilities for WASA Lahore.