TYTO Athene™

MODERNIZE WITH INTERNET OF THINGS (IOT)

Improve situation awareness of critical infrastructure and prevent catastrophic network outages

BLUF

A military installation in Asia deployed an Internet of Things solution to reduce operating costs and improve how they monitor network systems across the country. The brigade leadership receives real-time status updates on HVAC, electrical power, moisture and physical security/access, which enables the technicians to correct deficiencies before outages occur.

BACKGROUND

A military brigade was experiencing critical system outages in multiple locations in Asia. These outages received unprecedented attention from the leadership at NETCOM and other Commands. HVAC system failures were causing computer nodes to overheat, resulting in millions of dollars in equipment losses and an extensive network outage.

After evaluating commercial solutions, the team began designing a secure architecture, including an Internet of Things (IoT) solution provided by Tyto Athene. Various environmental and electrical sensors captured and communicated real time data via cellular networks. The sensors and data transmission were outside of the Department of Defense Information Network Army (DODIN-A), to ensure no compromise in network security. The team monitored the sensor information of the network infrastructure condition, which was captured and provided to the brigade leadership through a Common Operational Portal (COP).

PILOT TESTING

Team members conducted a pilot test in cooperation with the brigade headquarters in Asia during the summer months when extreme heat, moisture and power fluctuations in the network were common. They deployed 50 IoT sensors at various locations that transmitted data on the ongoing conditions – including electrical currents, moisture, water and unauthorized access – to the brigade operations center via ten LTE gateway routers.

1000 sensors deployed to monitor infrastructure and systems

15 catastrophic network node failures prevented within

90 days of full operational capability

The brigade leaders along with other staff members were able to simulate various scenarios that may have caused the initial network outages in Asia. The IoT solution had proven to be a reliable resource during the pilot test to detect and report conditions that could ultimately lead to catastrophic network outages.

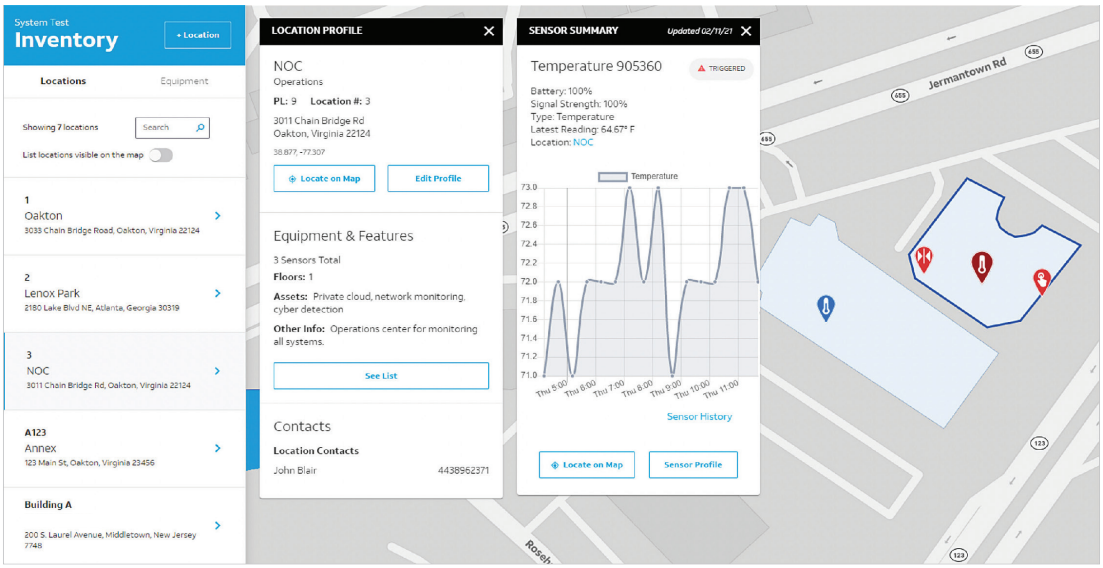
FULL OPERATIONAL CAPABILITY

Tyto Athene led a team of commercial vendors in transitioning from the pilot phase to production of the full operational capability (FOC) of the IoT solution, based on end-to-end architecture that included mobility, backhaul network and secure cloud-hosted environments. After extensive design and testing, the team packaged and shipped the IoT equipment that would monitor the network infrastructure for 60 nodes across the DODIN-A. With some creative planning around COVID-19 restrictions, the team was able to work in close coordination with the brigade IT staff that installed 60 sites in less than 30 days. The brigade leadership had gained invaluable insight of the supporting infrastructure and has credited the IoT solution in preventing at least 15 critical network outages.

POTENTIAL USES FOR THE TYTO ATHENE IOT SOLUTION

Operating in austere conditions, such as Southwest Asia, Alaska, Europe and the Pacific, Defense agencies can benefit tremendously with an IoT solution that can provide real-time network and infrastructure status to prevent network outages and equipment losses. The DODIN-A in Kuwait and Alaska could experience immediate return on investment with insights on infrastructure and environmental conditions.

Tyto Athene can deliver a solution that extends IoT capabilities throughout the U.S. and across international borders. We can set up a demonstration in any theater worldwide to show how your agency can benefit from IoT initiatives.



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