



Global Associates Engineers a 40% Reduction in Energy Use

Dialog's SmartServer™ IoT
enhances BMS performance by
LoRaWAN sensor integration

01 The Challenge

Environmental legislation is evolving rapidly in the UK and around the world. In June 2019, the UK parliament passed legislation requiring the reduction of net greenhouse gas emissions by 100%, relative to 1990 levels, by 2050. In response, a major UK-based manufacturer of consumer products with both UK and US retail outlets tasked global associates with reducing energy consumption at its stores and distribution centers, as part of a drive towards compliance with regulations related to carbon-neutrality. Reducing energy consumption has commercial benefits too. Not only does it reduce gas and electricity bills, but companies that can demonstrate solid environmental credentials are preferred by a growing number of consumers, driving brand preference and increased revenues.

Staff and customer wellbeing in-store was another important consideration. This particularly concerns how environmental conditions are monitored and managed.

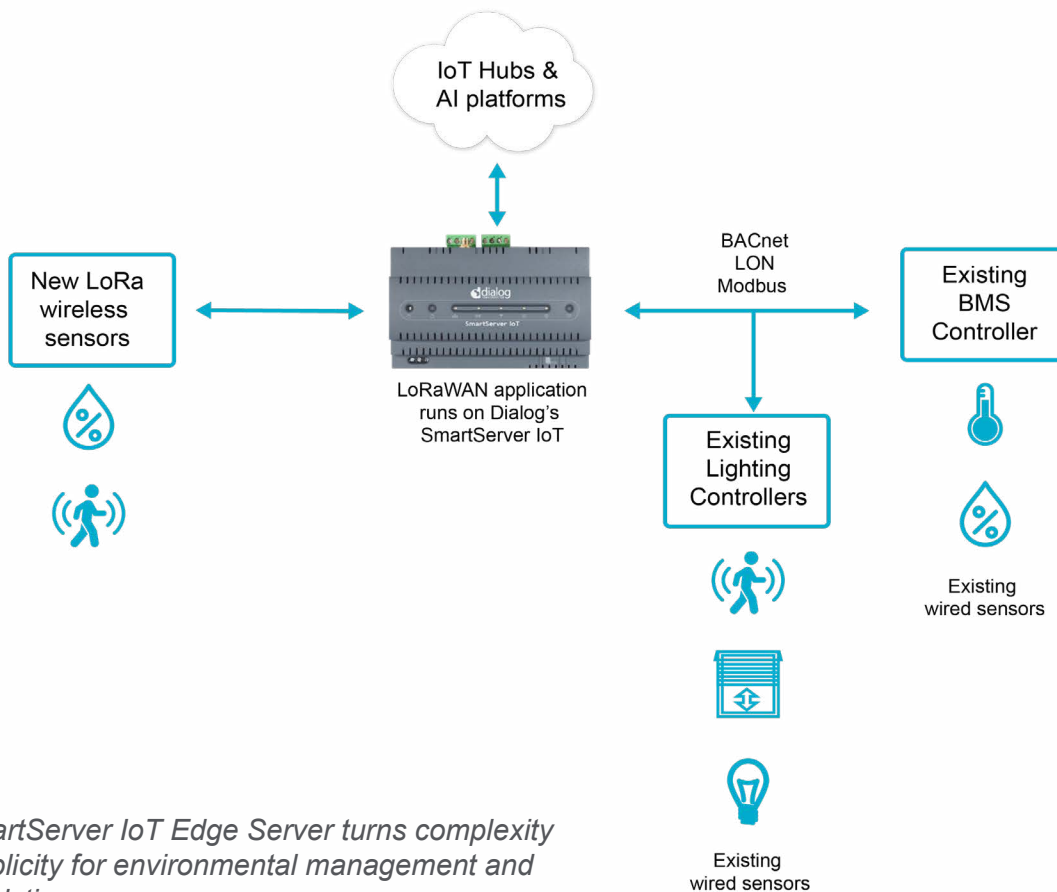
A key part to global associates' challenge was how to achieve their customers' goals while working with a legacy infrastructure. global quickly identified that the legacy systems were no longer offering the controlled function needed for efficiencies, comfort management and wellbeing. global decided on their master systems integration approach by combining best-in-class integrated controls and wireless technologies with weather-based API integration to target those three key areas resulting in significantly improved results. The real benefit to global's success is not only their site-based activities but also their ability to provide the remote ongoing triage support for complete end-to-end management.

The project was trialled at various UK locations with global associates demonstrating that significant energy savings could be made across the client's estate on both energy and maintenance costs. The client has recently awarded global a contract to target their next 90 highest energy spending sites with a further rollout in 2022 for an additional 60 sites.

02 The Solution

In partnership with Dialog, global associates developed a fully integrated, data-driven control and monitoring system based around the SmartServer IoT Edge Server.

Without disrupting the original infrastructure, energy-efficient wireless LoRa sensors were added, complementing the existing sensor networks. The LoRa sensor outputs were not directly compatible with the existing building management system (BMS), making intelligent, real-time decision-making based on the sensor data impossible. The solution was to feed them into Dialog's SmarterServer IoT platform where the IAP software layer abstracts their datapoints and converts them into BACnet datapoints. These are fed into the BMS, which can then take advantage of the additional data.



The SmartServer IoT Edge Server turns complexity into simplicity for environmental management and data analytics.

The BMS simply sees each LoRa data point as a BACnet point, the SmartServer IoT handles all translations. Dialog provided technical services through the process, including a custom application to map hundreds of LoRa data points to BACnet datapoints.

At each site, wired and wireless protocols will connect over 130 sensors to concentrators, hubs, routers, and switches, and to communicate with server-hosted measurement and control applications. Over 700 different data points are collected and processed at one site alone. BACnet, Modbus and LON protocols are all present, alongside LoRaWan wireless sensors and extensive deployment of RS-485 connections. There are also wireless actuators connected to the network infrastructure for operating both HVAC and lighting.

The end-customer's infrastructure includes the following array of sensors:

Environmental: temperature, humidity, and air quality PM2.5 levels

Occupancy: motion detection, including doorway switches and other sensors

Metering and load control: voltage, current, power, and energy

Heat exchanger maintenance: vibration sensors

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Thanks to its highly integrated design, the SmartServer IoT platform simplified and accelerated our task. We exceeded our customer's expectations with respect to energy savings and we estimate that the company will see a return on its capital investment within 14 months, or even less when you take capital allowances into consideration.



Paul Wetherfield,
CEO
global associates

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03 The Benefits

The SmartServer IoT platform, with its open, multi-protocol architecture, has delivered substantial and quantifiable benefits to both global associates and its customer:



It was easily integrated into legacy systems with minimal disruption.



The solution is scalable, simplifying monitoring and control of all customer locations from one central point. This makes it easy to implement changes at one site, a group of sites, or globally in response to the changing conditions or environmental regulations.



Where gas was the primary source for heat generation at a site, 40% reductions in consumption have been achieved; where electricity was the primary source for heat generation, 30% savings have been demonstrated.

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About global associates



global associates is a firm of building and energy management experts that combines Master System Integration technology and engineering to reduce energy consumption in a diverse range of workspaces including commercial office space, retail environments and the Industrial building sector. UK based with offices in Sittingbourne, Leeds and Liverpool.

The company was founded in 1993 and is both ISO9001 and 140001 UKAS accredited and are members of the Building Controls Industry Association (BCIA). In 2017 and 2020 they were named as the Best Building Controls and BEMS Installer of the Year an award they are finalists again in 2021. global associates solutions achieve and sustain significantly reduced levels of energy consumption for its extensive customer base, enhancing their profitability, reducing carbon footprints and helping them meet their environmental regulations.

Looking for more?

For more information on our SmartServer, please visit the Dialog website:
<https://www.dialog-semiconductor.com/products/industrial-edge-computing>



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