Case Study: Prolojik Makes Landmark London Building Smart and Future-proof for Businesses and Residents

Dialog's SmartServer™ IoT consolidates smart lighting for today and enables a smart tomorrow

The Challenge

Prolojik was awarded a contract to deliver the lighting control systems for a prestigious, mixed-use building in London EC2 – One Crown Place. The building, designed by KPF architects, comprises two prismatic towers, one of 28 stories and the other of 33, a ground-level, 6-story building with 10,650 sqm of office space and retail units, and a hotel and members' club in an adjacent row of Georgian terraces. The towers house 246 apartments.

Prolojik's challenge was not simply to install a large and complex lighting system for the diverse settings within One Crown Place. Future requirements are unpredictable, so the company's challenge was to design a network infrastructure that could adapt to whatever the future holds for the building's smart systems. Those systems may use traditional industrial communications they will be based on emerging wireless IoT standards like Wi-Fi 6 and LoRa (low power long range WAN), or even cellular M2M. As smart sensors and actuators play a growing role in making buildings more energy-efficient and more comfortable and convenient for their occupants, high-end premises such as One Crown Place may easily end up with tens of thousands of such devices from which data needs to be collected and analyzed or to which control signals need to be delivered reliably and securely.

The Solution

For the smart lighting, Prolojik selected a lighting industry standard DALI bus to connect the luminaires and smart sensors. To connect the DALI network to the building automation and controls system (BACS), Prolojik chose LON, an open standard for building automation protocol, using a LON/DALI collector.

With its built-in routing features and full native LON protocol support, SmartServer IoT was the ideal choice to bridge the lighting segments with everything else in the building automation network over a CAT 6 backbone.

About Prolojik

Prolojik makes buildings better places to work, rest, and play through the creative integration of smart lighting. The company's systems reduce energy consumption and running costs. They embrace industry-standard lighting protocols like DMX and DALI, and the latest wireless protocols, such as Bluetooth Mesh, to make lighting systems more flexible and controllable. What's more, Prolojik systems can be seamlessly integrated into electrical building control systems, whether as part of a new build or retrofit upgrade and the systems' open protocol technology means that Prolojik's clients are not locked into proprietary systems so they can enjoy resource-efficient integration of multiple other control products.

About Dialog

Dialog Semiconductor, a wholly owned subsidiary of Renesas Electronics Corporation, is a leading provider of standard and custom integrated circuits (ICs) that power the Internet of Things and Industry 4.0 applications. Dialog's proven expertise propels the next generation of today's devices by providing Battery Management, Bluetooth® low energy, Wi-Fi, Flash memory, and Configurable Mixed-signal ICs, improving power efficiency, reducing charge times, while increasing performance and productivity on the go.-efficient integration of multiple other control products.

Prolojik developed a system utilizing SmartServer IoT Edge Servers within the company's PN541 IP router hub. Thirty-one of them are used at One Crown Place for lighting control scheduling.

Each DALI lighting bus feeds a Prolojik PL340 LON/DALI controller. Each PL340 can control up to 4 x 64 DALI slave devices. The LonWorks bus outputs of the PL340s are then routed via the SmartServer IoT Edge Servers to the Cat 6 LAN backbone. Hosted services and applications are connected to the system over the CAT 6 LAN.

In addition to networking smart lighting into the BACS, SmartServer IoT supports connections into any IoT network using its USB-based hardware interface and an open library of drivers for different communications protocols. This will allow Prolojik to integrate future systems into the same CAT 6 backbone and be a part of the BACS without having to either create islands of automation or rip-and-replace today's system. This makes One Crown Plaza ready for the future of IoT.
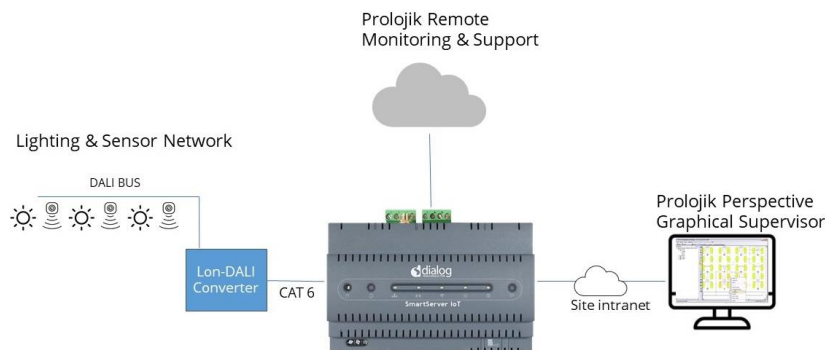
The SmartServer IoT Edge Server routes the LonWorks bus to CAT 6 Ethernet.
Over-the-air firmware and software updates can be delivered across the entire network.

The Benefits

Today, SmartServer IoT operates as part of Prolojik's lighting control systems to give users comprehensive, granular control of their lighting in the commercial, leisure, and domestic areas of One Park Place.

While the Prolojik lighting network only uses a fraction of the functionality that SmartServer IoT Edge Servers offer, its architecture makes the building 'smart ready' without adding complexity or cost. Out of the box, LON®, BACnet, Modbus, and IoT Access Protocol (IAP) are all supported by SmartServer IoT's extensible, open, multi-protocol gateway capabilities. This means that management, monitoring, and control of almost any kind of smart device that's installed in One Crown Place will be possible, with seamless integration into the building management systems. For example, environmental monitoring and control, presence and location monitoring, or health monitoring systems will all be supported expansions. SmartServer IoT's comprehensive hardware capabilities enable the collection and intelligent application of data, which are the essence of smart buildings.

Prolojik's Founder and Managing Director, Asela Rodrigo, commented: "What we've built here is much more than a lighting control system. It's an open, extensible, smart building platform capable of growing with the building for decades to come. Dialog's SmartServer IoT is at the heart of that capability."

More details of Dialog's SmartServer IoT Edge Server can be found here: