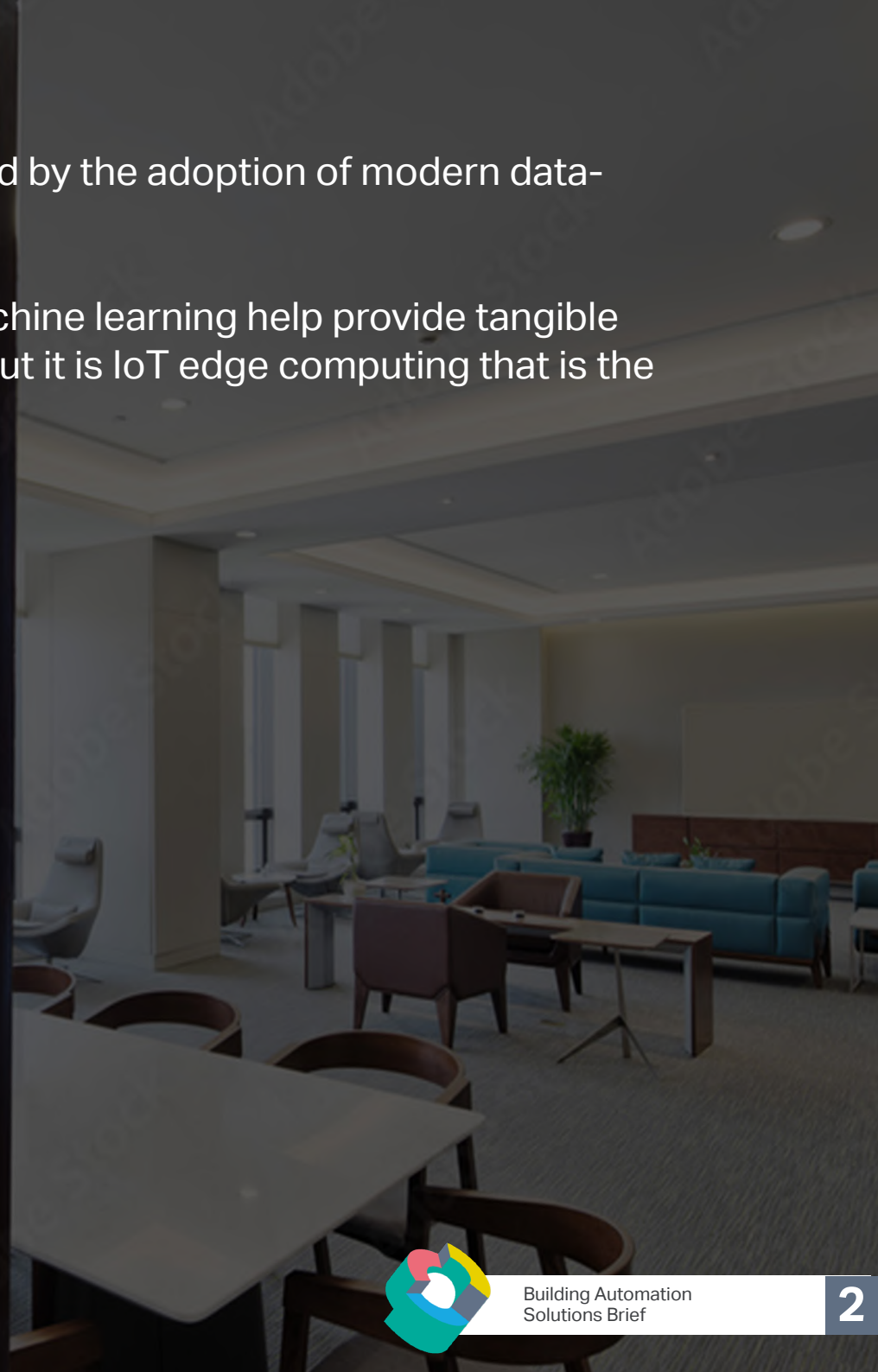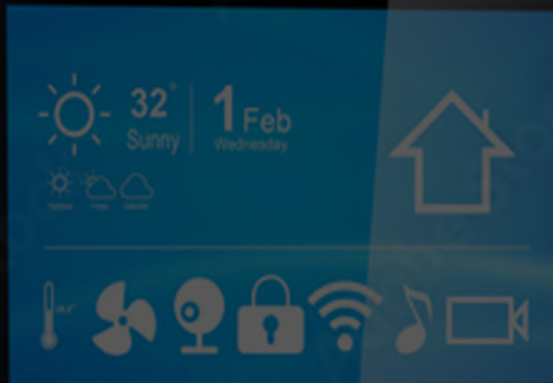**IOTech**

Building Automation Solutions Brief

Enabling Intelligent Building Automation Solutions with Open Edge Computing

The Buildings Automation industry is being transformed by the adoption of modern data-driven approaches to smart building management.

Exciting advancements in artificial intelligence and machine learning help provide tangible benefits to both building operators and their tenants, but it is IoT edge computing that is the real enabler for getting scalable solutions to market.

The Buildings Automation industry is being transformed by the adoption of modern data-driven approaches to smart building management.

Unlocking Building Automation Intelligence

Operational Benefits:

Forward-thinking building operators and system integrators that utilize modern smart building management system (BMS) techniques are unlocking many key environmental and business benefits:

- Optimized building efficiency and reduced power consumption
- Reduced system downtime
- Cost-saving predictive maintenance
- Supporting happier, more satisfied tenants
- Enabling new business models

Technical Challenges:

A smart BMS, however, must be able to address the following key technical challenges:

- Acquire data from a wide variety of building devices and cameras
- Support both greenfield (new) and brownfield (existing) buildings
- Integrate to Cloud systems for remote management and access
- Be able to deploy and management multiple buildings at scale
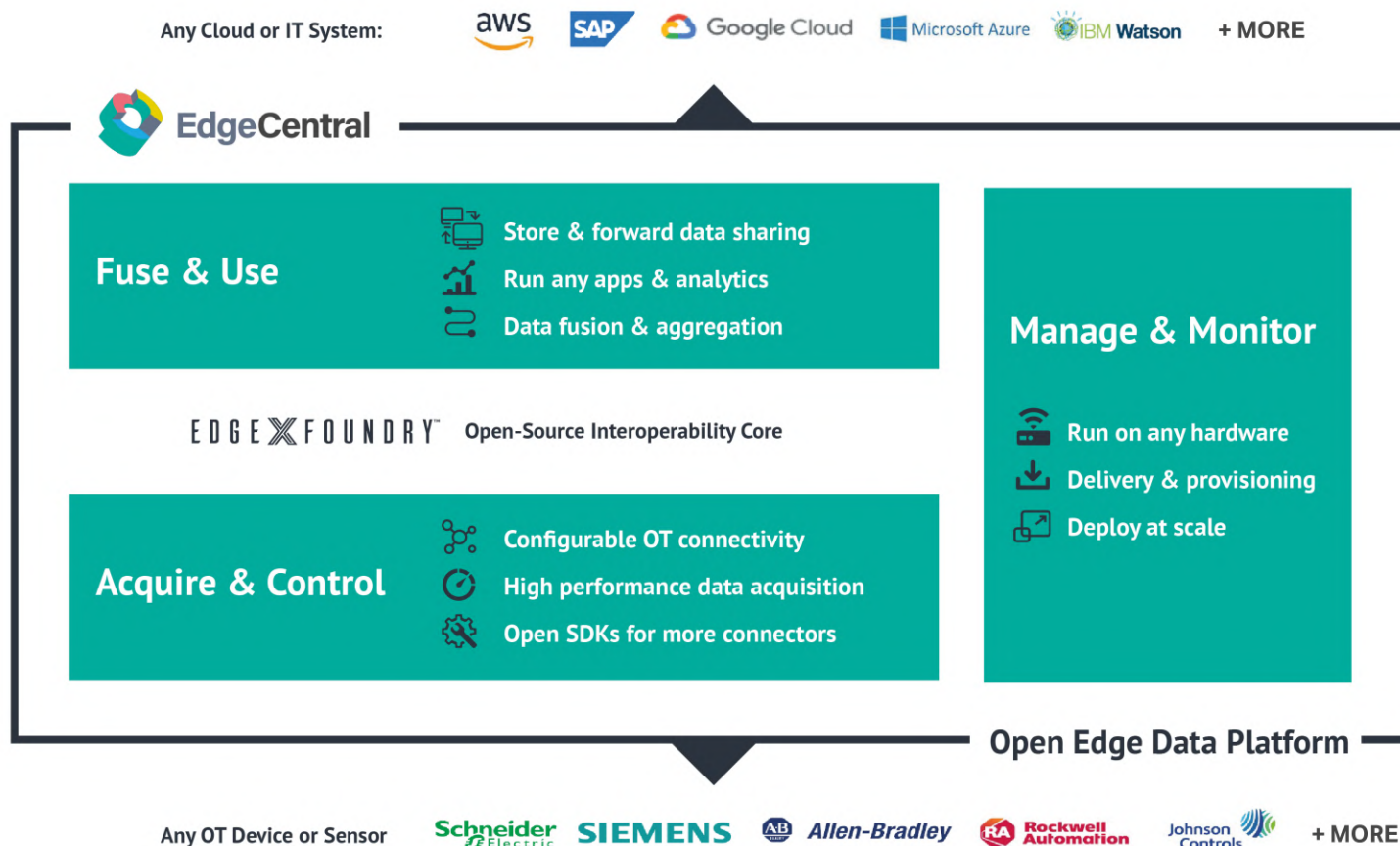- Address security and tenant privacy concerns

IOTech's edge computing software is a key enabler in helping building management suppliers deliver market leading solutions in the Building Automation industry.

Key Benefits of the IOTech Solution

- IoT edge platforms for data collection, processing and integration in each building

- Seamless data acquisition and actuation of devices, cameras and sensors prevalent in the buildings industry

- Support for key industry protocols including BACnet, Modbus, BLE, Zigbee as well as connecting to IP Cameras

- Data normalization and data fusion at the edge in each building

- Open and pluggable edge intelligence, rules and visualization

- Integration to major cloud platforms such as AWS, Microsoft Azure, Google and more

- Centralized management of the solution covering both hardware and software

- End-to-end security as standard

Building Automation Solutions Brief

IOTech Solutions Help Connect, Process and Manage the Edge

Any Cloud or IT System: aws · SAP · Google Cloud · Microsoft Azure · IBM Watson · **+ MORE**

EdgeCentral

Fuse & Use
- Store & forward data sharing
- Run any apps & analytics
- Data fusion & aggregation

EDGE X FOUNDRY™ **Open-Source Interoperability Core**

Acquire & Control
- Configurable OT connectivity
- High performance data acquisition
- Open SDKs for more connectors

Manage & Monitor
- Run on any hardware
- Delivery & provisioning
- Deploy at scale

Open Edge Data Platform

Any OT Device or Sensor · Schneider Electric · SIEMENS · AB Allen-Bradley · RA Rockwell Automation · Johnson Controls · **+ MORE**

Building Automation
Solutions Brief

Aquire and Control

The fundamental challenges of any edge IoT system is to first connect to the devices and acquire their data in an efficient and timely manner. IOTech provide the following key capabilities:
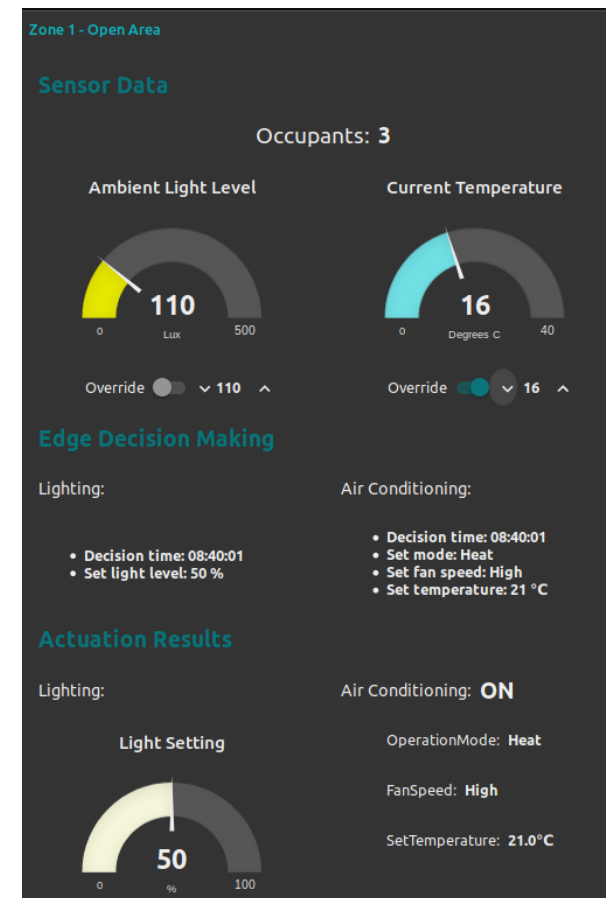
- Easy connectivity to industry devices and cameras
- Automatic discovery and device onboarding where possible
- Real-time acquisition of data from each device
- Tooling to define how each device should communicate
- Open SDKs to create more device connectors

Building Automation
Solutions Brief

Fuse and Use

Once acquired, the data can be processed on site to produce the key operational insights needed by the smart BMS. IOTech edge processing capability includes:
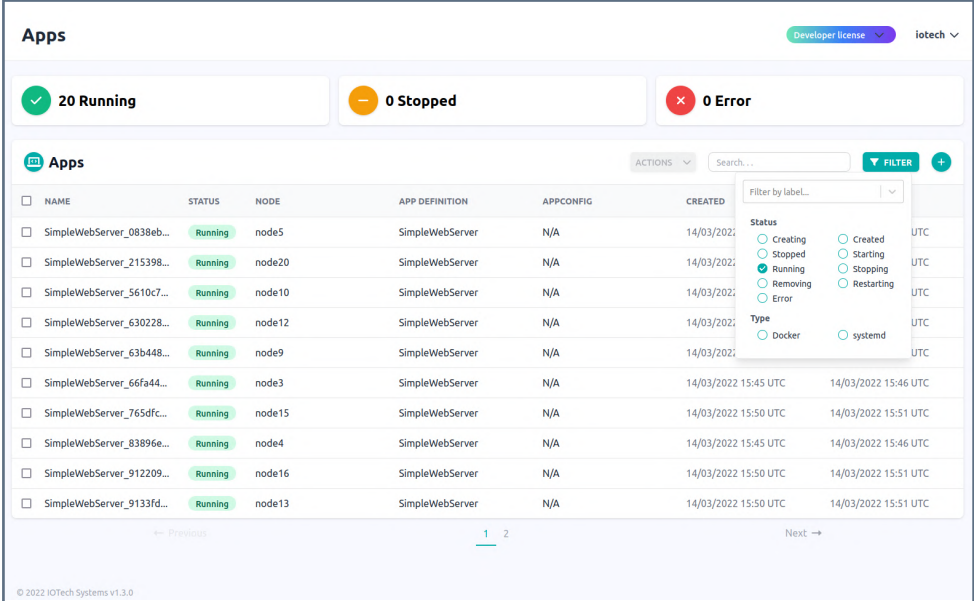
- Data fusion to combine different data sources and provide a holistic view of the building environment
- Built-in rules engines for user-defined decision making and control logic
- Alerts and notifications of key building behavior
- Pluggable third-party analytics and computer vision
- Reliable time-series edge data storage
- Visualization and dashboarding
- Cloud platform integration including AWS, Microsoft Azure, Google and IBM
- Configurable data flow to the Cloud with filtering, batching, compression and security

Zone 1 - Open Area

Sensor Data

Occupants: **3**

Ambient Light Level
110
0   Lux   500

Current Temperature
16
0   Degrees C   40

Override   ∨ 110 ∧

Override   ∨ 16 ∧

Edge Decision Making

Lighting:

- Decision time: 08:40:01
- Set light level: 50 %

Air Conditioning:

- Decision time: 08:40:01
- Set mode: Heat
- Set fan speed: High
- Set temperature: 21 °C

Actuation Results

Lighting:

Light Setting
50
0   %   100

Air Conditioning: **ON**

OperationMode: **Heat**

FanSpeed: **High**

SetTemperature: **21.0°C**

Building Automation
Solutions Brief

Manage and Monitor

Once a smart building solution is developed, the next challenge is to deploy and remotely manage the solution to all of your buildings in a scalable manner. IOTech provide the critical software capability for performing this task, including:

- Centralized management of the gateways and servers in each building
- Centralized management of edge software provided by both IOTech and third-party vendors
- Host on any cloud or on-premise environment
- Modern graphical interfaces for user friendly operation
- Integration to existing systems with command line tooling and REST APIs

Building Automation Solutions Brief

Summary

IOTech software is designed to greatly simplify the work involved in the creation and roll-out out of smart edge solutions such as a BMS. IOTech provide advanced device connectivity options that allows BMS providers to easily acquire data from a variety of industry-standard protocols and then process and utilize that data on site, in each building, and integrate to cloud systems as necessary.

IOTech software is agnostic of hardware, machine architecture, operating system and cloud vendor, meaning that deployment flexibility and reusability of the system is assured.

IOTech

For additional information about our
products, contact us at info@iotechsys.com

Visit our website

www.iotechsys.com