Build Your Intelligent Environment:
Daintree open-standards wireless controls powers your smart building

Innovative controls are the core of intelligent buildings

Today’s Energy Challenge and Productivity Opportunity
Energy efficiency is a big consideration for today’s building manager. Commercial buildings waste about 30% of the energy they consume due to ineffective HVAC controls, inefficient lighting, and poor space utilization. Further, buildings are subject to stringent government regulations, utility incentive programs, and green building certifications.

At the same time, Internet of Things (IoT) maturity provides the opportunity to transform buildings into smart buildings with data-rich sensors and controls, a scalable platform, and the right applications. Smart buildings can increase productivity and comfort, and safety—critical today, with productivity slowing 50% in the past decade.

The Solution
Today’s energy management and productivity challenges require a solution that is scalable, intelligent, and cost effective. Daintree delivers the features of a conventional lighting controls system, like providing scheduling, occupancy, and plug load control. However, it differentiates itself from competitors by seamlessly integrating into Current’s intelligent environment solution that leverages the data collected from an infrastructure built for lighting controls and re-purposes it for a digital engine that can drive new productivity enhancements.

Current by GE built its digital engine for intelligent environments with cost effective sensors and controls at the edge, a secure scalable architecture connecting to GE’s Predix IoT platform, and intelligent apps to help make decisions based on how space and assets are actually being used. Feeding data into this digital engine...
is Daintree controls, the industry’s first open standards-based solution for networked wireless building. The benefits of a Daintree powered building include:

- **Energy Reduction**: Up to 50% energy savings across lighting, HVAC, plug load, and fans from controls and energy management monitoring, and optimization with ControlScope Manager (CSM), Current’s energy management system.


- **Improved Total Cost of Ownership**: Current’s Building Energy Management as a Service (BEMaaS) model removes the complexities of energy management systems and bring smart control via the cloud at the lowest installation cost.

- **Productivity Increases**: Using the same occupancy and energy management data for lighting controls, a 100% increase in conference room availability with available software apps.

### Feature Comparison

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How Daintree Powers the Intelligent Environment

**Scalable Network Architecture**

Daintree controls serve as the foundation of a building’s digital infrastructure designed to seamlessly interoperate with a growing ecosystem of ZigBee partner sensor and lighting products and systems. Its network architecture ensures a scalable, secure, and easy to deploy solution that offers interoperability to help customers build the digital infrastructure of the future.

Daintree controls solve many of the industry’s toughest deployment challenges by eliminating wiring between the sensors and the controls. Wired solutions require new cabling between the node and controls, forcing facility managers to choose between a new killer app or complaints about a new construction project disrupting operations. Also, Daintree’s mesh network allows connected devices to communicate with each other wirelessly, drastically reducing total equipment and installation costs.
Intelligent Software Apps
Daintree delivers the industry’s most intelligent, comprehensive, and cost-effective control, monitoring, and optimization software for facility, operations, energy, and sustainability professionals with CSM. CSM offers flexible deployment options to support widest range of customers. Whether customers are looking for a limited deployment, like lighting only in a single location, or want to start seeing major gains from a suite of control applications including thermostats, plug-loads, exhaust fans, and environmental monitoring across multiple locations, CSM scales to the needs of the customer.

While most customers today add controls for energy management, Daintree is "open at the top", providing an open API to build software apps on top of GE’s powerful Predix platform. Facility managers can build their own apps or someone else’s to improve productivity or find a better energy management app. With over 125 technology partners, Daintree empowers businesses to choose from a wide range of apps that address their specific pain point. Already, Daintree supports smart building use cases like space planning & optimization, conference room management, environmental safety. This allows customer to realize more gains from their smart building than a conventional lighting controls solution.

Cost Effective Sensor Network and Fixture Designs
Today, ZigBee is the most widely deployed IoT product development solution on the market with over 40 different types of devices that provide unique datasets for app development. Daintree develops its own and works with an ecosystem of certified 3rd party ZigBee enabled sensors and fixtures. This provides greater flexibility, choice, speed, and lower project costs to businesses. While many competitors lock customers into a proprietary system, Daintree open network allows for a variety of sensor inputs. By continuing to build its ecosystem with partners like Philips, Osram, LG, Leviton, Inventronics, Titan, EU Controls, V-Mark, and ZAN, Daintree offers customers a level of customization unseen in the market today. Daintree controls can integrated into existing multi-vendor fixture solutions or can be integrated with GE’s award winning portfolio. With GE lighting fixtures coming that include imbedded sensors, Daintree will be even easier to deploy in retrofit projects.

Sensor Embedded Albeo™ LED Luminaire
Futureproofed for Smart Building Transformation

Why Daintree Controls?
Once installed, the Daintree solution remains flexible to meet the speed and innovation of the future smart building market. Other lighting or energy management solutions are either proprietary, wired, or lack a robust platform. Daintree, on the other hand, continues to be disruptive because of its open sensor network, wireless connection between nodes and controls, and support from GE’s Predix platform for app development.

Without the right sensors, controls, and API platform, building owners lack the agility to pivot with the newest technology or regulatory trends. They would either encounter future construction/deployment challenges, face sensor data limitations, or lack the platform or apps that match their desired business outcome or scalability needs. The Daintree ecosystem addresses these issues by:

- **An Innovative Sensor Network**: A proprietary sensor manufacturer will not be able to keep up with the speed of innovation. Daintree’s unique approach of an open sensor ecosystem allows Current to either develop its own ZigBee sensors or certify someone else’s to keep up with demand and provide the right dataset for app development.

- **Seamlessly Adding New Datasets**: Adding new sensors to an existing Daintree solution is simple, fast, and easy. With a wireless connection between Daintree’s controls and its sensors, managers can simply choose the sensors location, record its IEEE address, and activate pairing mode with the closest controller.

- **An Open API Platform**: Backed by the power of Predix, Current’s app partners will continue to grow, supporting new use cases, integrating new sensors, and making buildings greener, more productive and smarter.
Daintree Quick Product Guide

**Wireless Area Controller (WAC-50)**
Using open and interoperable ZigBee standards-based technology, the Daintree WAC communicates with standards-compliant sensors, switches, ballasts and LED drivers to transform basic room controls into a complete mesh wireless control solution. A WAC can independently control a single extended area, and multiple WACs can be connected together through an Ethernet network to scale the system to many hundreds or thousands of lights across a distributed enterprise or multiple sites.


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**Wireless Fixture Adapter (WFA100-SN)**
The WFA100-SN is a cost-effective wireless control solution for wired occupancy sensors and photosensors, providing ON/OFF and 0-10V dimming control of ballasts and LED drivers. The isolated relay offers N/O and N/C contacts providing robust switching options to control a variety of lighting loads.


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**Wireless Adapter (WA100-PM)**
The WA100-PM includes a 15A relay to switch ballasts/drivers and circuits, and provides 0-10V output to control one or more dimmable ballasts/drivers. It can also adapt low voltage occupancy sensors, photosensors, and wall switches/dimmers, enabling these devices to communicate wirelessly with the rest of the system. The WA100-PM provides added versatility with support for bi-level and alternate switching ballast configurations, as well as the ability to control an auxiliary relay or slave pack.


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**Wireless General Purpose Adapter – (WGA100)**
The WGA100 provides on/off switching and 0-10V analog control as well as reporting and monitoring capability of binary and 0-10V analog signal inputs for a variety of building applications. Binary outputs can be used to wirelessly control devices such as pumps, motors and contactors; analog output can be used to wirelessly control the variable speed of a fan or to report the current temperature in real time.

Daintree Quick Product Guide continued

Wireless Occupancy Sensor, Ceiling Mount (WOS2-CM) or Wall Mount (WOS2-WM)
The WOS2 is a battery-powered occupancy sensor utilizing passive infrared (PIR) sensing technology to detect movement. The sensor’s off-delay timer is user-configurable from any location using the ControlScope Manager (CSM) web application, eliminating the need for on-site, manual sensor adjustment. Installation is quick and easy without the need for any wires or plenum access.

Wireless Photosensor (WPS1)
The WPS1 is a battery-powered photosensor that is used to monitor and measure task or ambient light levels. Designed to work with ControlScope’s closed loop daylight harvesting solution, the WPS1 enables automatic and continuous adjustment of electric light levels to user-defined setpoints. Installation is also quick and easy without the need for any wires or plenum access.

Wireless Sensor (WHS 100)
The WHS100 provides ON/OFF and 0-10V dimming control of ballasts and LED driver functionality. Its familiar form factor enables a simple installation through a standard ½” knockout, making it an extremely versatile solution for a wide range of fixture types including high bay, mid-bay, and low-bay luminaires for industrial and warehouse facilities. Base mount or side mount options available.

Wireless Wall Dimmer (WWD1)
The WWD1 is a battery-powered device that can replace a standard wall switch or dimmer. Using open, standards based ZigBee wireless communications, this dimmer can be used to turn one or more lights on or off, as well as dim or brighten lights to their desired intensity. Installation is also quick and easy without the need for any wires, plenum access or wall cavity.
Daintree Quick Product Guide continued

Wireless Sensor Adapter WSA10
The WSA10 provides up to four (4) thermistor temperature sensor inputs, and up to two (2) 0-10 analog inputs suitable for a broad range of transducers, enabling wireless control and management of wired end-devices within the ControlScope system.

Wireless Thermostat WTS10
The WTS10 is a wireless commercial programmable thermostat that can connect to any single or multi-stage conventional or heat pump HVAC system, providing automatic temperature control. It is typically used in buildings under 50,000 square feet or in use with single zone packaged rooftop unit. WTS has remote thermostat configuration and scheduling with built-in temperature sensor or wireless remote temperature sensor capabilities.