

Green IT Colocation Provider SmartDC Relies on RF Code Environmental Monitoring

Client Profile

Headquartered in Rotterdam, Netherlands and founded in 2009, SmartDC provides colocation services to a demanding clientele. As a hosting provider striving towards green IT solutions, SmartDC facilities feature the best available renewable energy technologies and practices. Through closed cold and warm corridors paired with adiabatic cooling, SmartDC's newest suites boast a power usage effectiveness (PUE) of less than 1.15 PUE, thus meeting the highest standards possible, as set by The Green Grid's Green IT guidelines.¹

SmartDC's modular data centers, each built with modules of 40 to 50 IT racks, serve the needs of a broad range of customers—organizations ranging from small and medium enterprises (SMEs) to Internet service providers (ISPs) to large global corporations in a variety of industries.

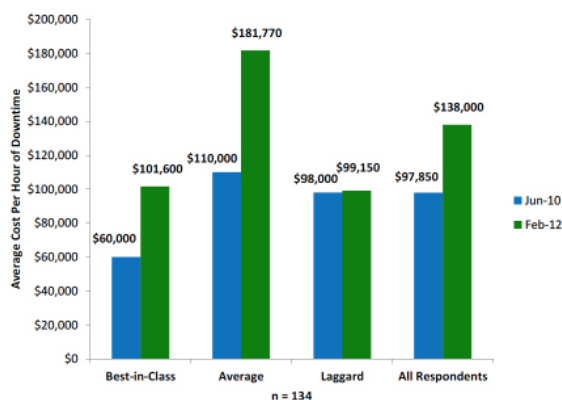
SmartDC Dataport of Rotterdam

"The combination of RF Code's wire-free infrastructure, compact environmental sensors, and open and flexible APIs made selecting RF Code's environmental monitoring solution an easy choice."

Richard Boogaard, SmartDC

Online gaming hosting is a particular specialty of Smart DC's colocation and network services. Managing Director of SmartDC, Richard Boogaard, explains the importance of hosting performance to popular gaming titles: "Within our data centers, online gaming services for players around the world are being provided by SmartDC for titles like Battlefield, Medal of Honor and Minecraft. These titles are hosted for end users playing on Microsoft Windows® systems as well as on high-end gaming consoles such as Playstation 3® and Xbox 360®. High-speed Internet connections are made with many carriers, with specific focus on high capacity and low latency. This performance is essential to the perception of the title in the online gaming community."

Objective: Flexibility, Control, and Visibility Over Environment Variables



Source: Aberdeen Group, February 2012

In a 2012 research brief, Aberdeen Group found that the cost of downtime is rising rapidly, increasing by 38% in just 19 months.

SmartDC's Managing Director Richard Boogaard was searching for an effective method of managing and controlling the environment variables within SmartDC's complex and scalable environment in order to meet the company's high green IT standards and provide the most value to customers. "Due to the high demands our customers have in regards to environment variables, and the service-level agreements (SLAs) that SmartDC must uphold, it is essential to measure what is going on in our modules properly," said Boogaard. "A traditional building management system (BMS)-based solution limits our ability of flexibly monitoring the environment in locations we deem most important and is not properly equipped to scale for future module expansion. The inflexibility of traditional BMS solutions was not the right fit for SmartDC's scalable, module environment."

¹ "PUE™: A Comprehensive Examination of the Metric" - https://www.thegreengrid.org/~media/WhitePapers/WP49-PUE%20A%20Comprehensive%20Examination%20of%20the%20Metric_v6.pdf?lang=en

As their achievements in green IT differentiate SmartDC from other colocation providers, Boogaard sought a monitoring system that in addition to being scalable, could also provide the right data in real-time-- thus enabling SmartDC to even further refine their advanced cooling techniques and maintain their green reputation.

SmartDC's need for an effective environmental monitoring system was heightened by their pioneer deployment of a evaporative cooling technology. "The use of new technology in an environment like ours can only be deployed successfully if you know what is happening at all times. In order to achieve successful deployment, SmartDC must monitor our environment at all times," asserted Boogaard.

Boogaard further explained: "Besides our own needs, we have SLAs with our customers, and naturally we also have SLAs with our suppliers. We needed a solution that would enable us to easily and continuously measure whether there is compliance within the specifications provided by suppliers and whether the innovative solutions we use are meeting our standards. Naturally, these goals are in addition to the general day-to-day management of our data center."

Solution Selection Process

SmartDC evaluated environmental monitoring and management solutions from multiple providers. However, as their management compared the available wired and wire-free technologies of the time, they quickly discovered that wired solutions proved to be especially ineffective within the modular structure of SmartDC data centers. "The traditional wired solutions proved to be unsuitable for our facilities due to our inability to deploy these solutions as needed," said Boogaard. "Furthermore, the added labor and cost of running cables to each and every measurement point was highly unappealing."

While RF Code's wire-free solution offered SmartDC the deployment flexibility they wanted and the environmental sensors they needed, RF Code's open software architecture proved to be the ultimate deciding factor. "Because we use components from different manufacturers, it is important that the management solution provides an open software environment," explained Boogaard. "RF Code's software makes this integration simple and allowed us to create a management environment that presents all of our environmental monitoring data in a single view. The combination of RF Code's wire-free infrastructure, compact environmental sensors, and open and flexible APIs made selecting RF Code's environmental monitoring solution an easy choice."

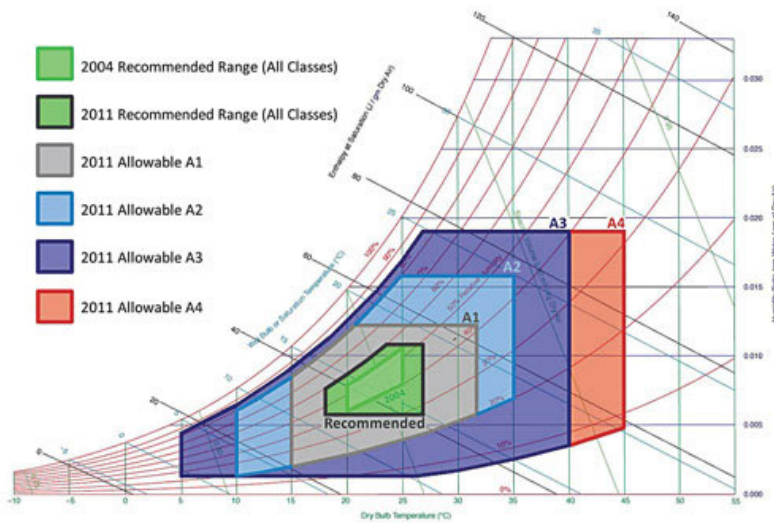
The Solution: RF Code Wire-Free Environmental Monitoring

RF Code's solution enables SmartDC to continuously measure SLA compliance accurately and reliably, thus ensuring continued efficiency and profitability. After deploying the RF Code environmental monitoring solution, SmartDC was immediately able to leverage the data provided by the tool to optimize their facilities' adiabatic cooling systems.

"It is well known throughout our industry that increasing the temperature of the air entering a rack by as little as 0.5°C can result in a 2% reduction in annual power consumption," said Boogaard. "Of course, with greater increases in air temperature, savings can grow at a corresponding rate, but if these shifts in temperature are not well monitored and managed, the likelihood of equipment failure and decreased data center reliability increases. It is very important that we closely monitor and regulate the conditions in our data center rooms."

RF Code's continuous delivery of real-time environmental data enables SmartDC to report more in-depth information to their clients. "Due to the modular design of our data center, we are able satisfy the highly specific needs and wishes of our individual customers," Boogaard said. "For example, some customers may desire to have their equipment running in a dedicated room that meets stringent ASHRAE guidelines."

"RF Code's measurement and monitoring technology allows us to provide detailed reports that demonstrate compliance and adherence to the ASHRAE guidelines," Boogaard added. "RF Code solution's capabilities are extremely flexible and allow us to adapt our reporting to the demands and requirements of each particular client."



ASHRAE has repeatedly expanded their recommended allowable temperature and humidity ranges for data center equipment over the past 10 years, underscoring the tremendous savings modern data centers can realize by carefully increasing temperature set points.

RF Code supplies affordable wire-free sensors that operate via RFID technology, a feature that makes each sensor easily deployable and adaptable to monitoring different specifications, e.g., ASHRAE guidelines. Each wire-free sensor transmits data regarding temperature, humidity, and/or other customizable environment variables in the locations you need these measurements to be monitored.

RF Code also provides the software that makes this environmental management through monitoring accessible and simple. Easy-to-interpret software features like the Rack Cooling Index (RCI) and Return Temperature Index (RTI) allow the user to directly interpret the data received from the sensors.

Next Steps

Following their successful deployment of RF Code's environmental monitoring software and wire-free temperature and humidity sensors, SmartDC has already expanded their deployment of RF Code environmental sensors to include leak detection sensors. "RF Code wire-free sensors enable us to immediately detect leaks in the adiabatic cooling systems before they lead to an emergency situation," explained Boogaard.

Further steps to deploy RF Code sensors will include the monitoring of air pressure in order to monitor the pressure differences between hot and cold corridors and use the data gathered to further optimize the system.

About RF Code

RF Code is the world's fastest growing, leading provider of distributed IT environmental monitoring and asset management solutions. As an innovator in the industry, a stand-out feature of RF Code is the capability to collect data in real time through their wide portfolio of wire-free tags and sensors for asset management and environmental monitoring. With an open architecture design, the solution integrates easily to any DCIM system which allows its application to expand outside IT into other enterprises such as healthcare and industrial supply chain asset tracking

RF Code is an essential component of the asset management, risk and compliance assurance, and automated control systems in healthcare, IT services, industrial supply chains, and natural resources / oil & gas industries. RF Code is a privately held company with investors including QuestMark Partners and Intel Capital. The company is headquartered in Austin, TX, with offices and partners in the UK, EMEA, Australia, Asia and South America. For more information, please visit <http://www.rfcode.com>.

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