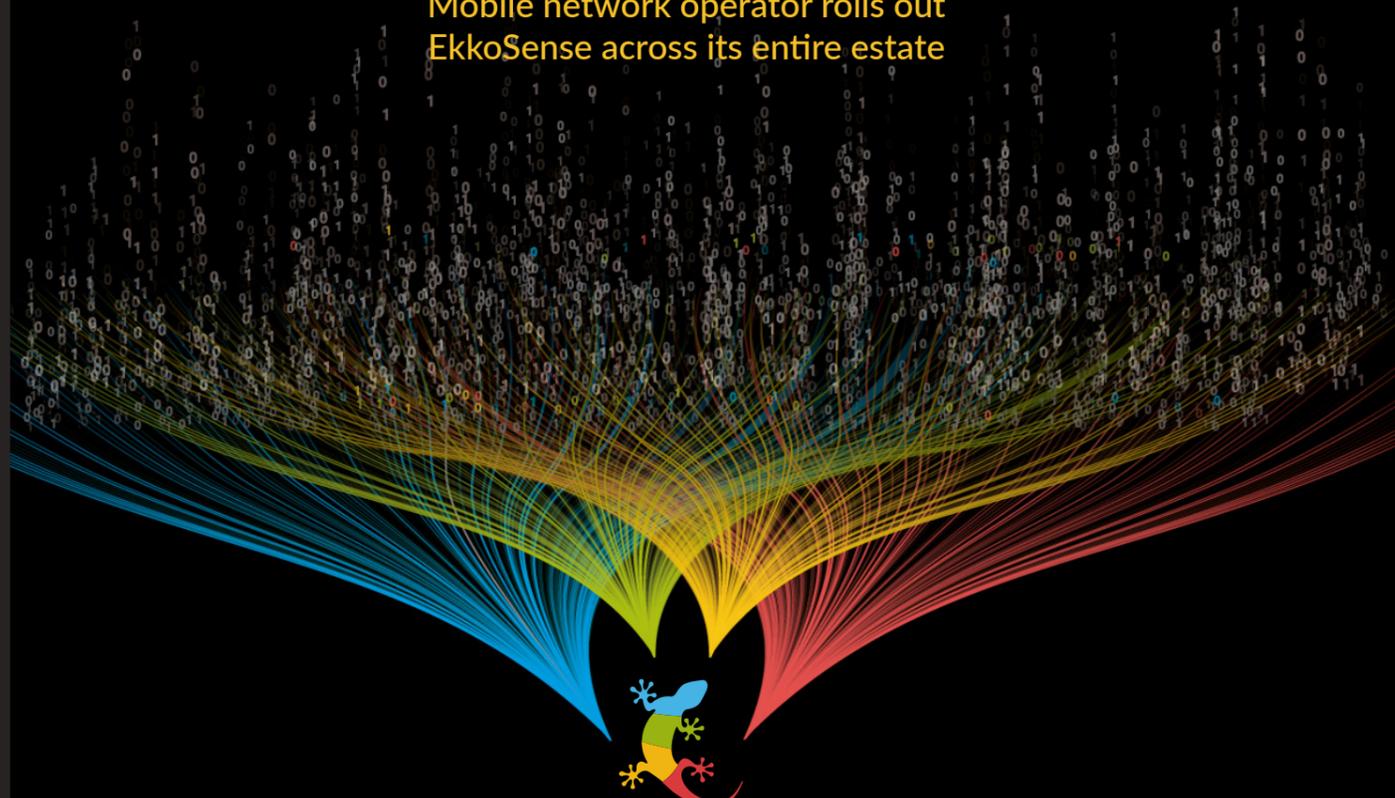Ekko Sense

Case Study

Helping Virgin Media O2 deliver against Net Zero goals

Mobile network operator rolls out EkkoSense across its entire estate

The EkkoSense® Effect

19%
Av Energy Saving

$0.8M
Annualized Saving

1M
Kg CO$_2$ Saved/Yr

To help build a greener network, Virgin Media O2 is radically overhauling its data centers and core network sites with brand new, energy-efficient cooling equipment to regulate temperatures at the sites that keep its mobile network running.

Virgin Media O2 has also become the first major mobile network operator to roll out new management software from EkkoSense across its entire estate. The software uses smart sensors fitted to data center equipment to monitor exactly how much cooling each site needs at any one time, and report back on how to optimize cooling as demand changes.

The initial efficiencies this tech provides us are through power reduction and site optimization. Any time we reduce energy use at our network sites it has a direct impact on our energy efficiency – which means we consume less energy for each unit of data that our network transmits. The new EkkoSense software is expected to deliver energy savings equivalent to one million kilograms of CO2 year-on-year. (Estimated energy savings based on electricity use at 12 Virgin Media O2 data center and switch sites (before/after upgrades.)

Benefits

Jorge Ribeiro Rousse, Director of Service Platform Strategy and Engineering, Virgin Media O2: "Demand for data on our network continues to grow year on year, so upgrading our data centers and core network sites is crucial. We continuously invest in updating the facilities that host our network; so that rather than adding more and more kit, we are reviewing exactly what we need to keep meeting customer demand, whilst still minimising our energy usage. The move to introduce EkkoSense has not only helped us make sure each site operates as efficiently as possible, it also helps identify any issues and prevents overcooling or overheating – so we can keep our network running seamlessly in line with customer demand.

"Introducing the new technology and working closely with the EkkoSense team has enabled us to deliver cooling optimisation right across our estate – saving energy and minimizing thermal risk. This has, in turn, allowed the 'release' of critical capacity on site.

"Ongoing thermal monitoring will also allow our dedicated data center teams to respond to any issues quicker and more effectively, with insight to help prevent similar issues occurring in the future.

"There may also be further efficiencies across the technical estate as we roll the technology out. For example, the software has provided operational benefits through early visibility of potential thermal anomalies. We are also introducing Cold Aisle Containment, which – working alongside the EkkoSense software – will allow us to drive further efficiencies in the future."

Solution Explained

"Cooling technology is pivotal to the effective operation of our data centers and core network sites. In fact, it's the third most important factor behind IT and power. Without the correct cooling configuration, we would need to restrict the operating limits for our data centers – which can add thermal risk, increasing the likelihood of service outages.

"We looked at several different toolsets in the marketplace, but chose EkkoSense because their team offered us the flexibility to work together with them to develop a product that was tailored to our needs. The result is a powerful monitoring, 3D visualization and analytics platform that tracks our data center estate cooling infrastructure performance in real-time and enables us to use only the energy we need to when meeting our cooling requirements. It's also intuitive and easy for our operations team to use.

"The new EkkoSense software uses smart sensors fitted to our data center equipment to monitor exactly how much cooling each site needs at any one time, and report back on how to optimize cooling as demand changes. Meeting our exact cooling demands means our network is using energy in a more efficient way.

"The new EkkoSense software has been very beneficial in monitoring how much cooling is required at each site at any one time. The software provides a real-time 3D model of each unique data hall, and uses machine learning to understand the cooling distribution within the space. This helps us identify and prevent hot and cold spots within the facility, matching exact cooling demand with our energy inputs. It also provides reassurance that the cooling system at each of our sites is operating in the most efficient way."

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EkkoSoft® Critical

Proof of Innovation

EkkoSense is a global leader in the provision of software-driven thermal optimization solutions for critical live environments.

With its powerful EkkoSoft Critical SaaS 3D visualization and analytics solution for data centers, EkkoSense is making it even easier for data center operations teams to collect granular real-time data, visualize airflow management improvements, manage complex capacity decisions, and quickly highlight any worrying trends in cooling performance.

The key difference with the EkkoSense approach is that the solutions not only pick up the problems or underlying negative trends but also suggest best practice solutions based on EkkoSoft Critical's extensive knowledge base and deep analytics capability. This effectively removes data center thermal risks and provides 100% rack-level ASHRAE thermal compliance. All this comes at a fraction of the cost of more expensive and complex legacy data center DCIM or CFD solutions, and offers a genuine ROI of less that 12 months in most cases.

EkkoSense has already helped its clients to reduce their cooling power-related carbon emissions by around 4,100 tonnes CO_2-eq per year – equivalent to a cumulative 10 MW+ cooling power saving and a $10 million cooling energy cost saving. These totals are being added to on a daily basis.

"We're delighted that Virgin Media O2 chose EkkoSense to help them cool their data centers more efficiently and deliver energy savings at a time when demands on their critical facilities have never been so intense. Our software's ability to capture and analyse Virgin Media O2's critical power, space and cooling information in real-time gives their data center team access to much more powerful optimization capabilities, as they progress towards net zero." - Dean Boyle, CEO, EkkoSense

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Key EkkoSense innovations that distinguish the company's software-based optimisation approach from more traditional legacy DCIM approaches include:

- The application of machine learning analytics built right into the heart of EkkoSoft Critical. Based on PhD-level thermal expertise, data from 50m+ data points in critical facilities around the world, as well as real-time inputs from sensors deployed across an organisation's entire estate – from Edge facilities through to the largest enterprise sites

- Unique Cooling Advisor functionality that provides continuous tangible optimisation recommendations to deliver cooling energy savings up to 30% - your own virtual PhD expert continually optimising your facility, , and always on hand to help in-house data centre teams to deliver the next best optimisation outcome

- The application of EkkoSense's distinctive Cooling Zones capability that shows the real time correlation between cooling units and IT racks to support optimisation and provide very effective redundancy and resilience testing – providing organisations with a much higher degree of confidence in the ongoing resiliency of their cooling plant

- A Lightweight and easy-to-manage M&E Capacity management capability - meaning that you no longer need an army of people or huge costs to deliver an effective centralised capacity management process

- Use of the latest Web technologies – including gaming interfaces to provide data centre teams with the most intuitive, easy-to-use and simplest to manage monitoring and management capabilities. By creating immersive Digital Twin representations of your data centre, operations teams get to see all their current cooling, power and thermal conditions via a single, accessible 3D visualisation

- Truly granular levels of sensing – taking advantage of EkkoSense's latest low-cost IoT wireless sensor technology to allow sensors to be deployed in higher numbers across the data centre right down to rack-level – making true machine learning-based analytics and real-time thermal management of critical facilities a reality. This is typically complemented by our EkkoAir vendor-agnostic cooling unit smart meter that provides real-time cooling duty information, highlights unperforming units and helps predict potential failure points before they happen

The result is EkkoSoft Critical - an immersive, intuitive and effective M&E software platform that helps customers such as Virgin Media O2 to:

- Become fully ASHRAE-compliant and remove thermal risk

- Identify unused cooling capacity and unlock potential capacity increases

- Directly support their green agenda & reduce carbon footprint in the quest for net zero

- Gain real-time monitoring insights from anywhere with full remote visibility

- Optimise cooling and gain energy savings of up to 30%

- Plan, predict and model M&E capital spending with confidence

Scalability

EkkoSense's distinctive software optimisation model lets data center teams gather and visualize capacity, power and cooling performance at a much more granular level. This goes beyond traditional DCIM reporting tools to provide tangible M&E insights that - in turn - enable data centers to be run much leaner.

Powerful 3D visualisation capabilities provide intuitive views of an organization's entire data center space utilisation, power usage and cooling capacity. Either on a room-by-room basis or across the entire estate.

The software features comprehensive capacity planning and power management functionality to provide true real-time space, power and cooling support. All of this at a fraction of the cost of traditional DCIM solutions. Entire estates are supported, from remote Edge facilities to enterprise sites. Real-time views provide early insight into potential issues - encouraging the delivery of greater IT loads across Edge facilities as well as significant risk reduction at remote sites.

Data center teams can use the 3D live visualisations in the EkkoSense software to reserve data power and cooling for future IT projects. Site and system limitations are clearly tracked, while available racks can be filtered to clearly indicate those that meet all the criteria for a specific capacity request.

A Site Power View capability also provides detailed insight into upstream and downstream power distribution across data centre estates - from site-level right down to rack-level power utilization. This ensures a detailed analysis of entire power chains.

Comprehensive Space Management functionality also allows for easy categorisation of existing and future reserved floor space plans. This supports data centre teams in their provisioning for planned and inflight IT growth and decommissioning requirements.

This is all supported by an intuitive ticketing and change workflow that provides a simple process for central capacity and operations teams to view and plan key capacity changes.

The result is a data center optimization solution that lets organizations track and manage their data center capacity changes in real-time, with the ability to make immediate capacity decisions across connected rooms. Data center operations teams can manage all their current and future cooling, space and capacity demands within a single intuitive system. They can also highlight and release previously unidentified stranded M&E capacity - avoiding the need for potential additional capital equipment investment.

By actively managing all their rack power usage and associated PDU utilisation across the estate, organisations can achieve much more precise control - enabling reduced overall data center energy usage.

> Keeping customers connected is our number one priority, but that cannot be at the expense of the environment. Data center cooling is a prime example: as we carry more data, we know we need to evolve our network to use energy in a smarter way – and this was the driving factor behind the upgrade. Investing in upgrading our network not only allows us to meet customer demand, it will also help us hit our efficiency targets – as we head towards net zero by 2025.

Bring the power of EkkoSense AI to your critical facilities

Discover more

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