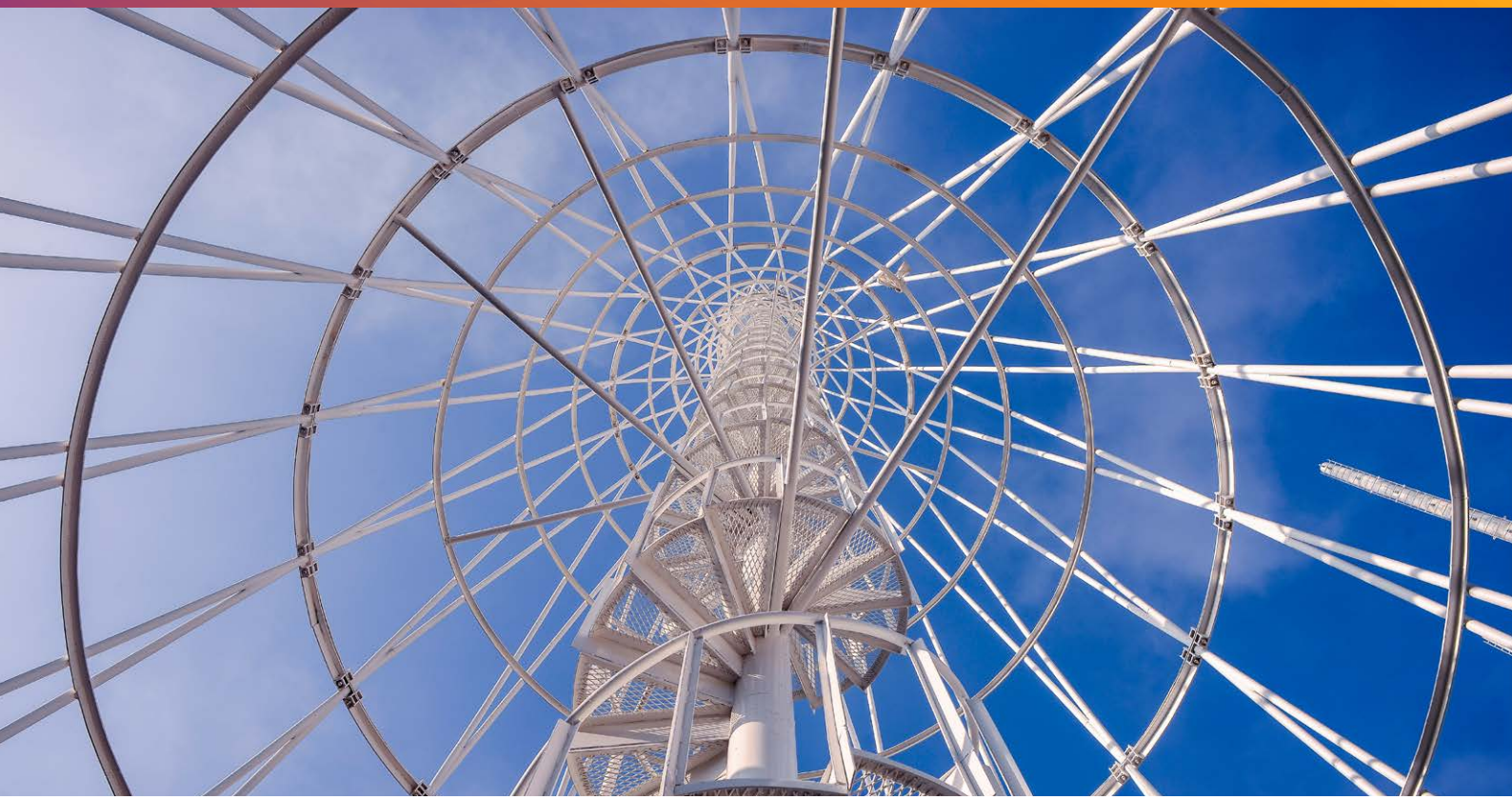
Celltech Helps Finnish Telco Deploy Vertiv™ DC Power Systems for Energy-Efficient Rollout of 5G Network

A Vertiv Case Study



Background

Fifth-generation mobile networks provide telecom operators with a potentially large new source of revenue — and one of its most challenging projects.

To maximise the benefits of 5G, telecom operators need to deploy the networks as quickly and efficiently as possible, across urban and remote areas.

One of the biggest challenges will be minimising the energy costs of the new networks as an increase in energy costs could erode telecom operators' profit margins.

Delivering ultra-low latency and high bandwidth at frequencies most compatible with 5G, requires dense networks with far more cell sites than current 3G and 4G architectures. These sites need powerful computing resources that potentially could double energy consumption at the tower, and fundamentally change the demands placed on the power and cooling infrastructure.

Challenge

Finding an energy efficient and robust power infrastructure for 5G

5G is a priority for one of Finland's leading telecom operators. The company is building a 5G network and requires power and back-up for its base stations (radio access network) in approximately 1,000 new and existing sites.

At the start of 2020, this Finnish telecom operator began to sell subscriptions for its 5G network. Initially, the company will focus on installing its 5G network in large cities in Finland and/or in areas without any fibre optic mobile networks.

Challenge: One of Finland's leading 5G telecom operators needed reliable and efficient DC power systems for their 5G network expansion and for reducing operating expenses in 5G sites.

Solution:

- Vertiv™ 48-volt NetSure™ DC power systems
- Vertiv™ eSure™ rectifiers

Results:

- Reduced operating expenses of the 5G network
- Reduced energy costs of the 5G network

Reliable, efficient DC power systems are critical to 5G network expansion and for reducing operational expenses in 5G sites. Power-hungry 5G radios need a reliable source of power boost. The power drop from the base of the tower to the radio often forces a battery draw that could leave the site unprepared for an unexpected outage.

Not only did the telecom operator have a need to update the power infrastructure of its base station and size, it was required to meet Finland's government standards regarding necessary runtimes in the event of power failure. It also required thousands of extra base stations.

Vertiv™ NetSure™ 7100

Solutions

Powering 5G efficiently

The Finnish telecoms company selected Vertiv as a key supplier for its 5G project, seeking its technical expertise in power management and critical infrastructure, and its experience with 5G rollouts.

Vertiv joined forces with Celltech, a long-standing Vertiv partner and a leading provider of batteries, power, and inverter systems for telecom operators in the Nordic region.

Vertiv supplied technologies from its NetSure™ Access product portfolio and high efficiency Vertiv™ eSure™ rectifiers that minimise energy consumption and reduce operating expenditure. The Vertiv™ 48-volt NetSure™ DC power systems were easy to adapt to the requirements of the telecom operators' 5G network as it was rolled out. The standard form factor of the NetSure™ platform simplified the installation process, helping the 5G telecoms operator upgrade its network faster, and avoid downtime when expanding power and load distribution.

Vertiv™ NetSure™ HVDC

Embarking on the 5G rollout in 2020 during the COVID-19 pandemic made the project even more challenging. Thanks to remote monitoring technology for the equipment and expert sourcing of the products, as well as the management of supply chains, the project is running according to schedule.

Vertiv™ eSure™ Rectifier

Results

An ongoing partnership

The rollout of 5G in Finland is ongoing. Early results from this Finnish operator's partnership with Vertiv and Celltech are encouraging. They include a reduction in the company's operating expenses and lowering the energy costs of the 5G network, which are in line with set targets.

In February 2021, the 5G network of the telecom operator covered more than 1.8 million people, and its services were available in 84 locations. The network will be built and upgraded over the next few years with dozens of base stations being commissioned every week in different parts of Finland.

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