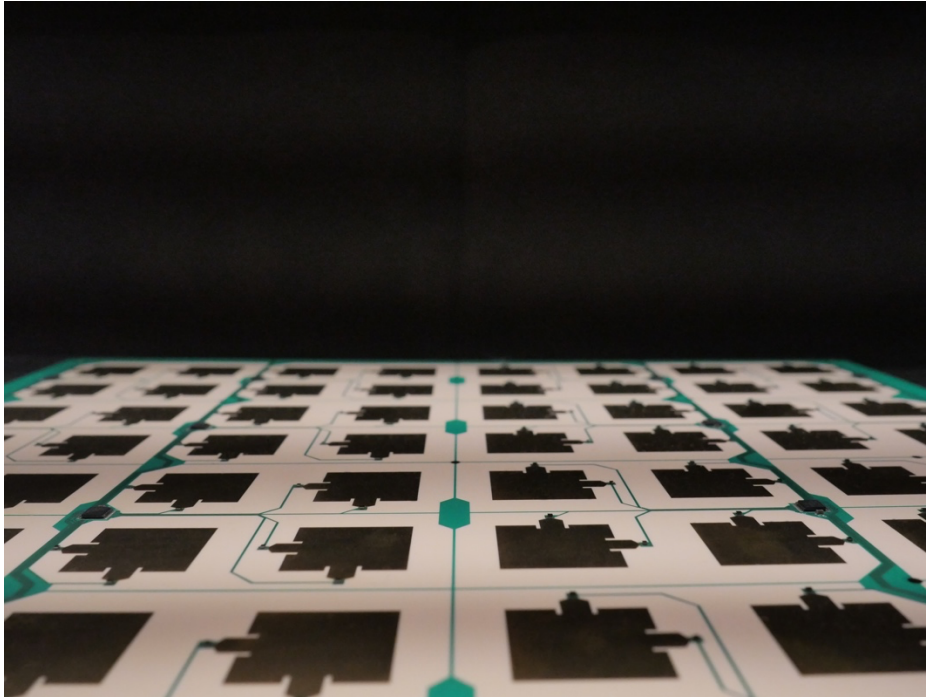


First Deployment Outside Asia: Greenerwave's RIS Restore 5G Millimeter-Wave Network Connectivity in Urban Coverage Gaps

Deployed with Orange at the Rennes SNCF Station, Greenerwave's technology solves the challenge of delivering stable, high-performance connectivity in urban areas—without multiplying antennas!



Paris, France — Greenerwave, the deeptech startup specializing in electromagnetic wave control, has successfully integrated its RIS (Reconfigurable Intelligent Surfaces) technology into Orange's experimental 5G network operating at 27 GHz (26.5–27.5 GHz) using Nokia antennas. As part of the European RISE-6G project, this pilot deployment at the Rennes SNCF station demonstrated how Greenerwave's RIS 2.0 addressed network coverage gaps, doubling data rates in under-served areas and ensuring excellent connectivity within coverage gaps.

Greenerwave's solution offers operators an agnostic, energy-efficient, and easily deployable method to enhance network quality without the need for costly, energy-intensive base stations. This groundbreaking approach guarantees high-speed connections for users even in the densest urban environments—a true revolution in 5G/5G+ connectivity!

Simultaneously, Greenerwave is commercializing its RIS technology across FR1, FR2, and FR3 bands to support research institutions in driving innovation and exploring new use cases in telecommunications, while addressing tomorrow's connectivity challenges.

Current 5G networks primarily operate on the 3.5 GHz band but are increasingly using millimeter waves (28 GHz for ultra-high-speed networks), particularly in the United States and Asia. However, higher frequencies come with reduced signal range and greater difficulty penetrating obstacles, presenting significant connectivity challenges, particularly in urban or indoor environments with limited coverage.

A First Outside Asia: RIS-Enhanced 5G by Greenerwave



For the first time, Greenerwave has integrated its intelligent surface technology into an existing 5G network at 27 GHz (Orange's). In Rennes, their RIS complemented Orange's 27 GHz 5G antenna, filling coverage gaps and doubling data rates in low-signal areas. A technological breakthrough that Greenerwave achieved in an area covered by Orange's 27 GHz experimental network, by redirecting beams to overcome coverage gaps. The quality of connectivity restored by the RIS was measured via a Sony Xperia smartphone compatible with these frequencies.

This first-of-its-kind deployment outside Asia unlocks the potential of Greenerwave's RIS as a scalable solution for mobile operators worldwide.

"We are delighted to collaborate with Orange and SNCF on this groundbreaking project, which highlights the tangible benefits of our RIS technology, even in the most complex urban environments, without increasing the number of antennas. It confirms the potential of our RIS technology to transform the future of telecommunications," said Geoffroy Lerosey, CEO and co-founder of Greenerwave.

Greenerwave: Green, Cost-Effective RIS Technology for Mobile Operators...

Greenerwave is reshaping telecommunications with its intelligent surface technology that enables precise control of electromagnetic waves. The French deeptech develops passive repeaters capable of directing signals toward specific devices, such as smartphones, while adapting in real-time to their location.

Green, cost-efficient, and compatible with all 5G/5G+ networks, Greenerwave's technology eliminates the need for extensive antenna arrays and amplifiers, reducing infrastructure costs and cutting operators' carbon footprints by half.

... Unleashing the Full Potential of 5G...

Mass-market compatible, Greenerwave's innovation unlocks the full potential of 5G/5G+ even in high-density zones. It is particularly valuable in automated industries, where uninterrupted connectivity is crucial to operations. In these environments, connectivity disruptions can lead to significant productivity losses, making stable, high-speed, low-latency connections indispensable.

Similarly, the technology is critical for emerging high-bandwidth, low-latency applications like video streaming, online gaming, live broadcasting, and virtual reality. Greenerwave's millimeter-wave RIS provides reliable, stable connections tailored to these demanding use cases, ensuring seamless operation for industrial equipment and processes.

... And Meeting the Future Needs of Industry (4.0) Through Research!

In September, Greenerwave launched the commercialization of its RIS 2.0 for public and private research labs, accelerating knowledge development and fostering expertise in tomorrow's telecommunications, IoT, and network infrastructure. These intelligent surfaces, covering all frequency bands (including FR3), can reconfigure wave propagation in real-time, making them ideal tools for institutions advancing wireless technology research and developing new applications.

By democratizing wave control technologies, Greenerwave reinforces Europe's leadership in developing more stable, energy-efficient telecommunications.

How it works

Greenerwave designs metasurfaces comprising elements that "shape" electromagnetic waves, enabling directional beams to be generated and controlled. These metasurfaces consist of a group of centimetric-sized elements called pixels that act as micromirrors. Each pixel can modify the sign of the reflected wave. The interactions between pixels and microwaves are controlled by algorithms derived from the world of physics that direct waves after their reflection on the surface. Passive, low-cost and



easy to manufacture, this technology aims to optimize the use of electromagnetic waves while drastically reducing the antenna energy consumption and production costs.

To access the press kit, please click [here](#)

About Greenerwave

Greenerwave is an industrial deeptech founded in 2015 by researchers Geoffroy Lerosey and Mathias Fink, spin-off from the Langevin Institute, dependent on CNRS and ESPCI-PSL (École supérieure de physique et de chimie industrielles de Paris). Specializing in the control and orientation of electromagnetic waves, Greenerwave designs and develops, in France, a revolutionary technology that drastically improves the energy efficiency of equipment, making it more economical, more environmentally friendly and less dependent on semi-conductors. This disruptive technology is finds application across various sectors, ranging from the automotive industry to satellite communications and the Internet of Things.

To learn more, please visit www.greenerwave.com

Press contacts

Stéphane Laurain stephane@edifice-communication.com +33(0)6 98 58 38 35

Ilinca Spita ilince@edifice-communication.com +33(0)6 64 75 12 98