

Press release

## Telefónica and Submer deploy a sustainable immersion cooling solution at Bellas Vistas central office

- This trial, developed in Madrid, demonstrates that immersion cooling will enable Telefónica to use less energy to support the growing demand for data in Edge Computing and 5G, and fits with its goal of [zero emissions by 2025 in its main operations.](#)
- [Submer](#)'s solution immerses servers in an electrically non-conductive, non-toxic, biodegradable liquid and is up to 50% more energy efficient.

**Madrid, 21<sup>st</sup> December 2021.-** Telefónica and Submer have tested an immersion cooling solution at the Bellas Vistas central office in Madrid. This is in response to the search for new technologies that help to reduce the consumption of cooling equipment in central offices and data centers. The project is in line with Telefónica's commitment to the increasingly urgent need to contribute to reducing CO<sub>2</sub> emissions to help limit the rise in global temperature.

Over the last few years, Telefónica has implemented the free cooling system in thousands of buildings and radio base stations. Its operation is simple: when temperatures are low, external air is used to cool equipment and servers and reduce energy consumption by up to 30%. However, in some cases, the implementation of free cooling does not completely eliminate the use of cooling systems, since on warmer days the outside conditions force their use.

### Cooling liquid immersion

The solution developed by Submer uses a new liquid cooling technique to increase energy efficiency by up to 50%, reduce carbon emissions from the use of refrigerant gases, reduce the footprint and improve the total cost of ownership (TCO) of data centres.

In traditional solutions, servers are installed in racks and air-cooled. With immersion cooling technology, servers are immersed in tanks with an electrically non-conductive liquid that improves heat transfer, non-toxic and biodegradable. The fluid in direct contact with the server chips, which operate between 70 and 90 degrees, absorbs the heat and dissipates it through heat exchangers installed on the outside.

Finally, the solution deployed eliminates the use of refrigerant gas, and its associated carbon emissions, since, unlike traditional systems, immersion cooling does not require chiller plants.

## **Deployment at Bellas Vistas**

A multidisciplinary team with experts from both companies and from different specialities, such as basic infrastructure, technology and IT, have worked collaboratively in order to make the deployment of this innovative and disruptive solution in Telefónica a reality.

The deployment at Bellas Vistas central office has a Submer SmartPod with a 50kW capacity that meets the TIER III reliability requirements defined by Uptime. The complete range of IT equipment, such as storage and processing servers and communication equipment, has been installed (submerged) in the solution.

"Sustainability criteria are essential to Telefónica when choosing any technology to incorporate into our networks and systems. Our goal is to provide excellent connectivity while doing it in an efficient way, with low energy usage and reduced carbon emissions. The liquid immersion cooling solution will allow us to continue to control energy consumption as traffic grows exponentially," said Enrique Blanco, Chief Technology & Information Officer (CTIO) of Telefónica.

Daniel Pope, CEO and co-founder of Submer, said: "Internet use currently accounts for almost 2% of global emissions, equivalent to all the world's air traffic. The technology Submer is developing aims to accelerate the transition to a more sustainable communications infrastructure. As a Spanish company, we are very proud to be able to demonstrate this with a referent like Telefónica".