Financiado por la Unión Europea NextGenerationEU

MINISTERIO PARA LA TRANSFORMACIÓN DIGITAL Y DE LA FUNCIÓN PÚBLICA

Plan de Recuperación, Transformación y Resiliencia

Press release

Telefónica and CAF Launch Europe's First Commercial Edge Computing pilot for the Industrial Sector

- Both companies are deploying a pioneering AI-powered computer-vision and video-analytics solution for trains that automatically detects train occupancy and the presence of suspicious objects.
- The project leverages Telefónica's 5G network, Network Slicing and the company's Bilbao Edge node to ensure real-time processing and data sovereignty.
- The initiative is part of the IPCEI-CIS programme, positioning Spain at the forefront of industrial digitalisation in Europe.
- This pilot marks a milestone in Telefónica's Edge strategy, which is rolling out 17 nodes in Spain to provide competitive, sustainable and secure European technology infrastructure based on Edge Computing.

Madrid, 3 February 2026.- Telefónica and CAF (Construcciones y Auxiliar de Ferrocarriles), a global leader in the manufacturing and supply of transport systems, have announced the launch of Europe's first B2B pilot integrating Edge Computing and 5G capabilities for the rail sector.

Deployed in Bilbao, the project represents a milestone in the digital transformation of heavy industry and positions both companies as pioneers in technological innovation.

Specifically, CAF has successfully implemented a solution that automatically detects train occupancy and the presence of suspicious objects in carriages, raising the bar for safety and operational efficiency.

The project uses an AI-based computer-vision system designed to analyse real-time video streams thanks to the combination of 5G, Edge Computing and Network Slicing, which enables data to be processed in real time, close to where it is generated.

Using Network Slicing on Telefónica's public 5G network ensures that the data captured by the computer-vision systems is transmitted securely, via a prioritised channel, to the Edge node.

In addition, all data is processed at Telefónica's Bilbao edge node—bringing compute close to the data source and ensuring ultra-low latency and full data sovereignty, as the data never leaves the region where it was generated.

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This new model for data capture and processing allows rail operators to dispense with complex, costly onboard hardware. By centralising intelligence at the Edge, maintenance costs are significantly reduced and industrial flexibility increases.
The implementation is supported by Telefónica Empresas' Operator Platform (Smart Edge), facilitating application deployment and future interoperability and integration of Edge services with other architectures across the European Union.

This pilot is part of the IPCEI-CIS initiative (Important Project of Common European Interest – Cloud Infrastructure and Services), coordinated by the European Commission, with participation from multiple Member States. Its goal is to place European companies in an optimal position to lead the next generation of digital services through differentiated, interconnected Edge technologies and infrastructure. In June 2021, Telefónica Spain's proposal was the top-ranked nationally and was submitted to the IPCEI. Following the European Commission's approval, the project has been funded through Spain's Recovery, Transformation and Resilience Plan.

Leonor Ostos, Innovation Manager at Telefónica Spain, said: "With this project, Telefónica and CAF consolidate their position as pioneers in the combination of 5G, Edge and Network Slicing. This collaboration not only enhances the technical and economic competitiveness of both companies in response to new demands in the rail market, but also accelerates the move towards Industry 4.0."

Igor López Orbe, Head of the Centre of Excellence for Communications and Cybersecurity at CAF, said: "5G is enabling vehicles to become increasingly connected. Edge technology, in turn, allows us to process information off-train in real time. The combination of both technologies makes it possible to implement advanced functions—including, in some cases, safety-related ones—while maintaining focus on cost and service sustainability over the long term. This project is part of a long track record of innovation between Telefónica and CAF, with the support of European institutions, which we expect to maintain and strengthen in the future."

This technology innovation project will be featured in the panel "Del dato a la decisión: Smart Edge Industrial" taking place on Wednesday, 4 February, at the Connected Industry National Congress-Congreso Nacional de Industria Conectada (Bilbao, 4–5 February).

A milestone in Telefónica's Edge Plan

The pilot is another step forward in consolidating Telefónica's Edge strategy, which is deploying 17 nodes in Spain under a plan to offer competitive, sustainable and secure European technology infrastructure, with the aim of driving the digital transformation of businesses and public institutions.

This pioneering plan in Europe already has 10 active nodes: Madrid (two), Barcelona, Valencia, Seville, Málaga, Palma de Mallorca, Bilbao, A Coruña and Terrassa. The rollout is ongoing and, over the course of this year, seven additional locations—Zaragoza, Las Palmas de Gran Canaria, Valladolid, Gijón, Santa Cruz de Tenerife, Santiago de Compostela and Mérida—will be added.

By 2026 the plan will comprise 17 Edge nodes across Spain, delivering nationwide edge computing capacity.

Funded by the European Union – NextGenerationEU. However, the views and opinions expressed are solely those of the author(s) and do not necessarily reflect those of the European Union or the European Commission. Neither the European Union nor the European Commission can be held responsible for them.

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