Telefónica accelerates its transformation to Autonomous Networks and reaches 12 Level 4 use cases

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Telefónica finished 2025 with a total of 12 Level 4 use cases, a category that already reflects a very advanced level in the development of autonomous networks and thus accelerates its transformation process. The Autonomous Network Journey (ANJ) program, launched in 2021 to transform network processes through automation and Artificial Intelligence, has far exceeded initial expectations. What seemed to be a long-term journey has accelerated significantly thanks to the strong commitment of the operations teams of Telefónica Spain, O2 Germany and Vivo (Brazil).

Based on the Autonomous Networks framework defined by the TM Forum, network autonomy is conceived as a path that advances from fully manual environments to fully autonomous networks, classified in levels 0 to 5. At their highest levels, networks are capable of self-learning, span multiple domains, and possess self-configuration, self-optimization, and self-healing capabilities, ensuring the highest levels of efficiency and reliability.

Telefónica recurrently measures the evolution of autonomy in each network domain (Fixed Access, Mobile Access, Transport, IP, Core and Telco Cloud), as well as in each key process (Planning, Testing, Deployment and Operations). The resulting weighted indicator reflects the actual maturity of each of the operations in Spain, Brazil and Germany, and shows how each country is progressing towards more predictive, efficient and self-sufficient operating models. Finally, the Group’s global level consolidates the progress of the three operations in a standardized way, offering a unified view of Telefónica’s progress towards autonomous maturity.

Fully operational use cases

On this path, Level 4 use cases – those capable of acting autonomously based on the intention transmitted by a human – are essential to raise the global average of autonomy. And thanks to the joint effort of the three operators, Telefónica closed 2025 with the following 12 Level 4 use cases, all of them fully operational:

- Autonomous creation of network capacity with Vivo's AI (Fractal). [telefonica.com]

- Digital twin for the transport network (NetOptimizer) from O2 Germany. [telefonica.com]

- Autonomous detection and resolution of weaknesses in Telefónica España's IP network. [telefonica.com]

- Autonomous detection and resolution on Vivo's virtualized 5G Core. [telefonica.com]

- Telefónica Spain's intelligent planning for the deployment of customer fibre (Smart CAPEX). [telefonica.com]

- Intelligent planning for the O2 Germany transmission network. [telefonica.com]

- NetCheck for error-free software changes from Telefonica Spain's IP network. [telefonica.com]

- NetCheck for intelligent configuration of Telefónica España's IP network.

- Autonomous creation of client fiber capacity (Fractal II) from Vivo.

- O2 Germany's Operations Analytics, Ticketing, and Diagnostics automation virtual assistant.

- In-service software change of CORE 5G (InService Software Upgrade) from O2 Germany. [telefonica.com]

- Intelligent multi-domain correlation at the customer level for proactive and automated detection of impact, anomalies and root cause in 4G/5G at O2 Germany.

The move towards autonomous networks is a reality and a firm commitment for Telefónica. At the Capital Markets Day held last

November, the company presented an ambitious roadmap: to reach an average level of autonomy of 3.75 by 2028 and reach level 4 by 2030 in Spain, Brazil and Germany. The achievement of 12 Level 4 use cases consolidates the Group's position as a European benchmark in network automation and demonstrates that the combination of technology, talent and focus is the right way to move towards an autonomous network.

Andrea Folgueiras, Global CTIO at Telefónica, will present these evolutions and use cases in the session she will offer in the Agora of Telefónica's stand at the MWC. This talk, entitled 'An autonomous, future-ready network powering our next wave of growth', will take place on March 3rd between 11:30 a.m. and 12 p.m. (Hall 3 – 3K31).

For more information: Telefónica at MWC 2026

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