**Press release**
**Nota de prensa**

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# 5TONIC, the open research and innovation laboratory on 5G, celebrates its 5th anniversary

5TONIC, the open research and innovation laboratory on **5G technologies** founded by Telefónica and IMDEA Networks, has celebrated its fifth anniversary this month positioned as one of the most advanced 5G laboratories in Europe. The laboratory was recognized as a centre for excellence in 5G technology and was awarded the status of a Digital Innovation Hub by the European Commission in 2018. Since its launch in 2015 it has been working on two fundamental lines of activities:

Firstly, and with the highest priority, converting the theoretical capabilities of the fifth generation mobile networks into enablers of **real-world use cases** and applications for the different vertical industries, developing solutions for health, industry 4.0, gaming, surveillance, transportation, automotive, and tourism sectors, as well as for the efficient management of cities (smart cities), among others.

Secondly, to carry out tests of the new technologies that are being incorporated into the 5G ecosystem and that facilitate many of these use cases, such as network function virtualization and orchestration systems (NFV), the softwarization of networks (SDN) or the processing capacity on the edge computing (MEC). For this, the laboratory has deployed 4G and 5G mobile networks, based on Ericsson technology and with all the necessary elements, both in radio access and in the core network, to support end-to-end connectivity. This network infrastructure compliant with 3GPP Rel-15 NSA will be completed this year with the incorporation of the 5G core network (5GC) with support for the SA (Stand Alone) operation mode, as well as with radio access in millimetre frequency bands, which will allow supporting new use cases with more demanding performance requirements.

In the health field, a sector especially relevant as a consequence of the coronavirus pandemic, 5TONIC has developed an innovative 5G-based emergency services assistance system, within the framework of the European innovation project 5G-TRANSFORMER and together with SAMUR-PC and the Carlos III University of Madrid (UC3M). This system enables a totally personalized emergency diagnosis and treatment, which could even access the patient's medical history at the same time they are treated. Also collaborates with other national and international research and innovation projects, and has been the only laboratory chosen by the three major pan-European projects funded by the European Union in the Call ICT-17 5G End to End Facility: 5G EVE, 5G VINNI and 5Genesis.

Multiple projects from other Calls (e.g., ICT-19 Advanced 5G validation trials across multiple vertical industries) are, as a result, extensively using these 5TONIC infrastructures. As 5Growth, whose objective is to **empower vertical industries** with an AI-driven automated and sharable

5G End-to-End solution that will allow these industries to achieve simultaneously their respective key performance targets. 5TONIC also supports the activities of other European projects, as well as collaborative projects with Taiwan, Brazil and the United States.

In these five years, some of the most innovative companies and technological organizations operating in Spain have joined 5TONIC for **its collaborative work formula**, where companies cooperate with each other to achieve their particular objectives jointly. In addition to the founding organizations, 5TONIC counts among its full members with: Ericsson (since 2015), Intel, CommScope, UC3M and InterDigital (since 2016) and Altran (since 2018). Another quite relevant figure is the collaborator role, that is, companies that join the laboratory to develop specific projects; currently include Nokia, ASTI, Rohde & Schwarz, Luz WaveLabs, Saguna Networks, Celling5G, UTEK, INNOVALIA and Telcaria.

5TONIC also extends its ecosystem activities by supporting the training of professionals in new 5G technologies, not only with the dissemination of the results of their activities, but also with the participation in Ericsson's sponsored  Carlos III University Master on "NFV and SDN in 5G Networks ", launched in 2016 and the first Master program in the world to be taught on these subjects. It also helps the **development of new companies** that seek to leverage 5G to develop innovative solutions in multiple areas.

"For the industry as a whole, it is key to have spaces for innovation and collaboration such as 5TONIC that enable the testing of all 5G technology components, while acquiring an end-to-end vision and putting real use cases to work", highlights David del Val, President of 5TONIC and CEO of Telefónica R&D. "All these achievements demonstrate the good position of Spain, due to laboratories like 5TONIC, in the global race for 5G. Furthermore, it highlights the need to **invest in research and innovation** so that the country and its companies continue to advance technologically, becoming not only a European reference, but a global one." underlines Arturo Azcorra, vice president of 5TONIC.

**Source(s): IMDEA Networks Institute**

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## About us

**IMDEA Networks Institute, promoted by the Regional Government of Madrid, is a research organization on computer and communication networks** whose multinational team is engaged in cutting-edge fundamental science and technology. As a growing, English speaking institute located in Madrid, Spain, IMDEA Networks offers a unique opportunity for pioneering scientists to develop their ideas. IMDEA Networks has established itself internationally at the forefront in the **development of future network principles and technologies**. Our team of highly-reputed researchers is designing and creating today the networks of tomorrow.

**Some keywords that define us:** 5G, Big Data, blockchains and distributed ledgers, cloud computing, content delivery networks, data analytics, energy-efficient networks, fog and edge computing, indoor positioning, Internet of Things (IoT), machine learning, millimeter-wave communication, mobile computing, network economics, network measurements, network security, networked systems, network protocols and algorithms, network virtualization (software defined networks – SDN and network function virtualization – NFV), privacy, social networks,

underwater networks, vehicular networks, wireless networks and more…

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