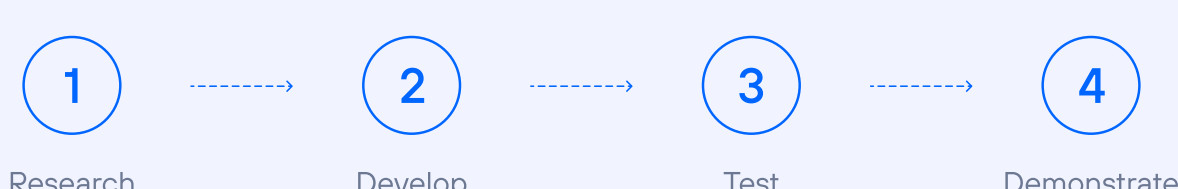


The best 5G Private Network for universities

Higher education institutions are working to create cutting-edge research laboratories. To achieve this, they need a secure, dedicated communications infrastructure for internal use, one that meets their current connectivity needs and is ready for future applications.

Research labs and 5G Private Networks

Through **research labs**, faculty, staff, and students can study and explore Industry 4.0 technologies that will be deployed for mission-critical and enterprise IoT applications across many sectors, leveraging advanced communications technologies.



New applications, business models, and 5G & IoT-based use cases for real-world scenarios become a reality in these environments.

In this way, Industry 4.0 technologies are integrated into an educational and research environment, serving as a bridge between universities and the industry.

Telefónica Tech's **5G Private Network** is a wireless connectivity solution that links the university's smart devices with the flexibility required by each of our clients, adapting to their specific needs.

Advanced 5G Private Network, fully dedicated to the university

Both the radio and the core are located on the university's premises, operating as an isolated private network.



Solution components

CORE	RAN	Optional Services/Apps	Management
User Plane	Small Cell	IMS VxNR	Network Manager
	Micro Macro		GUI
	mmWave	MC-PTT	API
Control Plane	 O-RAN ALLIANCE		
	All In One	SIM/eSIM	DASHBOARD

mmWave: Millimeter waves
O-RAN: Open RAN

IMS: IP Multimedia Subsystem
VxNR: Voice over New Radio
MC-PTT: Mission Critical Push To Talk

GUI Graphical User Interface
API: Application Programming Interface

Benefits of a 5G Private Network

What are the benefits of a 5G Private Network in research labs and university campuses?

Private networks are the foundation of these 5G ecosystems, as they can fill coverage gaps, enhance security and data privacy, reduce latency, and increase bandwidth.

- ✓ **Customized coverage and performance**
A network specifically designed to meet the customer's unique requirements
- ✓ **Reliability and interference**
Personalized management
- ✓ **Security and privacy**
360° Security
- ✓ **Traffic prioritization**
From basic to critical
- ✓ **Control and uncertainty**
Increased control and reduced uncertainty
- ✓ **Autonomy and latency**
Minimal survival functions hosted locally

How can we help you?

We collaborate in the management of grants for the financing of research infrastructures, the acquisition of scientific and technical equipment, and R&D projects in advanced 5G under the Unico I+D 6G Program.

€56 MILLION AWARDED IN GRANTS

33 PROJECTS

19 UNIVERSITIES AND RESEARCH CENTERS ARE IMPLEMENTING IT

Why Telefónica Tech?

- **50+** private network **projects**
- **80+** active **sites** worldwide
- **Proven experience** across various **sectors** such as education, manufacturing, mining, oil & gas, ports, and healthcare

- **Global Private Network Deployment and Operations Center (NOC, Network Operation Center)** providing **24/7/365 support** in English, Spanish, and Portuguese
- **Leaders in Gartner's "Magic Quadrant for 4G and 5G Private Mobile Network Services"** (2025)
- **Private networks deployed and under deployment** in top-tier national and international centers and laboratories