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Telefónica showcases a new solution for critical emergency, security, and defense missions at MWC

- In this demonstration for mission-critical applications, Telefónica relies on dual technology to deploy a complete device in minutes that encompasses a 5G tactical bubble, AI, and drones through a centralized command and control station that analyzes and executes the entire operation.

- Through its Mission-Critical Dome experience, the operator will show how technology helps manage emergency situations, connecting different locations in Barcelona in real time where a disaster simulation will be generated.

Barcelona, March 2, 2026.- Telefónica will showcase its advanced emergency, security, and defense network based on dual-use technologies—for both civil and military environments—at its stand at the Mobile World Congress (MWC). This solution enables the efficient deployment of a comprehensive emergency response system to deal with critical situations.

The mission-critical technology led by Telefónica provides the coverage, bandwidth, low latency, and multiple connections needed to restore communications, coordinate various personnel, and facilitate medical efforts through various stages and with the help of different partners, all in less than an hour from the moment teams can access the epicenter of the disaster.

Jesús Abraham, Head of Innovation for Defense and Security at Telefónica Spain, explains: “With our current emergency, security, and defense solution, actors such as government agencies, logistics companies, and healthcare centers can make more efficient use of resources by combining all the technologies available at Telefónica to achieve comprehensive, unique, and differentiated capabilities in a disaster scenario where it is necessary to manage the crisis on three levels: strategic, operational, and tactical”.

Initially, Telefónica restores connectivity and carries out a situational awareness process to gain a detailed understanding of the circumstances of the disaster. This makes it possible to know which area and how many people are affected, as well as to locate those who are at risk.

Next, the operator deploys a hyperconnectivity node composed of, among other technologies, a 5G tactical bubble based on a virtual private network that integrates all the elements necessary to maintain connectivity, incorporating all the necessary equipment and devices—including those not initially connected to the network.

The 5G bubble can be deployed by land, sea, and air, and the elements connecting these different spaces bounded by a 5G node can even be combined with each other for as long as necessary, as it only requires an electricity generator to be connected.

In a subsequent phase, 5G enables a series of technologies to achieve efficient management for mission-critical tasks:

- **Command and Control Post:** a platform that integrates services and data in an environment with the best user experience (UX), incorporating AI and information

management tools, which facilitates comprehensive, real-time knowledge of the situation being analyzed.

- **Backhauling System:** a technological solution that allows different nodes and 5G tactical bubbles to be linked to each other, and these to the public network via multi-provider satellite links, radio links, public 5G network, UHF (Ultra High Frequency) or even HF (High Frequency) over IP. 'All Line of Sight' and 'Beyond Line of Sight communications technologies' work simultaneously through an intelligent network orchestrator to facilitate connection between operators, forward command posts, and command centers.

- **Fog Computing:** this architecture processes and stores data in intermediate nodes, such as routers and local servers, instead of sending everything directly to the cloud, making better use of connectivity, computing, storage, and network requirements by distributing different services where they are needed, whether in the cloud or at the edge.

- **MCP (Model Context Protocol) Services:** key internal technologies for AI solutions to function properly, ensuring interoperability and scalability. This service, applied to emergency infrastructure, facilitates, among other things, the location of missing persons.

- **Network Slicing:** functionality that optimizes network usage by creating dedicated virtual subnetworks and responds to specific needs in each use case.

- **Artificial Intelligence:** AI-based virtual assistants facilitate the detection of anomalous events and data-driven decision-making.

- **Drones and other robotic devices such as quadrupeds, bipeds, and autonomous vehicles:** physical elements that travel to disaster sites and use 5G technology to connect to a single channel via TT&C (Telemetry, Tracking, and Command) and Payload, which means that all communication with this equipment is done through a single dedicated radio channel.

- **Telemedicine systems:** a tactical case carried on board a drone that allows medical consultations to be brought to places where healthcare systems are unable to reach.

Mission-Critical Dome

In this demonstration at MWC, which takes place from March 2 to 5 in Barcelona, Telefónica will create a command and control system from which it will be possible to see where personnel are located and how they are deployed, as well as how many users are affected and their location.

In a fictional setting with extreme weather conditions, the company will showcase the capabilities of its technology, which is designed to assist in the management of critical missions anywhere in the world.

The recreation is based on heavy rain causing a river to overflow, flooding the nearest neighborhood and depriving offices, homes, and businesses in the area of power and connectivity, as the infrastructure has been damaged.

To restore connectivity in the affected areas, Telefónica will showcase the networks and tools that enable connectivity to be restored in the affected areas, maintaining constant communication between coordination centers and advanced command posts to manage, in real time, the activity of the reconnaissance, rescue, and healthcare teams.

The Telefónica stand at MWC will feature a reproduction of the Command and Control Center, capable of coordinating emergency services in an integrated manner. This center, located at the

Fira de Barcelona stand, connects in real time with an advanced command post at Port Forum, on the front line of rescue, assistance, and medical aid operations, and also communicates with the advanced line that can only be accessed by air.

To provide connectivity to teams advancing on the ground within the disaster area, a 5G bubble will be deployed around a Telefónica Mobile Unit. There will also be a tactical drone equipped with a people location system that uses mobile phone signals as emergency beacons and will provide timely coverage to shadow areas, helping to detect missing persons in the territory affected by the flood.

Each of the tactical bubbles will feature network slicing, which guarantees quality of service for the following applications: Advanced virtual command and control center; integration with VHF (Very High Frequency) radios for emergency services; mission-critical services for deployed emergency teams, such as chats, file transfers, and video streaming, among others; management and control of terrestrial and aerial robot dogs to provide physical security with perimeter surveillance and assist in the detection of missing persons; and, finally, telemedicine services for emergency and rescue teams.

To carry out this experiment, Telefónica has collaborated with a dual national ecosystem consisting of: Alisys Robotics, ATIKA, Cartronic, Centum, Kenmei, Seabots, Sitep, SSM, UAV Works, XRF, and Zebra.

For more information: Mobile World Congress 2026: all the information - Telefónica