



5G STAND ALONE

KEYWORDS: NETWORK SLICING, GUARANTEED PERFORMANCE, TAILORED SOLUTIONS, STRATEGIC SECTORS

WINDTRE is the first operator in Italy to launch the 5G Stand Alone (SA) network, a technology that marks a **turning point for the digital transformation of businesses and public administration**. 5G SA is a next-generation mobile network, fully independent from 4G and designed to deliver advanced services. Its architecture enables scenarios requiring high standards of security, reliability, and scalability. It adapts to the specific needs of strategic sectors such as industry, transportation, logistics, utilities, and healthcare, ensuring top performance even in contexts where uninterrupted connectivity and data transmission are essential.

To meet the growing demands of the business market, alongside **Mobile Private Networks** — customized solutions requiring significant infrastructure investments and aimed primarily at large enterprises— WINDTRE introduces a new service based on the **network slicing**, designed also for SMEs.

5G network slicing allows portions of the public network to be allocated to specific use cases, creating virtual Mobile Private Networks with costs suitable for smaller businesses. This solution supports the specific requirements of enterprise applications, guaranteeing consistent performance aligned with customer needs, such as low latency and connection stability. Clients avoid the costs and lead times of building dedicated infrastructure and managing private networks, while benefiting from enhanced security and service quality through public network slices.

Unlike previous approaches focused mainly on increasing peak speeds, network slicing introduces guaranteed performance and reliability:

- Controlled latency
- Scalability ensured by the public network
- Extended geographic coverage
- Zero management burden for the customer
- Dedicated maintenance as an additional service

This approach enables a new generation of digital services, accessible even to smaller businesses. 5G SA makes it possible to create tailor-made networks for every client. WINDTRE complements this capability with vertical offers for specific sectors, dedicated design teams, implementation, management, and maintenance of the entire service. For medium and large enterprises and public administrations, WINDTRE provides complete solutions that include connected devices (IoT) and advanced services such as cybersecurity.

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USE CASES AND DEMONSTRATIONS

KEYWORDS: LIVE BROADCASTING, CONNECTED HEALTHCARE, DIGITAL PAYMENTS, PUSH-TO-TALK

Key areas enabled by 5G SA include:

- **Secure communications and advanced Push-to-Talk**
Network slicing integrates instant and secure communication services, such as Push-to-Talk, directly into the mobile network. This solution can replace TETRA networks in critical sectors (utilities, security, transportation, including public transport), offering:
 - Use of commercial devices instead of specialized equipment
 - Guaranteed coverage even in crowded environments
 - Native integration with other mobile services
- **Augmented reality for industrial maintenance**
Controlled latency and guaranteed service quality enable AR applications for predictive and corrective maintenance in industrial, logistics, and utility environments. Field technicians can receive real-time visual instructions, improving efficiency and workplace safety while reducing accidents.
- **Digital payments (POS)**
In high-traffic contexts—such as trade fairs, stadiums, and shopping centers—slicing ensures reliability and continuity for POS services, preventing interruptions in digital payments.
- **Healthcare instrumentation and clinical data exchange**
With prioritized access and dedicated 5G SA public network resources, it is possible to securely and reliably manage the transmission of medical device data, facilitating real-time exchange of reports, diagnostic images, and clinical data—even in mobility scenarios such as emergency interventions.
- **Audio-video services for media and entertainment**
Network slicing allocates public network resources to audio-video streaming services, guaranteeing quality and continuity even under heavy traffic conditions. This supports live event broadcasting and field reporting for media organizations.

In the media and entertainment sector, WINDTRE showcased the potential of 5G SA: using the new 5G Stand Alone core, built in collaboration with Ericsson, a dedicated slice was created on the public network for video production during a sports event. Mobile cameras connected to the 5G SA network streamed high-definition images live to the control room, ensuring stability and continuity even with over 90,000 spectators in attendance. Thanks to reserved uplink capacity, the broadcast maintained high performance suitable for the chosen video quality—an example of how 5G SA can be applied in broadcasting, mobility, security, and entertainment.

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