

5G in Defense Market Size Expected to Reach USD 11.92 Billion by 2035 as Armed Forces Advance Connectivity Capabilities

Global 5G in Defense Market Expected to Expand at a CAGR of 21.6% Through 2035 Amid Rising Demand for Secure Communications and Tactical Edge Computing.

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The global 5G in Defense market is witnessing a transformative phase as armed forces worldwide accelerate investments in next-generation communication infrastructures. The increasing need for ultra-low-latency connectivity, enhanced battlefield awareness, secure command-and-control systems, and real-time intelligence sharing is driving the adoption of 5G technologies across military platforms. According to industry estimates, the market was valued at USD 1.68 billion in 2025 and is projected to reach USD 11.92 billion by 2035, registering a compound annual growth rate (CAGR) of 21.6% during the forecast period. The rapid modernization of defense communication systems and the integration of artificial intelligence, edge computing, and autonomous platforms are expected to remain central growth catalysts for the industry.



5G in Defense Market

Market Overview:

Defense organizations are increasingly shifting away from traditional communication architectures toward software-defined and highly secure 5G-enabled ecosystems. Modern military operations require uninterrupted connectivity across land, naval, and airborne assets, creating significant demand for resilient and scalable communication networks.

[5G technology in defense](#) offers substantial advantages over legacy defense communications, including faster data transmission, lower latency, improved network reliability, and support for a larger number of connected devices. These capabilities are becoming critical for enabling real-time situational awareness, intelligence gathering, autonomous operations, and integrated

battlefield management systems.

The transition from pilot programs to large-scale deployment is accelerating as governments recognize the strategic importance of advanced wireless communication infrastructure. Military agencies are investing in private 5G networks, virtualized architectures, and sovereign communication systems to strengthen national security and operational readiness.

Key Market Trends:

1. Expansion of Multi-Domain Operations

One of the most significant trends shaping the 5G in Defense market is the growing adoption of multi-domain operations (MDO). Modern defense strategies increasingly require seamless coordination between land, sea, air, cyber, and space domains. 5G networks facilitate the rapid exchange of mission-critical data across these domains, enabling synchronized decision-making and operational effectiveness.

2. Rising Deployment of Private Military 5G Networks

Defense agencies are investing heavily in private 5G infrastructures within military installations and strategic facilities. These deployments offer enhanced security, greater control over network operations, and improved resilience against cyber threats. Private networks also support mission-specific communication requirements while reducing dependence on commercial telecommunications infrastructure.

3. Growth of Enhanced ISR Capabilities

Intelligence, Surveillance, and Reconnaissance (ISR) systems are increasingly leveraging 5G connectivity to process and transmit high-volume data in real time. Advanced sensors, drones, autonomous vehicles, and surveillance platforms require high-bandwidth networks capable of supporting rapid data analytics and decision-making. This trend is driving substantial investments in 5G-enabled ISR ecosystems.

4. Integration of AI and Edge Computing

Artificial intelligence and edge computing are becoming integral components of military communication networks. Defense organizations are deploying edge-based processing capabilities to reduce latency and enhance operational responsiveness. The convergence of AI with 5G networks enables autonomous decision support, predictive analytics, and real-time threat assessment in contested environments.

Market Drivers:

1. Increasing Military Modernization Programs

Governments worldwide are allocating substantial budgets toward defense modernization initiatives. The replacement of legacy communication systems with advanced digital infrastructures is creating significant demand for 5G technologies. Military modernization efforts increasingly prioritize network-centric warfare capabilities, secure communications, and integrated command systems.

2. Demand for Real-Time Battlefield Connectivity

Modern combat operations rely heavily on the rapid exchange of information between personnel, vehicles, sensors, and command centers. The low-latency characteristics of 5G networks enable near-instantaneous communication, improving mission effectiveness and operational coordination.

3. Expansion of Autonomous Defense Systems

The increasing deployment of unmanned aerial vehicles (UAVs), autonomous ground vehicles, and robotic defense platforms is creating new connectivity requirements. 5G networks provide the bandwidth and reliability needed to support autonomous operations, remote control capabilities, and machine-to-machine communications.

4. Rising Focus on Secure Communication Infrastructure

Cybersecurity concerns and geopolitical tensions are encouraging nations to invest in secure and sovereign communication systems. 5G technologies offer advanced network management capabilities, encryption mechanisms, and virtualization features that strengthen defense communication security.

Emerging Opportunities:

1. Sovereign 5G Core Network Development

Many countries are prioritizing domestically controlled communication infrastructures to reduce reliance on external vendors. The development of sovereign 5G core networks presents substantial growth opportunities for technology providers offering secure and customizable defense-grade solutions.

2. Integration with Non-Terrestrial Networks (NTN)

The convergence of 5G with satellite communications and non-terrestrial network architectures is expected to unlock new defense applications. Such integrations can enhance connectivity in remote locations, maritime environments, and contested operational theaters where traditional

communication infrastructure is limited.

3. Tactical Edge AI Applications

The deployment of AI-powered analytics at the tactical edge represents a significant market opportunity. Military organizations are increasingly seeking solutions capable of processing sensor data locally, enabling faster decision-making and reducing dependence on centralized computing resources.

4. Smart Military Bases and Connected Infrastructure

The development of intelligent military facilities is creating demand for advanced communication networks capable of supporting automation, security monitoring, logistics management, and energy optimization. 5G-enabled smart base initiatives are expected to generate new revenue streams across the defense ecosystem.

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Segment Analysis:

1. By Communication Infrastructure

Small Cell - The Small Cell segment represents the largest share of the communication infrastructure category, accounting for 58.4% of the market in 2025. The widespread deployment of small cells is driven by the need for dense and reliable connectivity within military installations, command centers, hangars, and operational facilities. These solutions provide enhanced coverage and support high-capacity communication requirements across defense environments.

Macro Cell - The Macro Cell segment accounted for 41.6% of the market in 2025. Macro cells play a critical role in supporting long-range communication, command-and-control functions, and connectivity across expansive military training grounds and operational theaters. Their ability to provide broad-area coverage makes them essential for strategic defense communications.

2. By Core Network Technology

Software-Defined Networking (SDN) - Software-Defined Networking (SDN) emerged as the leading core network technology segment with a 34.6% market share in 2025. SDN enables flexible network management, dynamic resource allocation, and mission-specific network slicing, making it highly suitable for modern defense applications.

Mobile Edge Computing (MEC) - Mobile Edge Computing (MEC) accounted for 27.3% of the market and is expected to experience strong growth due to increasing demand for localized data

processing and low-latency analytics. MEC solutions support real-time intelligence processing and tactical decision-making at the edge of military networks.

Network Functions Virtualization (NFV) - Network Functions Virtualization (NFV) represented 24.8% of the market in 2025. NFV enables defense organizations to deploy scalable and software-based network architectures while reducing infrastructure complexity and operational costs.

Fog Computing - Fog Computing accounted for 13.3% of the market, supporting distributed computing environments and enhancing network resilience in remote or contested operational scenarios.

3. By Platform

Land - The Land platform segment generated approximately USD 776 million in 2025, making it the largest platform category. Growth is fueled by increasing investments in connected combat vehicles, tactical communication systems, and battlefield networking solutions.

Airborne - The Airborne segment reached approximately USD 511 million in 2025 and is projected to exhibit strong growth due to rising adoption of connected aircraft, unmanned aerial systems, and advanced ISR platforms.

Naval - The Naval segment generated around USD 393 million in 2025. Maritime defense applications are increasingly utilizing 5G technologies to improve fleet communications, situational awareness, and mission coordination across naval operations.

Regional Analysis:

North America:

North America remains the largest regional market, accounting for approximately 38.4% of global revenue. The region benefits from substantial defense budgets, extensive military modernization programs, and strong government support for next-generation communication initiatives. Continued investments in advanced defense technologies are expected to sustain market leadership throughout the forecast period.

Europe:

Europe is projected to be the fastest-growing regional market, registering a CAGR of approximately 23.8%. Increasing defense expenditures, modernization initiatives, and efforts to strengthen regional security infrastructure are driving the adoption of 5G-enabled defense solutions across the continent.

Asia-Pacific:

Asia-Pacific accounted for approximately 27.1% of the global market. Growing geopolitical tensions, rising military spending, and investments in indigenous communication technologies are supporting strong market expansion across countries such as China, Japan, South Korea, and India.

South America:

South American nations are gradually investing in digital defense infrastructure and communication modernization initiatives. While still an emerging market, the region presents long-term opportunities for technology providers seeking expansion into developing defense ecosystems.

Middle East & Africa:

The Middle East & Africa region is experiencing growing interest in advanced defense communication systems due to increasing security requirements and military modernization programs. Investments in smart defense technologies and secure communications are expected to support future market growth.

Competitive Landscape:

The 5G in Defense market is characterized by the presence of leading telecommunications providers, defense contractors, and network technology companies. Strategic partnerships, product innovation, military contracts, and research investments remain key competitive strategies.

Ericsson - Ericsson continues to strengthen its position through advanced 5G infrastructure solutions designed for mission-critical and defense-grade applications. The company focuses on network reliability, secure communications, and private wireless deployments for defense customers.

Nokia - Nokia is actively expanding its defense communications portfolio through private wireless networks, edge computing capabilities, and secure networking solutions tailored to military requirements.

Samsung - Samsung leverages its expertise in advanced wireless technologies to deliver high-performance 5G infrastructure supporting military communications, surveillance systems, and connected defense operations.

Huawei - Huawei remains a notable participant in the market, offering advanced network technologies and communication infrastructure solutions across various defense-related

applications where regulatory environments permit deployment.

Lockheed Martin - Lockheed Martin continues to integrate 5G technologies into defense platforms and operational networks, supporting next-generation military communications, command systems, and digital battlefield capabilities.

Cisco Systems - Cisco Systems provides secure networking architectures, cybersecurity solutions, and software-defined infrastructure technologies that support military communication modernization initiatives.

L3Harris Technologies - L3Harris Technologies focuses on advanced tactical communications, secure networking, and integrated defense systems that leverage emerging 5G capabilities for enhanced operational effectiveness.

Thales Group - Thales Group continues to expand its defense communications portfolio through secure connectivity solutions, digital transformation initiatives, and advanced networking technologies tailored to military environments.

Recent Developments:

January 2024 – Lockheed Martin and Verizon broadened the scope of their 5G.MIL hybrid base-to-tactical network demonstration at Whidbey Island by incorporating eight additional edge computing nodes. The expansion was aimed at enhancing network resilience, operational flexibility, and real-time data processing capabilities across military environments.

March 2024 – The U.S. Department of Defense Office of the Under Secretary allocated an additional USD 168 million under its Tranche 2 initiative to support 5G deployment activities across five new military installations, reinforcing the department's commitment to advancing next-generation defense communications.

May 2024 – Nokia entered into a framework agreement with the German Bundeswehr to deploy private 5G military network infrastructure across four garrison locations. The contract is expected to strengthen secure communications, operational efficiency, and digital connectivity within military facilities.

August 2024 – Samsung Networks secured a major contract from South Korea's Ministry of National Defense for the supply of virtualized Radio Access Network (vRAN) tactical communication kits. The agreement, valued at approximately KRW 92 billion, highlights the increasing adoption of software-driven network technologies in defense operations.

October 2024 – Ericsson and Thales established a joint venture focused on delivering sovereign 5G core network solutions for defense and government customers across Europe. The collaboration aims to address growing demand for secure, independent, and mission-critical

communication infrastructures.

Outlook:

The global 5G in Defense market is poised for substantial growth over the next decade as military organizations prioritize digital transformation and next-generation communication capabilities. The convergence of 5G, artificial intelligence, edge computing, autonomous systems, and advanced ISR technologies is expected to redefine modern warfare and defense operations. With strong government support, rising defense expenditures, and increasing demand for secure and resilient communication infrastructures, the market is expected to remain one of the fastest-growing segments within the broader defense technology landscape.

As armed forces worldwide continue to modernize their operational frameworks, 5G technology will play a foundational role in enabling connected, intelligent, and mission-ready defense ecosystems throughout the forecast period.

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