Self-Organizing Network Artificial Intelligence (AI) Market CAGR to be at 18.8% from 2025 to 2029 | $12.32 Billion 2029

The Business Research Company's Self-Organizing Network Artificial Intelligence (AI) Global Market Report 2025 – Market Size, Trends, And Forecast 2025-2034

The Business Research Company

LONDON, GREATER LONDON, UNITED KINGDOM, December 3, 2025 /EINPresswire.com/ -- What Is The Projected Market Size & Growth Rate Of The Self-Organizing Network Artificial Intelligence (AI) Market?

The market size for artificial intelligence (AI) in self-organizing networks has witnessed a swift expansion in recent years. The market which was valued at $5.19 billion in 2024, is expected to surge to $6.18 billion in 2025, with a compound annual growth rate (CAGR) of 19.2%. The historical growth can be traced back to the enhanced usage of machine learning and AI tools in telecommunications networks, increased funding in smart network management systems, a growing demand for self-repairing and self-optimizing capacities, along with a heightened emphasis on anticipative maintenance and active fault detection.

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The market size for self-organizing networks powered by artificial intelligence (AI) is projected to experience a significant increase in the coming years, expanding to $12.32 billion by 2029 with a compound annual growth rate (CAGR) of 18.8%. The surge in this forecast period is due to factors such as the escalating demand for automation and improved operational efficiency, an uptick in 5G implementations and network densification, an upsurge in data traffic and user growth, and the rise in the utilization of AI and machine learning algorithms. Upcoming trends within this forecast period consist of progress in artificial intelligence-led network automations, enhanced incorporation of machine learning for real-time optimization, developments in self-repairing and self-configuring networks, and the use of generative AI for network analytics.

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What Is The Crucial Factor Driving The Global Self-Organizing Network Artificial Intelligence (AI) Market?
The anticipated surge in the adoption of 5G networks could significantly boost the self-organizing network AI market's growth. 5G networks, the most recent generation in mobile connectivity, offer high-speed data, minimized latency, and increased capacity to back revolutionary technologies such as immersive gaming and the internet of things. The higher adoption rate of 5G networks is traceable to the growing need for fast yet low-latency connectivity to accommodate real-time digital applications. These networks bolster the AI in self-organizing networks by delivering high-speed, low-latency connectivity which facilitates real-time data handling and decision-making. They bolster network efficiency by endorsing AI-led automation, refinement, and predictive upkeep, thereby improving service quality and user experience significantly. To highlight this, by December 2023, the Office of Communications (Ofcom), a UK-based regulatory and competition authority, stated that the outdoor 5G coverage supplied by at least one mobile network operator had risen to between 85-93% in 2023, marking a rise from the 67-78% witnessed in 2022. Consequently, the surge in 5G network adoption is fueling the growth of the self-organizing network AI market.

Who Are The Emerging Players In The Self-Organizing Network Artificial Intelligence (AI) Market?
Major players in the Self-Organizing Network Artificial Intelligence (AI) Global Market Report 2025 include:
• Huawei Investment & Holding Co. Ltd.
• Cisco Systems Inc.
• Qualcomm Incorporated
• Telefonaktiebolaget LM Ericsson
• NEC Corporation
• Nokia Oyj
• ZTE Corporation
• Juniper Networks Inc.
• Amdocs Limited
• Ciena Corporation

What Are The Key Trends Shaping The Self-Organizing Network Artificial Intelligence (AI) Industry?
Leading corporations in the self-organizing network AI market are prioritizing the creation of sophisticated solutions, such as AI-driven radio resource management, to enhance network efficiency, better user satisfaction and decrease operational expenses. AI-backed radio resource management (RRM) employs artificial intelligence and machine learning strategies to dynamically manage, allocate, and optimize radio spectrum and network resources in a telecommunications network. For example, Huawei Technologies Co, a Chinese tech company,

introduced the AI Core Network at the Mobile World Congress (MWC) in March 2025, signifying a significant progression in the advancement of intelligent telecommunications. This revolutionary network structure incorporates AI within the nucleus of telecommunication systems, facilitating fluid connectivity and cooperation between AI agents. It aims to provide intelligent automation, instantaneous decision-making, AI-assisted radio resource management and enhanced network efficiency for a wide range of service environments. This sets the stage for the emergence of future, intelligent networks.

What Segments Are Covered In The Self-Organizing Network Artificial Intelligence (AI) Market Report?
The self-organizing network artificial intelligence (AI) market covered in this report is segmented –
1) By Component: Software, Hardware, Services
2) By Network Type: 2G Or 3G, 4G Or LTE, 5G, Other Network Types
3) By Deployment Mode: On-Premises, Cloud
4) By Application: Network Optimization, Network Configuration Management, Network Healing, Network Planning and Design, Other Applications
5) By End-User: Telecom Operators, Enterprises, Managed Service Providers, Other End Users

Subsegments:
1) By Software: Network Planning Optimization, Configuration Management, Fault Management, Performance Management, Security Management
2) By Hardware: Servers, Antennas, Base Stations, Routers, Switches, Sensors
3) By Services: Consulting Services, Integration Services, Managed Services, Support Maintenance Services, Training Services

View the full self-organizing network artificial intelligence (ai) market report:
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Which Region Is Projected To Hold The Largest Market Share In The Global Self-Organizing Network Artificial Intelligence (AI) Market?
In the Self-Organizing Network Artificial Intelligence (AI) Global Market Report for the year 2025, Europe emerged as the leading region for the previous year. Moreover, the growth in AI market in the Asia-Pacific region is predicted to outpace others in the forecast period. Other regions that were included in the analysis are Western Europe, Eastern Europe, North America, South America, Middle East, and Africa.

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