

# AI-Based Telecom Fault Market Forecasts to 2034 – Global Analysis By Component (Solutions and Services), Deployment Mode, Fault Type, Network Type, Application, End User and By Geography

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## Abstracts

According to Statistics MRC, the Global AI-Based Telecom Fault Management Market is accounted for \$2.1 billion in 2026 and is expected to reach \$6.3 billion by 2034 growing at a CAGR of 14.7% during the forecast period. AI-Based Telecom Fault Management refers to the use of artificial intelligence, machine learning, and advanced analytics to detect, predict, diagnose, and resolve faults within telecommunication networks. These systems analyze large volumes of network performance and operational data in real time to identify anomalies, minimize service disruptions, and automate corrective actions. AI-based telecom fault management enhances network reliability, reduces downtime, improves operational efficiency, and supports proactive maintenance across complex telecom infrastructure environments.

### Market Dynamics:

Driver:

Network complexity fault volume explosion

Rapid growth in network infrastructure complexity, driven by 5G deployment, cloud-native network function adoption, and multi-vendor open RAN architectures, is generating alarm and fault volumes that overwhelm traditional rule-based fault management systems and human network operations center staff. A single large operator may process millions of alarms daily across a complex heterogeneous network, creating critical demand for AI-powered fault correlation and prioritization that

eliminates alarm storms and focuses operator attention on actionable network events.

Restraint:

Data quality and labeling requirements

Effective AI-based fault management requires extensive historical fault data with accurate root cause labels to train reliable machine learning models that can generalize across diverse network topologies and failure scenarios. Telecom operators frequently lack well-labeled historical fault datasets due to inconsistent alarm documentation practices and the sparse occurrence of rare but critical failure modes. Data collected across multi-vendor network environments with inconsistent telemetry formats requires substantial preprocessing and normalization before AI model training.

Opportunity:

Autonomous network operations platforms

Growing operator investment in autonomous network operations capabilities that minimize human intervention in routine fault detection, diagnosis, and remediation workflows creates a compelling commercial opportunity for AI-based telecom fault management platform vendors. Operators pursuing zero-touch network automation architectures require fault management systems capable of closed-loop autonomous remediation for defined fault categories without NOC staff involvement. As AI fault management platforms demonstrate reliable autonomous remediation at scale, operators are expanding automation scope from simple fault recovery to complex multi-domain fault coordination.

Threat:

Incumbent OSS vendor embedded AI capabilities

Traditional network management and operations support system vendors, including Ericsson, Nokia, and Huawei, are embedding AI fault management capabilities directly within their established OSS platforms, reducing operator motivation to deploy standalone third-party AI fault management solutions that require additional integration effort. Operators with deeply integrated incumbent OSS infrastructure face significant switching costs and integration risk when evaluating alternative AI fault management

platforms.

#### Covid-19 Impact:

COVID-19 generated unprecedented traffic pattern changes that immediately obsoleted existing rule-based fault management thresholds across operator networks globally, creating acute demand for AI-based adaptive fault detection capable of identifying abnormal conditions against new normal traffic baselines. NOC staffing constraints during lockdowns accelerated operator interest in AI-driven fault automation that reduces dependence on manual alarm investigation. Post-pandemic elevated network traffic levels and expanded 5G network complexity have sustained strong operator investment in AI fault management capabilities as a core network operations efficiency initiative.

The services segment is expected to be the largest during the forecast period

The services segment is expected to account for the largest market share during the forecast period, due to the extensive professional services and managed operations support required to deploy, train, and continuously improve AI fault management models across complex multi-vendor operator network environments. Telecom operators require specialized data engineering, machine learning model development, and network domain expertise to configure AI fault management platforms for their specific network topologies and fault patterns.

The on-premise segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the on-premise segment is predicted to witness the highest growth rate, driven by telecom operators' preference for deploying AI fault management systems within their own network operations infrastructure to maintain data sovereignty, minimize latency for real-time fault detection, and ensure compliance with national telecommunications data residency regulations. Large incumbent operators managing extensive legacy network infrastructure retain strong preferences for on-premises fault management deployments that integrate directly with existing OSS environments and do not require external network data transmission.

#### **Region with largest share:**

During the forecast period, the North America region is expected to hold the largest

market share, due to the most advanced 5G network deployments requiring sophisticated AI fault management and the presence of major platform vendors, including IBM Corporation, Cisco Systems, Inc., and Amdocs Limited. US and Canadian mobile operators are among the earliest adopters of AI-powered network operations automation driven by competitive pressure to reduce network operations costs while maintaining service quality.

### **Region with highest CAGR:**

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR, due to the world's largest 5G network deployments in China and South Korea, generating massive fault management scale requirements and accelerating AI-based operations adoption. Rapidly expanding telecom network infrastructure across India, Southeast Asia, and Australia creates strong new market demand. Government initiatives supporting network automation and digital infrastructure investment across the region stimulate AI fault management procurement from both incumbent operators and new market entrants deploying greenfield 5G networks.

### **Key players in the market**

Some of the key players in AI-Based Telecom Fault Management Market include Ericsson AB, Nokia Corporation, Huawei Technologies Co., Ltd., IBM Corporation, Cisco Systems, Inc., Amdocs Limited, Netcracker Technology Corporation, Comarch SA, Subex Limited, TEOCO Corporation, Guavus, Inc., Anritsu Corporation, Spirent Communications plc, Viavi Solutions Inc., ExlService Holdings, Inc., Ribbon Communications Inc., Infosys Limited, and Wipro Limited.

### **Key Developments:**

In May 2026, Ericsson AB launched its AI Operations Center fault management suite with large language model-powered alarm narrative generation, enabling NOC engineers to receive natural language fault explanations and recommended remediation steps for complex multi-domain network failures.

In April 2026, Nokia Corporation introduced AVA Cognitive Fault Manager 5.0 with unsupervised anomaly detection for cloud-native 5G core network functions, automatically discovering new fault patterns without pre-labeled training data across containerized network function deployments.

In March 2026, IBM Corporation expanded its AIOps-powered telecom fault management platform with closed-loop automated remediation capabilities for 4G and 5G radio network faults, achieving 78% autonomous fault resolution rate in commercial deployments across three major European mobile operators.

#### Components Covered:

Solutions

Services

#### Deployment Modes Covered:

On-Premise

Cloud-Based

Hybrid Deployment

#### Fault Types Covered:

Network Faults

Service Faults

Hardware Faults

Software Faults

Security Faults

#### Network Types Covered:

4G/LTE Networks

5G Networks

Fiber Networks

Cloud Networks

Private Telecom Networks

Applications Covered:

Real-Time Fault Monitoring

Predictive Maintenance

Alarm Correlation

Network Performance Optimization

Incident Management

Service Assurance

End Users Covered:

Telecom Operators

Managed Service Providers

Data Center Operators

Internet Service Providers

Enterprise Network Providers

Regions Covered:

North America

United States

Canada

Mexico

Europe

United Kingdom

Germany

France

Italy

Spain

Netherlands

Belgium

Sweden

Switzerland

Poland

Rest of Europe

Asia Pacific

China

Japan

India

South Korea

Australia

Indonesia

Thailand

Malaysia

Singapore

Vietnam

Rest of Asia Pacific

South America

Brazil

Argentina

Colombia

Chile

Peru

Rest of South America

Rest of the World (RoW)

Middle East

Saudi Arabia

United Arab Emirates

Qatar

Israel

Rest of Middle East

Africa

South Africa

Egypt

Morocco

Rest of Africa

**What our report offers:**

- Market share assessments for the regional and country-level segments
- Strategic recommendations for the new entrants
- Covers Market data for the years 2023, 2024, 2025, 2026, 2027, 2028, 2030, 2032 and 2034
- Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)
- Strategic recommendations in key business segments based on the market estimations
- Competitive landscaping mapping the key common trends
- Company profiling with detailed strategies, financials, and recent developments
- Supply chain trends mapping the latest technological advancements

**Free Customization Offerings:**

All the customers of this report will be entitled to receive one of the following free customization options:

Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

## Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

## Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

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