IA/AUTOMATION IN TELECOM



GENTEX®
TRAINING CENTER

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Introduction

Artificial intelligence and automation are reshaping how telecommunications companies plan, operate, protect, and improve their networks. Telecom operators manage complex environments that include radio access networks, transport systems, core networks, cloud platforms, customer systems, and business support applications. As these environments grow, traditional manual processes become slower, more costly, and more difficult to manage.

The AI and Automation in Telecom Training Course provides a practical understanding of how telecommunications organizations can apply artificial intelligence, machine learning, analytics, and workflow automation across their technical and business operations. The course explains how these technologies support faster decisions, improve service quality, reduce repetitive work, and strengthen network reliability.

Participants will explore the role of AI in network monitoring, fault prediction, capacity planning, performance optimization, customer experience, cybersecurity, and operational support. They will also examine how automation can connect data, decisions, and actions across network and service management processes.

A major part of the course focuses on the development of intelligent and autonomous network operations. Participants will learn how telecom organizations are progressing from basic task automation toward intent-based management and closed-loop automation. In a closed-loop model, systems collect operational data, identify an issue, recommend or perform an action, and then evaluate the result. Current industry frameworks recognize AI, machine learning, intent-driven management, and closed-loop assurance as important capabilities for advanced telecom operations.

The course also addresses the practical conditions required for successful implementation. These include data quality, system integration, governance, security, human oversight, change management, and measurable business value. Participants will therefore gain both technical knowledge and a structured approach for selecting and managing AI and automation initiatives.

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Gentex Training Center delivers this five-day program through clear explanations, telecom-based examples, practical exercises, discussions, and implementation planning activities.

AI and Automation in Telecom Course Objectives

By the end of this course, participants will be able to:

- Explain the main concepts of artificial intelligence, machine learning, analytics, and automation.
- Describe the role of AI and automation within modern telecom operations.
- Distinguish between manual processes, rules-based automation, intelligent automation, and autonomous operations.
- Identify suitable AI and automation use cases across telecom networks, operations, and customer services.
- Understand how AI can support network planning, optimization, assurance, and maintenance.
- Apply automation principles to repetitive operational and administrative telecom processes.
- Explain the purpose of AIOps in managing complex telecom and information technology environments.
- Understand how AI can analyze alarms, events, logs, performance indicators, and customer data.
- Examine predictive maintenance methods for identifying possible failures before service disruption occurs.
- Understand anomaly detection and its value in fault management and service assurance.
- Explore AI-supported capacity planning and traffic forecasting.
- Understand intent-based management and closed-loop automation.
- Assess the role of OSS and BSS platforms in intelligent telecom operations.
- Identify the data requirements of telecom AI solutions.

- Evaluate the quality, accuracy, accessibility, and relevance of operational data.
- Recognize common risks related to AI bias, privacy, security, explainability, and unreliable outputs.
- Define the responsibilities of technical teams, business teams, data specialists, and management.
- Select AI and automation projects according to operational need and business value.
- Establish suitable performance indicators for AI and automation initiatives.
- Prepare a practical roadmap for introducing AI and automation into a telecom organization.

Course Methodology

The course uses an interactive and practical learning approach. It combines instructor-led presentations, telecom examples, group discussions, case analysis, process-mapping exercises, and implementation workshops. Participants will evaluate use cases, identify automation opportunities, assess risks, and develop a practical AI and automation roadmap.

Who Should Take This Course

This course is suitable for:

- Telecom network engineers and specialists.
- Network operations center personnel.
- Telecom operations and maintenance teams.
- Radio access, transport, and core network professionals.
- OSS and BSS specialists.
- Information technology and systems professionals.
- Data analysts and business intelligence specialists.

- Digital transformation and innovation teams.
- Customer experience and service assurance professionals.
- Cybersecurity and telecom risk personnel.
- Process improvement and automation specialists.
- Technical project managers and program managers.
- Telecom supervisors, department heads, and decision-makers.
- Professionals involved in AI or automation projects within telecom organizations.

AI and Automation in Telecom Course Outlines

Day 1: Foundations of AI and Automation in Telecommunications

- Artificial intelligence, machine learning, generative AI, and data analytics concepts.
- Automation, orchestration, intelligent automation, and autonomous operations.
- Key drivers for adopting AI and automation in telecom organizations.
- Telecom data sources, including alarms, logs, network events, and performance indicators.
- Identifying suitable AI and automation opportunities across telecom operations.

Day 2: AI for Network Operations and Performance Optimization

- AIOps applications in network monitoring and operational management.
- Intelligent alarm management, event correlation, and root cause analysis.
- Anomaly detection, predictive maintenance, and fault prevention.
- Traffic forecasting, capacity planning, and network resource optimization.

- AI applications across radio access, transport, core, and cloud networks.

Day 3: Telecom Process Automation and Customer Operations

- Workflow automation and robotic process automation in telecom processes.
- Automated service provisioning, activation, configuration, and validation.
- Integration of automation with OSS, BSS, CRM, billing, and inventory systems.
- AI-supported customer service, ticket classification, and virtual assistance.
- Customer analytics, churn prediction, personalization, and revenue assurance.

Day 4: Autonomous Networks, Closed-Loop Automation, and Governance

- Autonomous network concepts and automation maturity levels.
- Intent-based network management and policy-driven automation.
- Closed-loop monitoring, analysis, decision-making, and corrective action.
- AI governance, data privacy, transparency, accountability, and human oversight.
- Cybersecurity controls for AI models, data, interfaces, and automation platforms.

Day 5: AI and Automation Strategy and Implementation Roadmap

- Assessing organizational readiness, systems, data, processes, and workforce skills.
- Selecting and prioritizing AI and automation use cases.
- Developing business cases, pilot projects, and implementation plans.
- Establishing performance indicators and measuring operational value.

- Preparing a practical AI and automation roadmap for telecom organizations.

Conclusion

By successfully completing the AI and Automation in Telecom Training Course, participants will develop a practical understanding of how artificial intelligence and automation can improve telecom networks, operations, services, and customer processes.

They will be able to identify valuable use cases, assess data and system requirements, evaluate operational risks, and support the development of controlled automation solutions. Moreover, they will understand how organizations can progress from basic automation toward intelligent, intent-driven, and closed-loop operations.

Through the knowledge gained with Gentex Training Center, participants will be better prepared to contribute to AI and automation initiatives that improve service quality, operational efficiency, network reliability, and informed decision-making.

FAQs

Q1 What is the "AI and Automation in Telecom" course about?

The AI and Automation in Telecom Training Course focuses on applying artificial intelligence, machine learning, analytics, and automation to telecom operations. It covers network monitoring, fault prediction, capacity planning, process automation, customer operations, AIOps, autonomous networks, intent-based management, and closed-loop automation.

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Q2 What are the key benefits of the "AI and Automation in Telecom" course?

The course helps participants identify valuable AI and automation opportunities, improve network reliability, reduce repetitive operational work, and support better decision-making. It also develops understanding of predictive maintenance, network optimization, intelligent service processes, governance, risk management, and measurable business value.

Q3 What skills will I gain from the "AI and Automation in Telecom" course?

Participants will develop AI and Automation Strategy, Telecom Network Optimization, Predictive Maintenance and Fault Management, and Autonomous Network and Closed-Loop Operations skills. These capabilities support the identification of practical use cases, network performance improvement, intelligent fault management, and structured automation implementation.

Q4 What tools, methods, or standards are covered in the "AI and Automation in Telecom" course?

The course covers AIOps, workflow automation, robotic process automation (RPA), OSS and BSS integration, intent-based network management, policy-driven automation, and closed-loop automation. It also addresses anomaly detection, predictive maintenance, event correlation, root cause analysis, traffic forecasting, and AI governance principles.

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Q5 How is the "AI and Automation in Telecom" course applied in real-world practice?

The course applies AI and automation to practical telecom activities such as network monitoring, alarm correlation, fault prediction, capacity planning, service provisioning, customer support, churn prediction, and revenue assurance. Participants also develop implementation plans that address data quality, system integration, cybersecurity, governance, and measurable performance indicators.