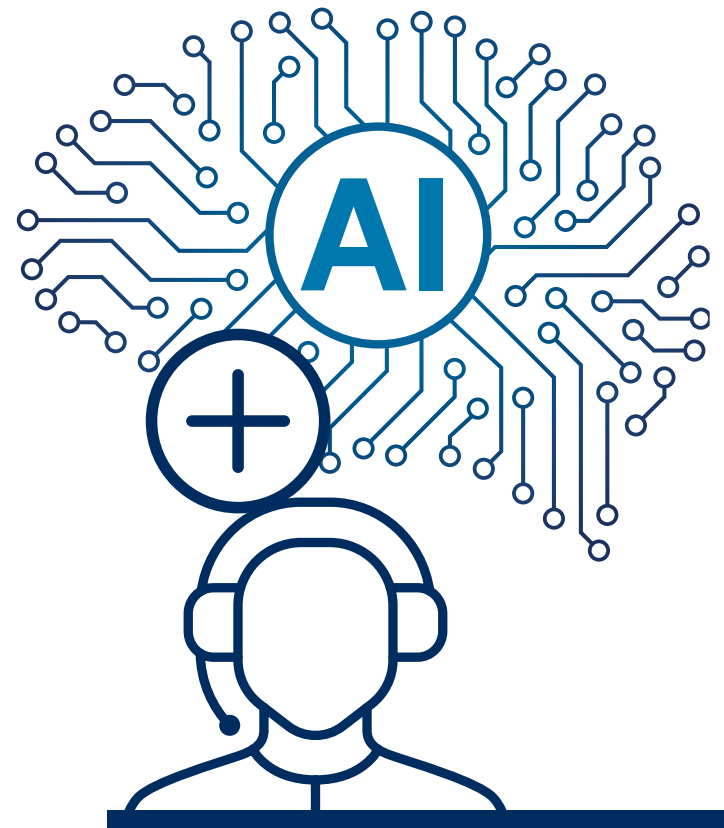


Artificial Intelligence in Emergency Communications Centers



HOW IS AI BEING INTEGRATED INTO EMERGENCY COMMUNICATIONS CENTERS (ECCs)?

Evolving technologies allow public safety telecommunicators to answer, process, and dispatch calls with greater efficiency and accuracy. AI is gradually being implemented in ECCs as a decision-support tool to assist personnel in daily operations. AI can assist ECCs in navigating staffing shortages, budget constraints, and increased work demands. Though AI-based tools and capabilities have many benefits, incorporating them into operations requires significant evaluation of impacts to operability, interoperability, security, and resiliency. **Below are examples of ways ECCs are implementing AI.**

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WHAT IS ARTIFICIAL INTELLIGENCE (AI)?

AI is a machine-based system that can, for a given set of human-defined objectives, make predictions, recommendations, or decisions influencing real or virtual environments. AI systems use machine and human-based inputs to perceive real and virtual environments, abstract such perceptions into models through analysis in an automated manner, and use model inference to formulate options for information or action.

[RESOURCE](#)

CALL TRIAGING

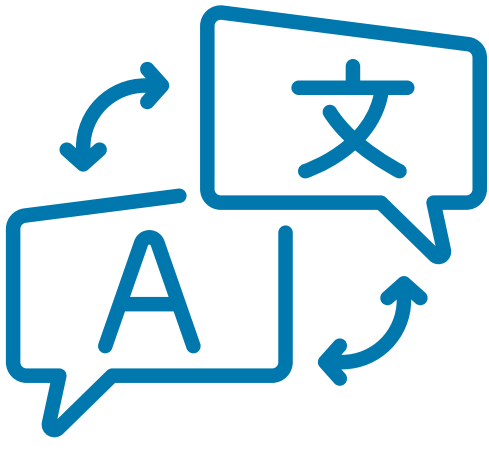
Conversational AI platforms like voice assistants and chatbots can **process high call volumes in a timely manner, allowing telecommunicators to focus on emergency calls.** This technology can help prioritize calls, process case reporting, and direct callers to additional information or services.



Charleston County Consolidated Emergency Communications, South Carolina has an AI call taker named Matthew that processes administrative lines and the 911HelpMe online portal, decreasing the workload on telecommunicators and allowing them to focus on more urgent calls for service.

Jefferson County Communications Center Authority, Colorado has been utilizing AI since December 2022. Currently, up to 40% of administrative line calls for service are being processed by the AI assistant.

[RESOURCE](#)



Orleans Parish Communications District and other ECCs are using real-time AI-powered language translation and transcription to help telecommunicators accurately process calls 70% faster by eliminating the need for a third-party translator.

[RESOURCES](#)

TWO-WAY LANGUAGE SERVICE

Two-way language services can **assist telecommunicators with translation and live transcription of callers' voice and text-to-911 messages in real-time.** This technology recognizes source languages and transcribes messages into English. Some AI two-way language services even support American Sign Language.

BACKGROUND NOISE REDUCTION/SPEECH RECOGNITION

Most ECCs utilizing AI technologies and tools are benefactors of advanced software and AI-enabled infrastructure including background noise reduction and/or speech recognition tools. **Telecommunicators are able to understand audio, identify inaudible background noises, and confirm critical data with automatic call transcription, ultimately saving time.**

AI can identify keywords related to emergencies through an automatic live transcription tool. The written alert helps telecommunicators identify the emergency for timely call entry and dispatch of appropriate resources, which may reduce response times. Some solutions also provide transcription in multiple languages instantaneously, and increase visibility by using automated and keyword-based notifications sent to applicable first responders, such as real-time crime centers.



Metro Nashville Department of Emergency Communications, Tennessee has been using a real-time speech-to-text transcription call handling tool since June 2024, and plans to launch an AI-powered radio monitoring solution in late Summer 2025.

QUALITY ASSURANCE, CONTROL, & IMPROVEMENTS

Quality Assurance (QA), Quality Control (QC), and Quality Improvements (QI) AI software can assist administrators, information technologists (IT), and other personnel **by reviewing calls in real time for customer service, accuracy, and critical information based on event types, standard operating procedures, and the law.**

Additionally, QA/QC/QI results help agencies remain consistent in providing telecommunicators timely feedback to assess training, performance, or employee recognition requirements. Analyzing raw data, statistics, and identifying trends for QA/QC/QI **supports the administrative guidelines and frequency of reviews for the QA/QC/QI program.** It provides an opportunity to revisit policies and procedures to assess if changes are necessary based on performance, emerging dynamics in the 911 industry, and current laws.



Hamilton County 911, Tennessee is using real-time QA alerting supervisors of critical incidents based on keyword detections, which allows the call to be monitored live and ensures quality customer service, timely call entry, and dispatch of appropriate first responders and necessary resources.

North Central Texas Emergency Communications District supervisors are testing an AI program that monitors calls and flags when a telecommunicator has processed several tragic calls or remained on the line with a high stress call for an extended period of time. This QC keeps watch over telecommunicators, their wellness, burnout, and may help prevent mental health challenges.

[RESOURCES](#)



WILDFIRE MONITORING

Wildfire sensors integrated into 911 alerting systems can use environmental data to notify telecommunicators of a potential emergency, and even share thermal imaging photos.

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AUDIO AND VISUAL USES

Some agencies are pairing AI technologies in the same areas, such as audio detection for gunshot alerting and license plate recognition cameras, to increase situational awareness.

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SENSORS AND OTHER TOOLS

Real-time monitoring of sensors, satellites, and other technology systems by **AI can help identify keywords and signal alerts** that are useful for emergency incident identification and management.

AI-driven audio detection, such as gunshot alerting, can assist agencies in decreasing response times and increasing public safety.

AI-ENHANCED TRAINING

Telecommunicator training can be **enhanced using AI-powered resources including simulations** to improve telecommunicator skills. Additionally, AI can learn from previous incidents and suggest call flow and process improvements as well as response options.

[RESOURCE](#)

CYBERSECURITY

The interconnected nature of modern ECCs allows for the influx of data from multiple sources. **Integrating AI-enabled solutions and other advanced methods of data consumption can enable efficiencies, but it also requires careful evaluation of operability impacts and ensure interoperability, security and resiliency.** Malicious actors may target AI systems, especially those with vulnerabilities that stem from weaknesses in design and implementation. Also, with AI systems, data may be processed by a third-party provider. **ECCs should:**



Consider a comprehensive risk assessment addressing data access, management, and cybersecurity in their Continuity of Operations (COOP) Plan



Develop an AI Implementation Plan



Conduct a data inventory across their emergency communications ecosystem to understand how data is being used



Ensure data is secure and access is only granted to those with a need-to-know



Ensure appropriate encryption and security measures are in place

In addition, some malicious actors are using AI to execute attacks, such as deep fakes and spoofing, which should be accounted for in cyber incident and vulnerability plans.

[RESOURCE](#)

ADDITIONAL RESOURCES