



CRISIS COGNITION
TECH FOR IMPACT

USE CASE

FOR THE OFFLINE AI (O-LA) SYSTEM IN A MASS CASUALTY EVENT IN A REMOTE AREA

Mass casualty events (MCEs)—such as natural disasters, severe accidents, or large-scale emergencies—create urgent, high-stakes situations where immediate information and effective coordination are essential. In remote areas, where internet access is often unreliable or unavailable, responders face additional challenges in accessing real-time information, coordinating care, and managing limited resources. The Offline AI (O-LA) system can play a crucial role in these environments, offering offline support to emergency responders, medical personnel, and logistical coordinators, allowing them to work efficiently under pressure without relying on internet connectivity. Additionally, O-LA's ability to update its datasets in real-time, even while offline, ensures that responders have the most up-to-date information available, "on the fly."

Problem Statement

During MCEs in remote regions, the need for rapid and coordinated action is critical. Responders are often constrained by limited medical resources, communication difficulties, and lack of access to real-time data, such as medical protocols or logistics information. Without reliable internet, even basic information can be difficult to obtain, delaying life-saving decisions. To address this, an offline solution that provides immediate access to vital information and enables seamless communication among responders is essential. O-LA's ability to update data in real-time, even in the absence of connectivity, ensures that critical decision-making is based on the most current available information.

Solution: Offline AI-Powered Assistance System (O-LA) for Military Operations

The O-LA system is a secure, portable AI solution engineered for rugged field use. Its design allows it to be mounted on vehicles or deployed at key locations, providing localized, real-time access to mission-critical resources. When activated, O-LA establishes a secure connectivity "bubble" that enables users to interact with its AI-powered tools without internet reliance. Through P2P networking, multiple O-LA units can form a mesh network, significantly expanding the coverage area. This mesh supports secure data sharing, logistics coordination, medical support, and communication across dispersed teams, ensuring seamless connectivity and enhanced situational awareness throughout the operational zone.

KEY FUNCTIONALITIES AND USE CASES

Medical Triage and Emergency Medical Guidance

In mass casualty events, O-LA assists first responders with triage procedures, offering guidelines for categorizing and prioritizing patients based on injury severity. General responders can access basic triage information, while medical professionals can query more detailed datasets that include advanced trauma care, resuscitation protocols, and injury-specific treatment guidelines. O-LA ensures that both frontline responders and medical teams have access to up-to-date medical information, even when new data or protocols are updated "on the fly."

Resource and Supply Management Assistance

O-LA helps logistical teams track critical resources, such as medical supplies, food, and water. General users can query available supplies and estimated needs, while incident commanders can access detailed insights into inventory, resupply recommendations, and usage patterns. O-LA's real-time updating feature allows the system to alert commanders about shortages and suggest alternative resources or strategies to maximize available supplies. These updates happen seamlessly, ensuring that responders have the most current information on critical resources.

Evacuation and Safe-Zone Coordination

In large-scale emergencies, setting up safe zones and planning evacuations is critical. O-LA provides responders with guidance on setting up safe zones, evacuation routes, and shelter capacities using pre-loaded geographic and infrastructure data. Incident commanders can access real-time updates on terrain, population density, and evolving risk zones, allowing them to adjust evacuation strategies "on the fly" as new information becomes available.

Localized Language and Cultural Support

In some remote areas, language and cultural differences can hinder effective communication. O-LA includes multilingual and culturally aware functionality, enabling responders to access information in the local language, improving communication with affected populations. Furthermore, incident commanders can access real-time updates on local cultural practices, ensuring that response efforts are sensitive and effective. This localized, dynamic information fosters cooperation from local communities in crisis situations.

Coordination and Communication Support for Multiple Response Teams

During a mass casualty event, coordination among multiple teams (e.g., medical, logistical, and incident command) is essential. O-LA allows seamless coordination by providing role-specific, real-time guidance to all teams, ensuring that each unit has the information it needs to perform its tasks effectively. The system's secure, tiered access structure ensures that sensitive data, such as medical records or high-priority resource allocations, is protected, while allowing incident commanders to monitor and adjust strategies as new data is updated in real time.

Real-Time Incident Tracking and Situation Updates

O-LA provides continuous, real-time updates on the evolving crisis situation, helping incident commanders track the progress of the response. With encrypted access, commanders can receive up-to-date feedback from each team, allowing them to make fast, informed decisions. The system's ability to update information "on the fly" ensures that incident commanders are always operating with the latest details on resource distribution, casualty care, and evacuation plans, which helps keep response efforts aligned with the current situation on the ground. This capability is especially critical in the rapidly changing and unpredictable conditions of mass casualty events, where having real-time situational awareness is crucial for effective response.

BENEFITS OF O-LA IN MASS CASUALTY EVENTS

- **Global Offline Functionality:** Operates entirely offline, ensuring that responders have access to critical tools and information without needing internet connectivity, ideal for remote areas with no service.
- **Real-Time, On-the-Fly Data Updates:** The ability to update datasets in real time allows responders to act based on the latest available information, even in the absence of internet connectivity.
- **Cost-Effective Operation:** Eliminates the need for expensive satellite or mobile internet access, making it more affordable for response teams in remote locations.
- **Real-Time Decision Support:** Provides instant access to triage protocols, treatment guidelines, and resource management tools, supporting quick, life-saving decisions.
- **Enhanced Multi-Team Coordination:** O-LA's tiered access structure enables seamless coordination between different teams, from frontline medical responders to logistics and command units, ensuring response efficiency.
- **Localized and Culturally Aware Information:** Multilingual, culturally sensitive data enables better communication with local communities, building trust and fostering cooperation during response efforts.

The **O-LA** system's offline capabilities and real-time data update feature make it an invaluable tool for mass casualty events in remote areas. By providing tailored access to critical data, O-LA ensures that responders can deliver life-saving care, coordinate resources, and manage evacuations without relying on internet connectivity. This adaptability, combined with the ability to update datasets on the fly, allows emergency teams to respond dynamically to rapidly changing situations. O-LA's cost-effectiveness and support for multi-team coordination ensure a more effective, efficient response in some of the world's most challenging environments, ultimately improving survival outcomes and streamlining disaster management.

