



Emergency SOS via satellite

iPhone 14 can connect to satellites so users can text emergency services when cellular or Wi-Fi networks are unavailable.

Key Takeaways

- Emergency SOS via satellite allows users to text emergency services when terrestrial networks are unavailable.
- iPhone will prompt users to answer common dispatcher questions in advance, to decrease time-to-dispatch.
- High-accuracy location, verified phone number, and iPhone battery status will be provided at the start of a session.
- Medical ID information may be available via the Enhanced Emergency Data service.
- Satellite text takes longer than SMS, and transmit times can be affected by obstructions like trees and terrain.
- Text-enabled PSAPs will receive messages via their native text interface.
- Voice-only PSAPs will receive a call from an emergency relay center.

Backup Connectivity to Emergency Services

When a iPhone user attempts to call or text emergency services in a supported country, and no cellular or Wi-Fi network is available, iPhone can prompt the user to text emergency services via satellite. Emergency SOS via satellite is designed to provide Public Safety Answering Points (PSAPs) with vital information as quickly as possible, so that field responders can be dispatched without delay. Emergency SOS via satellite is available starting with iPhone 14.

Critical Information, Right Up Front

Emergency SOS via satellite is designed to provide PSAPs with much of the information required for dispatch at the very beginning of a text session. This decreases time to dispatch and offsets some of the satellite connection latency during two-way messaging.

Location and phone number: verified

Satellite text sessions begin with a highly accurate estimate of the user's location, along with clear guidance about how much area may need to be searched to find the user. Additionally, the user's verified phone number is provided, to help complete common protocol steps that require this information.

Common questions: answered

When a user starts an emergency text session via satellite, iPhone will guide the user to answer common PSAP questions before beginning two-way text communication. These questions are designed for interoperability with major call-taking protocols, and selected on the basis of expected frequencies of particular emergency types, as well as their ability to distinguish particular dispatch cases. This dramatically speeds up the process of gathering the information needed to reach a dispatch decision.

Enhanced Emergency Data

PSAPs that have established Enhanced Emergency Data (EED) service can also receive location and Medical ID data from their integrator of choice. This data can help further reduce the required back-and-forth messaging, and assist the PSAP in reaching a user's emergency contacts, who may have additional information about the user's point of departure, route, equipment, etc.

Routing

Text messages and emergency relay center calls will be automatically routed to the primary PSAP that normally provides text or wireless voice service to the user's location. PSAPs should ensure that their service-area boundaries are accurate and up-to-date with the TCC and/or wireless call routing providers that serve their jurisdiction.

Relay Center Protocols

Emergency relay center telecommunicators will begin interviewing users according to industry-standard protocols upon receiving an initial data transfer. Information gleaned from this interview will be provided to the responding PSAP upon connection of the voice call.

During a PSAP call, the relay telecommunicator will continue interviewing the caller, and providing their responses to the PSAP. Where permissible, when protocol thresholds indicate that specific instructions should be provided to the user (e.g., clearing an airway, stopping a bleed, etc.) the relay telecommunicator will provide those instructions to the user, and notify the PSAP.

These capabilities are intended to provide users with consistent, high-quality service, and reduce the PSAP workload associated with indirect communications. However, the emergency relay center exists to serve the needs of the PSAP: At any time, the PSAP is welcome and encouraged to ask their own questions or provide their own instructions, which the relay telecommunicator will promptly pass on to the user.

Sending and Receiving Text on iPhone

Once a user has completed the on-device questionnaire, iPhone will guide them to align with a satellite. On initial connection, iPhone will package and send the user's on-iPhone questionnaire responses, location, battery status, and a key to unlock their stored EED information. After the initial questionnaire is transmitted, the user and PSAP can begin two-way text communication.

Emergency SOS via satellite works differently from on-grid SMS messaging. Satellites are much farther away than cell towers, and orbit at high speeds relative to the user. This means that transmission speeds are slower than for SMS messages.

Each message from a user to a PSAP can take a few seconds to a few minutes to transmit. Messages from a PSAP to a user are faster. Obstructions, like buildings, terrain, or foliage may increase text transmit times. Transmit time also depends on message length: shorter messages require less time to send, and longer messages require more.

Responding to User Text

Emergency SOS via satellite is designed to support PSAPs that can accept text messages natively, as well as those that are currently voice-only.

Text-enabled PSAPs

For text-enabled PSAPs, Emergency SOS via satellite will deliver texts to the PSAP responsible for the user's location via the PSAP's existing Text Control Center (TCC). Location will be provided via the TCC interface.

Voice-only PSAPs

For PSAPs that do not currently accept text (or only support text for the deaf, hard-of-hearing, or speech impaired), an emergency relay center will communicate with the user via text, and contact the PSAP responsible for the user's location by voice. Relay calls will arrive on the PSAP's 911 trunks, and display the user's phone number and location in the regular Automatic Number Identification (ANI) and Automatic Location Identification (ALI) fields.

Emergency relay telecommunicators are trained in accordance with national and international best practices, and certified in protocol-based dispatching for law enforcement, fire, and medical calls.

Emergency relay center telecommunicators will attempt to remain in contact with a user until the user's emergency has been resolved. If a PSAP prefers to disconnect a relay call after dispatching field responders, relay telecommunicators will provide an incident number, and a telephone number for the relay center, in case the PSAP requires further information.

Learn More

For more information email safety_systems@apple.com.