Techfiesta Hackathon Brainstorming

Below is a *brainstorming* session focused on a *combined Women and Child Safety solution* that integrates both **PS1 (Emergency Alert System)** and **PS2 (Incident Reporting and Response System)**. The **main focus** is on the Emergency Alert System, but we'll also include how the incident reporting could complement it.

Guardian 360

Feature 1: One-Touch Distress Alert (Online/Offline)

Mobile app that, with a single action, sends an alert containing location, distress type, and any relevant metadata to

1. Predefined emergency contacts (friends/family).
2. Local authorities (police, emergency services).
3. Optional "community watchers" or volunteer networks.

1.1 Offline Mode via SMS

1.1.1. SMS to Server Mobile

- When there is no internet, the SOS alert triggers an SMS to a designated server phone (or a short-code service).
- The server phone is connected to a backend system that parses the SMS content and re-broadcasts the distress to relevant contacts and authorities.
- Benefit: Guarantees that the alert still goes out even if no data connection is available.

- SMS character limits; we might need a structured or compressed message format (e.g., “UID: 123;LOC:lat,long;MSG:HELP”).
- If location wasn’t embedded, the app can try to do a cell tower approximation or last-known GPS coordinate.

1.1.2. Stored Contacts for Edge Cases

- The app can keep a “backup contact” in case the server phone is unreachable.
- If the main server phone fails to respond within a time window, the phone automatically sends the SMS to one of the user’s designated emergency contacts directly.

1.1.3. Auto-Retry

- The app could attempt multiple SMS sends at defined intervals if it doesn’t get an acknowledgement from the server.
- Minimizes the chance an SMS fails and goes unnoticed.

1.2. Online Mode with Streaming

1.2.1. Real-Time Location & Metadata

- With internet availability, the location, userID, and any distress message is sent to the server in real time.
- The server can forward alerts instantly to the user’s circle, authorities, or community watchers.

1.2.2. Two-Way Communication

- If online, authorities or designated contacts might be able to “ping” the user to confirm safety, or to provide instructions.
- Potentially use a minimal chat or “acknowledgment system” for faster rescue coordination.

Feature 2: Adaptive Distress Messaging

Automatic Context: The system picks up environmental clues—e.g., if it's late night or location is known to be high-risk—to refine the alert urgency.

Voice Recording or Short Video: The option to attach a 5-second audio/video snippet for verification (only if safe and feasible).

Feature 3: Automatic Video/Audio Recording

Once the user presses the SOS button, the app automatically starts recording from either the back camera, the front camera

3.1. Offline Mode

- The recorded video/audio is stored in an encrypted format on the user's device.
- If the device remains safe, the user or authorities can later retrieve these recordings as evidence.
- Once the device reconnects to the internet, the app can automatically upload the footage to the server
- The system can upload segments of the video in chunks so that partial evidence is still saved if connectivity is lost again mid-upload.

3.2. Online Mode

- If the user has a stable internet connection (Wi-Fi or mobile data), video is streamed.
- Ensures that even if the phone is destroyed or confiscated, the footage is already stored on the server.

Feature 4: False Alarms

Automatic streaming/recording might be triggered by accident.

A quick “Cancel” or “I’m Safe” confirmation is vital to reduce overhead on the server and authorities.

Even if canceled, partial footage might remain stored locally—should it be auto-deleted or kept for a short time?

Feature 5: Incident Reporting & Tracking

Simplified Report Form: For the user to file a more detailed report after the emergency, or for bystanders to report incidents they have witnessed.

Anonymous Reporting: Option to hide personal details if the reporter feels unsafe disclosing their identity.

Automatic Categorization: AI/ML can detect if it’s a theft, assault, harassment, etc., based on keywords.

Tracking & Updates: The user (or witness) can see the progress of the report—e.g., “Investigating,” “In Progress,” “Resolved.”

Feature 6: Travel Alerts

In the app’s settings, the user picks a location from a map or types the address/coordinates.

Assign a label (e.g., “My Home”), choose whether the message triggers on arrival, on departure, or both.

Once the device enters the specified radius, the app automatically composes a message or push notification.

Sends it to the user’s chosen recipients (family/friends).

The app can keep a small log (“Reached Home at 6:15 PM”).

This log can later be used for personal reference or if needed for safety auditing.

If no internet is available upon arrival, the app can queue the message and send it automatically when connectivity is restored.