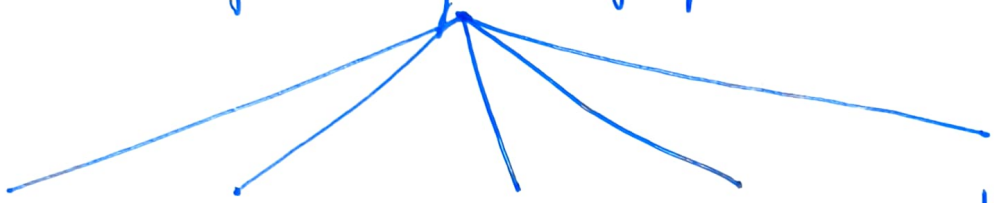
Proactive Ambulance Alert and Routing system

Core goal

To save lives by reducing emergency response time through



Real time accident detection

optimized ambulance dispatch

Driver alerts

Dynamic Traffic management

Hospital readiness

Core Feature Breakdown

1) Accident Detection and Automated SOS

How

Phones detect sudden deceleration / impact using sensors (accelometer, gyroscope)

Action

SOS with exact location and crash data is auto-sent to central server.

Offline compatibility

Use sms based fallback when no internet is available.

2) Central Emergency Platform

- Receives SOS signals.
- Dispatches nearest available ambulance using real-time GPS and traffic data.
- Sends real time crash info and ETA in hospitals.

3) Smartphone Geofenced Alert

- Geofence - Dynamically created Around ambulance Path.
- Alerts - sent to nearby drivers to clear the route.
- Channels - In app notifications + Vibration + sms alerts (for offline users)

4) Smart Traffic Management

- Integrate with city traffic light systems
- Adjust signals dynamically (extends green, shortens Red) to give ambulance a clear path.

Date : ___/___/___

5) Hospital Integration

- Nearest hospital receives auto-alerts
- Automatically check emergency bed availability.
- If full, reroutes ambulance to next best option.
- Sends like patient vitals during transit.

6) Real-time Ambulance and Patient Tracking

- Ambulance location and ETA shared with hospital and patient's emergency contact.
- Patient Vitals (heart rate, spO_2) sent to hospital dashboard

7) Public incentives and Community Awareness

- Reward drivers who make aside (insurance discounts, recognition)
- Awareness campaign with school, transport authorities and local govt.

Date : ___/___/___

* How System flows (End-to-End)

1) Crash occurs

- Smart phone detect crash → SOS triggered automatically

2) Emergency server Reads

- Receives crash details and location → identifies nearest ambulance
  ↓
  calculate optimal route

3) Driver Alerts

- Create a geofence around → notifies nearby drivers with alerts

4) Traffic Light Optimized

Green signals extended → Red light shortened → Ensures flow.

5) Hospital Alerted

- Notified with patient info and ETA.

↓

Confirms bed availability

↓

Prepares ER team

6) Arrival and Handoff

Ambulance Reaches faster

↓

Hospital already ready

↓

no paperwork

↓

Immediate treatment

Date : ___/___/___

* What's make this project different and outstand with other competetors

1) Works even offline using built in phone sms or sos

2) Combined real time routing, patient vitals, and hospital readines,

3) Uses existing technologies smartly (sensors, sms, GPS, geofencing).

4) Has public engagement, not just a back-end system.