



DAYANANDA SAGAR  
UNIVERSITY



TEAM  
**SafeMiles**

Technocognition Hackathon 2025



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# PROBLEM STATEMENT



## ISSUE 1

20% of vehicle crashes are fatigue & dozing related.

Proof:

<https://PMC10082604/>



## ISSUE 2

Micro-sleep / brief dozing can occur in “the blink of an eye” and be deadly.

Proof:

<https://abcnews.go.com/Technology/blink-eye-dozing-driving/story?id=17870880>



## ISSUE 3

High risk among truck, cab & night-shift drivers

Existing systems are expensive or unavailable in low-end vehicles



- Most road crashes took place between midnight and 5 am and during the post-lunch period between 3 pm and 6 pm
- A driver undertaking night trips should get at least eight-hour sleep during daytime
- Fatigue said to be main reason for drivers dozing off on the wheels
- Drivers should take breaks in between while on a long journey and stay hydrated
- AP has over 1,603 black spots on the various National Highways

- In 2022, **21,249** road accidents were reported in Andhra Pradesh in which **8,293** persons were killed and **21,340** were injured

- A driver undertaking night trips should get at least eight-hour sleep during daytime

# SOLUTION OVERVIEW

## 👁️ On-The-Go Safety



- 1 Detects eye blinks & head tilt in real time
- 2 Vibration & loud buzzer alert to wake driver instantly
- 3 Lightweight, discreet & comfortable

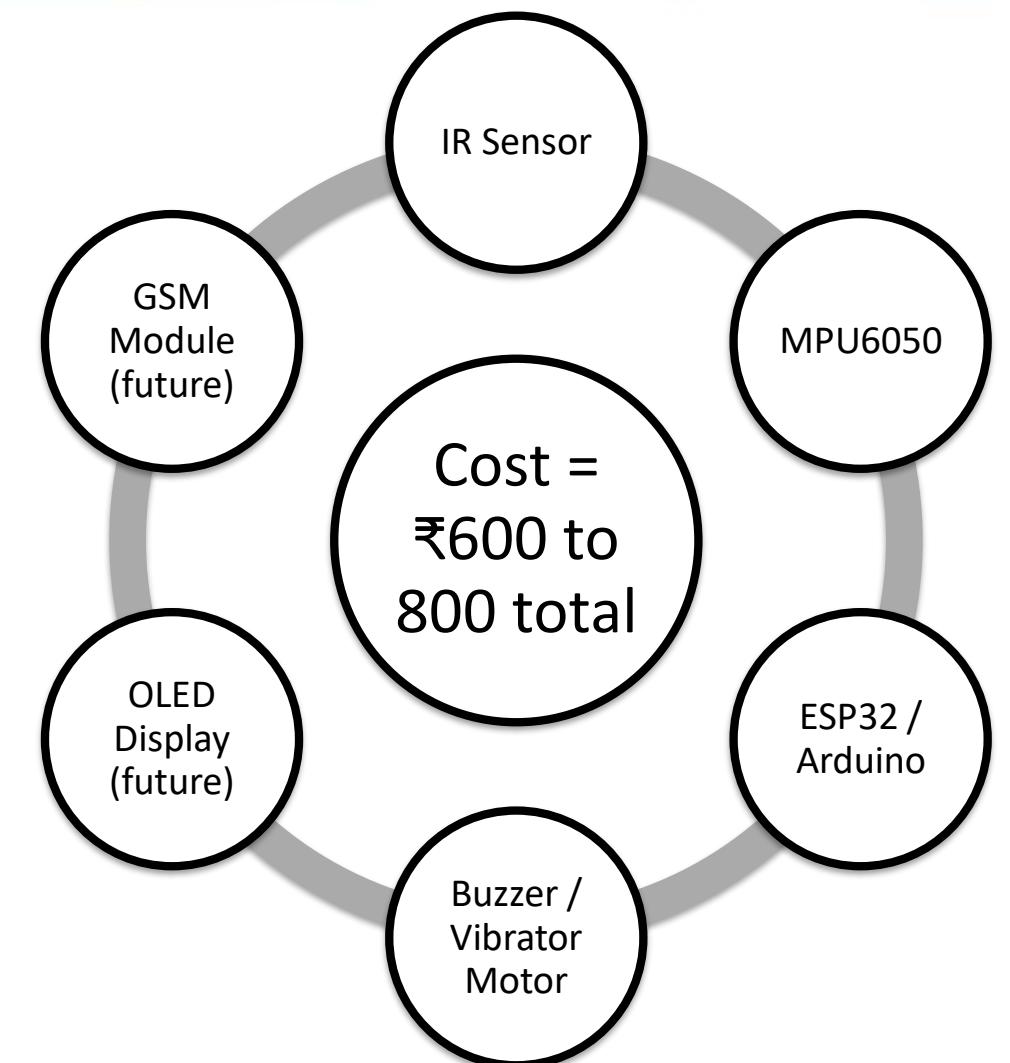
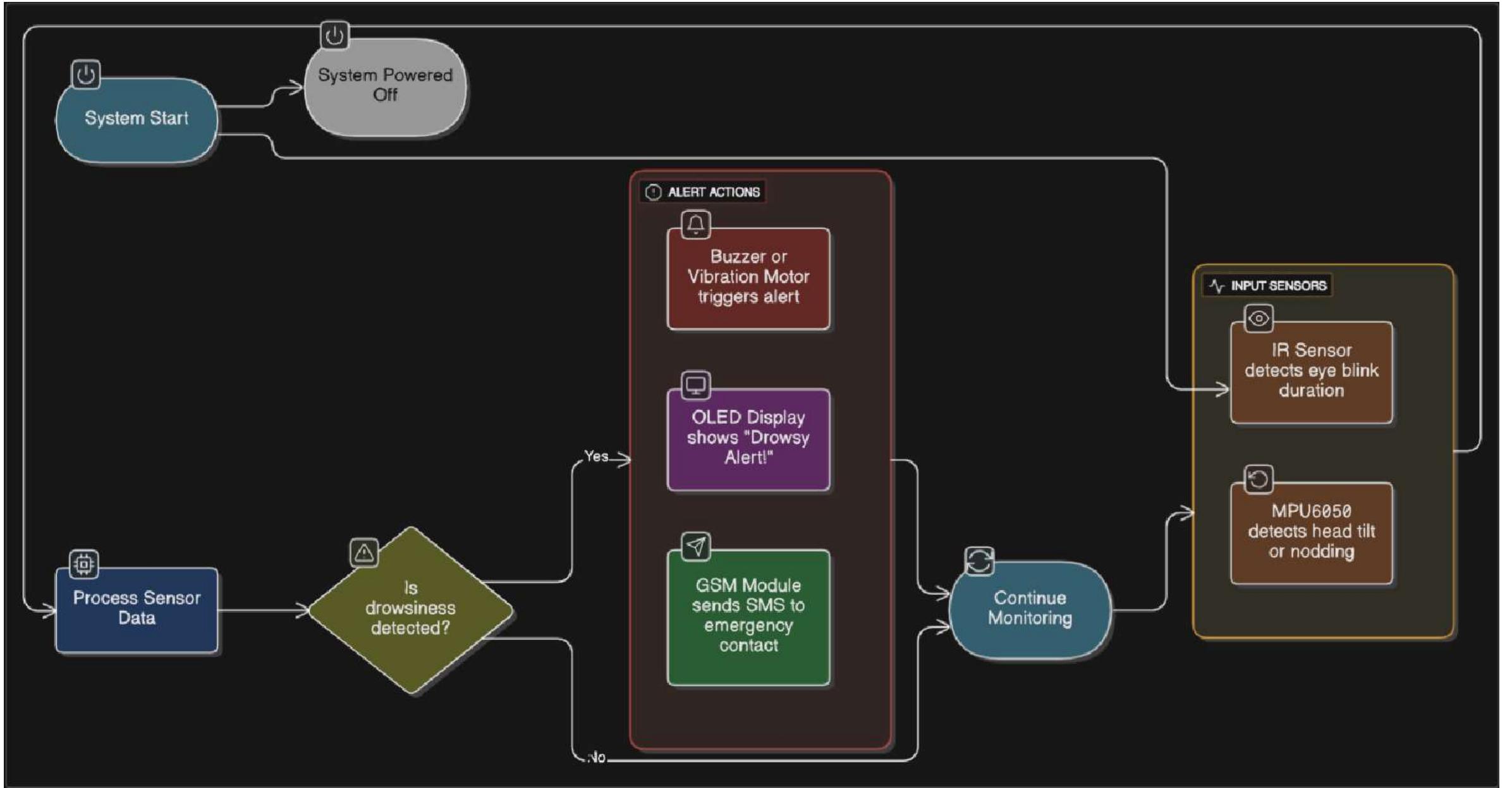
## 🚗 In-Car Gaurdian



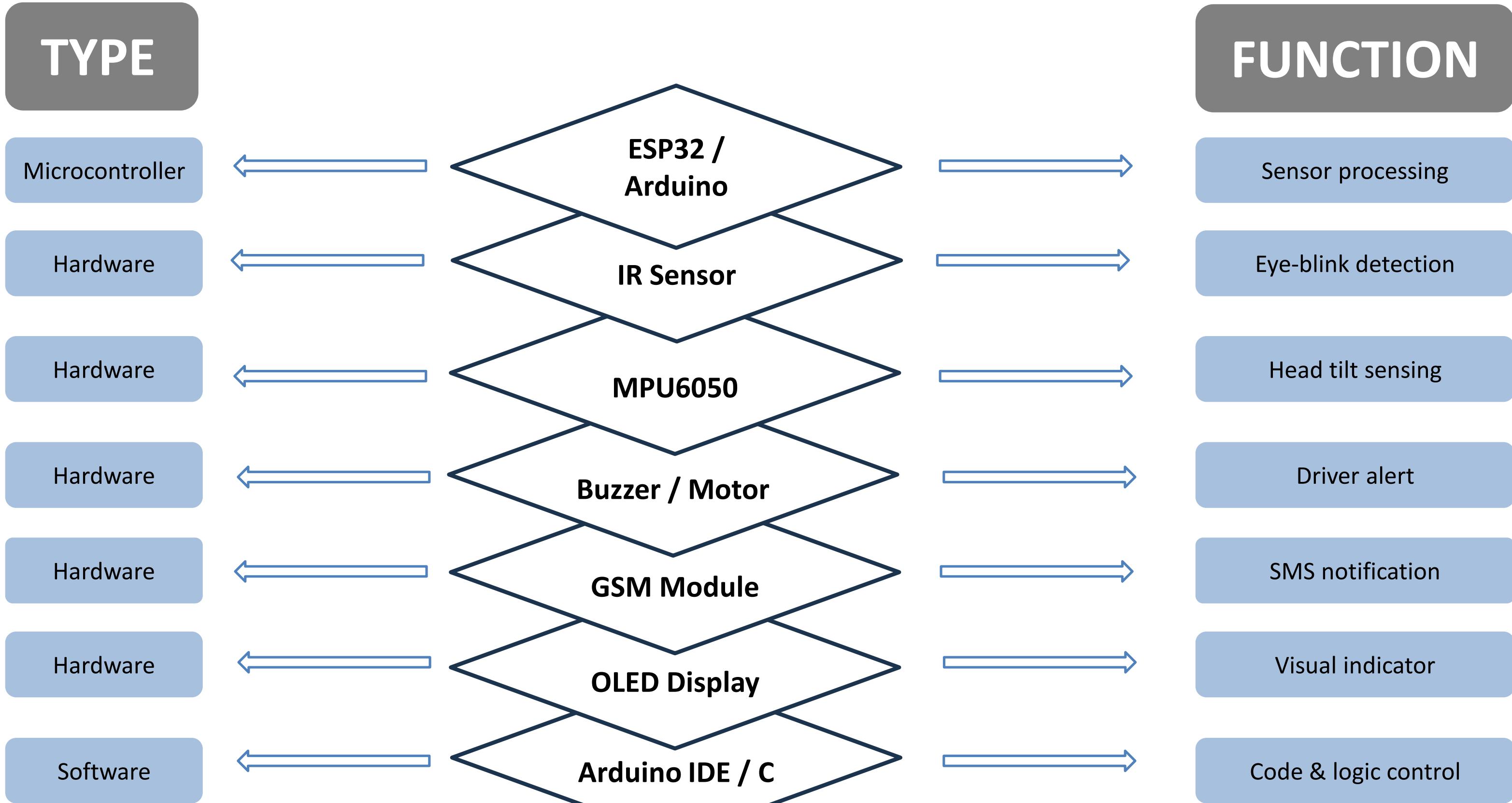
- 1 Buzzer alert when fatigue detected
- 2 GSM module sends SMS to ring/emergency contacts
- 3 Ideal for truck & long-distance drivers



# IMPLEMENTATION/PROTOTYPE



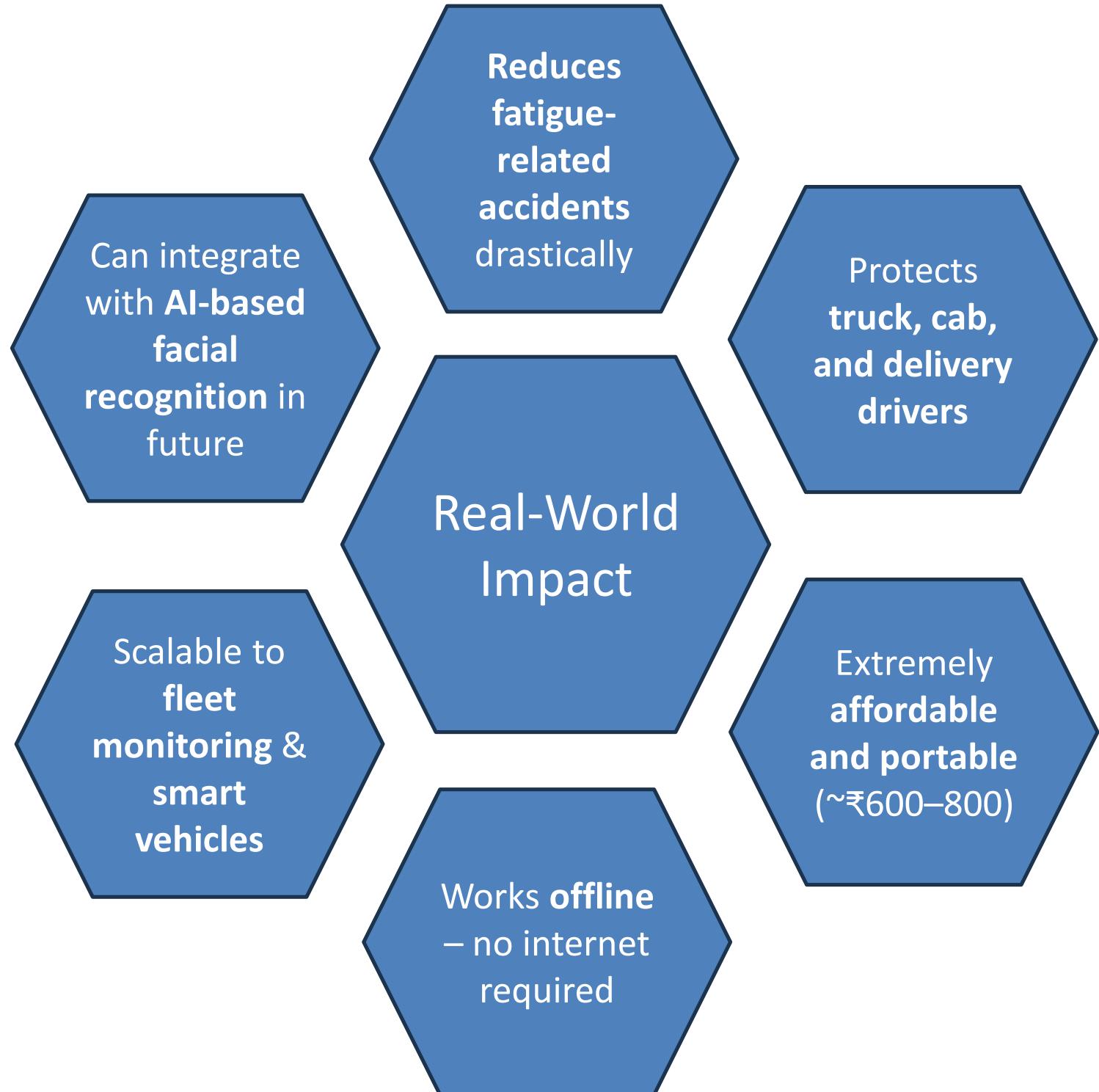
# TECHNOLOGY STACK





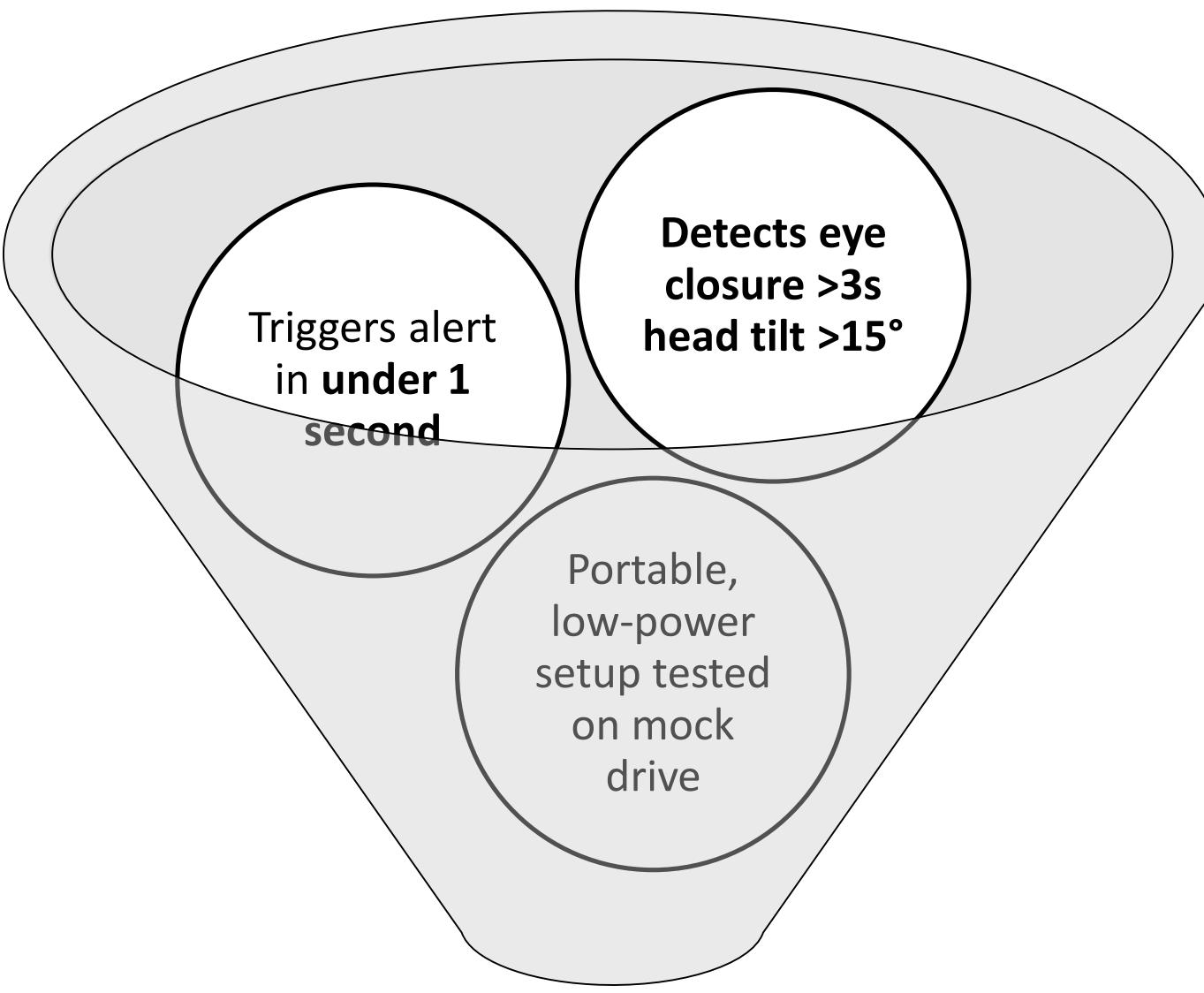
# IMPACT & SCALABILITY

Highlight the potential benefits, measurable outcomes, and how the solution can scale globally.



- **Can be used in many vehicles** – trucks, buses, cabs, etc.
- **Fleet version:** Track multiple drivers from one dashboard
- **IoT upgrade:** Can send safety data to the cloud in future
- **Car companies can build it in** or use it as an add-on kit
- **Easy to improve:** Sensors and modules can be upgraded anytime
- **Safety data can help** insurance companies or road planners
- **Useful for government safety programs** and CSR initiatives
- **Can be expanded globally** with small design changes

# RESULTS



SafeMiles

# FUTURE SCOPE

