

# “INVIGUARD”

(invisible protection, visible care)



# TEAM MEMBERS AND GUIDE

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# Problem Statement

The problem: Make sure people with special needs are safe. People with special needs have additional challenges in their daily lives, they can have unintentional accidents, especially falls Vacancies in quick intervention in an emergency situation because family members and their viewers often lack the ability to deliver in real time.

High risk: Fall injuries are common and can have serious consequences.

Lack of immediate response: Caregivers are not immediately alerted when an accident occurs.

Continuous monitoring: Body movements and vital signs should be monitored regularly to ensure safety.



## Proposed Solution / Unique Selling Proposition (USP)

INVIGUARD is a wearable device, combining IoT technology, threshold-powered data processing and real-time monitoring, designed specifically for people with special needs

- Real-time fall detection and protection reduce injuries by placing a safety cage around the head during a fall.
- Health monitoring: Monitors vital signs such as body temperature and heart rate to spot irregularities.
- Emergency alert system: In case of emergency, this system immediately notifies caregivers via GPS and GSM.
- Easy-to-navigate interface: Provides caregivers with a simple app interface for monitoring and managing health information.

# Cost Estimation

## 1. Hardware Components

**Component Cost Range (INR)**

**ESP32 Microcontroller** 600 - 1200

**Temperature Sensor (NTC)** 80 - 400

**Heart Rate Sensor (Pulse Sensor)** 400 - 1200

**Accelerometer (e.g., MPU 6050)** 150 - 800

**Servo Motor (each)** 120 - 800

**Battery Pack and Power Management** 800 - 1600

**GSM Module** 900 - 1500

**GPS Module** 400 - 800

**Helmet (Base Design)** 4000 - 8000

**Miscellaneous Components** 400 - 3000

## Total Project Estimate

- Overall Estimated Cost: ₹1,28,810 - ₹2,03,700

- Note: Estimate is based on current industry standards.

## 2. Software Development

**Task Cost Range (INR)**

**API Development (Backend)** 40,000 - 50,000

**Database Setup (Self-hosted or Cloud-hosted)** 8,000 - 15,000

**Frontend Development** 40,000 - 50,000

**Testing and debugging** 16,000 - 40,000

**Data Processing Logic** 20,000 - 30,000

# Competitive Differentiation

## What is different about INVIGUARD?

INVIGUARD includes a physical security layer with automatic protection, while most security devices primarily focus on vigilance systems

- The physical safety device detects a fall and deploys an a honeycomb-like device around the head, beyond the alarm.
- Advanced data analytics: Sophisticated data processing enabled by threshold value and sensors enables predictive analytics and real-time alerts.
- Seamless integration: Integrates software (web app interface, data storage) and hardware (sensors, security devices) to create an integrated, user-friendly system.
- Low maintenance: Long battery life and easy trouble-free operation are included features.

# Customer / Market Analysis

Market values:

Primary customers: Older people, rehabilitation centres, special needs families and caregivers.

Secondary markets: insurance companies (for covered services), assisted living facilities, and health care organizations.

The size and capacity of the market: The increasing need for personalized healthcare is expected to fuel the global market for wearable medical devices. The fall detection and adult protection market will expand rapidly as more people become aware of assistive technologies.

customer requirements

Reliable protection for those at risk: A comprehensive solution combining preventive and emergency measures. Monitoring interface that is easy to use and accessible to caregivers.

# Business Plan

## **Phase 1: Development and testing of the prototype**

- Complete the development of the INVIGUARD model.
- Completely test it in real-world situations and get feedback from doctors and caregivers.

## **Phase 2: Pilot program & market penetration**

- Partner with living adults and recovery offices to test INVIGUARD.
- Collect data to improve product performance indicators and user experience.

## **Phase 3: Performance and Scaling**

- Target families and self-care providers as you expand into new markets.
- Implement contracts with health care providers.
- For more sophisticated capabilities (such as real-time caregiver information and predictive health analytics), introduce a subscription-based service.

## **Revenue model**

- Sales: Basic copying equipment is a one-time purchase.
- Subscription: A monthly plan that includes data storage, premium alert services and advanced analytics.
- B2B Partnerships: Collections of services shared with insurance companies and healthcare providers.

## CONCLUSION

INVIGUARD is a flexible wearable safety tool that combines proactive safety management, data-driven insights and real-time monitoring to improve the personal safety of people with autism by accessing vital health indicators monitoring and reacting faster to potential threats than traditional warning systems. Going beyond provide full protection.

As the need for assistive technology increases, INVIGUARD meets an important market need by providing caregivers peace of mind and enabling people to be more independent and safe. Set to revolutionize personal safety standards and position itself as a trusted option for families, caregivers and healthcare professionals, INVIGUARD is poised to make a significant impact on the wearable safety device market.

# THANK YOU

