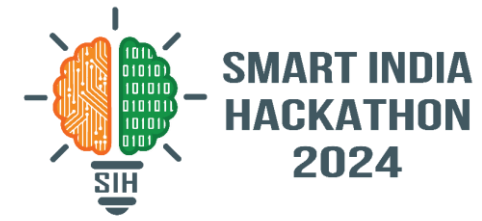


SMART INDIA HACKATHON 2024



- **Problem Statement ID** – SIH1527
- **Problem Statement Title** - Student Innovation
- **Theme**- Disaster Management
- **PS Category**- Hardware
- **Team ID**-
- **Team Name**- Team LIFELINE



IDEA / SOLUTION:

We propose a unique **life-saving** hardware device engineered to aid every citizen during **flood relief** operations. Our device, "**LIFE-LINE**". is a rescue-gear to **mitigate the issues** faced by people in the **disaster hit regions of the nation**.

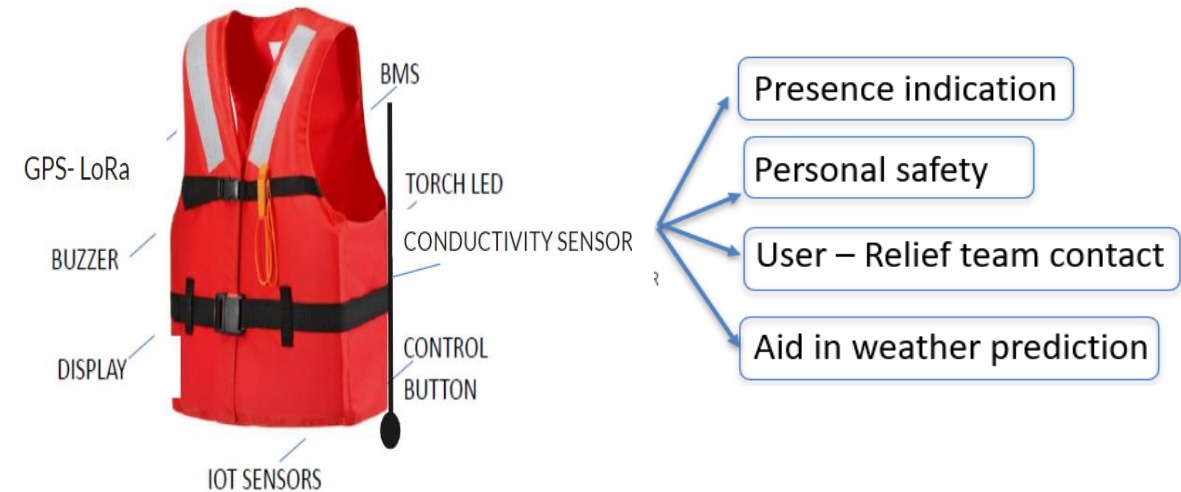
Our device consists of:

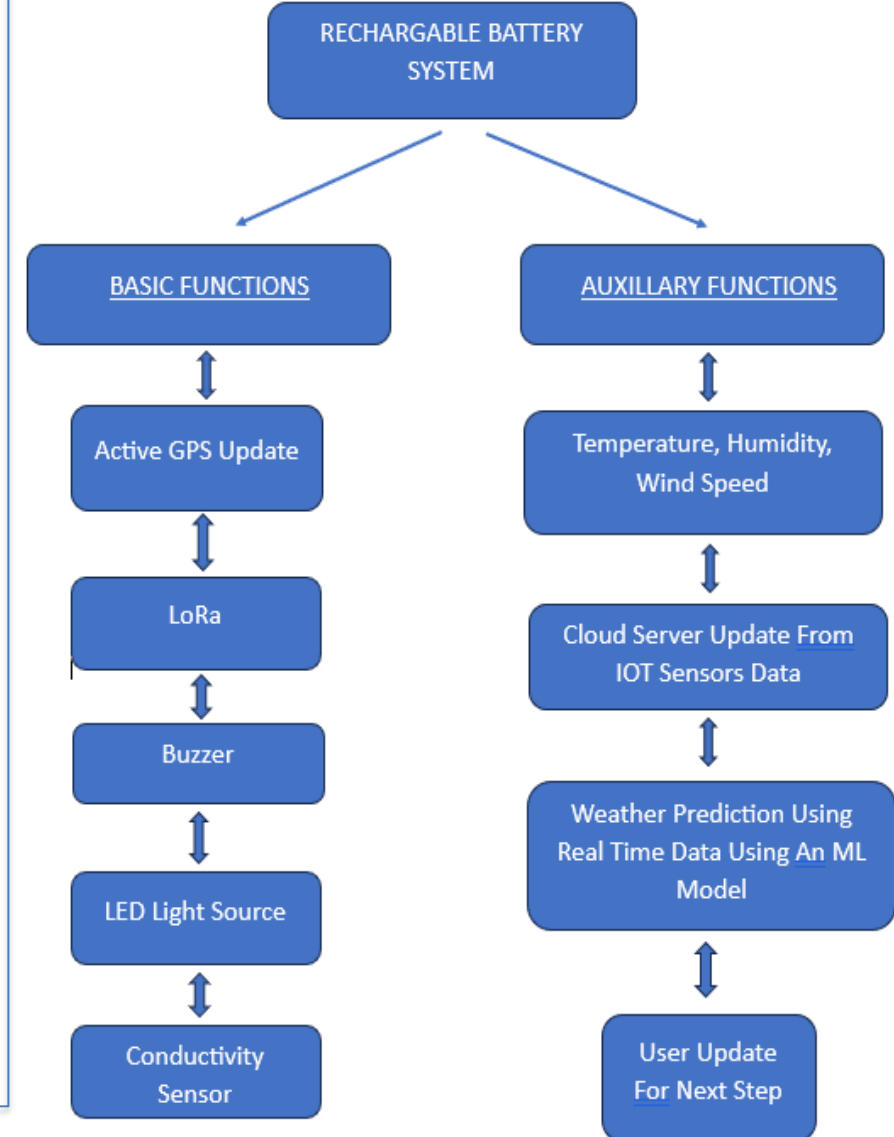
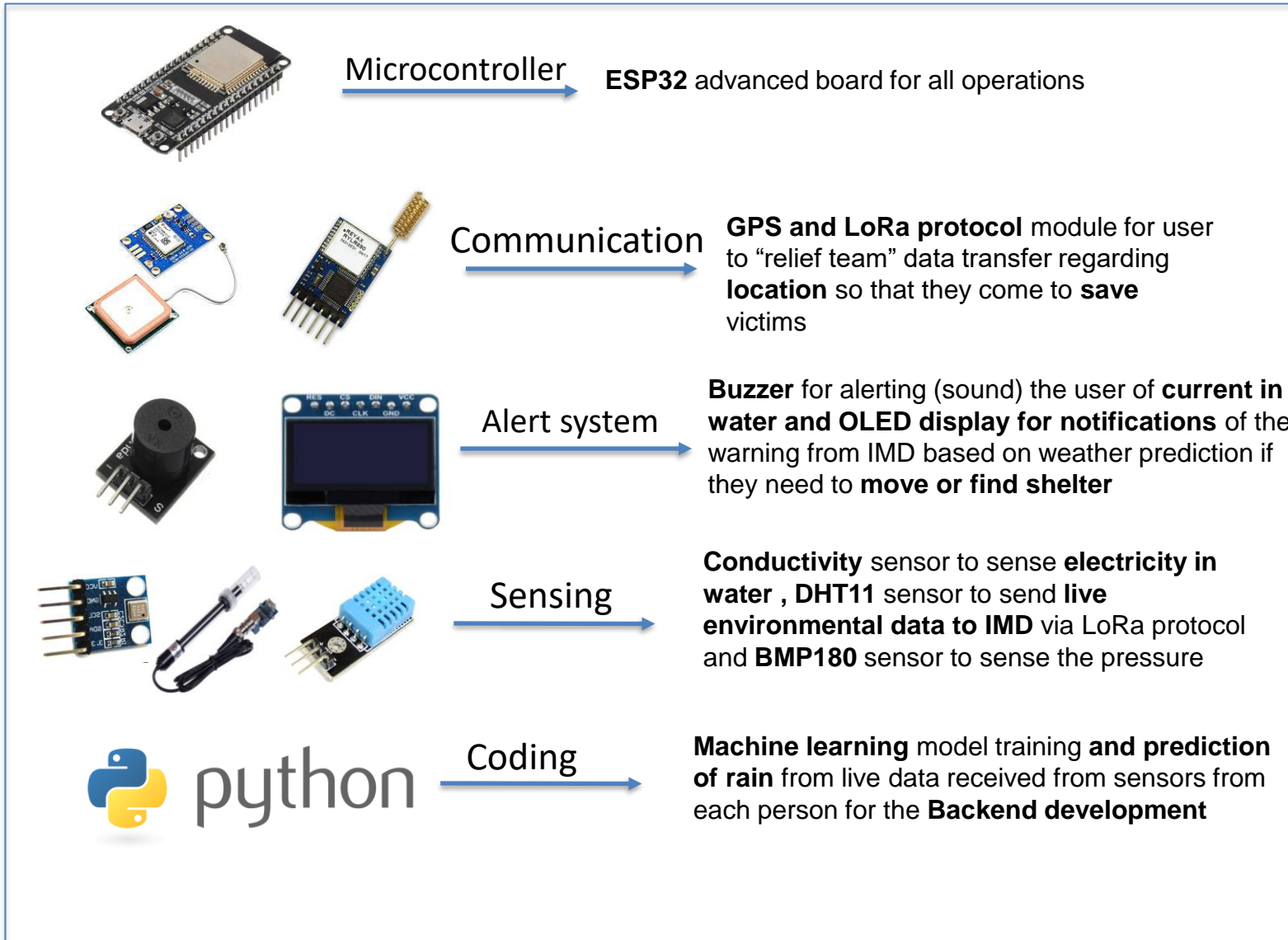
- All inclusive **Electronics gear** to equip and upgrade existing life jackets
- **GPS technology** to alert the stranded citizen's **location** to the rescue or NDRF team
- LoRa protocol for establishing **reliable communication without dependency** on cellular networks, WiFi, Bluetooth..
- **Rechargeable battery power** for usage in hazardous conditions
- Back-end ML model to **predict** the immediate weather using real time data from **IOT sensors** and **notify the user**

UNIQUE VALUE PROPOSITION(UVP):

- Efficient search and rescue by upgrading available jackets (**more features in existing simple jacket**)
- Functions with full efficiency **without internet**
- **Two way benefit** – Common People and Rescuer
- Saves more **human lives**

PROBLEM RESOLUTION:





FEASIBILITY:

- **Building on the existing material** and adding extra features to it helps in saving the resources and **reusing** government assets



- Sensors used **are readily available** in the market and the design and technology used are **user-friendly**

POTENTIAL RISKS /CHALLENGES AND STRATEGIES TO OVERCOME :

Ensuring IoT sensors remain **waterproof** while Maintaining environmental data **accuracy** for weather forecasting



Rubber gasket for creating watertight seals for enclosure. For IoT sensors, **silicone conformal coating** and **water proof membranes** can be used to allow interaction with environment and **shield from water**

GPS accuracy may be compromised by signal reflections from surrounding surfaces and indoor conditions



Specialized external antenna can be used to improve the sensitivity of the GPS, **increase it's gain** and maximize the signal strength, even in closed spaces.

Weight balancing



Placing of components appropriately

BENEFITS AND IMPACT CREATED:

- **One strategy** for complete emergency preparedness
- **Reliable and safe** transportation and rescue in flood
- Provides individuals with greater confidence and security during floods, **reducing panic and anxiety**
- India being a **heavy flood prone** country, our solution will be an **evergreen need**
- The **target audience** for the device is the general public afflicted by floods. This broad market appeal creates potential for **increased sales and profitability**.



“Our mission aligns directly with **SDG 11.5**, which focuses on reducing casualties caused by natural disasters”

- https://nidm.gov.in/PDF/TrgReports/2023/June/Report_23June2023cg.pdf
- <https://www.ndtv.com/south/vijayawada-floods-ajit-singh-nagar-flooding-dramatic-video-of-vijayawada-street-flooding-4-feet-of-water-in-3-hours-6533985>
- <https://citizenmatters.in/chennai-floods-real-estate-wetland-encroachment-buildings-solutions/>

