

# PTSD Detection Device

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## **Project Abstract:**

*Many veterans, active-duty service members, and first responders continuously face challenges due to post-traumatic stress disorder (PTSD). In partnership with BAE Systems and America's VetDogs, this initiative focuses on the development of a device to highlight the relationship between technology and service dogs, aimed at detecting early signs of PTSD episodes. The proposed solution comprises three distinct components, each addressing the need for accurate, timely alerts to service dogs. The first component involves a Digital PTSD Detection Device, utilizing a biosensor armband and smartphone to monitor biometric measurements and enable communication between the human and dog devices. The third component will be the housing unit for the second design. This will ensure the reliability, comfort, and efficacy of the proposed designs. Through this collaboration, America's VetDogs and BAE Systems strive to make a lasting impact on the lives of individuals facing the challenges of PTSD.*

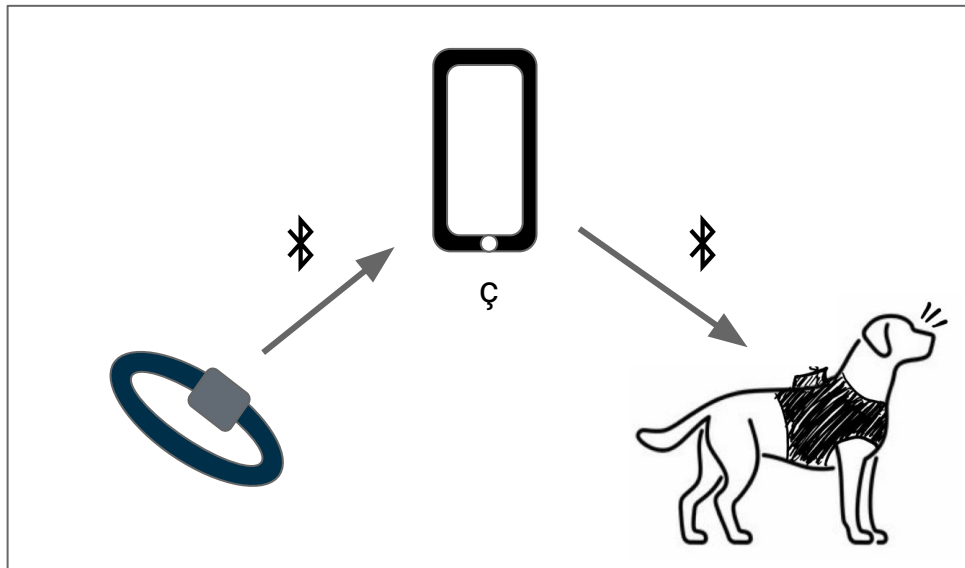


## Design Challenges



- BAE Systems
- America's VetDogs
- Helping veterans with post-traumatic stress disorder
- Combining power of technology and service dogs
- Recognize a PTSD episode before the individual is affected

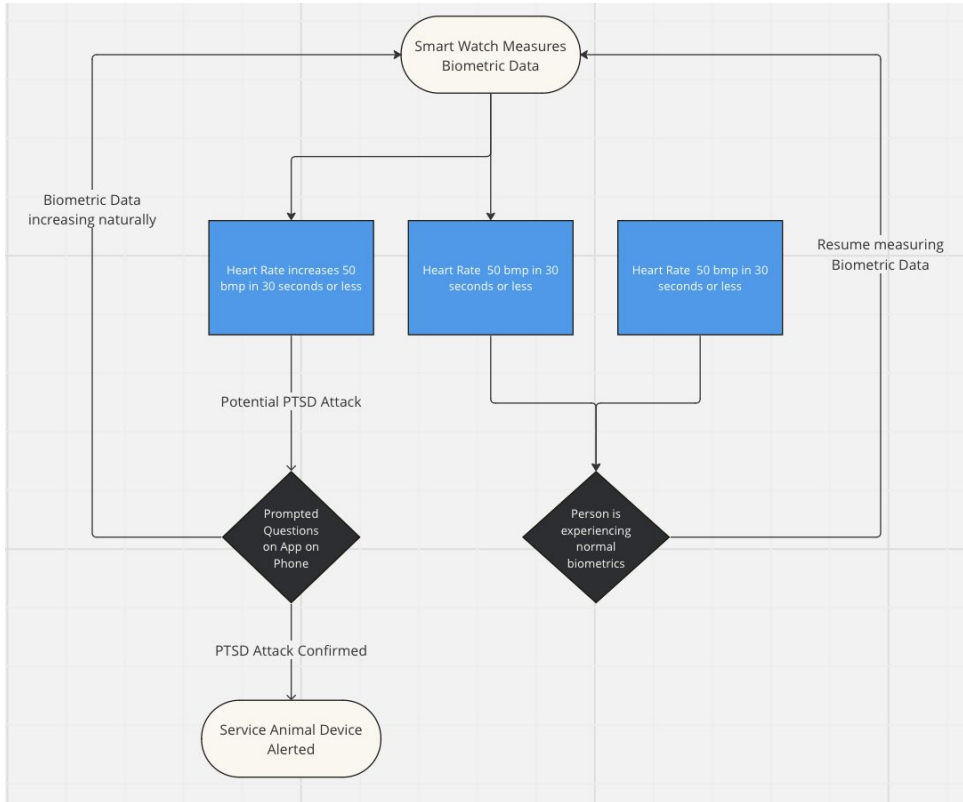
# Device Design Description



## 3 Part System

- Wahoo Smart Band
- Smartphone App
- Dog Wearable Alert Device

# Watch Component and Algorithm

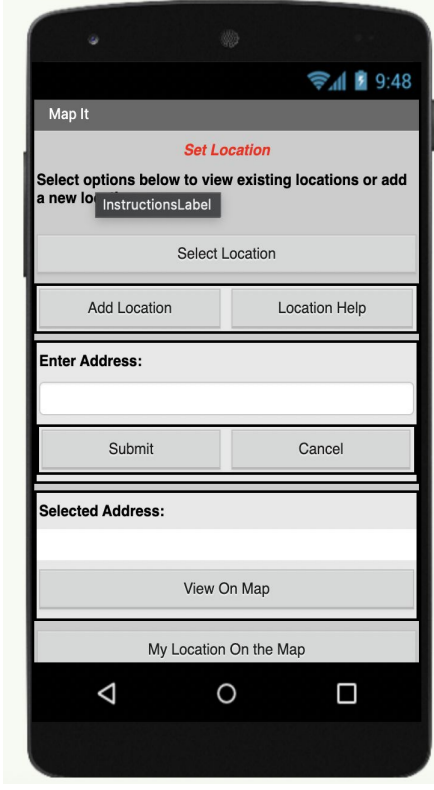
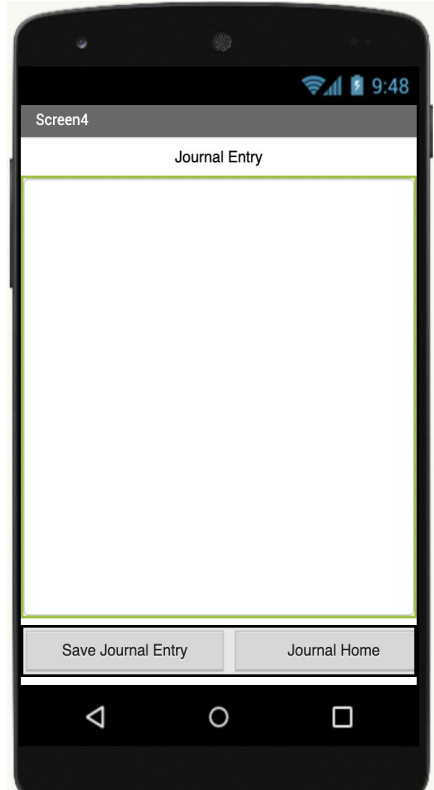
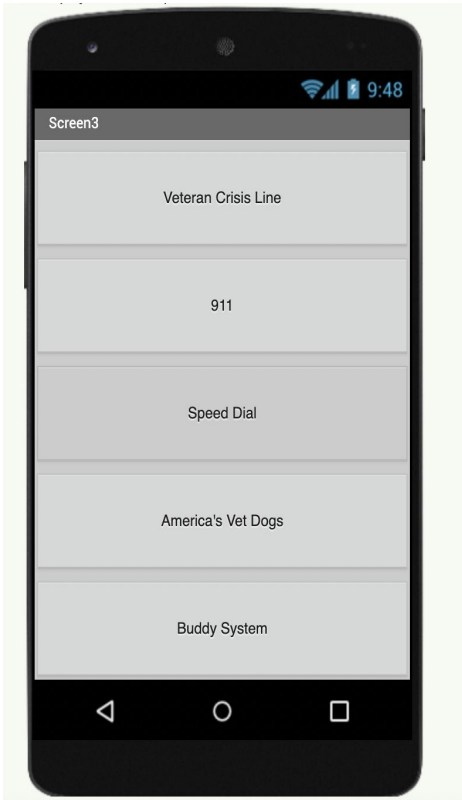
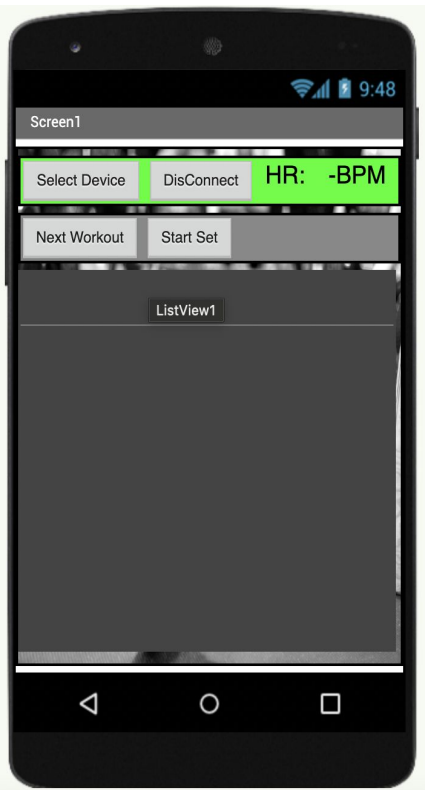


- Wahoo Smartband Heart Rate Data
- Heart Rate Zones
  - PTSD attack: 120 - 130 bpm
  - Mild Attack/Triggered : 100 bpm
- Exclusions
  - Medication (Beta blockers, Calcium channel blockers)
  - Sickness
  - Infection
- Additional Biometric Markers
  - Respiration, Cortisol levels, Adrenaline & Blood Sugar

# App Design



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# Service Animal Device Design

