EnterpriseBusiness INTELLIGENCE

Elephant Detection System

AI & IoT Based Innovation

The Problem

- Human-elephant conflict has caused many casualties to humans, elephants & properties.
- Properties and crops gets destroyed by wild elephants.
- There is no effective way of warning humans if a wild elephant is near by its property or village.

Detection

- Sensors will be used to detect ground vibrations caused by elephants when they walk and their voices when they communicate.
- An AI module will identify vibration patterns of elephants moving and their communication patterns.

Notification

A long-range radio transmitter module will be used to send a signal to a network server if an elephant was detected.

An alert will then be sent as SMS to mobile devices which were subscribed to the service.

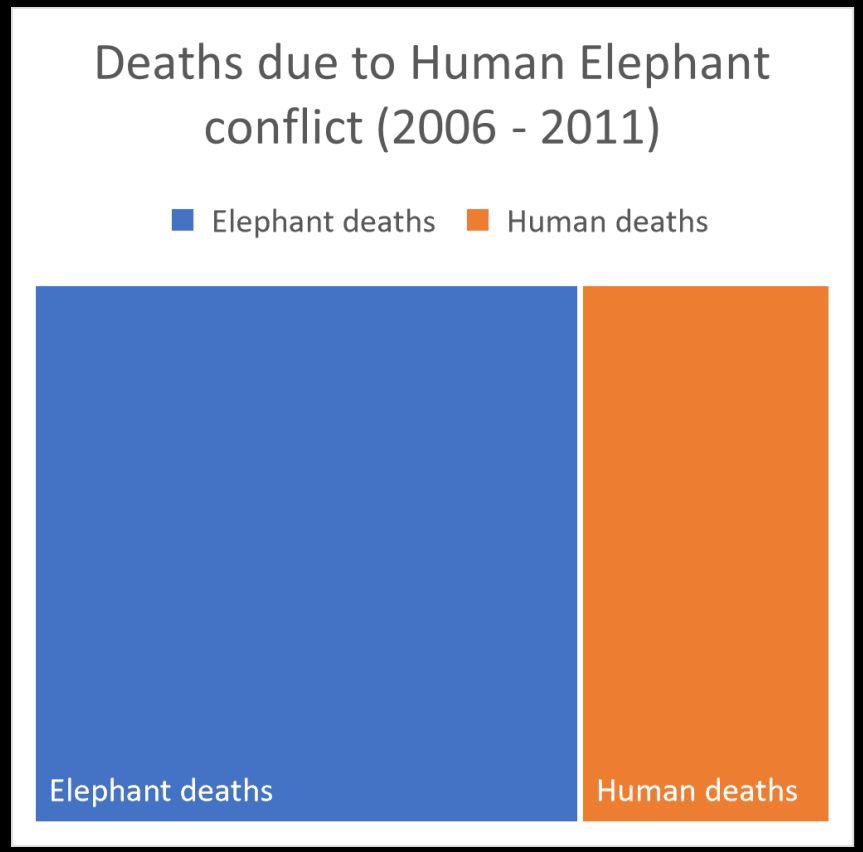
Nearby elephant locations and their behaviors will be updated real time to our mobile app and in our web app.

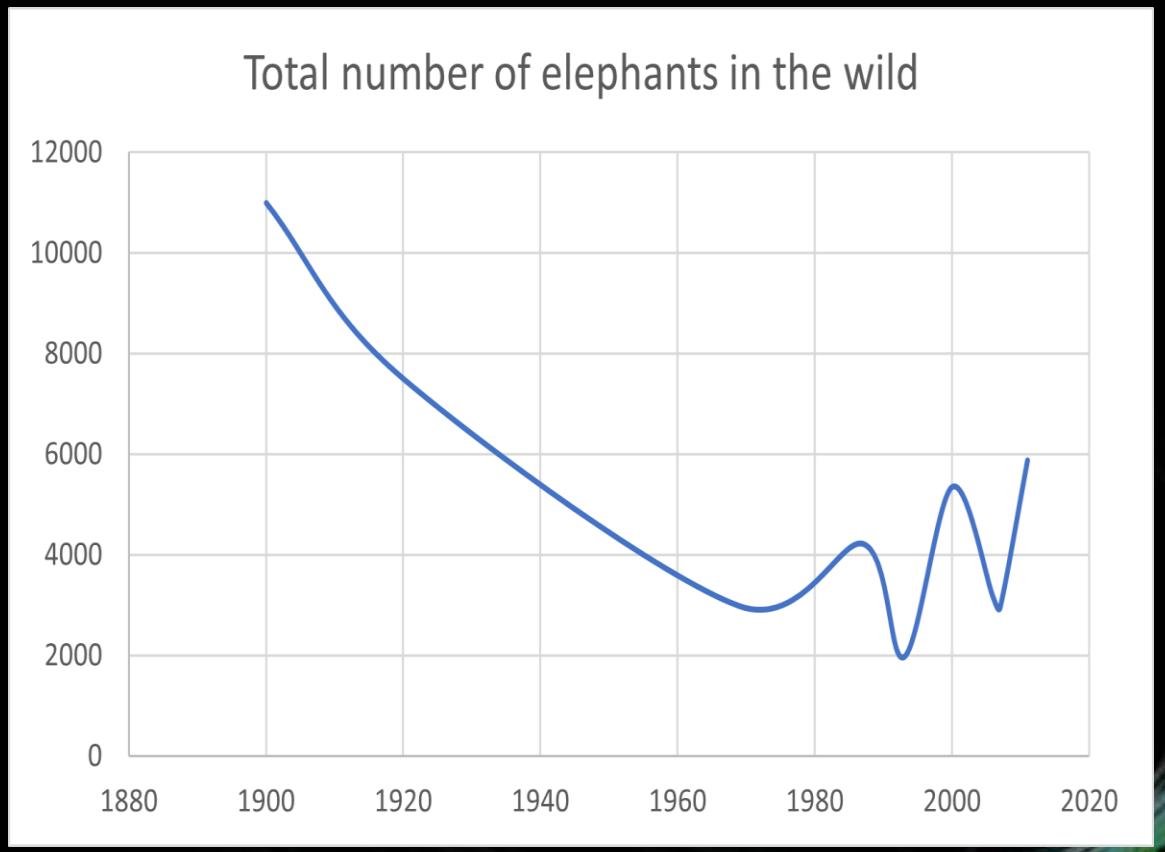
Repelling

- Several frequencies which cause irritation or fear to elephants will be emitted through a frequency emitter.

- Frequencies like Sounds of bees and sounds of large predators are used in this system.

Human Elephant Conflicts

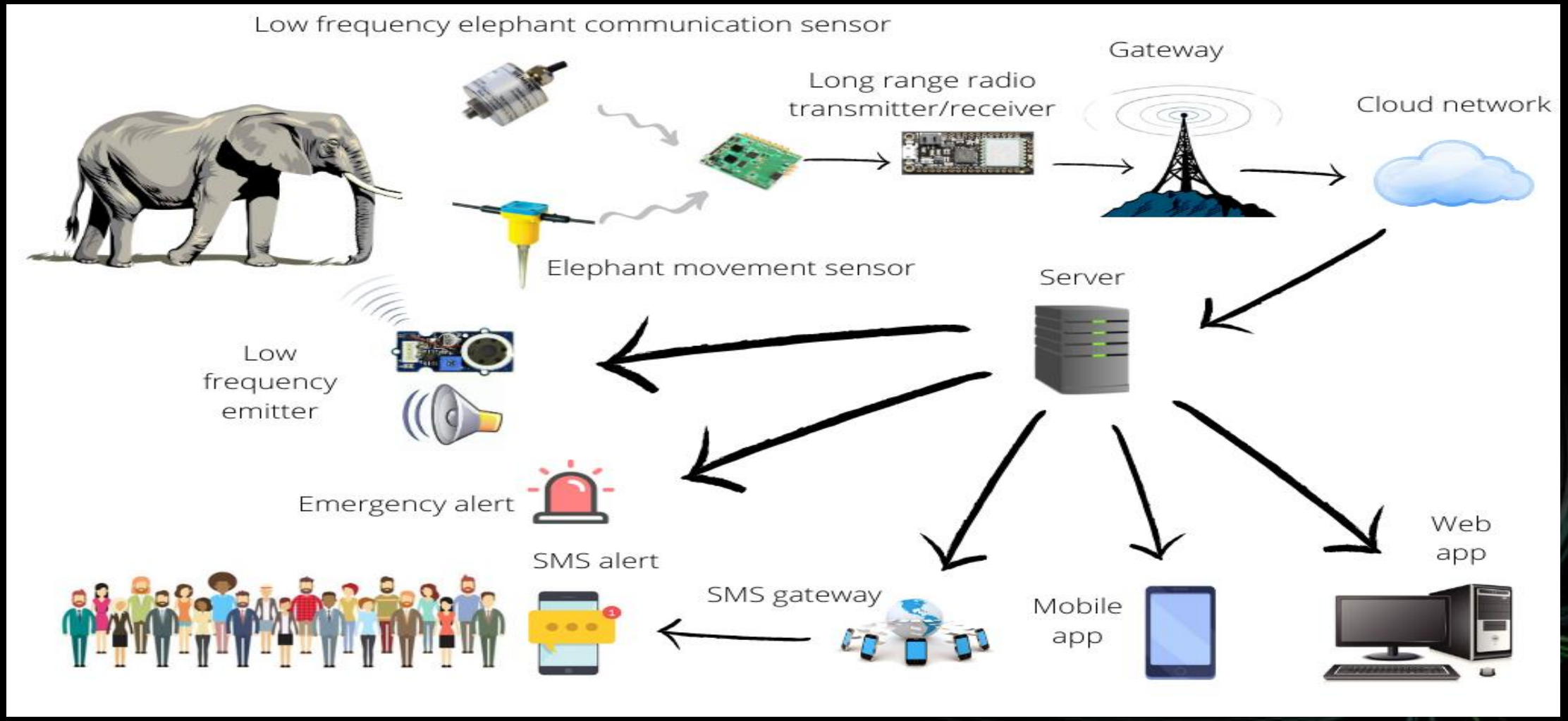




Challenges & Mitigation Plan

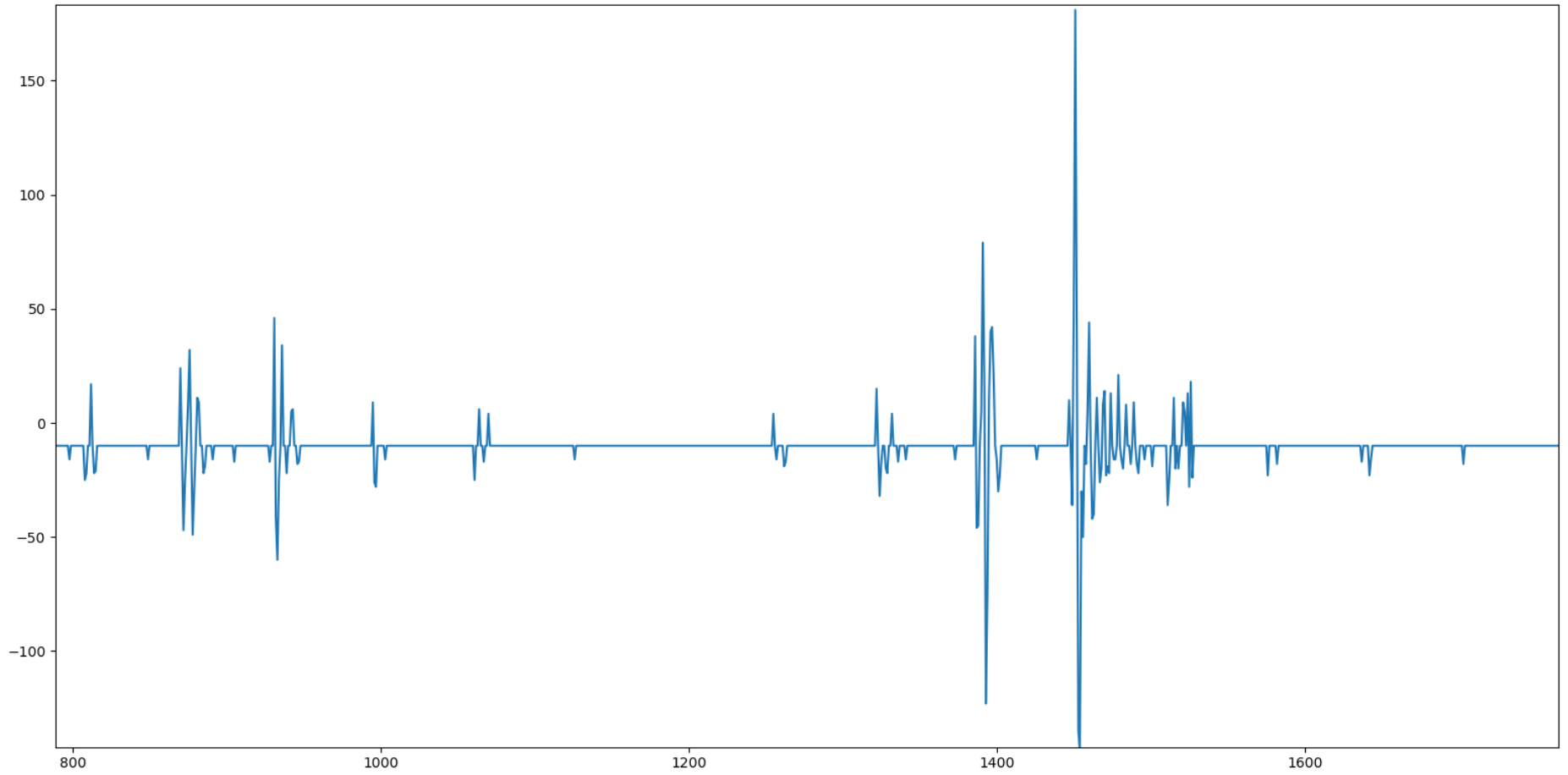
- Current elephant detection methods lack the ability to detect elephant movements precisely.
- Most of the existing systems use sensors to detect either elephants walking or elephants communicating.
- We are using a combination of both sensors to increase the reliability and precision.
- Existing elephant repelling systems use same animal sounds. Repetitive use of same sound can cause elephants to adapt to the sound.
- We use a mixture of frequencies to mitigate the adaptation speed.

Proposed System Architecture



Detected Frequency Patterns

Vibration Pattern of a Walking Elephant



Mobile Application