

# StreetBit: A Bluetooth Beacon-based Personal Safety Application for Distracted Pedestrians

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# Introduction



6,704

On average fatalities  
from 2016 -2018



200,000

Annually injuries of non-fatal  
medically-attended pedestrian

Governors Highway Safety Association (GHSA) (2019 preliminary data)

# Introduction



Pedestrians are using the smartphone while crossing the street

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# Introduction



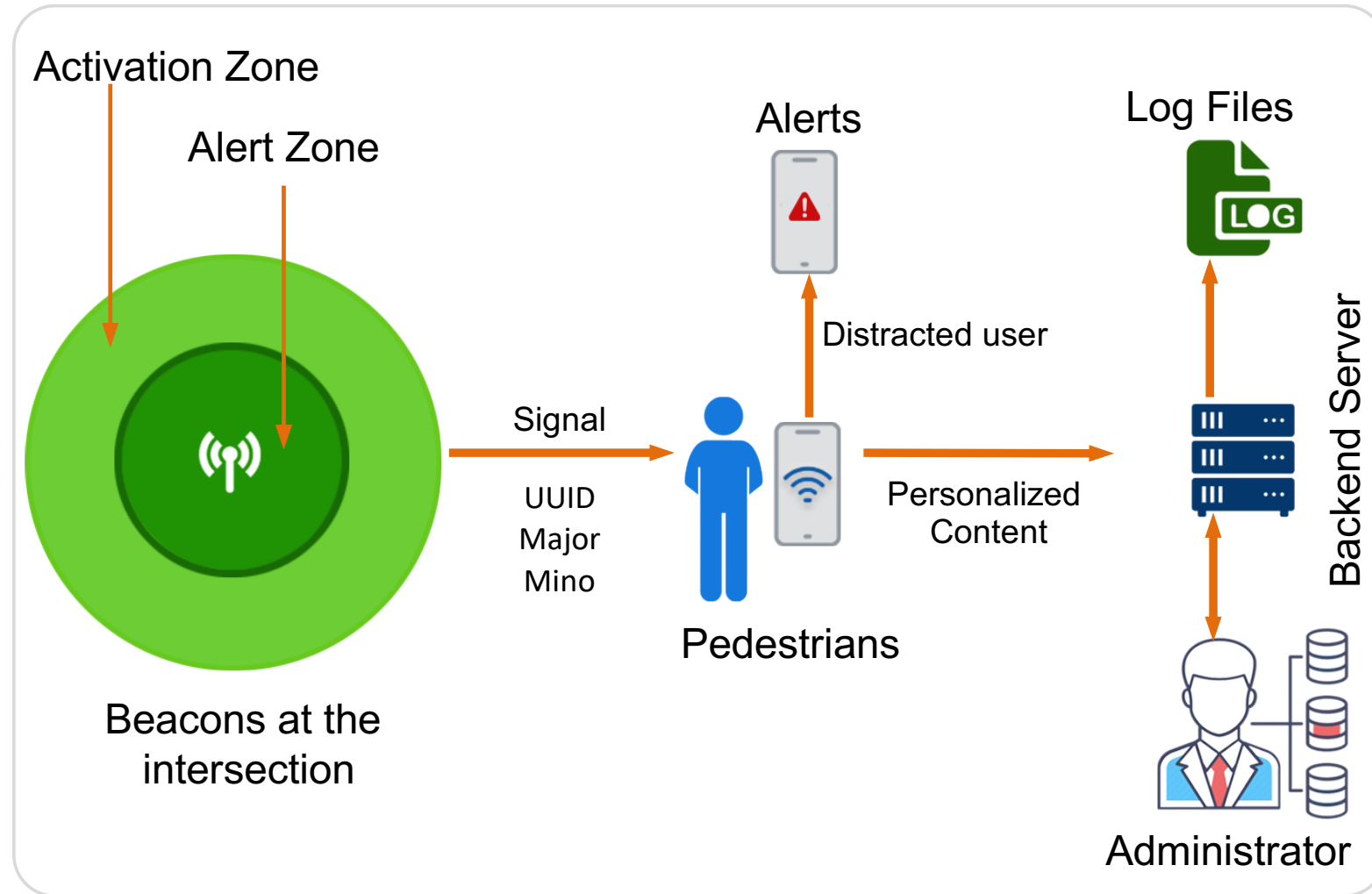
- Distraction by smartphone may be a major contributor to injury.
- Timely interruptions could alert distracted pedestrians and prevent injuries.
- Such a system would alert pedestrians in real-time when they approach an intersection while being distracted by their smartphones.

# StreetBit



- A Bluetooth Low Energy (BLE) beacon-based intervention application.
- The StreetBit application incurs low energy consumption because the app runs in the background.
- It provides multiple ways of warnings to pedestrians, including notifications, overlay video warnings, audio alerts, and vibrations.

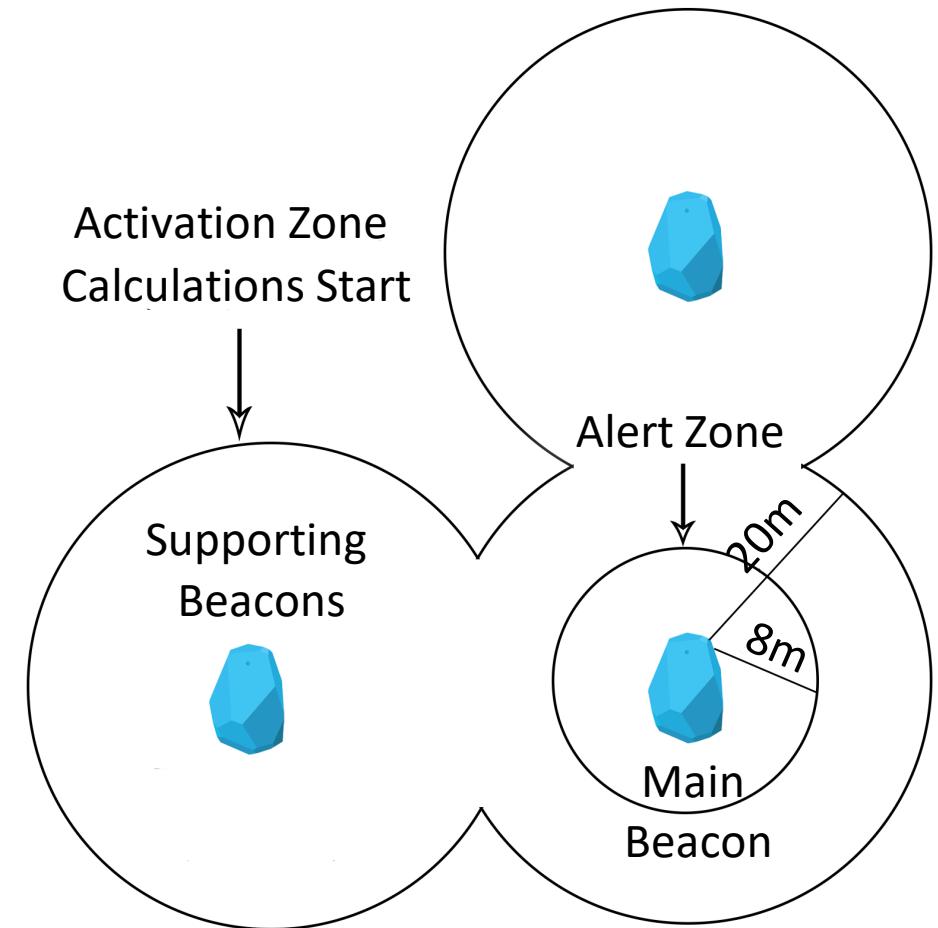
# StreetBit Architecture



# Beacon characteristics

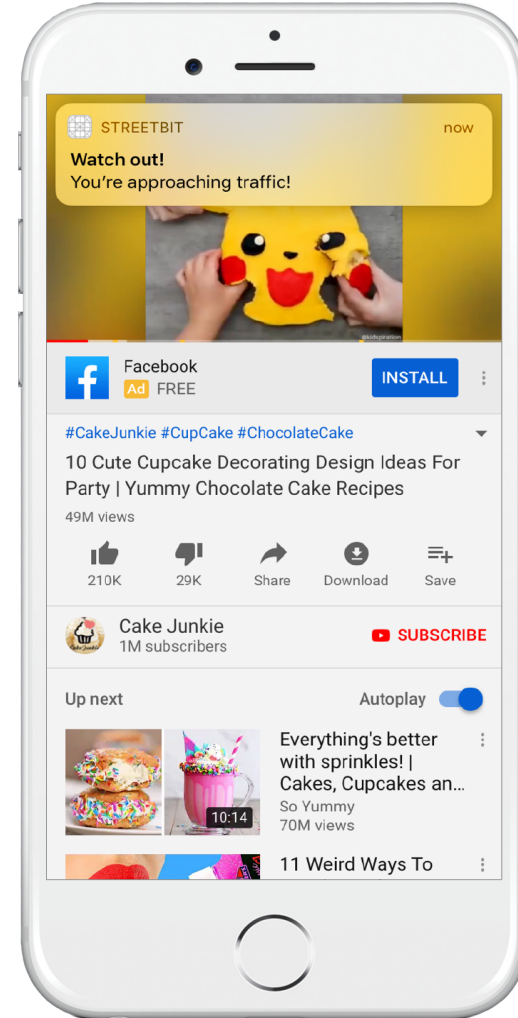
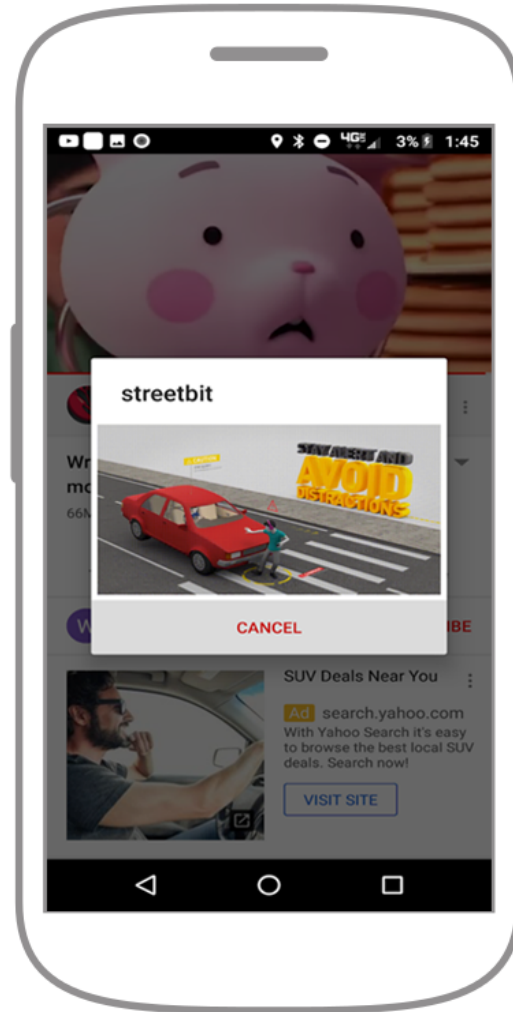
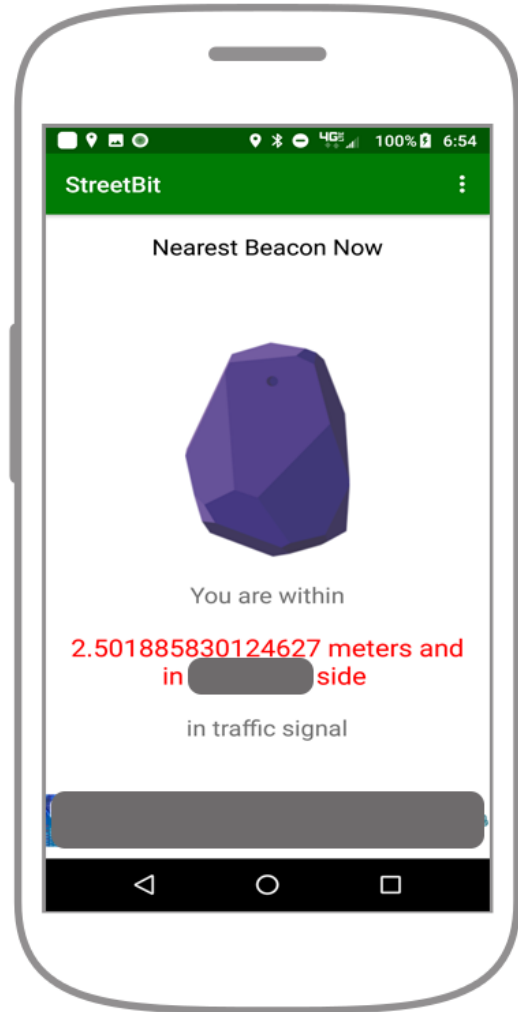


- There are two types of Beacons, Supporting or Helper beacons and Main beacons.
- The activation radius is 20 meters for the helper beacons and the main beacon radius is 8 meters.

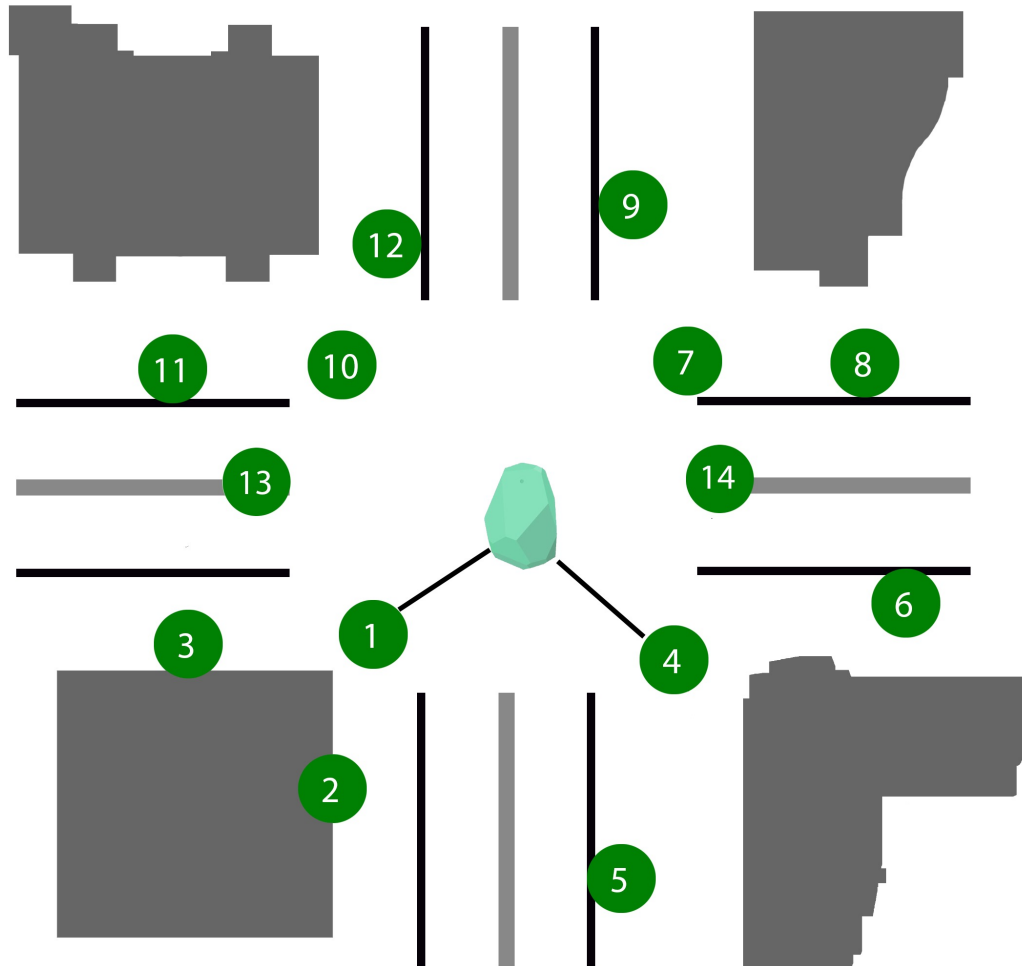




# Mobile Application

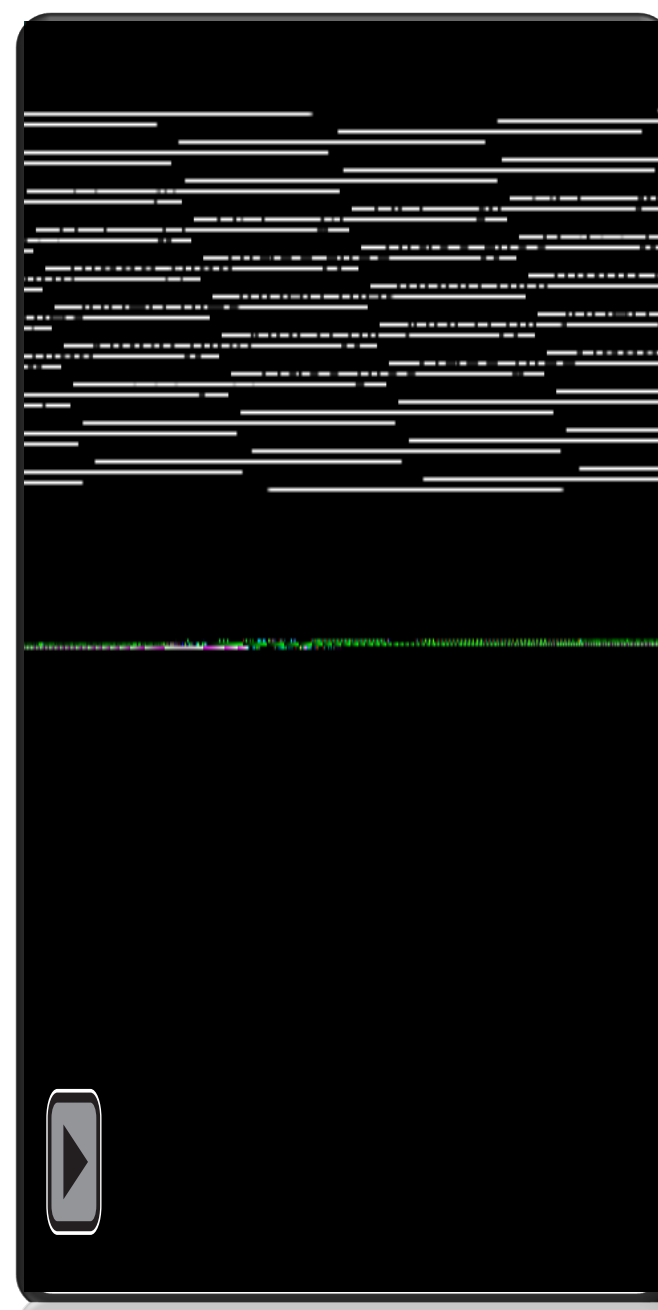
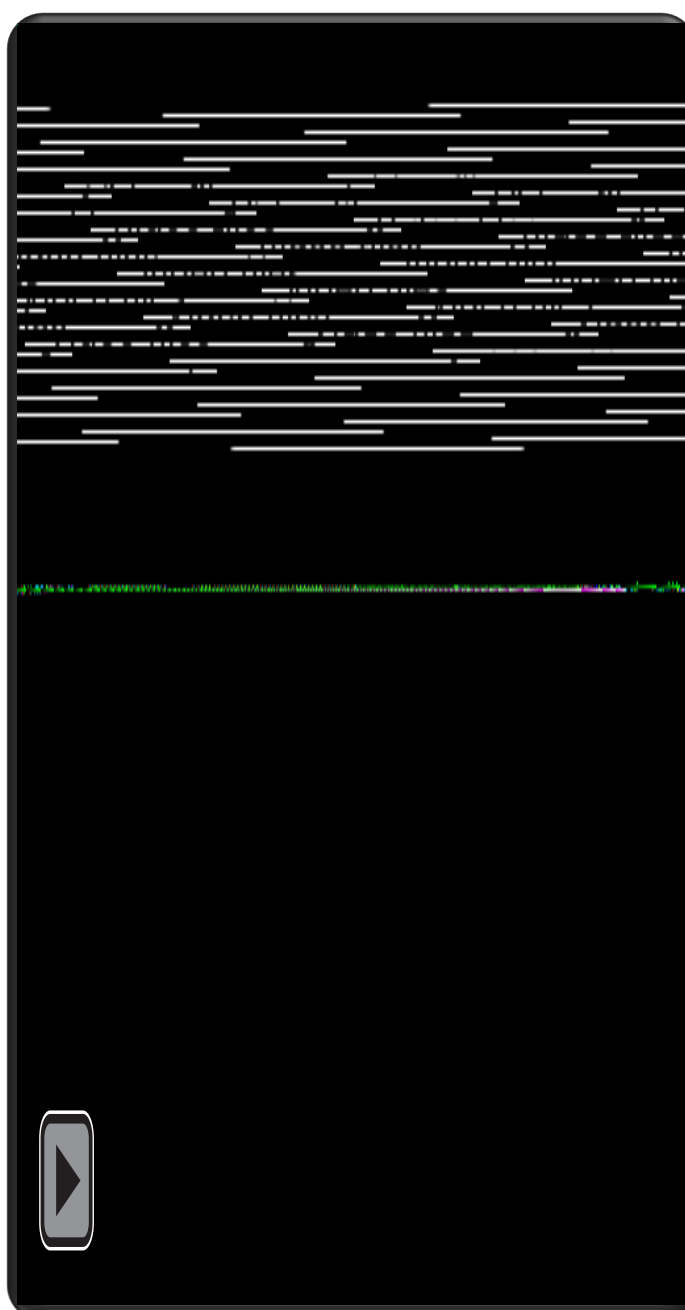


# Deployment



# Demo

When pedestrians watch YouTube while walk (use Adobe Acrobat to see videos).



# Acknowledgments



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- We want to thank the UAB Facilities Division to permit for the test deployment.



# Thank You

For any further questions please contact:

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