

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



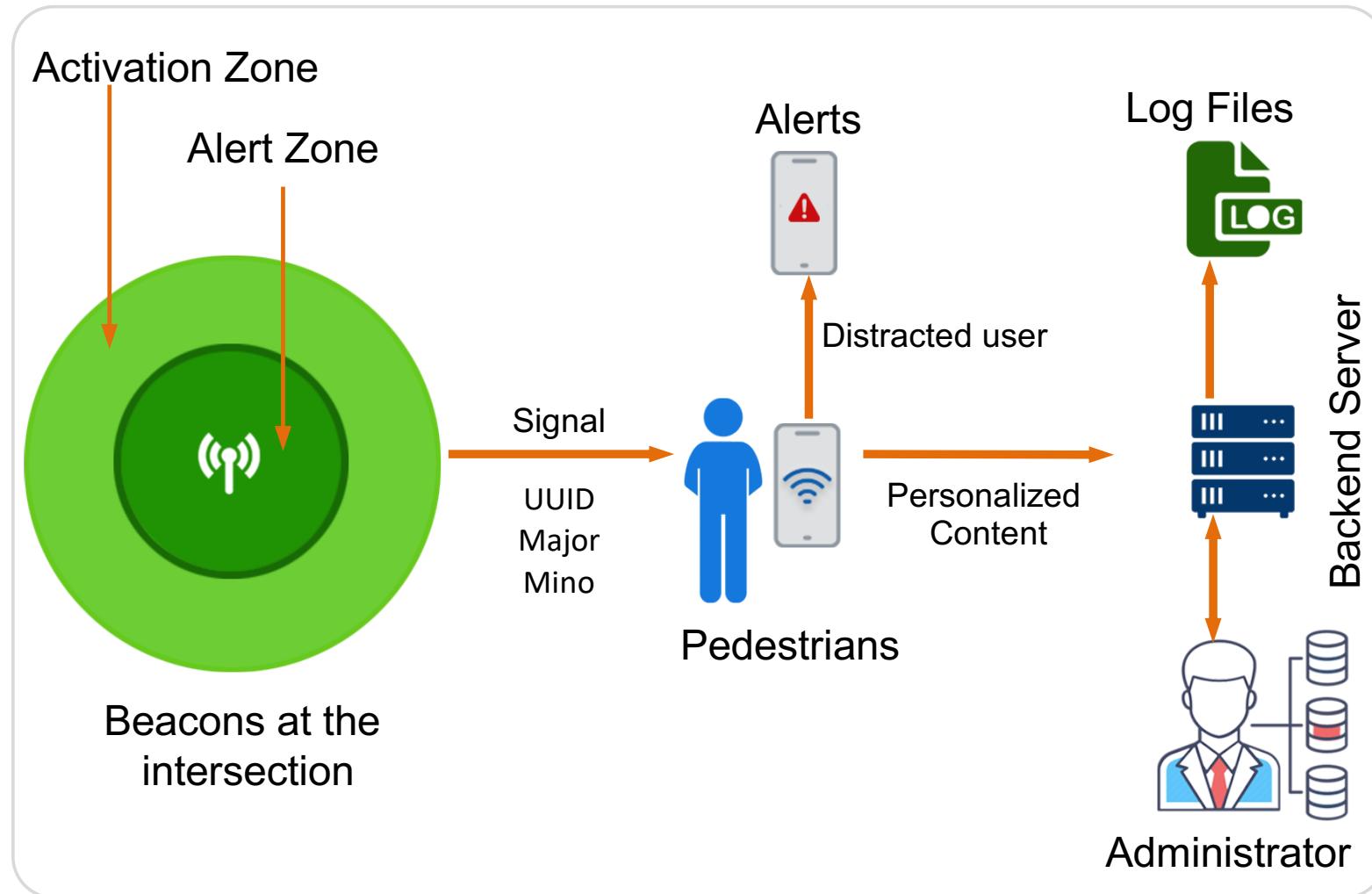
- Distraction by smartphone may be a major contributor to injury.
- Timely interruptions could alert distracted pedestrians and prevent injuries.
- Such a system would alert pedestrians in real-time when they approach an intersection while being distracted by their smartphones.

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.

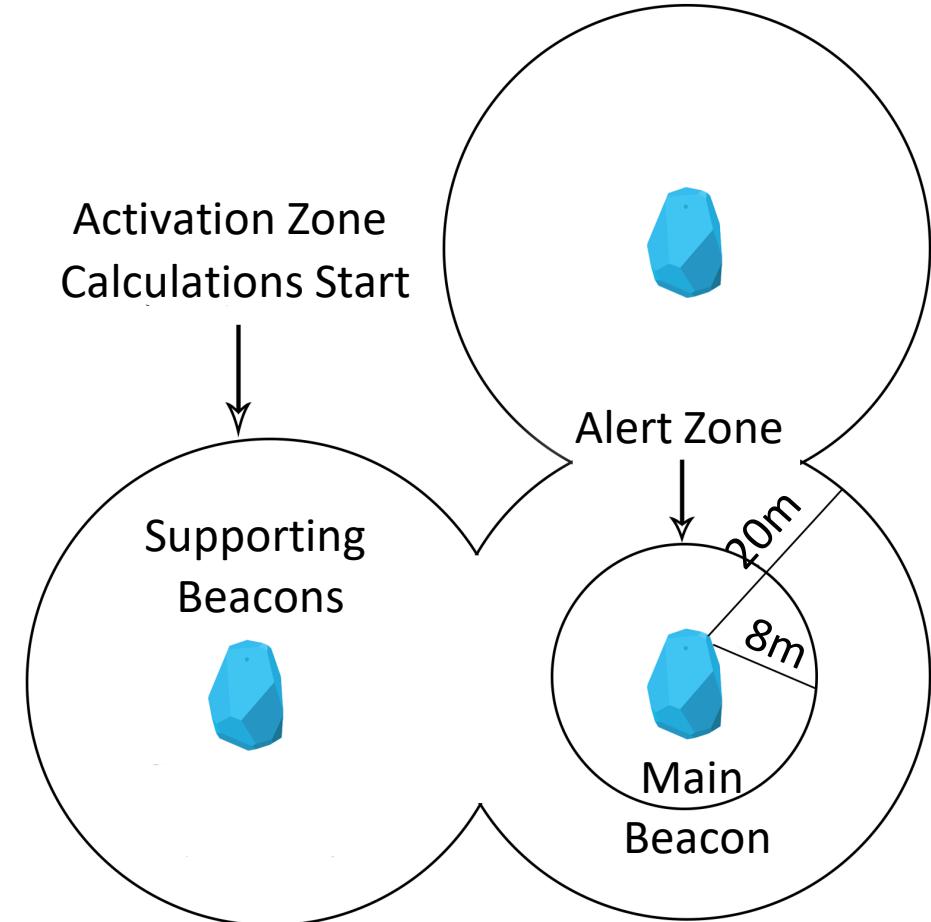
StreetBit Architecture



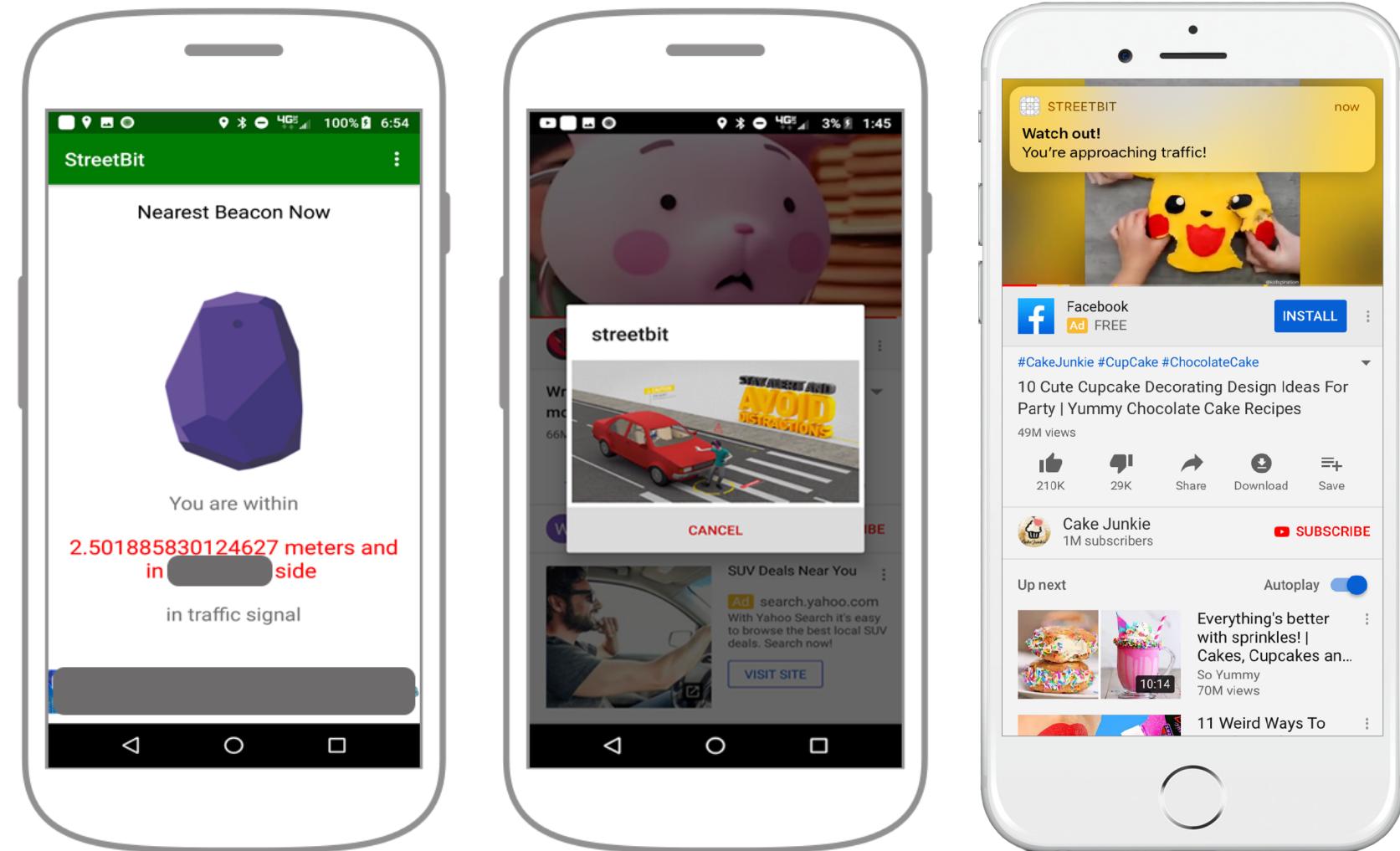
Beacon characteristics



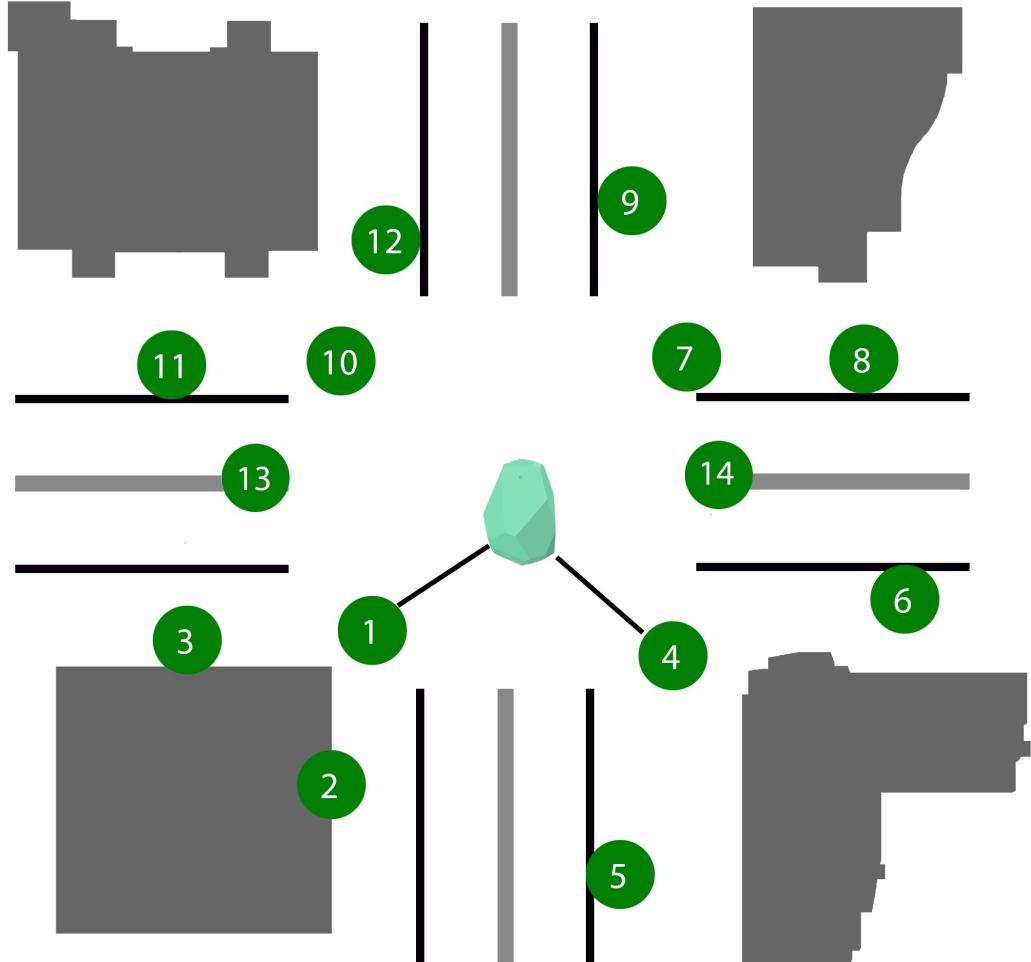
- There are two types of Beacons, Supporting or Helper beacons and Main beacons.
- The activation radius is 20 meters for the helper beacons and the main beacon radius is 8 meters.



Mobile Application

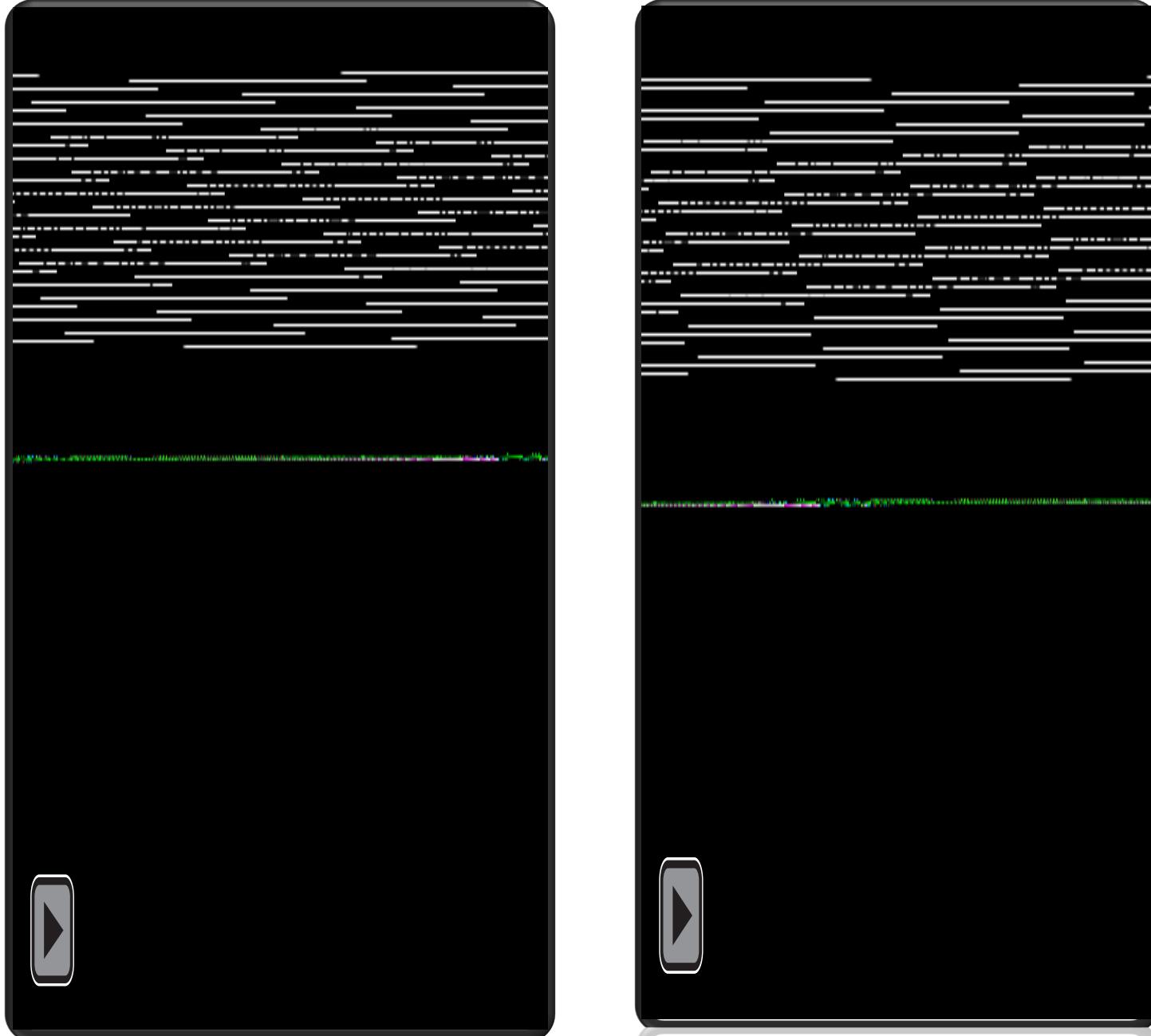


Deployment



Demo

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



Acknowledgments



- This research was supported by the National Science Foundation through awards DGE-1723768, ACI-1642078, CNS-1351038, and ECCS-195209 and by the National Institutes of Health grant 1R21HD095270-01.
- 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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