



Maps for Police

APX NEXT
[Link to device](#)



AN INCIDENT STORY

Fairfax County, Virginia

- Trespassing complaint was reported
- Officer A was authorized by dispatch for foot pursuit
- Location & description of suspected communicated over radios, !
“Caucasian male, southbound across Coppermine Rd”
- Backup officer B, in car, trying to rush to communicated location !
- Officer A is chasing and losing sight of suspect
- Officer B rushing to the scene, flanking from other side
- But eventually the suspect is caught after relentless effort.



PROBLEM STATEMENT

From incident journey



What is my peer
location?

Map app



Who is my
Suspect?

Message app



Where is my
suspect?

PERSONA

“As a user I want to see the location of my units so that I can manage my incident.”



Patrol Officers

- On the field users, first to report at an incident



Police Sergeant

- Manages his officers during an incident



Fire Commander

- Manage firefighters on the field
- Coordinate in incident on the field



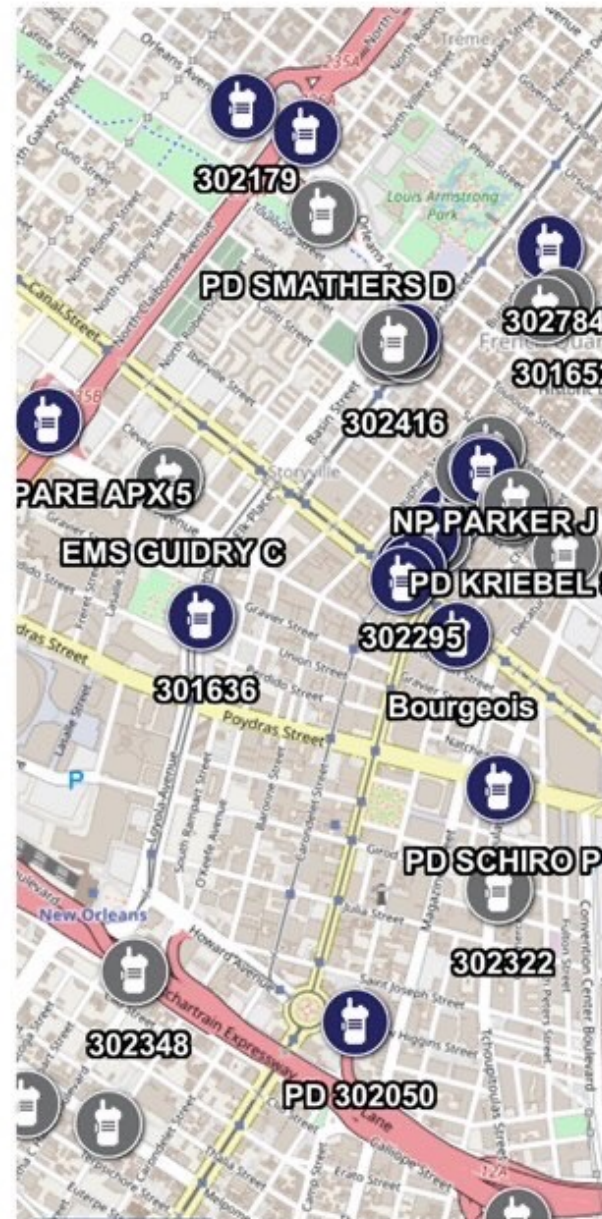
Dispatch

- Coordinates incident between one or more agencies

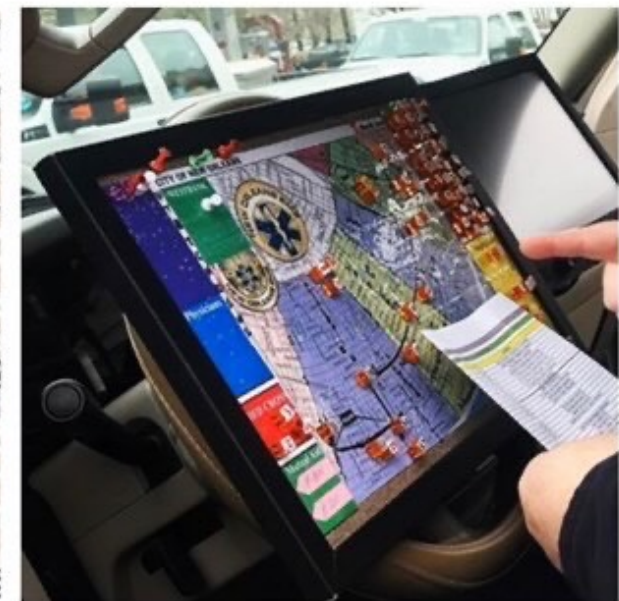
Participated in Exploratory research to understand users

Users use desktop application in their car

Sergeant uses paper maps to manage their units during an incident.



Desktop application



Traditional paper maps

MAPS



Problems identified as per Research



Where am I?

Officers were lost while chasing suspects on street.



Where is my backup/peer?

Strategize their moves while approaching a suspect.



Where are my units?

Sergeant didn't know situational location of officers clearly



What are my unit's capabilities?

Sergeant find it difficult to know which officer is equipped with what type equipment.



**MSI owns
80% of market shares
in public safety domain**

BUSINESS GOALS

Boost sale of APX NEXT

Build subscription based software solutions

Gain competitive advantage



LEAD UX DESIGNER

My Role

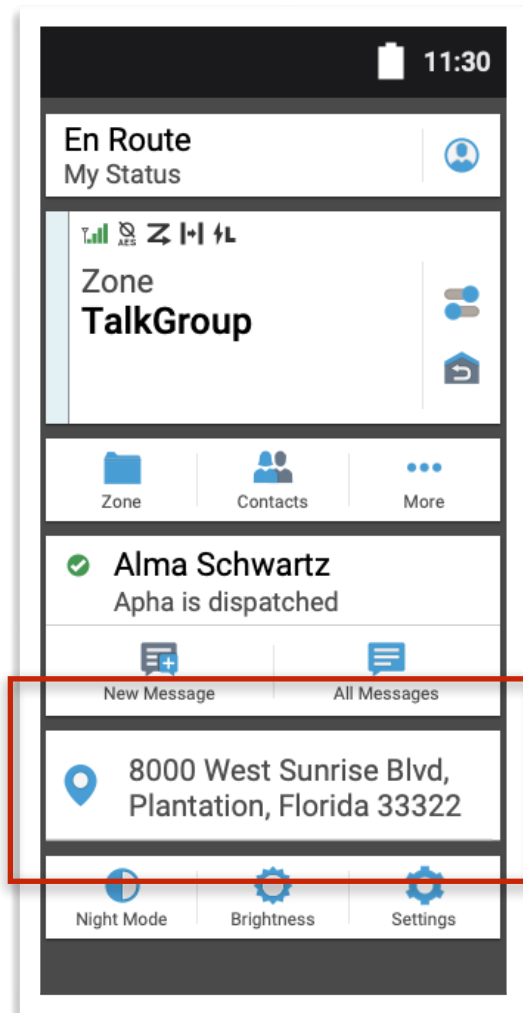
UX Design
Research moderator

Tools Used

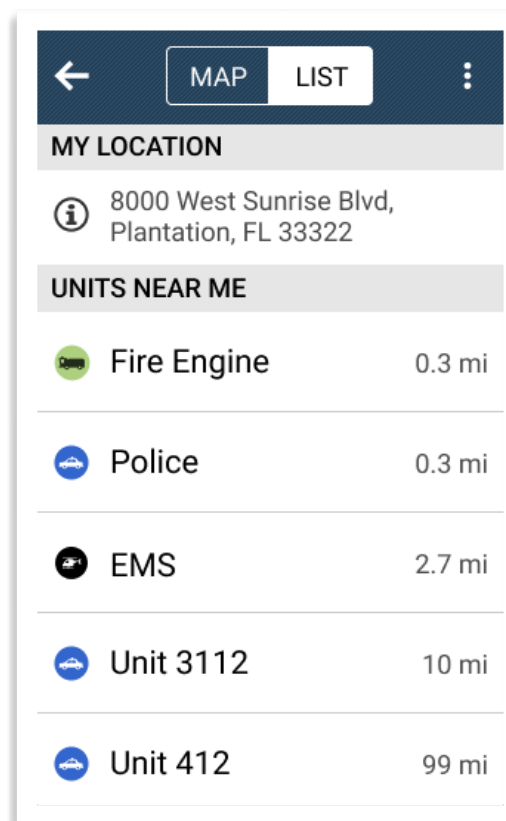
Sketch/Figma
Invision

MAP

Provides situational awareness to officers



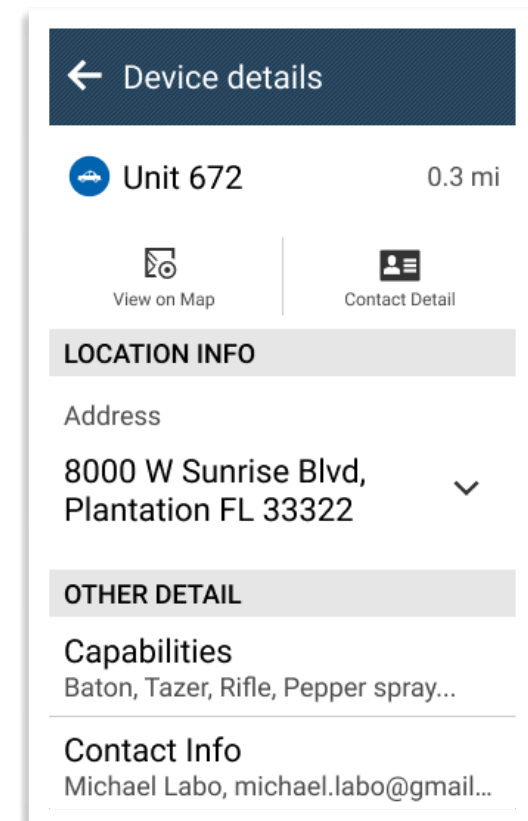
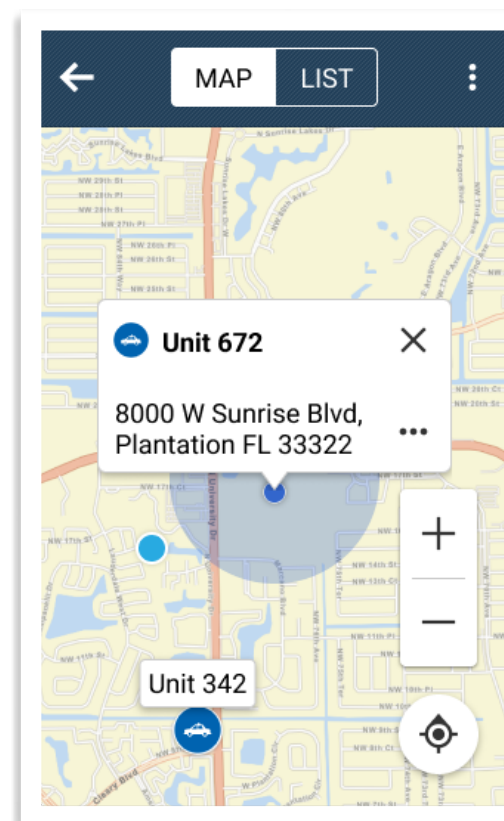
Where am I?



Where is my backup?

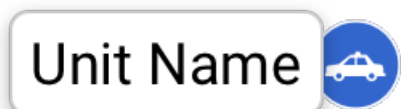
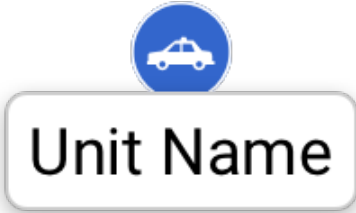
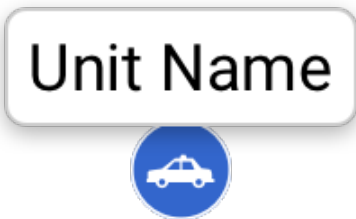


Where are my units?



Where are my units' capabilities?

UNIT REPRESENTATION ON MAPS



**Information
Architecture**

Within same agency see name first since icon will be same for majority officers (majority use case)

✗ Will work best if officers from different unit types are at same spot. Icon is distinguisher
Best for dispatch view

✗ Will work best if officers from different unit types are at same spot like in dispatch. Icon is distinguisher

Within same agency put name first since icon will be same for majority of officers

**Tap Target
surface area**

Large
(Glove Compatible)

Large
(Glove Compatible)

✗ Wide

✗ Wide

**Scalable
name/icon**

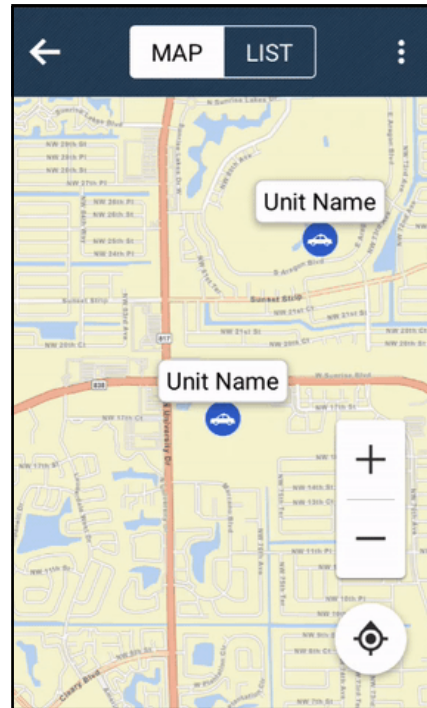
Affordable
(not trimmed in 3.6 inch display)

Affordable
(not trimmed in 3.6 inch display)

✗ Not Affordable
(element might trimmed off the screen)

✗ Not Affordable
(element might trimmed off the screen)

UNIT DETAIL PRESENTATION



Information Architecture

People preferred this solution because information was at one place

User Context

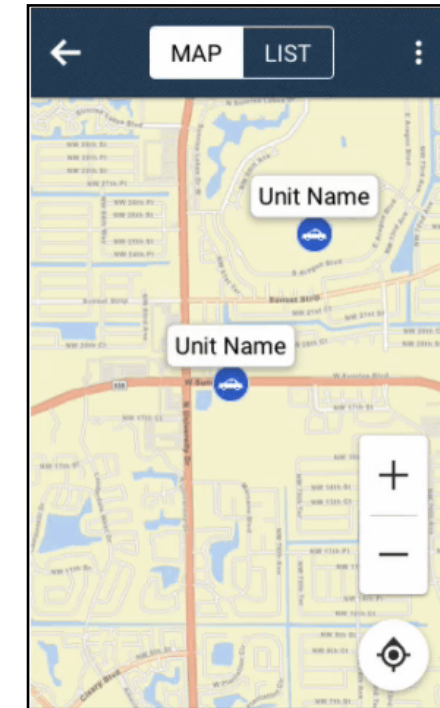
In mission critical times people preferred simplest of solution

Scalability

✗ Solution is NOT scalable to add more information in tooltip. however, this is desirable to keep map clean

Hardware Ergonomics

NO bump when we swipe finger from bottom to top.



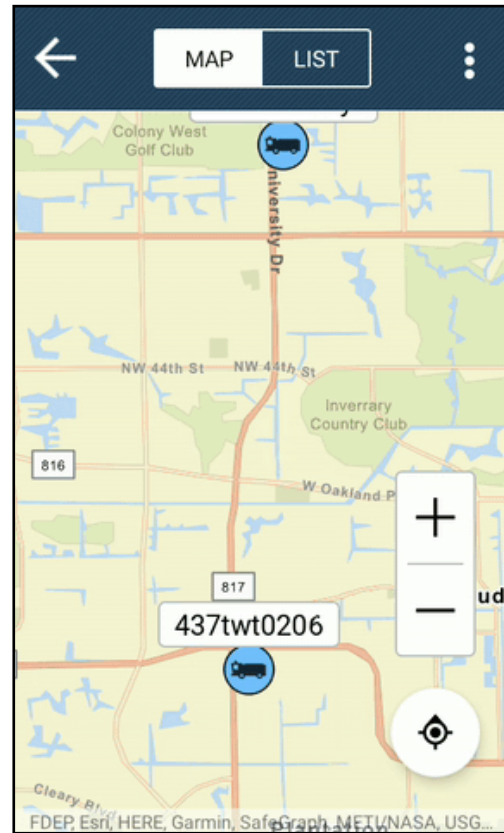
✗ Did not like this design because information was separated at two different places

✗ In mission critical times people do not prefer complex solution

Solution IS scalable and more information can be added.

✗ There IS bump when we swipe finger from bottom to top.

CLUSTERING



Information Architecture

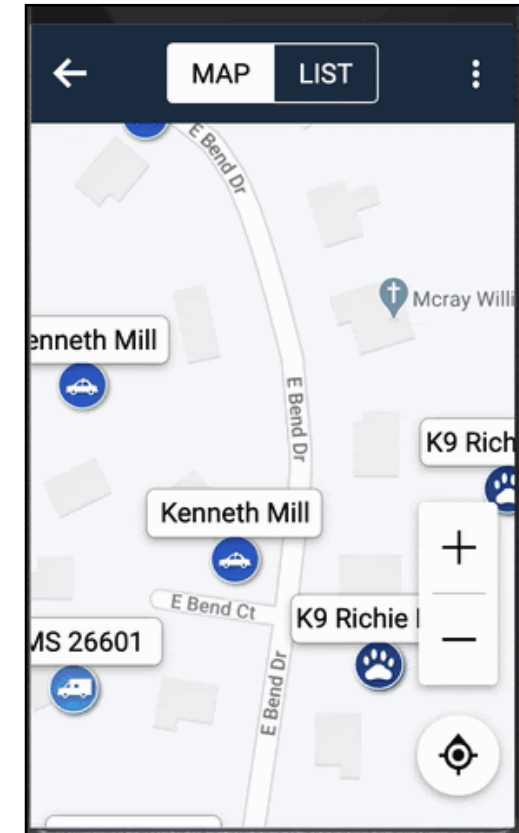
✗ Positional information of unit is removed after cluster group is formed

User Context

✗ In mission critical times this design will group multiple units if they are 6 feet apart.

Scalability

This design is scalable and performs better when more than dozens of units are closely

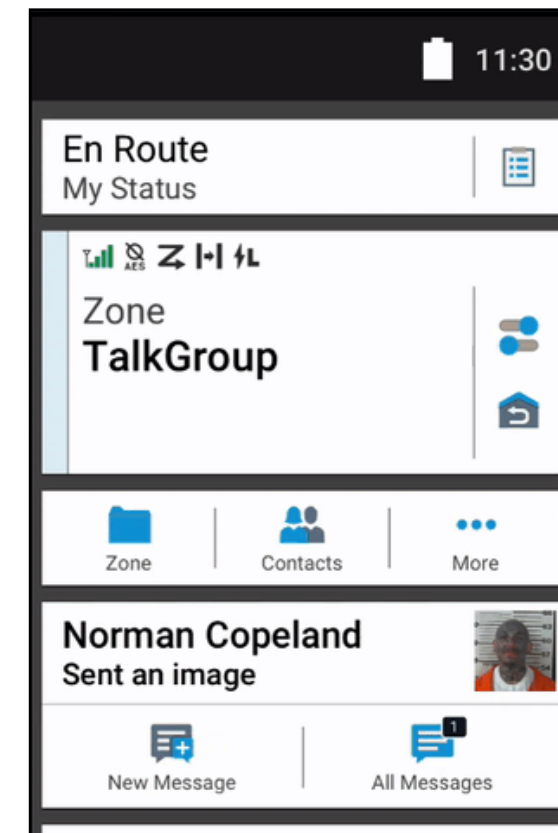
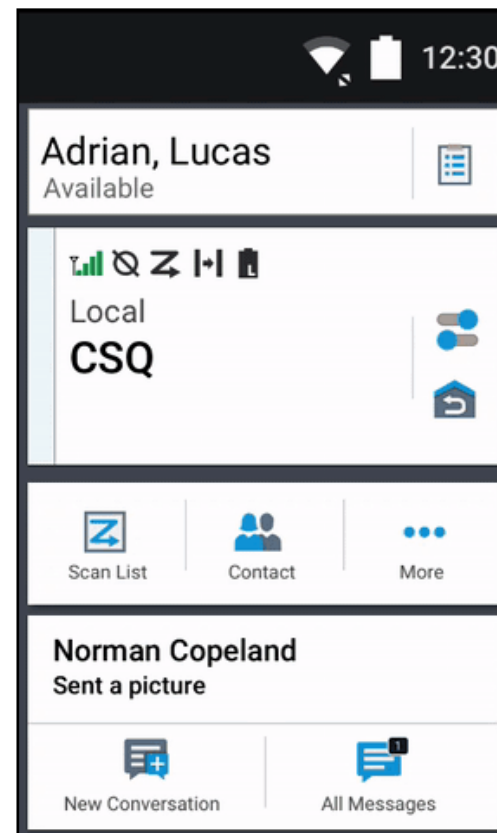


Positional information is maintained as long as possible.

This design will evolve and show unit icons if multiple units are 6 feet apart.

✗ This design will not perform better when more than dozens of units are closely

MESSAGE 'BOLO'



Information Architecture

✗ BOLO is high priority use case for messaging, this design hides that info

BOLO is high priority use case for messaging, this puts that info right UP top

User Context

✗ Takes 2 steps to open BOLO
(Not purposeful in mission critical situations, accessibility to info quickly)

Will take 1 step to open BOLO
Quick glance

Scalability

N/A

Solution is scalable if multiple multimedia with text is sent.



IN-HOUSE USER TESTING 5 users

UX designers (3)
Human Factor (1)
New User (1)

CUSTOMER USABILITY TEST

Quarterly Beta

“Maps is North Star of APX NEXT”

“Genuinely Intuitive”



CUSTOMER FEEDBACK VISIT

“Maps is North Star of APX NEXT”

“Genuinely Intuitive”

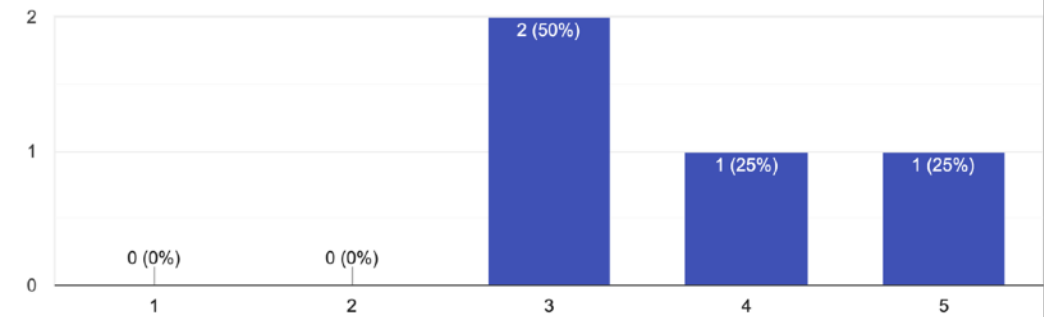


CUSTOMER BETA SURVEY DATA



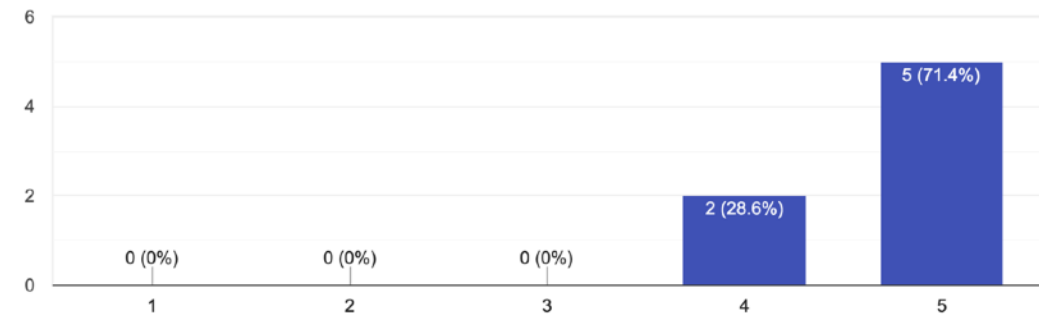
How would you rate your overall experience with SmartMapping?
4 responses

Q4'20



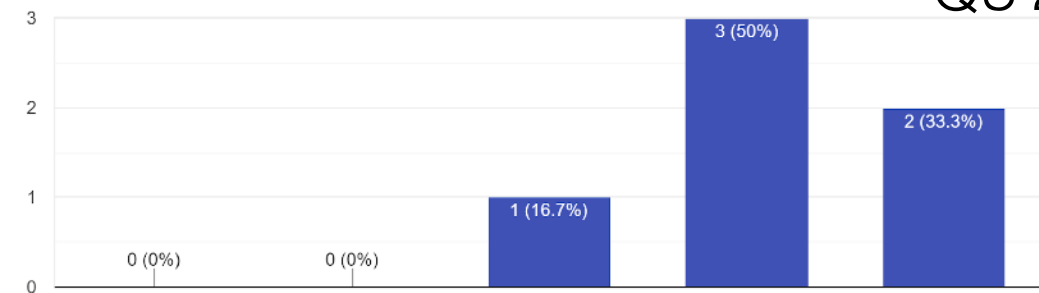
How would you rate your overall experience with SmartMapping?
7 responses

Q2'21



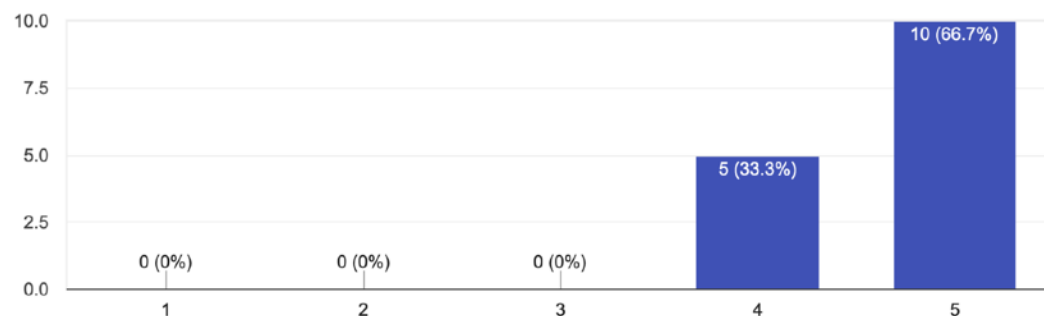
How would you rate your overall experience with SmartMapping?
6 responses

Q3'21



How would you rate your overall experience with SmartMapping?
15 responses

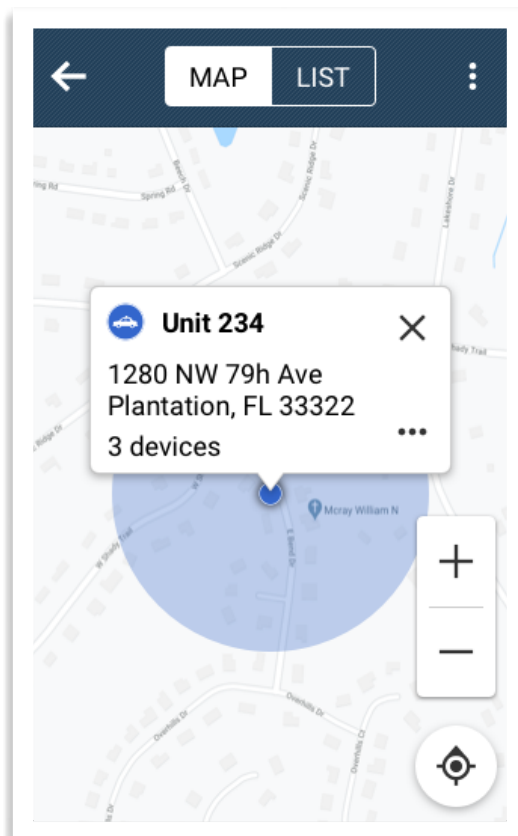
Q4'21



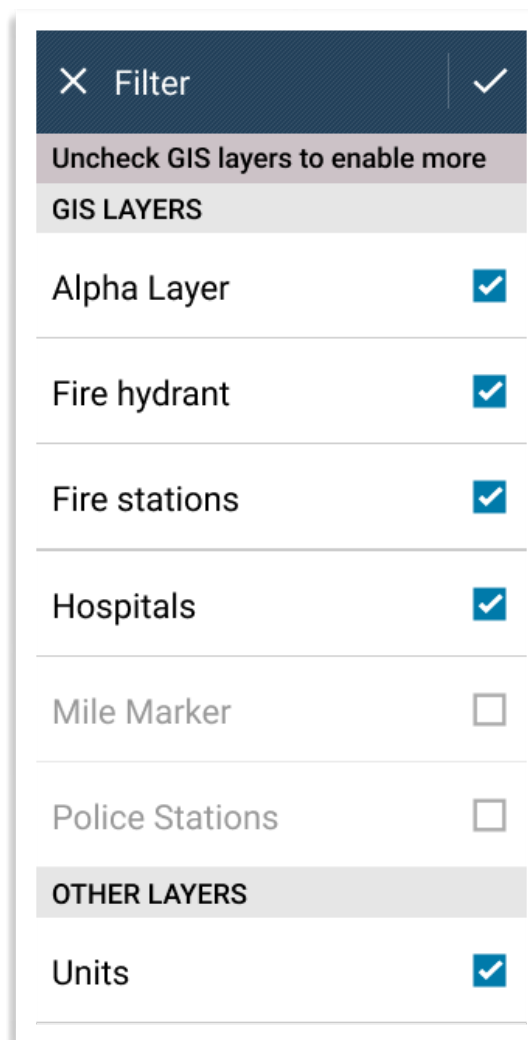
MAP

Other features

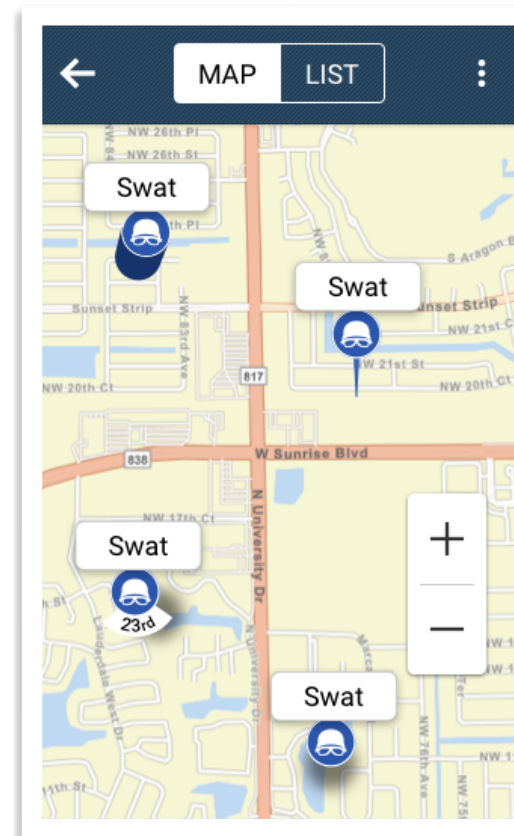
Inaccuracy Indicator



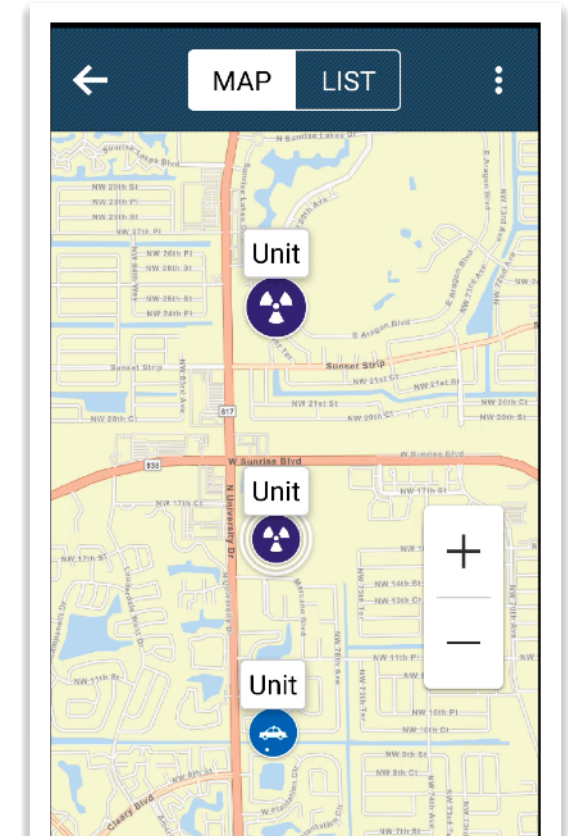
Restrictions in Filter



Show Z-axis



PTT voice chatter



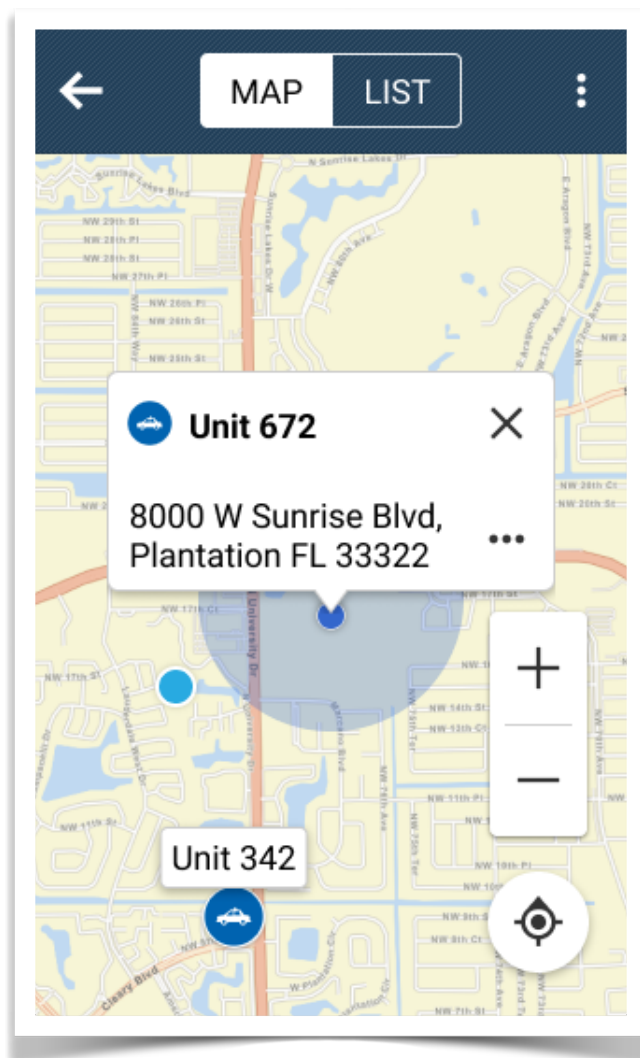
Role

OTHER RESPONSIBILITIES

- Create UX vision for roadmap features
(collaborate in setting priorities)
- Plan, participate research activities, innovation sessions
(Moderate research in some scenarios)
- Manage design framework to sustain it's integrity
- Mentoring new, current designers and run design scrum
- Maintain productive relationship with cross-functional teams
(User guide, marketing, audio, etc)
- Patent in Pursue



MAP DEMO



**“I find SmartMaps intuitive
and easy to use.”**

~ Police Chief
Michigan

Prateek Kumar Pradeep
prateek.pradeep@gmail.com

Thank you