Zombie Triage
Data Collection

Emily

Lily

Ellen

Joel , Zombie Hunter

Personal Info

Age: 48

Former Profession: Contractor

Goal: Help bring the end of the zombie epidemic.

Background

Lost his daughter in the initial outbreak of L. paradoxum.

Personality

Controlled, deliberate, also impatient.

The Situation

- Currently collecting samples in small teams.
- Requires self exposure to the pathogen through direct contact with zombies.
- Pieces are collected and labeled, then brought back to base for testing.
- High risk and margin of error.

Premise

Pre-field mission at base camp

Joel pairs app to rifle
- turn on receiver for rifle
- press activate button to activate pairing and collecting session

Feedback: mode changes to active collecting, creates active session, receiver on rifle blinks blue

He loads the rifle with microchipped darts that are pre-synced with rifle.

In Position

Teams head out in armed vehicles with a driver for navigation, two to collect data and two for defense.

As Joel shoots targets with microchips he can confirm the receiver on the rifle is pulling data (light blinking green).
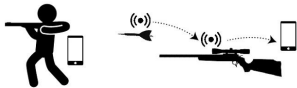
After or In-between Mission

Joel will review data before queuing for transmission

- Option to discard obvious incorrect data
- Confirm all button to transmit
- Phone will vibrate once transmitted.

He checks the map icon, which updates to show percentage of area completed/cleared based on the new data sets.

Experience Map

+ eliminate close contact with zombies

+ larger groups to clear areas faster

+ carry more supplies for longer missions

- conspicuous; potential danger in drawing larger hordes of zombies

- potential mechanical issues and road obstacles

+ two steps: pair gun's bluetooth sensor with the app, then stick the phone in your pocket and your hands are free

+ data will automatically begin receiving when the motion of the dart is detected

+ data automatically collected

+ accurate location data

+ current updates on location completion

+ ability to track zombie travel/migration patterns

- reviewing data sets for obvious errors

Prototyping Plan
You can use an eraser on the drafting table or a sledge hammer on the construction site." - Frank Lloyd Wright

Hypothesis
- Hunters will be able to tag the zombies safely
- Power sources available (i.e. solar)
- Blood samples include type, strain, gender

User testing
- Test darts and guns
- Bluetooth connection to the phone

Visual Layout
Interface Element Design
Logical Flow
Behavior
What is your first impression of the homepage?
Look at the website for 5 seconds. Now look away and tell me what you think the website is about.
If you clicked on this [this element], what would you expect it to do? Where would you expect it to take you?
Do you trust this website? Do you think it is it professional?
If you had a magic wand, what would you change about the site?
What did you like about the website?

Air dart gun

- Quiet (virtually silent)
- adjustable power controls that makes for effective shooting at close range or sizable distance, even from the bird's eye view of a helicopter.

Dart gun testing –
Check range needed to implant the dart correctly

Darts –
Make sure will carry the chip and implant it

Compare dart guns

Pistol

Rifle

Interview hunters to figure out preferences.

Which one has the correct range

Handles the easiest

Loads fastest

Darts

DNA AND BIOPSY DARTS

PLL TRANSMITTER DART

DNA AND BIOPSY DARTS

Working closely with our customers, we designed and built our DNA dart on a 2 cc dart body to remove a sample consisting of both the dermis and hypodermis material. Our DNA darts are available in the following three tail designs: Type 'C', Type 'P', and Type 'U' (with flight stabilizers). Biospy Darts are ideal for gathering sample tissue for analysis, the Pneu-Dart Biopsy Dart contains a farrel"cutter" on the outside protecting the three barbs on the inside of the cylinder. Upon hitting your desired target, simply unscrew the farrel containing the tissue sample.

PLL TRANSMITTER DART

Easily track your darted animal with our new PLL (Phase Lock Loop) Transmitter Dart – a microprocessor control advanced feature transmitter with solid state components. Our new UNI-body case design fortifies the transmitter to withstand kinetic energy impact values FIFTEEN times greater than anything else on the market with an effective range up to 1.5 miles depending upon topography. Up to 120 continuous hours of battery life, and easy to use, magnetic tap-on tap-off activation with pulsing LED light for easy detection.

Wireless Technologies

- *Multiplexing Overlays on Bluetooth*

- *Microchips*

- iBeacon

    ○ approximate range of 70 meters.

Multiplexing Overlays on Bluetooth
- allowing multi-point connections when multiple bluetooth devices are transmitting

Microchips
- For data differentiation there will be a slight shift in time stamp and frequency to collect multiple data points along with unique ids of chips
- Tiny device that can track location by gps and analyze blood samples for type, programed recognized pathogens and gender
- Device emits radio waves, collected by a battery/beacon patch (attached to the tailpiece of the

- dart) that powers the chip and transmits the data via bluetooth

iBeacon

- The maximum range of an iBeacon transmission will depend on the location and placement, obstructions in the environment and where the device is. Standard beacons have an approximate range of 70 meters.
- The frequency of the iBeacon transmission depends on the configuration of the iBeacon and can be altered using device specific methods. Both the rate and the transmit power have an effect on the iBeacon battery life.
- Will return (to the listening device) an array (unlimited) of all iBeacons found along with their properties.

microchip
notes:
- How long is the power source good for? Estimote Beacons estimate 3 year with their stickers.
- Future gps tracking: what device is it reporting to, share that data with other techs in the field?

Main Screen, Data Collection   **Data Sets for Review**   **Map, Area Completion**
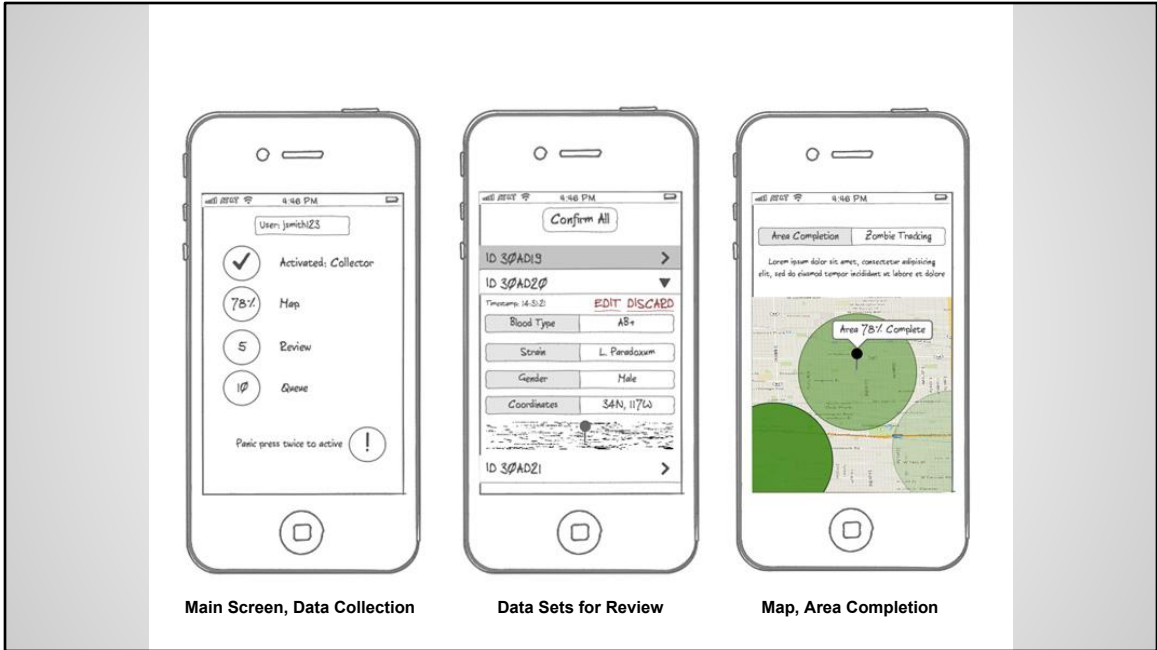
Confirm information when receiving it from the bluetooth device.
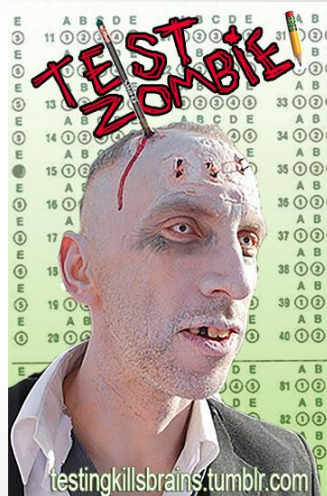
User Testing

Meet
George

- Infected with L. Mirillis strain
- Estimated time of infection: 2 months ago
- Gender: Male
- Blood type: O

Lab testing of Darts and Transmitters
- Successfully tagged from distance of 15, 30 and 45 feet
- Darts connect to phone at distances up to 70 meters
- Microchip successfully broadcasts migration data over weeks and months. Battery lasts up to 3 year.

Field Testing

Location: Savannah, GA

- Medium-sized American city

- Variety of environments to test user experience

- Zombie threat is 25% contained in Savannah, as compared to 7% in Chicago, and 3% in New York.

3 Teams. 3 Environments

Suburbs

Business District

Inner City / Downtown

Mobile Command Unit

Suburbs

- Lower density and prevalence of 1-2 story buildings allowed team a high percentage of tagged targets

- Team made more use of the rifle than the pistol, and encountered fewer roadblocks.

- Some families in the suburbs keep zombies as pets. Team members would like to be able to send out an alert on certain channels to communicate with local homeowners before entering an area.

- People in this area are largely supportive of our efforts, and have often assisted our teams against looters and zombies driving SUVs.

Business District

- Zombies in these areas tend to be fairly docile.
- Some are still sitting at their desks, or clustered around office break rooms.

- A few larger office buildings required team members leaving the truck in groups.
- Team members reported that a decoy such as a remote control rabbit might help in bringing zombies out of these larger office buildings.
- Rabbit will be fitted with a camera, and will be controllable by team members' phones.

Downtown / Inner City

The Real Zombie Horde

Tall Buildings and
Frequent Road blocks

ZOMBIE LN.

- Truck had to keep moving.
- Abundance of obstacles meant frequent rerouting
- Team often had to double back to tag missed targets

Hazards also included:
- zombies falling/jumping from tall buildings
- Snipers - likely members of a separatist group
- Large mutant rats

WARNING
IF THE ZOMBIES CHASE US
I'M TRIPPING YOU

Recommendations:

1. Ability to quickly mark down roadblocks encountered, for future team use.

2. Two different reroute buttons on the map app: button for emergencies, as well as one for navigating around obstacles.