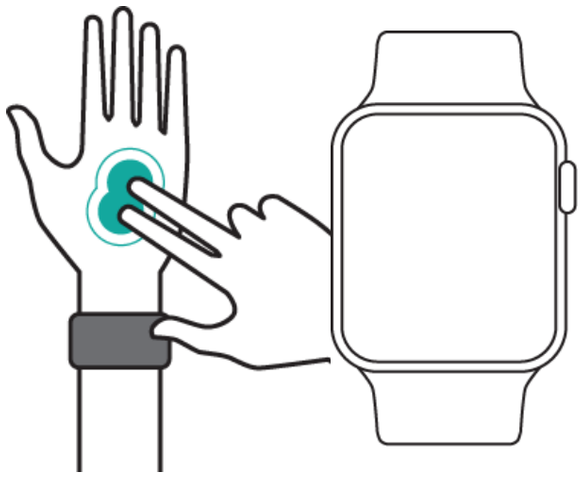
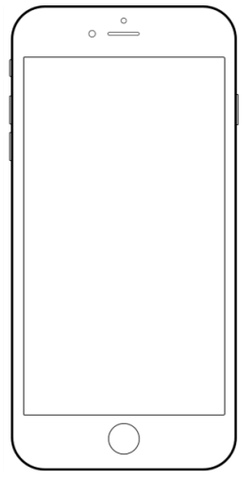
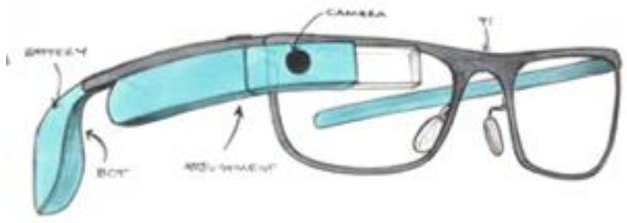
Help Source







Principles of Human Computer Interaction . ITIS 6400-8400 . Fall 2016

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by Alex Nelson, Lina Taheri, Maryam Tavakoli Hosseinabadi, Rob Frye, and Rahul Rachapalli

Introduction to Help Source

Intro, User Groups, & Design Goals

Introduction

A lot of us take personal safety for granted. But the reality is that bad things can happen - and it's important to be prepared for them.

So it's good to know that with **Help Source**, an app on your smartphone, you're never alone.

- Whether you're walking home late at night
- Alone in a suspicious cab
- In a dangerous part of town.

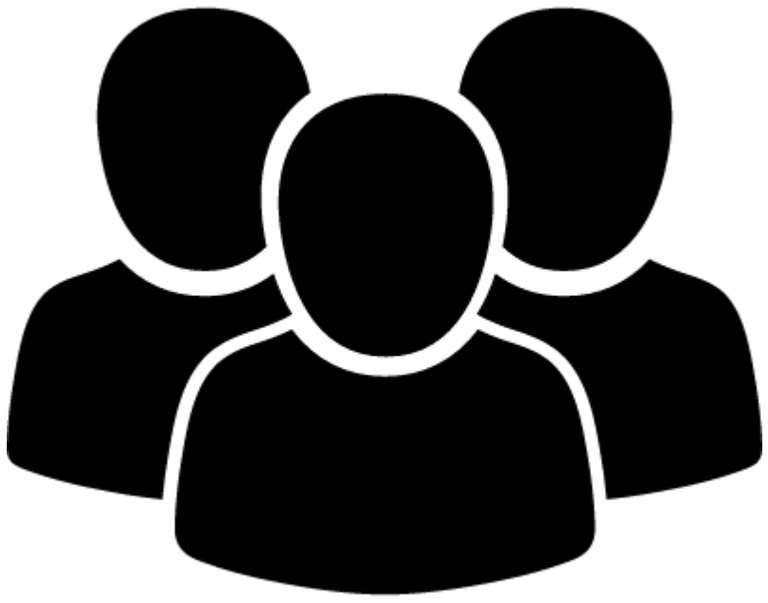
User Groups

User groups in need of help are:

- Older adults
- Users in risk (exposed to violent or property crime)
- Race and ethnicity are tied to issues of SES. Social and economic marginalization contributes to the vulnerability of these groups.
- Persons with a disability include those with a cognitive, physical, or sensory impairment

User groups willing to help are:

- Emergency services
- Volunteer organizations



Design Goal #1: Getting Help

In an emergency it’s often impossible to reach for your phone. So, our app works with a

- Wearable
- Skinput device
- Google Glass!

With a specially configured gesture that allows you to send an emergency alert to

- Emergency services
- Safe circles
- to the volunteers in that area

from the mobile app with just the touch of a thumb.

Design Goal #2: Giving Help

➔ A volunteer can be anyone who’s willing to help and is registered on our application.

➔ A volunteer would have configured Help Source on his smartphone and the notifications will be received to his smart phone, wearable or on Google Glass if configured.

➔ Volunteers will be notified when a victim is in a reachable area.

➔ The volunteer can reach the victim to help using the GPS location of the victim sent as an alert.

Design Goal #3: Getting Info

In case of emergency, the victim is provided with

- Safety points (Police stations, Hospitals etc.,)
- Emergency contact numbers
- Details of the volunteers arriving for help
- Helpful links and alerts
- A special ringtone configured to shout out for help.

Design Concept #1

Natural & Discreet Gestures to Act without Alerting the Criminal

Device: Skinput + Watch/Activity Tracker

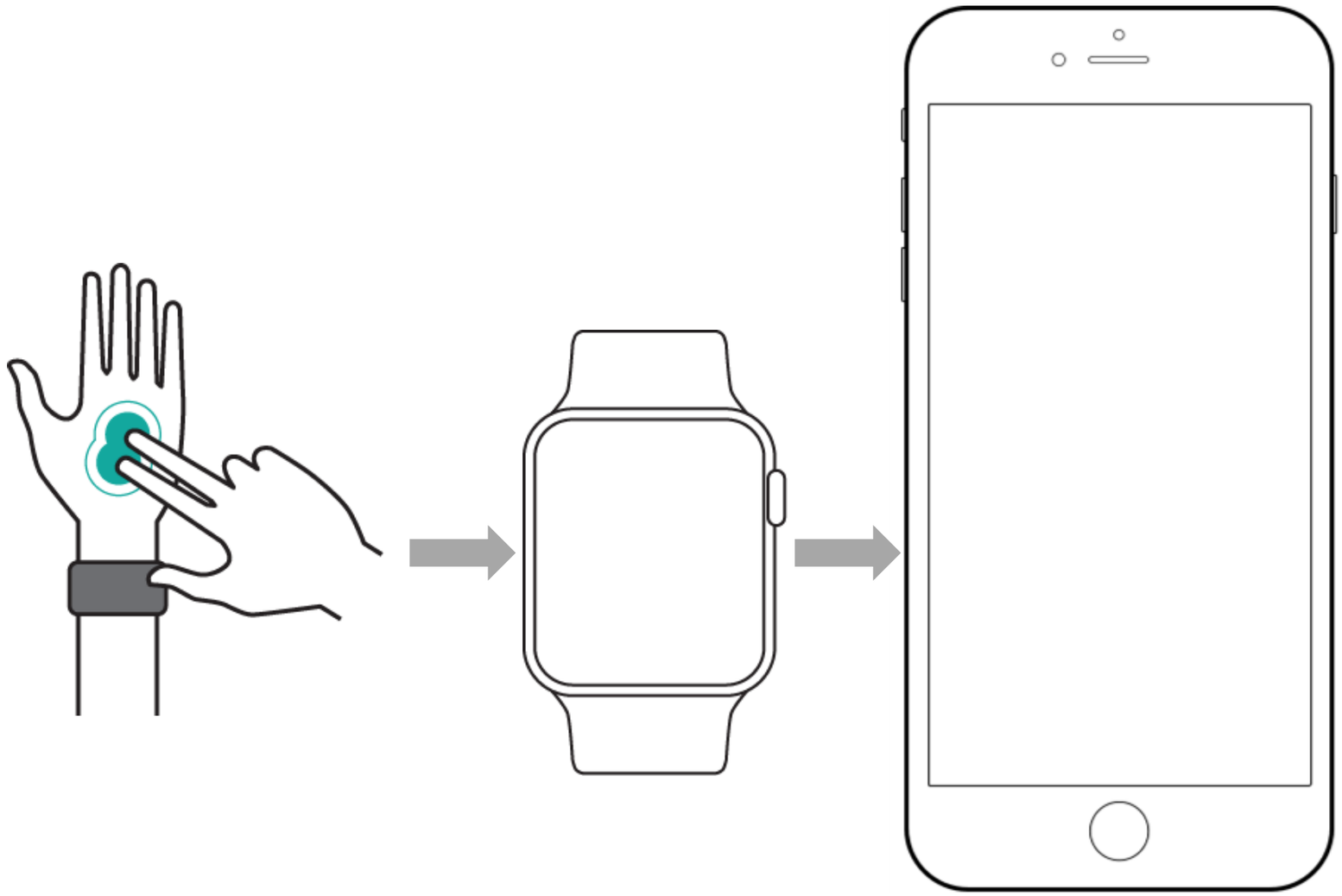
Skinput + Watch/Activity Tracker

Concept #1 Natural and discreet finger gesture and skinput

When you are in danger of being victim of a possible crime:

- You need to act without alerting the criminal
- You need to act unobtrusively
- You need to use as little effort as possible
- With fewest possible motions
- And with natural and discreet motions

Use the Skinput + Watch system with interaction of natural finger gestures with a skin receiver on a smartwatch / activity tracker with capability of connection to a smartphone.



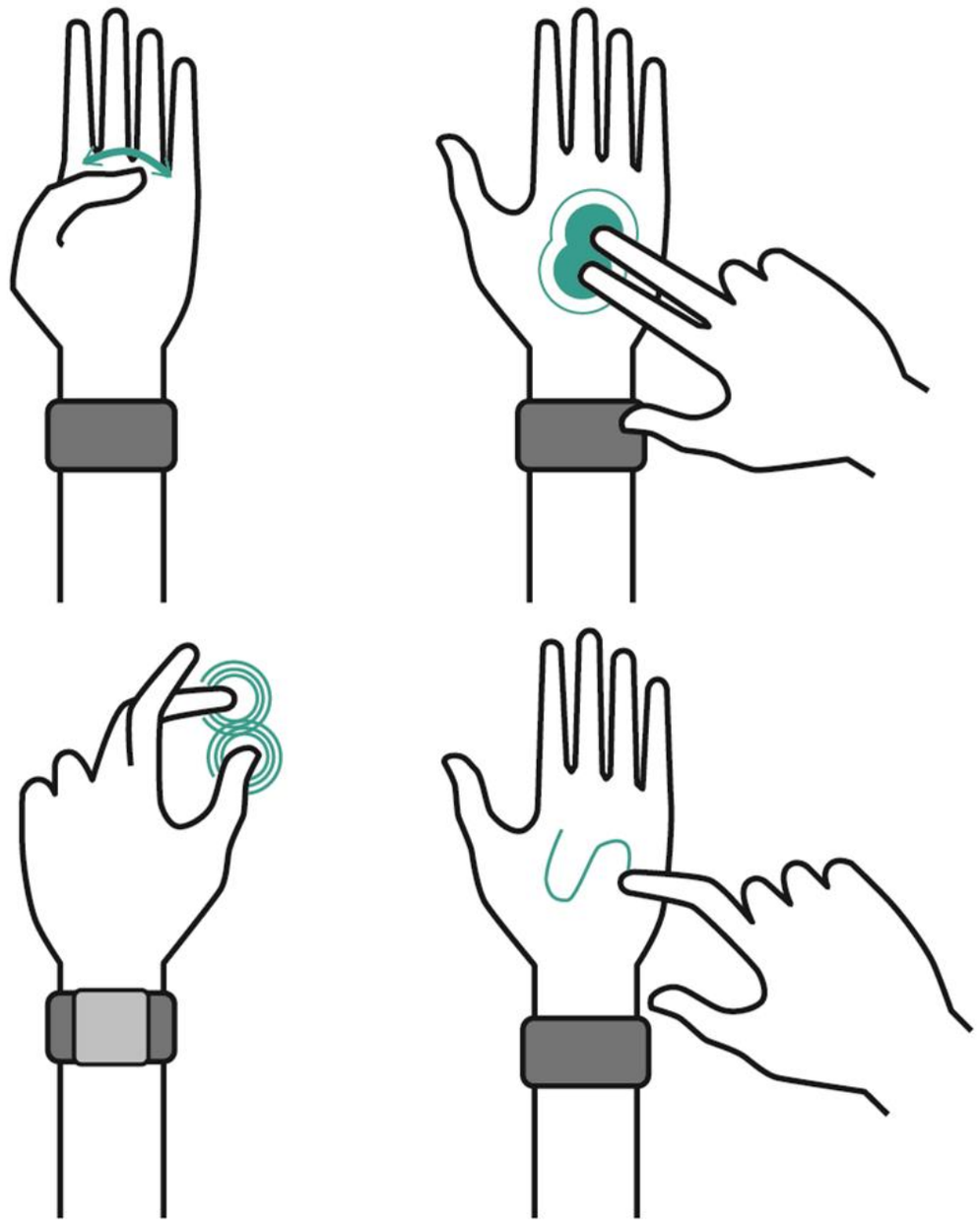
Skinput + Watch/Activity Tracker: Multiple interactive input options

Concept #1 Natural and discreet finger gesture and skinput

There are many ways to use finger gestures as input.

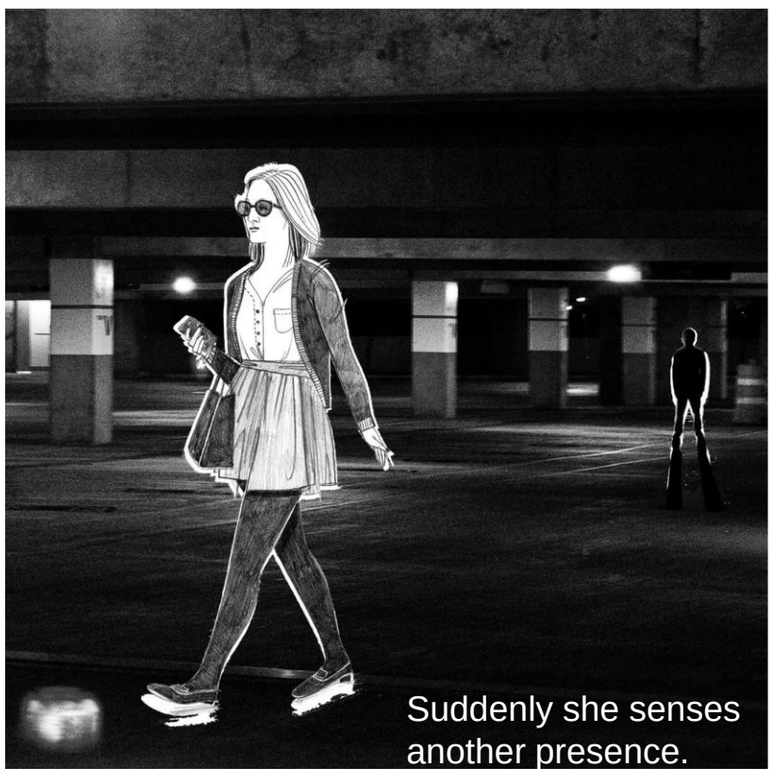
Naturalness and variety of hand gestures and the waves they create under the skin makes this system very intuitive with a minimal learning curve.

Skinput + Watch is accessible to everyone, even the physically impaired.



GETTING HELP: Julia's story

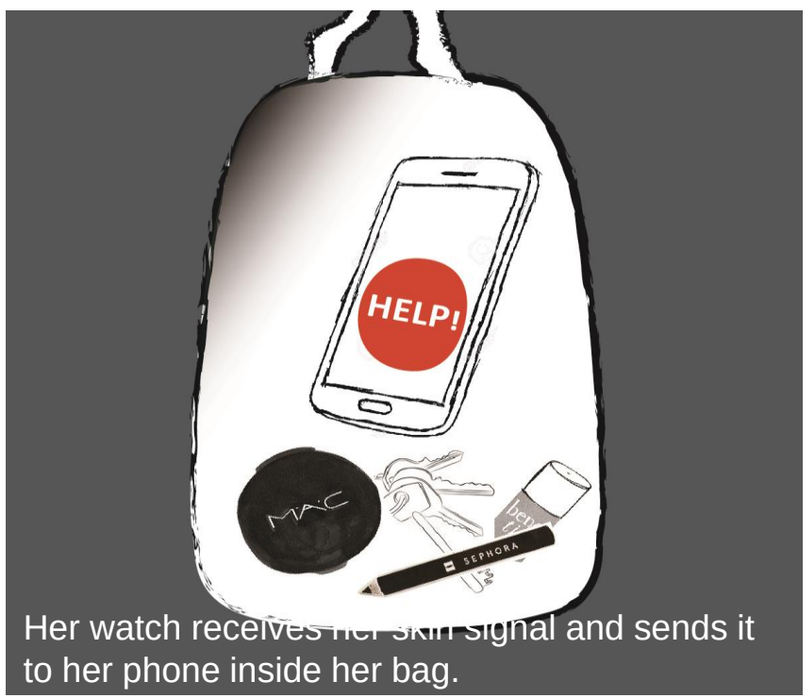
Concept #1 Natural and discreet finger gesture and skinput



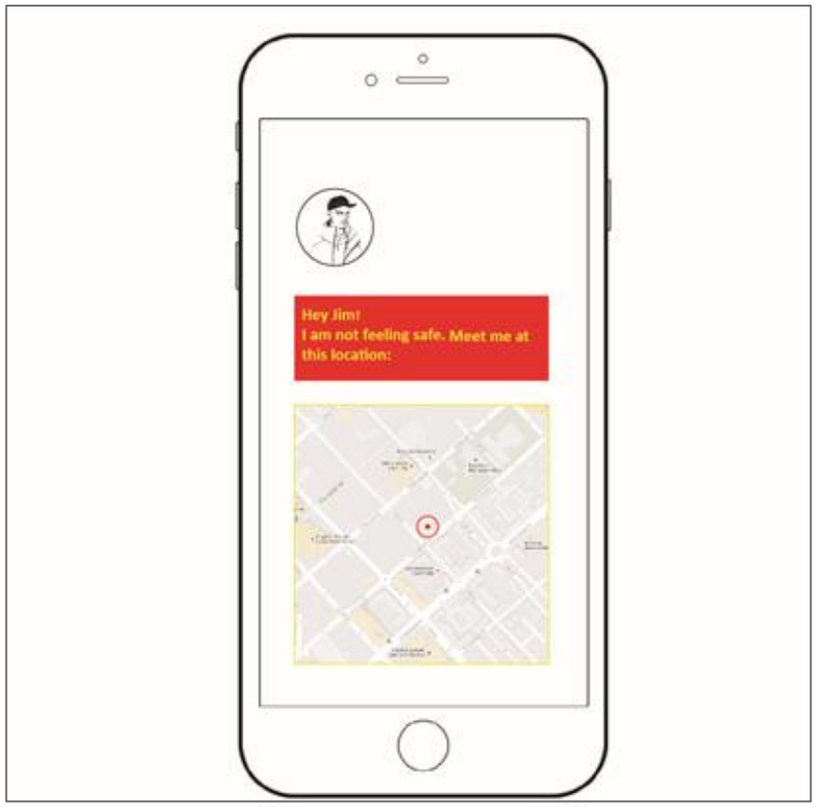
GETTING HELP: Julia's story (cont'd.)

Concept #1 Natural and discreet finger gesture and skinput

She keeps calm and just taps her thumb and middle finger together multiple times.



Her watch receives her skin signal and sends it to her phone inside her bag.



Her phone sends a help request message along with location to her friend Jim who lives on the same block.

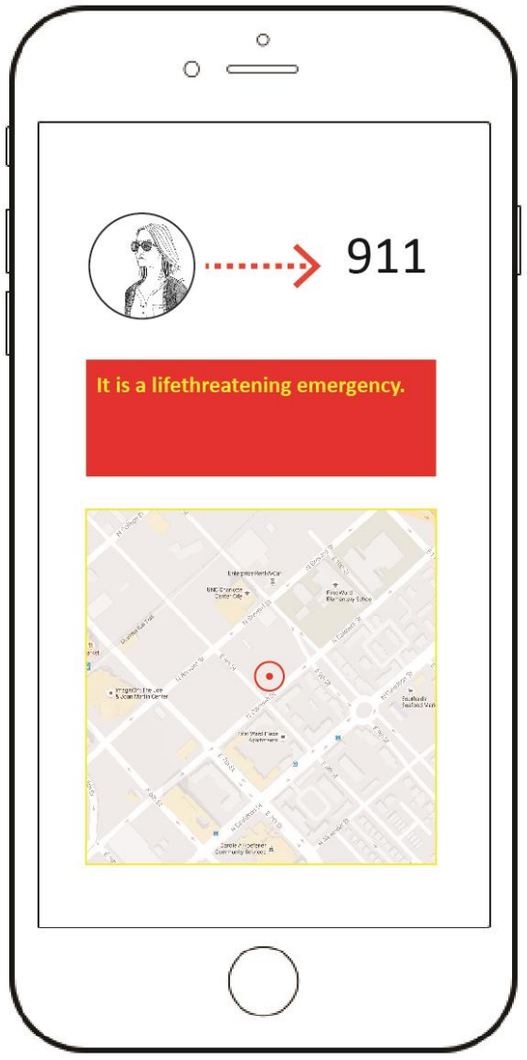
By the time she finds her car Jim is here to help her and the suspicious guy disappears.

GETTING HELP: Gesture options

Concept #1 Natural and discreet finger gesture and skinput

- Julia wants to contact the authorities directly.

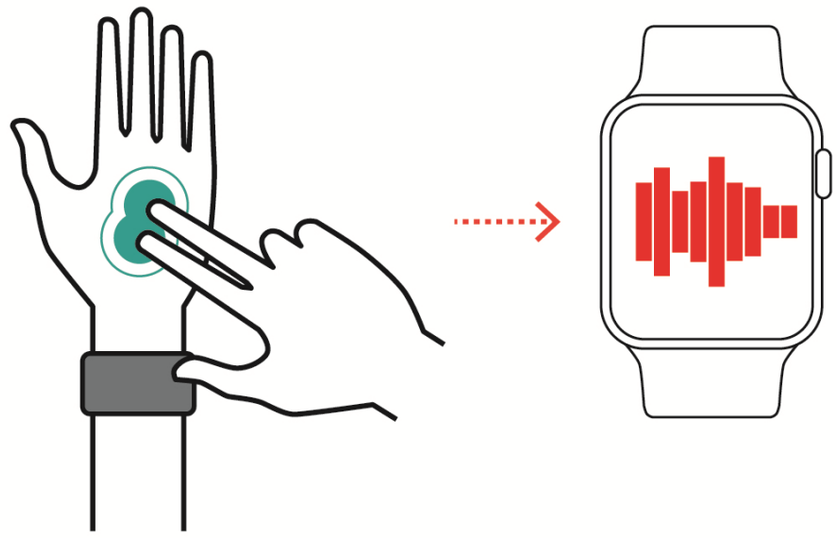
Julia taps and drags her thumb on her palm and across her fingers.



Her watch sends a message to her phone with a code indicating the need to call 911 along with her location.

- Julia wants to record sounds of the environment

Julia taps and holds her two fingers on the palm of her hand.



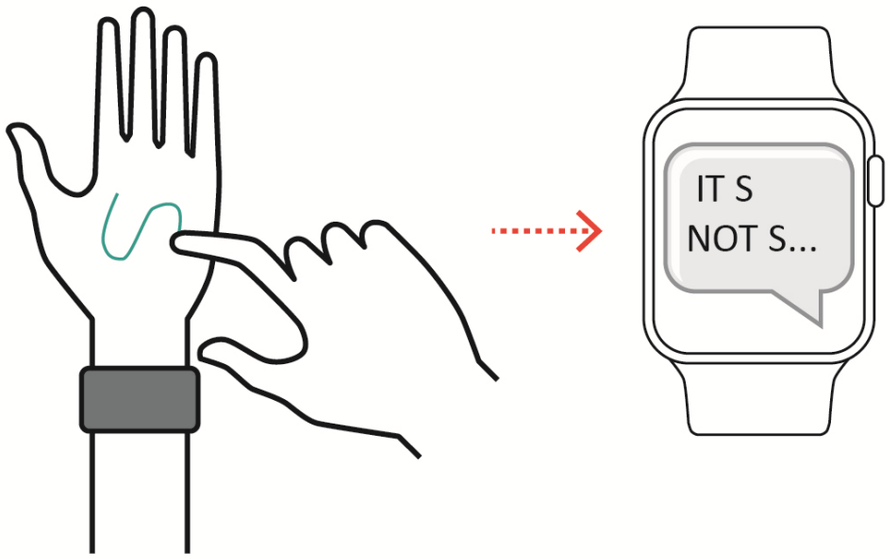
Her watch starts recording.

GETTING HELP: Gesture options

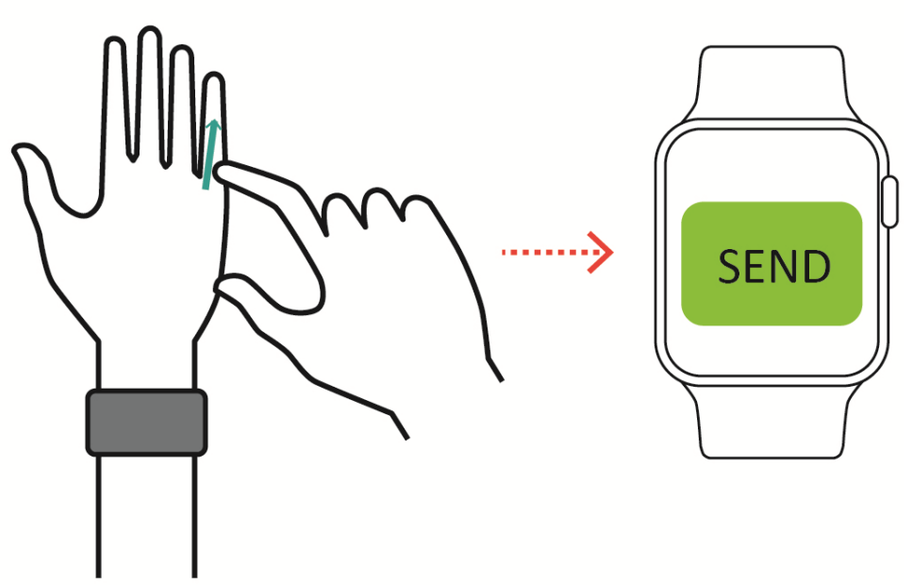
Concept #1 Natural and discreet finger gesture and skinput

- Julia can simply write her message on the palm of her hand and her skintracker will transform it to text.

She writes on her palm by tracing her finger in the shape of the letters.



Julia swipes her finger on her pinky.

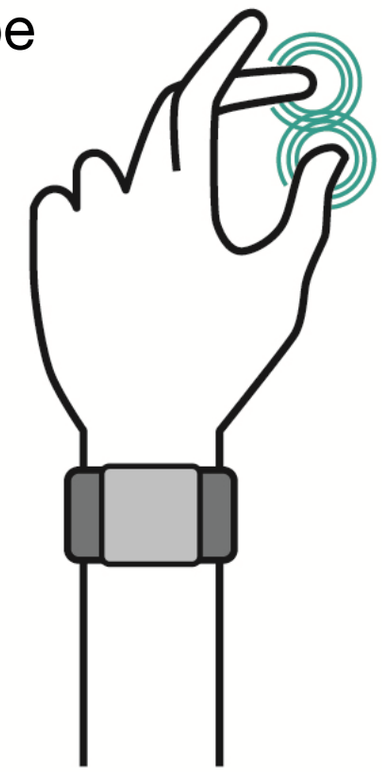


Her watch sends the message through her phone.

GIVING HELP & GETTING INFO

Concept #1 Natural and discreet finger gesture and skinput

In extreme situations where the helper is in a potential crime scene, there is a need for helpers to act unobtrusively as well.
Help givers can simply use the phone app to communicate with a help seeker and emergency authorities, and can even get extra information on the watch with different gestures. However, there is a limit to the amount of information that could be displayed on the watch screen.



Back to Julia's story:
Jim double taps his thumb and middle finger to give a buzz to Julia's watch/tracker and send her a message through the app.
[Different user/role, different gesture output]

Design Concept #2

Help with the Touch of a Button

Device: Mobile Phone - The ubiquitous helper

GETTING HELP with *Help Source*

Concept #2 Help with the touch of a button

We all need help sometimes. With *Help Source*, you can ask for help with the touch of a button. Simply press GET HELP, and we'll alert emergency services and nearby volunteers that you're in trouble!

Press the button, and you'll have 10 seconds to cancel the request.

GETTING HELP with *Help Source*

Concept #2 Help with the touch of a button

Your phone's camera will start recording and your GPS location will be sent to police dispatchers. Nearby volunteers will also be notified, and the integrated mapping feature will guide helpers to your location.

GETTING HELP with *Help Source*

Concept #2 Help with the touch of a button

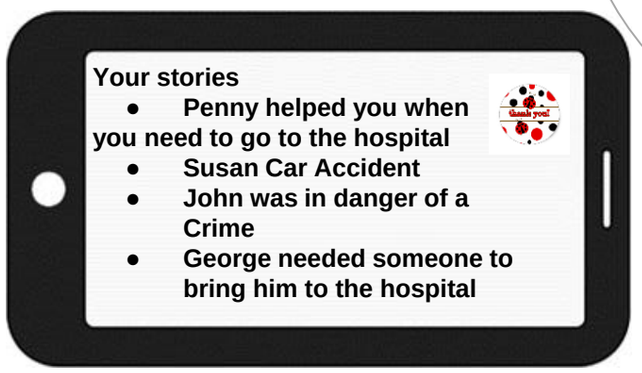
You'll be notified that police have been dispatched. Any members who are monitoring with the *GET HELP* feature are also notified. The status message will advise you who is responding.

When the situation has been resolved, use the home button to return to the home screen.

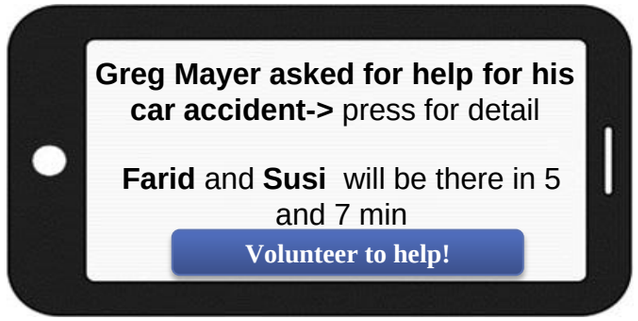
Why we help...

Mike received the notification since he set the “willing to help” on.

He remembers the last time that he saved Susan’s life.



He looks at his last stories on the app and remembers those who helped him and thegood feelings that he had when he was helping.



Greg has asked for help & Mike is thinking whether to press the “volunteer to help” button?!

.

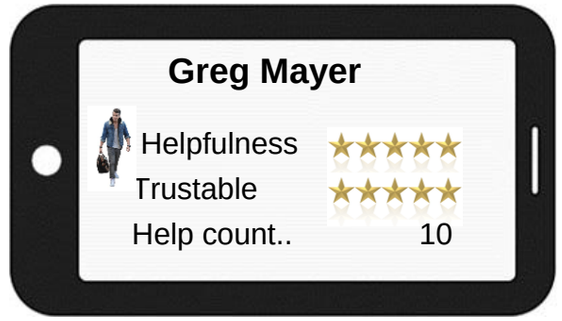
.

.

Finally, he decides to help and presses the button to get directions to the location..

Mike also takes a look at his own profile and the kind previous comments that people left for him, even those helps that were not very crucial.

He knows he would be helpful in case of a car accident, he has time now and there are two other people responding as well. He checked the two others’ profiles and found out that he knows Susi, and based on the profile Farid is trustable. **But he is still thinking**...

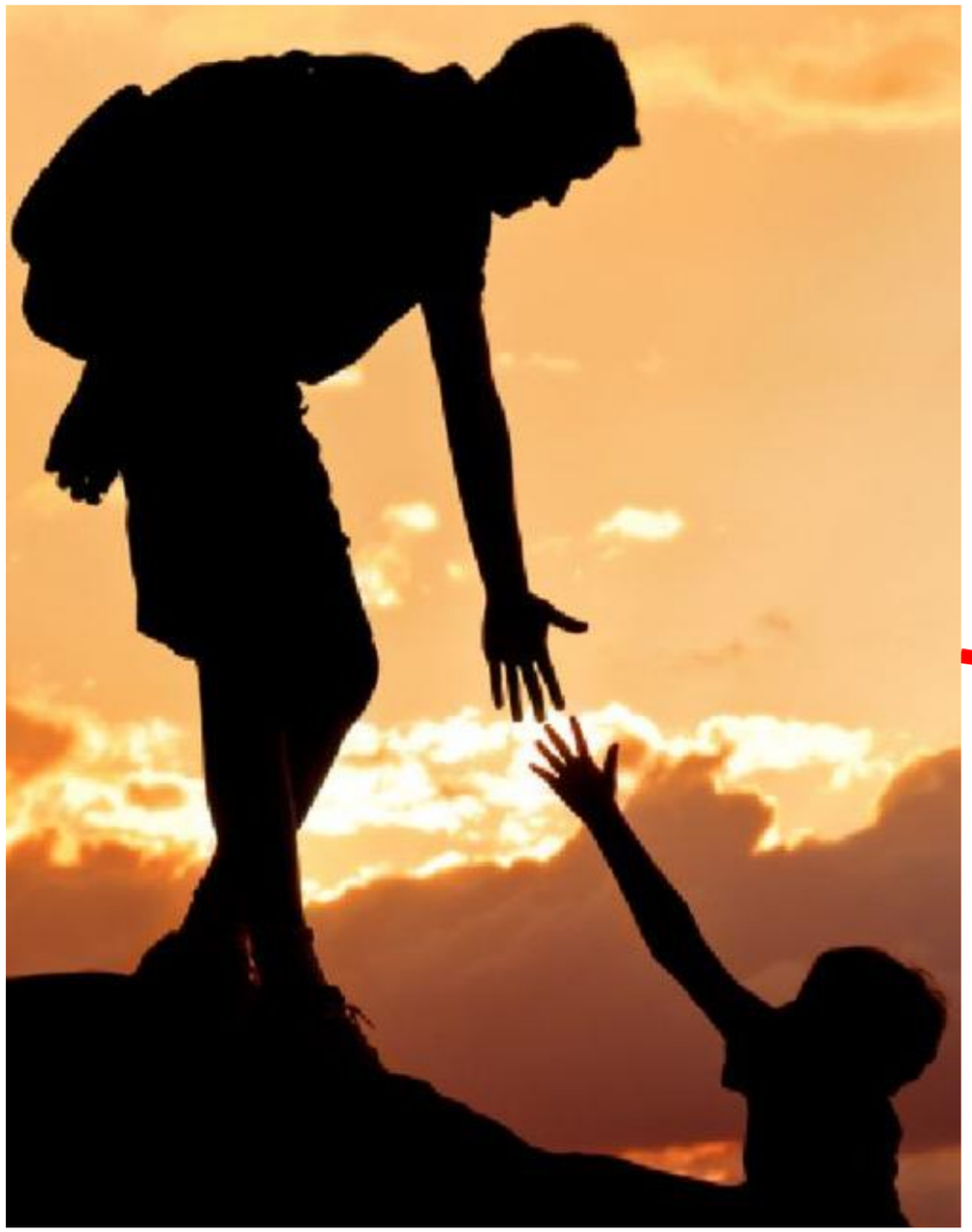


Mike is also looking at Greg’s profile, his rating, and comments about him and how helpful he was for other people, and he is trustable, as well.

He looks at his growing network of trustees who helped him a lot in tough situations.

GIVING HELP with *Help Source*

Concept #2 Help with the touch of a button



Many people are motivated to help others. Whether you're called to help others because of your religious beliefs or because of a simple desire to help others, you can get started by selecting GIVE HELP from the Help Source home.

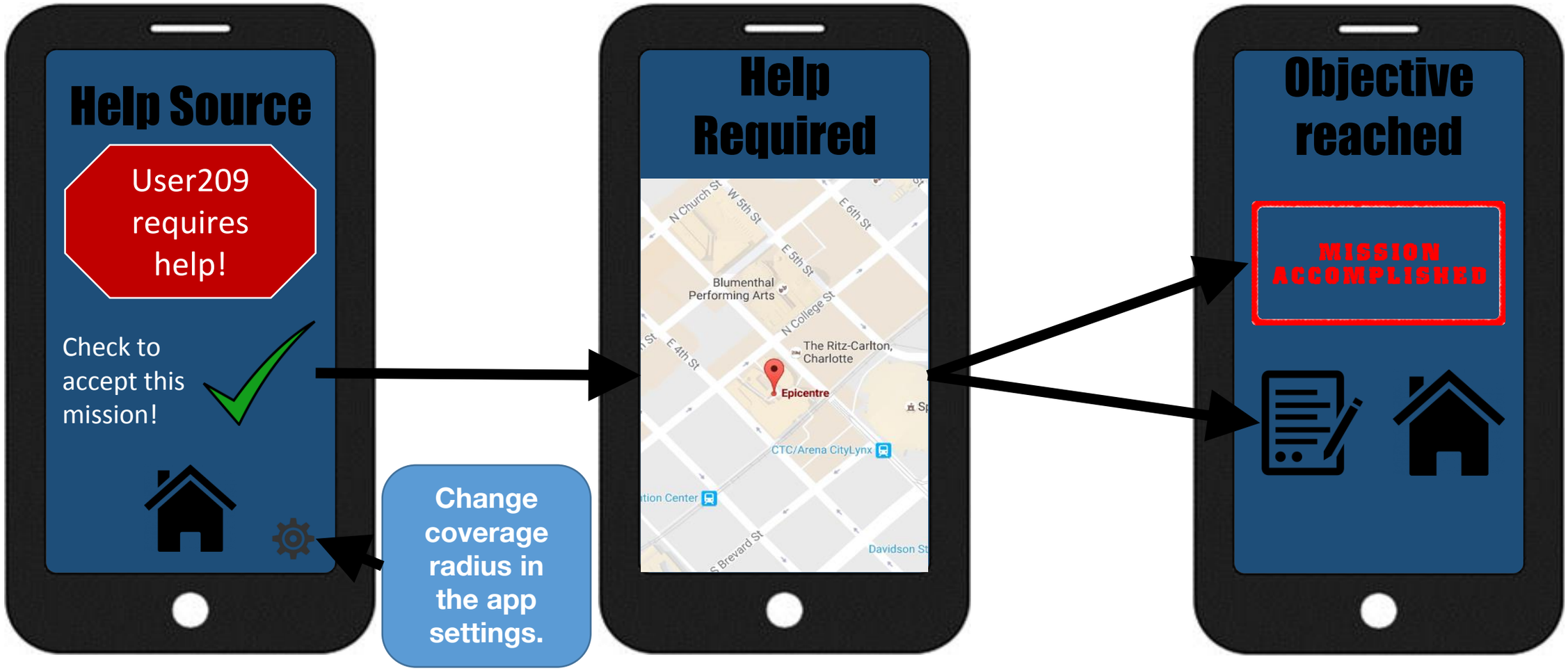
Select *Give Help*, and accept the terms of use to get started.

GIVING HELP with *Help Source*

Concept #2 Help with the touch of a button

It’s just that easy. When you’ve logged on as a helper, you can run the Help Source app in the background and receive help missions in your area.

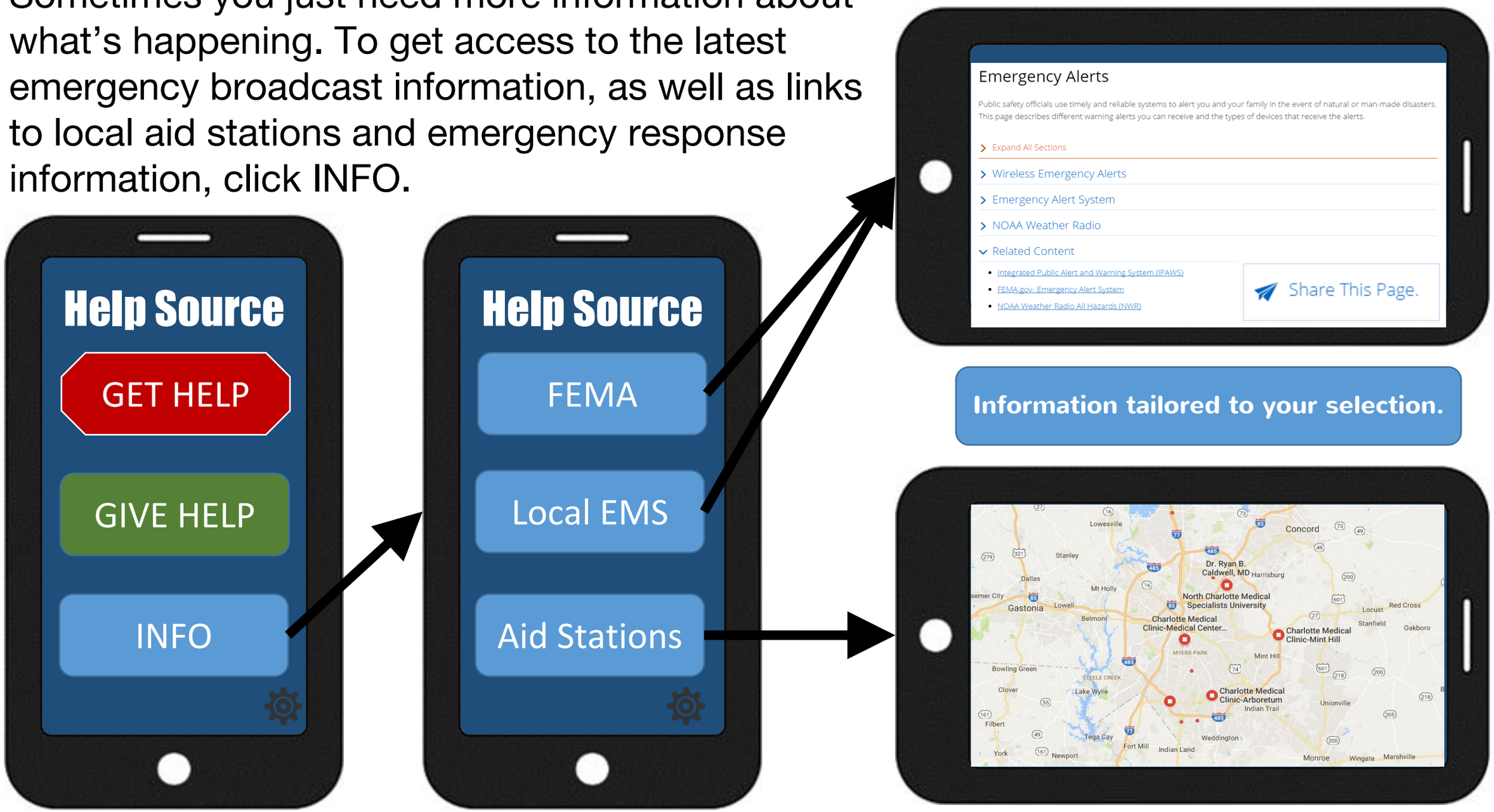
When your phone’s GPS detects you’ve arrived, the camera will start recording. You can click Mission Accomplished to complete the mission and save the video. You can also enter notes about the incident in the Debriefing section, with text and text-to-voice.



GETTING INFO with *Help Source*

Concept #2 Help with the touch of a button

Sometimes you just need more information about what's happening. To get access to the latest emergency broadcast information, as well as links to local aid stations and emergency response information, click INFO.



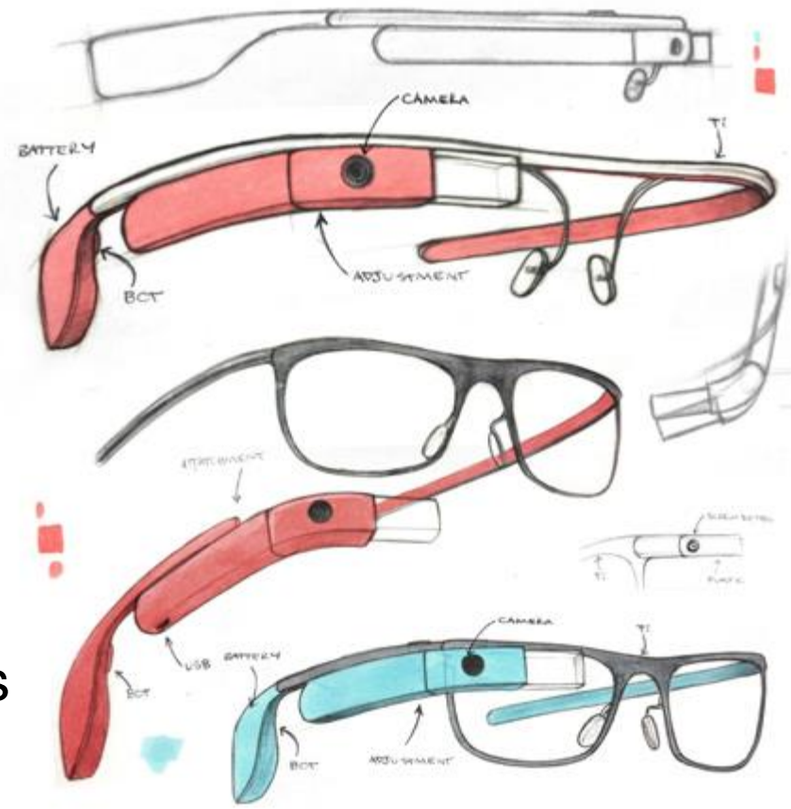
Design Concept #3

Capturing and Broadcasting Crimes from your Vantage Point

Device: Google Glass

GOOGLE GLASS

Concept #3 Capturing and broadcasting crimes from your vantage point



- In case of crime you need to be aware of your environment while acting normal
  - Without losing your
  - Without getting your phone out
  - Without making loud noise

- In case of car trouble or other similar situations, your hands may be busy
  - No hands available to call or text
  - But you need to ask for help

- You want to get help or inform others about the dangerous situation…
  - Sharing the location
  - A picture of the situation will provide a lot of information

- We don’t want to add yet another gadget!
  - Why don’t we use Google Glass that is already there?
  - It can be activated both by tapping on the handle of the glass or by voice.

GETTING HELP

Concept #3 Capturing and broadcasting crimes from your vantage point

Ok Glass! I'm in danger!

1- They are in emergent situation and they cannot use their hand and should be aware of the environment, too.. Help Source app process their voice via Google Glass, and send picture and location info to police and trusted group.

2- She senses the danger and she is asking for help by tapping google glass handle. She acts very normal without talking or bringing out the phone, while sending help request along with the location...

Ok Glass! Help Source, non-emergent help!

3- She needs help but her hand is busy she is communicating with glass via voice… She explains the situation by voice and probably some picture, the application will send the help request for nearby potential helpers.

GETTING HELP

Concept #3 Capturing and broadcasting crimes from your vantage point

Help Source! **I’m in danger!**	Help Source! **Non-emergent help!**	Help Source! **Who needs help?**
Help Source! **Profile**	Help Source! **Information**	Help Source! **Setting**

- The application will be activated by “I’m in danger” voice message via Google Glass or can be controlled by tapping the Glass handle!
- It immediately takes a photo and will broadcast photo and location to the eligible and trustable people (depends on the setting)
- Sends notification (can be received either on phone or via Google Glass again!)

GIVING HELP

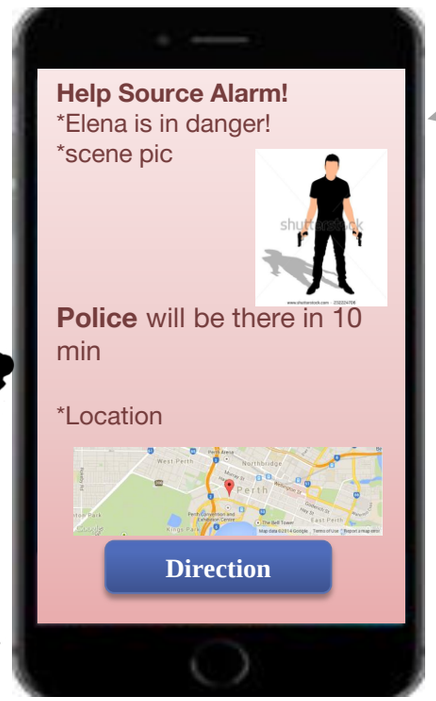
Concept #3 Capturing and broadcasting crimes from your vantage point

Help Source:
- Your location and the scene picture is sent …
- Police and Mike will be there in 4 and 10 min…
- Messages are deleting for your safety..!

Glass View

Volunteer to help!	Help Source Alarm! Elena Mayer is in danger	More INFO

Ok Glass! Take direction for helping!



Help Source Alarm!
- Elena is in danger…
- Photo of the suspected person…

- Location

GETTING INFO

Concept #3 Capturing and broadcasting crimes from your vantage point

It is possible to search for information while you are running!

- Google glass lets you look for information while you are also aware of your environment by:
  - Communicating by talking
    - Via searching for example..
  - Communicating by tapping on your glasses
    - It might take more time than working with mobile phone

Emergency Contacts	Search on Map	Shout out for HELP
		

Evaluation of Design Concepts

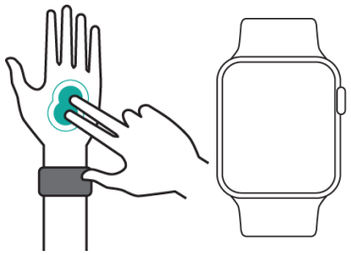
Skinput+Watch, Mobile Phone, & Google Glass

Evaluation of Design Concepts

Rubric // Help Sourcing for Victims of Criminal Actions & Terror Attacks

Satisfaction of Design Goals [**Scored from 1-10**]	Goal 1 : Getting Help	Goal 2 : Giving Help	Goal 3 : Getting Info	**Total Points** [**30 Possible**]
[Design 1] Skinput + Watch	[**10**] Allows a user to use natural & discreet motions to signal for help with little effort and without notifying the criminal.	[**8**] Provides quick ways of communicating to a person in need of help by natural gestures, but can be limited in its abilities.	[**8**] Difficult to find precise information, but the use of the watch's screen and audio has potential to quickly relay info.	**26**
[Design #2] Mobile Phone	[**6**] Provides a lot of options for the user, but requires focus which can distract the user from their surroundings.	[**9**] Users wanting to provide help have all of their resources in front of them, but cannot react instantaneously.	[**8**] Information is endless on a mobile device, but requires time and mobility to search & find relevant information.	**23**
[Design 3] Google Glass	[**8**] Great source of documenting crime activities & sending for help, but user error can occur with voice recognition.	[**8**] Great way of relaying crime scenario to helper through video footage, but is limited in it's abilities.	[**9**] Allows users to see what's around them while also displaying information for when the user has time to quickly retain it.	**25**

KEY FEATURES

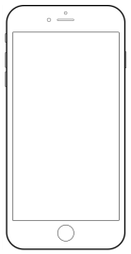


Skinput + Watch [Design 1]

GETTING + PROVIDING HELP
- Act without alerting the criminal
- Fast, few motions needed
- Safe for the situation
- Requires little focus
- Minimal physical effort required
- Natural and discrete motions
- Encouraging to use

GETTING INFO
- Informative for the Situation
- Fast, few motions needed
- Safe for the situation
- Requires little focus
- Easy to Understand
- Simple to Navigate
- Low possibility of mistake & slip

USABILITY
- Common device(s) to own
- Accessible for all to use
- Easy to use
- Effective
- Efficient
- Easy to Learn
- Error Tolerant



Mobile Phone [Design 2]

GETTING + PROVIDING HELP
- Act without alerting the criminal
- Fast, few motions needed
- Safe for the situation
- Requires little focus
- Minimal physical effort required
- Natural and discrete motions
- Encouraging to use

GETTING INFO
- Informative for the Situation
- Fast, few motions needed
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- Requires little focus
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USABILITY
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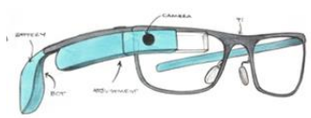


Google Glass [Design 3]

GETTING + PROVIDING HELP
- Act without alerting the criminal
- Fast, few motions needed
- Safe for the situation
- Requires little focus
- Minimal physical effort required
- Natural and discrete motions
- Encouraging to use

GETTING INFO
- Informative for the Situation
- Fast, few motions needed
- Safe for the situation
- Requires little focus
- Easy to Understand
- Simple to Navigate
- Low possibility of mistake & slip

USABILITY
- Common device(s) to own
- Accessible for all to use
- Easy to use
- Effective
- Efficient
- Easy to Learn
- Error Tolerant

Using Multiple Devices

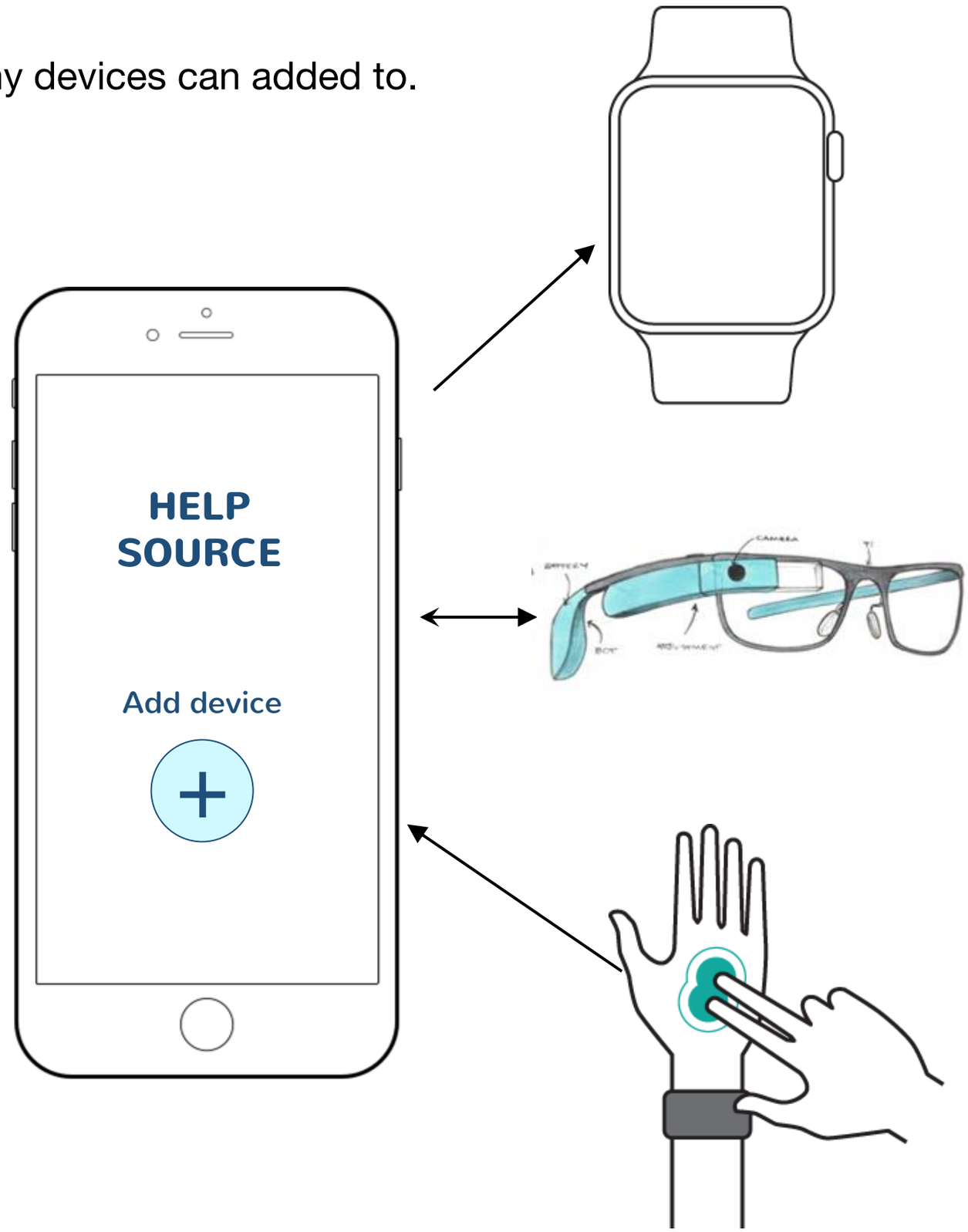
Mobile Phone as main component for which many devices can added to.

The mobile phone offered the most usability features and was seen as the only common device owned by people currently. This information led to our decision to use the mobile phone as the main device.

However, with the purpose of reaching a wide range of people in communities, we felt the need to not limit ourselves to one device. Rather, we aim to design the mobile device as a main source for which many devices can be added. These devices can act as input or output for the application depending on how they are being used by the system.

Example devices:

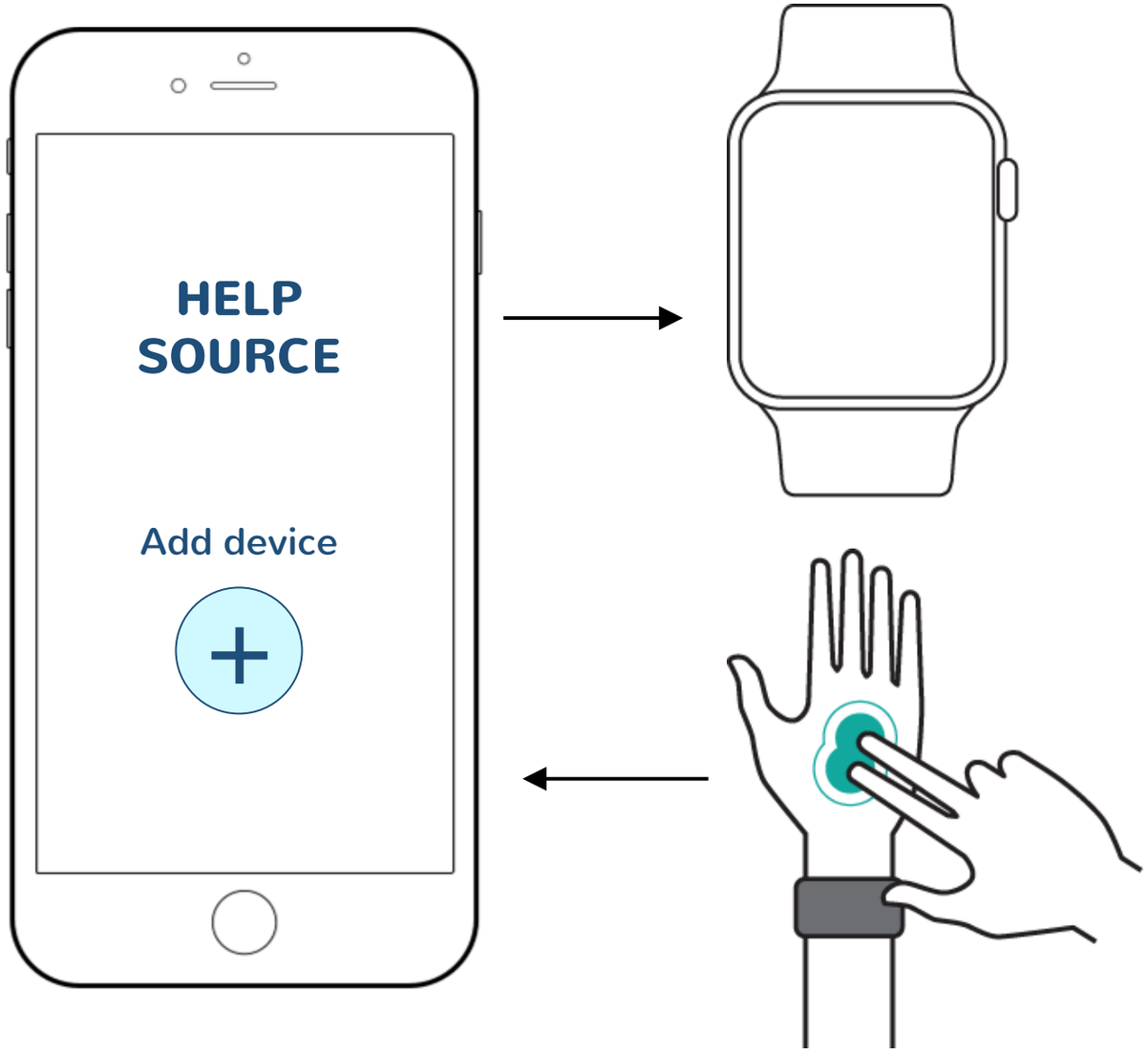
- Watch
- Google Glass
- Skinput



Mobile Phone / Skinput + Watch

New Design Concept

Although we anticipate using the mobile phone and adding multiple devices to it, the skinput+watch is the device combination that we will move forward with developing for our project. The skinput+watch design concept received the highest total points on our evaluation rubric. This rubric calculated how well the concept's device accomplished each of our 3 main design goals. By allowing the user to use natural & discreet motions to signal for help with little effort and without alerting the criminal, these devices could change the way we deal with crimes forever. Although the usability ranking was low, skinput has great potential with it's ease of use for all people, including those with physical impairments. This device also provides the platform with the quickest and most subtle ways of communicating with those who can help.



THE END

HELP SOURCE APP

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by Alex Nelson, Lina Taheri, Maryam Tavakoli Hosseinabadi, Rob Frye, and Rahul Rachapalli